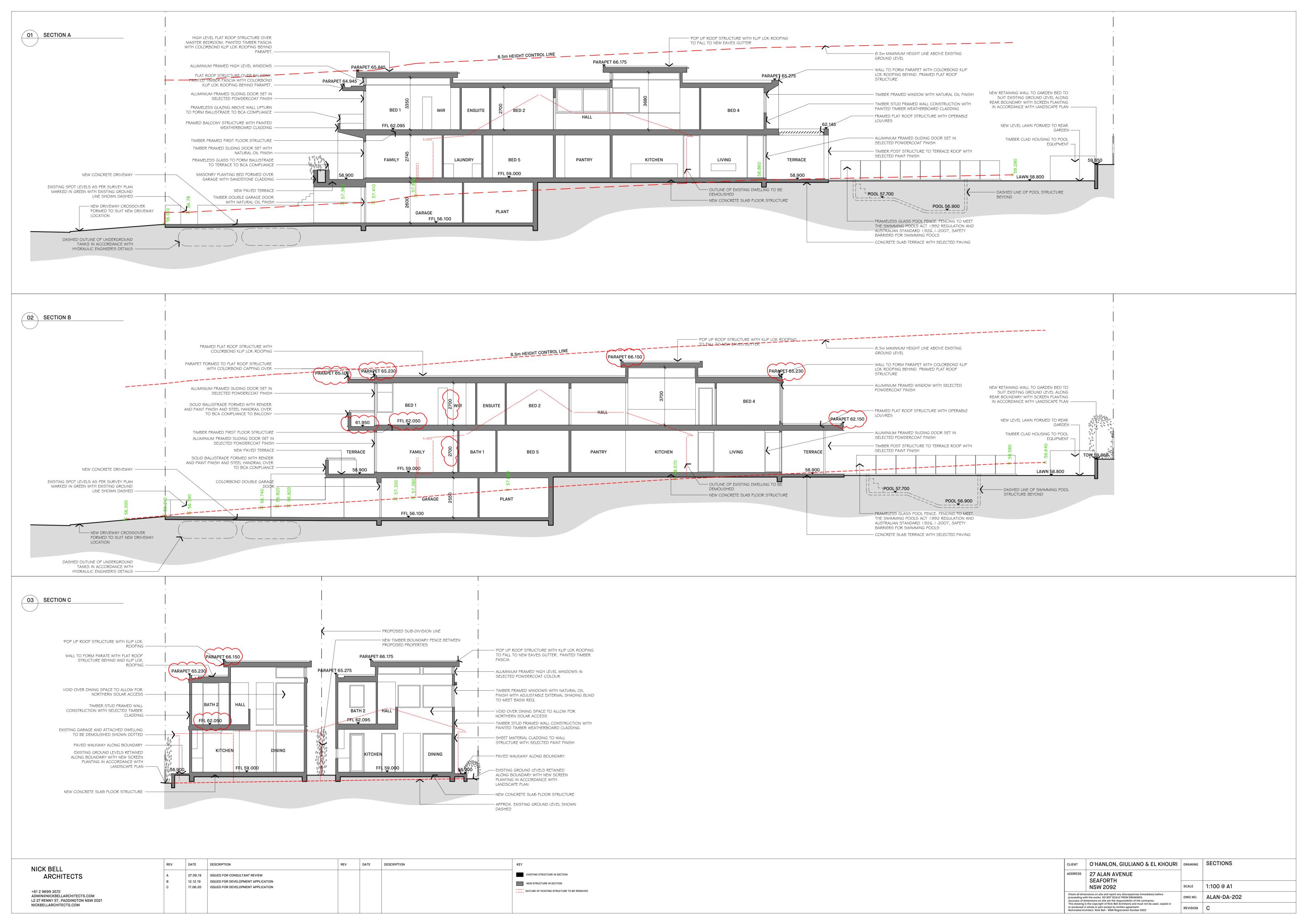
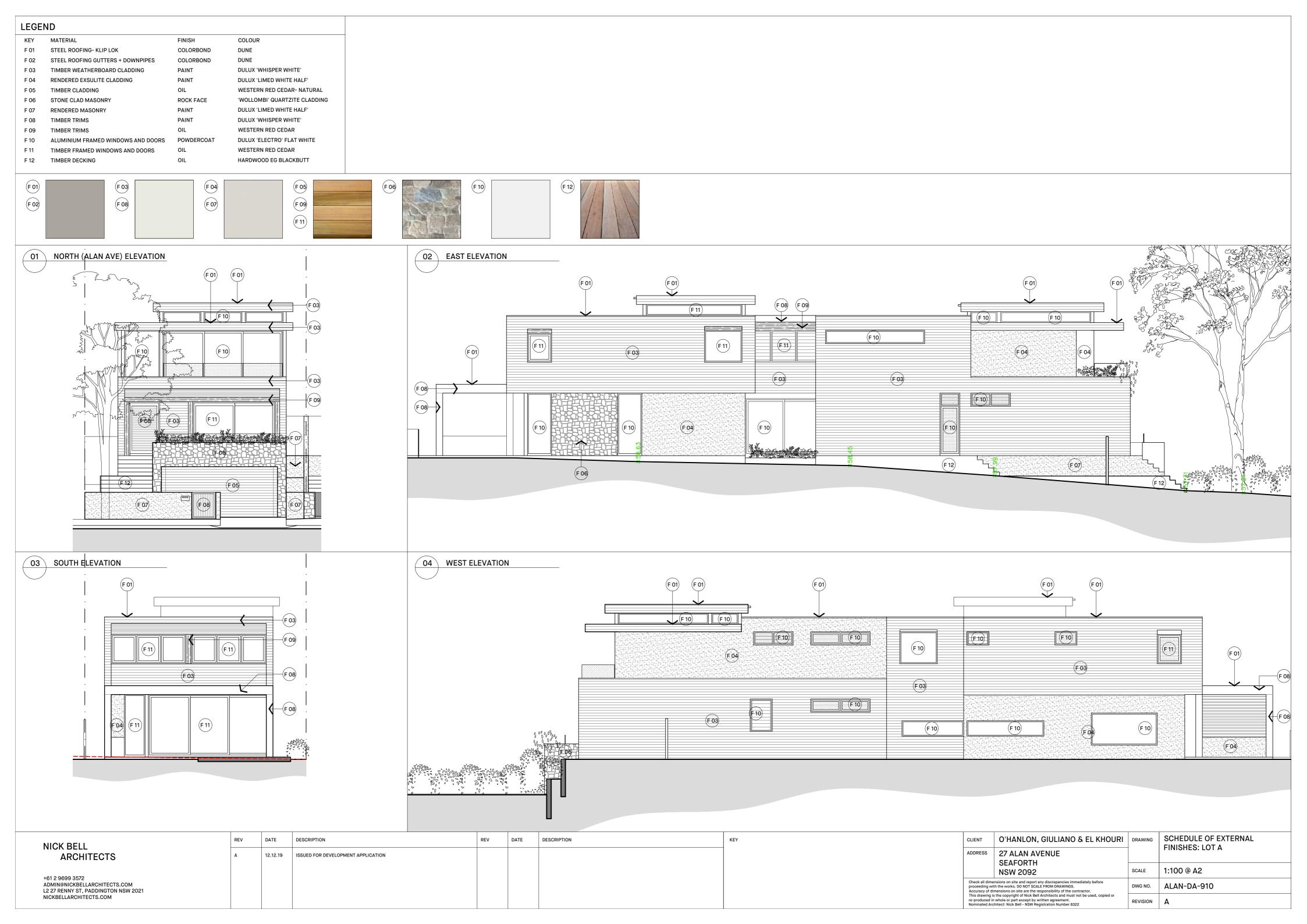
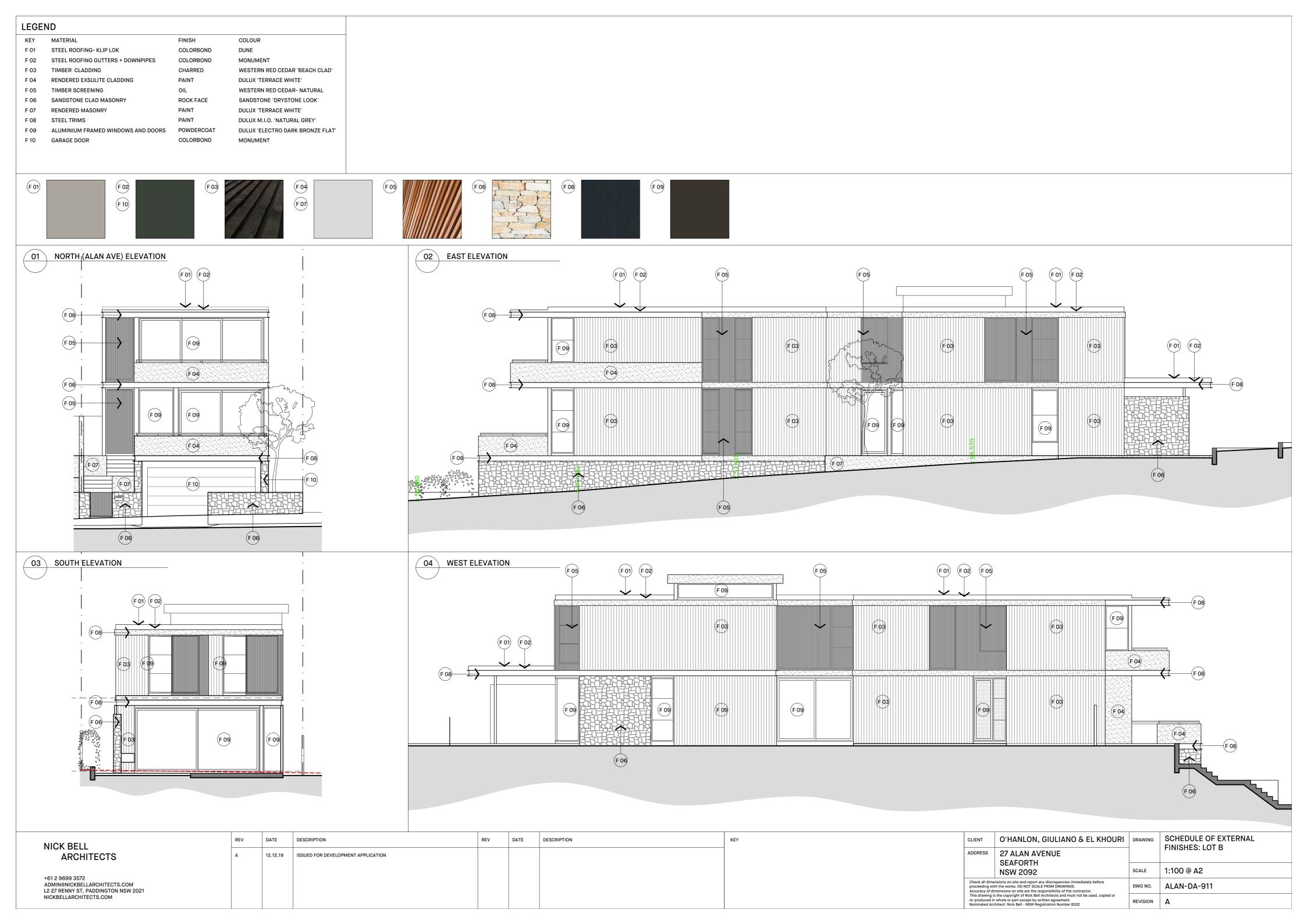


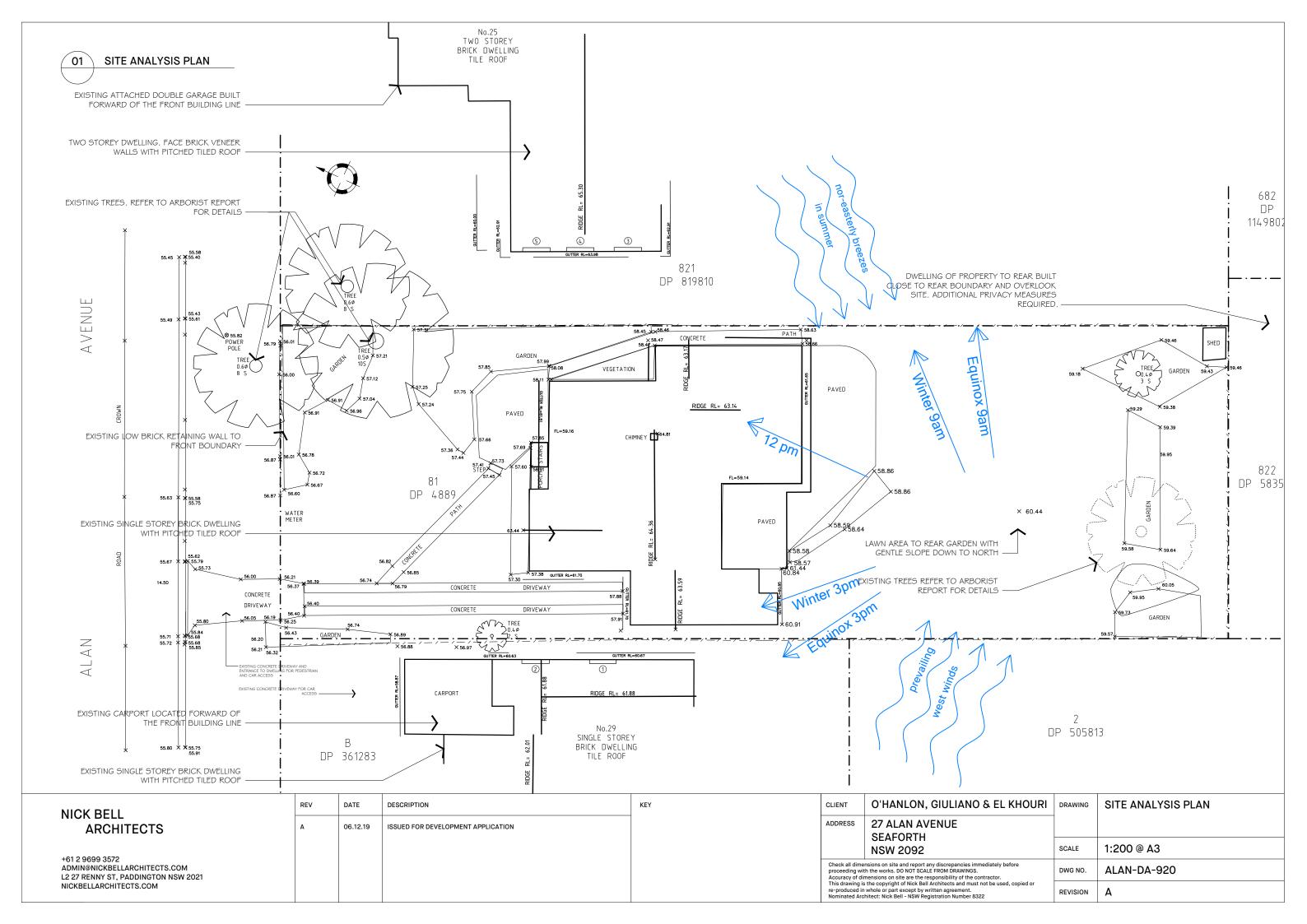


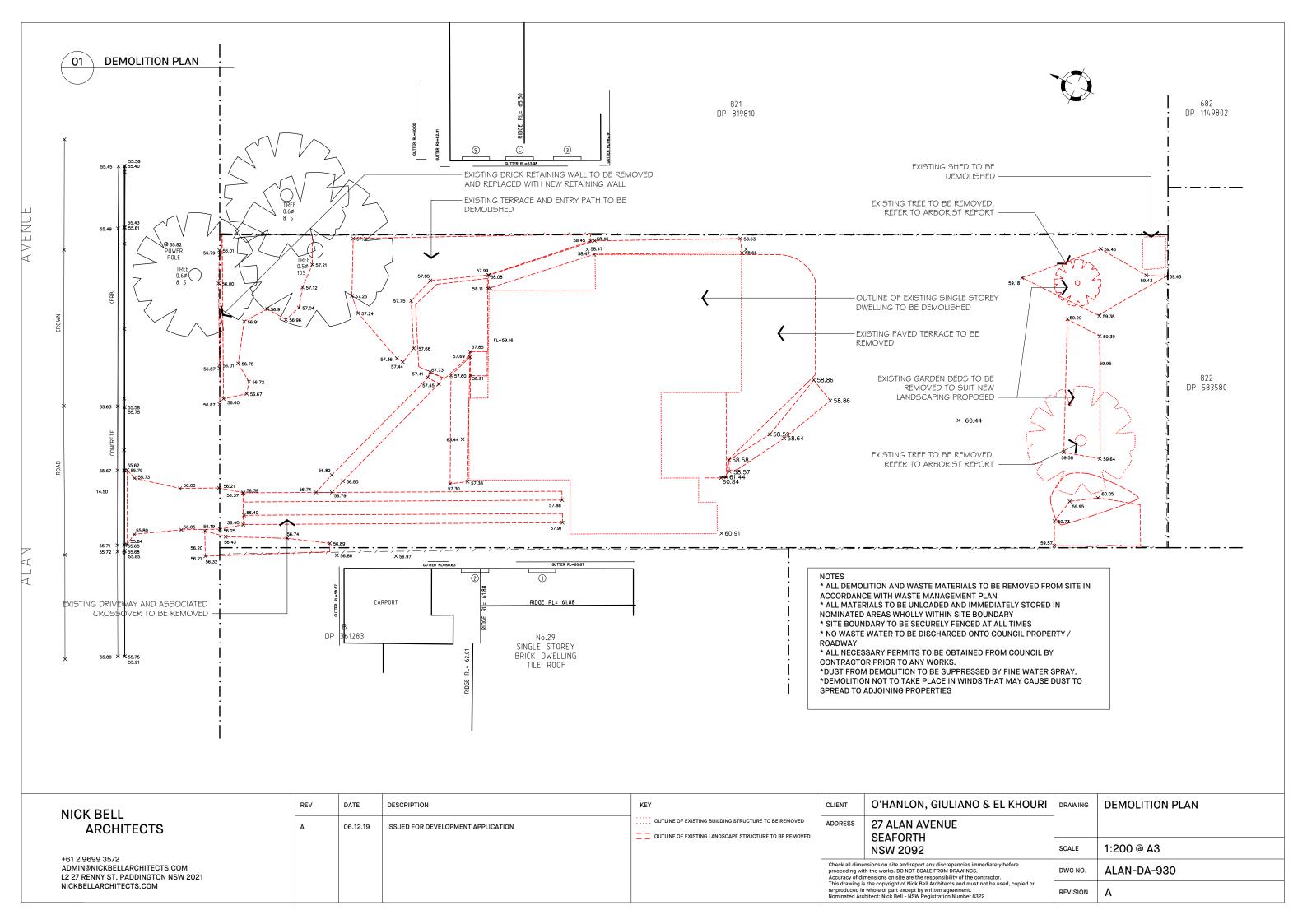
NICK BELL	REV DATE DESCRIPTION REV DATE DESCRIPTION	KEY	CLIENT O'HANLON, GIULIANO & EL KHOURI DRAWING ELEVATIONS
NICK BELL ARCHITECTS	A 27.09.19 ISSUED FOR CONSULTANT REVIEW	EXISTING STRUCTURE IN SECTION	ADDRESS 27 ALAN AVENUE
+61.2.0600.2572	B 12.12.19 ISSUED FOR DEVELOPMENT APPLICATION C 17.06.20 ISSUED FOR DEVELOPMENT APPLICATION	NEW STRUCTURE IN SECTION OUTLING OF EXISTING STRUCTURE TO BE REMOVED	SEAFORTH NSW 2092 SCALE 1:100 @ A1
+61 2 9699 3572 ADMIN@NICKBELLARCHITECTS.COM L2 27 RENNY ST, PADDINGTON NSW 2021 NICKBELLARCHITECTS.COM			Check all dimensions on site and report any discrepancies immediately before proceeding with the works. DO NOT SCALE FROM DRAWINGS. Accuracy of dimensions on site are the responsibility of the contractor. DWG NO. ALAN-DA-201
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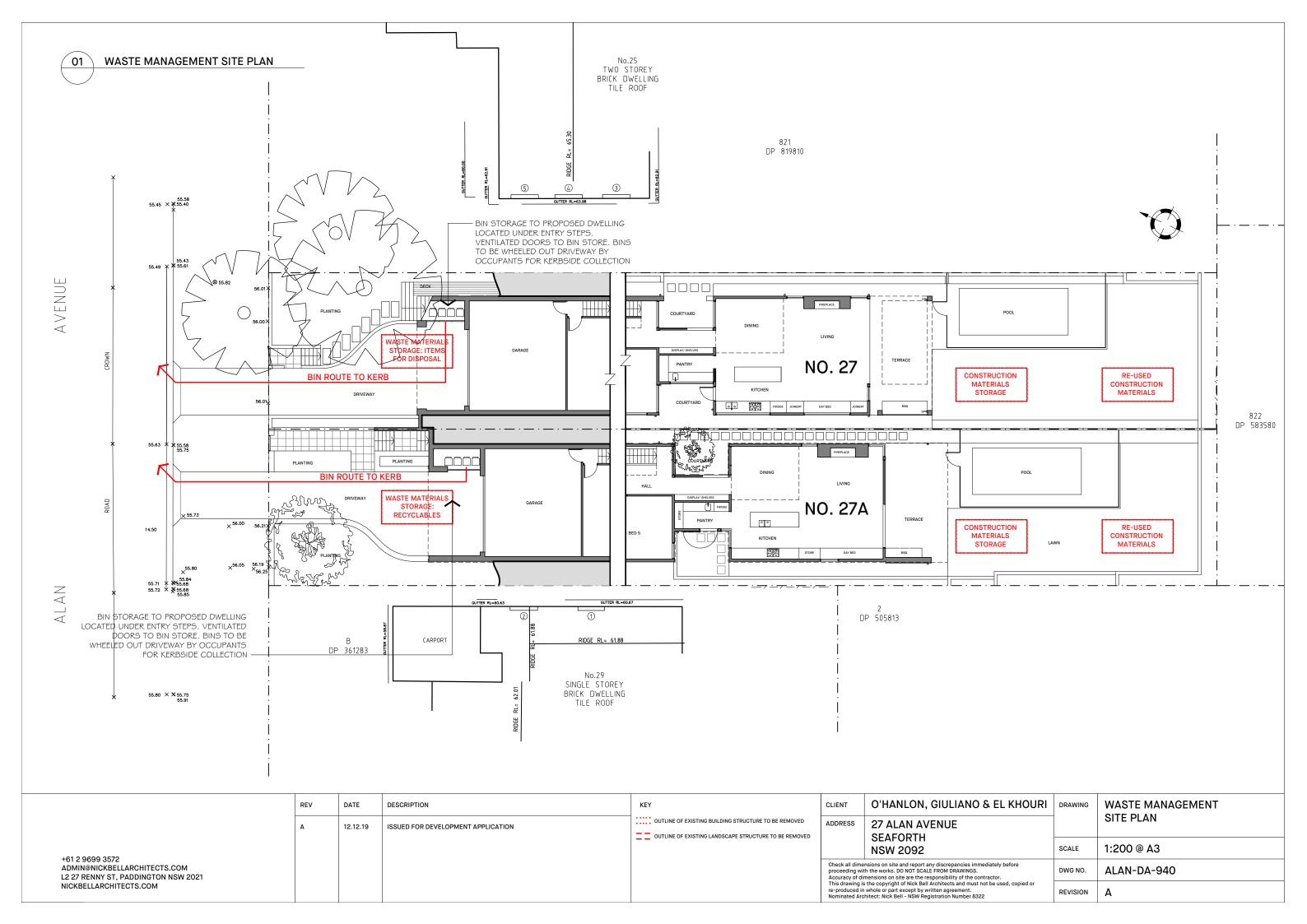


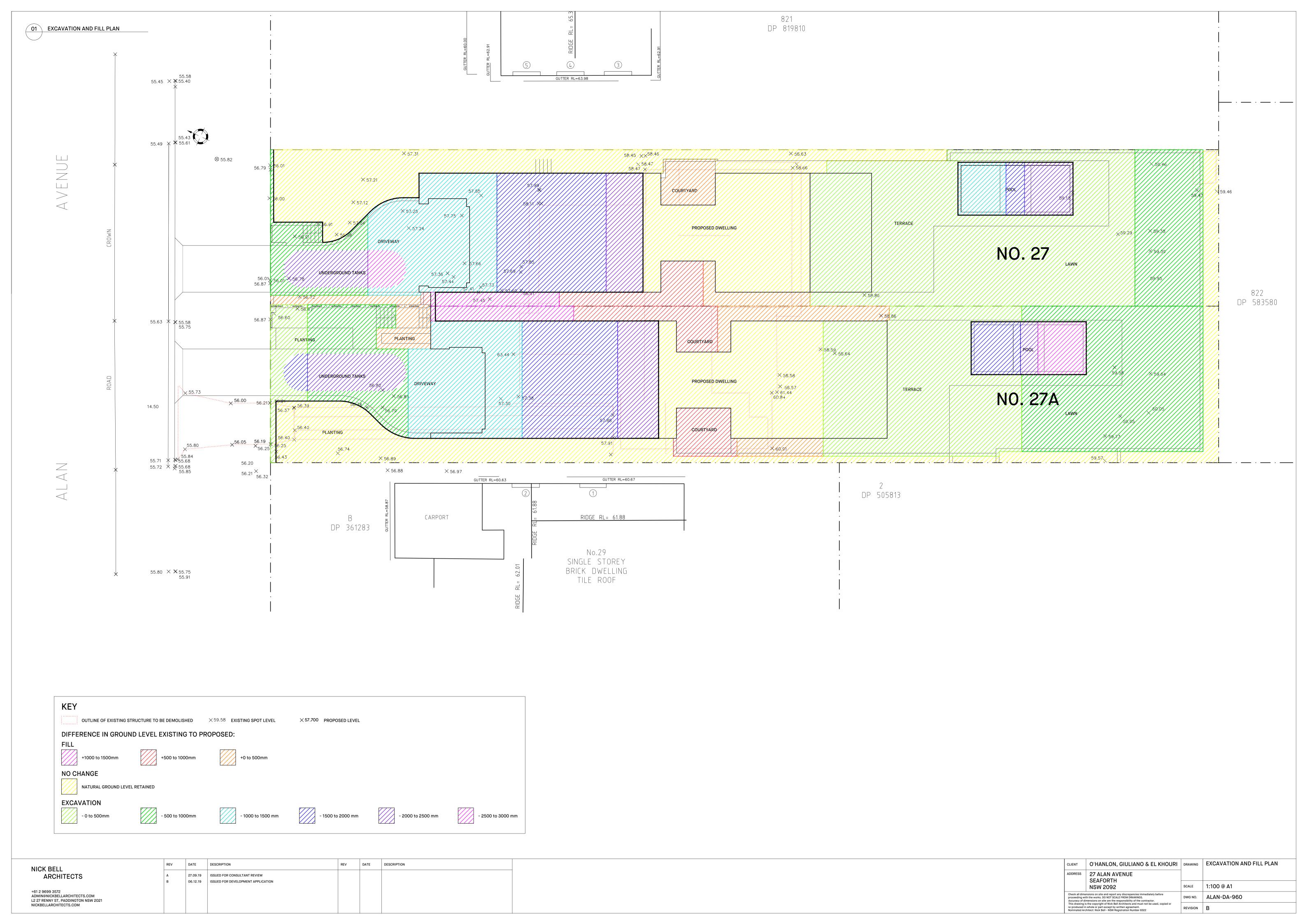


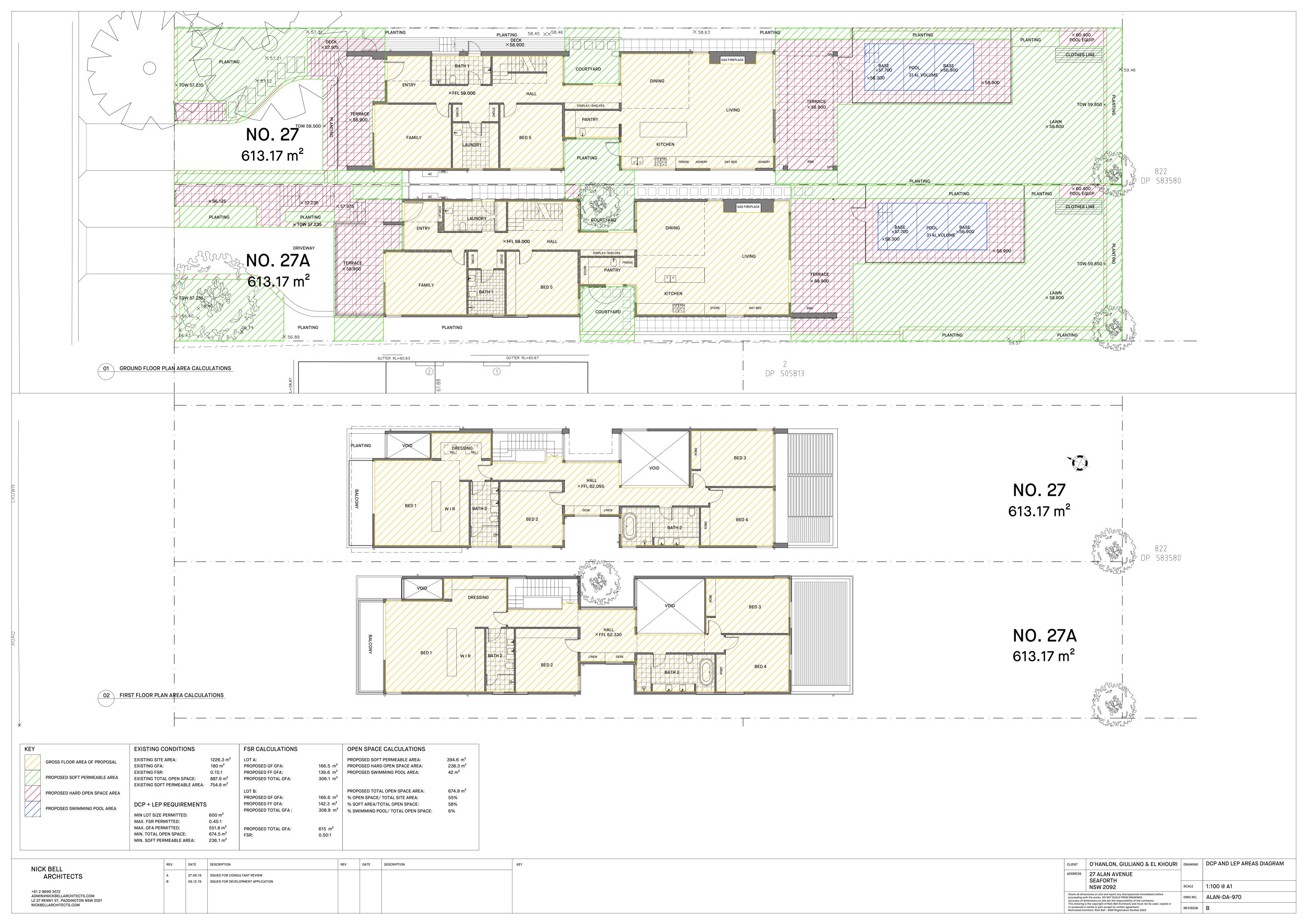












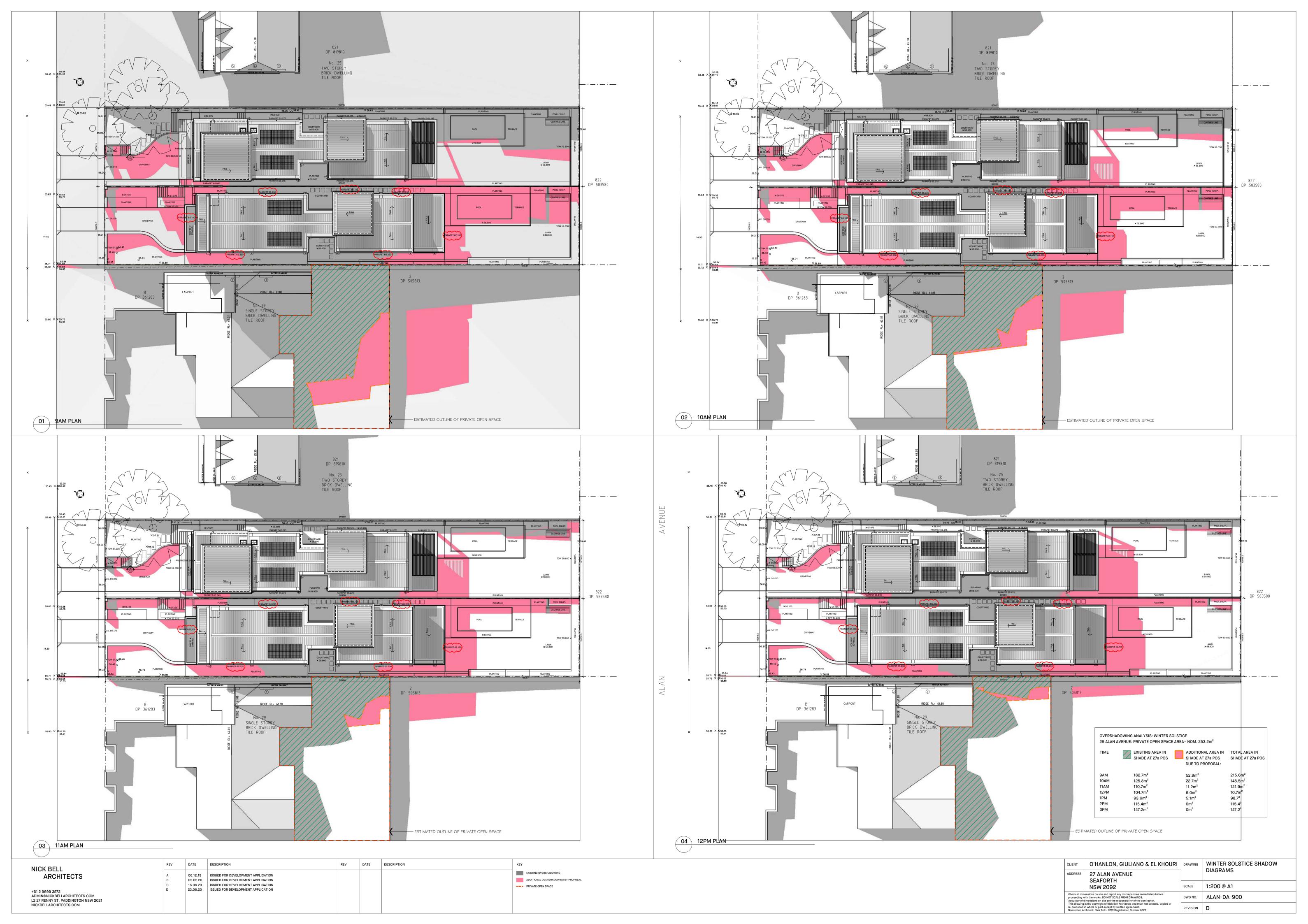


01 VIEW OF THE PROPOSAL FROM ALAN AVE

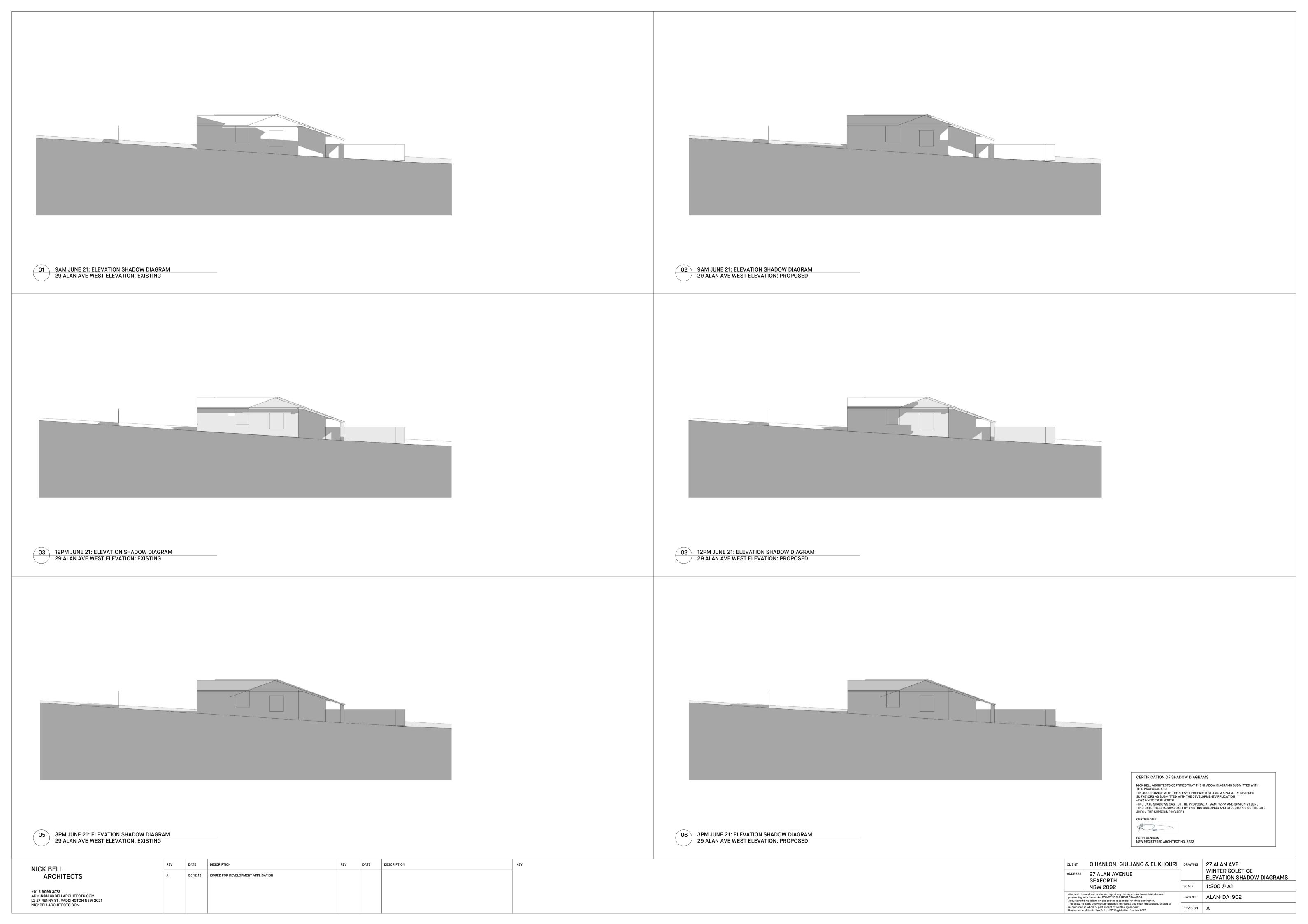


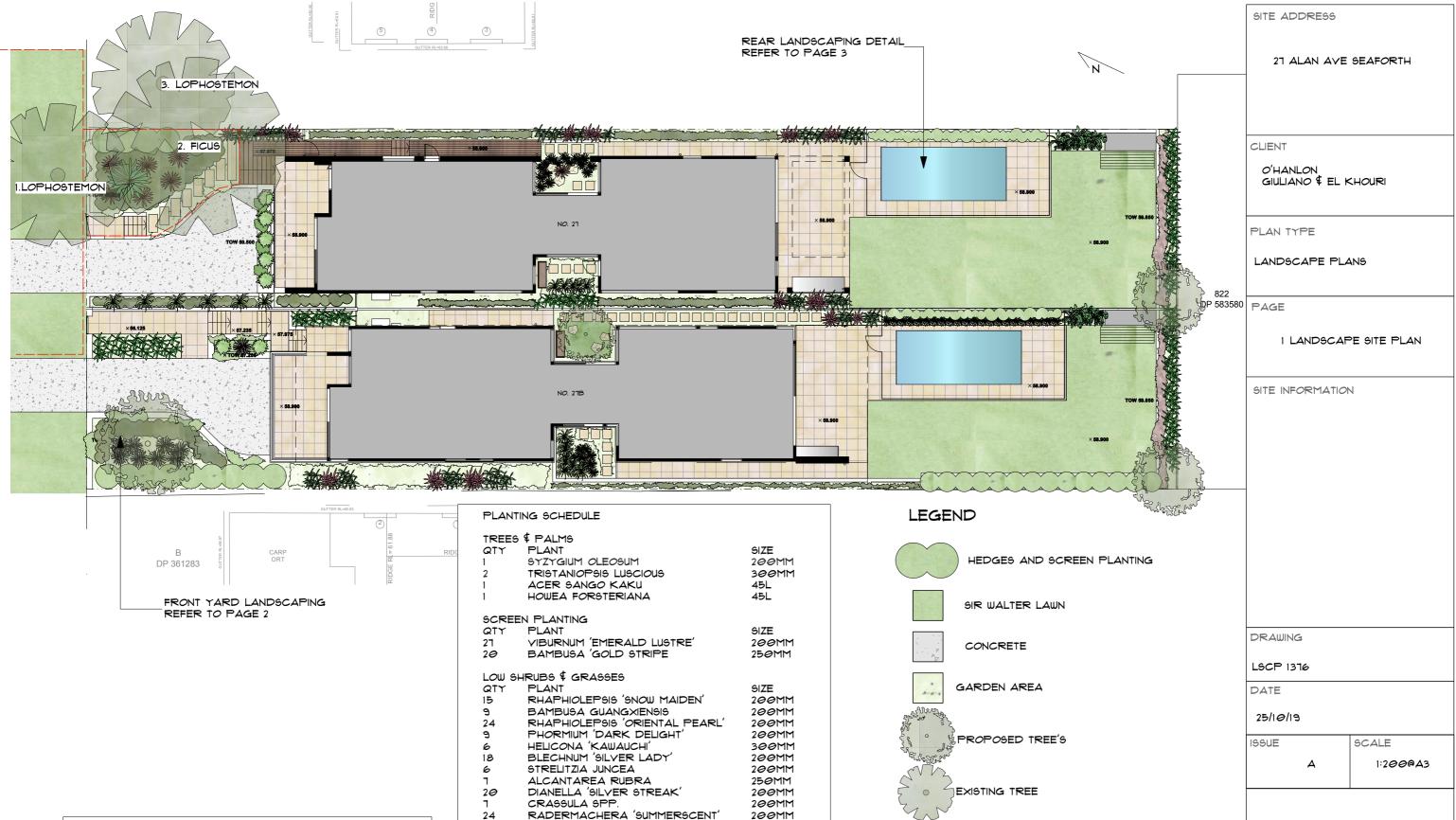
02 VIEW OF THE PROPOSAL FROM ALAN AVE

NICK BELL	REV	DATE	DESCRIPTION	KEY	CLIENT	O'HANLON, GIULIANO & EL KHOURI	DRAWING	PERSPECTIVES
ARCHITECTS	Α	27.09.19	ISSUED FOR CONSULTANT REVIEW		ADDRESS	27 ALAN AVENUE		
101.0.0000.0570	В	06.12.19	ISSUED FOR DEVELOPMENT APPLICATION			SEAFORTH NSW 2092	SCALE	N/A
+61 2 9699 3572 ADMIN@NICKBELLARCHITECTS.COM L2 27 RENNY ST, PADDINGTON NSW 2021					proceeding w	ensions on site and report any discrepancies immediately before ith the works. DO NOT SCALE FROM DRAWINGS. imensions on site are the responsibility of the contractor.	DWG NO.	ALAN-DA-980
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200MM

LANDSCAPE CALCULATIONS (REFER TO ARCHITECTS PLANS)

EXISTING SIGNIFICANT TREE'S (REFER TO ARBORIST REPORT)

---- TPZ (REFER TO ARBORIST REPORT)

TREE NO. TREE TYPE ACTION LOPHOSTEMON CONFERTUS RETAIN FICUS RUBIGINOSA RETAIN 2 LOPHOSTEMON CONFERTUS RETAIN 3

'TROPICAL STYLE' BOUNDARY PLANTING

RAPHIS EXCELSA 12 300MM CORDYLINE NEGRA/PINK DIAMOND 15 200MM 12 CHAMAEDOREA SEIFRIZII 200MM

GROUND COVERS \$ CLIMBERS

ASPLENIUM NIDUS

QTY PLANT SIZE 40 VIOLA HEDERACEA 100MM SENECIO SERPENS 15@MM 8 TRACHELOSPERMUM JASMINOIDES 200MM 50 8 TRACHELOSPERMUM ASIATICUM 150MM ALTERNANTHERA DENTATA 150MM 18 CASURINA COUSIN IT 15@MM DICHONDRA SILVER FALLS 150MM



TREE TO BE REMOVED



SMALL SHRUBS



PAYING

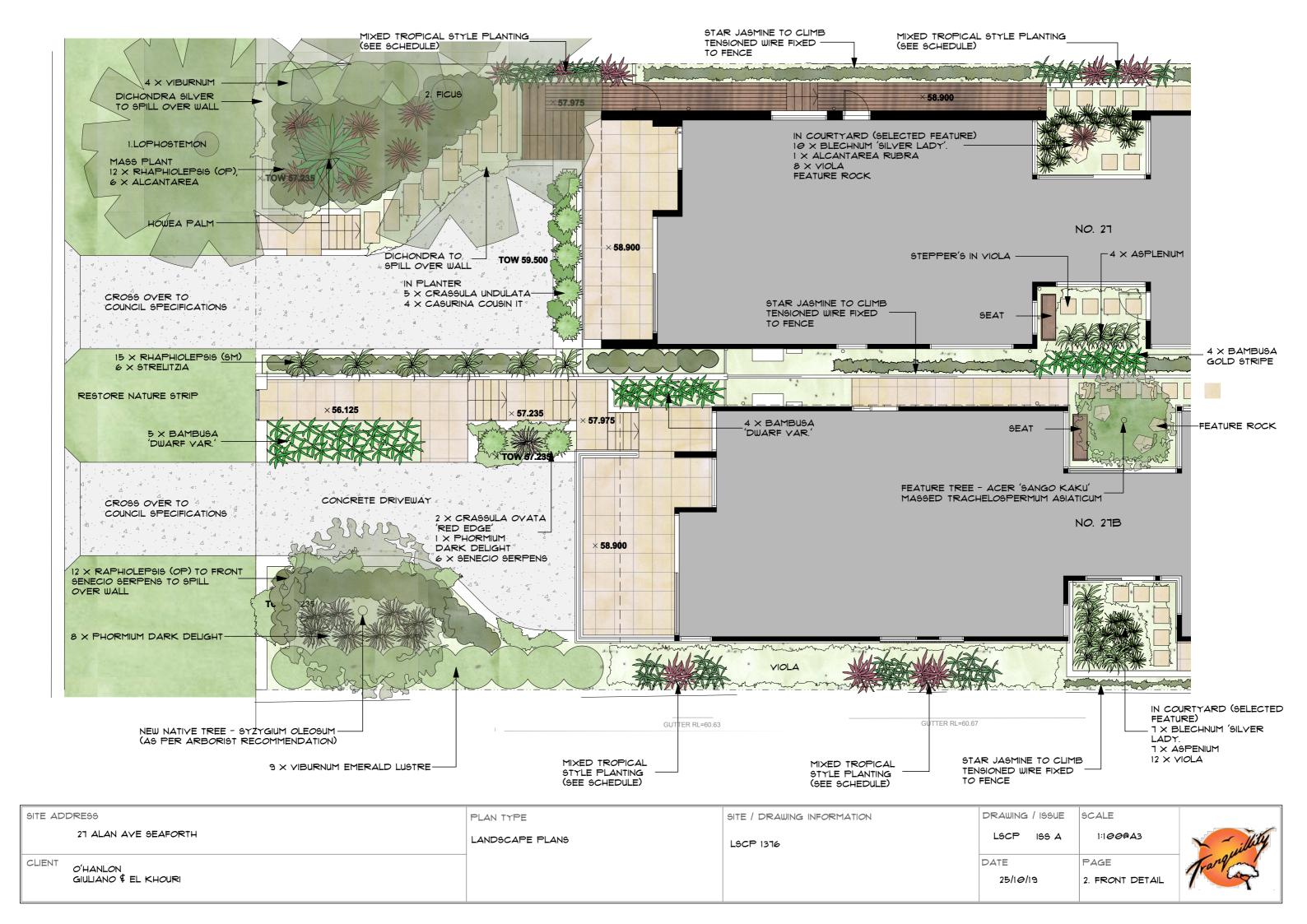


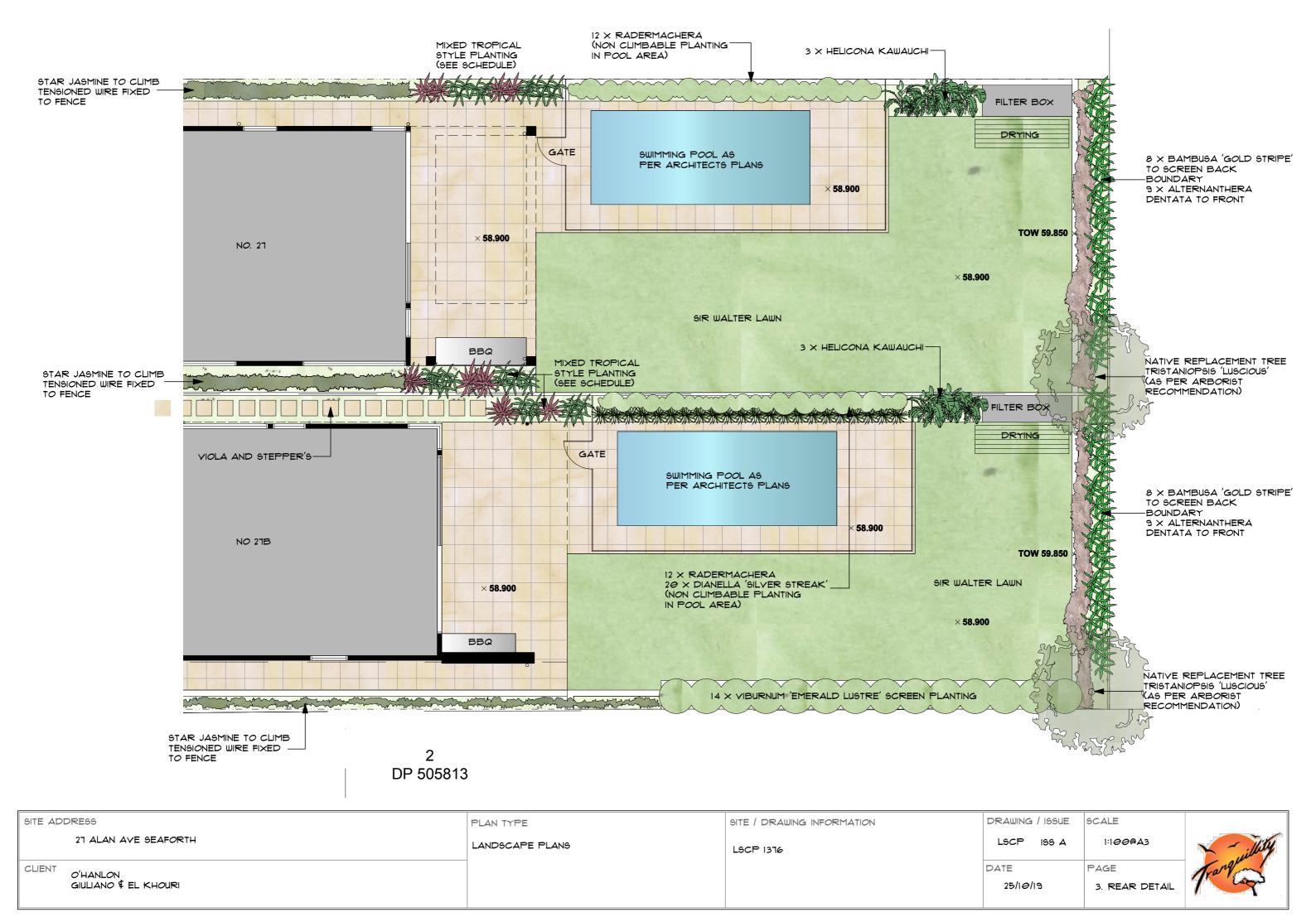
RETAINING WALL



LANDSCAPE DESIGN

ALL DIMENSIONS TO BE VERIFIED ONSITE. ALL WORKS TO BE IN ACCORDANCE WITH BCA AND RELEVENT GOVERNMENT CODES.





SPECIFICATIONS

PLANTED MATERIAL TO BE STORED IN POTS ON SITE IN ORDER TO BE REPLANTED WHERE SPECIFIED.

ANY EXISTING TREES AND VEGETATION TO BE RETAINED SHALL BE PRESERVED AND PROTECTED FROM DAMAGE OF ANY SORT DURING THE EXECUTION OF LANDSCAPE WORK. IN PARTICULAR, ROOT SYSTEMS OF EXISTING PLANTS MUST NOT BE DISTURBED. ANY NEARBY

SITE WORKS SHOULD BE CARRIED OUT CAREFULLY USING HAND TOOLS. STORAGE OF MATERIALS, MIXING OF MATERIALS, VEHICLE PARKING, DISPOSAL OF LIQUIDS, MACHINERY REPAIRS AND REFUELING, SITE OFFICE AND SHEDS, AND THE LIGHTING OF FIRES SHALL NOT OCCUR WITHIN THREE (3) METRES OF ANY EXISTING OR NEW TREES. DO NOT STOCKPILE SOIL, RUBBLE OR OTHER DEBRIS CLEARED FROM THE SITE, OR BUILDING MATERIALS WITHIN THE DRIP LINE OF EXISTING OR NEW TREES. ALL VEGETATION NOT SHOWN ON PLAN TO BE REMOVED. NO TREE REMOVAL IS TO OCCUR WITHOUT THE PRESENCE OF THE ARBORIST.

SERVICES

SERVICES AND UTILITIES SHOWN HAVE BEEN LOCATED BY PHYSICAL EVIDENCE AND/OR BY REFERENCE TO SURVEYS PROVIDED. PITS MAY NOT HAVE BEEN OPENED TO VERIFY THE TYPE OF UTILITY. EXCAVATION HAS NOT BEEN CARRIED OUT TO CONFIRM UNDERGROUND LOCATION. SERVICE DETAILS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN AND PRIOR TO COMMENCEMENT OF CONSTRUCTION.

REMOVE MIN 300MM OF EXISTING SITE SOIL WHERE IT DOES NOT INTERFERE WITH THE ROOTS OF THE EXISTING TREES PROVIDE SOIL PROFILES AS FOLLOWS;

PLANTER BOX MIX

SIMILAR TO THAT SUPPLIED BY ANL TO ALL GARDEN BEDS AS SPECIFIED ON THE PLAN

ANY IMPORTED SOIL OR SOIL BLENDS USING SITE TOPSOIL MATERIALS USED IN THE TOP 600MM OF ANY LANDSCAPED AREA FINISHED SOIL PROFILE SHALL MEET THE REQUIREMENTS OF AS 4419 - 2003 'SOILS FOR LANDSCAPING AND GARDEN USE'. SOILS SHALL BE PLACED AND COMPACTED IN LAYERS TO PREVENT UNDUE SETTLEMENT.

SUB-BASE FILLING AND PLACEMENT SHALL MEET THE ENGINEERS MATERIAL AND COMPACTION REQUIREMENTS.

EROSION CONTROL

WHERE GRADIENTS IN FINISHED SURFACE LEVEL EXCEED 1:2.5 MULCH IS TO BE HELD IN PLACE WITH AN UNOBTRUSIVE BIODEGRADABLE FIT FOR PURPOSE NETTING WITH THE NETTING TO BE FIXED IN PLACE AS THE MANUFACTURERS SPECIFICATION FOR THIS PARTICULAR SITUATION.

STAKING

ALL TREES NOT SELF SUPPORTING AND TREES GENERALLY SHALL BE PROVIDED WITH POINTED HARDWOOD STAKES AS FOLLOWS:

TREES UP TO CONTAINER SIZE OF 25L - 2 × 25MM × 25MM × 1M HIGH STAKES AT EACH

TREES ABOVE CONTAINER SIZE OF 25L - 2 imes 50 imes 50 imes 2.1 High Stakes Each

TIES SHALL BE OF 50MM WIDE JUTE MESH WEBBING TIED 'FIGURE EIGHT PATTERN' TO SUPPORT THE PLANT AND TIES TO BE FIXED SECURELY TO STAKES

SOIL IMPROVEMENT

WHERE SITE TOPSOIL IS TO BE USED IT SHALL BE IMPROVED BY ADDING BOTANY HUMAS OR SIMILAR AT A RATIO OF 1:3 BY VOLUME.

PLANTING MATERIALS

PLANTS SHALL CORRESPOND TO THE PLANTING INDEX. THERE SHALL BE NO SUBSTITUTION IN QUALITY OR QUANTITY OF MATERIAL UNLESS OTHERWISE SPECIFIED BY THE LANDSCAPE ARCHITECT. THE LANDSCAPE ARCHITECT. THE LANDSCAPE ARCHITECT. RESERVES THE RIGHT TO REFUSE ANY MATERIAL SHOWING SIGNS OF DISEASE, DISTORTED GROWTH HABIT OR MALPRACTICE. PLANTS TO BE PLACED IN THE GROUND NO MORE THAN 48 HOURS AFTER ARRIVAL ON SITE. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAIL. PLANTING HOLES TO BE DUG DOUBLE THE WIDTH OF THE POT SIZE AND BACKFILLED WITH ORGANIC SOIL AND NATIVE FERTILIZER. THE FINISHED LEVEL OF THE PLANT IS TO FINISH FLUSH WITH THE EXISTING POT LEVEL NO BACKFILLING AROUND THE STEM OF THE PLANT WITH EITHER SOIL OR MULCH.

EDGING

PAYER EDGE INSTALLED ON MORTAR AND BRICKTOR BTW LAWN AND GARDENS

USE PREMIUM SIR WALTER TURF OVER 250MM RIPPED SUBGRADE WITH MINIMUM OF 50MM TURF UNDERLAY.

MUI CH **MAINTENANCE**

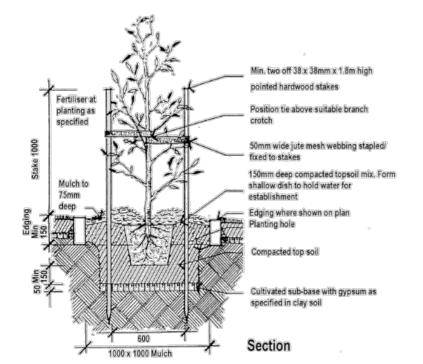
ALL PLANTER BEDS AND GARDEN AREAS SHALL HAVE CYPRESS MULCH. ALL MULCH IS TO BE FREE OF DELETERIOUS MATTER SUCH AS SOIL, WEEDS AND STICKS.

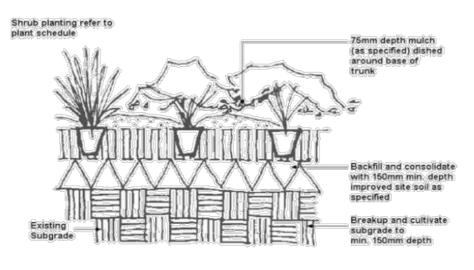
ON COMPLETION OF WORK ALL PLANTING AREAS ARE TO BE FERTILISED WITH ORGANIC LIFE, SLOW RELEASE FERTILISER (OSMOCOTE 8-9 MONTH) WHICH IS TO BE SUFFICIENTLY WATERED IN, AS WELL AS A SOLUBLE FERTILISER SIMILAR TO SEASOL APPLIED IN ACCORDANCE WITH THE MANUFACTURERS DETAILS. REAPPLY AS PER DIRECTIONS WATERING IN PERIOD OF 3 MONTHS IS APPLICABLE. WATER SHOULD BE APPLIED DURING THIS PERIOD SO AS PLANTS DO NOT GET TO THE STAGE OF WILTING.

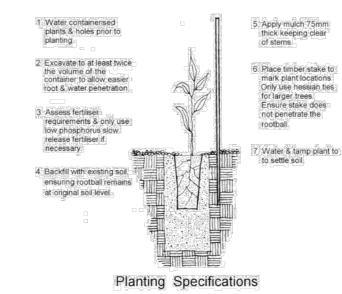
TIP PRUNING IS ENCOURAGED AT 3 MONTHS TO PROMOTE FULLER GROWTH

HARD CONSTRUCTION

ALL CIVIL, STRUCTURAL AND HYDRAULIC WORK ASSOCIATED WITH THIS PROJECT SHALL BE TO CONSULTING ENGINEER'S DETAILS. ALL EXTERNAL STAIRS TO BE CONSTRUCTED IN ACCORDANCE WITH CLAUSE D2:13 OF THE BUILDING CODE OF AUSTRALIA.







27 ALAN AVE SEAFORTH

CLIENT

SITE ADDRESS

O'HANLON GIULIANO \$ EL KHOURI

PLAN TYPE

LANDSCAPE PLANS

PAGE

4. SPECIFICATIONS

SITE INFORMATION

DRAWING

LSCP 1376

DATE

25/10/19 ISSUE

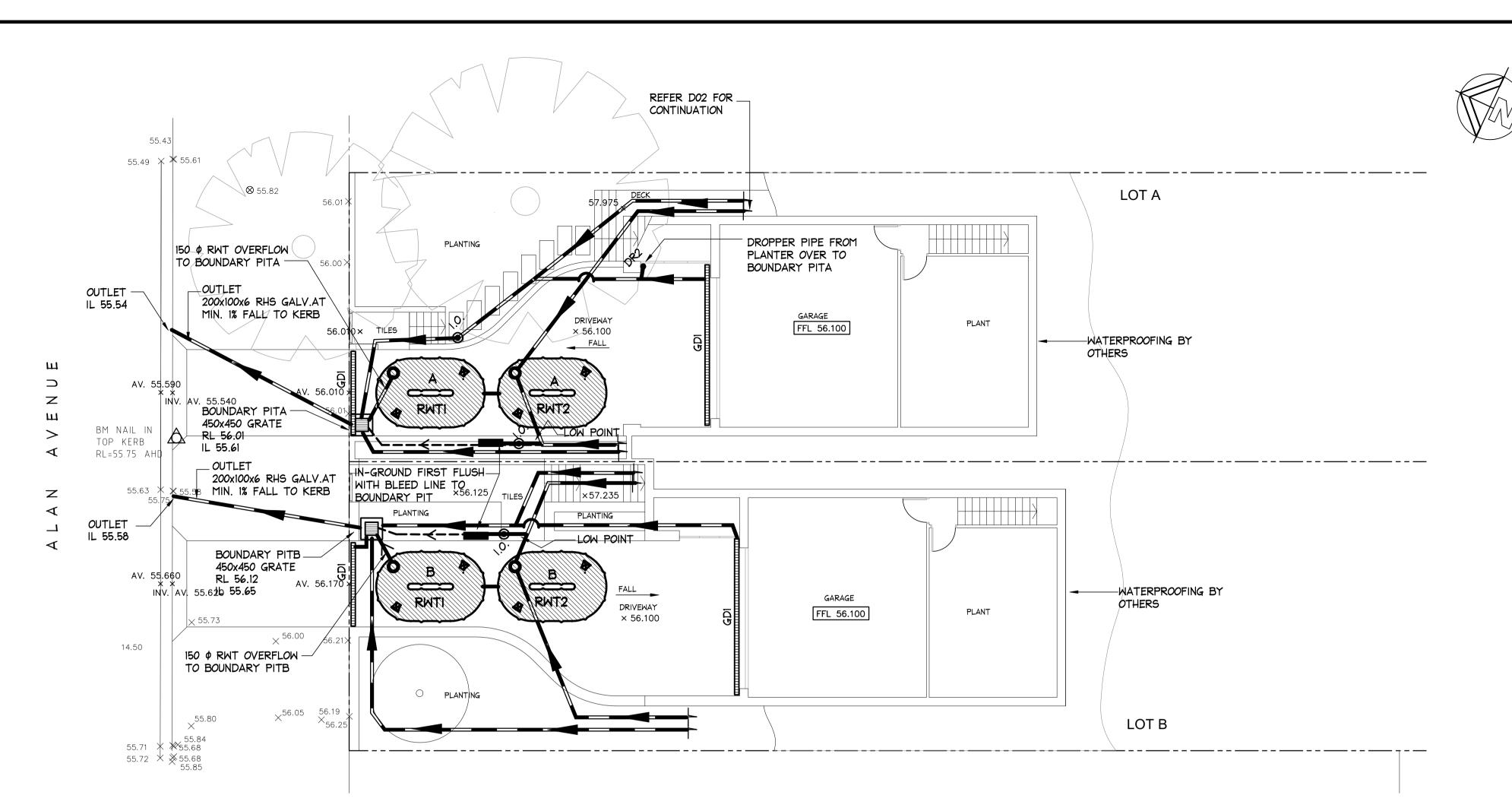
SCALE

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ALL DIMENSIONS TO BE VERIFIED ONSITE. ALL WORKS TO BE IN ACCORDANCE WITH BCA AND RELEVENT GOVERNMENT CODES

PLANTING SPECIFICATIONS



ONSITE DETENTION SYSTEM SUMMARY NOTES FOR LOT A TOTAL SITE AREA 613 m^2 212 m² (35%) PRE DEVELOPMENT IMPERVIOUS AREA $355 \text{ m}^2 (58\%)$ POST DEVELOPMENT IMPERVIOUS AREA PRE DEVELOPMENT SITE DISCHARGE (USE 35% IMPERVIOUS RATIO 17 l/s 5 YR 100 YR 34 l/s POST DEVELOPMENT SITE DISCHARGE 16 1/s 5 YR 100 YR 17 1/s 9.0 m^3 OSD REQUIREMENT 9.0 m^3 RWT REQUIRED TO PROVIDE 100% OSD OFFSET 10.0 m³ (NOTE: 10.0 m³ PROVIDED) RWT REQUIREMENT (BASIX) REVISED OSD VOLUME (AFTER OFFSET) 0 m^3

ONSITE DETENTION SYST	
TOTAL SITE AREA	613 m ²
PRE DEVELOPMENT IMPERVIOUS AREA	182 m² (30%)
POST DEVELOPMENT IMPERVIOUS AREA	$362 \text{ m}^2 (59\%)$
PRE DEVELOPMENT SITE DISCHARGE (USE 30% IMPER	VIOUS RATIO)
5 YR	16 1/s
100 YR	31 1/s
POST DEVELOPMENT SITE DISCHARGE	
5 YR	16 1/s
100 YR	16 1/s
OSD REQUIREMENT	9.0 m ³
RWT REQUIRED TO PROVIDE 100% OSD OFFSET	9.0 m ³
RWT REQUIREMENT (BASIX)	10.0 m³ (NOTE: 10.0 m³ PROVIDED)
REVISED OSD VOLUME (AFTER OFFSET)	0 m ³

BASEMENT - DRAINAGE PLAN

	DRAINAGE LINES ARE INDICATIVE ONLY. TION MAY VARY DUE TO CONSTRAINTS.
RWT 1, RWT 2	UNDERGROUND RAINWATER TANKS (UNDER DRIVEWAY) TOROID BAGELS - 3780L x 2400W x 1350D RWT 1 = 5000 L RWT 2 = 5000 L
GDI	GRATED DRAIN GDI - 150 MIN DEPTH x 150 WIDE GRATED DRAIN GD2 - STORMTECH 65AG GRATED DRAIN
© 1.0.	INSPECTION OPENING
PIT	STORMWATER PIT
	STORMWATER PIPE FLOW DIRECTION
	NEW STORMWATER PIPE
& • €	SPREADER
BGI	BOX GUTTER, REFER TO DETAILS
autiCt go\•	SUMP WITH 100mm Ø DOWNPIPE DISCHARGE TO RWT
auto 🗨	RAINHEAD WITH 100mm ϕ DOWNPIPE DISCHARGE TO RWT
AR ·	100mm Ø DROPPER PIPE TO DISCHARGE TO BOUNDARY PIT
₹ •	100mm \$\phi\$ DOWNPIPE TO DISCHARGE TO RWT
LEGEND	

NOTE:

STORMWATER DRAWINGS DO NOT INCLUDE SUBSOIL AGRICULTURAL DRAINAGE DETAILS FOR D.A. SUBMISSION. NORTHERN BEACHES CONSULTING ENGINEERS PTY LTD MUST BE COMMISSIONED TO INCLUDE THESE DETAILS ONLY WHEN CONSTRUCTION CERTIFICATE AND/OR CONSTRUCTION DOCUMENTATION IS COMPLETE AND PROVIDED.

NOTE: EXCAVATION AROUND TREES CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF SELECTED TREES NOT TO DISTURB THE TREE ROOT SYSTEM. HAND DIGGING OF TRENCHES ETC MAY BE NECESSARY. REFER ARBORISTS REPORT.

NOTE:

ALL DPI DOWN PIPES TO DISCHARGE INTO RAINWATER RE-USE TANKS IN ACCORDANCE WITH AS 3500.3



NOTE: NO INVESTIGATION OF UNDERGROUND

DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE

- INCONVENIENCE USERS OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS
- 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

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IF IN DOUBT ASK

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					Date
06-12-2019	В	ISSUED FOR DA SUBMISSION	MC	CF	Rick
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Date:	Issue:	Description:	Ву:	Review:	(Direc The cop Consulting

OCUMENT CERTIFICATION ick G Wray (Civil), CPEng, MIEAust., NER., RPEQ: 08293. Pirector NB Consulting Engineers) Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220 ne copyright of this drawing remains with Northern Beaches sulting Engineers Pty Ltd. Trading as NB Consulting Engineers

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E: nb@nbconsulting.com.au W: www.nbconsulting.com.au

NICK BELL ARCHITECTS Client:

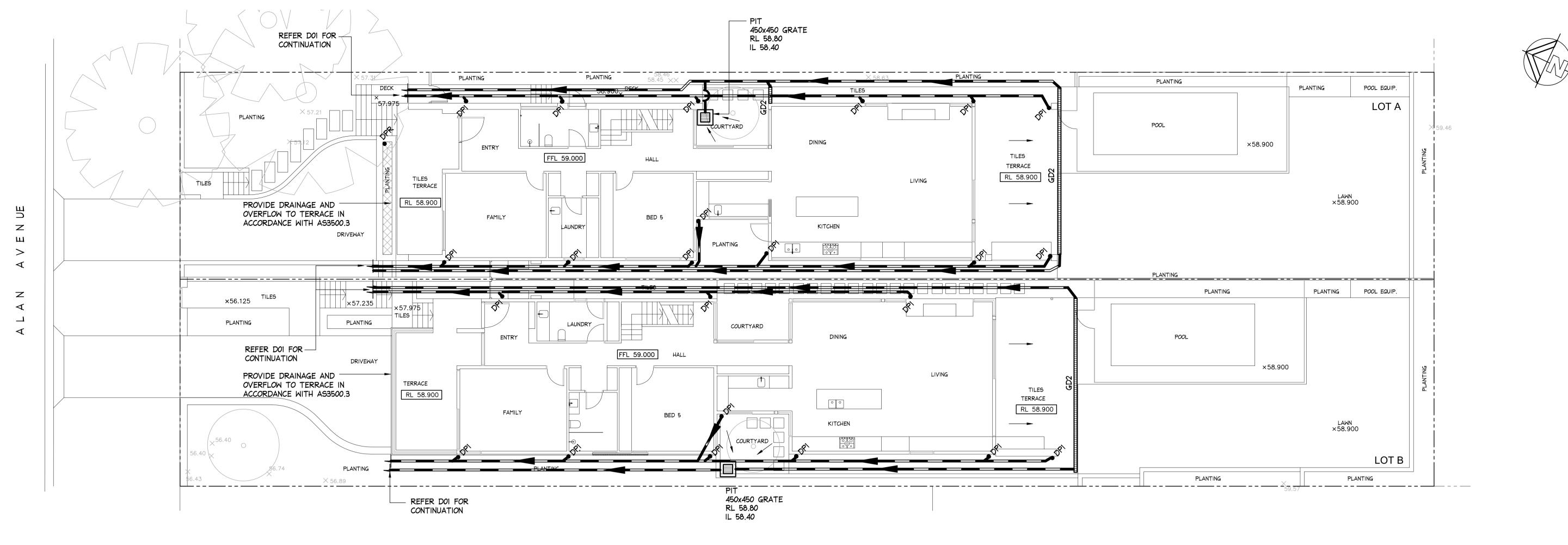
27 ALAN AVENUE SEAFORTH Drawing Title:

NEW RESIDENCE

Design: Drawn: NOV. 2019 CH MC

Drawing No:

STORMWATER MANAGEMENT 1909132 D01 RA EL KHOURI BASEMENT DRAINAGE PLAN



GROUND FLOOR - DRAINAGE PLAN

NOTE:

STORMWATER DRAWINGS DO NOT INCLUDE SUBSOIL AGRICULTURAL DRAINAGE DETAILS FOR D.A. SUBMISSION. NORTHERN BEACHES CONSULTING ENGINEERS PTY LTD MUST BE COMMISSIONED TO INCLUDE THESE DETAILS ONLY WHEN CONSTRUCTION CERTIFICATE AND/OR CONSTRUCTION DOCUMENTATION IS COMPLETE AND PROVIDED

NOTE: PLANTERS

ATLANTIS DRAINAGE CELLS TO PLANTER AREAS TO BE INSTALLED AS PER MANUFACTURERS DETAILS. DISCHARGE TO BOUNDARY PIT.

NOTE: EXCAVATION AROUND TREES CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF SELECTED TREES NOT TO DISTURB THE TREE ROOT SYSTEM. HAND DIGGING OF TRENCHES ETC MAY BE

NECESSARY, REFER ARBORISTS REPORT.

NOTE:

SWIMMING POOL SURCHARGE OVERFLOW TO BE CONNECTED TO SYDNEY WATER SEWER IN ACCORDANCE WITH AS3500.2.2.2003 DETAILS AND CERTIFICATION BY OTHERS.

NOTE:

ALL DPI DOWN PIPES TO DISCHARGE INTO RAINWATER RE-USE TANKS IN ACCORDANCE WITH AS 3500.3

RAINWATER RE-USE TANKS:

- 1. 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 REQUIRMENTS
- 2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE. REFERENCES:
- COOMBES P.J. \$ KUCZERA G. (2001), "RAINWATER TANK DESIGN FOR WATER SUPPLY \$ STORMWATER MANAGEMENT." STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE. PATRICK DUPONT \$ STEVE SHACKEL, "RAINWATER"
- AUSTRALIAN GOVERNMENT (2004), "GUIDANCE ON USE OF RAINWATER TANKS" 4. ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE "INSTALLING A RAINWATER TANK"

FOR NON DRINKING USE AND TO BASIX AND LOCAL COUNCIL REQUIREMENTS.

- AVAILABLE AT www.sydneywater.com.au 5. 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.
- 6. 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.
- 7. 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.
- 8. FIRST FLUSH DEVICES, OR APPROVED ALTERATIVE, 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.
- 9. 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.
- 10. 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
- 11. 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.
- 12. RAINWATER TANK TO BE WATER PROOFED IN ACCORDANCE WITH HB 230-200B

STORMWATER NOTES:

- 1. ALL PIPES TO BE 100mm \$\phi\$ UNLESS NOTED OTHERWISE
- 2. ALL PIPES TO BE UPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE. 3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
- 4. 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 GRANULAR MATERIAL AS SPECIFIED.
- 5. ALL DOWN PIPES TO BE 100mm \$\phi\$ UNLESS NOTED OTHERWISE. 6. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
- 7. PROVIDE CLEANING EYES AT ALL DOWNPIPES. 8. ALL 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 I NIZ 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 NI2 AT 300 EACH WAY UNLESS NOTED OTHERWISE. 9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS
- AS PER COUNCIL STANDARDS. 10. THE BOUNDARY OR SILT ARRESTOR PIT SHOULD ALWAYS INCORPORATE A SUMP AND MAXI-MESH SCREEN AS PER LOCAL COUNCIL 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. 11. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS
- AND SPECIFICATIONS. 12. PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APPROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
- 13. ALL LEVELS SHOWN ARE TO AHD 14. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- 15. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO UPVC.
- 16. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
- 17. UNLESS NOTED OTHERWISE, SUB-SOIL DRAINS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500.3 ALONGSIDE WALLS THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER. THIS MAY ALSO INVOLVE TRENCHING INTO THE CLAY OR ROCK SUBGRADE TO DIRECT GROUNDWATER AWAY FROM STRUCTURES.
- 18. IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES OR GUTTER GUARD TO ALL EAVES GUTTERS.



BEFORE YOU DIG

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

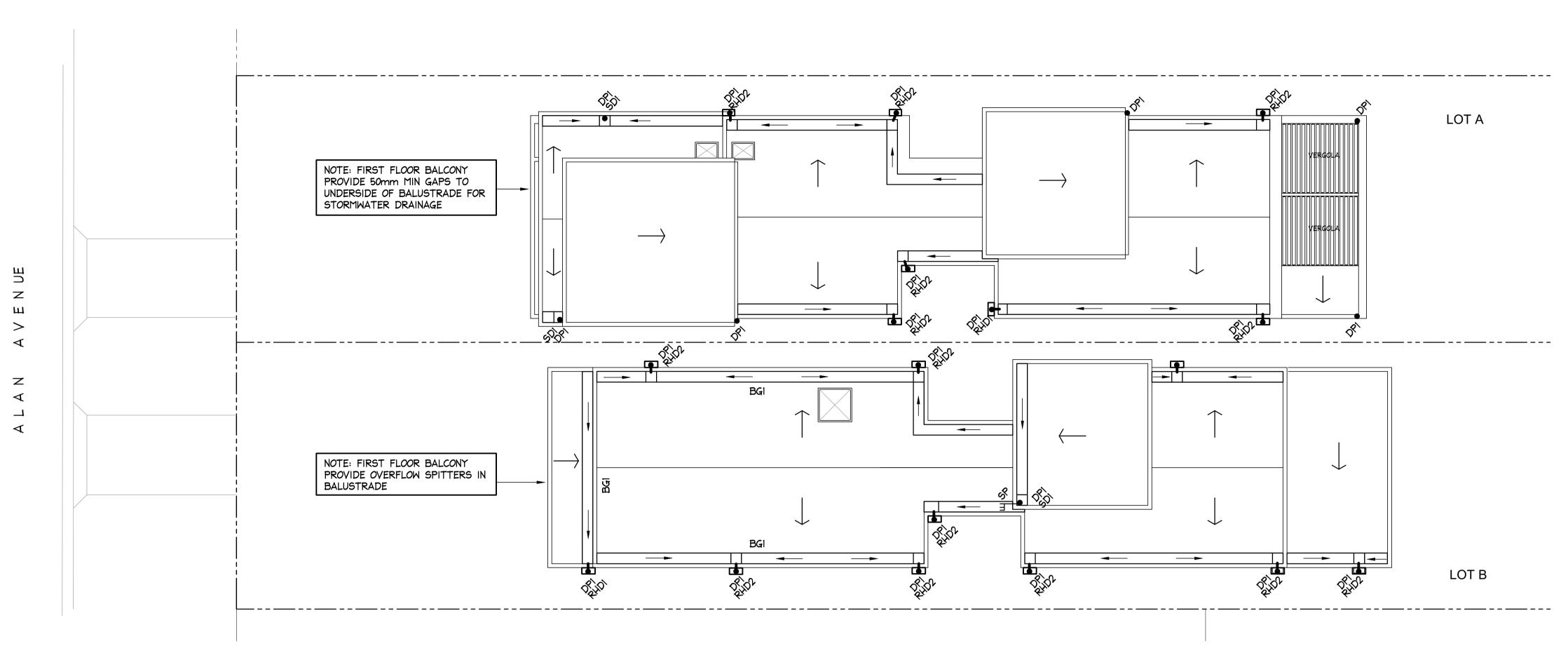
WHILE THE DAMAGE IS REPAIRED MINIMISE YOUR RISK AND DIAL BEFORE YOU DIG. - TEL. 1100

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				DOCUMENT CERTIFICATION	Consulting Engineers Architect:		Project: NEW RESIDENCE	Date:	Design:	Drawn:	
				Date:	STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 076 121 616 A.B.N. 24 076 121 616	NICK BELL ARCHITECTS	27 ALAN AVENUE SEAFORTH	NOV. 2019	CH	MC	
06-12-2019 B	ISSUED FOR DA SUBMISSION	MC	CF	Rick G Wray	Sydney: Ph: (02) 9984 7000 Suite 207 30 Fisher Road Dee Why N.S.W. 2099 Client:		Drawing Title:	Job No:	<u> </u>	Drawing No:	Issue:
Α	ISSUED FOR COMMENT	MC		BE(Civil), CPEng, MIEAust., NER., RPEQ: 08293. (Director NB Consulting Engineers)	Gold Coast: Ph: (07) 5631 4744		STORMWATER MANAGEMENT			•	
Date: Issue:	Description:	Ву:	Review:	The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Trading as NB Consulting Engineers	Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220 E : nb@nbconsulting.com.au W : www.nbconsulting.com.au	RA EL KHOURI	GROUND FLOOR DRAINAGE PLAN	1900	72	D02	: B





NOTE: BOX GUTTERS

ALL BOX GUTTER SYSTEMS SHOWN ON THESE PLANS ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE ASSOCIATED DETAILS. IF ANY CHANGE TO THE BOX GUTTER CONFIGURATION IS PROPOSED, NOTIFY THE ENGINEER FOR RE-DESIGN. IF THE INSTALLED BOX GUTTER DOES NOT STRICTLY COMPLY WITH OUR DESIGN, CERTIFICATION OF THE HYDRAULIC SYSTEM MAY BE REFUSED.

ROOF - DRAINAGE PLAN
SCALE = 1 : 100

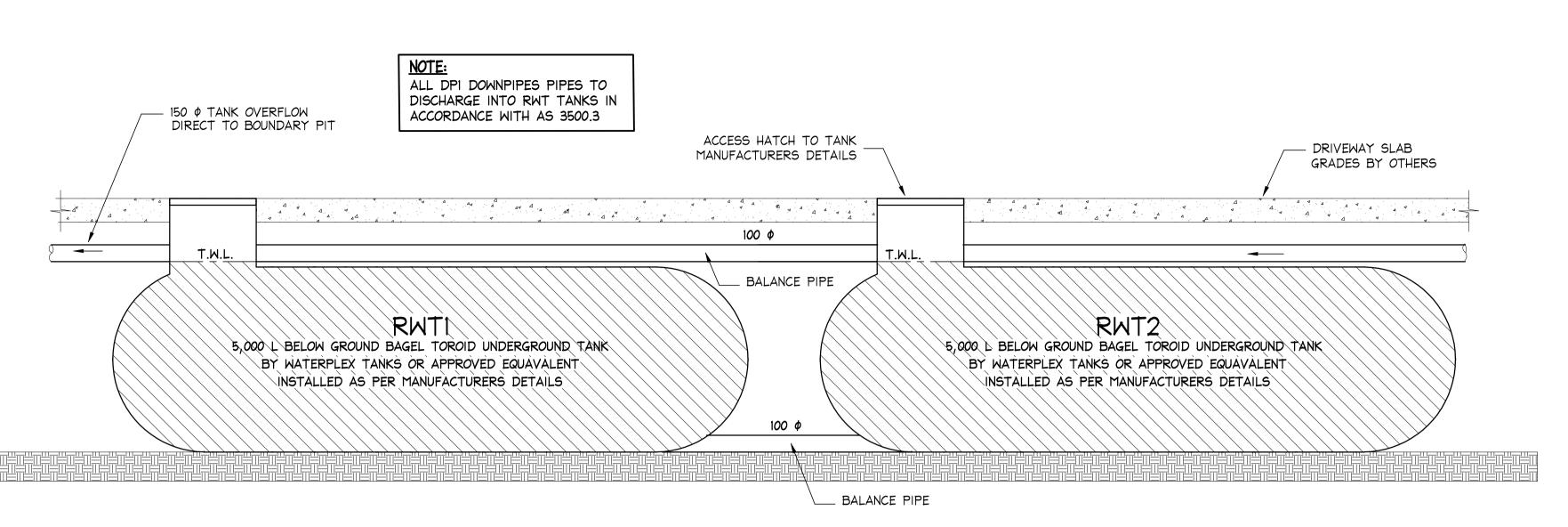
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IF IN DOUBT ASK

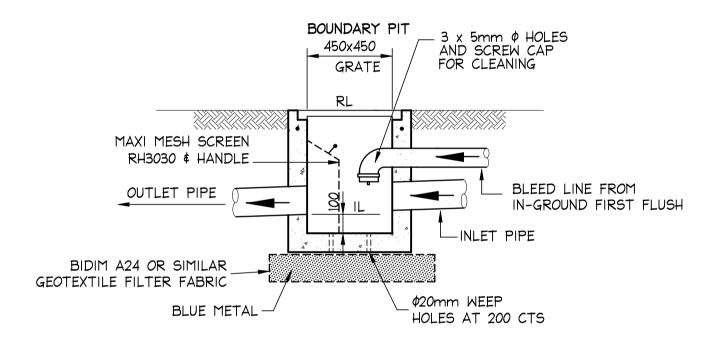
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					Date:
06-12-2019	В	ISSUED FOR DA SUBMISSION	MC	CF	Rick G Wray
	А	ISSUED FOR COMMENT	MC		BE(Civil), CPEng, MIEAust., NER., RPEQ: 08293.
					(Director NB Consulting Engineers)
Date:	Issue:	Description:	By:	Review:	The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Trading as NB Consulting Engineers

X	Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 076 121 616 A.B.N. 24 076 121 616
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hes neers	E : nb@nbconsulting.com.au W : www.nbconsulting.com.au

tect:	NICK BELL ARCHITECTS	NEW RESIDENCE 27 ALAN AVENUE SEAFORTH	Date: NOV. 2019	Design:
t:	RA EL KHOURI	STORMWATER MANAGEMENT ROOF DRAINAGE PLAN AND DETAILS	Job No:	132

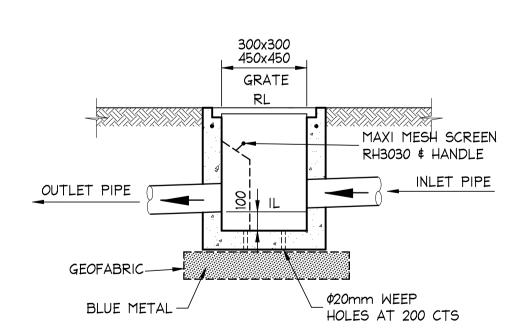


TYPICAL SECTION OF BELOW GROUND RWT TANKS SCALE = N.T.S.

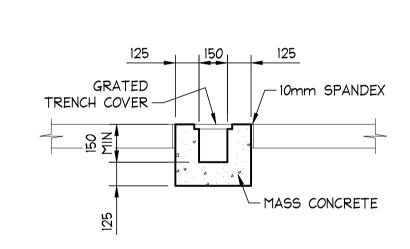


PRECAST OR CAST INSITU PIT REFER STORMWATER NOTES ALTERNATIVE POLYPROPYLENE PIT BY MANUFACTURER TYPICAL 450x450 PIT DETAIL

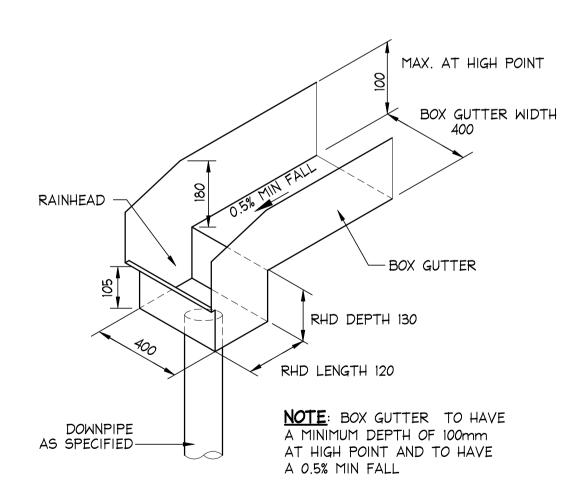
SCALE = 1 : 20



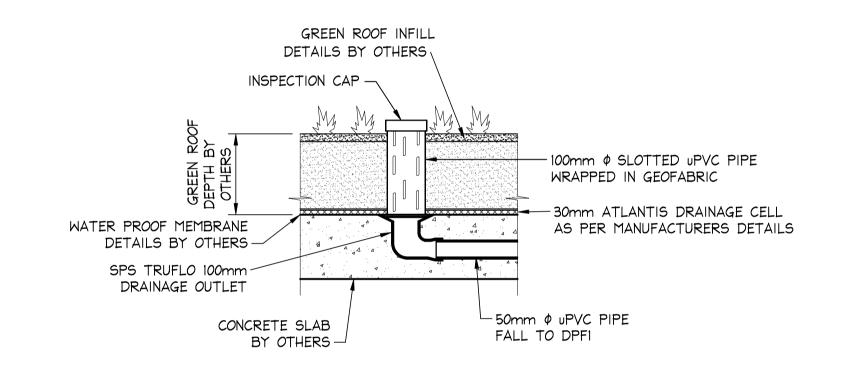
PRECAST OR CAST INSITU PIT REFER STORMWATER NOTES ALTERNATIVE POLYPROPYLENE PIT BY MANUFACTURER TYPICAL PIT DETAIL SCALE = 1 : 20



OR PRECAST GRATED DRAIN ALTERNATIVE POLYPROPYLENE DRAIN BY MANUFACTURER TYPICAL GRATED DRAIN GDI SCALE = 1 : 20



BOX GUTTER 'BGI' \$ RAINHEAD 'RHD1/RHD2' DETAIL SCALE = NTS



300mm Ø INGROUND FIRST FLUSH

WATER DIVERTER BY RAINWATER

PER MANUFACTURERS DETAILS

HARVESTING OR APPROVED EQUIVALENT TO BE INSTALLED AND MAINTAINED AS

(AT LOW POINT)

ROOF GUTTER WITH LEAF GUARD -

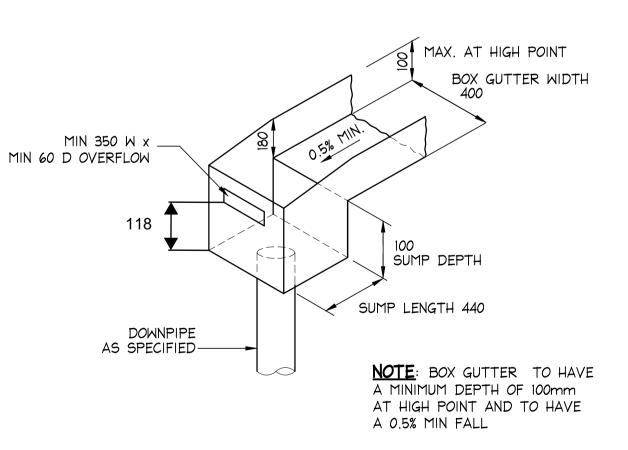
- INLET FROM DOWNPIPES

BLEED LINE PIPE

TO BE CONNECTED

TO BOUNDARY PIT

REFER TO MANUFACTURER'S SPECIFICATION FOR SPS DRAINAGE OUTLETS STANDARD PLANTER DRAIN SCALE = 1 : 10



BOX GUTTER BGI \$ SDI SUMP DETAIL SCALE = NTS

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					DOC
					Date
06-12-2019	В	ISSUED FOR DA SUBMISSION	MC	CF	Rick
	А	ISSUED FOR COMMENT	MC		BE(Civ
Date:	Issue:	Description:	Ву:	Review:	(Direc The copy Consulting

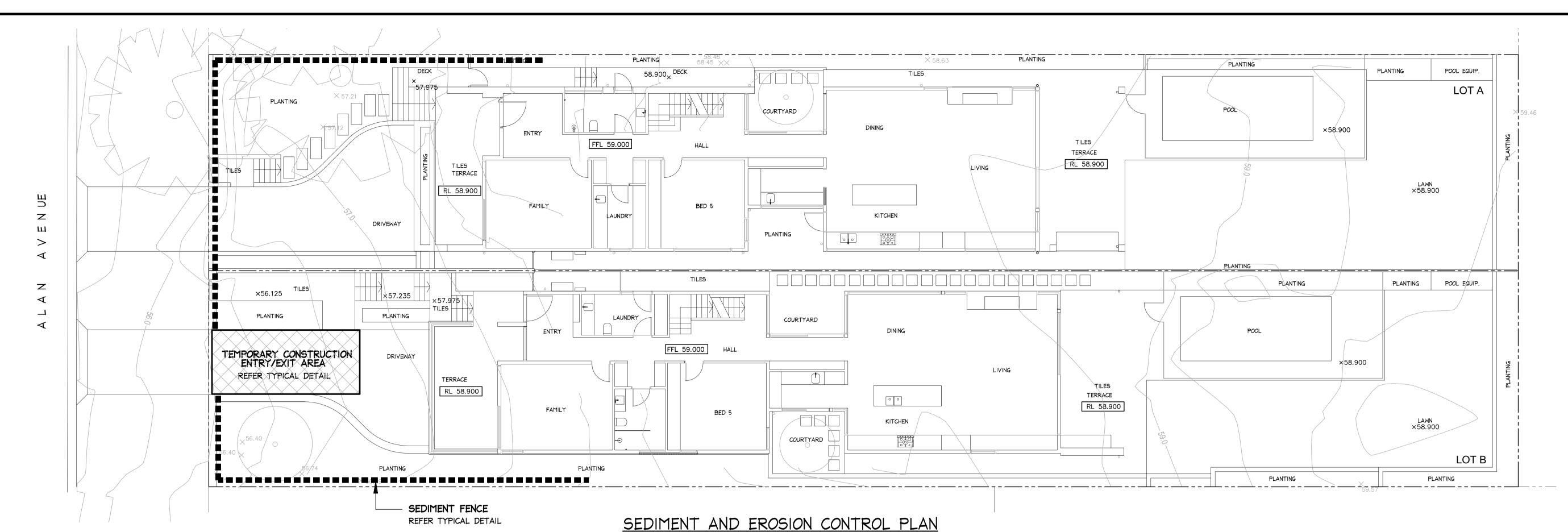
DOCUMENT CERTIFICATION Date:	Consulting Engineers STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 076 121 616 A.B.N. 24 076 121 616
Rick G Wray BE(Civil), CPEng, MIEAust., NER., RPEQ: 08293. (Director NB Consulting Engineers)	Sydney: Ph: (02) 9984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2099 Gold Coast: Ph: (07) 5631 4744
The copyright of this drawing remains with Northern Beaches onsulting Engineers Pty Ltd. Trading as NB Consulting Engineers	Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220 E : nb@nbconsulting.com.au W : www.nbconsulting.com.au

Consulting Engineers
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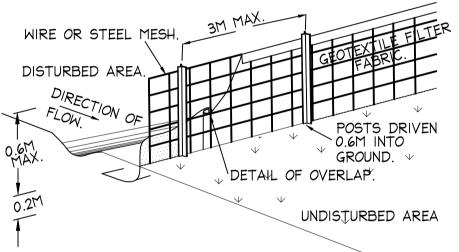
Architect:	
	NICK BELL ARCHITECT
Client:	
	RA EL KHOURI

ect:	CK BELL ARCHITECTS	NEW RESIDENCE 27 ALAN AVENUE SEAFORTH
:	RA EL KHOURI	STORMWATER MANAGEMENT DETAILS

Date:	Design:		Drawn:	
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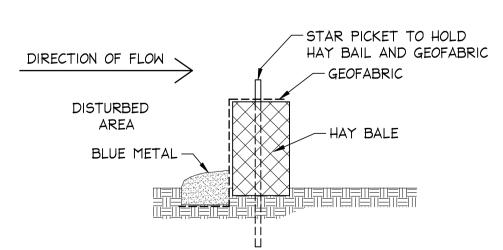
DRAINAGE AREA 0.6HA. MAX. SLOPE GRADIENT 1:2 MAX. SLOPE LENGTH 60M MAX.



SEDIMENT FENCE DETAIL - OPTION 1

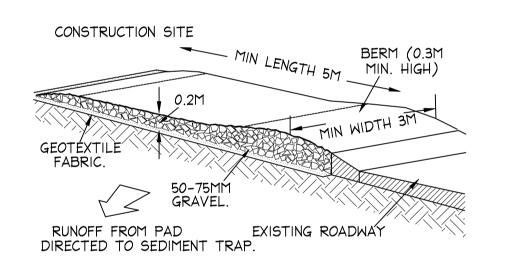
CONSTRUCTION NOTES:

- 1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
- 2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES APART.
- 3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE
- FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED. 4. BACKFILL TRENCH OVER BASE OF FABRIC
- 5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH
- WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER. 6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.



SEDIMENT FENCE DETAIL - OPTION 2

SCALE = N.T.S.



TYPICAL TEMPORARY CONSTRUCTION ENTRY/EXIT DETAIL

CONSTRUCTION NOTES:

- STRIP TOPSOIL AND LEVEL SITE.
- 2. COMPACT SUBGRADE.

SANDBAGS OVERLAP ONTO KERB.

RUNOFF

GAP BETWEEN BAGS

ACT AS SPILLWAY.

- 3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
- 4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROADBASE or 30mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
- 5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE or OTHER SEDIMENT TRAP.

SCHEDULE OF WORKS:

- I. SILT FENCE AND ASSOCIATED WORKS INCLUDING INTERCEPTOR DRAIN IS TO BE INSTALLED BEFORE THE COMMENCEMENT OF ANY EXCAVATION.
- 2. CUTS TO BE EXECUTED TO THE REQUIRED LEVEL USING CONVENTIONAL EXCAVATION MACHINERY. INITIALLY THE DEPTH OF FILL/CLAY IS TO BE ESTABLISHED TO ENSURE NEIGHBOURING PROPERTIES ARE NOT ADVERSELY AFFECTED. EARTH BATTERS TO BE A MAXIMUM SLOPE OF 1.0 m VERT. TO 1.7 m HORIZ. (AS PER GEOTECHNICAL REPORT). ANY BATTERS GREATER THAN 1.0 m VERT. TO 1.7 m HORIZ. ARE TO BE ADEQUATELY SHORED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
- 3. ANY PERMANENT RETAINING STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERS DETAILS AND INSTRUCTIONS.
- 4. ALL PERMANENT RETAINING STRUCTURES ARE TO BE COMPLETED WITH MINIMUM DELAY FOLLOWING EXCAVATION.

NOTES:

EXISTING PAVEMENT

DIRECTION OF FLOW

DISTURBED

AREA

BLUE METAL

- 1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
- 2. MINIMISE DISTURBED AREAS' 3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS
- AND FOOTPATHS. 4. DRAINAGE IS TO BE CONNECTED TO STORMWATER
- SYSTEM AS SOON AS POSSIBLE. 5. ROADS AND FOOTPATH TO BE SWEPT DAILY.

DIRECTION OF FLOW - GEOFABRIC GEOFABRIC DISTURBED AREA -HAY BALE BLUE METAL

SANDBAG KERB INLET SEDIMENT TRAP

THREE LAYERS OF SANDBAGS

WITH ENDS OVERLAPPED.

SCALE = N.T.S.

REMOVABLE HAY BALE DETAILS

SCALE = N.T.S.

GENERAL NOTES :

- 1. CONSTRUCTION VEHICLES ARE TO LEAVE AND ENTER THE SITE OVER AN ALL WEATHER SURFACE CONSISTING OF COURSE CRUSHED STONE OR BLUE METAL CONSTRUCTED WITHIN THE FRONT SETBACK AREA OPPOSITE THE EXISTING FOOTPATH CROSSING UNLESS NOTED OTHERWISE
- 2. EXCAVATION MACHINERY ARE TO BE UNLOADED AND LOADED UPON THIS ALL WEATHER SURFACE. CONCRETE PUMPS AND TRUCKS WILL ALSO UTILISE THE ALL WEATHER SURFACE FOR THEIR OPERATIONS.
- 3. MATERIALS WILL BE UNLOADED UPON THE ALL WEATHER SURFACE WITHIN THE FRONT SETBACK AREA BY MEANS OF CRANES MOUNTED ON THE BACK OF DELIVERY TRUCKS OR UNLOADED BY HAND. IT IS NOT ENVISAGED THAT A MOBILE CRANE WILL BE REQUIRED DURING THE CONSTRUCTION PROCESS
- 4. SOME STOCKPILING OF TOPSOIL REMOVED FROM THE BUILDING AREA MAY BE TORED ON THE SITE DURING THE CONSTRUCTION WITHIN THE PROPERTY IN AN AREA ENCLOSED WITHIN THE SEDIMENT CONTROL FENCING.
- 5. ALL EXCAVATED & CONSTRUCTION MATERIALS, SHED, SKIP BINS, TEMPORARY WATER CLOSETS, SPOIL AND EQUIPMENT, ETC SHALL BE KEPT WITHIN THE PROPERTY. NO VEHICLES OR MACHINES SHALL BE KEPT WITHIN THE PROPERTY NO VEHICLES OR MACHINES SHALL STAND ON COUNICIL FOOTPATHS FOR LARGE LENGTHS OF TIME.
- 6. ALL RUBBISH & RECYCLABLE MATERIAL SHALL BE STOCKPILED IN WASTE BINS IN THE AREA NOMINATED ON THE SITE PLAN WITHIN THE SITE BOUNDARY. PUBLIC PROPERTY SHALL BE KEPT FREE OF RUBBISH AND RECYCLABLES AT ALL TIMES ANY WASTE MATERIALS SHALL BE REGULARLY COLLECTED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE FASHION.
- 7. ANY BUILDING / DEMOLITION WORKS INVOLVING ASBESTOS SHALL BE CARRIED
- OUT IN ACCORDANCE WITH THE RELAVANT STANDARDS. 8. VEHICLES LEAVING THE SITE WILL DO SO VIA THE ALL WEATHER BALLAST DRIVEWAY MADE OF COURSE AGGREGATE OR SIMILLAR LOCATED WITHIN THE FRONT SETBACK AREA OF THE DEVELOPMENT. ANY DIRT OR MATERIAL DEPOSITED ON THE ROAD RESERVE OR ROADWAY IS TO BE PROMPTLY CLEANED.
- 9. ANY EXCAVATED AREA REQUIRED SUPPORT WILL BE UNDERTAKEN BY THE OWNER USING STRUCTURALLY APPROVED RETAINING STRUCTURES.
- 10. ADEQUATE SAFETY SIGNAGE MUST BE ERECTED IN A PROMINENT POSITION ON THE WORK SITE, WARNING OF UNAUTHORISED ENTRY TO WORK SITE AND
- INTENDING DANGERS. 11. SAFETY FENCES SHALL BE PROVIDED AROUND ALL BOUNDARIES UNLESS A CONTINUOUS STRUCTURALLY ADEQUATE FENCE PRESENTLY EXISTS. THE FENCING SHALL BE ADEQUATE TO RESTRICT PUBLIC ACCESS TO THE SITE
- WHEN BUILDING WORK IS NOT IN PROGRESS OR THE SITE IS UNOCCUPIED. 12. NOISE LEVELS SHALL NOT EXCEED COUNCIL REGULATION LEVELS. BUILDING AND DEMOLITION WORKS SHALL ONLY BE CARRIED OUT BETWEEN HOURS AND
- DAYS SPECIFIED BY COUNCIL. 13. GEOTEXTILE FABRIC SHALL BE PLACED ON THE INSIDE OF THE SITE FENCING PRIOR TO SITE DISTURBANCE TO PREVENT SEDIMENT WASHING FROM CLEARED AND DISTURBED AREAS OF THE SITE INTO THE STORMWATER SYSTEM DURING CONSTRUCTION UNCONTAMINATED RUNOFF FROM CLEARED OR DISTURBED AREAS IS TO BE DIRECTED TO A TEMPORARY SILT ARRESTOR PIT THAT SHALL BE PROVIDED WITHIN THE SITE AT THE STREET BOUNDARY PROCESSING SITE STORMWATER BEFORE IT IS DISCHARGED TO THE STREET DRAINAGE SYSTEM
- 14. ALL TOP SOIL STRIPPED \$ STOCKPILED ON SITE IS TO BE BE PLACED IN NOMINATED AREAS ON PLAN. ALL DISTURBED AREAS ARE TO BE STABILISED UPON THE COMPLETION OF BUILDING WORKS.
- 15. ALL SEDIMENT CONTROL STRUCTURES ARE TO BE CONTINUALLY MAINTAINED DURING CONSTRUCTION AND INSPECTED FOR STRUCTURAL DAMAGE AFTER EACH RAINFALL EVENT, WITH TRAPPED SEDIMENT BEING REMOVED TO THE TOPSOIL STOCKPILE.
- 16. WHERE THERE IS THE POTENTIAL OF SITE EROSION TO PRODUCE EXCESSIVE SEDIMENT RUNOFF SUITABLE GEOTEXTILE BARRIERS SHALL BE PLACED TO ALLEVIATE THE RISK ACCORDINGLY. BARE SURFACES SHALL BE KEPT MOIST TO REDUCE DUST LEVELS. GEOTEXTILE FABRIC LOCATED ON THE INSIDE OF FENCES SHALL ALSO BE UTILISED FOR DUST CONTROL WHERE NECESSARY.



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

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			Rick G Wray	Sydney: Ph: (02) 9984 7000 Suite 207, 30 Fisher Road Dee Why N.S.W. 2099	Client:	Drawing Title:	Job No:		Drawing No:	Issue:
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Date: Issue:	Description:	By: Review	The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Trading as NB Consulting Engineers	E : nb@nbconsulting.com.au W : www.nbconsulting.com.au	RA LL NAOURI	PLAN AND DETAILS			כטע	A