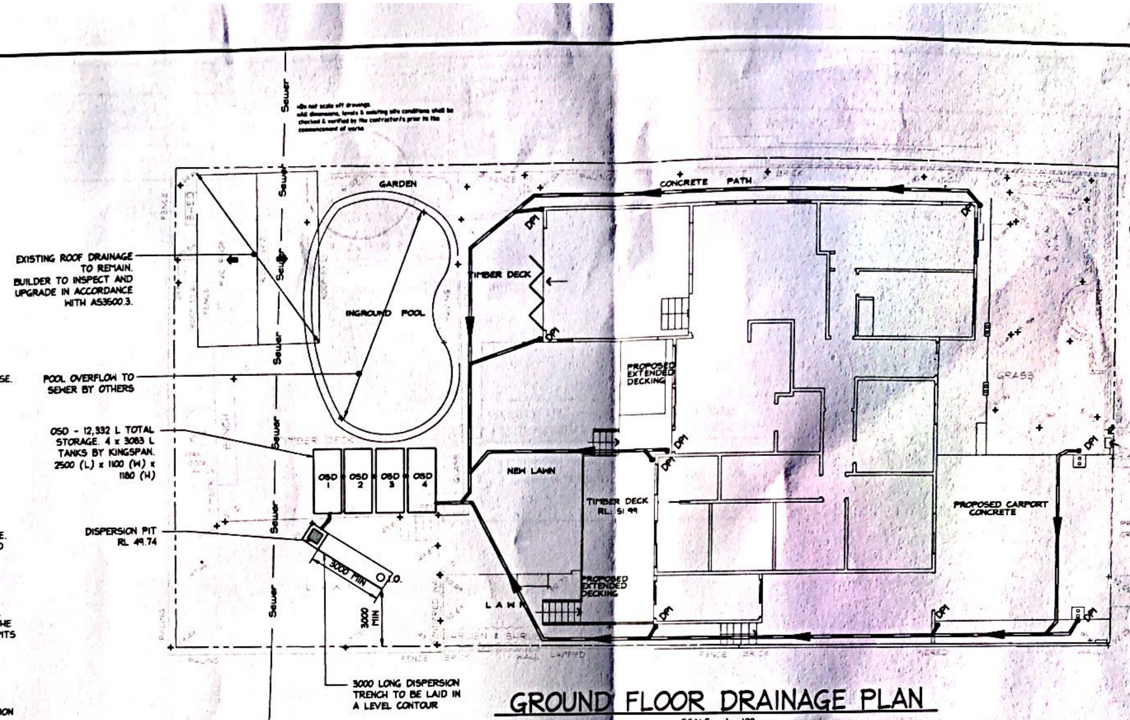

GROUND FLOOR DRAINAGE PLAN

SCALE = 1 : 100

NOTES:

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NORTHERN BEACHES COUNCIL
DEVELOPMENT ENGINEERS
APPROVED
SUBJECT TO AMENDMENTS / ADDITIONS SHOWN IN RED

Application No.: SC8A 2020/0013
30/7/20
DEVELOPMENT ENGINEER DATE

STORMWATER NOTES:

1. ALL PIPES TO BE 100mm ø 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 ø 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 1 N12 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.
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.
19. ORIFICE PLATE MUST BE INSTALLED PRIOR TO INSTALLATION OF THE ROOF DRAINAGE SYSTEM AND CONNECTION OF THE SITE STORMWATER SYSTEM TO THE ONSITE DETENTION TANK.

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 FOR NON DRINKING USE ONLY AS FOLLOWS: a) TO WATER GARDEN AREAS b) WASHING CARS .
2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
3. 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' 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 230-2008

Scale check - 100mm when printed to scale

A1

NOTE: EXISTING STORMWATER SYSTEM
EXISTING STORMWATER SYSTEM TO BE CHECKED AND UPGRADED AS REQUIRED. BUILDER TO INSPECT PRIOR TO CONSTRUCTION AND UPGRADE IF REQUIRED IN ACCORDANCE WITH AS 3500.3

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.

LEGEND

Symbol	Description
DP ●	100mm ø DOWNPIPE DISCHARGE TO OSD
——	NEW STORMWATER PIPE
←——	STORMWATER PIPE FALL DIRECTION IN CHARGED SYSTEMS
——◄	STORMWATER PIPE FLOW DIRECTION
○ I.O.	INSPECTION OPENING
PIT	STORMWATER PIT

NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY. LOCATION MAY VARY DUE TO CONSTRAINTS.

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.

NORTHERN BEACHES COUNCIL - WARRINGAH ON SITE DETENTION SYSTEM SUMMARY NOTES

STORMWATER TO NORTHERN BEACHES COUNCIL - WARRINGAH POLICY FOR LOW LEVEL PROPERTIES (PDS - POL 136):

STEP 1 - CONNECTION TO EXISTING SYSTEM	INADEQUATE
STEP 2 - ONSITE ABSORPTION	INADEQUATE (ASSUMED DUE TO LIMITED AREA)
STEP 3 - GRAVITY EASEMENT PIPE	REFUSED BY LOWER PROPERTY OWNERS NOTE: SIGNED REFUSAL LETTER/S ARE TO BE PROVIDED BY THE CLIENT
STEP 4 - LEVEL SPREADER	INADEQUATE (DUE TO LIMITED SITE AREA)
STEP 5 - ALTERNATIVE DISPOSAL METHOD	CHARGED SYSTEM - ADEQUATE
TOTAL SITE AREA	697 m^2
CONSIDERED SITE AREA	374 m^2 (POST-DEV IMPERVIOUS AREA ONLY)
PRE DEVELOPMENT IMPERVIOUS AREA	0 m^2 (STATE-OF-NATURE)
POST DEVELOPMENT IMPERVIOUS AREA	374 m^2
PRE DEVELOPMENT SITE DISCHARGE	
5 YR	7 l/s
100 YR	18 l/s
POST DEVELOPMENT SITE DISCHARGE	
5 YR	6 l/s (5 l/s FROM OSD)
100 YR	7 l/s (5 l/s FROM OSD)
PORTION OF CONSIDERED SITE THROUGH OSD	92 %
ORIFICE SIZE	49 mm ø
TYPE OF CONTROL	ABOVE GROUND TANK
DIMENSION OF OSD	28 m^2 0.95m DEEP
VOLUME OF OSD	12.0 m^3 (NOTE: 12.0 m^3 REQUIRED)

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

ISSUED FOR SECTION 4.55 SUBMISSION ONLY NOT FOR CONSTRUCTION

IF IN DOUBT ASK

NB Consulting Engineers

Date	Issue	Description		
12.06.2020	A	ISSUE FOR SECTION 4.55	KO	-

DOCUMENT CERTIFICATION
Date:
Rick G Wray
BE(Civil),CPEng,MIEAust.,NER.,RPEQ: 08245.
(Director NB Consulting Engineers)

NB Consulting Engineers
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Burleigh Heads QLD 4220

Architect: IQ HOMES ARCHITECTURAL DESIGN AND DRAFTING

Client: Tracy Hart

Project: ALTERATIONS & ADDITIONS 9 VINES AVENUE, FORESTVILLE

Drawing Title: GROUND FLOOR DRAINAGE PLAN

Date	Design	Drawn	Job No	Drawing No	Issue
JUNE 2020	CH	KO	200465	D01	A

NOTES:

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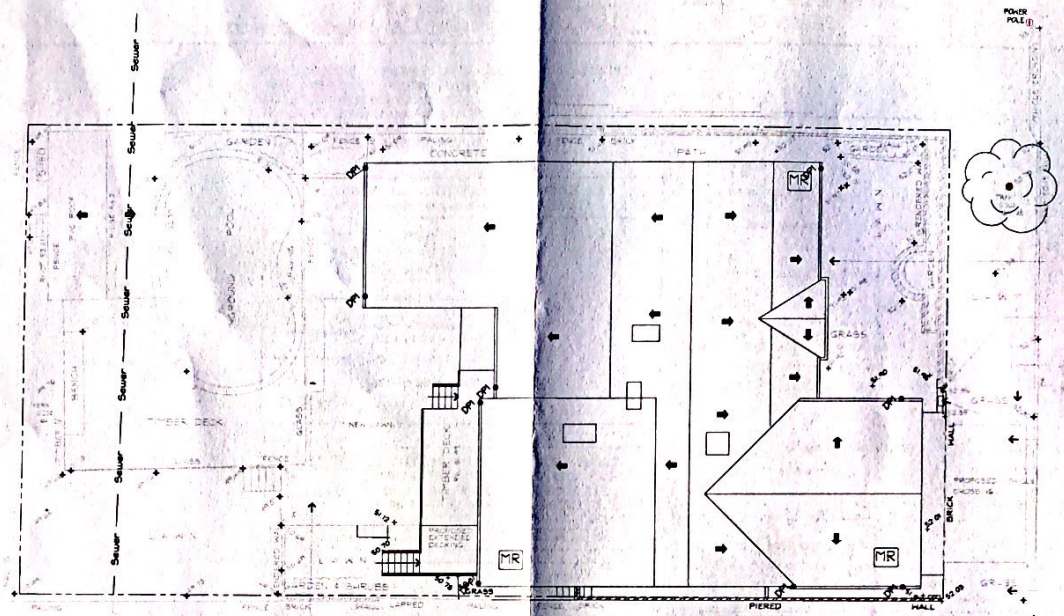

GROUND FLOOR DRAINAGE PLAN

SCALE = 1 : 100

NORTHERN BEACHES COUNCIL
DEVELOPMENT ENGINEERS
APPROVED
SUBJECT TO AMENDMENTS / ADDITIONS SHOWN IN RED

Application No : 5684 2020/0013

DEVELOPMENT ENGINEER — 30/7/20 DATE

LEGEND

DPU ● 100mm ø DOWNPIPE DISCHARGE TO OSD

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Scale check - 100mm when printed to scale

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Date	Issue	Description	By	Reviewer
12.06.2020	A	ISSUE FOR SECTION 4.55	KO	-

DOCUMENT CERTIFICATION
Date :
Rick G Wray
BE(Civil),CPEng,RPEAust.,NER, RPEQ 08298
(Director NB Consulting Engineers)

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Architect: IQ HOMES
ARCHITECTURAL DESIGN AND DRAFTING

Client: Tracy Hart

Project: ALTERATIONS & ADDITIONS
9 VINES AVENUE, FORESTVILLE

Drawing Title: ROOF DRAINAGE PLAN

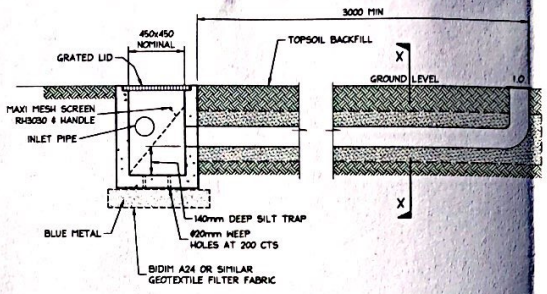
Date	Design	Drawn
JUNE 2020	CH	KO

Job No	Drawing No	Issue
200465	D02	A

NB Consulting Engineers

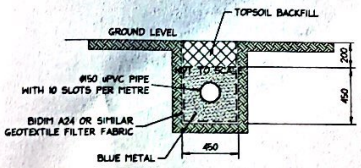
NOTE: DISPERSION TRENCH

1. DISPERSION TRENCH TO BE LAID ON A LEVEL CONTOUR.
2. GROUND LEVEL ABOVE TRENCH MUST BE LEVEL SO AS TO EVENLY DISPERSE WATER DOWN HILL OF THE TRENCH
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION FOR DISPERSION TRENCH NOTIFY ENGINEER FOR ALTERNATE DETAIL.

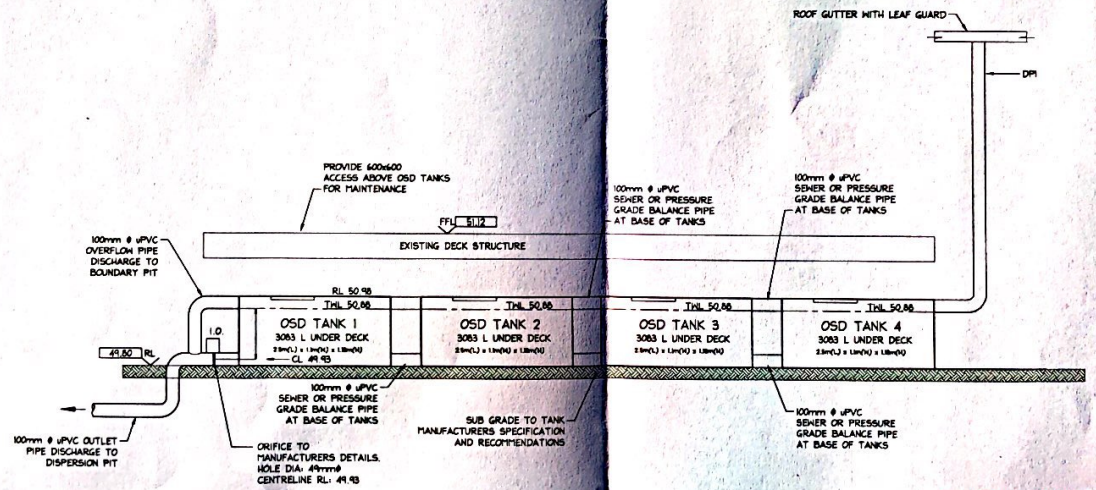


DISPERSION TRENCH LONGITUDINAL SECTION

NOT TO SCALE



SECTION X-X



TANKS SPECIFIED ARE BY KINGSPAN OR APPROVED EQUIVALENT

TYPICAL SECTION OSD TANKS

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NORTHERN BEACHES COUNCIL
DEVELOPMENT ENGINEERS
APPROVED
SUBJECT TO AMENDMENTS / ADDITIONS SHOWN IN RED
Application No. S68A2020/0013
DEVELOPMENT ENGINEER 30/7/20 DATE

DIAL 1100 BEFORE YOU DIG

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DOCUMENT CERTIFICATION
Date: 12.06.2020
Rick G Wray
BE(Civil),CPEng,MIEAust.,NER,RPEQ 08293.
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Architect:	IQ HOMES ARCHITECTURAL DESIGN AND DRAFTING
Client:	Tracy Hart
Project:	ALTERATIONS & ADDITIONS 9 VINES AVENUE, FORESTVILLE
Drawing Title:	DRAINAGE DETAILS
Date:	JUNE 2020
Design:	CH
Drawn:	KO
Job No:	200465
Drawing No:	D03
Issue:	A

NB Consulting Engineers