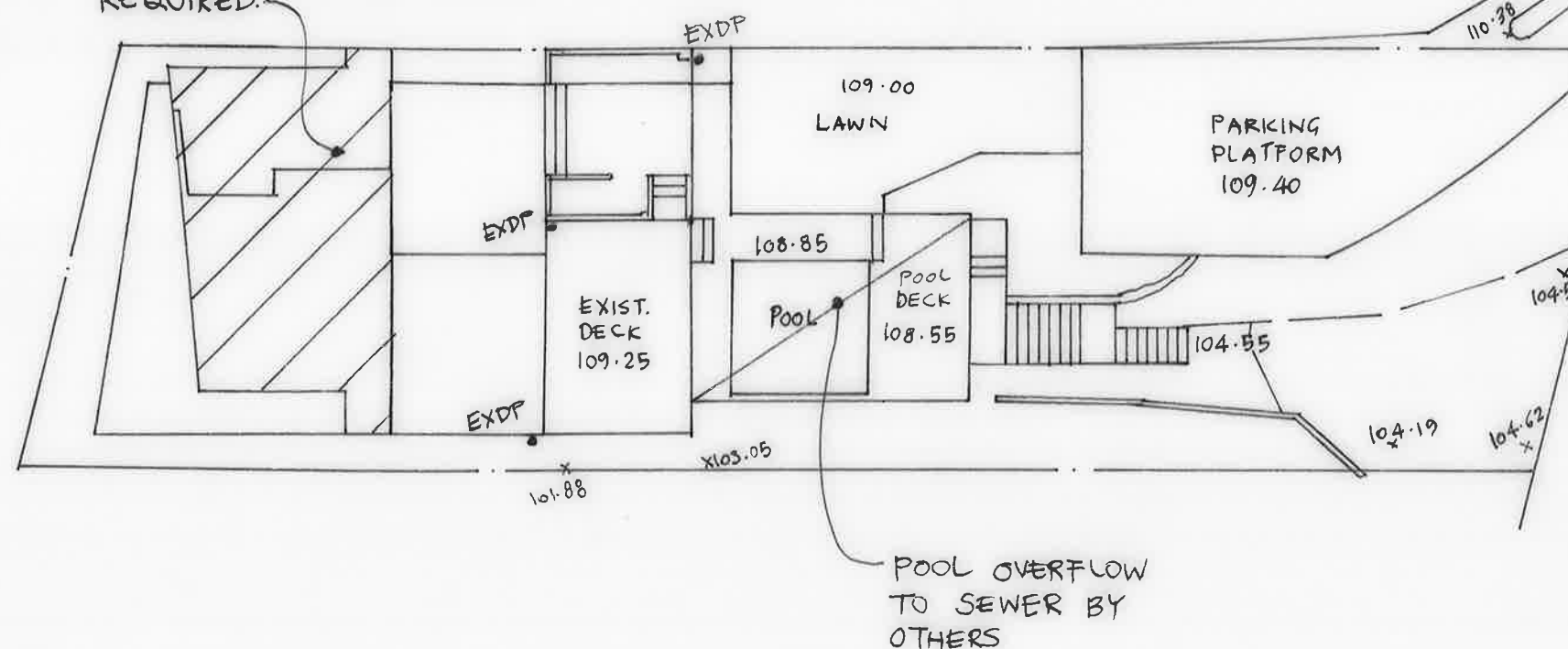




NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.

HATCHING DENOTES EXISTING ROOF DRAINAGE TO REMAIN. BUILDER TO INSPECT & UPGRADE WHERE REQUIRED.



NOTE:
STORMWATER DRAWINGS DO NOT INCLUDE SUBSOIL AGRICULTURAL DRAINAGE DETAILS FOR D.A. SUBMISSION. NB CONSULTING ENGINEERS P/L MUST BE COMMISSIONED TO INCLUDE THESE DETAILS ONLY WHEN CONSTRUCTION CERTIFICATE AND/OR CONSTRUCTION DOCUMENTATION IS COMPLETE & PROVIDED.

NOTE:
REFER D02 FOR SURFACE DRAINAGE.

EXDP: EXISTING DOWNPIPE TO BE RE-DIRECTED TO RWT (VIA FIRST FLUSH DEVICE) BUILDER TO INSPECT & UPGRADE AS REQUIRED.

SITE PLAN 1:200

ISSUE FOR DA
SUBMISSION

IF IN DOUBT ASK

A3

DOCUMENT CERTIFICATION

Date FEB 20' *R. Wray*
Rick G Wray
BE(Civil), CPENG, MIEAust., NER., RPENG. 00583
(Director NB Consulting Engineers)

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Architect:
ALTERE GARDENS

Client:
JUSTIN CARUANA

Project: **129 UPPER CLONTARF ST
SEAFORTH**

Drawing Title:
SITE PLAN

Date:
JAN. '20

Design:
C. McL

Drawn:
LFC

Job No:
180220

Drawing No:
DOI

Issue:
A

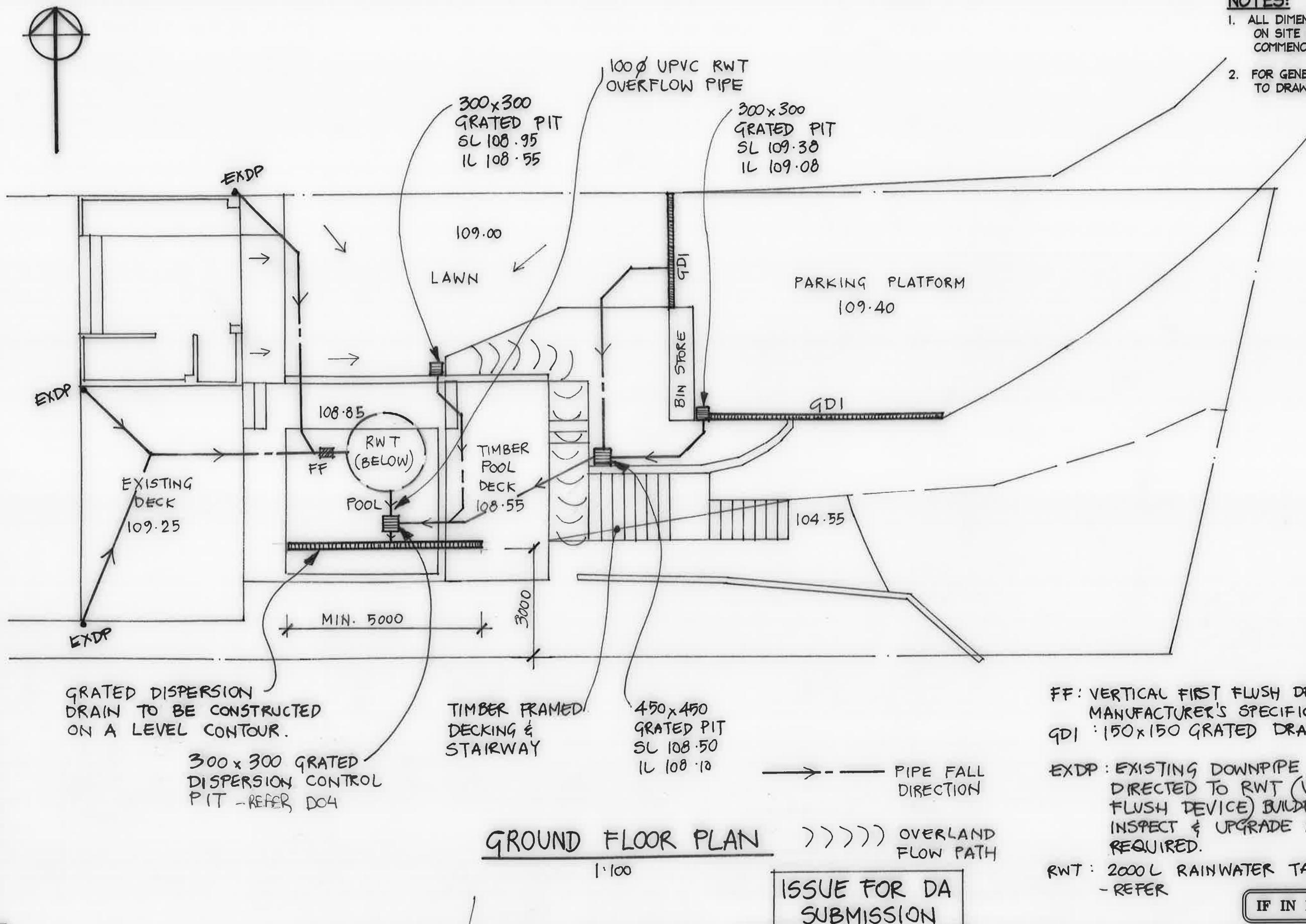
Date:	Issue:	Description:	By:	Review:
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2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.



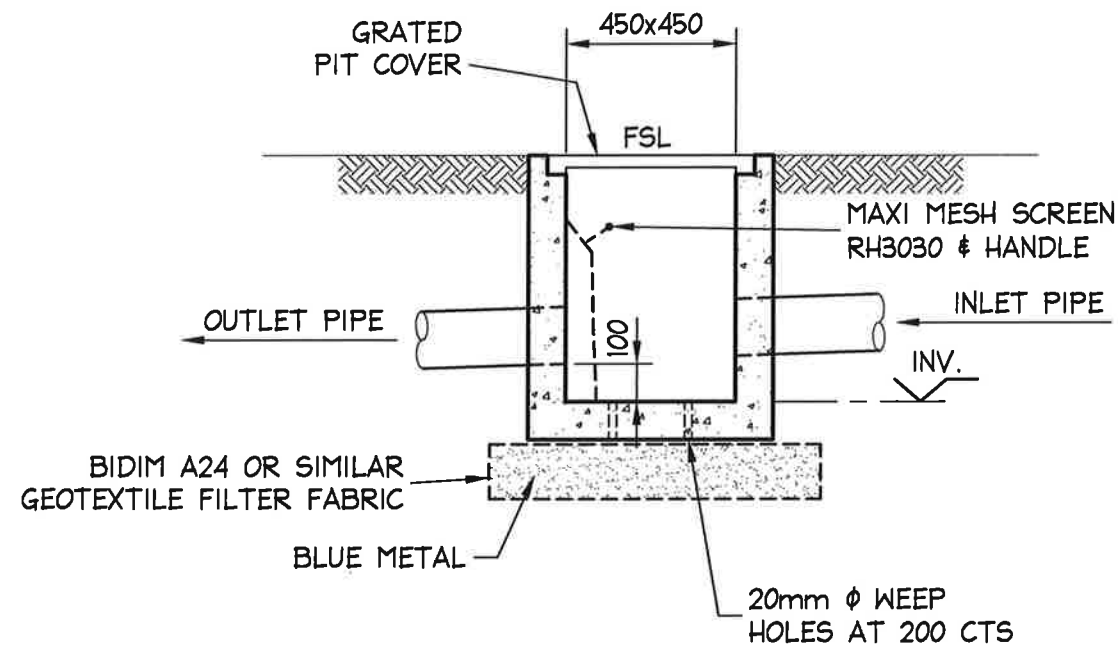
A3

DOCUMENT CERTIFICATION				NB Consulting Engineers		Architect:	Project:	Date:	Design:	Drawn:
Date: FEB 20				STRUCTURAL - CIVIL - STORMWATER - REMEDIAL		ALTERE GARDENS	129 UPPER CLONTARF ST	JAN. '20	C. McL	LFC
Rick G Wray				A.C.N. 076 121 616 A.B.N. 24 076 121 616			SEAFORTH			
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(Director NB Consulting Engineers)				Suite 207, 30 Fisher Road Dee Why N.S.W. 2099		JUSTIN CARUANA	GROUND FLOOR PLAN	180220	D02	A
Gold Coast: Ph: (07) 5631 4744				Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220						
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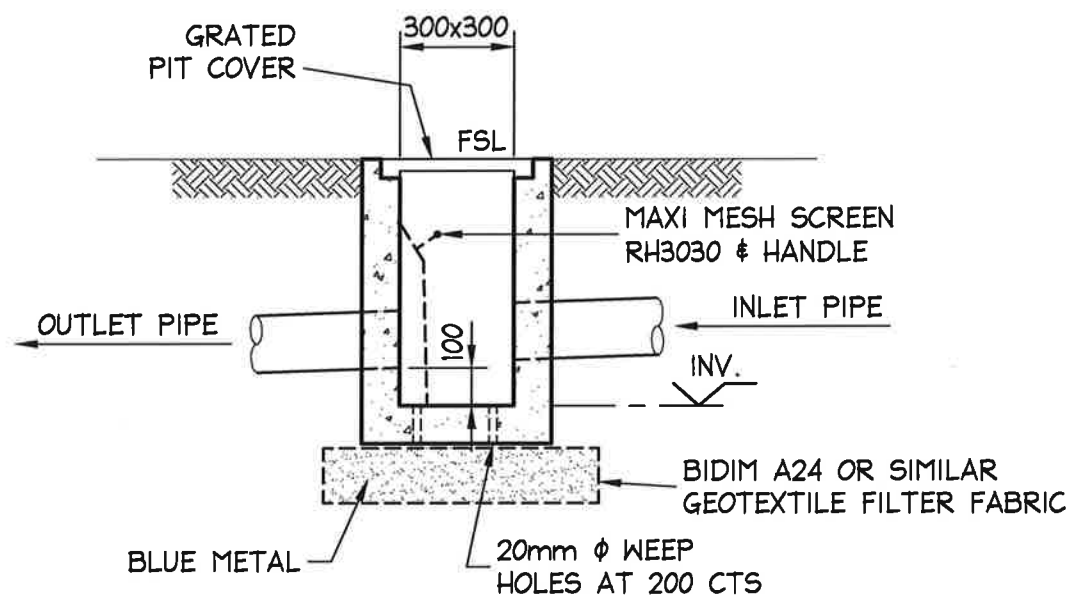
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PRECAST OR CAST INSITU PIT
REFER STORMWATER NOTES
ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER

450x450 PIT DETAIL

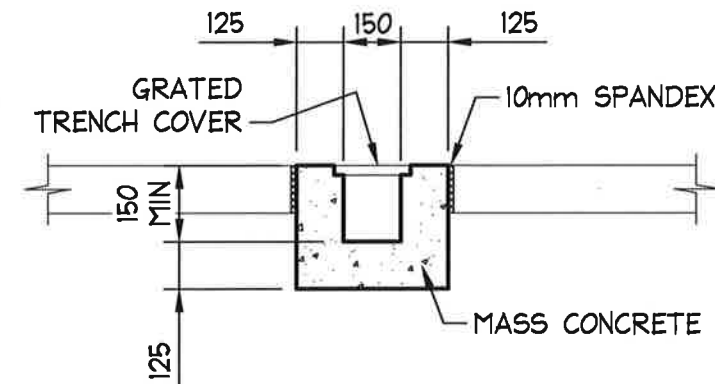
SCALE = 1 : 20



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

300x300 PIT DETAIL

SCALE = 1 : 20



OR PRECAST GRATED DRAIN
ALTERNATE POLYPROPYLENE DRAIN BY MANUFACTURER

TYPICAL GRATED DRAIN

SCALE = 1 : 20

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DOCUMENT CERTIFICATION

Date: FEB 20
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(Director NB Consulting Engineers)
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Architect:
ALTERE GARDENS
Client:
JUSTIN CARUANA

Project:
**129 UPPER CLONTARF ST
SEAFORTH**
Drawing Title:
**TYPICAL
DETAILS**

Date: FEB. '20	Design: C.McL	Drawn: LFC
Job No: 180220	Drawing No: D03	Issue: A

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[illegible]

- NOTES:**
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
 2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.

STORMWATER NOTES:

1. ALL PIPES TO BE 100mm ϕ 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 ϕ 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.

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.
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 230-200B

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DOCUMENT CERTIFICATION				NB Consulting Engineers		Architect:	Project:	Date:	Design:	Drawn:
Date: FEB 20				STRUCTURAL - CIVIL - STORMWATER - REMEDIAL		ALTERE GARDENS	129 UPPER CLONTARF ST	FEB. '20	C.McL	LFC
Rick G Wray				A.C.N. 076 121 616 A.B.N. 24 076 121 616			SEAFORTH			
BE(Civil), CPENG, MIEAust., NER., RPEQ: 00285				Sydney: Ph: (02) 9984 7000		Client:	Drawing Title:	Job No:	Drawing No:	Issue:
(Director NB Consulting Engineers)				Suite 207, 30 Fisher Road Dee Why N.S.W. 2099		JUSTIN CARUANA	STORMWATER	180220	D05	A
Gold Coast: Ph: (07) 5631 4744				Unit 8, 1726 Gold Coast Highway Burleigh Heads QLD 4220			& RWT NOTES			
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Date:	Issue:	Description:	By:	Review:						

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NORTHERN BEACHES COUNCIL - MANLY ON SITE DETENTION SYSTEM SUMMARY NOTES

TOTAL SITE AREA	534.3 m ²
PRE DEVELOPMENT IMPERVIOUS AREA	257.8 m ² (48%)
POST DEVELOPMENT IMPERVIOUS AREA	273.4 m ² (51%)
INCREASE IMPERVIOUS AREA	15.6 m ²
RWT REQUIREMENT (AS PER BASIX)	901 L
RWT PROVIDED	2,000 L

STORMWATER DISPERSION REQUIREMENT:

DUE TO THE GEOGRAPHICAL NATURE OF THE SITE, COUNCIL DEVELOPMENT ENGINEERS HAVE RECOMMENDED THAT ONLY THE PORTION OF SITE AREA UNDERGOING ALTERATIONS AND ADDITIONS IS TO BE CONSIDERED FOR THE STORMWATER DESIGN. COUNCIL HAVE ACKNOWLEDGED THAT IN THE ABSENCE OF AN EASEMENT, A DISPERSION SYSTEM IS TO BE UTILISED. - REFER EMAIL WITH 'ALEX KWOK' (22/01/2020)

DESIGN AREA DIRECT TO DISPERSION (NOTE: PLEASE CONTACT ENGINEER IF THIS IS TO BE ALTERED)	190 m ² (63% IMPERVIOUS)
MAXIMUM CONCENTRATED DISCHARGE TO LEVEL SPREADER	11 L/s

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STORMWATER DISPERSION REQUIREMENT:
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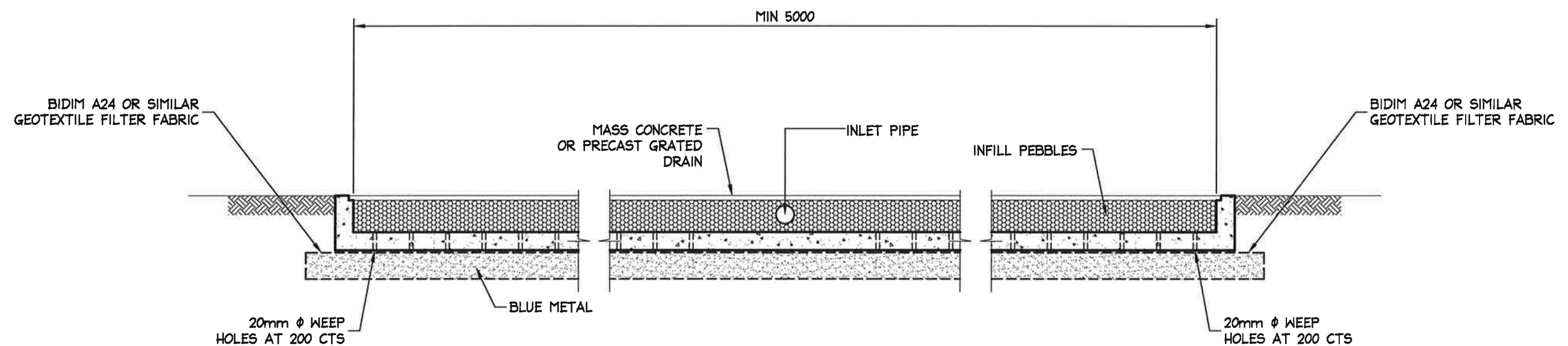
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Date: FEB. '20	Design: C.McL	Drawn: LFC
Job No: 180220	Drawing No: D06	Issue: A

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**DISPERSION TRENCH LONGITUDINAL SECTION**

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DOCUMENT CERTIFICATION

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Architect:
ALTERE GARDENS

Client:
JUSTIN CARUANA

Project:
**129 UPPER CLONTARF ST
SEAFORTH**

Drawing Title:
**DISPERSION
LONG SECTION**

Date:
FEB. '20

Design:
C.McL

Drawn:
LFC

Job No:
180220

Drawing No:
D07

Issue:
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