ALL NEW ZEALAND LOCATIONS

STRUCTURAL WORKS - GENERIC DESIGN

CONTRACTOR AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120kN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.

JOB No.	DWG No.	TITLE	REV	DATE	DESCRIPTION
DT-02	PS-CD-01	DRAWING SCHEDULE	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-02	STANDARD NOTES AND DETAILS (DURABILITY ZONE D)	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-03	700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - NON EXPANSIVE SOILS	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-04	700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - EXPANSIVE SOILS UP TO CLASS 'M'	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-05	700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - EXPANSIVE SOILS CLASS 'H2'	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-06	1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - NON EXPANSIVE SOILS	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-07	1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - EXPANSIVE SOILS UP TO CLASS 'M'	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-08	1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - EXPANSIVE SOILS CLASS 'H2'	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-09	TYPE 2 STORMPIT UNDER COMMERCIAL DRIVEWAY - NON EXPANSIVE SOILS	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-10	TYPE 2 STORMPIT UNDER COMMERCIAL DRIVEWAY - EXPANSIVE SOILS UP TO CLASS 'M'	1	31/01/2024	FOR CONSENT
DT-02	PS-CD-11	TYPE 2 STORMPIT UNDER COMMERCIAL DRIVEWAY - EXPANSIVE SOILS CLASS 'H2'	1	31/01/2024	FOR CONSENT

UNDER COMMERCIAL DRIVEWAY INSTALLATION OF APD 700 LTR, 1000 LTR PUMPSTATION & TYPE 2 STORMPIT -MAX AXLE LOAD 120kN. ALL NEW ZEALAND LOCATIONS

S:
S:

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

REFER TO STRUCTURAL SPECIFICATION SHEET FOR CONCRETE REINFORCING AND OTHER NOTES

SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/M/022 2014 SECTION 3.2 AND

MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE CONTACT APD.

CONTRACTOR AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120kN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.

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

UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS) INSTALLATION OF APD 700 & 1000 LTR **PUMPSTATION & TYPE 2 STORMPIT** ALL NEW ZEALAND LOCATIONS

DRAWING SCHEDULE

The information contained in this drawing is the sole property of APD LTD, is confidential, may only be used for the purpose issued and not be divulged to third parties, coreid or reproduced in any way. All intellectual property rights pertaining to this drawing belong to APD LTD. ORIGINAL SHEET SIZE: A3 JOB No: DT-02 DRAWN: RCE ^{WING №} PS-CD-01 DATE: SEP 2023 REVISION No: DESIGN: AG APD LTD 49 McLaughlins Road, Wiri, Auckland Vew Zealand TEL: 00 64 9 263 7741 www.apd.co.nz

STANDARD NOTES:

DURABILITY ZONE D (NZS3604

GENERAL:

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL GEOTECHNICAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR DECISION BEFORE PROCEEDING WITH THE WORK

ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEERS DRAWINGS SHALL NOT BE SCALED.

DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE STRUCTURE UNTIL ITS COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED BY EXCESSIVE LOADING

WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT NEW ZEALAND STANDARDS AND LOCAL AUTHORITY REGULATIONS, EXCEPT WHERE VARIED IN CONTRACT DOCUMENTS.

THE LOCATION. SIZE, AND DETAILS OF ALL PENETRATIONS, HOLES, ETC IN STRUCTURAL MEMBERS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION UNLESS OTHERWISE SHOWN ON STRUCTURAL DRAWINGS

SUBSTITUTION FOR OR AMENDMENT OF SPECIFIED DETAILS OR MATERIALS SHALL NOT BE CARRIED OUT WITHOUT THE APPROVAL OF THE ENGINEER.

CONCRETE

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH NZS 3101:2006

NO HOLES CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE APPROVAL OF THE ENGINEER.

CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.

ALL CONCRETE TO BE MECHANICALLY VIBRATED AND CAREFULLY WORKED AROUND THE REINFORCEMENT AND INTO THE CORNERS OF THE FORMWORK

MINIMUM COMPRESSIVE STRENGTHS OF CONCRETE AT 28 DAYS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

ELEMENT	GRADE(MPa)
SITE CONCRETE	17.5
SLAB ON GRADE	30
SUSPENDED SLAB	30

ALL CONCRETE IS TO HAVE 15 x 15 CHAMFER TO ALL EXPOSED EDGES UNLESS NOTED OTHERWISE

FINISHES TO CONCRETE TO BE IN ACCORDANCE WITH NZS 3114.

WATER / CEMENT RATIOS FOR CONCRETE USED IN SLABS ON GRADE SHALL NOT EXCEED

REINFORCEMENT:

ALL REINFORCEMENT SHALL CONFORM TO AS/NZS 4671. ALL HOOK BARS AND BENDS SHALL BE MADE WITHOUT FRACTURE IN ACCORDANCE TO NZS 3101. GRADE 300 BARS MAY BE BENT ONCE ONLY

ALL REINFORCEMENT SHALL BE AS FOLLOWS:

SYMBOL	TYPE - TO AS/NZS 4671
R	PLAIN BARS GRADE 300 MPa
D	DEFORMED BARS GRADE 300 MPa
HD	DEFORMED BARS GRADE 500 MPa - MA
HR	PLAIN BARS GRADE 500 MPa - MA
	MESH TO NZS 3421 (500 MPa)

* REINFORCEMENT SHALL BE CLASS E TO AS/NZS 4671 MANUFACTURED USING THE MICRO ALLOY PROCESS.

REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

CLEAR COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DWGS. WHERE NOT SPECIFICALLY DESIGNATED COVER IS TO BE IN ACCORDANCE WITH NZS 3109.

MEMBER	CAST AGAINST		
	NOT EXPOSED TO WEATHER OR WATER	EXPOSED TO WEATHER OR WATER	GROUND (SEE NOTE BELOW)
STRIP FOOTINGS	N/A	50	75 *
SLABS	35	50	75 *

* WHERE THERE IS A PERMANENT IMPERMEABLE MEMBRANE BETWEEN CONCRETE AND GROUND USE 50mm COVER

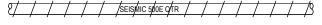
FOR SITES WITHIN 500M OF MEAN HIGH WATER MARK INCREASE COVER

NO REINFORCEMENT SPLICES SHALL BE MADE, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, WITHOUT THE PRIOR APPROVAL OF THE ENGINEER, MINIMUM LAP FOR FABRIC SHALL BE ONE MESH PLUS 50mm

WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS OR

APPROVED BY THE ENGINEER. WHERE WELDING OF REINFORCEMENT IS PERMITTED GRADE 500 STEEL SHALL NOT BE WELDED OR REBENT UNLESS IT IS CLEARLY MARKED AS MICRO. ALLOY GRADE 500, QUENCHED AND TEMPERED STEEL SHALL NOT BE WELDED OR REBENT

BAR MARKING FOR IDENTIFICATION OF MICRO ALLOY (MA) AND QUENCHED AND TEMPERED (QTR) REINFORCING ARE SHOWN BELOW: (INDICATIVE ONLY) / / / / / / / / / / / / / / / / / / /



REINFORCEMENT SHALL BE ADEQUATELY FIXED AND SUPPORTED TO PREVENT IT SAGGING OR MOVING. MESH TO BE FULLY SUPPORTED ON PROPRIETARY CHAIRS.REFER TO SPECIFICATION FOR MINIMUM FIXING REQUIREMENTS.

THE MINIMUM CLEAR SPACING BETWEEN CONDUITS, CABLES, PIPES AND BARS SHALL BE AS REQUIRED BY NZS 3101 BUT NOT LESS THAN THREE DIAMETERS. CONDUITS IN SLABS ARE TO BE PLACED ABOVE BOTTOM REINFORCEMENT AND BELOW TOP REINFORCEMENT.

LEGEND USED FOR REINFORCEMENT LOCATION

BS	BOTH SIDES
BB	BOTTOM BOTTOM
В	BOTTOM
TT	TOP TOP
Т	TOP
EW	EACH WAY
EF	EACH FACE
NF	NEAR FACE
FF	FAR FACE
NF	NEAR FACE

ABR ALTERNATE BARS REVERSED

STANDARD SPLICE LAP LENGTHS FOR DEFORMED BARS:-

CONCRETE LAPS		
BAR SIZE DIA.	D	HD
	GRADE 300	GRADE 500
10	400	600
12	450	750
16	600	1000
20	750	1200
25	900	1500
28	1100	1700
MESH	1 MESH SQ. + 50mm	

NOTE: FOR ROUND BARS SPLICE LAP LENGTH TO BE TWICE THE SPLICE LENGTH OF DEFORMED BARS

LAPS IN BEAMS & COLUMNS SHALL BE VIA AN OFFSET LAP CREATED BY CRANKING OF THE BAR AS SHOWN BELOW

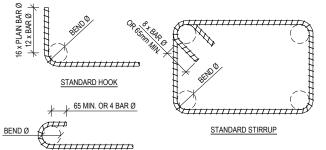
LAP AS ABOVE

, 12 BAR Ø REVERSE COLD BENDING SHALL NOT BE CARRIED OUT ON-SITE. HOT BENDING MAY BE

CARRIED OUT AT THE DISCRETION AND WITH THE WRITTEN APPROVAL OF THE ENGINEER REFER TO SPECIFICATION FOR HEATING & HOT BENDING PROCEDURE.

COLD BENDING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH NZS 3109.

BENDS FOR ALL BARS EXCEPT STIRRUPS & TIES:-



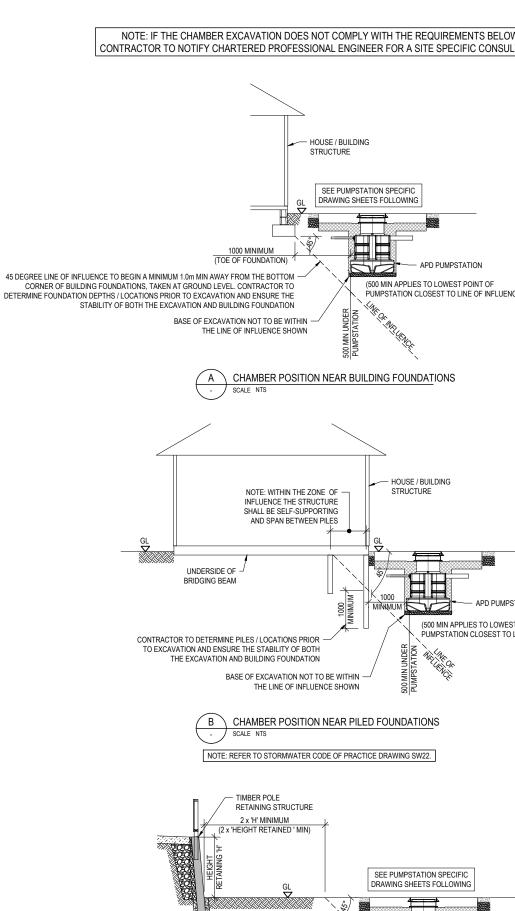
STANDARD 180° HOOK

300 & 500 6 to 20 5 BAR DIAMETERS 300 & 500 25 to 40 7 BAR DIAMETERS	STEEL GRADE	BAR DIAMETER	MINIMUM BEND DIAMETER
300 & 500 25 to 40 7 BAR DIAMETERS	300 & 500	6 to 20	5 BAR DIAMETERS
	300 & 500	25 to 40	7 BAR DIAMETERS

FOUNDATIONS:

FOUNDATIONS ARE TO BE FOUNDED ON ORIGINAL UNDISTURBED GROUND, AT A MINIMUM DEPTH OF 600mm, BEFORE ANY CONCRETE IS PLACED THE SOILS SHALL BE VERIFIED TO BE 'GOOD GROUND' TO NZS3604

50mm OF SITE CONCRETE MAY BE PLACED UNDER FOUNDATIONS TO CREATE A CLEAN SURFACE TO PLACE REINFORCING ON WHEN REQUIRED.



VINE & WILLINGE

500 MIN UNDE PUMPSTATIO

BASE OF EXCAVATION NOT TO

45 DEGREE LINE OF INFLUENCE TO BEGIN AT A DISTANCE OF A MINIMUM OF

С

TWICE THE HEIGHT RETAINED AWAY FROM THE EDGE OF THE RETAINING

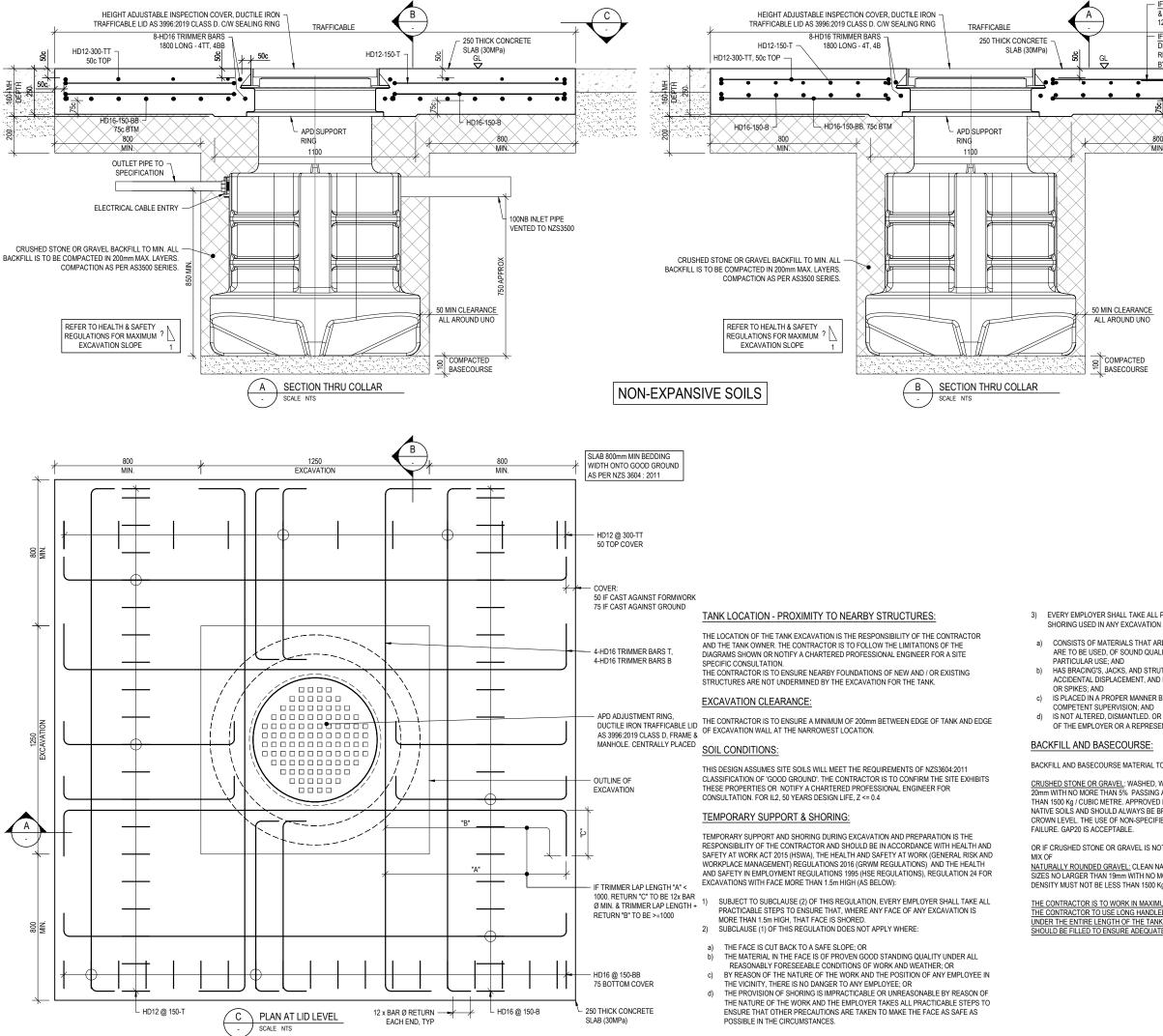
WALL POSTS. CONTRACTOR TO DETERMINE PRIOR TO EXCAVATION

SCALE NTS

BE WITHIN THE LINE OF INFLUENCE SHOWN

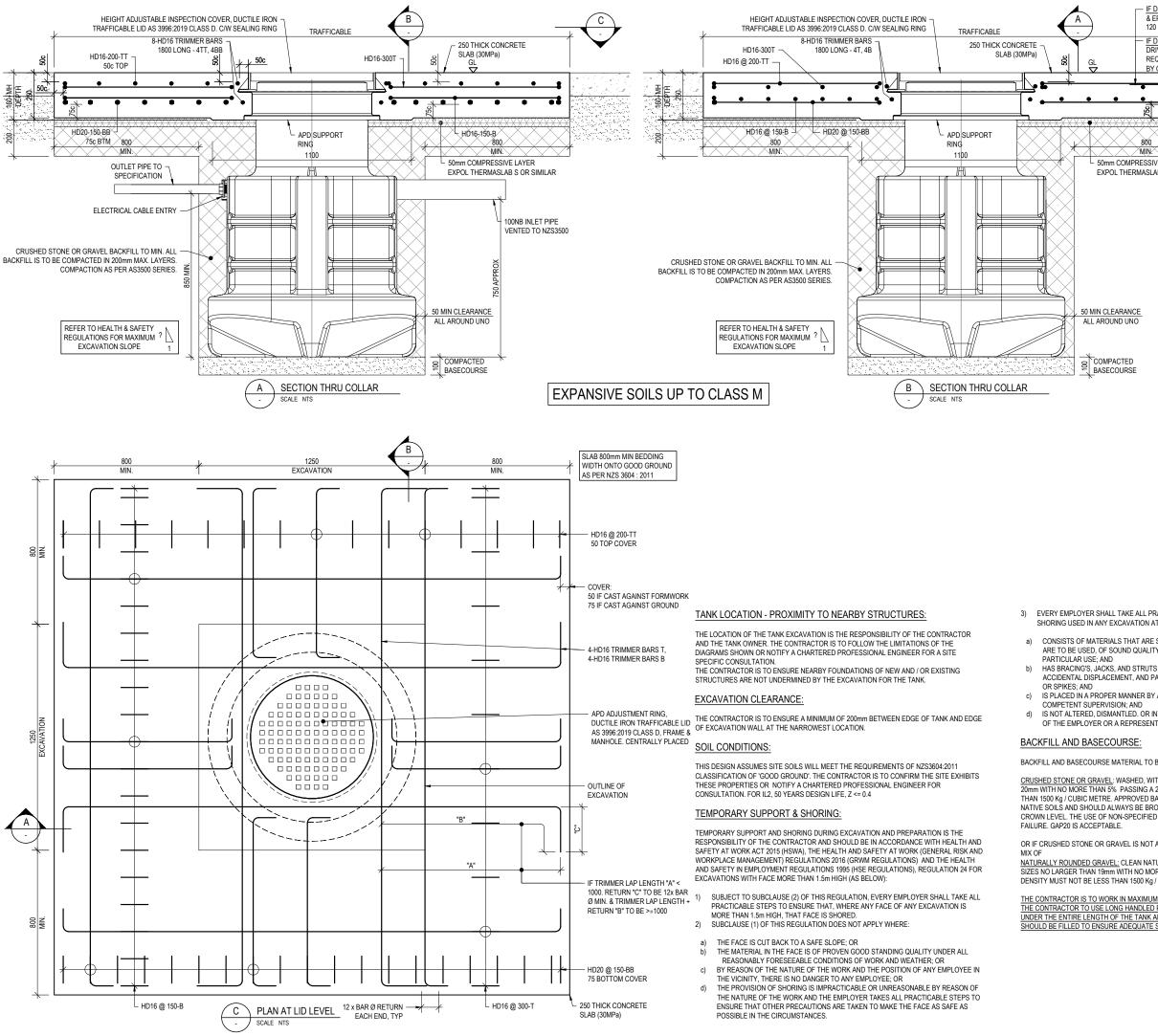
CHAMBER POSITION BELOW TIMBER RETAINING WALL

REQUIREMENTS BELOW -	NOTES:
SITE SPECIFIC CONSULTATION	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
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	SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/M/022 2014 SECTION 3.2 AND D1.
APD PUMPSTATION IS TO LOWEST POINT OF CLOSEST TO LINE OF INFLUENCE)	MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE CONTACT APD.
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(500 MIN APPLIES TO LOWEST POINT OF PUMPSTATION CLOSEST TO LINE OF INFLUENCE)	
MELLA CA	
<u>FION</u> S	
W22.	FOR CONSENT 31-01-24 1 REVISION: DATE: No.:
	(AXLE LOAD 120kN OR LESS)
	INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT
	ADDRESS: ALL NEW ZEALAND LOCATIONS
	DRAWING TITLE:
ATION SPECIFIC ETS FOLLOWING	STANDARD NOTES AND DETAILS (DURABILITY ZONE D)
	· · ·
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	ORIGINAL SHEET SIZE: A3 JOB No: DT-02
	DRAWN: RCE DRAWING No: PS-CD-02
(500 MIN APPLIES TO LOWEST POINT OF	DESIGN: AG REVISION No: 1
PUMPSTATION CLOSEST TO LINE OF INFLUENCE)	CHECKED: SCALE: NTS NTS
NA AND	
. HANGE	
`	
INING WALL_	APD LTD 49 McLaughlins Road, Wiri, Auckland,
	New Zealand TEL: 00 64 9 263 7741
	www.apd.co.nz

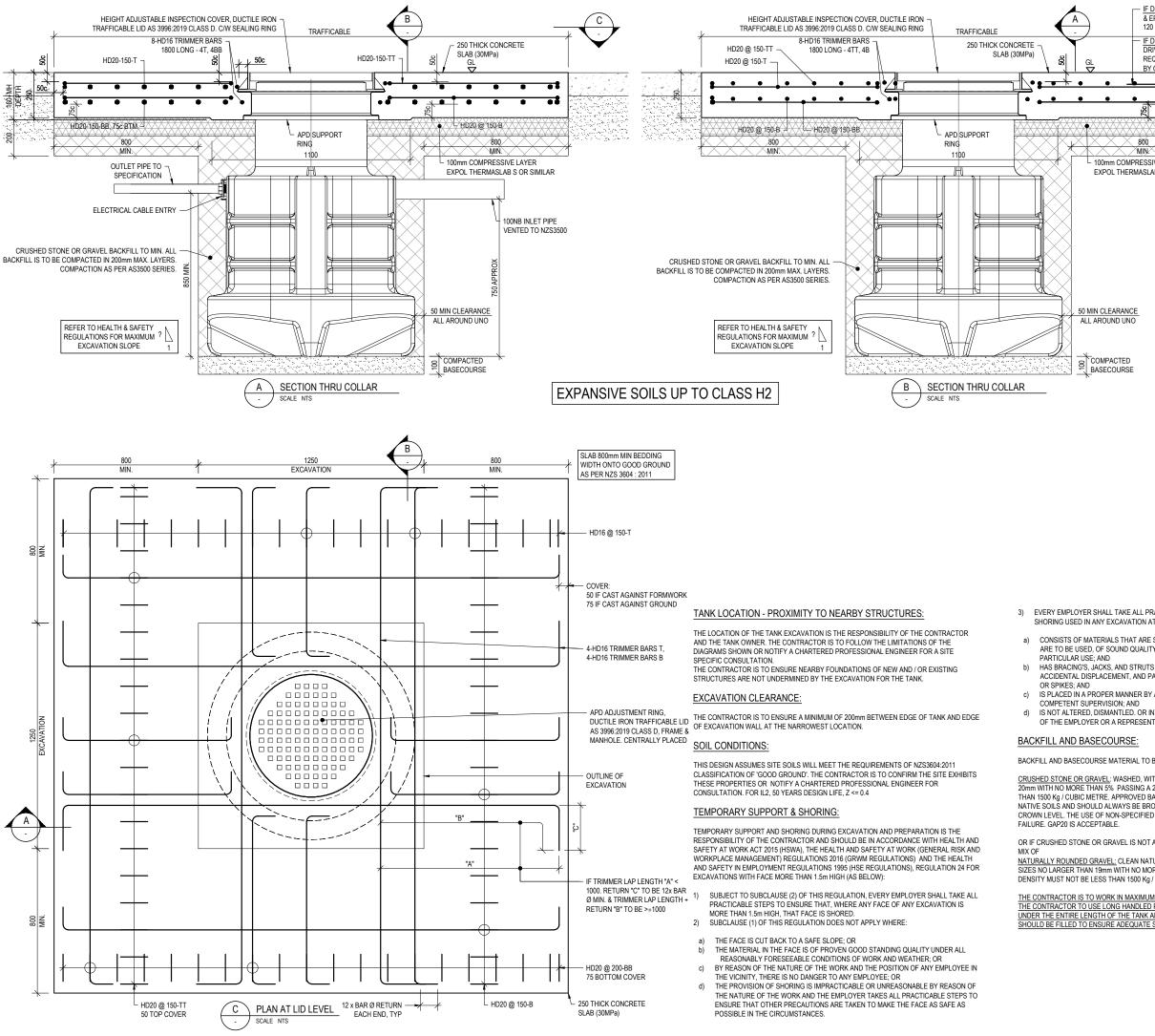


EDRIVEWAY IS EXISTING: SCABBLE EDGES AND DRILL EPOXY D12 STARTERS @ 400CRS WITH EPCON C6,	NOTES:		
20 EMBEDMENT, LAP 600. F DRIVEWAY IS NEW: LAP TANK TOPPING STEEL WITH DRIVEWAY REINFORCEMENT, FULL LAP LENGTH REQD. (REFER GENERAL NOTES) DRIVEWAY DESIGN	CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK		
YO OTHERS TO LOCAL AUTHORITY STANDARD.	CONTRACTOR TO FOLLOW MATERIAL SPECIFICATION AND LIMITS OF LOCATION WITH RELATION TO STRUCTURES AND RETAINING WALLS		
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	D1. MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE		
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TS THAT ARE SECURELY HELD TO PREVENT PACKING'S AND WEDGES THAT ARE HELD BY NAILS			
BY A BY AN EXPERIENCED PERSON UNDER			
INTERFERED WITH EXCEPT ON THE INSTRUCTIONS INTATIVE OF THE EMPLOYER.	FOR CONSENT 31-01-24 1 REVISION: DATE: No.: JOB TITLE: LINDED COMMEDICIAL DRIVEWAY		
O BE EITHER:	UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS) INSTALLATION OF APD 700 & 1000 LTR		
VITH ANGULAR PARTICLE SIZES NO LARGER THAN A 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS	PUMPSTATION & TYPE 2 STORMPIT ADDRESS: ALL NEW ZEALAND LOCATIONS		
BACKFILL SHOULD NOT BE MIXED WITH SAND OR ROUGHT UP TO AT LEAST 150MM ABOVE TANK ED BACKFILL MATERIAL COULD RESULT IN TANK	DRAWING TITLE 700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - NON-		
T AVAILABLE, THEN SPECIFIC QUARRY AGGREGATE	EXPANSIVE SOILS The information contained in this drawing is the sole property of APD LTD, is confidential, may only be used for the purpose issued and not		
ATURALLY ROUNDED AGGREGATE WITH PARTICLE IORE THAN 5% PASSING A 2.36mm SIEVE. DRY g / CUBIC METRE.	be divulged to third partles, copied or reproduced in any way. All intellectual property rights pertaining to this drawing belong to APD LTD. ORIGNAL SHEET SIZE: A3 0.08 N: DT-02 DRAWIN: RCE DRAWING N: PS-CD-0.3		
UM BACKFILL LIFTS OF 200mm. AFTER EACH LIFT, D PROBE TO WORK THE BACKFILL MATERIAL (AND WITHIN ANY RIBS. ALL VOIDS AND SPACES	DATE: SEP 2023 DESIGN: AG REVISION No: 1 CHECKED: SCALE: NTS NTS		
E SUPPORT OF TANK.			
	APD LTD 49 McLaughlins Road, Wiri, Auckland, New Zealand		

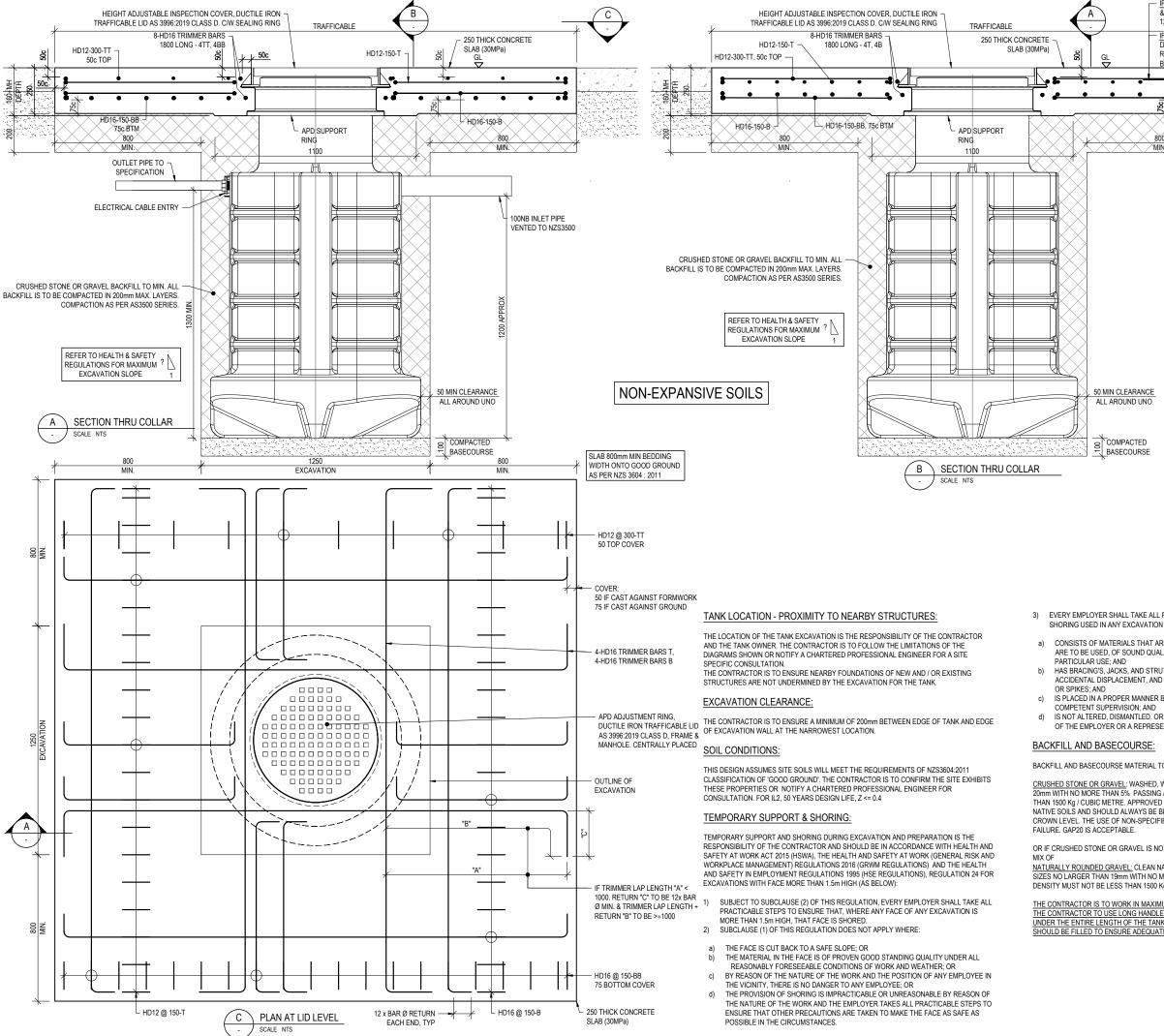
TEL: 00 64 9 263 7741 www.apd.co.nz



DRIVEWAY IS EXISTING: SCABBLE EDGES AND DRILL POXY D12 STARTERS @ 400CRS WITH EPCON C6,	NOTES:
) EMBEDMENT, LAP 600. <u>DRIVEWAY IS NEW:</u> LAP TANK TOPPING STEEL WITH IVEWAY REINFORCEMENT, FULL LAP LENGTH QD. (REFER GENERAL NOTES) DRIVEWAY DESIGN	CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK
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CUBIC METRE.	ORIGINAL SHEET SIZE: A3 JOB No: DT-02 DRAWN: RCE DRAWING No: PS-CD-04 DXT: 05D 2022
A BACKFILL LIFTS OF 200mm. AFTER EACH LIFT, PROBE TO WORK THE BACKFILL MATERIAL	DATE: SEP 2023 DESIGN: AG
ND WITHIN ANY RIBS. ALL VOIDS AND SPACES SUPPORT OF TANK.	CHECKED: SCALE: NTS NTS
	APD LTD 49 McLaughlins Road, Wiri, Auckland, New Zealand

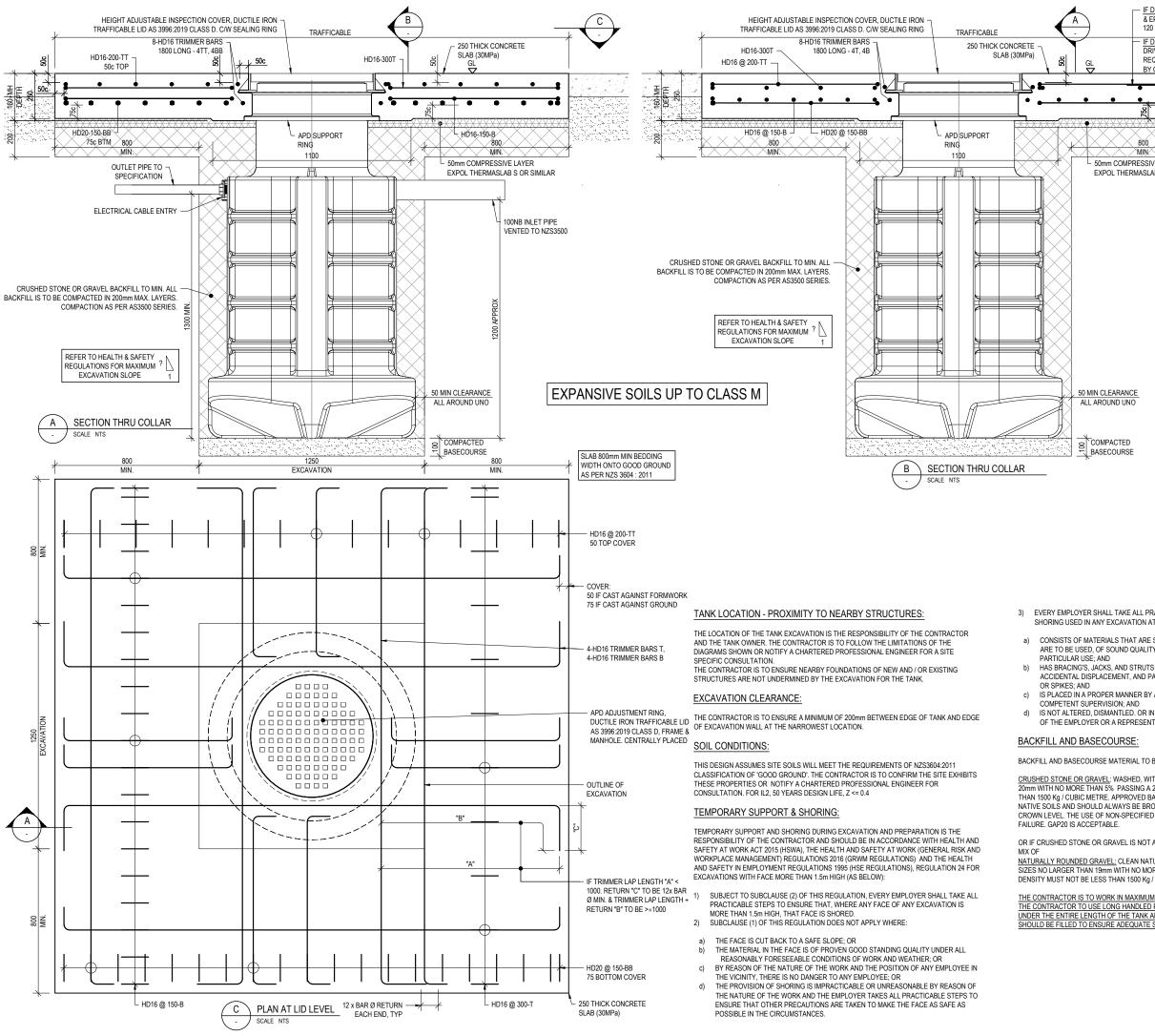


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FOR CONSENT 31-01-24 1			
I OR CONSENT 31-01-24 1 REVISION: DATE: No.: JOB TITLE:			
UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS)			
INSTALLATION OF APD 700 & 1000 LTR			
PUMPSTATION & TYPE 2 STORMPIT ADDRESS: ALL NEW ZEALAND LOCATIONS			
DRAWING TITLE 700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE			
700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing is the sole property of APD			
700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2			
700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing is the sole property of APD LTD; is confidential, may only be used for the purpose issued and not be divulged to informatic, and on the grances is used and not be divulged to informatic and on the grances is used and not drug to the grants, and on the grant of the grances is used intellectual property rights pertaining to this drawing belong to APD LTD. ORIGNAL SHEET SIZE: A3 JOB No: DT-02 DRAWN: RCE DATE: SEP 2023			
700 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing is the sole property of APD LTD, is confidential, may only be used for the purpose issued and not be divulged to thing parties, copied or reproduced and repetive dide or reproduced and repetive dide or reproduced and repetive dide or repetive dide or repetive dide or report. ORIGNAL SHEET SIZE: A3 JOB No: DT-02 DRAWN: RCE DRAWING No: DATE: SEP 2023 DESIGN: AG			
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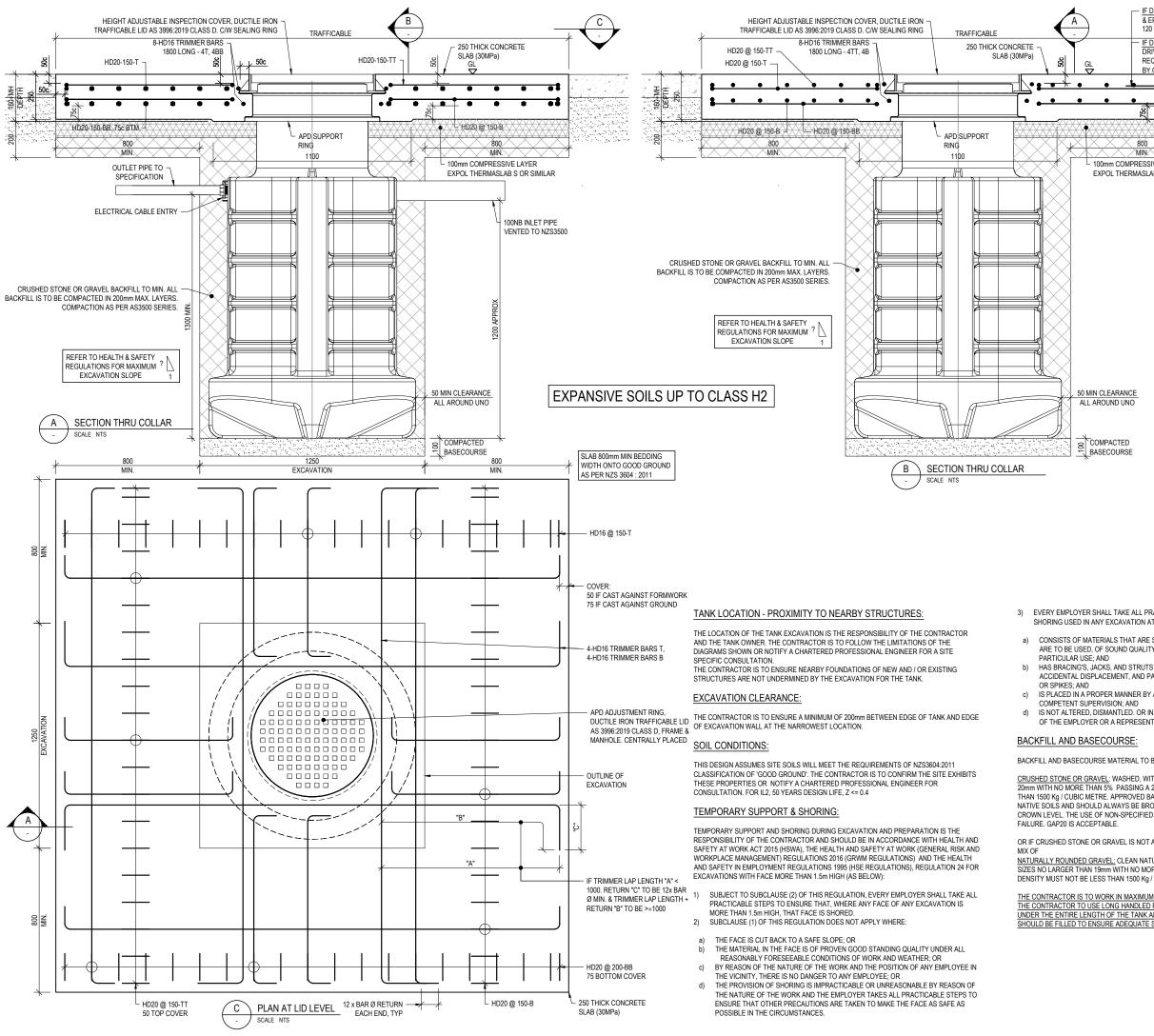


F DRIVEWAY IS EXISTING: SCABBLE EDGES AND DRILL & EPOXY D12 STARTERS @ 400CRS WITH EPCON C6,	NOTES:		
120 EMBEDMENT, LAP 600. F DRIVEWAY IS NEW: LAP TANK TOPPING STEEL WITH DRIVEWAY REINFORCEMENT, FULL LAP LENGTH REQD. (REFER GENERAL NOTES) DRIVEWAY DESIGN	CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK		
BY OTHERS TO LOCAL AUTHORITY STANDARD.	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 REFER TO STRUCTURAL SPECIFICATION SHEET FOR CONCRETE REINFORCING AND OTHER NOTES		
	SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/M/022 2014 SECTION 3.2 AND D1.		
	MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE CONTACT APD.		
	CONTRACTOR AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120kN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.		
PRACTICABLE STEPS TO ENSURE THAT ANY I AT THE PLACE OF WORK:			
RE SUITABLE FOR THE PURPOSE FOR WHICH THEY ITY, AND ADEQUATE STRENGTH FOR THE			
TS THAT ARE SECURELY HELD TO PREVENT PACKING'S AND WEDGES THAT ARE HELD BY NAILS			
BY A BY AN EXPERIENCED PERSON UNDER			
R INTERFERED WITH EXCEPT ON THE INSTRUCTIONS	FOR CONSENT 31-01-24 1 REVISION: DATE: No.:		
NTATIVE OF THE EMPLOYER. O BE EITHER:	UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120KN OR LESS) INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT		
WITH ANGULAR PARTICLE SIZES NO LARGER THAN A 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS BACKFILL SHOULD NOT BE MIXED WITH SAND OR ROUGHT UP TO AT LEAST 150MM ABOVE TANK			
ED BACKFILL MATERIAL COULD RESULT IN TANK	1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY - NON- EXPANSIVE SOILS		
ATURALLY ROUNDED AGGREGATE WITH PARTICLE IORE THAN 5% PASSING A 2.36mm SIEVE. DRY	The information contained in this drawing is the sole property of APD LTD, is confidential, may only be used for the purpose issued and not be divulged to third parties, copied or reproduced in any way. All intellectual property rights pertaining to this drawing belong to APD LTD. ORIGINAL SHEET SIZE. A3 0.08 No. DT-02		
(g / CUBIC METRE. UM BACKFILL LIFTS OF 200mm. AFTER EACH LIFT, ED PROBE TO WORK THE BACKFILL MATERIAL	DRAWN: RCE DRAWING No: PS-CD-06 DATE: SEP 2023 DESIGN: AG REVISION No: 1		
K AND WITHIN ANY RIBS. ALL VOIDS AND SPACES E SUPPORT OF TANK.	CHECKED: SCALE: NTS NTS		
	АРР		
	APD LTD 49 McLaughlins Road, Wiri, Auckland, New Zealand		

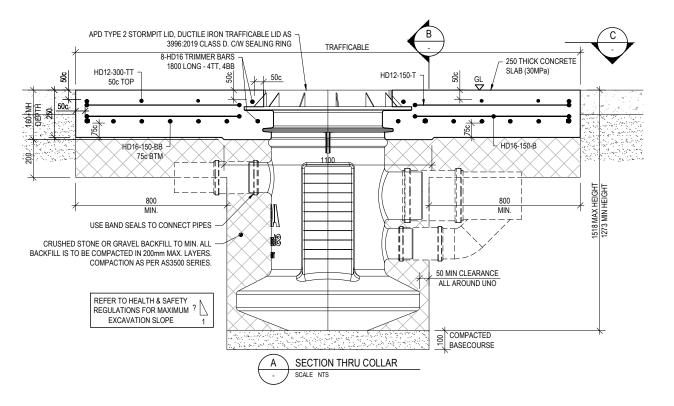
TEL: 00 64 9 263 7741 www.apd.co.nz

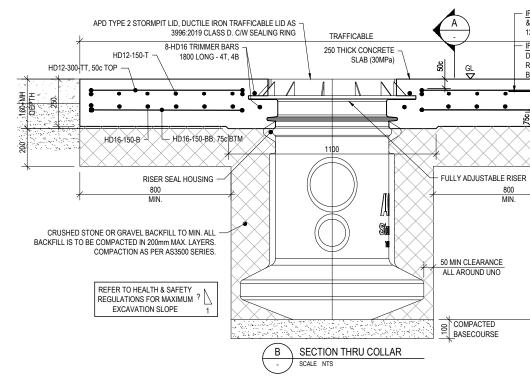


DRIVEWAY IS EXISTING: SCABBLE EDGES AND DRILL POXY D12 STARTERS @ 400CRS WITH EPCON C6,	NOTES:		
) EMBEDMENT, LAP 600. <u>DRIVEWAY IS NEW:</u> LAP TANK TOPPING STEEL WITH IVEWAY REINFORCEMENT, FULL LAP LENGTH QD. (REFER GENERAL NOTES) DRIVEWAY DESIGN	CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK		
OTHERS TO LOCAL AUTHORITY STANDARD.	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		
VE LAYER	DEFINITIONS: UNO - UNLESS NOTED OTHERWISE		
AB S OR SIMILAR	REFER TO STRUCTURAL SPECIFICATION SHEET FOR CONCRETE REINFORCING AND OTHER NOTES		
	SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/W/022 2014 SECTION 3.2 AND		
	D1. MANHOLE COVER IS DESIGNED FOR MAXIMUM		
	CLASS D, IF CLASS E IS REQUIRED PLEASE CONTACT APD.		
	CONTRACTOR AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120kN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.		
RACTICABLE STEPS TO ENSURE THAT ANY T THE PLACE OF WORK:			
SUITABLE FOR THE PURPOSE FOR WHICH THEY Y, AND ADEQUATE STRENGTH FOR THE			
S THAT ARE SECURELY HELD TO PREVENT ACKING'S AND WEDGES THAT ARE HELD BY NAILS			
A BY AN EXPERIENCED PERSON UNDER			
ITERFERED WITH EXCEPT ON THE INSTRUCTIONS TATIVE OF THE EMPLOYER.	FOR CONSENT 31-01-24 1 REVISION: DATE: No.: JOB TITLE:		
	UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS)		
BE EITHER:	INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT		
TH ANGULAR PARTICLE SIZES NO LARGER THAN 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS ACKFILL SHOULD NOT BE MIXED WITH SAND OR	ADDRESS: ALL NEW ZEALAND LOCATIONS		
DUGHT UP TO AT LEAST 150MM ABOVE TANK D BACKFILL MATERIAL COULD RESULT IN TANK	DRAWING TITLE 1000 LTR PUMPSTATION UNDER		
AVAILABLE, THEN SPECIFIC QUARRY AGGREGATE	COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS M		
URALLY ROUNDED AGGREGATE WITH PARTICLE RE THAN 5% PASSING A 2.36mm SIEVE. DRY	The information contained in this drawing is the sole property of APD LTD is confidential, may only be used for the purpose issued and not be divulged to third parties, copied or reproduced in any way. All intellectual property rights pertaining to this drawing belong to APD LTD. ORIGINLS. SHEET SIZE: A3 JOB No: DT-02		
/ CUBIC METRE. /I BACKFILL LIFTS OF 200mm. AFTER EACH LIFT,	DRAWN: RCE DRAWING No: D1-02 DRAWN: RCE DRAWING No: PS-CD-07 DATE: SEP 2023		
PROBE TO WORK THE BACKFILL MATERIAL AND WITHIN ANY RIBS. ALL VOIDS AND SPACES	DESIGN: AG REVISION No: 1 CHECKED: SCALE: NTS NTS		
SUPPORT OF TANK.	APD		
	APD LTD 49 McLaughlins Road, Wiri, Auckland,		
	New Zealand TEL: 00 64 9 263 7741		
	www.apd.co.nz		

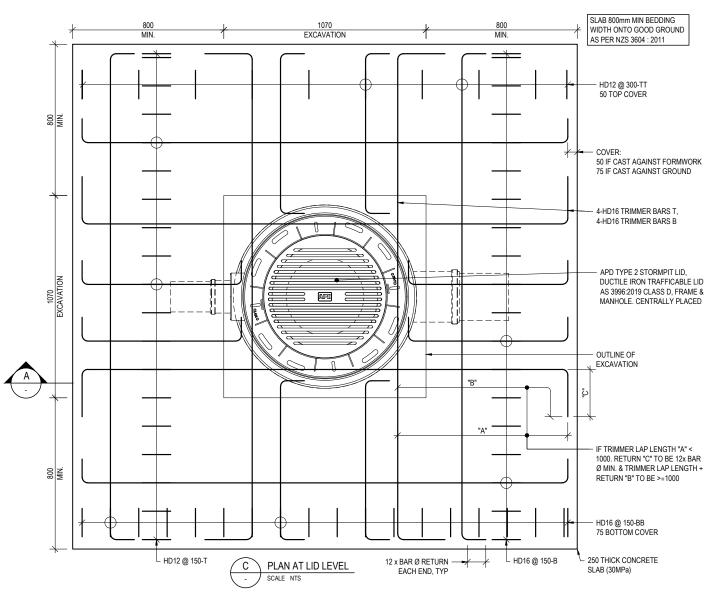


NOTES:			
CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK			
CONTRACTOR TO FOLLOW MATERIAL SPECIFICATION AND LIMITS OF LOCATION WITH RELATION TO STRUCTURES AND RETAINING WALLS			
CONTRACTOR TO NOTIFY A CHARTERED PROFESSIONAL ENGINEER IF ANY OF THE DESIGN REQUIREMENTS OUTLINED IN THIS DRAWING PACKAGE ARE NOT ACHIEVEABLE			
DEFINITIONS: UNO - UNLESS NOTED OTHERWISE			
REFER TO STRUCTURAL SPECIFICATION SHEET FOR CONCRETE REINFORCING AND OTHER NOTES			
SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/M/022 2014 SECTION 3.2 AND D1.			
MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE			
CONTACT APD. CONTRACTOR AND TANK OWNER TO ENSURE TANK			
IS PLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120kN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.			
FOR CONSENT 31-01-24 1			
I OR CONCENT DIFORCE I REVISION: DATE: No.: JOB TITLE:			
UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS)			
INSTALLATION OF APD 700 & 1000 LTR			
· · · · · · · · · · · · · · · · · · ·			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT ADRESS: ALL NEW ZEALAND LOCATIONS DRAWING TITLE: 1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The Information contained in this drawing is the sole property of APD			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT ADDRESS: ALL NEW ZEALAND LOCATIONS DRAWING TITLE: 1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT ADRESS: ALL NEW ZEALAND LOCATIONS DRAWING TITLE: 1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing belong to APD LTD. Instantion contained in this drawing belong to APD LTD. ORIGINAL SHEET SZE: A3 JOB No: DT-02 DRAWING RCE DATE: SEP 2023			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT ADRESS: ALL NEW ZEALAND LOCATIONS DRAWING TITLE: 1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing is the sole property of APD LTD, is contidential, may only be used for the purpose issued and rot be divulged to thind partice, copied or reproduced in any way. All intellecula property diffs pertaining to this drawing belong to APD LTD. ORIGINAL SHEET JZE: A3 JOB NO: DT-02 DRAWINE RCE DATE: SEP 2023 DESIGN: AG REVISION NO: 1			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT ADRESS: ALL NEW ZEALAND LOCATIONS DRAWING TITLE: 1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing belong to APD LTD. indifficult partice, copied or reproduced and not be divulged to thing partice, copied or reproduced and not be divulged to thing partice, copied or reproduced in any way. All indifficult partice, copied oreproduced in any way			
INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT ADRESS: ALL NEW ZEALAND LOCATIONS DRAWING TITLE: 1000 LTR PUMPSTATION UNDER COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS H2 The information contained in this drawing is the sole property of APD LTD, is contidential, may only be used for the purpose issued and rot be divulged to thind partice, copied or reproduced in any way. All intellecula property diffs pertaining to this drawing belong to APD LTD. ORIGINAL SHEET JZE: A3 JOB NO: DT-02 DRAWINE RCE DATE: SEP 2023 DESIGN: AG REVISION NO: 1			





NON-EXPANSIVE SOILS



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'. 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):

- 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. SUBCLAUSE (1) OF THIS REGULATION DOES NOT APPLY WHERE:
- THE FACE IS CUT BACK TO A SAFE SLOPE; OR
- THE MATERIAL IN THE FACE IS OF PROVEN GOOD STANDING QUALITY UNDER ALL REASONABLY FORESEEABLE CONDITIONS OF WORK AND WEATHER; OR
- 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 C)
- THE PROVISION OF SHORING IS IMPRACTICABLE OR UNREASONABLE BY REASON OF d) 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 PF SHORING USED IN ANY EXCAVATION
- a) CONSISTS OF MATERIALS THAT ARE ARE TO BE USED, OF SOUND QUALIT PARTICULAR USE; AND
- HAS BRACING'S, JACKS, AND STRUTS ACCIDENTAL DISPLACEMENT, AND P b)
- OR SPIKES; AND IS PLACED IN A PROPER MANNER BY c)
- COMPETENT SUPERVISION; AND IS NOT ALTERED, DISMANTLED, OR d) OF THE EMPLOYER OR A REPRESEN

BACKFILL AND BASECOURSE:

BACKFILL AND BASECOURSE MATERIAL TO

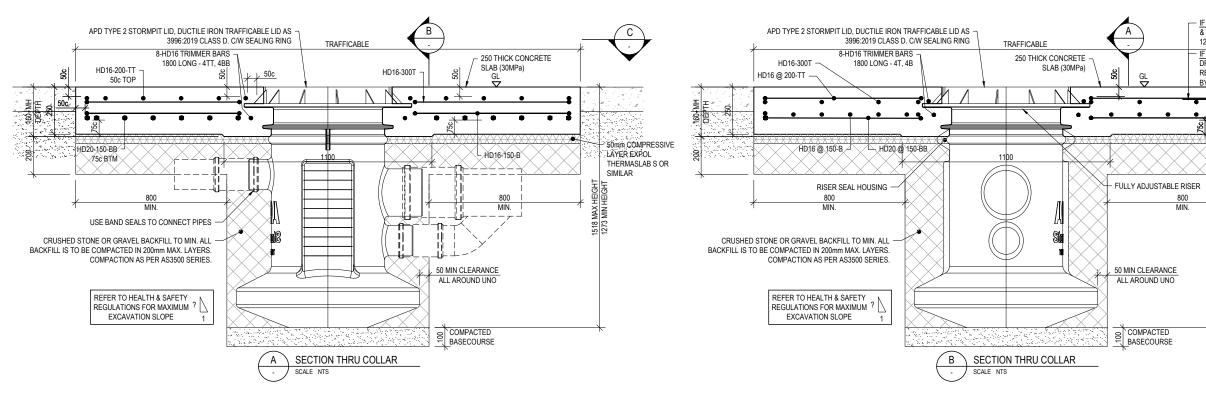
CRUSHED STONE OR GRAVEL: WASHED, WI 20mm WITH NO MORE THAN 5% PASSING A THAN 1500 Kg / CUBIC METRE. APPROVED NATIVE SOILS AND SHOULD ALWAYS BE BE CROWN LEVEL. THE USE OF NON-SPECIFIEI FAILURE, GAP20 IS ACCEPTABLE.

OR IF CRUSHED STONE OR GRAVEL IS NOT MIX OF NATURALLY ROUNDED GRAVEL: CLEAN NAT SIZES NO LARGER THAN 19mm WITH NO MC

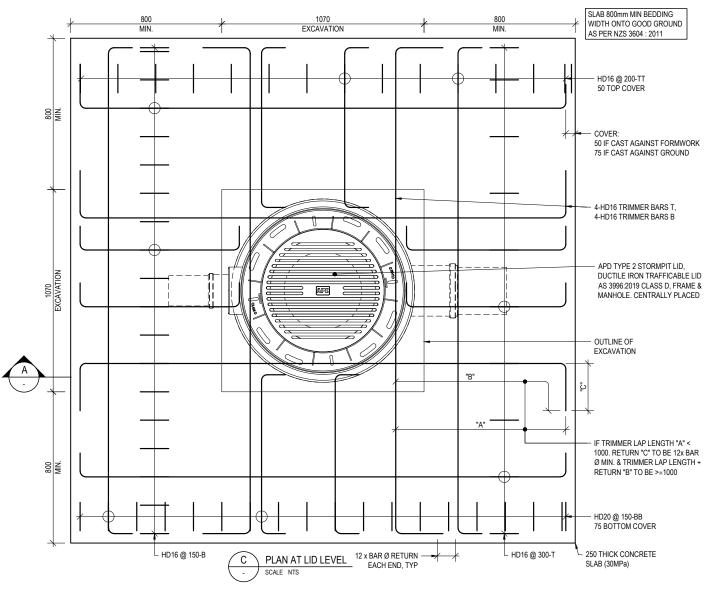
DENSITY MUST NOT BE LESS THAN 1500 Kg

THE CONTRACTOR IS TO WORK IN MAXIMU THE CONTRACTOR TO USE LONG HANDLED UNDER THE ENTIRE LENGTH OF THE TANK / SHOULD BE FILLED TO ENSURE ADEQUATE

DRIVEWAY IS EXISTING: SCABBLE EDGES AND DRILL EPOXY D12 STARTERS @ 400CRS WITH EPCON C6, 10 EMBEDMENT, LAP 600. DRIVEWAY IS NÉW: LAP TANK TOPPING STEEL WITH RIVEWAY REINFÖRCEMENT, FULL LAP LENGTH EQD. (REFER GENERAL NOTES) DRIVEWAY DESIGN	CONTRACTOR TO CONFIRM ALL LEVELS AND			
Y OTHERS TO LOCAL AUTHORITY STANDARD.	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			
1273 MN HEIGHT	REFER TO STRUCTURAL SPECIFICATION SHEET FOR CONCRETE REINFORCING AND OTHER NOTES			
1518 M 1273 M	SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/M/022 2014 SECTION 3.2 AND D1.			
	MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE CONTACT APD.			
\	CONTRACTOR AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120KN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.			
RACTICABLE STEPS TO ENSURE THAT ANY AT THE PLACE OF WORK:				
E SUITABLE FOR THE PURPOSE FOR WHICH THEY TY, AND ADEQUATE STRENGTH FOR THE				
S THAT ARE SECURELY HELD TO PREVENT PACKING'S AND WEDGES THAT ARE HELD BY NAILS				
YA BY AN EXPERIENCED PERSON UNDER				
NTERFERED WITH EXCEPT ON THE INSTRUCTIONS ITATIVE OF THE EMPLOYER.	FOR CONSENT 31-01-24 1 REVISION: DATE: No.: JOB TITLE:			
	UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS)			
BE EITHER:	INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT			
ITH ANGULAR PARTICLE SIZES NO LARGER THAN x.2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS BACKFILL SHOULD NOT BE MIXED WITH SAND OR ROUGHT UP TO AT LEAST 150MM ABOVE TANK	ADDRESS: ALL NEW ZEALAND LOCATIONS			
D BACKFILL MATERIAL COULD RESULT IN TANK	TYPE 2 STORMPIT UNDER COMMERCIAL DRIVEWAY - NON-			
AVAILABLE, THEN SPECIFIC QUARRY AGGREGATE	EXPANSIVE SOILS The information contained in this drawing is the sole property of APD LTD, is confidential, may only be used for the purpose issued and not			
TURALLY ROUNDED AGGREGATE WITH PARTICLE DRE THAN 5% PASSING A 2.36mm SIEVE. DRY) / CUBIC METRE.	be drulged to third parties, copied or reproduced in any way. All intellectual property rights pertaining to this drawing belong to APD LTD. ORIGINAL SHEET SIZE: A3 JOB No: DT-02			
M BACKFILL LIFTS OF 200mm. AFTER EACH LIFT, D PROBE TO WORK THE BACKFILL MATERIAL AND WITHIN ANY RIBS. ALL VOIDS AND SPACES	DATE: SEP 2023 P 3-C D-09 DESIGN: AG REVISION No: 1			
SUPPORT OF TANK.				
	APD LTD 49 McLaughlins Road, Wiri, Auckland, New Zealand TEL: 00 64 9 263 7741 www.apd.co.nz			



EXPANSIVE SOILS UP TO CLASS M



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'. 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):

- 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. SUBCLAUSE (1) OF THIS REGULATION DOES NOT APPLY WHERE: 2)
- THE FACE IS CUT BACK TO A SAFE SLOPE; OR
- THE MATERIAL IN THE FACE IS OF PROVEN GOOD STANDING QUALITY UNDER ALL REASONABLY FORESEEABLE CONDITIONS OF WORK AND WEATHER; OR
- 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 C)
- THE PROVISION OF SHORING IS IMPRACTICABLE OR UNREASONABLE BY REASON OF d) 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 PF SHORING USED IN ANY EXCAVATION
- a) CONSISTS OF MATERIALS THAT ARE ARE TO BE USED, OF SOUND QUALIT PARTICULAR USE; AND
- HAS BRACING'S, JACKS, AND STRUTS ACCIDENTAL DISPLACEMENT, AND P b) OR SPIKES; AND IS PLACED IN A PROPER MANNER BY
- c)
- COMPETENT SUPERVISION; AND IS NOT ALTERED, DISMANTLED, OR d) OF THE EMPLOYER OR A REPRESEN

BACKFILL AND BASECOURSE:

BACKFILL AND BASECOURSE MATERIAL TO

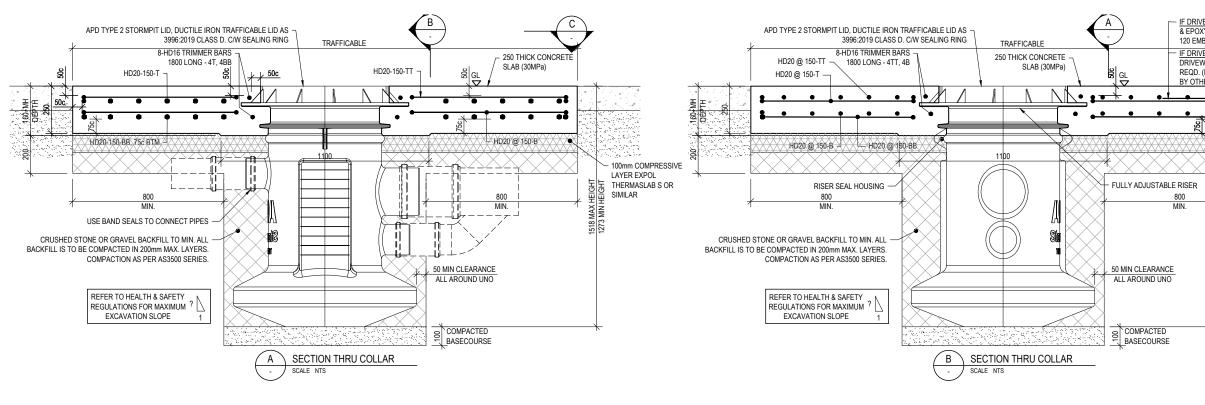
CRUSHED STONE OR GRAVEL: WASHED, WI 20mm WITH NO MORE THAN 5% PASSING A THAN 1500 Kg / CUBIC METRE. APPROVED B NATIVE SOILS AND SHOULD ALWAYS BE BE CROWN LEVEL. THE USE OF NON-SPECIFIEI FAILURE, GAP20 IS ACCEPTABLE.

OR IF CRUSHED STONE OR GRAVEL IS NOT MIX OF NATURALLY ROUNDED GRAVEL: CLEAN NAT SIZES NO LARGER THAN 19mm WITH NO MC

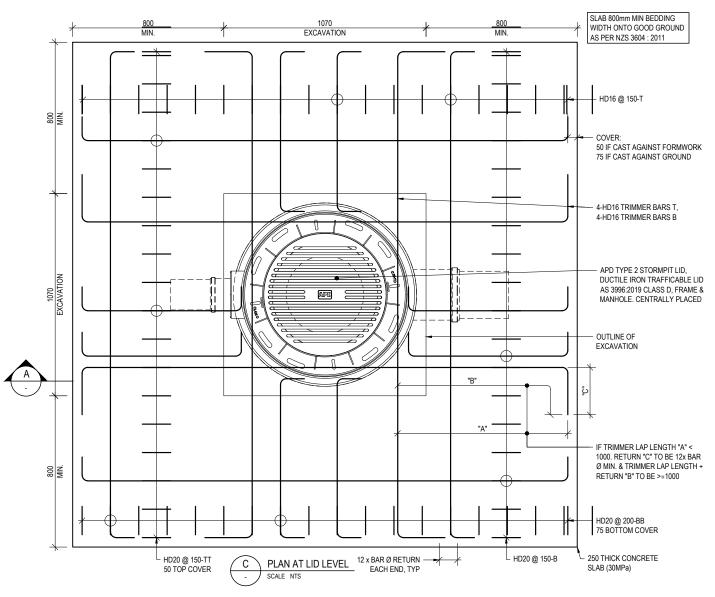
DENSITY MUST NOT BE LESS THAN 1500 Kg

THE CONTRACTOR IS TO WORK IN MAXIMUN THE CONTRACTOR TO USE LONG HANDLED UNDER THE ENTIRE LENGTH OF THE TANK A SHOULD BE FILLED TO ENSURE ADEQUATE

DRIVEWAY IS EXISTING: SCABBLE EDGES AND DRILL	NOTES:		
EPOXY D12 STARTERS @ 400CRS WITH EPCON C6, 0 EMBEDMENT, LAP 600. <u>DRIVEWAY IS NÉW:</u> LAP TANK TOPPING STEEL WITH RIVEWAY REINFÖRCEMENT, FULL LAP LENGTH COL, (REFER GENERAL NOTES) DRIVEWAY DESIGN COLIFECT COLOR MUTICICITY CONTROL	CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK		
/ OTHERS TO LOCAL AUTHORITY STANDARD.	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		
50mm COMPRESSIVE LAYER EXPOL	DEFINITIONS: UNO - UNLESS NOTED OTHERWISE		
	REFER TO STRUCTURAL SPECIFICATION SHEET FOR CONCRETE REINFORCING AND OTHER NOTES		
	SLAB DESIGNED FOR HN LOADS AS PER NZTA BRIDGE MANUAL SP/M/022 2014 SECTION 3.2 AND		
	D1. MANHOLE COVER IS DESIGNED FOR MAXIMUM CLASS D, IF CLASS E IS REQUIRED PLEASE		
	CONTACT APD. CONTRACTOR AND TANK OWNER TO ENSURE TANK		
\	ISPLACED IN A POSITION THAT WILL NOT EXCEED: PAIR OF AXLE LOADS OF 120kN EACH. TRAFFIC COUNT LESS THAN 100 VEHICLES PER DAY & LOW SPEED ZONES.		
RACTICABLE STEPS TO ENSURE THAT ANY AT THE PLACE OF WORK:			
SUITABLE FOR THE PURPOSE FOR WHICH THEY IY, AND ADEQUATE STRENGTH FOR THE			
S THAT ARE SECURELY HELD TO PREVENT ACKING'S AND WEDGES THAT ARE HELD BY NAILS			
A BY AN EXPERIENCED PERSON UNDER			
NTERFERED WITH EXCEPT ON THE INSTRUCTIONS ITATIVE OF THE EMPLOYER.	FOR CONSENT 31-01-24 1 REVISION: DATE: No.: JOB TITLE:		
	UNDER COMMERCIAL DRIVEWAY (AXLE LOAD 120kN OR LESS)		
BE EITHER:	INSTALLATION OF APD 700 & 1000 LTR PUMPSTATION & TYPE 2 STORMPIT		
ITH ANGULAR PARTICLE SIZES NO LARGER THAN 2.36mm SIEVE. DRY DENSITY MUST NOT BE LESS BACKFILL SHOULD NOT BE MIXED WITH SAND OR	ADDRESS: ALL NEW ZEALAND LOCATIONS		
OUGHT UP TO AT LEAST 150MM ABOVE TANK D BACKFILL MATERIAL COULD RESULT IN TANK			
AVAILABLE, THEN SPECIFIC QUARRY AGGREGATE	COMMERCIAL DRIVEWAY -EXPANSIVE SOILS UP TO CLASS M		
TURALLY ROUNDED AGGREGATE WITH PARTICLE DRE THAN 5% PASSING A 2.36mm SIEVE. DRY	The information contained in this drawing is the sole property of APD LTD, is confidential may only be used for the purpose issued and not be divulged to third parties, copied or reproduced in any way. All intellectual property rights pertaining to this drawing belong to APD LTD. ORIGNAL SHEET SIZE: A3 JOB No. DT-02		
	DRAWIN: RCE DRAWING No: PS-CD-10		
M BACKFILL LIFTS OF 200mm. AFTER EACH LIFT, D PROBE TO WORK THE BACKFILL MATERIAL AND WITHIN ANY RIBS. ALL VOIDS AND SPACES	DESIGN: AG REVISION No: 1		
SUPPORT OF TANK.	CHECKED: SCALE: NTS NTS		
	АРР		
	APD LTD 49 Mcl aughlins Road, Wiri, Augkland		
	49 McLaughlins Road, Wiri, Auckland, New Zealand TEL: 00 64 9 263 7741		
	www.apd.co.nz		



EXPANSIVE SOILS UP TO CLASS H2



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'. 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):

- 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. SUBCLAUSE (1) OF THIS REGULATION DOES NOT APPLY WHERE: 2)
- THE FACE IS CUT BACK TO A SAFE SLOPE; OR
- THE MATERIAL IN THE FACE IS OF PROVEN GOOD STANDING QUALITY UNDER ALL REASONABLY FORESEEABLE CONDITIONS OF WORK AND WEATHER; OR
- 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 C)
- THE PROVISION OF SHORING IS IMPRACTICABLE OR UNREASONABLE BY REASON OF d) 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 PF SHORING USED IN ANY EXCAVATION
- a) CONSISTS OF MATERIALS THAT ARE ARE TO BE USED, OF SOUND QUALIT PARTICULAR USE; AND
- HAS BRACING'S, JACKS, AND STRUTS ACCIDENTAL DISPLACEMENT, AND P OR SPIKES; AND IS PLACED IN A PROPER MANNER BY
- c)
- COMPETENT SUPERVISION; AND IS NOT ALTERED, DISMANTLED, OR d)

BACKFILL AND BASECOURSE:

BACKFILL AND BASECOURSE MATERIAL TO

CRUSHED STONE OR GRAVEL: WASHED, WI 20mm WITH NO MORE THAN 5% PASSING A THAN 1500 Kg / CUBIC METRE. APPROVED NATIVE SOILS AND SHOULD ALWAYS BE BE CROWN LEVEL. THE USE OF NON-SPECIFIEI FAILURE, GAP20 IS ACCEPTABLE.

OR IF CRUSHED STONE OR GRAVEL IS NOT MIX OF NATURALLY ROUNDED GRAVEL: CLEAN NAT SIZES NO LARGER THAN 19mm WITH NO MC

DENSITY MUST NOT BE LESS THAN 1500 Kg THE CONTRACTOR IS TO WORK IN MAXIMU THE CONTRACTOR TO USE LONG HANDLED UNDER THE ENTIRE LENGTH OF THE TANK / SHOULD BE FILLED TO ENSURE ADEQUATE

A	- IF DRIVEWAY IS EXISTING: S		NOTES:	
	& EPOXY D12 STARTERS @ 120 EMBEDMENT, LAP 600. IF DRIVEWAY IS NEW: LAP T DRIVEWAY REINFORCEMEN REQD. (REFER GENERAL NO PY OTHERS TO LOCAL WITH	ANK TOPPING STEEL WITH T, FULL LAP LENGTH DTES) DRIVEWAY DESIGN	CONTRACTOR TO CONFIRM A DIMENSIONS AND LOCATE AN SERVICES & DRAINS ON SITE COMMENCING WORK	ND MARK ALL
	BY OTHERS TO LOCAL AUTH		CONTRACTOR TO FOLLOW M. SPECIFICATION AND LIMITS C RELATION TO STRUCTURES A	OF LOCATION WITH
		100mm COMPRESSIVE	CONTRACTOR TO NOTIFY A C PROFESSIONAL ENGINEER IF REQUIREMENTS OUTLINED IN PACKAGE ARE NOT ACHIEVED	ANY OF THE DESIGN N THIS DRAWING
FULLY ADJUSTABI	E RISER		DEFINITIONS: UNO - UNLESS NOTED OT REFER TO STRUCTURAL SPE	-
	MIN. 1	1273 MIN HEIG	FOR CONCRETE REINFORCIN SLAB DESIGNED FOR HN LOA BRIDGE MANUAL SP/M/022 20	ADS AS PER NZTA
50 MIN CLEARANC			D1. MANHOLE COVER IS DESIGNE CLASS D, IF CLASS E IS REQU	
)		CONTACT APD. CONTRACTOR AND TANK OW IS PLACED IN A POSITION TH/	
		¥	PAIR OF AXLE LOADS OF 120 COUNT LESS THAN 100 VEHIC SPEED ZONES.	
	AKE ALL PRACTICABLE STEPS			
	THAT ARE SUITABLE FOR THE			
HAS BRACING'S, JACKS, A ACCIDENTAL DISPLACEM OR SPIKES; AND		GES THAT ARE HELD BY NAILS		
COMPETENT SUPERVISIO IS NOT ALTERED, DISMAN		XCEPT ON THE INSTRUCTIONS	FOR CONSENT REVISION:	31-01-24 1 DATE: No.:
FILL AND BASECOU	IRSE:		UNDER COMMERCIAI	
ILL AND BASECOURSE MA			INSTALLATION OF AF PUMPSTATION & TYP	
NITH NO MORE THAN 5 1500 kg / CUBIC METRE. AF E SOILS AND SHOULD ALW N LEVEL. THE USE OF NOM	/ASHED, WITH ANGULAR PARTI PASSING A 2.36mm SIEVE. DRY PROVED BACKFILL SHOULD N AYS BE BROUGHT UP TO AT LE I-SPECIFIED BACKFILL MATERI	DENSITY MUST NOT BE LESS OT BE MIXED WITH SAND OR EAST 150MM ABOVE TANK	ADDRESS: ALL NEW ZEALAND LU DRAWING TITLE: TYPE 2 STORMPIT UN	NDER
RE. GAP20 IS ACCEPTABLE CRUSHED STONE OR GRA		PECIFIC QUARRY AGGREGATE	COMMERCIAL DRIVE SOILS UP TO CLASS	H2
NO LARGER THAN 19mm V	CLEAN NATURALLY ROUNDED /ITH NO MORE THAN 5% PASSII AN 1500 Kg / CUBIC METRE.		The information contained in this drawing LTD, is confidential, may only be used for be divulged to third parties, copied or reg intellectual property rights pertaining to ti ORIGINAL SHEET SIZE: A3 JOB No: D7	T-02
ONTRACTOR TO USE LONG	IN MAXIMUM BACKFILL LIFTS O G HANDLED PROBE TO WORK T THE TANK AND WITHIN ANY RIE	HE BACKFILL MATERIAL	DRAWN: RCE DRAWING N DATE: SEP 2023 DESIGN: AG REVISION N CHECKED: SCALE: NT	1
	ADEQUATE SUPPORT OF TANK			
			APD LTD 49 McLaughlins Road, Wiri, Auck New Zealand TEL: 00 64 9 263 7741 www.apd.co.nz	kland,