

ALL NEW ZEALAND LOCATIONS

STRUCTURAL WORKS - GENERIC DESIGN

| JOB No. | DWG No.  | TITLE   | REV | DATE       | DESCRIPTION |
|---------|----------|---|-----|------------|-------------|
| DT-02   | PS-UL-01 | DRAWING SCHEDULE  | 1   | 31/01/2024 | FOR CONSENT |
| DT-02   | PS-UL-02 | STANDARD NOTES AND DETAILS  | 1   | 31/01/2024 | FOR CONSENT |
| DT-02   | PS-UL-03 | 700 LTR PUMPSTATION CHAMBER UNDER LAWN, PAVERS OR OTHER NON-TRAFFICABLE FINISH  | 1   | 31/01/2024 | FOR CONSENT |
| DT-02   | PS-UL-04 | 1000 LTR PUMPSTATION CHAMBER UNDER LAWN, PAVERS OR OTHER NON-TRAFFICABLE FINISH | 1   | 31/01/2024 | FOR CONSENT |
| DT-02   | PS-UL-05 | TYPE 2 STORMPIT UNDER LAWN, PAVERS OR OTHER NON-TRAFFICABLE FINISH              | 1   | 31/01/2024 | FOR CONSENT |

# UNDER LAWN INSTALLATION OF APD 700 LTR, 1000 LTR PUMPSTATION & TYPE 2 STORMPIT. ALL NEW ZEALAND NON TRAFFICABLE LOCATIONS

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

DEFINITIONS:  
UNO - UNLESS NOTED OTHERWISE

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| FOR CONSENT | 31-01-24 | 1    |
| REVISION:   | DATE:    | No.: |

JOB TITLE:  
UNDER LAWN INSTALLATION  
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT

ADDRESS:  
ALL NEW ZEALAND LOCATIONS

DRAWING TITLE:  
DRAWING SCHEDULE

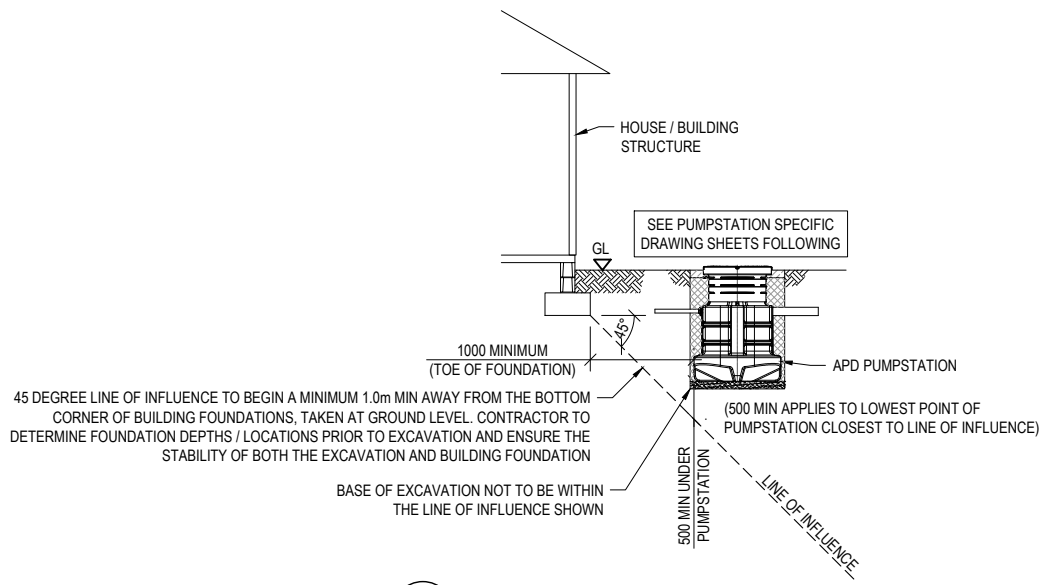
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|-------------------------|----------------------|
| ORIGINAL SHEET SIZE: A3 | JOB No: DT-02        |
| DRAWN: RCE              | DRAWING No: PS-UL-01 |
| DATE: SEP 2023          | REVISION No: 1       |
| DESIGN: AG              |                      |
| CHECKED:                | SCALE: NTS NTS       |

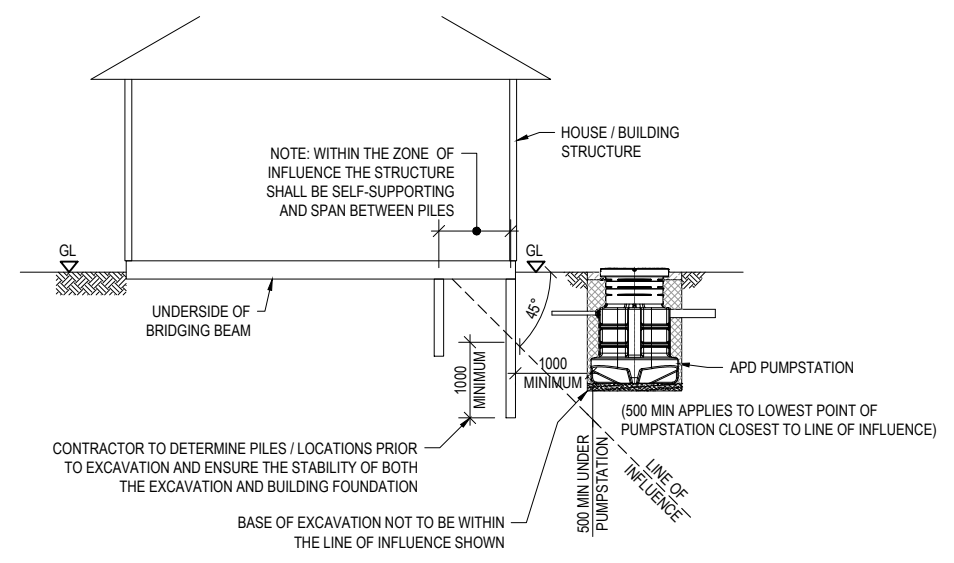


APD LTD  
49 McLaughlins Road, Wiri, Auckland,  
New Zealand  
TEL: 00 64 9 263 7741  
www.apd.co.nz

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

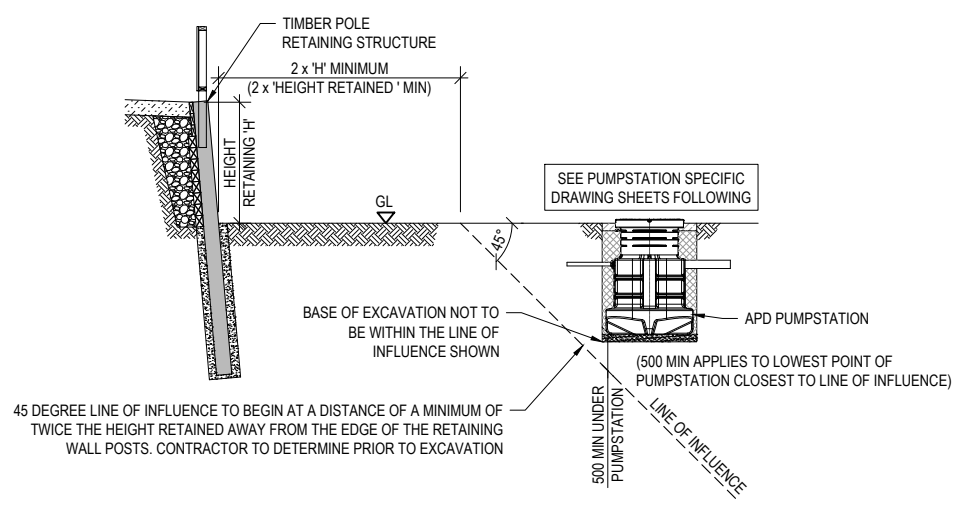


**A** CHAMBER POSITION NEAR BUILDING FOUNDATIONS  
SCALE NTS



**B** CHAMBER POSITION NEAR PILED FOUNDATIONS  
SCALE NTS

NOTE: REFER TO STORMWATER CODE OF PRACTICE DRAWING SW22.



**C** CHAMBER POSITION BELOW TIMBER RETAINING WALL  
SCALE NTS

NOTES:

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| FOR CONSENT | 31-01-24 | 1    |
| REVISION:   | DATE:    | No.: |

JOB TITLE:  
UNDER LAWN INSTALLATION  
INSTALLATION OF APD 700 & 1000 LTR  
PUMPSTATION & TYPE 2 STORMPIT

ADDRESS:  
ALL NEW ZEALAND LOCATIONS

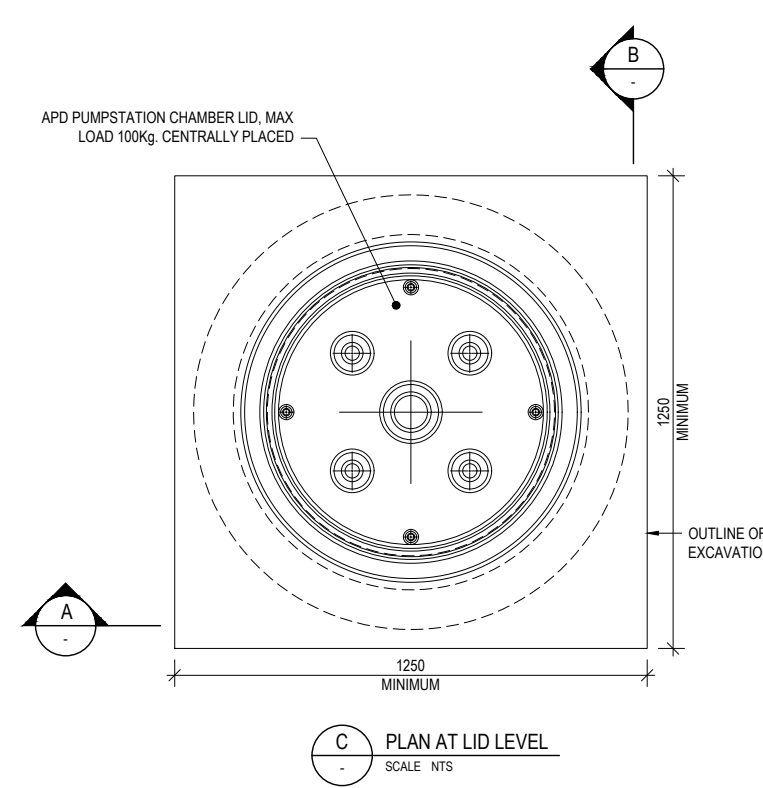
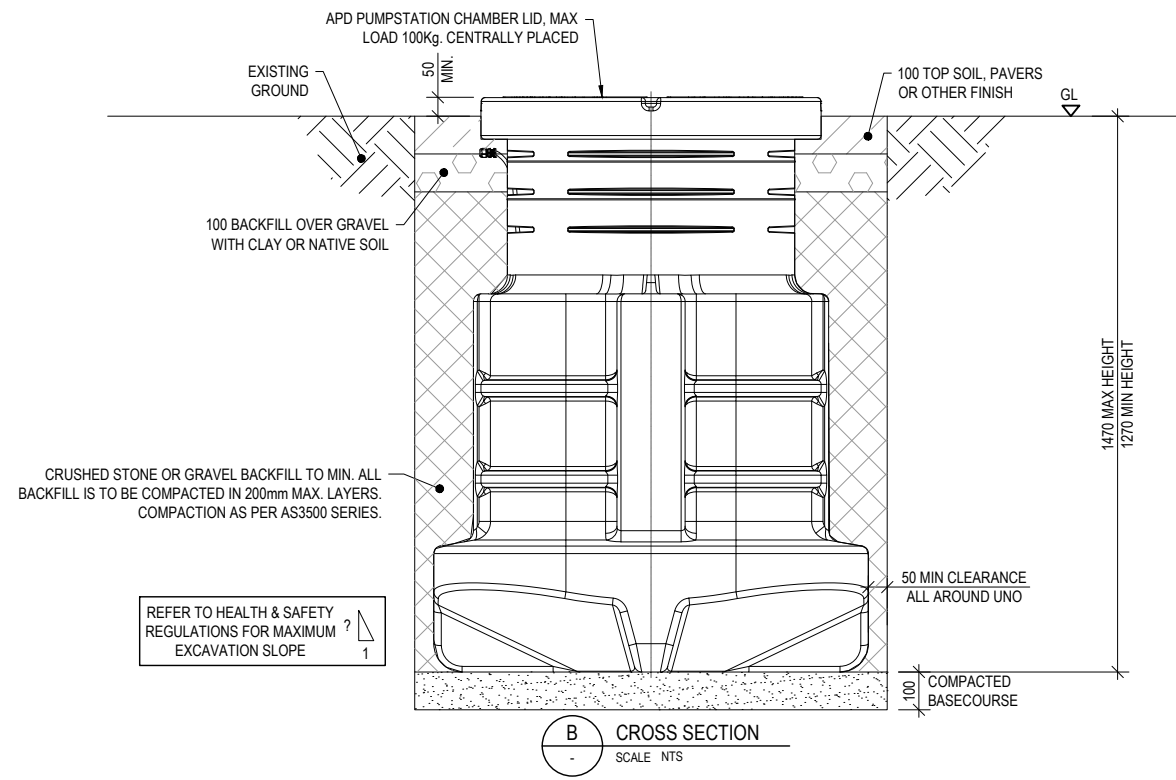
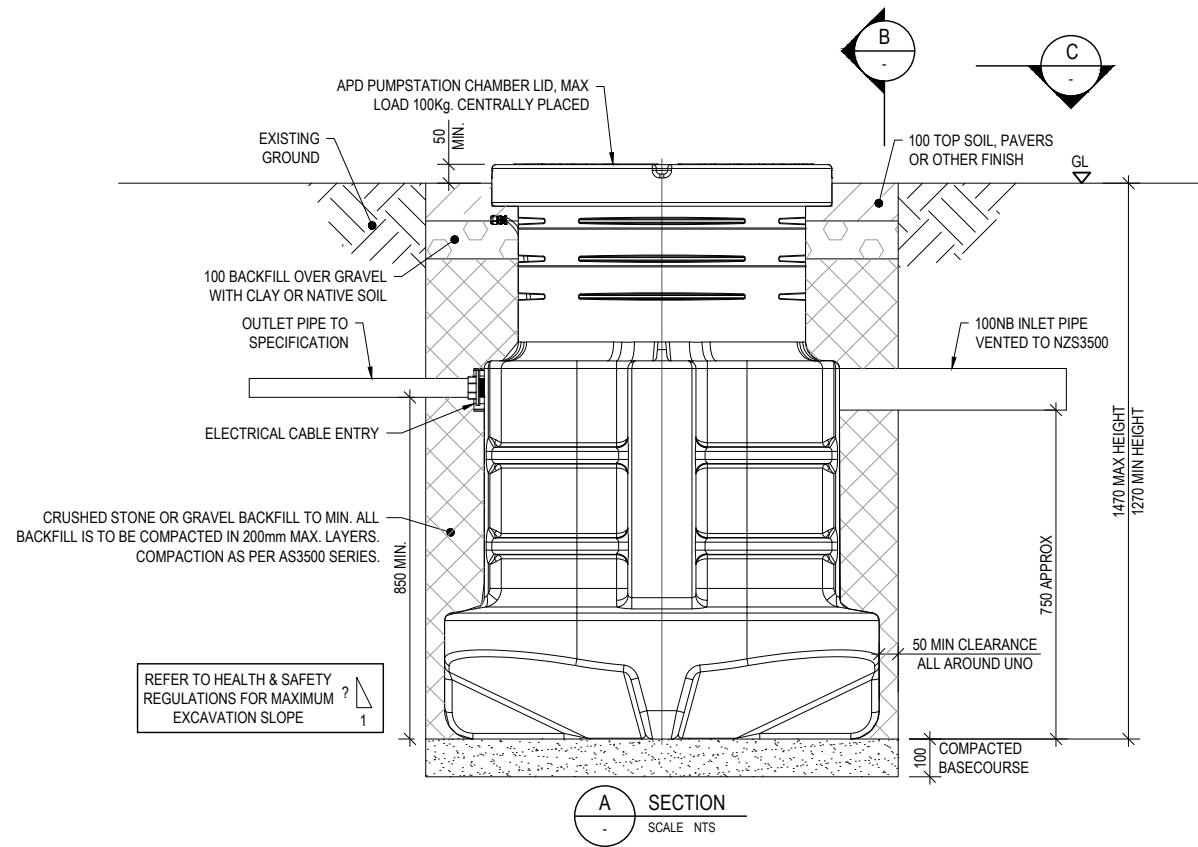
DRAWING TITLE:  
STANDARD NOTES AND DETAILS

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**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 UP TO 'H2'. 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

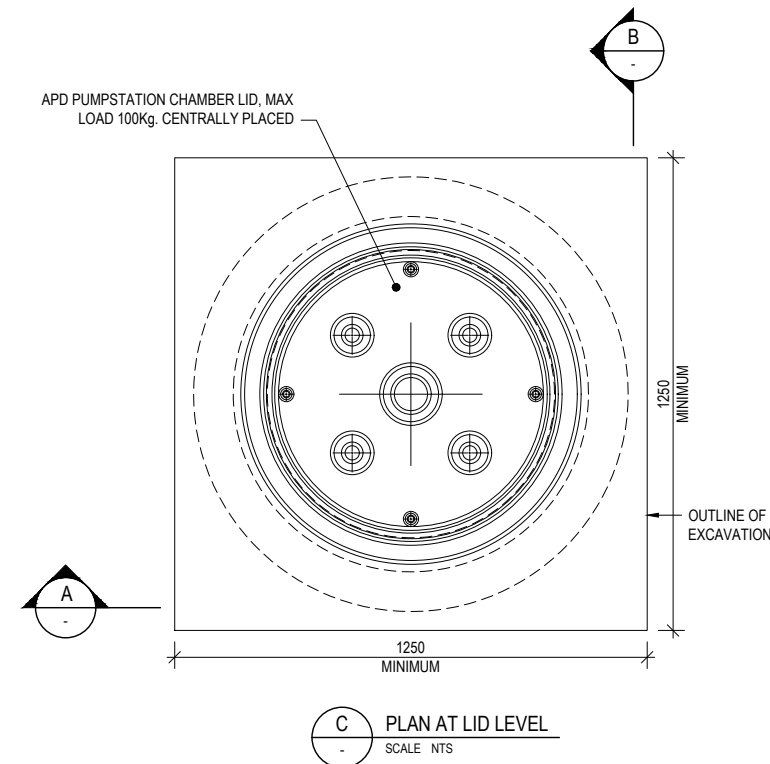
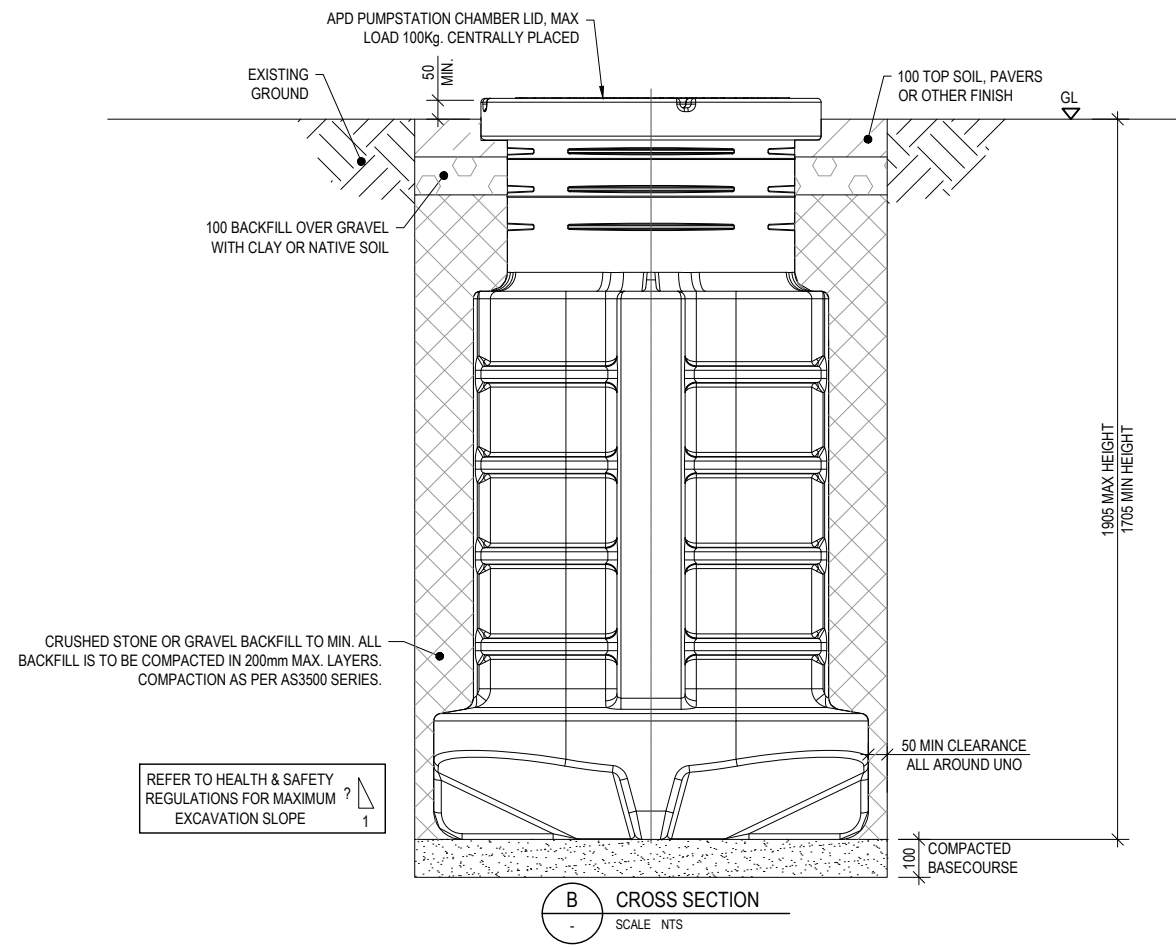
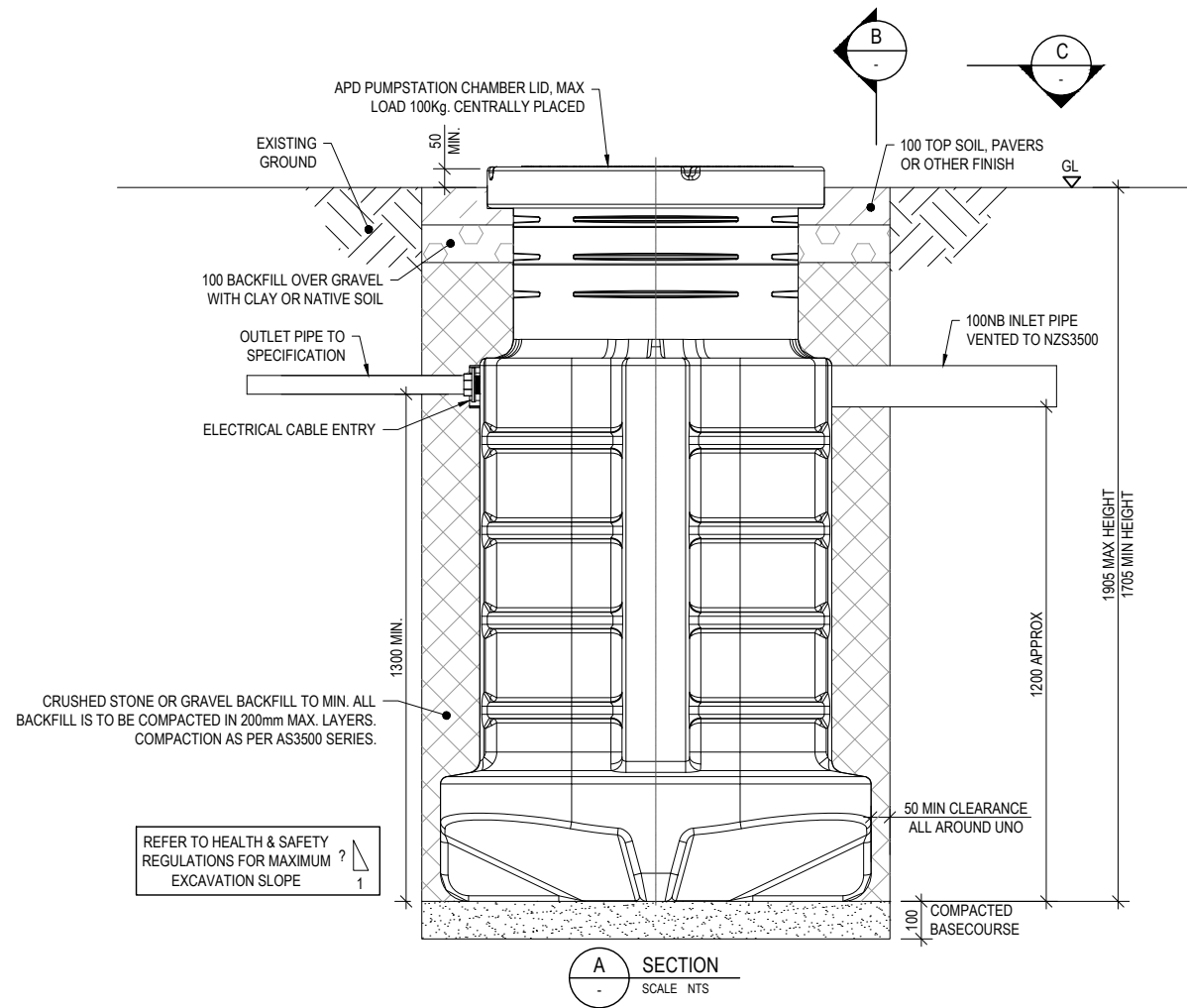
**NATURALLY ROUNDED GRAVEL:** CLEAN NATURALLY ROUNDED AGGREGATE WITH PARTICLE SIZES NO LARGER THAN 19mm WITH NO MORE THAN 5% PASSING A 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS THAN 1500 Kg / CUBIC METRE.

THE CONTRACTOR IS TO WORK IN MAXIMUM BACKFILL LIFTS OF 200mm. 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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|---|----------------------|------|
| FOR CONSENT   | 31-01-24             | 1    |
| REVISION:   | DATE:                | No.: |
| JOB TITLE:<br><b>UNDER LAWN INSTALLATION<br/>INSTALLATION OF APD 700 &amp; 1000 LTR<br/>PUMPSTATION &amp; TYPE 2 STORMPIT</b>   |                      |      |
| ADDRESS:<br><b>ALL NEW ZEALAND LOCATIONS</b>  |                      |      |
| DRAWING TITLE:<br><b>700 LTR PUMPSTATION UNDER<br/>LAWN, PAVERS OR OTHER NON<br/>TRAFFICABLE FINISH</b>   |                      |      |
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| ORIGINAL SHEET SIZE: A3   | JOB No: DT-02        |      |
| DRAWN: RCE  | DRAWING No: PS-UL-03 |      |
| DATE: SEP 2023  | REVISION No: 1       |      |
| DESIGN: AG  |                      |      |
| CHECKED:  | SCALE: NTS           | NTS  |

**APD**

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49 McLaughlins Road, Wiri, Auckland,  
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**EXCAVATION CLEARANCE:**

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**SOIL CONDITIONS:**

THIS DESIGN ASSUMES SITE SOILS WILL MEET THE REQUIREMENTS OF NZS3604:2011 CLASSIFICATION OF 'GOOD GROUND' AND AS2870:2011 SOIL EXPANSIVITY CLASS UP TO 'H2'. THE CONTRACTOR IS TO CONFIRM THE SITE EXHIBITS THESE PROPERTIES OR NOTIFY A CHARTERED PROFESSIONAL ENGINEER FOR CONSULTATION. FOR IL2, 50 YEARS DESIGN LIFE,  $Z <= 0.4$

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- 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.

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  - c) IS PLACED IN A PROPER MANNER BY A BY AN EXPERIENCED PERSON UNDER COMPETENT SUPERVISION; AND
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**BACKFILL AND BASECOURSE:**

BACKFILL AND BASECOURSE MATERIAL TO BE EITHER:

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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 200mm. 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.

**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  
 DEFINITIONS:  
 UNO - UNLESS NOTED OTHERWISE

|             |          |      |
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| FOR CONSENT | 31-01-24 | 1    |
| REVISION:   | DATE:    | No.: |

JOB TITLE:  
**UNDER LAWN INSTALLATION  
 INSTALLATION OF APD 700 & 1000 LTR  
 PUMPSTATION & TYPE 2 STORMPIT**

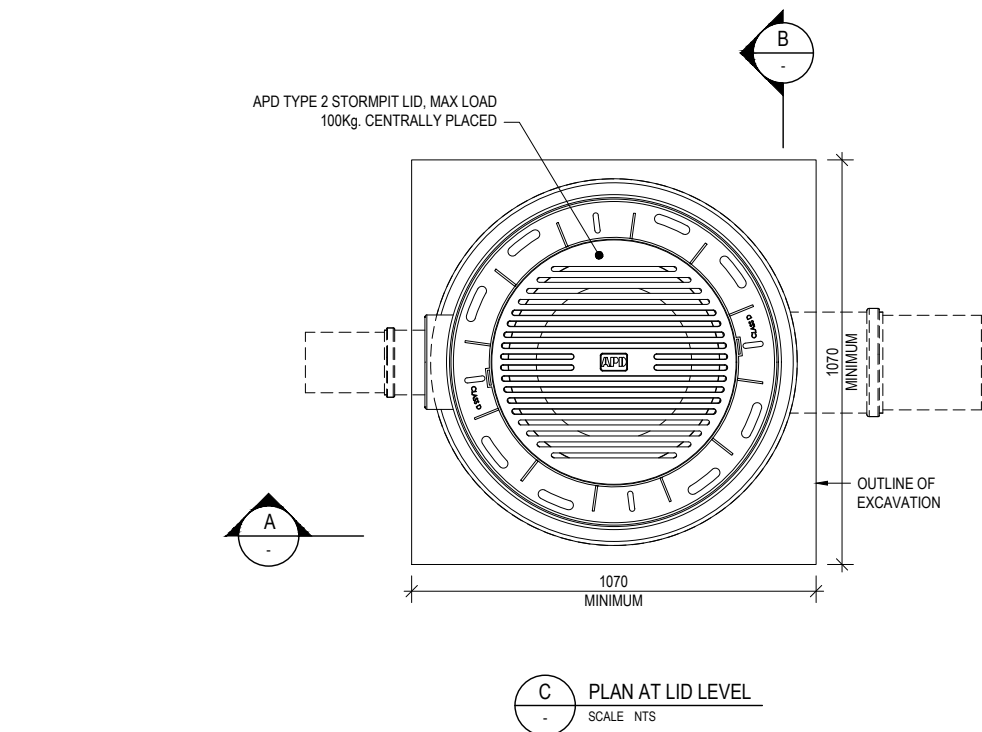
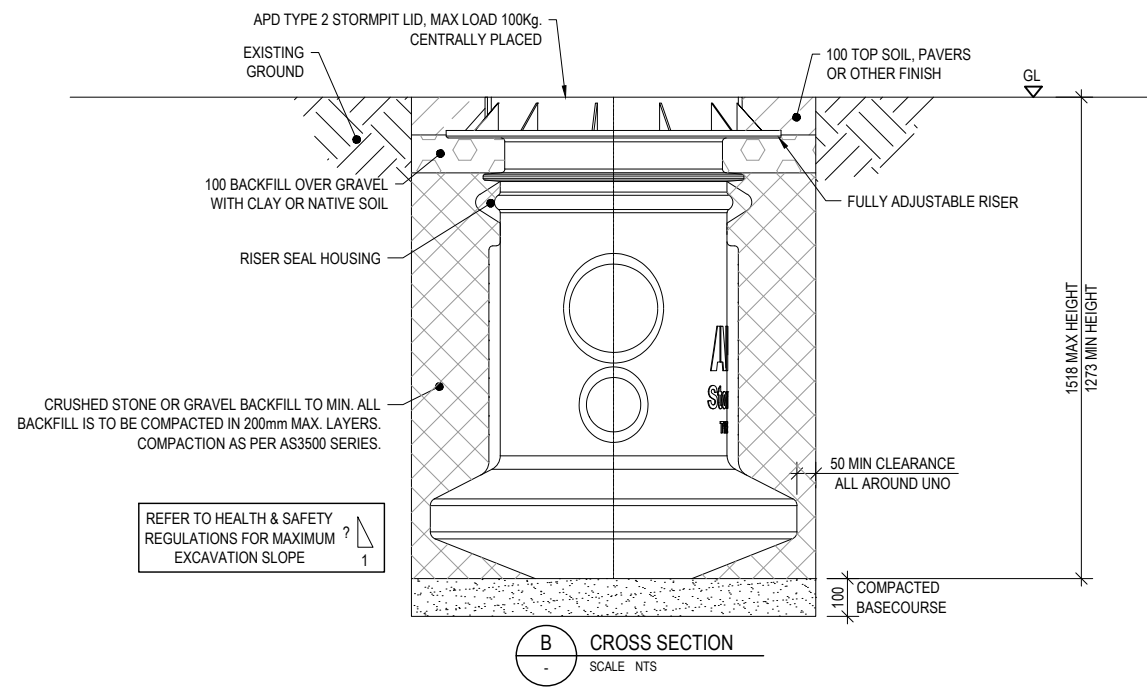
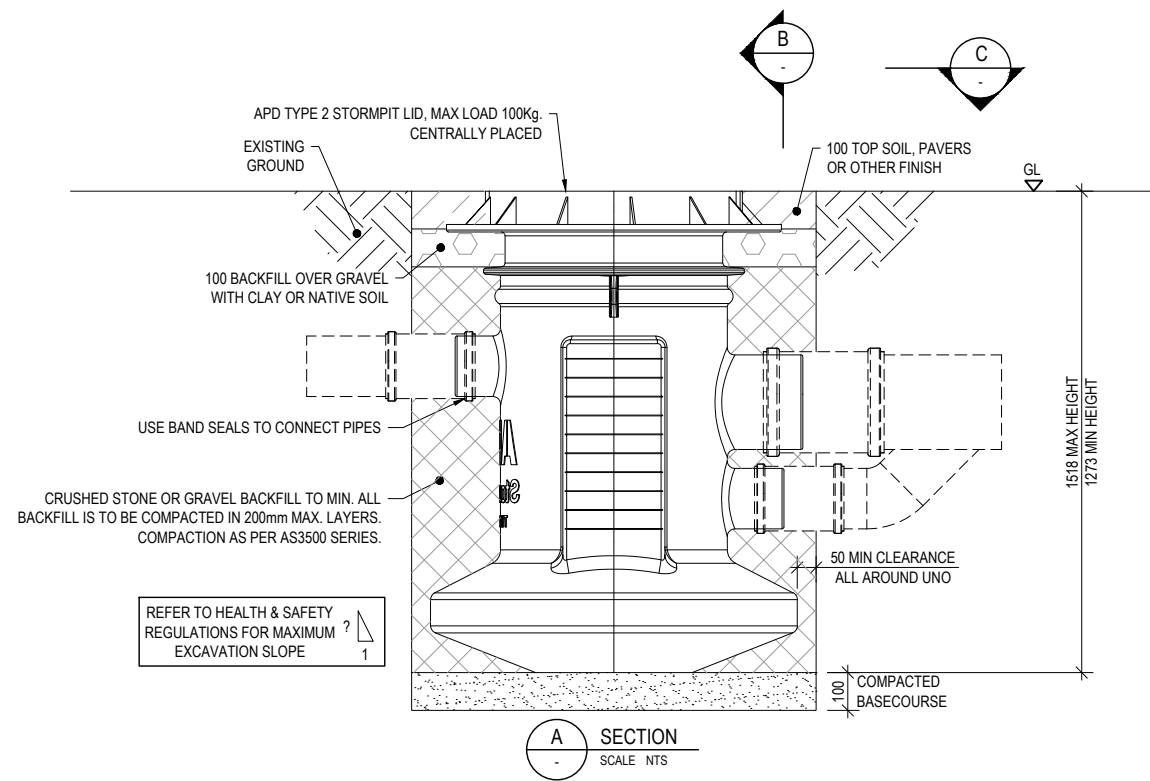
ADDRESS:  
**ALL NEW ZEALAND LOCATIONS**

DRAWING TITLE:  
**1000 LTR PUMPSTATION UNDER  
 LAWN, PAVERS OR OTHER NON  
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**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 UP TO 'H2'. THE CONTRACTOR IS TO CONFIRM THE SITE EXHIBITS THESE PROPERTIES OR NOTIFY A CHARTERED PROFESSIONAL ENGINEER FOR CONSULTATION. FOR IL2, 50 YEARS DESIGN LIFE,  $Z <= 0.4$

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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.

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| REVISION:   | DATE:    | No.: |

JOB TITLE:  
**UNDER LAWN INSTALLATION  
INSTALLATION OF APD 700 & 1000 LTR  
PUMPSTATION & TYPE 2 STORMPIT**

ADDRESS:  
**ALL NEW ZEALAND LOCATIONS**

DRAWING TITLE:  
**TYPE 2 STORMPIT UNDER  
LAWN, PAVERS OR OTHER NON  
TRAFFICABLE FINISH**

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|-------------------------|-----------------------------|
| ORIGINAL SHEET SIZE: A3 | JOB No: DT-02               |
| DRAWN: RCE              | DRAWING No: <b>PS-UL-05</b> |
| DATE: SEP 2023          | REVISION No: 1              |
| DESIGN: AG              | SCALE: NTS                  |
| CHECKED:                | SCALE: NTS                  |



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