

ALL NEW ZEALAND LOCATIONS

STRUCTURAL WORKS - GENERIC DESIGN

JOB No.	DWG No.	TITLE	REV	DATE	DESCRIPTION
DT-02	UL-01	DRAWING SCHEDULE	1	5/12/2021	FOR CONSENT
DT-02	UL-02	STANDARD NOTES AND DETAILS	1	5/12/2021	FOR CONSENT
DT-02	UL-03	TANK UNDER LAWN	2	2/04/2022	REVISED FOR CONSENT

NOTES:

CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK

CONTRACTOR TO FOLLOW MATERIAL SPECIFICATION AND LIMITS OF LOCATION WITH RELATION TO STRUCTURES AND RETAINING WALLS

CONTRACTOR TO NOTIFY A CHARTERED PROFESSIONAL ENGINEER IF ANY OF THE DESIGN REQUIREMENTS OUTLINED IN THIS DRAWING PACKAGE ARE NOT ACHIEVEABLE

MAXIMUM BURIED COVER DEPTH OVER TOP OF TANKS:  
 1200mm DIA - MAX. BURIED COVER IS 900mm, OR 1200mm FOR TANK WITH REINFORCED ENDS STANDARD RISER 650mm, CAN BE EXTENDED TO HIGHER ON REQUEST.  
 645mm, 800mm, 1000mm DIA - MAX. BURIED COVER IS 900mm.  
 STANDARD RISER 350mm, CAN BE EXTENDED ON REQUEST.

IF YOU NEED TO BURY YOUR TANK DEEPER THAN ABOVE PLEASE CONTACT APD LTD FOR OTHER OPTIONS

DEFINITIONS:  
 UNO - UNLESS NOTED OTHERWISE


FOR CONSENT	05-12-21	1
REVISION:	DATE:	No.:

JOB TITLE:  
 UNDER LAWN INSTALLATION OF APD TANKS WITH GROUND ANCHORS  
 ADDRESS:  
 ALL NEW ZEALAND LOCATIONS

DRAWING TITLE:  
 DRAWING SCHEDULE

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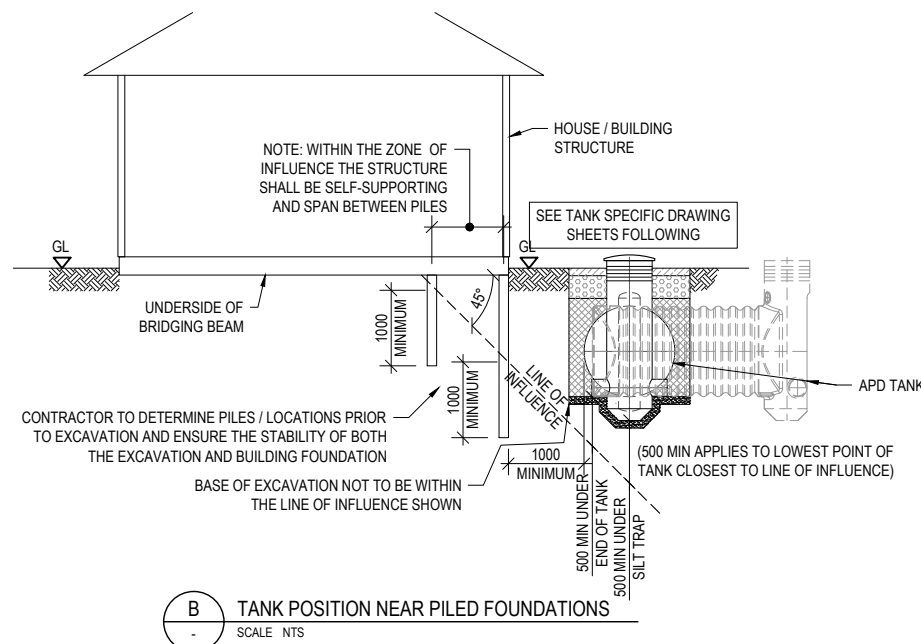
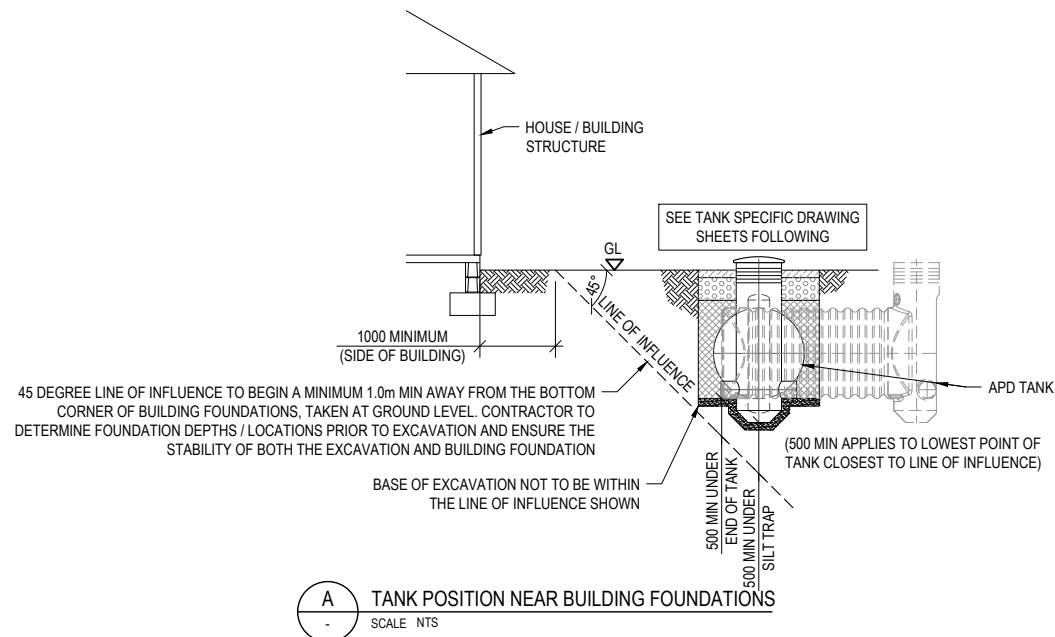
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DRAWN: RCE	DRAWING No: UL-01
DATE: AUG 2021	REVISION No: 1
DESIGN: AG	
CHECKED:	SCALE: NTS NTS



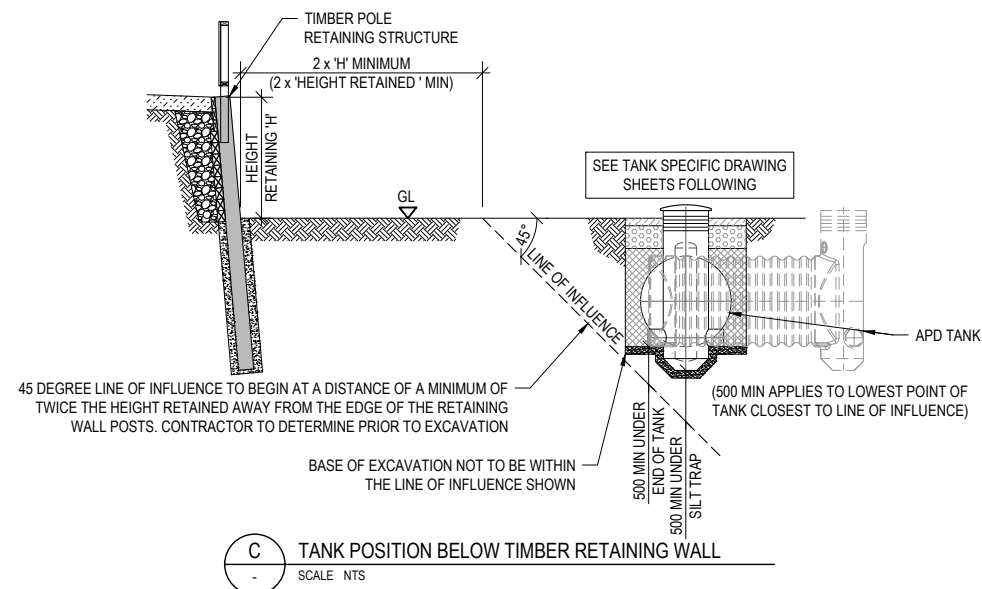
APD LTD  
 49 McLaughlins Road, Wiri, Auckland,  
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 TEL: 00 64 9 263 7741  
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# UNDER LAWN INSTALLATION OF APD TANKS. ALL NEW ZEALAND NON TRAFFICABLE LOCATIONS

NOTE: IF THE TANK EXCAVATION DOES NOT COMPLY WITH THE REQUIREMENTS BELOW - CONTRACTOR TO NOTIFY CHARTERED PROFESSIONAL ENGINEER FOR A SITE SPECIFIC CONSULTATION



NOTE: REFER TO STORMWATER CODE OF PRACTICE DRAWING SW22.



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FOR CONSENT	05-12-21	1
REVISION:	DATE:	No.:

JOB TITLE:  
 UNDER LAWN INSTALLATION OF APD TANKS WITH GROUND ANCHORS  
 ADDRESS:  
 ALL NEW ZEALAND LOCATIONS

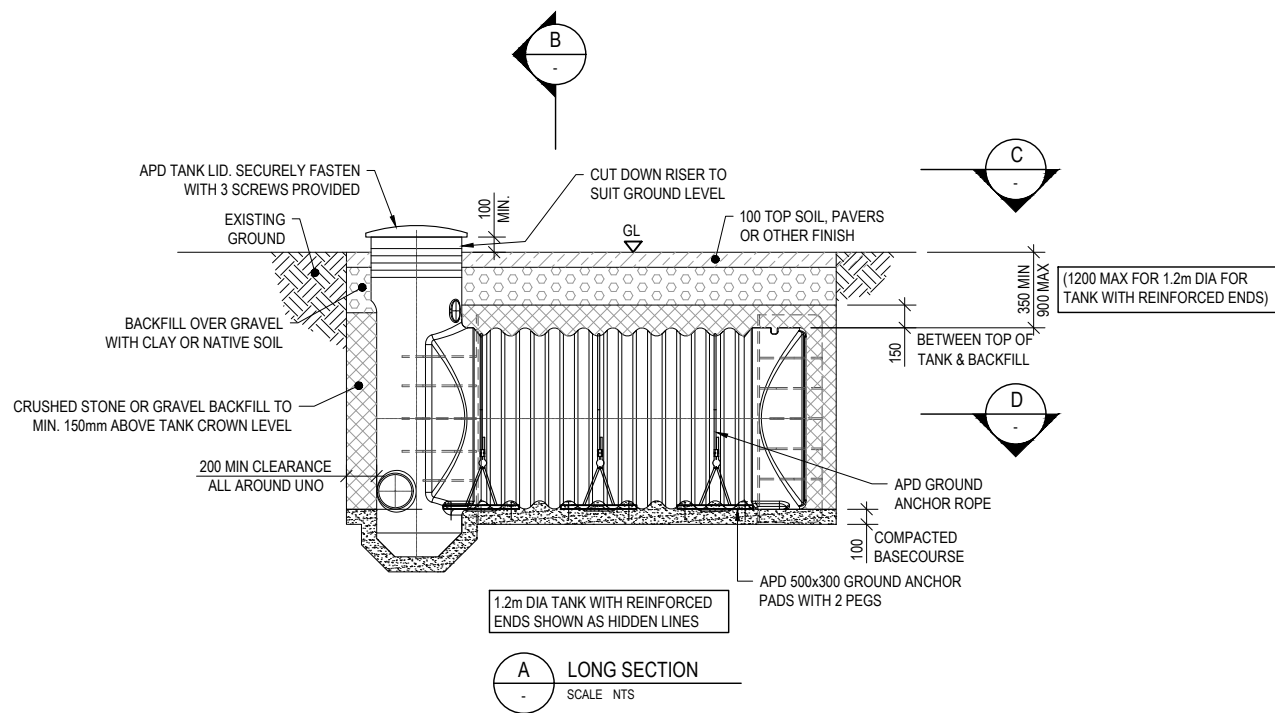
DRAWING TITLE:  
 STANDARD NOTES AND DETAILS

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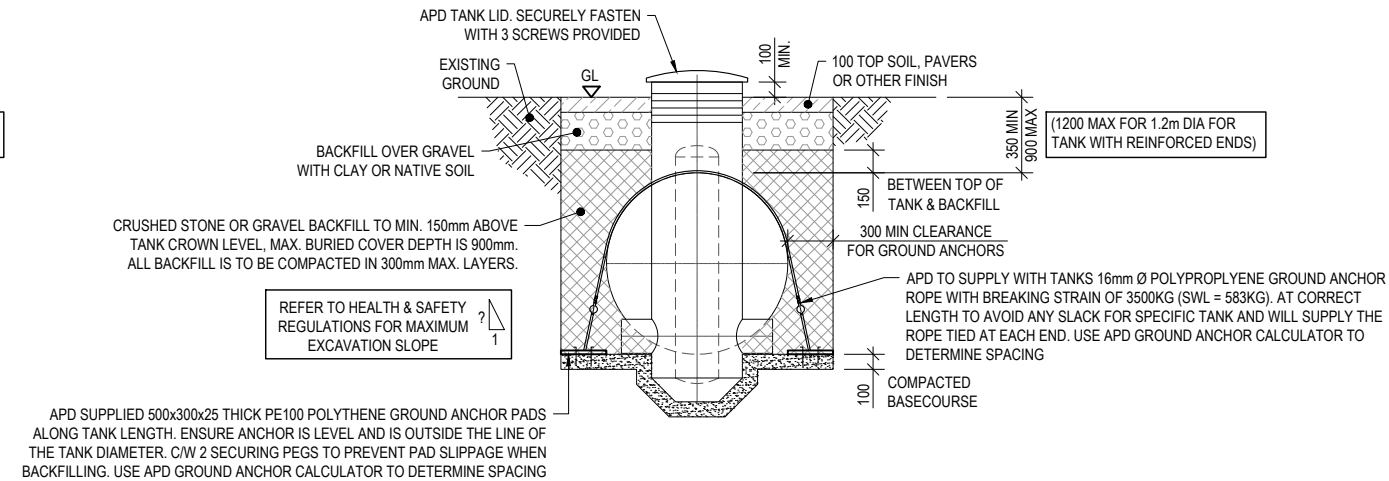
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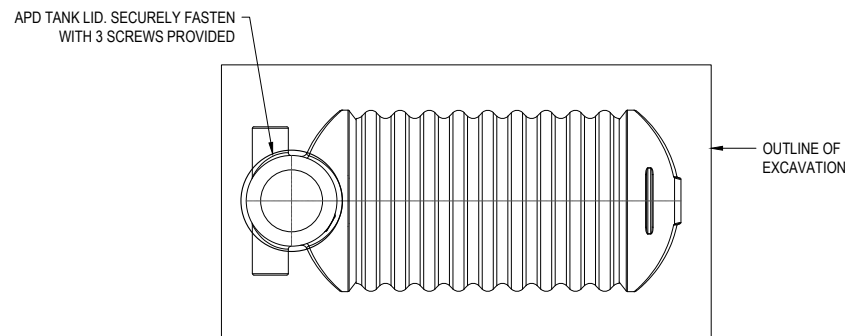
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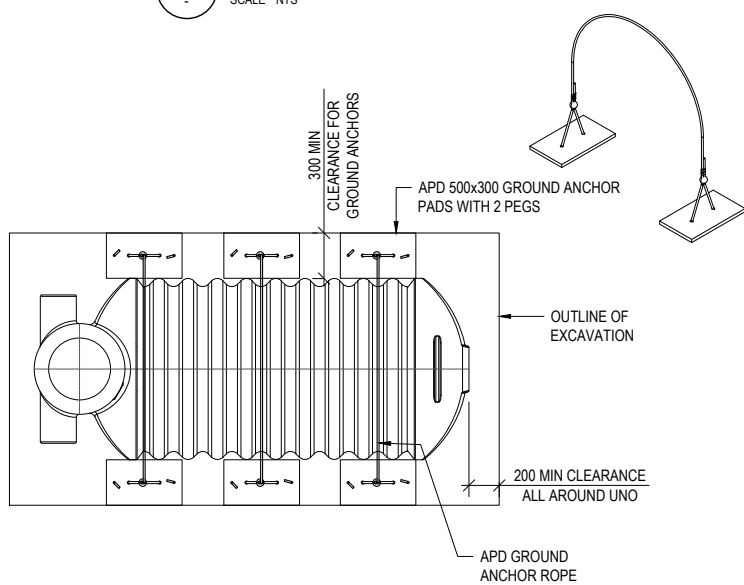
**A LONG SECTION**  
SCALE: NTS



**B CROSS SECTION**  
SCALE: NTS



**C PLAN AT LID LEVEL**  
SCALE: NTS



**D PLAN AT BASE**  
SCALE: NTS

NOTE: USE THE APD GROUND ANCHOR CALCULATOR TO DETERMINE NUMBER, SPACING AND REQUIREMENT FOR GROUND ANCHORS. SITE SPECIFIC REPORTS OR WATER TABLE INFORMATION ARE REQUIRED TO PROVE THE NON-REQUIREMENT OF GROUND ANCHORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE OWNER TO ENSURE CORRECT TANK INSTALLATION IN ACCORDANCE WITH THE APD LTD INSTALLATION GUIDES AND THESE DRAWINGS.

**TANK LOCATION - PROXIMITY TO NEARBY STRUCTURES:**

THE LOCATION OF THE TANK EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE TANK OWNER. THE CONTRACTOR IS TO FOLLOW THE LIMITATIONS OF THE DIAGRAMS SHOWN OR NOTIFY A CHARTERED PROFESSIONAL ENGINEER FOR A SITE SPECIFIC CONSULTATION. THE CONTRACTOR IS TO ENSURE NEARBY FOUNDATIONS OF NEW AND / OR EXISTING STRUCTURES ARE NOT UNDERMINED BY THE EXCAVATION FOR THE TANK.

**EXCAVATION CLEARANCE:**

THE CONTRACTOR IS TO ENSURE A MINIMUM OF 200mm BETWEEN EDGE OF TANK AND EDGE OF EXCAVATION WALL AT THE NARROWEST LOCATION.

**SOIL CONDITIONS:**

THIS DESIGN ASSUMES SITE SOILS WILL MEET THE REQUIREMENTS OF NZS3604:2011 CLASSIFICATION OF 'GOOD GROUND' AND AS2870:2011 SOIL EXPANSIVITY CLASS 'S' OR 'M'. THE CONTRACTOR IS TO CONFIRM THE SITE EXHIBITS THESE PROPERTIES OR NOTIFY A CHARTERED PROFESSIONAL ENGINEER FOR CONSULTATION. FOR IL2, 50 YEARS DESIGN LIFE,  $Z <= 0.4$

**TEMPORARY SUPPORT & SHORING:**

TEMPORARY SUPPORT AND SHORING DURING EXCAVATION AND PREPARATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD BE IN ACCORDANCE WITH HEALTH AND SAFETY AT WORK ACT 2015 (HSWA), THE HEALTH AND SAFETY AT WORK (GENERAL RISK AND WORKPLACE MANAGEMENT) REGULATIONS 2016 (GRWM REGULATIONS) AND THE HEALTH AND SAFETY IN EMPLOYMENT REGULATIONS 1995 (HSE REGULATIONS), REGULATION 24 FOR EXCAVATIONS WITH FACE MORE THAN 1.5m HIGH (AS BELOW):

- 1) SUBJECT TO SUBCLAUSE (2) OF THIS REGULATION, EVERY EMPLOYER SHALL TAKE ALL PRACTICABLE STEPS TO ENSURE THAT, WHERE ANY FACE OF ANY EXCAVATION IS MORE THAN 1.5m HIGH, THAT FACE IS SHORED.
- 2) SUBCLAUSE (1) OF THIS REGULATION DOES NOT APPLY WHERE:
  - a) THE FACE IS CUT BACK TO A SAFE SLOPE; OR
  - b) THE MATERIAL IN THE FACE IS OF PROVEN GOOD STANDING QUALITY UNDER ALL REASONABLY FORESEEABLE CONDITIONS OF WORK AND WEATHER; OR
  - c) BY REASON OF THE NATURE OF THE WORK AND THE POSITION OF ANY EMPLOYEE IN THE VICINITY, THERE IS NO DANGER TO ANY EMPLOYEE; OR
  - d) THE PROVISION OF SHORING IS IMPRACTICABLE OR UNREASONABLE BY REASON OF THE NATURE OF THE WORK AND THE EMPLOYER TAKES ALL PRACTICABLE STEPS TO ENSURE THAT OTHER PRECAUTIONS ARE TAKEN TO MAKE THE FACE AS SAFE AS POSSIBLE IN THE CIRCUMSTANCES.

- 3) EVERY EMPLOYER SHALL TAKE ALL PRACTICABLE STEPS TO ENSURE THAT ANY SHORING USED IN ANY EXCAVATION AT THE PLACE OF WORK:
  - a) CONSISTS OF MATERIALS THAT ARE SUITABLE FOR THE PURPOSE FOR WHICH THEY ARE TO BE USED, OF SOUND QUALITY, AND ADEQUATE STRENGTH FOR THE PARTICULAR USE; AND
  - b) HAS BRACING'S, JACKS, AND STRUTS THAT ARE SECURELY HELD TO PREVENT ACCIDENTAL DISPLACEMENT, AND PACKING'S AND WEDGES THAT ARE HELD BY NAILS OR SPIKES; AND
  - c) IS PLACED IN A PROPER MANNER BY A BY AN EXPERIENCED PERSON UNDER COMPETENT SUPERVISION; AND
  - d) IS NOT ALTERED, DISMANTLED, OR INTERFERED WITH EXCEPT ON THE INSTRUCTIONS OF THE EMPLOYER OR A REPRESENTATIVE OF THE EMPLOYER.

**BACKFILL AND BASECOURSE:**

BACKFILL AND BASECOURSE MATERIAL TO BE EITHER:

**CRUSHED STONE OR GRAVEL:** WASHED, WITH ANGULAR PARTICLE SIZES NO LARGER THAN 20mm WITH NO MORE THAN 5% PASSING A 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS THAN 1500 Kg / CUBIC METRE. APPROVED BACKFILL SHOULD NOT BE MIXED WITH SAND OR NATIVE SOILS AND SHOULD ALWAYS BE BROUGHT UP TO AT LEAST 150MM ABOVE TANK CROWN LEVEL. THE USE OF NON-SPECIFIED BACKFILL MATERIAL COULD RESULT IN TANK FAILURE. GAP20 IS ACCEPTABLE.

OR IF CRUSHED STONE OR GRAVEL IS NOT AVAILABLE, THEN SPECIFIC QUARRY AGGREGATE MIX OF **NATURALLY ROUNDED GRAVEL:** CLEAN NATURALLY ROUNDED AGGREGATE WITH PARTICLE SIZES NO LARGER THAN 19mm WITH NO MORE THAN 5% PASSING A 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS THAN 1500 Kg / CUBIC METRE.

THE CONTRACTOR IS TO WORK IN MAXIMUM BACKFILL LIFTS OF 300mm. AFTER EACH LIFT, THE CONTRACTOR TO USE LONG HANDLED PROBE TO WORK THE BACKFILL MATERIAL UNDER THE ENTIRE LENGTH OF THE TANK AND WITHIN ANY RIBS. ALL VOIDS AND SPACES SHOULD BE FILLED TO ENSURE ADEQUATE SUPPORT OF TANK.

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REVISED FOR CONSENT	01-04-22	2
FOR CONSENT	05-12-21	1
REVISION:	DATE:	No.:

JOB TITLE:  
**UNDER LAWN INSTALLATION OF APD TANKS WITH GROUND ANCHORS**  
 ADDRESS:  
**ALL NEW ZEALAND LOCATIONS**

DRAWING TITLE:  
**TANK UNDER LAWN, PAVERS OR OTHER NON TRAFFICABLE FINISH**

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ORIGINAL SHEET SIZE: A3	JOB No: DT-02
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