

WHENUAPAI-REDHILLS WASTEWATER SERVICING
BRIGHAM CREEK ROAD, WHENUAPAI
INTERIM SLAUGHTERHOUSE PS - WASTEWATER GRAVITY PIPE

DRAWING No		DRAWING TITLE	REVISION
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DETAILED DESIGN
NOT FOR CONSTRUCTION

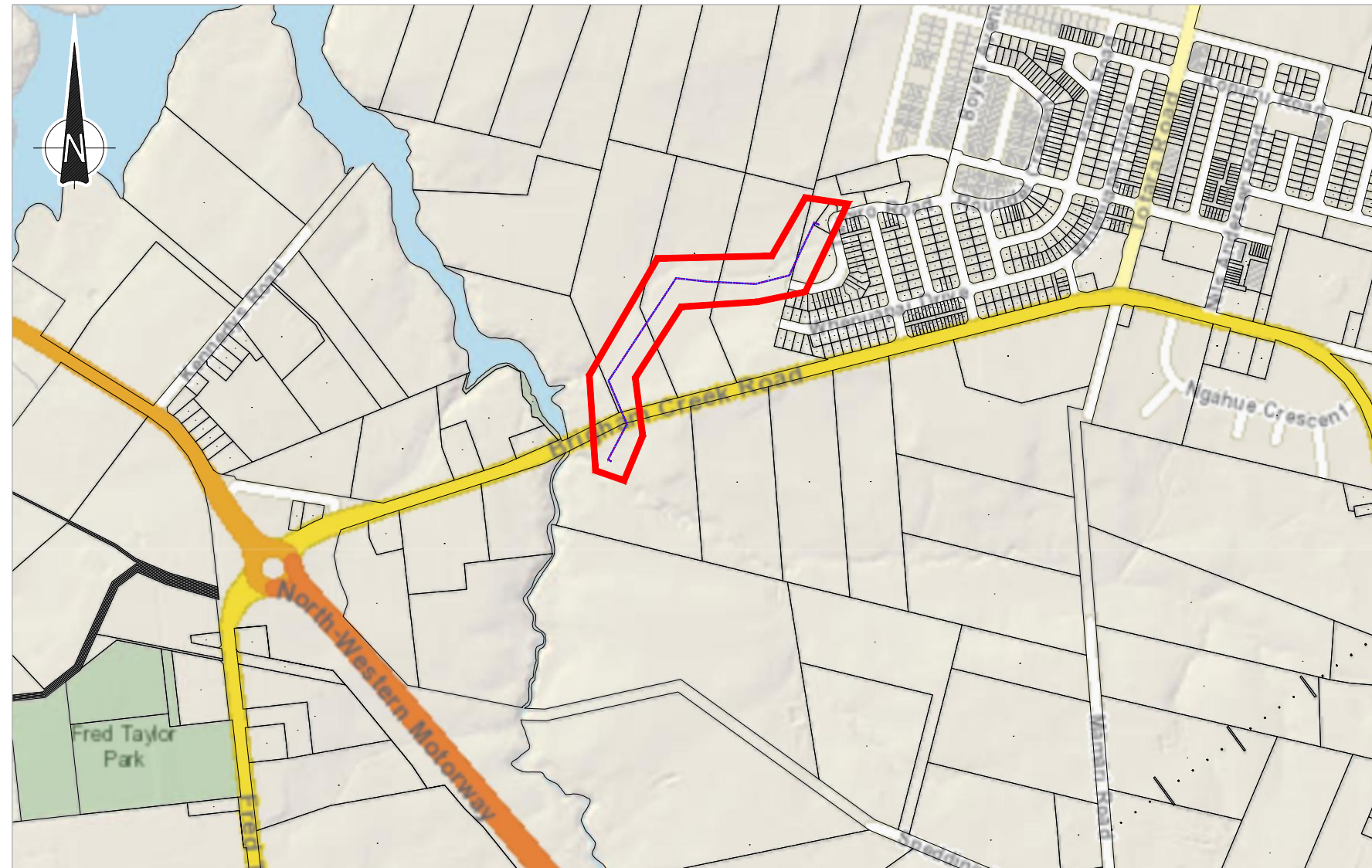
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WHENUAPAI-REDHILLS WASTEWATER SERVICING
BRIGHAM CREEK ROAD, WHENUAPAI
INTERIM SLAUGHTERHOUSE PS - WASTEWATER GRAVITY PIPE - DRAWING INDEX



CAD FILE	R0017910.001	DATE	15-12-21
ORIGINAL SCALE	A3	CONTRACT No.	6484-6934
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WHENUAPAI-REDHILLS WASTEWATER SERVICING BRIGHAM CREEK ROAD, WHENUAPAI INTERIM SLAUGHTERHOUSE PS – WASTEWATER GRAVITY PIPE



LOCALITY PLAN
NOT TO SCALE

DETAILED DESIGN
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						WSL DESIGN MGMT.					DWG No.	R0017910.002	ISSUE	1
1	12-21	ISSUED FOR DETAILED DESIGN			D.X.	WSL PROJ. LEAD			WHENUAPAI-REDHILLS WASTEWATER SERVICING BRIGHAM CREEK ROAD, WHENUAPAI INTERIM SLAUGHTERHOUSE PS – WASTEWATER GRAVITY PIPE – LOCATION PLAN					
ISSUE	DATE	AMENDMENT			BY	APPD.	BY	DATE						

THE SCOPE OF EARTHWORK SPECIFICATION RELATES ONLY TO EXCAVATION/BACKFILL WITHIN OPEN TRENCH WORKS, SURROUNDING MANHOLES, AND THE BACKFILL TO ORIGINAL CONDITIONS/DESIGN REQUIRED PROFILE.

1. SITE VERIFICATION

THE CONTRACTOR SHALL BE DEEMED TO HAVE REVIEWED THE GEOTECHNICAL FACTUAL REPORT AND HAVE READ AND UNDERSTOOD THE INFERRED GROUND CONDITIONS.

2. SITE MANAGEMENT PLAN

THE CONTRACTOR SHALL PREPARE AN EARTHWORKS MANAGEMENT PLAN PRIOR TO THE COMMENCEMENT OF WORKS AND INCLUDING EROSION AND SEDIMENT CONTROL AND DUST CONTROL. THE MANAGEMENT PLAN SHOULD MAKE REFERENCE TO LOCAL AUTHORITY REQUIREMENTS. THIS PLAN SHALL BE SUBMITTED TO THE LOCAL AUTHORITY AND APPROVED PRIOR TO COMMENCING ANY EARTHWORKS.

3. PRIOR TO COMMENCEMENT OF CONSTRUCTION

EXISTING SERVICES

BEFORE COMMENCEMENT OF EXCAVATION, THE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF THE EXISTING SERVICES WITHIN THE WORK AREAS OR AREAS LIKELY TO BE AFFECTED BY THE WORK AND DRAINAGE FOR THEIR CONNECTION AND DIVERSION.

INSTRUCTIONS OR INFORMATION GIVEN TO THE CONTRACTOR BY THE ENGINEER OR SHOWN ON THE DRAWINGS, SHALL IN NO WAY RELEASE HIM FROM LIABILITIES UNDER THIS CLAUSE.

WHEN TRENCHING AND EXCAVATING, CARE IS TO BE TAKEN NOT TO DAMAGE EXISTING DRAINS, WATER MAINS, CABLES, ETC. IF IN SERVICE. SHOULD ANY DAMAGE OCCUR, THE ENGINEER AND LOCAL AUTHORITY SHALL BE NOTIFIED AT ONCE AND THE DAMAGE MADE GOOD.

SURFACE DRAINAGE

TEMPORARY SURFACE DRAINAGE SHALL BE CONSTRUCTED BY THE CONTRACTOR TO MAINTAIN THE NATURAL DRAINAGE AND LIMIT THE INTRODUCTION OF WATER TO THE EARTHWORKS.

4. FILL MATERIAL DEFINITION

GRANULAR FILL

DEFINED AS A WELL GRADED, DURABLE, GRANULAR AGGREGATE WHICH CONTAINS SPECIFIED FINES AND WHICH MEETS SPECIFIED GRADING, STRENGTH, AND DURABILITY CRITERIA AS DEFINED BELOW:

- GRADINGS FOR GAP65, GAP40 AND GAP20 ARE TO CONFORM TO THOSE SPECIFIED IN THE SUMMARY TABLE1
- FREE DRAINING GRANULAR MATERIAL SHALL BE IMPORTED CRUSHED AND GRADED CLEAN MATERIAL, PREFERABLY, WELL GRADED OR UNIFORM, WITH 100% PASSING A 10MM SIEVE, AND 15% PASSING A 0.5MM SIEVE OR OTHER SIMILAR APPROVED.
- IF THE MATERIAL AND GRADING IS NOT SPECIFIED ELSEWHERE, HARDFILL MATERIAL SHALL BE GAP65 MATERIAL OR FILL APPROVED BY THE ENGINEER.

THE CONTRACTOR IS TO SUPPLY THE FOLLOWING DATA RELATED TO THE PROPOSED BACKFILL MATERIALS FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION:

- ADDRESS OF THE SOURCE QUARRY;
- THE GEOLOGICAL DESCRIPTION OF THE PARENT MATERIAL;
- THE CONTRACTOR SHALL PROVIDE A PARTICLE SIZE DISTRIBUTION TEST, COMPACTION TEST AND BROKEN FACE PERCENTAGE TEST RESULTS FROM A REPRESENTATIVE GRAVEL FILL SAMPLE TESTED IN AN INDEPENDENT AND ACCREDITED LABORATORY.
- RESULTS OF COMPACTION TESTS AS SPECIFIED IN NZS 4402:1988 – TEST 4.1.1 OR TEST 4.1.3 ARE TO BE CARRIED OUT ON THE PROPOSED BACKFILL AND THE RESULTS PRESENTED TO THE ENGINEER FOR AGREEMENT PRIOR TO CONSTRUCTION. THESE ARE TO CLEARLY SHOW THE OPTIMUM MOISTURE CONTENT AND MAXIMUM DENSITY ACHIEVED.

BASED ON THE ABOVE DETAILS, THE CONTRACTOR IS TO AGREE THE METHOD OF COMPACTION WITH THE DESIGNER PRIOR TO COMMENCEMENT OF CONSTRUCTION ON SITE.

COHESIVE FILL

DEFINED AS MATERIAL COMPRISED PREDOMINANTLY CLAY AND SILT WITH NON–GRANULAR COMPOSITE.

CLEAN FILL

CLEANFILL MATERIAL IS MATERIAL THAT DOES NOT UNDERGO ANY PHYSICAL, CHEMICAL, OR BIOLOGICAL TRANSFORMATIONS THAT WILL CAUSE ADVERSE ENVIRONMENTAL EFFECTS OR HEALTH EFFECTS ONCE IT IS PLACED IN THE GROUND. CLEANFILL MATERIAL HAS NO POTENTIALLY HAZARDOUS CONTENT AND MUST NOT BE CONTAMINATED BY OR MIXED WITH ANY OTHER NON–CLEANFILL MATERIAL.

UNSUITABLE

DEFINED AS MATERIAL NOT CONSIDERED ACCEPTABLE FOR THE USE AS ENGINEERING FILL WITHIN THE BACKFILL OF THE TRENCH EXCAVATIONS AND/OR ACCESS PLATFORM. THIS WILL COMPRISE:

- OVERLY ORGANIC / ORGANIC MATERIAL / TOPSOIL
- NON–ENGINEERED FILL THAT CANNOT BE RECONDITIONED
- OVERLY SATURATED MATERIAL THAT CANNOT BE RECONDITIONED
- REFUGE/RUBBISH

SITE WON MATERIAL

MATERIAL THAT IS IN–SITU, AND EXCAVATED FOR CONTRACT WORKS. THIS MATERIAL CAN BE CONDITIONED (DRIED, DISCED

AND BLENDED) AND BE PLACED AS PART OF SITE EARTHWORK TO MEET COMPACTION REQUIREMENTS.

ACCEPTABLE MATERIAL

ACCEPTABLE FILL IS TO BE USED FOR EARTHWORKS WHICH COMPRISES THE FOLLOWING MATERIALS LISTED BELOW FOR VARIOUS AREAS. IN ADDITION, MINIMUM STRENGTHS ALSO REQUIRED TO BE ACHIEVED, AS DEFINED IN SECTIONS 8 & 9 OF THIS SPECIFICATION.

a) TRENCH BACKFILL

- CLEAN FILL (COHESIVE), WON 100% FROM SITE AND REUSED/RECONDITIONED
- IMPORTED FILL (COHESIVE), 100% OFFSITE, AND USED
- MIXED/CONDITIONED FILL (COHESIVE), COMPRISING BOTH LOCALLY WON AND IMPORTED (SECTION 7 FOR CONDITIONING NOTES).

b) MANHOLES

CLEAN IMPORTED GRANULAR FILL, GAP65 OR EQUIVALENT (FOR BULK BACKFILLING OF MANHOLE TRENCH EXCAVATIONS ONLY) OR SAND

5. EXCAVATION – PIPE TRENCH AND MANHOLE

GENERAL REQUIREMENTS

- THE BOTTOM OF THE EXCAVATIONS SHALL BE FORMED ON SUITABLE NATURAL MATERIAL AS AGREED BY THE CONTRACTOR AND ENGINEER, AND BE SUITABLY SHORED IF NEEDED TO ALLOW HORIZONTAL PLACEMENT OF FILL. THE ENGINEER MAY REQUIRE ADDITIONAL EXCAVATION TO REMOVE ANY POCKETS OF SOFT SOIL, UNSUITABLE MATERIAL, OR LOOSE ROCK.
- TRENCH EXCAVATION SHOULD BE STAGED. MAXIMUM EXCAVATION OF TRENCH EXCAVATION SHOULD BE NO MORE THAN 10 M IN LENGTH EACH STAGE.
- EXCAVATION FOR THE PARTICULAR SECTION OF OPEN TRENCH WORK SHALL NOT COMMENCE UNTIL THE CORRESPONDING ADJACENT SECTION OF IN–GROUND RETAINING WALL HAS BEEN CONSTRUCTED AND A MINIMUM OF 7 DAYS HAS LAPSED SINCE THE CONCRETE HAS BEEN POURED
- THE EXCAVATIONS SHALL BE KEPT FREE OF WATER.
- NO WORK SHALL BE CARRIED OUT UPON PREPARED EXCAVATION SURFACES UNTIL THE ENGINEER HAS APPROVED THE PREPARED SURFACES.
- TEMPORARY AND PERMANENT CUT SLOPES SHALL BE ADEQUATELY PROTECTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EFFECT OR DAMAGE THE TEMPORARY WORKS MAY HAVE UPON OR WHICH MAY BE CAUSED TO THE WORKS, ANY EXISTING STRUCTURES OR ANY SURROUNDING PROPERTY AND FOR ANY EFFECT OR DAMAGE THAT MAY BE CAUSED BY THE EXCAVATION OR DISPOSAL OF EXCAVATED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LANDSLIPS IN THE EXCAVATION AND ANY INJURIOUS EFFECTS CAUSED THEREBY AND SHALL MAKE GOOD ALL SUCH DAMAGE WHETHER TO THE WORKS, THE ADJOINING PROPERTY OR ADJACENT STRUCTURES TO THE SATISFACTION OF THE ENGINEER AND / OR LOCAL REGULATORY AUTHORITY.
- THE CONTRACTOR SHALL EMPLOY ONLY THOSE PLANT AND WORKING METHODS WHICH ARE SUITED TO THE MATERIALS TO BE HANDLED AND TRAVERSED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE NATURE OF THE SUITABLE MATERIAL SO THAT WHEN IT IS PLACED AND COMPACTED IT REMAINS ACCEPTABLE.

EXCAVATION IN SOIL, NON ENGINEERED FILL AND ROCK

THE CONTRACTOR SHALL ACCOUNT FOR ALL MATERIALS ENCOUNTERED, THAT COULD REASONABLY BE ANTICIPATED FROM THE GEOTECHNICAL INFORMATION PROVIDED. THIS SHALL INCLUDE VARIABLE MATERIAL IN THE NON–ENGINEERED FILL.

EXCAVATION SUPPORT

THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT WHERE NECESSARY. AS A MINIMUM, IT IS EXPECTED THAT ANY PROPOSED TRENCH IS PROTECTED BY TRENCH SHIELDS DURING EXCAVATION AND ALL PROPOSED MANHOLE / LAUNCH–RETRIEVAL SHAFTS BE SUPPORTED BE ADEQUATE STEEL RING CAISSONS. .

ALTERNATIVE SUPPORT MAY BE PROVIDED BY THE CONTRACTORS ENGINEER, SUBJECT TO PRIOR APPROVAL / VERIFICATION FROM THE DESIGN ENGINEER.

6. FILL CONDITIONING

FOR COHESIVE FILL, IN THE EVENT THAT SITE WON MATERIAL OR IMPORTED MATERIAL IS OVERLY SATURATED, REQUIRES BLENDING, OR DOES NOT DISPLAY SUFFICIENT PLASTICITY FOR ACHIEVING PROPER COMPACTION, THE CONTRACTOR MAY CONSIDER CONDITIONING OF THE MATERIAL PRIOR TO PLACEMENT AS ACCEPTABLE FILL. CONDITIONING INCLUDING SPECIFIC METHODOLOGIES SHOULD BE DISCUSSED AND AGREED BY THE CONTRACTOR AND THE DESIGNER AS REQUIRED, AT THE TIME.

7. PLACEMENT AND COMPACTION OF FILL – TRENCH AND MANHOLE EXCAVATION

- THE GENERAL PRINCIPLE TO BE ACHIEVED IN BACKFILLING OF THE TRENCH IS TO MAINTAIN AS BEST AS PRACTICAL THE ORIGINAL PERMEABILITY OF THE SOILS BELOW THE SLOPE. APPROVED LOCALLY WON MATERIAL, IMPORTED OR BLENDED MATERIAL MAY BE USED.
- PIPE BEDDING REQUIREMENTS SHOULD BE FOLLOWED AS PER PIPE DESIGN AND AS SPECIFIED ON DRAWING R0017910.010.

FOR TRENCH BACKFILL WORKS:

- MATERIAL TO COMPRISE COHESIVE, PREFERABLY LOCALLY WON, IMPORTED OR BLENDED (AT THE DIGRESSION OF THE DESIGN ENGINEER).
- RECONDITIONING OF LOCALLY WON MATERIAL OK, PROVIDED SITE PLATEAU TESTING AND/OR LABORATORY TESTING OF SAMPLE CAN BE PERFORMED AND PROVIDED BY CONTRACTOR

- PLACEMENT OF FILL IN LOOSE LAYERS NOT EXCEEDING 200 MM
- COMPACTION VIA THE USE OF MACHINE PLANT, SUFFICIENTLY WEIGHTED AND WITH A STUDDED SURFACE, I.E. A PAD–FOOT OR EQUIVALENT. FLAT PLATES NOT TO BE USED.
- CARE TO BE TAKEN DURING THE FIRST 1–2 LIFTS ABOVE THE PIPE BEDDING MATERIAL TO AVOID DAMAGE TO THE UNDERLYING PIPE
- COMPACTION OF THE TRENCH BACKFILL SHOULD ACHIEVE THE MINIMUM STRENGTH VALUES (TO BE VERIFIED ON SITE): COMPACTION REQUIREMENTS AS SET OUT BELOW:
 - 5% AIR VOIDS
 - TESTING AT NOMINAL LOCATIONS ALONG TRENCH, AND MINIMUM ONE TEST APPROXIMATELY HALF WAY UP, AND ONE AT FINISH LEVEL.

FOR MANHOLE BACKFILL:

- USE OF APPROPRIATELY SIZED GRANULAR FILL ACCEPTABLE
- TO BE COMPACTED IN LOOSE LAYERS NOT EXCEED TWICE THE AVERAGE PARTICLE DIAMETER
- USE OF VIBRATION COMPACTING EQUIPMENT
- ALTERNATIVELY THE USE OF SAND BACKFILL MAY BE CONSIDERED, IF COMPACTION OF GRANULAR FILL DEEMED IMPRACTICAL WITH THE SITE CONSTRAINTS

8. COMPACTION TESTING

COMPACTION REQUIREMENTS

ONE "SET" OF NUCLEAR DENSOMETER TESTS (WHERE ONE "SET" = 3 INDIVIDUAL TESTS) IS TO BE CARRIED OUT FOR EACH 30M³ OF FILL PLACED. 95% OF THE TESTS CARRIED OUT MUST MEET THE REQUIRED DENSITY SPECIFICATION."

WHERE FIELD TESTS INDICATE THAT THE SPECIFIED STANDARD OF COMPACTION HAS NOT BEEN ACHIEVED, CORRECTIVE ACTION SHALL BE TAKEN TO BRING THE FILL TO THE REQUIRED STANDARD AND AS REQUIRED BY THE ENGINEER. THIS MAY REQUIRE EXCAVATION AND REMOVAL OF THE FAILED FILL.

COMPACTION STANDARDS

AT ANY TIME EITHER PRIOR TO OR DURING THE COURSE OF CONSTRUCTION, THE ENGINEER MAY DIRECT MODIFICATIONS TO THE FOLLOWING COMPACTION CRITERIA, WITH THE OBJECT OF ENSURING THAT THE COMPACTION CRITERIA FOR THE PARTICULAR MATERIALS AND CONDITIONS BEING ENCOUNTERED OR LIKELY TO BE ENCOUNTERED ARE ACHIEVED.

9. FILL CONTROL AND TEST METHODS

GENERAL

NUCLEAR DENSOMETER TESTS WILL BE USED TO DETERMINE THE CLASSIFICATION AND COMPACTION STANDARDS OF FILL MATERIALS. APPROXIMATE TEST METHODS, SUCH AS A HAND SHEAR VANE, MAY BE EMPLOYED TO OBTAIN RAPID INDICATIVE RESULTS, BUT APPROXIMATE METHODS SHALL NOT BE USED FOR ACCEPTANCE PURPOSES WHERE THE ADEQUACY OF MATERIALS, PROCESSING OR WORKMANSHIP IS IN DOUBT OR THE AMOUNT BY WHICH THE TEST RESULT FAILS WITHIN THE CONFIDENCE LIMITS OF THE APPROXIMATE TEST RESULT. NUCLEAR DENSOMETER SHOULD BE COMPLETED IN ACCORDANCE WITH TEST METHOD NZS4407 TEST 4.2.1 AND BE CALIBRATED IN ACCORDANCE WITH TEST 4.2.4 OF NZS4407: 1991 AT A FREQUENCY NOT EXCEEDING 2 YEARS IN AN IANZ ACCREDITED LABORATORY.

PRIOR TO PLACEMENT OF FILL, CONTRACTOR IS TO OBTAIN A SITE SPECIFIC BULK HEAVY COMPACTION TEST FOR EACH REPRESENTATIVE FILL MATERIAL PROPOSED TO BE USED. A MINIMUM OF 1 TEST PER MATERIAL IS REQUIRED. THE TESTING SHALL BE CARRIED OUT BY A IANZ VERIFIED LABORATORY. THE RESULTS SHALL BE PROVIDED TO THE DESIGN ENGINEER FOR REVIEW PRIOR TO COMPACTION COMMENCING.

TABLE 1: GRADING OF MATERIAL								
GAP 65	PERCENTAGE PASSING		GAP40	PERCENTAGE PASSING		GAP20	PERCENTAGE PASSING	
APERTURE SIZE(MM)	LOWER LIMIT	UPPER LIMIT	APERTURE SIZE(MM)	LOWER LIMIT	UPPER LIMIT	APERTURE SIZE(MM)	LOWER LIMIT	UPPER LIMIT
65	100	100	37.5	100	100	19	100	100
37.5	80	90	19	61	80	13.2	80	95
19	50	70	9.5	38	57	9.5	64	76
9.5	30	55	4.75	23	43	4.75	37	48
4.75	20	40	2.36	10	33	2.36	26	36
2.36	15	30	1.18	7	25	1.18	18	28
1.18	10	22	0.6	2	19	0.6	12	22
0.6	6	18	0.3	0	14	0.3	6	14
0.3	4	14	0.15	0	10	0.15	2	7
0.15	2	10	0.075	0	7	0.075	0	3
0.075	0	7						

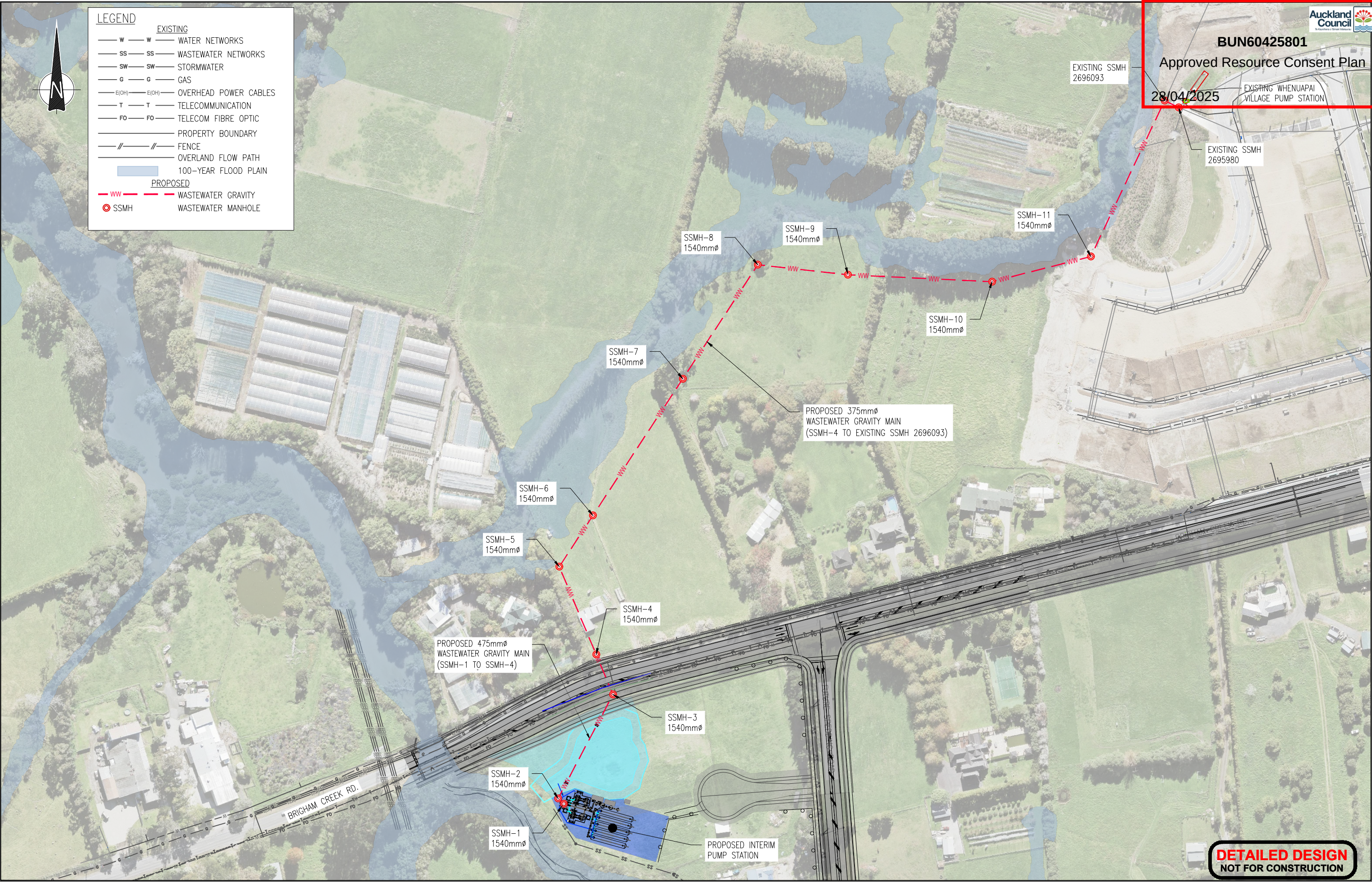
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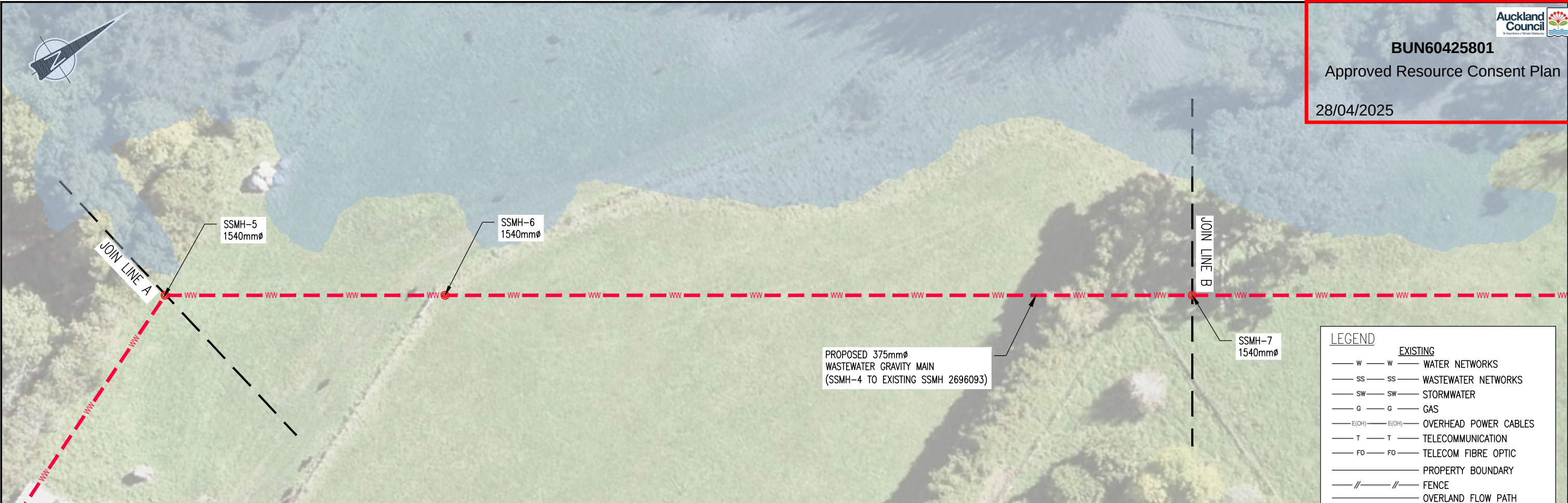
WHENUAPAI–REDHILLS WASTEWATER SERVICING
BRIGHAM CREEK ROAD, WHENUAPAI
INTERIM SLAUGHTERHOUSE PS – GRAVITY MAIN – GENERAL NOTES



CAD FILE	R0017910.003	DATE	10–12–21
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DWG No.	R0017910.003	ISSUE	3



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				DES. APPROVED	SW	12-21		BRIGHAM CREEK ROAD, WHENUAPAI				ORIGINAL SCALE	A3	1:2000	CONTRACT No.	6484-6934
				DRAWN	JC	12-21		INTERIM SLAUGHTERHOUSE PS - WASTEWATER GRAVITY MAIN - GENERAL LAYOUT				REF No.	12508391 3-AWD32			
				DWG. APPROVED	DJ	12-21						DWG No.	R0017910.004			ISSUE
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ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE									



LEGEND

EXISTING

W

W

WATER NETWORKS

SS

SS

WASTEWATER NETWORKS

SW

SW

STORMWATER

G

G

GAS

E(OH)

E(OH)

OVERHEAD POWER CABLES

T

T

TELECOMMUNICATION

FO

FO

TELECOM FIBRE OPTIC

PROPERTY BOUNDARY

//

//

FENCE

OVERLAND FLOW PATH

100-YEAR FLOOD PLAIN

PROPOSED

WW

WW

WASTEWATER GRAVITY

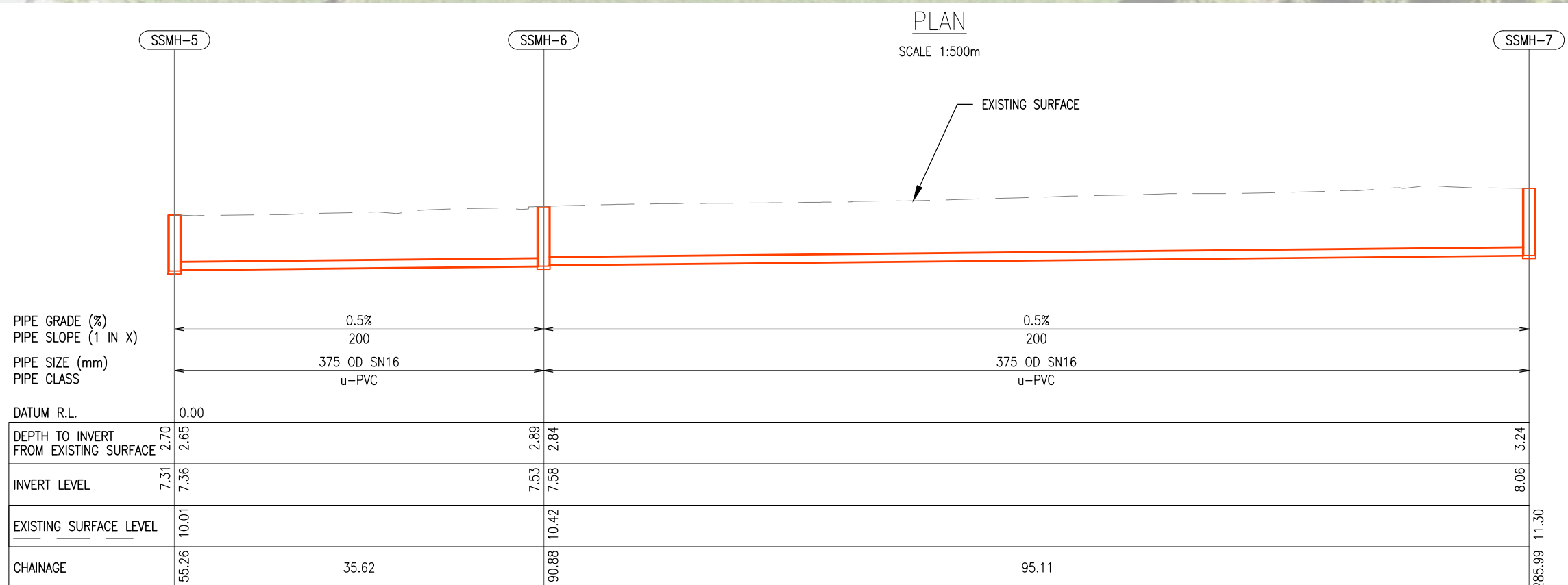
SSMH

SSMH

WASTEWATER MANHOLE

NOTE:

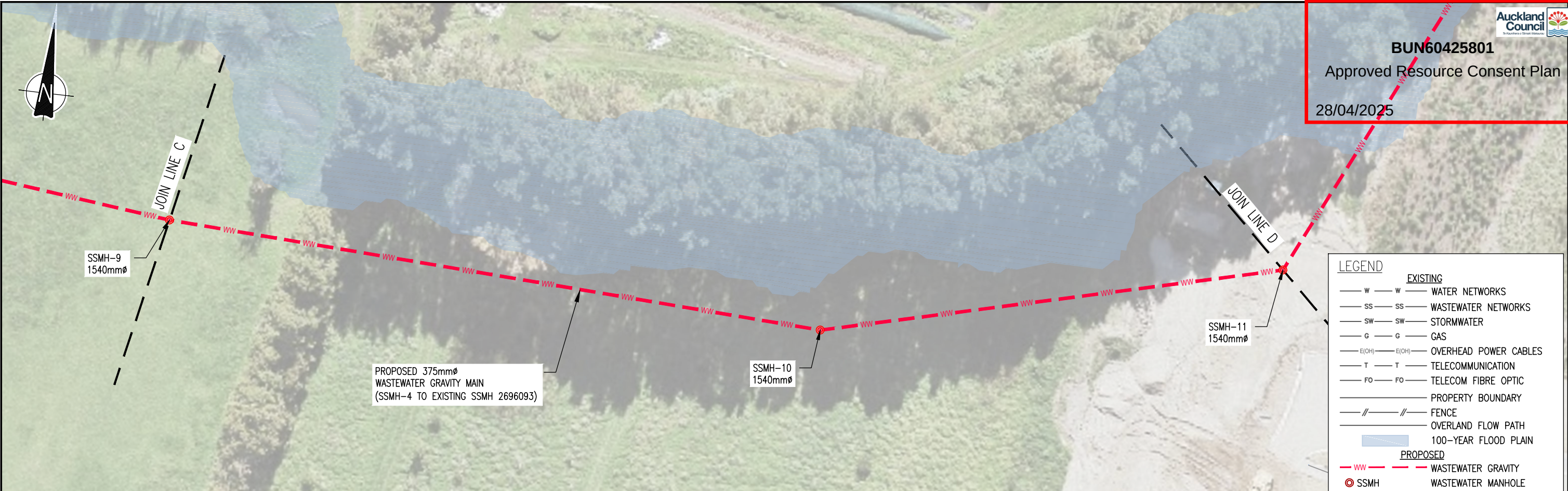
1. 1540MM MANHOLES TO BE IN ACCORDANCE WITH WSL STANDARD DRAWING 2000244.012.



LONG SECTION
SCALE 1:500m(H), 1:250(V)

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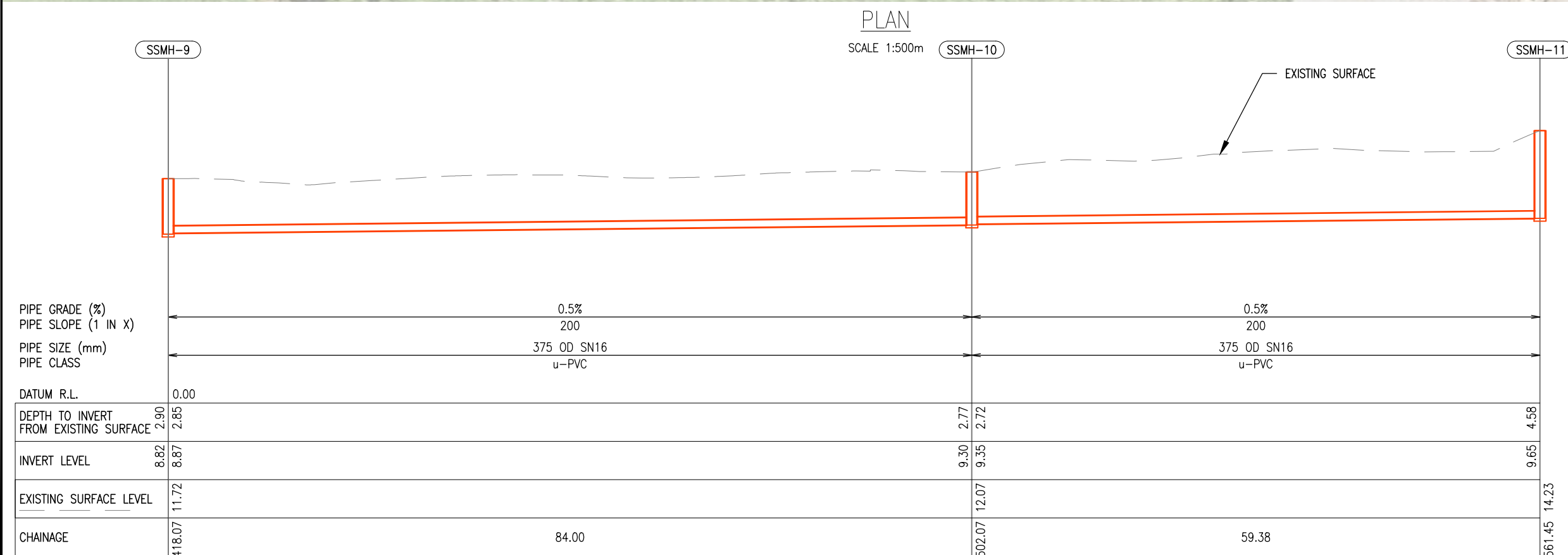
				DESIGNED	PH	12-21		WHENUAPAI-REDHILLS WASTEWATER SERVICING BRIGHAM CREEK ROAD, WHENUAPAI INTERIM SLAUGHTERHOUSE PS - WASTEWATER GRAVITY MAIN PLAN AND LONG SECTION - SHEET 2 OF 5		CAD FILE	R0017910.002	DATE	10-12-21	
				DES. APPROVED	SW	12-21				ORIGINAL SCALE	A3	1:500	CONTRACT No.	6484-6934
				DRAWN	JC	12-21				REF No.	12508391 3-AWD32			
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ISSUE	DATE	AMENDMENT	BY	APPD.		DATE								



BUN60425801
Approved Resource Consent Plan
28/04/2025

LEGEND	
EXISTING	
W	WATER NETWORKS
SS	WASTEWATER NETWORKS
SW	STORMWATER
G	GAS
E(OH)	OVERHEAD POWER CABLES
T	TELECOMMUNICATION
FO	TELECOM FIBRE OPTIC
—	PROPERTY BOUNDARY
//	FENCE
—	OVERLAND FLOW PATH
Blue Area	100-YEAR FLOOD PLAIN
PROPOSED	
WW	WASTEWATER GRAVITY
SSMH	WASTEWATER MANHOLE

NOTE:
1. 1540MM MANHOLES TO BE IN ACCORDANCE WITH WSL STANDARD DRAWING 2000244.012.



PIPE GRADE (%)	0.5%	0.5%
PIPE SLOPE (1 IN X)	200	200
PIPE SIZE (mm)	375 OD SN16	375 OD SN16
PIPE CLASS	u-PVC	u-PVC
DATUM R.L.	0.00	
DEPTH TO INVERT FROM EXISTING SURFACE	2.90 2.85	2.77 2.72
INVERT LEVEL	8.82 8.87	9.30 9.35
EXISTING SURFACE LEVEL	11.72	12.07
CHAINAGE	418.07 84.00	502.07 59.38
		561.45 14.23

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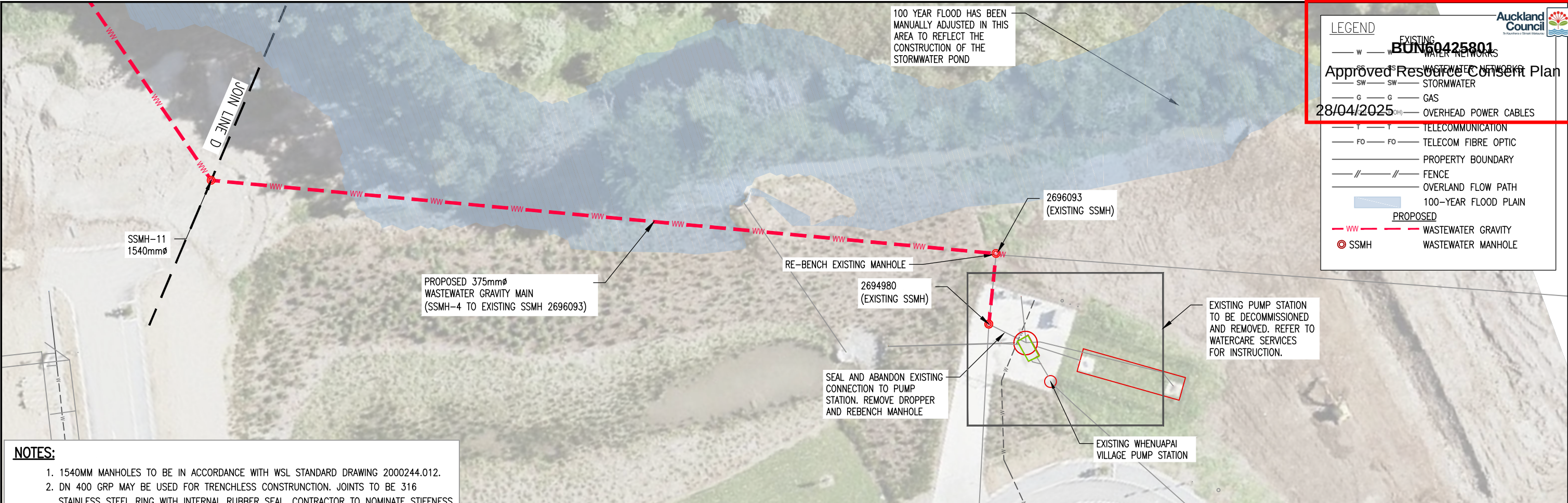
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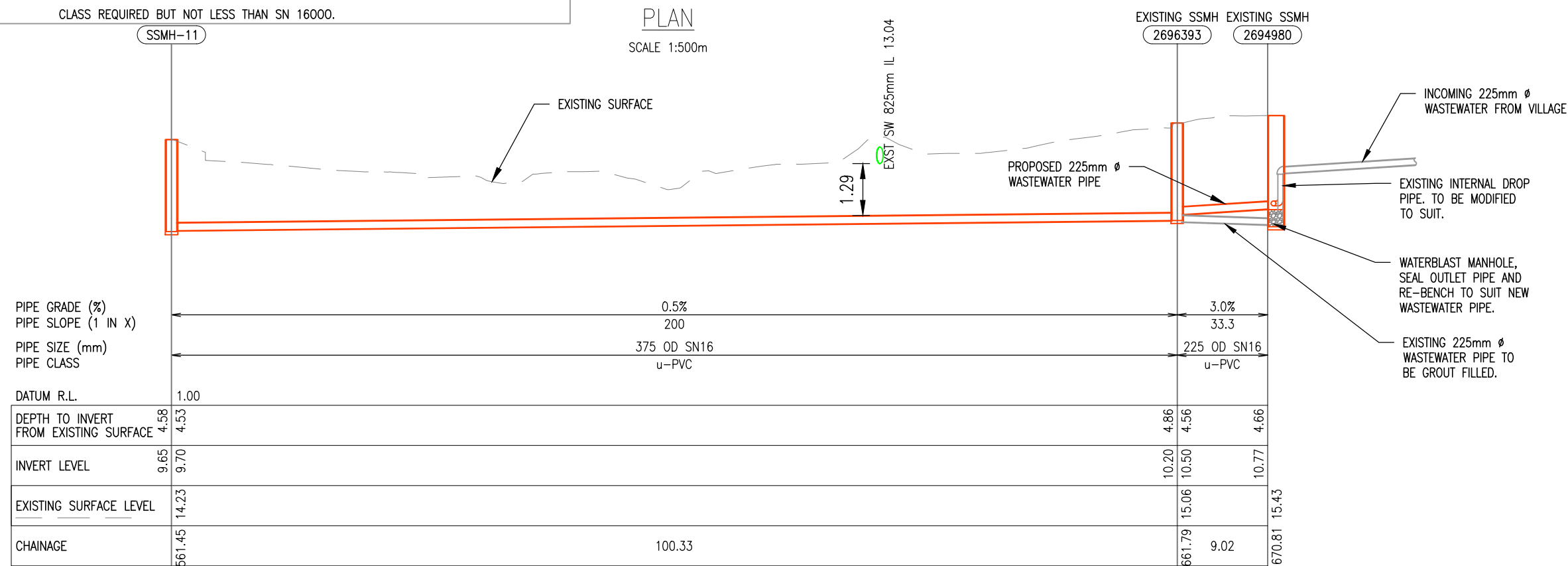
WHENUAPAI-REDHILLS WASTEWATER SERVICING
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INTERIM SLAUGHTERHOUSE PS - WASTEWATER GRAVITY MAIN PLAN AND LONG SECTION - SHEET 4 OF 5

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REF No.	12508391 3-AWD32		
DWG No.	R0017910.008	ISSUE	3



NOTES:

1. 1540MM MANHOLES TO BE IN ACCORDANCE WITH WSL STANDARD DRAWING 2000244.012.
2. DN 400 GRP MAY BE USED FOR TRENCHLESS CONSTRUCTION. JOINTS TO BE 316 STAINLESS STEEL RING WITH INTERNAL RUBBER SEAL. CONTRACTOR TO NOMINATE STIFFNESS CLASS REQUIRED BUT NOT LESS THAN SN 16000.



LONG SECTION

SCALE 1:500m(H), 1:250(V)

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	PH	12-21	
				DES. APPROVED	SW	12-21	
				DRAWN	JC	12-21	
3	12-21	ISSUED FOR DETAILED DESIGN	J.C.	DWG. APPROVED	DJ	12-21	
2	8-21	RE-ISSUED FOR PRELIMINARY DESIGN	J.C.	WSL DESIGN MGMT.			
1	5-21	ISSUED FOR PRELIMINARY DESIGN	J.C.	WSL PROJ. LEAD			
ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE



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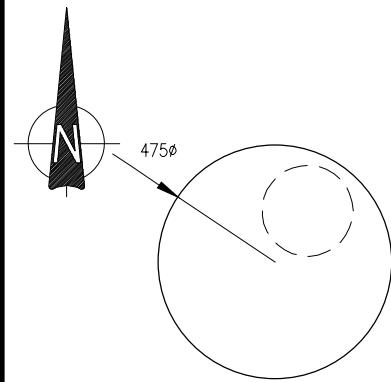
WHENUAPAI-REDHILLS WASTEWATER SERVICING

BRIGHAM CREEK ROAD, WHENUAPAI

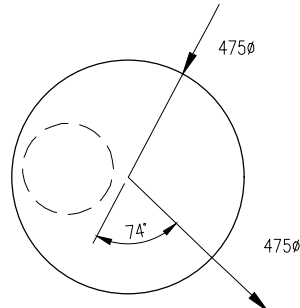
INTERIM SLAUGHTERHOUSE PS - WASTEWATER GRAVITY MAIN PLAN AND LONG SECTION - SHEET 5 OF 5



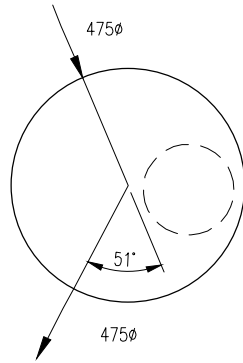
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REF No.	12508391 3-AWD32		
DWG No.	R0017910.009	ISSUE	3



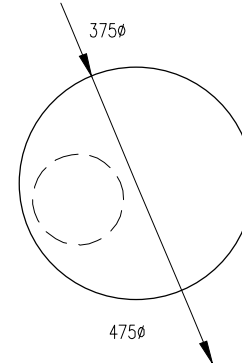
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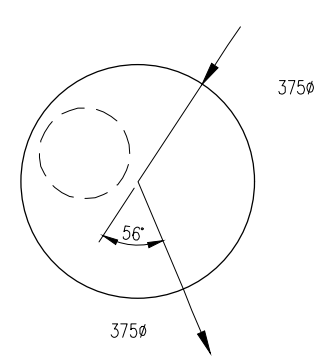
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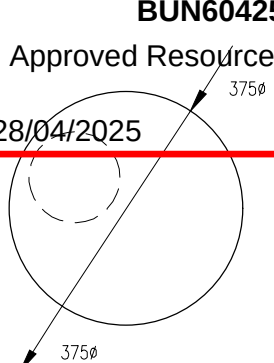
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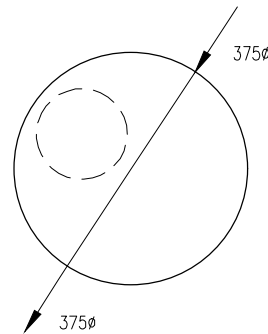
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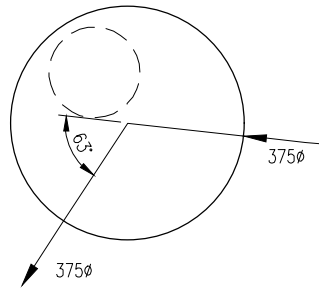
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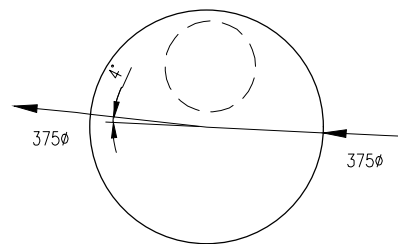
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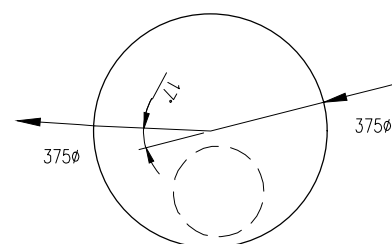
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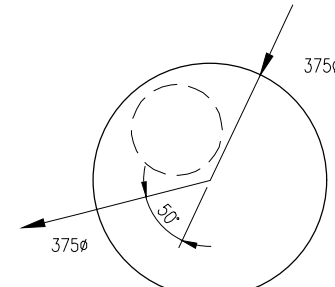
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SSMH-9



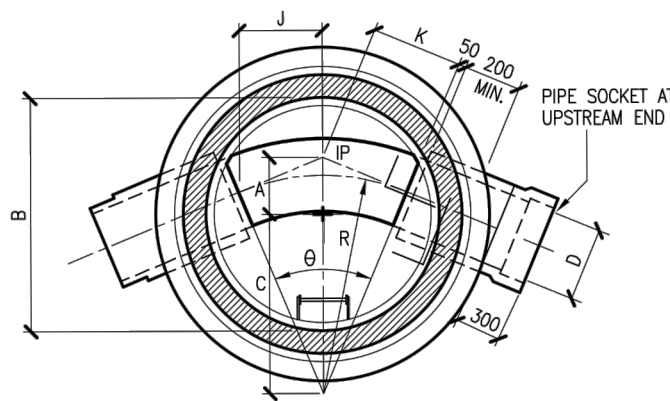
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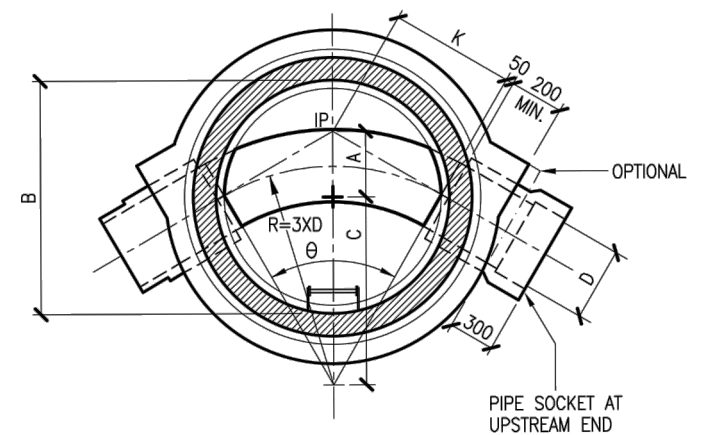
SSMH-11

SETOUT POINTS		
POINT	EASTING	NORTHING
SSMH-1	1743047.960	5926628.398
SSMH-2	1743042.764	5926631.866
SSMH-3	1743074.715	5926692.257
SSMH-4	1743064.939	5926715.540
SSMH-5	1743043.477	5926766.654
SSMH-6	1743063.052	5926796.415
SSMH-7	1743115.318	5926875.877
SSMH-8	1743158.943	5926942.204
SSMH-9	1743211.314	5926936.361
SSMH-10	1743295.217	5926932.351
SSMH-11	1743352.770	5926946.971

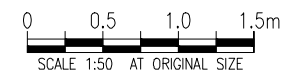
MANHOLE DIMENSION DETAIL										
MH No.	TYPE	PIPE ID	θ	J	R	K	A	B	C	NOTES
SSMH-1	A1	460		616		616	201	1540		
SSMH-2	A2	460	84°	616	1380	1243	548	1540	1149	
SSMH-3	A1	460	51°	616	1431	682	385	1540	1201	
SSMH-4	A1	460	0°	616		616	201	1540		STRAIGHT
SSMH-5	A1	370	56.4°	616	1312	698	442	1540	1044	
SSMH-6	A1	370	0°	616		616	237	1540		STRAIGHT
SSMH-7	A1	370	0°	616		616	237	1540		STRAIGHT
SSMH-8	A2	370	63°	616	1110	680	473	1540	840	
SSMH-9	A1	370	4°	616	17651	616	250	1540	17411	
SSMH-10	A1	370	17°	616	4168	623	295	1540	3919	
SSMH-11	A1	370	50°	616	1458	680	417	1540	1192	



TYPE A1
SCALE: 1:50 & N.TS.



TYPE A2
SCALE: 1:50 & N.TS.



DETAILED DESIGN
NOT FOR CONSTRUCTION

DESIGNED	PH	12-21
DES. APPROVED	SW	12-21
DRAWN	DX	12-21
DWG. APPROVED	JC	12-21
WLS DESIGN MGMT.		
WLS PROJ. LEAD		
ISSUE	DATE	AMENDMENT
2	11-21	ISSUED FOR DETAILED DESIGN
1	11-21	ISSUED FOR PRELIMINARY DESIGN
BY	APPD.	
BY	DATE	

Watercare
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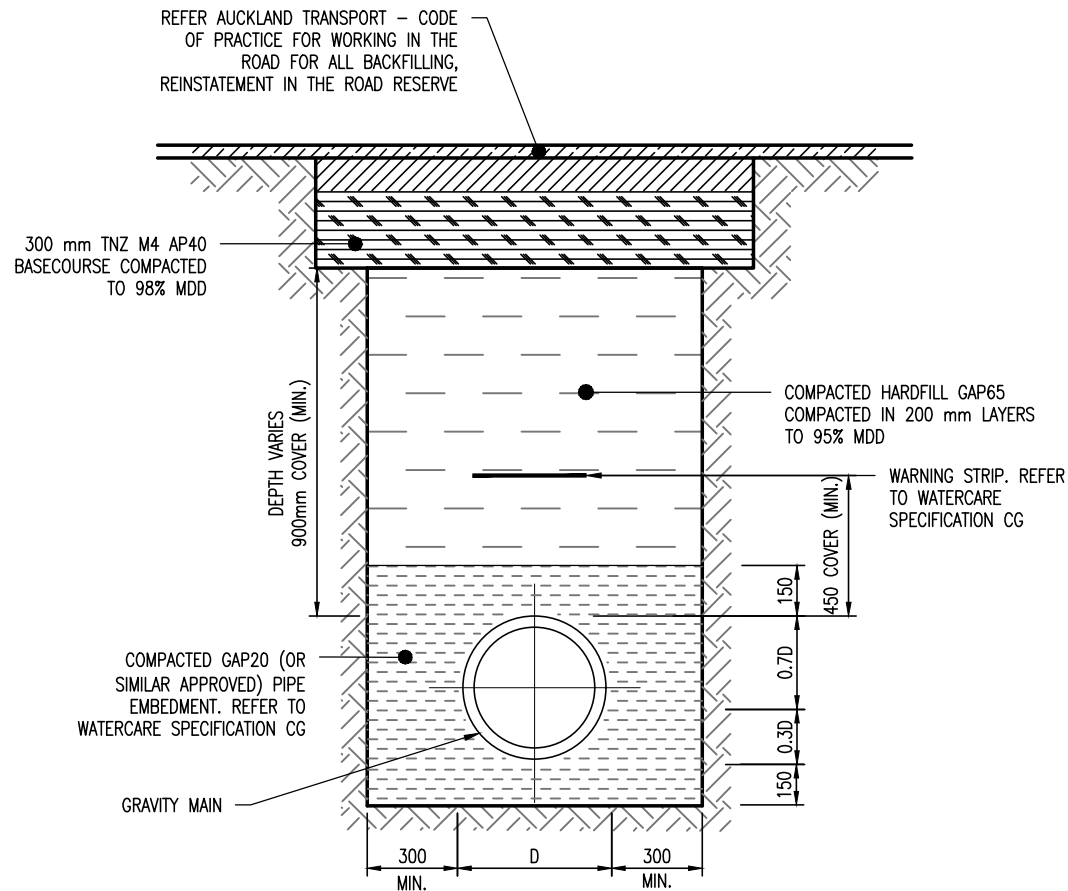
WHENUAPAI-REDHILLS WASTEWATER SERVICING
BRIGHAM CREEK ROAD, WHENUAPAI
INTERIM SLAUGHTERHOUSE PS - WATER GRAVITY MAIN MANHOLE DIMENSIONS AND SETOUT



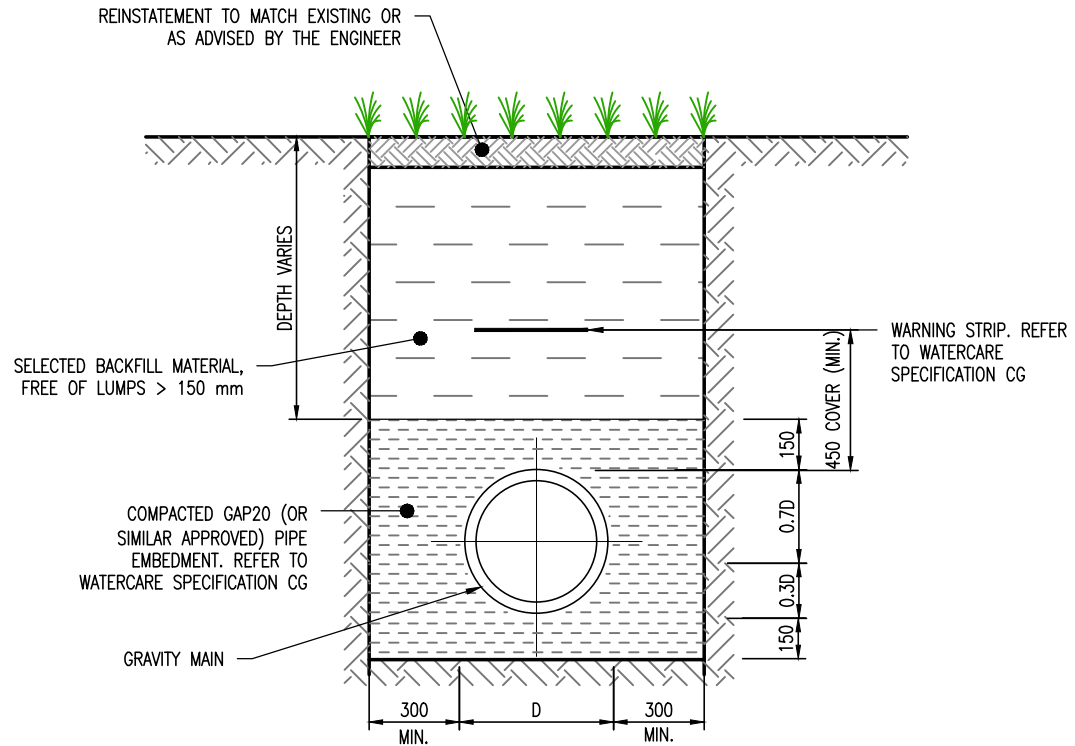
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ORIGINAL SCALE	A3 1:50	CONTRACT No.	6484-6934
REF No.	12508391 3-AWD32		
DWG No.	R0017910.010	ISSUE	2

NOTES:

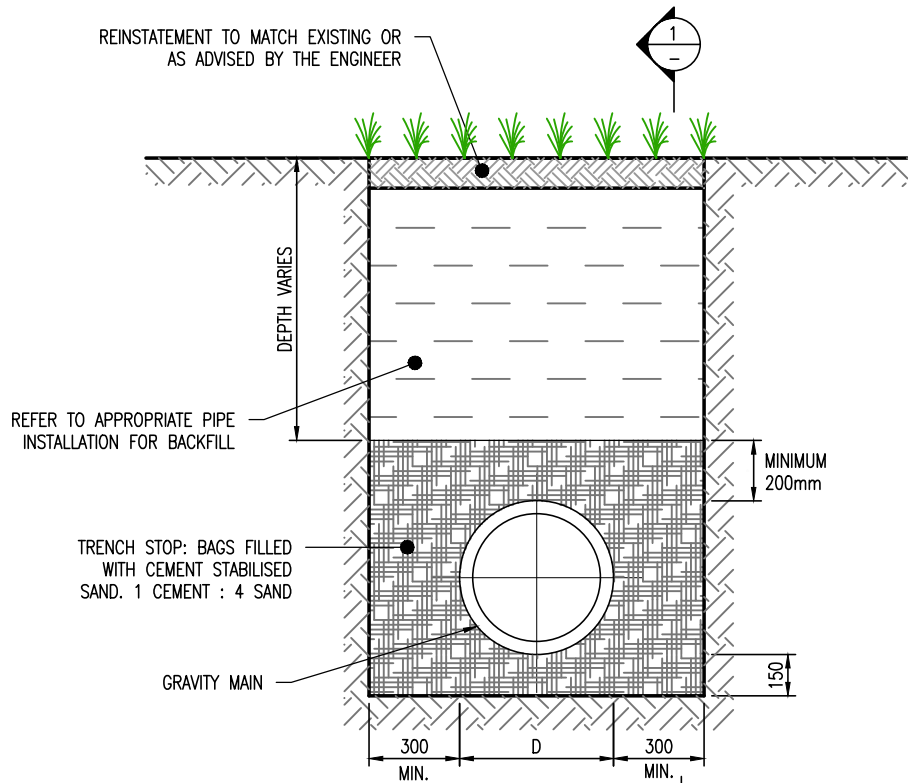
1. MINIMUM HORIZONTAL AND VERTICAL CLEARANCE TO OTHER SERVICES COMPLIES WITH WATERCARE CODE OF PRACTICE.
2. FOR SLEEVES AND MATERIAL REFER TO WATERCARE STANDARD.
3. DIMENSION 'D' REFERS TO THE EXTERNAL PIPE DIAMETER.



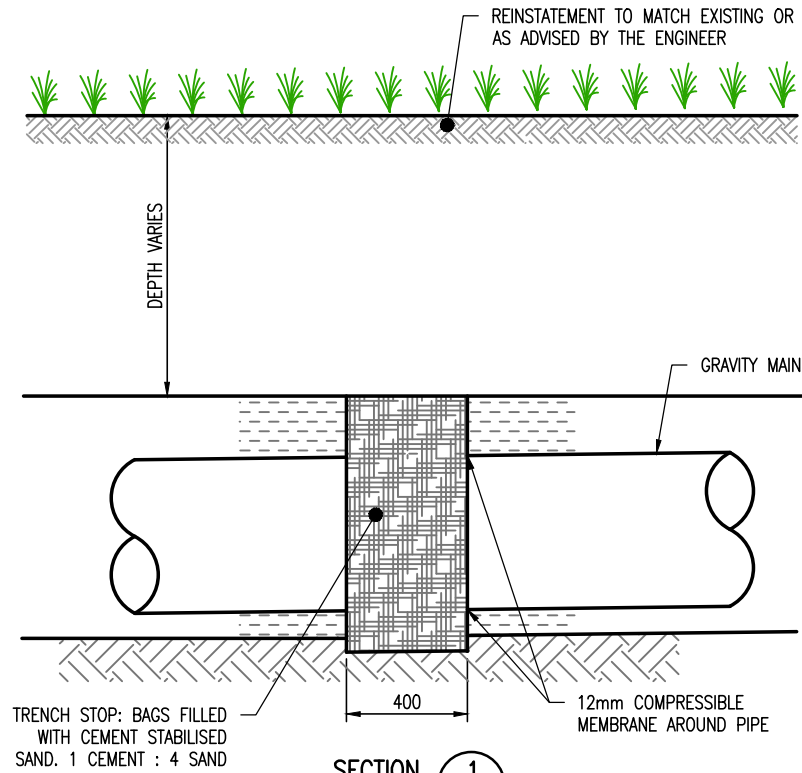
PIPE TRENCH INSTALLATION IN EXISTING CARRIAGEWAY
SCALE NTS



PIPE INSTALLATION IN GRASS AND BERM
SCALE NTS



TRENCH STOP
SCALE NTS



SECTION 1
SCALE NTS

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	PH	11-21	
				DES. APPROVED	SW	12-21	
				DRAWN	DX	12-21	
3	12-21	ISSUED FOR DETAILED DESIGN	D.J.	P.H.	DWG. APPROVED	JC	12-21
2	8-21	RE-ISSUED FOR PRELIMINARY DESIGN	D.X.		WSL DESIGN MGMT.		
1	5-21	ISSUED FOR PRELIMINARY DESIGN	D.X.		WSL PROJ. LEAD		
ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE

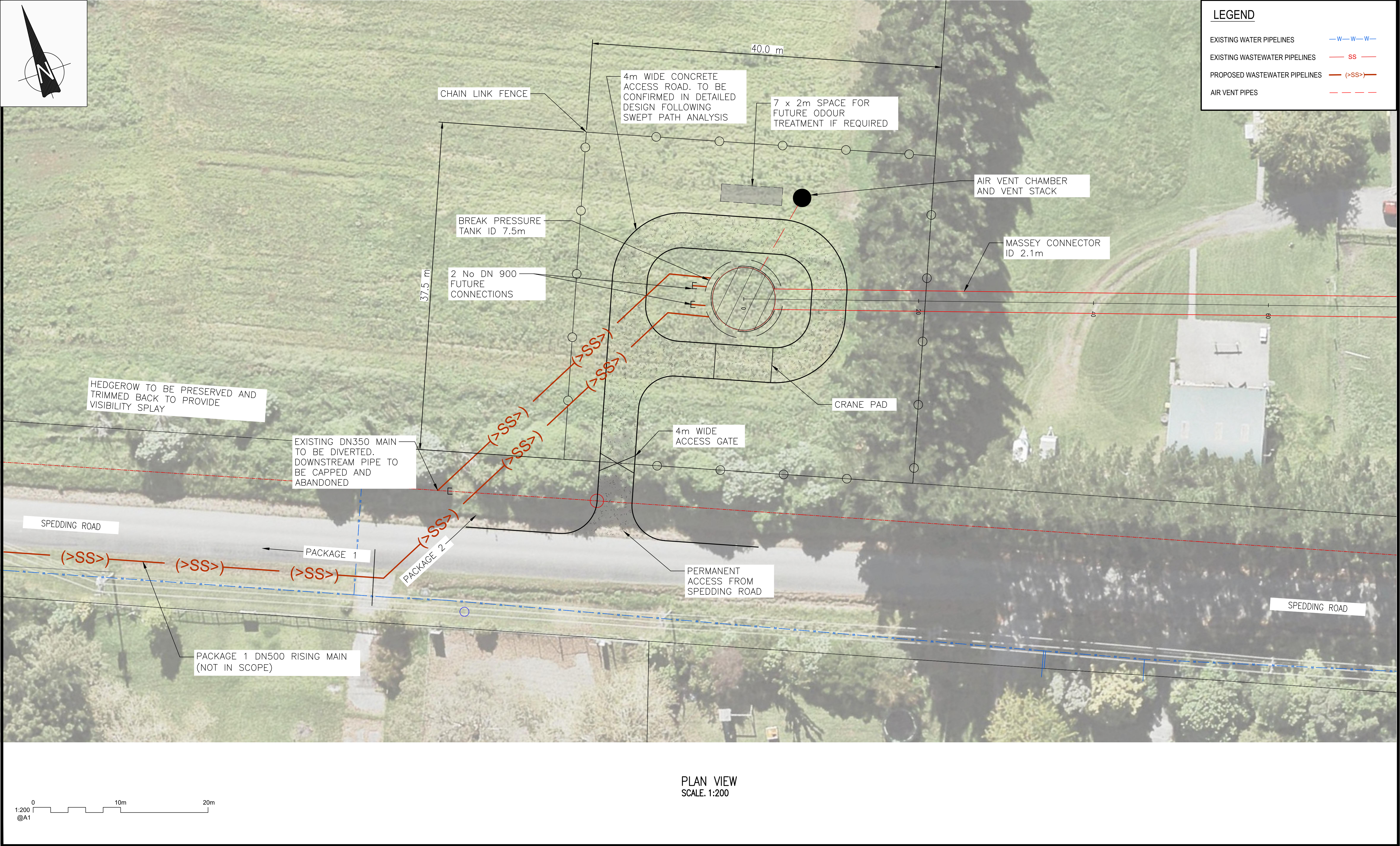
Watercare

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WHENUAPAI-REDHILLS WASTEWATER SERVICING
BRIGHAM CREEK ROAD, WHENUAPAI
INTERIM SLAUGHTERHOUSE PS – WASTEWATER GRAVITY MAIN TRENCH DETAILS



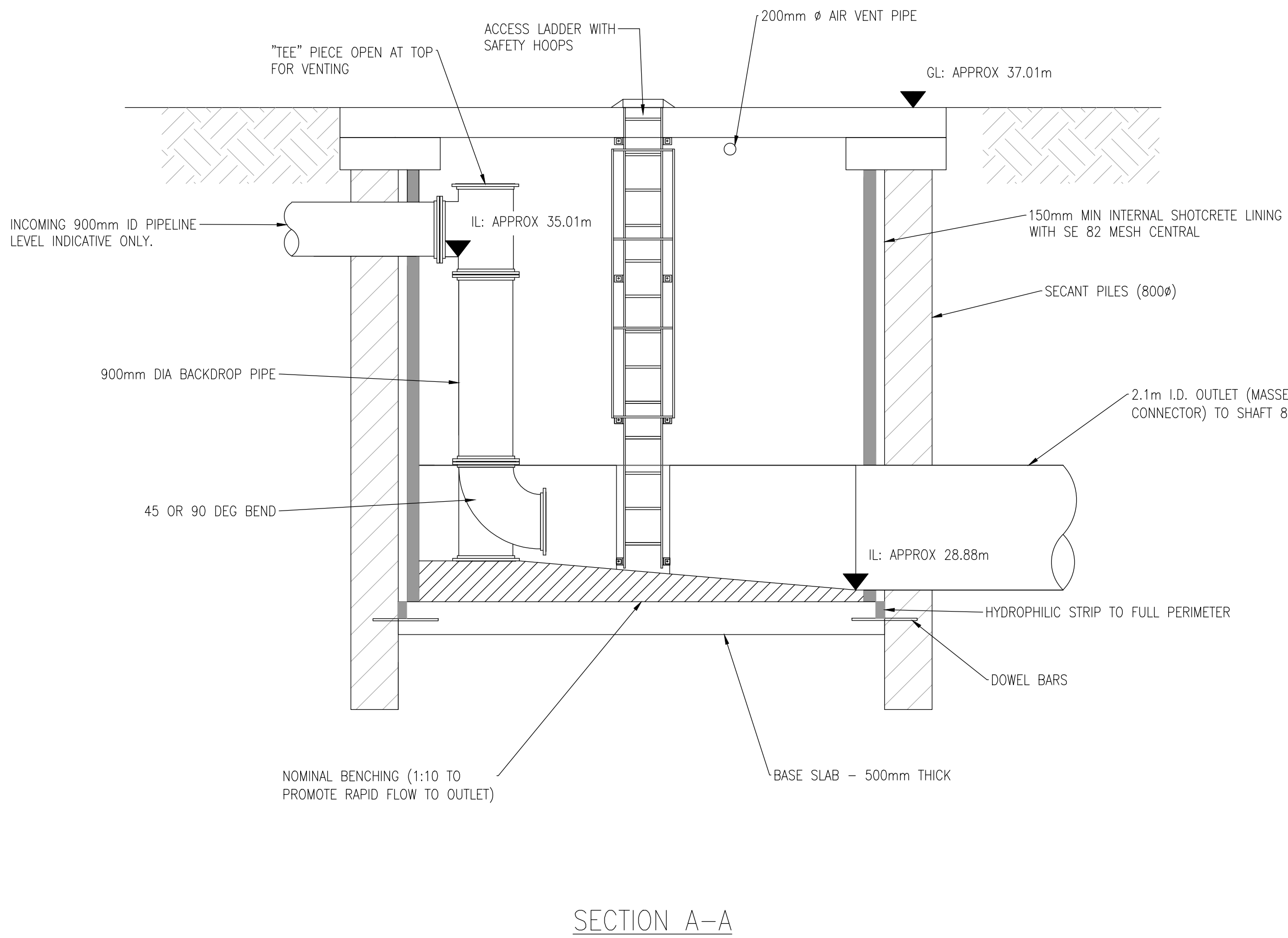
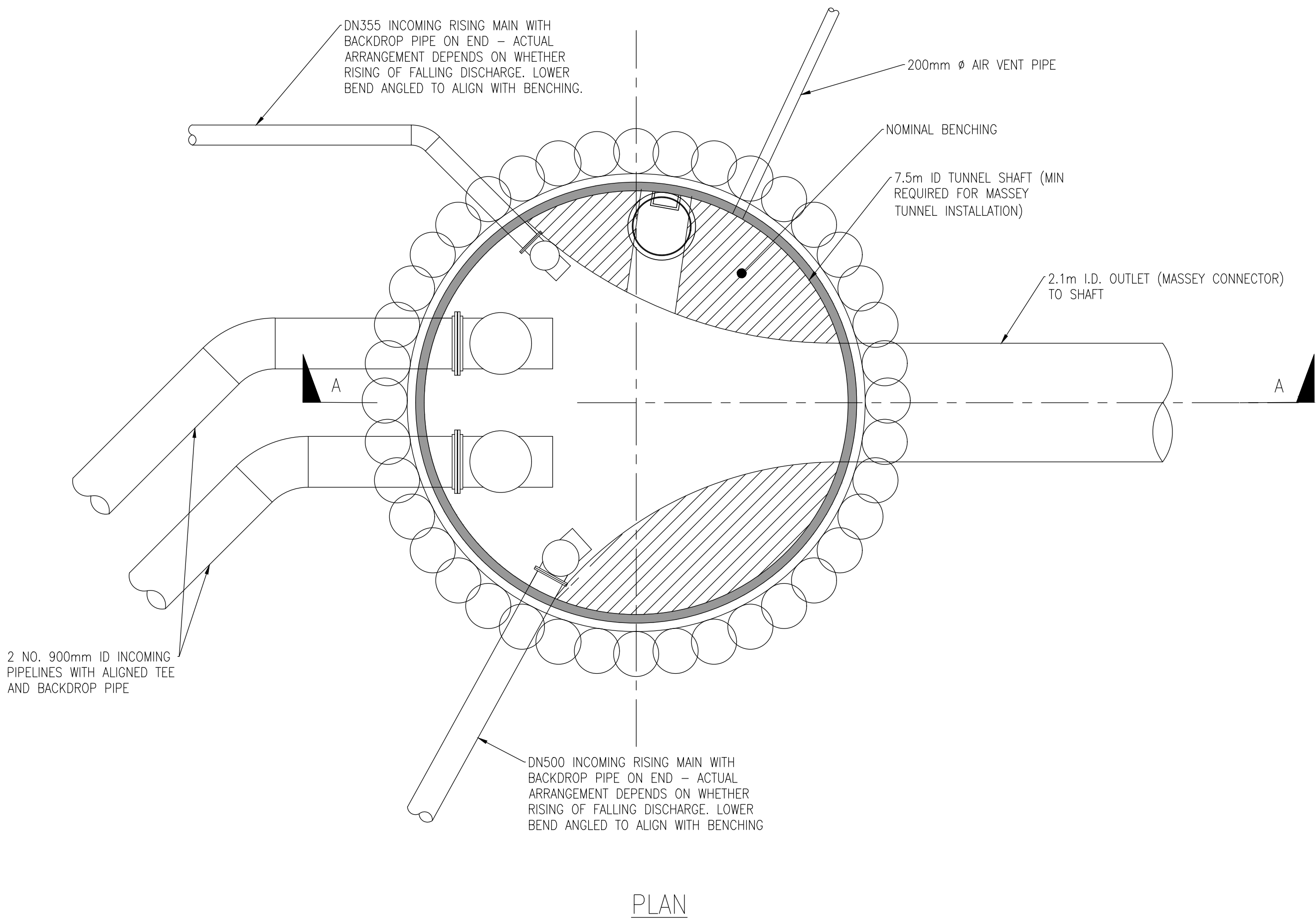
CAD FILE	R0017910.011	DATE	10-12-21
ORIGINAL SCALE	A3 NTS	CONTRACT No.	6484-6934
REF No.	12508391 3-AWD32		
DWG No.	R0017910.011	ISSUE	3



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NOTES

1. DESIGN PHASE IS PRELIMINARY DESIGN. DRAWING NOT FOR CONSTRUCTION
2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
3. LEVELS ARE IN TERMS OF DATUM AUCKLAND 1946
4. ALLOW FOR 200mm (MIN)
5. SECANT PILES:
- SOFT PILES = UN-REINFORCED, F'C = 3 MPA
- HARD PILES = REINFORCED, F'C = 40 MPA
- SOFT EYE FOR TUNNEL PENETRATION

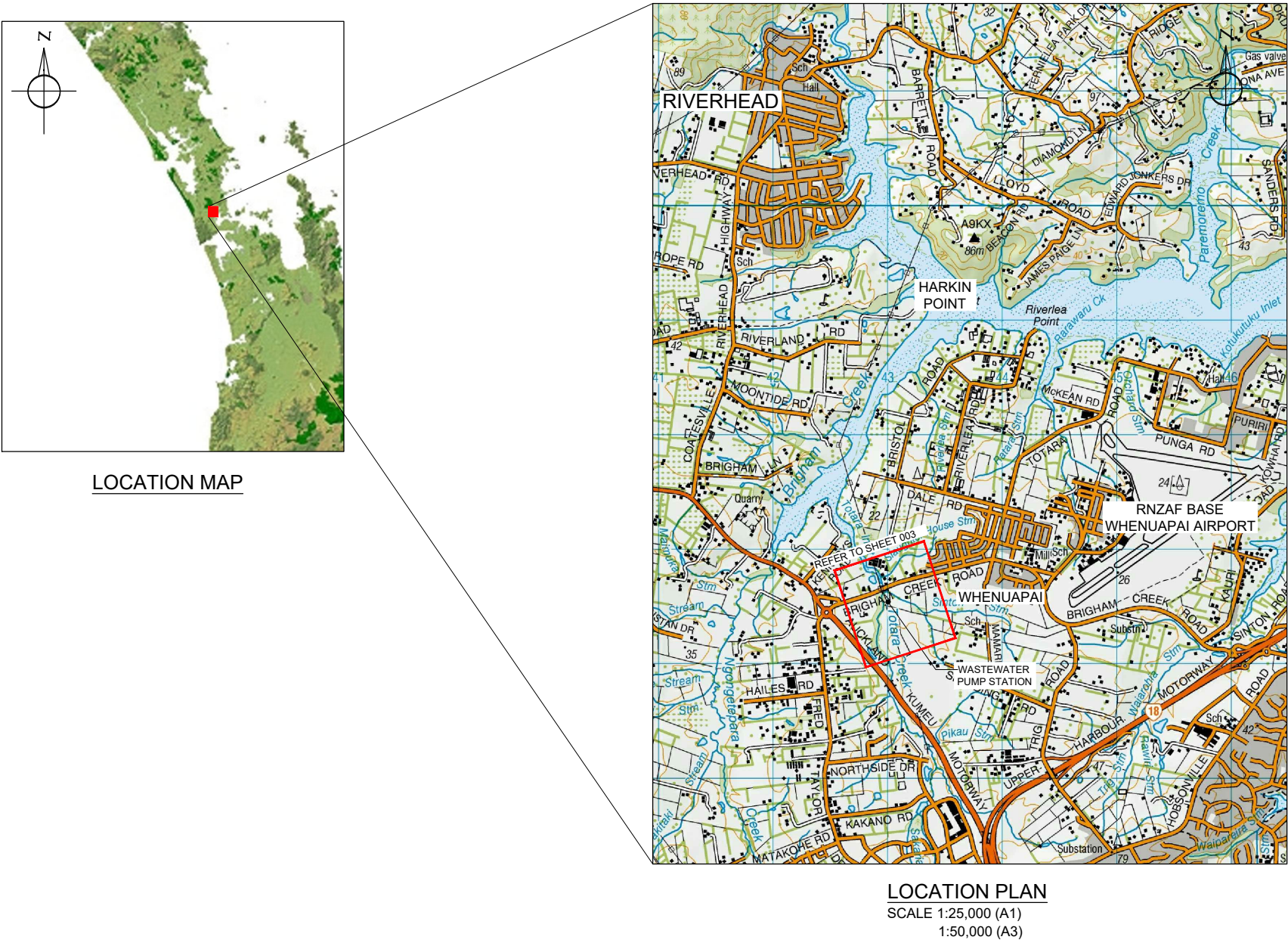


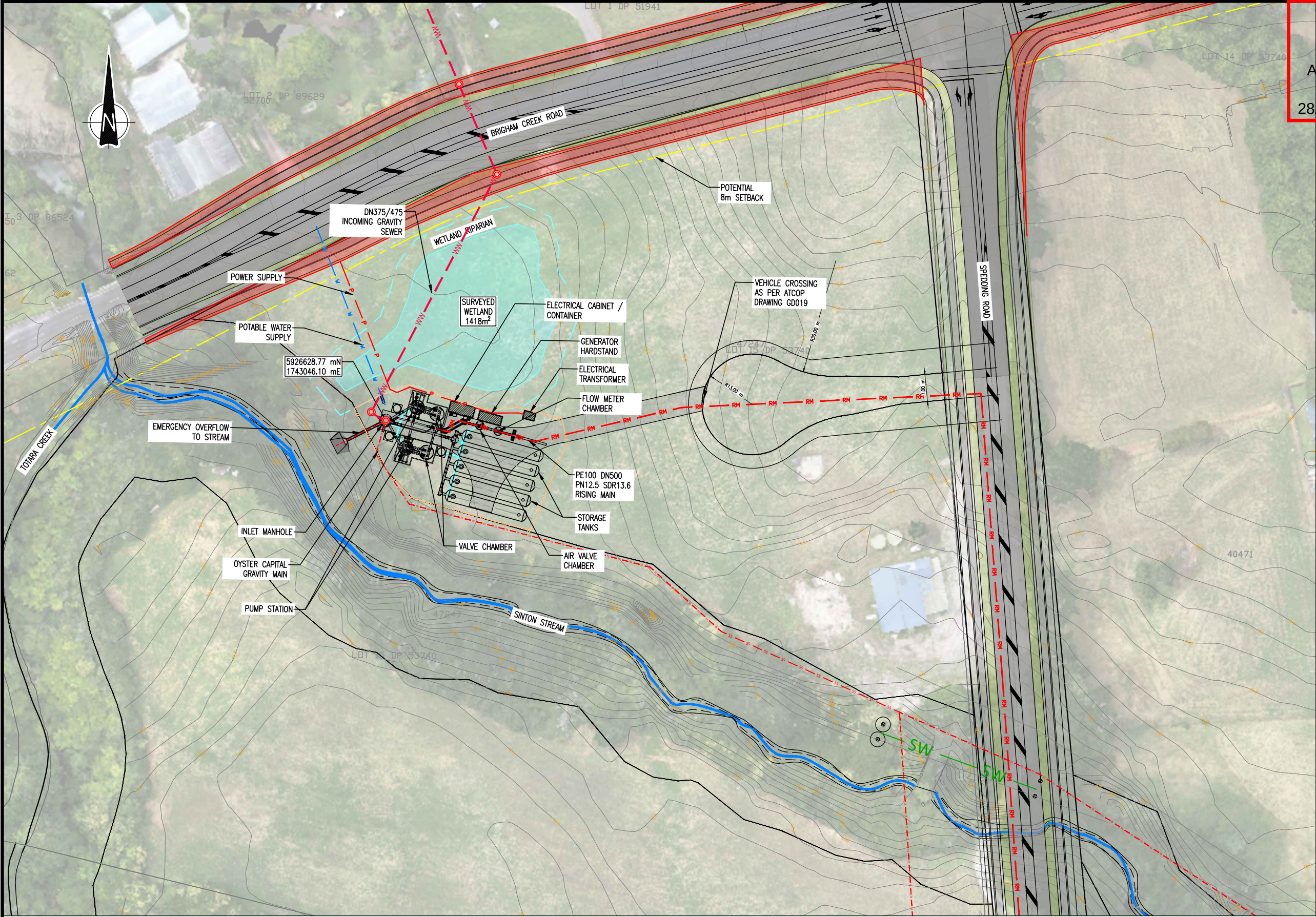
					DESIGNED	C. UNDERDOWN	05-22	 Watercare COPYRIGHT – This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.	M MOTT MACDONALD	NORTHERN INTERCEPTOR PHASE 2				CAD FILE	2013661.801	DATE	13-05-22
					DES. APPROVED	P. CORRIS	05-22			ORIGINAL SCALE A1		CONTRACT No.					
					DRAWN	F. MISPLON	05-22			AS SHOWN		—					
					DWG. APPROVED	P. CORRIS	05-22			REF. No.		417039-MMD-02-XX-DR-C-0001					
					WSL DESIGN MGMT.					DWG. No.		2013661.801		ISSUE	1		
1	05-22	PRELIMINARY DESIGN – FOR REVIEW			FM	PC				BREAK PRESSURE TANK LAYOUT AND SECTION							
ISSUE	DATE	AMENDMENT			BY	APPD.											

WATERCARE SERVICES LIMITED

WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1

WASTEWATER PUMP STATION (DPISH)





LEGEND:

BUN60425801

Approved Resource Consent Plan

28/04/2025

EXISTING LOT BOUNDARY

EXISTING GROUND LEVEL

POTENTIAL SETBACK

RISING MAIN

POWER SUPPLY

SECURITY FENCE AND WSL OWNED

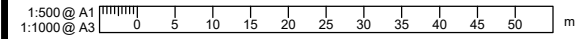
WATER SUPPLY

WETLAND BOUNDARY

STREAM

WASTEWATER GRAVITY SEWER

OYSTER CAPITAL GRAVITY SEWER (TBC)



DETAILED DESIGN
NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	DES. APPROVED	DRAWN	DWG. APPROVED	WSL DESIGN MGMT.	WSL PROJ. LEAD	BY	DATE
4	01-22	DETAILED DESIGN ISSUE	SA	MG	SA	MG	SA	MG	SA	MG	SA	MG
3	10-21	SAFETY IN DESIGN	SA	MK	SA	MK	SA	MK	SA	MK	SA	MK
2	08-21	RE-ISSUED FOR PRELIMINARY DESIGN	Ev	MK	Ev	MK	Ev	MK	Ev	MK	Ev	MK
1	03-21	PRELIMINARY DESIGN ISSUE	AJ	BR	AJ	BR	AJ	BR	AJ	BR	AJ	BR

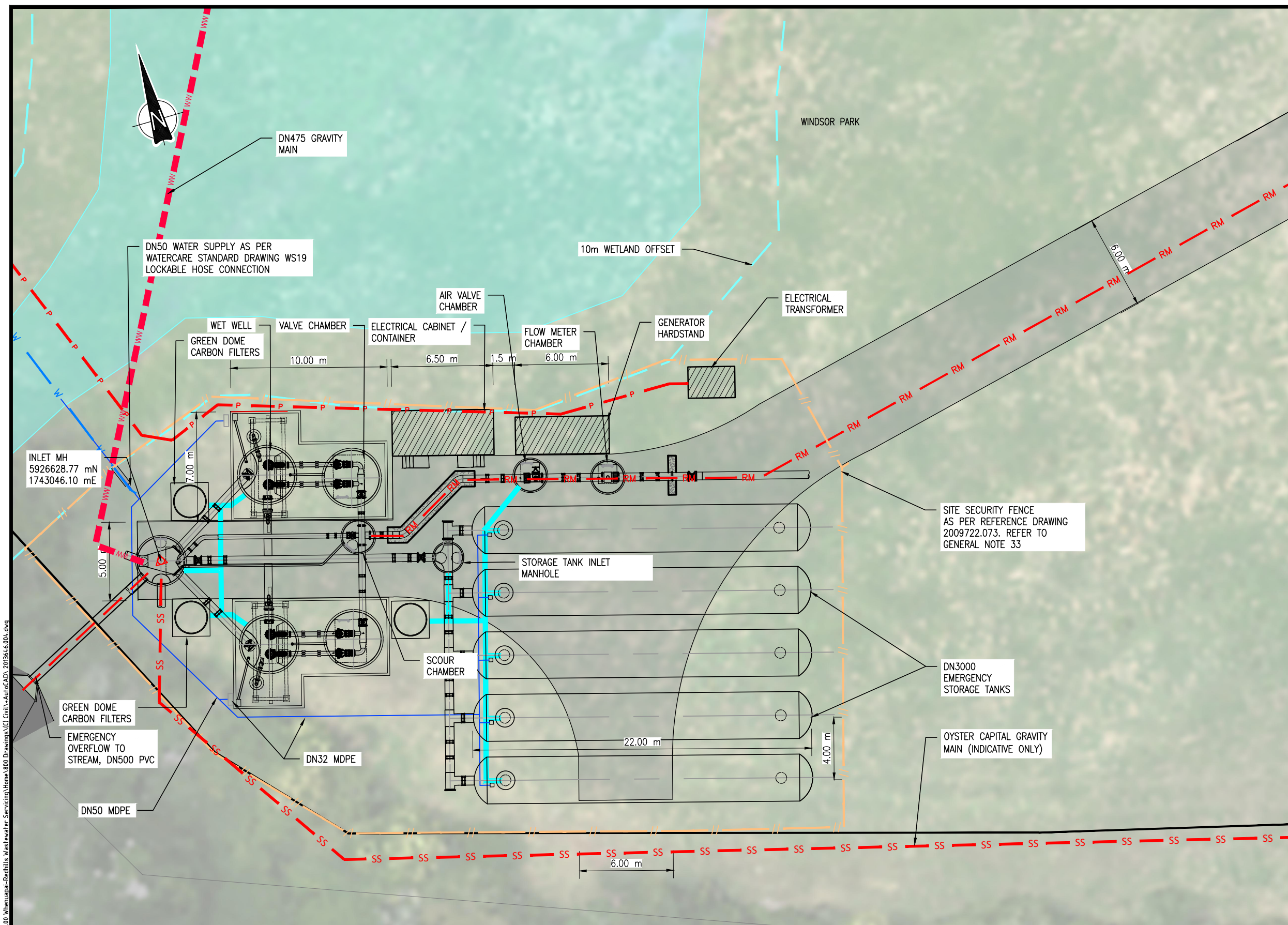
Watercare

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
OVERALL PLAN



CAD FILE	2013646.003	DATE	14-01-2022
ORIGINAL SCALE	A3 1:500	CONTRACT No.	6484-6934
REF No.	12508391 3-AWD32	ISSUE	4
DWG No.	2013646.003		



NOTE:

1. REFER TO DRAWING 2013650.007 FOR
GENERAL NOTES

SITE PLAN
SCALE. 1:250

1:250@A1 1:500@A3

DETAILED DESIGN
NOT FOR CONSTRUCTION

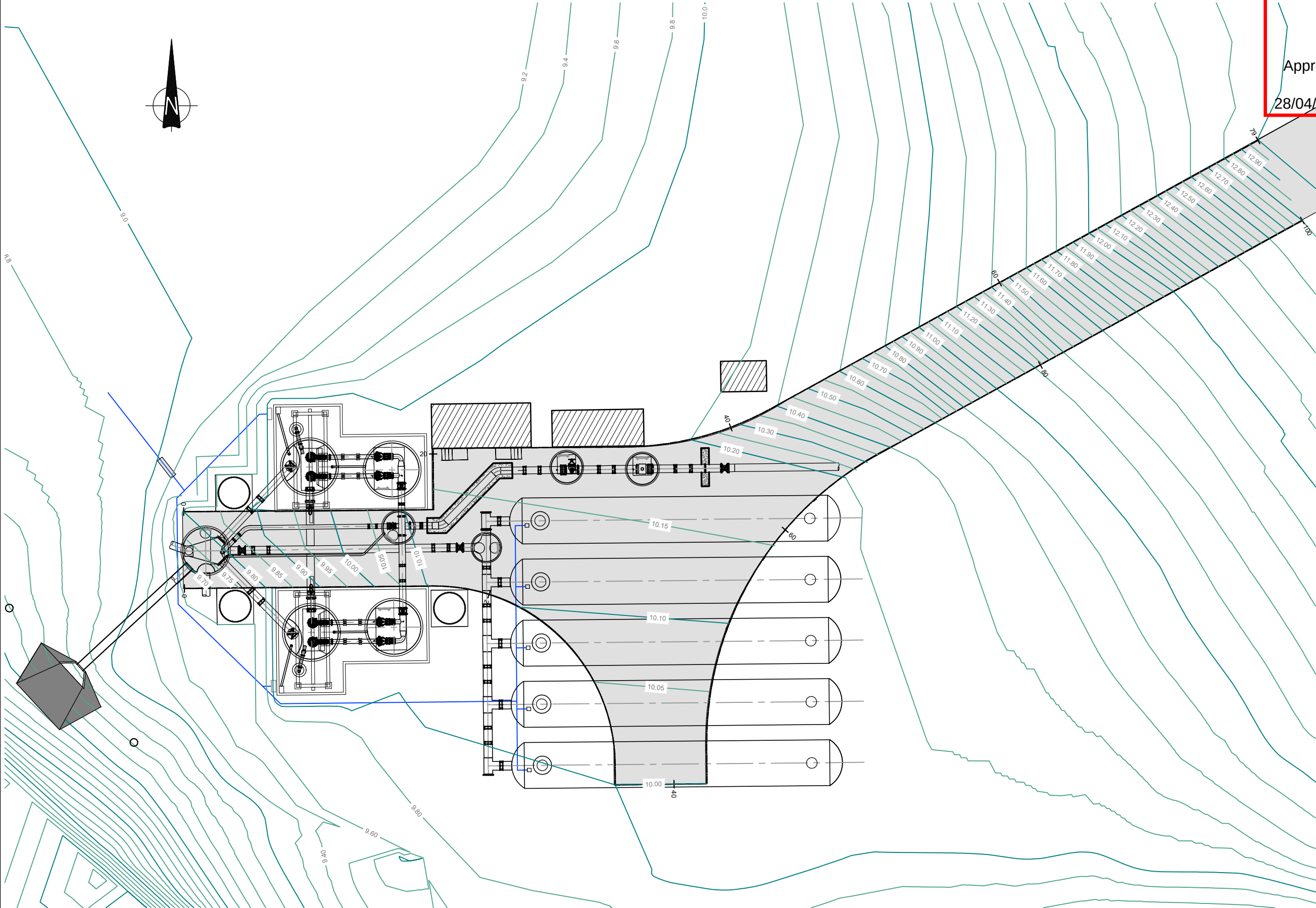
					DESIGNED	AJ	05-21
					DES. APPROVED	BR	05-21
4	01-22	DETAILED DESIGN ISSUE	SA	MG	DRAWN	EW	05-21
3	10-21	SAFETY IN DESIGN	SA	MK	DWG. APPROVED	EW	05-21
2	08-21	RE-ISSUED FOR PRELIMINARY DESIGN	EvV	MK	WSL DESIGN MGMT.	-	-
1	05-21	PRELIMINARY DESIGN ISSUE	AJ	BR	WSL PROJ. LEAD	-	-
ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE



WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
SITE PLAN



CAD FILE	2013646.004	DATE	14-01-2022
ORIGINAL SCALE	A3	CONTRACT No.	6484-6934
	AS SHOWN		
REF No.	12508391 3-AWD32		
DWG No.	2013646.004	ISSUE	4



- NOTE:
- 1. CO-ORDINATES ARE NEW ZEALAND TRANSVERSE MERCATOR – NZTM.
 - 2. LEVELS ARE IN TERMS OF NZVD1946.

SITE PLAN
SCALE: 1:250

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	SA	11-21
				DES. APPROVED	RG	11-21
				DRAWN	SA	11-21
				DWG. APPROVED	WC	11-21
				WSL DESIGN MGMT.	RB	11-21
				WSL PROJ. LEAD	RB	11-21
1	01-22	DETAILED DESIGN ISSUE	SA	WC		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

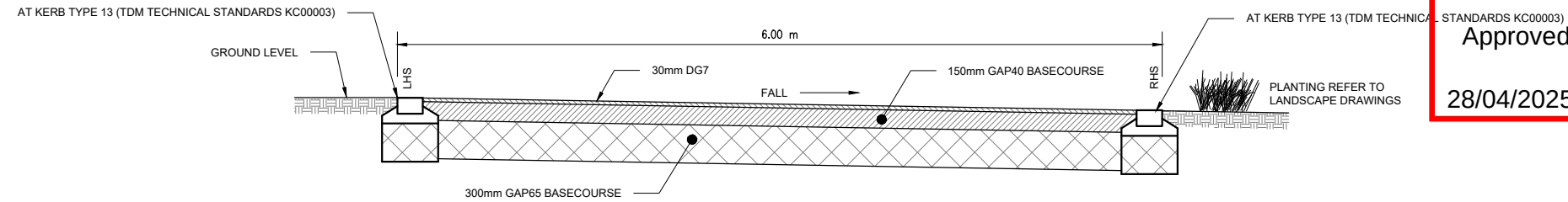
Watercare

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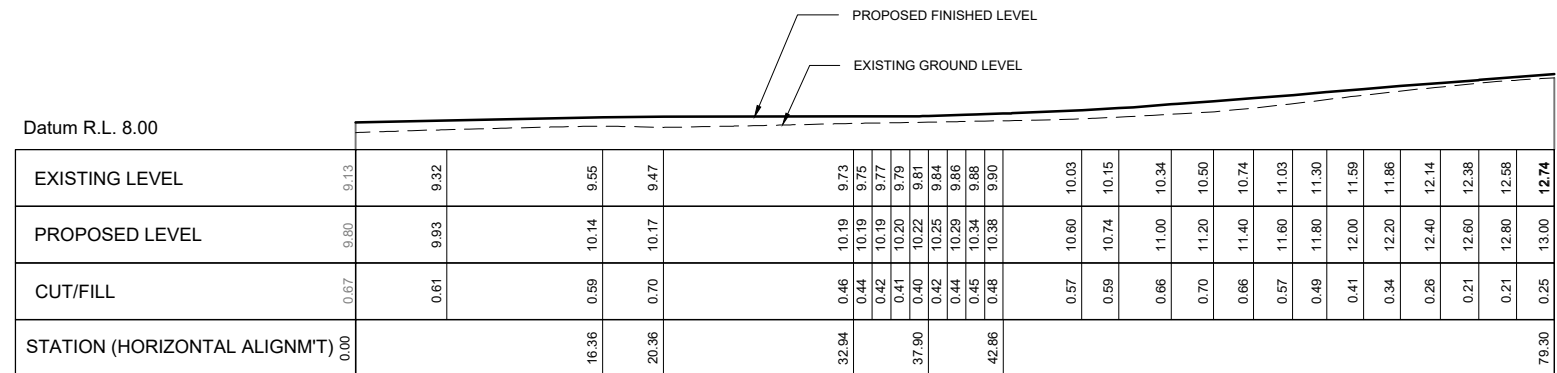
WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
SITE ROADING – PLAN



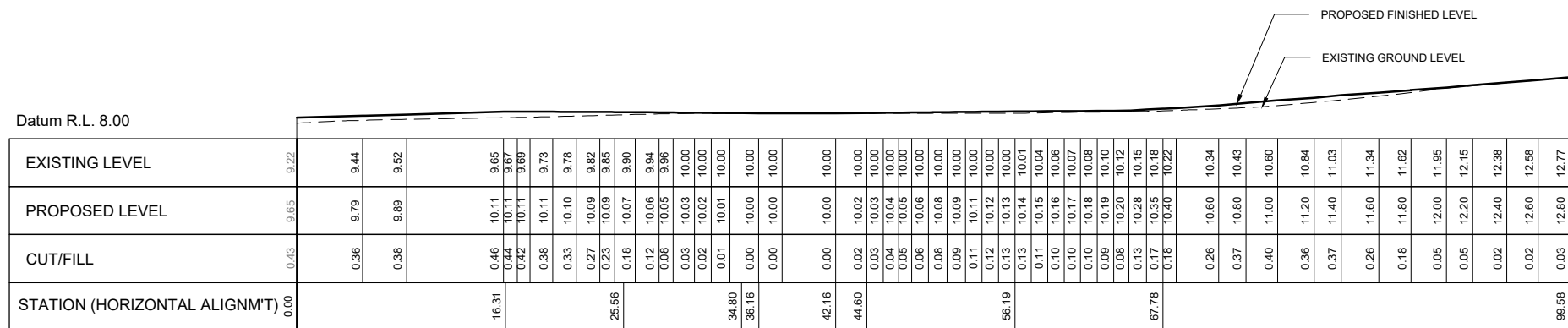
CAD FILE	2013646.005	DATE	14-01-22
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391	3-AWD32	
DWG No.	2013646.005	ISSUE	1



TYPICAL ACCESS ROAD SECTION
SCALE: 1:50



Alignment - LHS KERB
SECTION BETWEEN CH: 0.00 AND 79.30
SCALE 1500



Alignment - RHS KERB
SECTION BETWEEN CH: 0.00 AND 99.58
SCALE 1500

1:500 0 4 8 12 16 20 24 m

1:50 0 1 2 3 4 5 m

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	SA	11-21
				DES. APPROVED	RG	11-21
				DRAWN	SA	11-21
				DWG. APPROVED	WC	11-21
				WSL DESIGN MGMT.	RB	11-21
				WSL PROJ. LEAD	RB	11-21
1	01-22	DETAILED DESIGN ISSUE	SA	WC		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

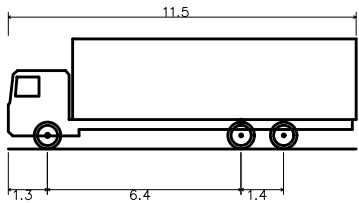
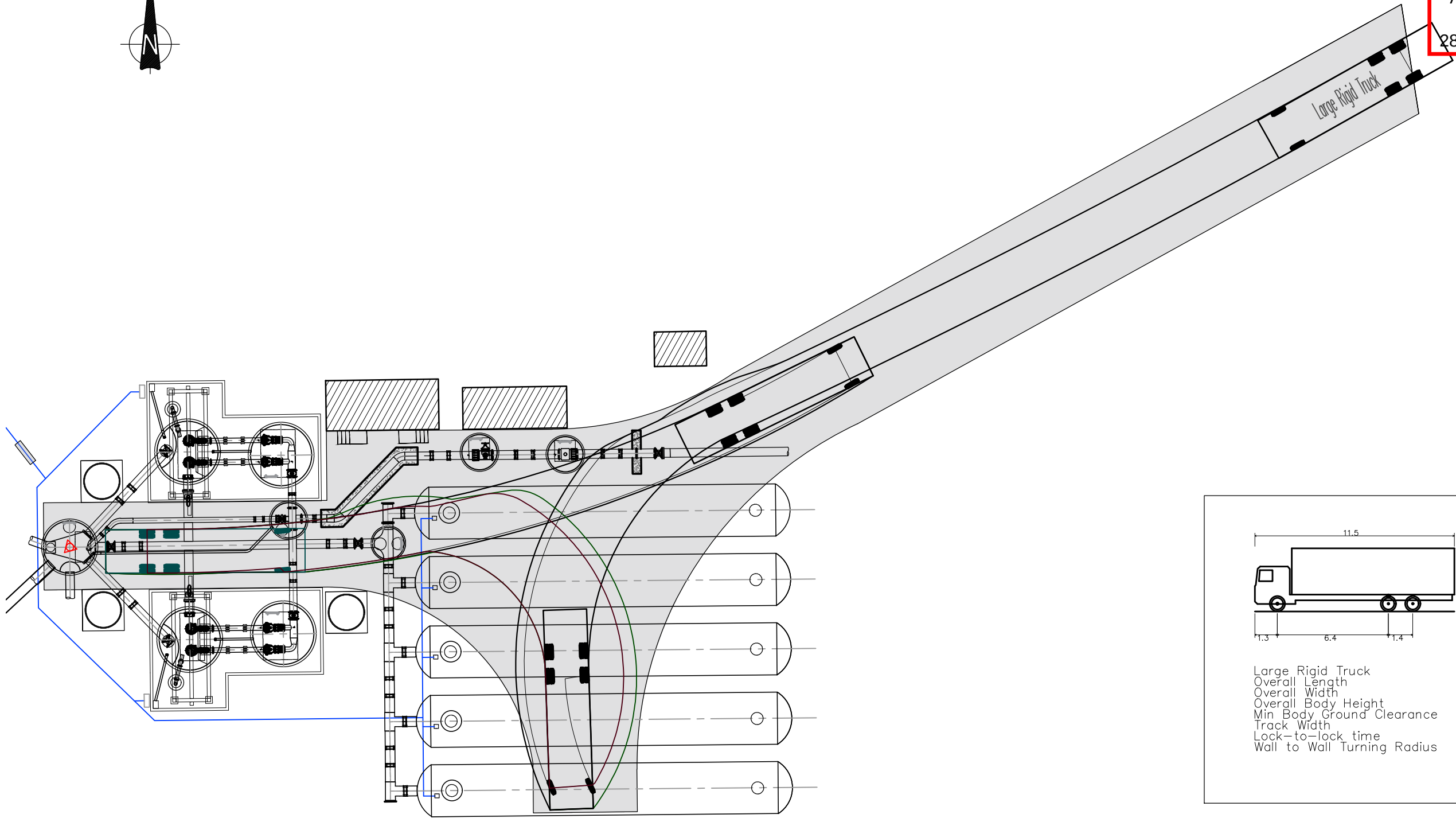
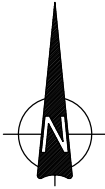
Watercare

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
SITE ROADING - TYPICAL SECTION AND DETAILS



CAD FILE	2013646.006	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391	3-AWD32	
DWG No.	2013646.006	ISSUE	1



Large Rigid Truck
Overall Length 11.500m
Overall Width 2.500m
Overall Body Height 3.632m
Min Body Ground Clearance 0.427m
Track Width 2.500m
Lock-to-lock time 6.00s
Wall to Wall Turning Radius 12.000m

DETAILED DESIGN
NOT FOR CONSTRUCTION

U:\Project\NZ\3A\3-AWD32.00 Whenuapai-Redhills Wastewater Servicing Home 800 Drawings\NC\Civil-AutoCAD\2013646.007.dwg

1:250 0 2 4 6 8 10 12 m

				DESIGNED	SA	11-21
				DES. APPROVED	RG	11-21
				DRAWN	SA	11-21
				DWG. APPROVED	WC	11-21
				WSL DESIGN MGMT.	RB	11-21
				WSL PROJ. LEAD	RB	11-21
1	01-22	DETAILED DESIGN ISSUE		SA	WC	
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

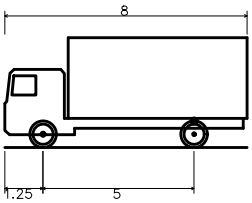
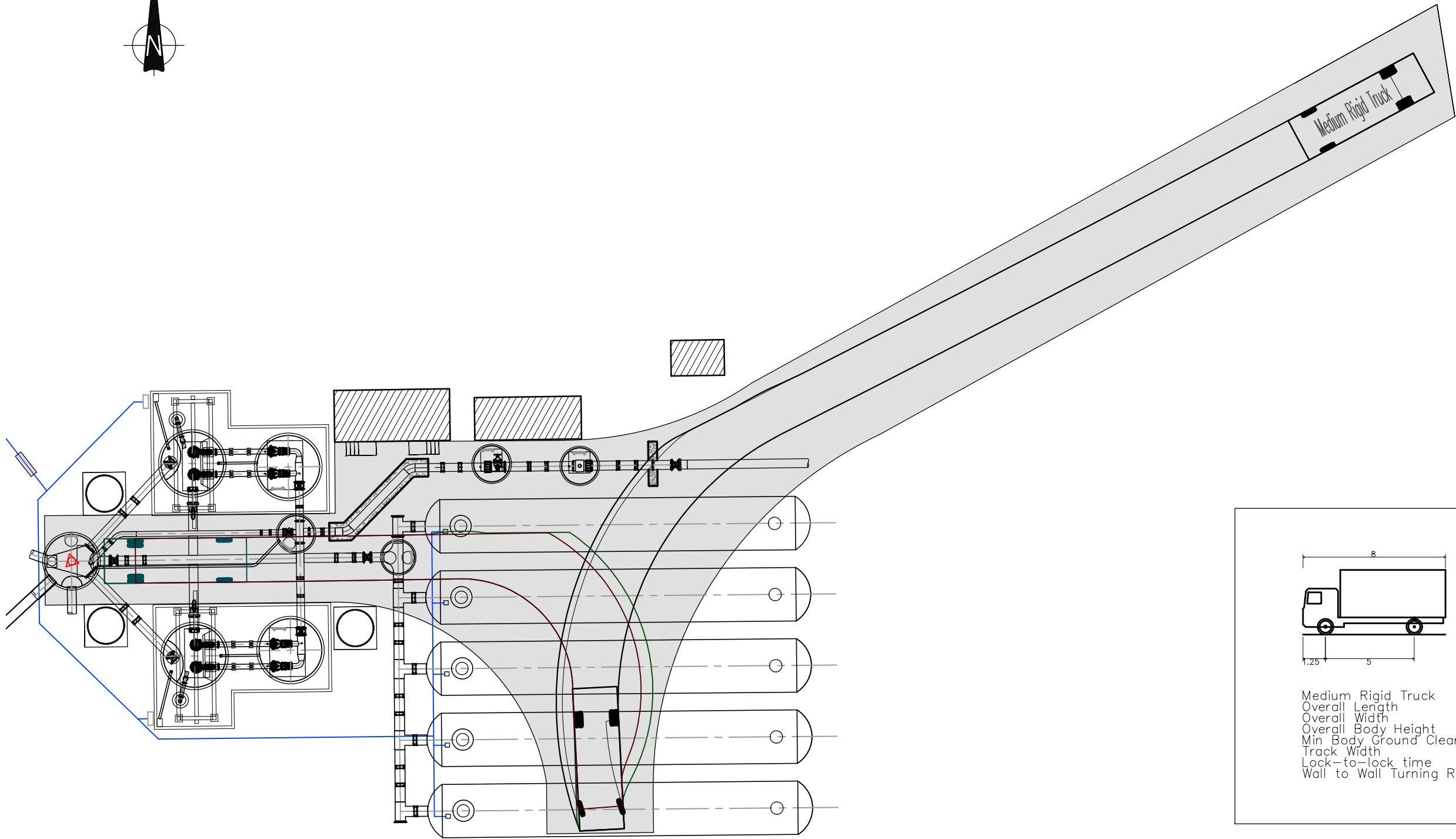
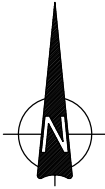
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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
SITE ROADING - LARGE RIGID TRUCK VEHICLE TURNING



CAD FILE	2013646.007	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391 3-AWD32		
DWG No.	2013646.007	ISSUE	1



Medium Rigid Truck
Overall Length 8.000m
Overall Width 2.500m
Overall Body Height 3.632m
Min Body Ground Clearance 0.427m
Track Width 2.500m
Lock-to-lock time 6.00s
Wall to Wall Turning Radius 10.000m

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	SA	11-21
				DES. APPROVED	RG	11-21
				DRAWN	SA	11-21
				DWG. APPROVED	WC	11-21
				WSL DESIGN MGMT.	RB	11-21
				WSL PROJ. LEAD	RB	11-21
1	01-22	DETAILED DESIGN ISSUE	SA	WC		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

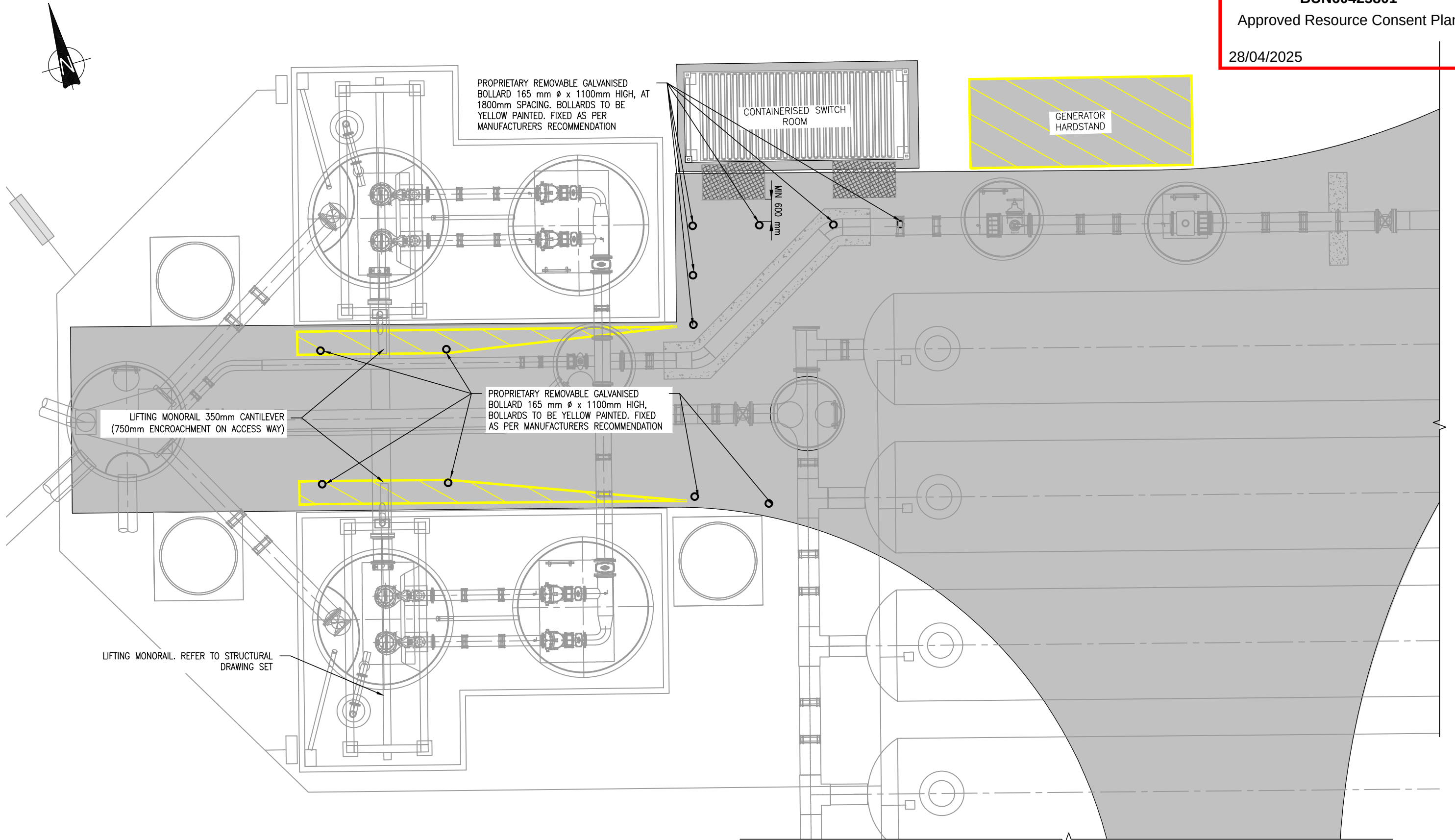
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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
SITE ROADING - MEDIUM RIGID TRUCK VEHICLE TURNING



CAD FILE	2013646.008	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391 3-AWD32		
DWG No.	2013646.008	ISSUE	1



PUMP STATION ROAD MARKING AND BOLLARDS
SCALE 1:100 (A3)

U:\Projects\NZ\3A\3-AWD32.00 Whenuapai-Redhills Wastewater Servicing Home 800 Drawings\NC Civil-AutoCAD\2013646.009.dwg

				DESIGNED	JG	11-21
				DES. APPROVED	MG	11-21
				DRAWN	JG	11-21
				DWG. APPROVED	MG	11-21
				WSL DESIGN MGMT.	RB	-
				WSL PROJ. LEAD	RB	-
1	01-22	DETAILED DESIGN ISSUE	JG	WC		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

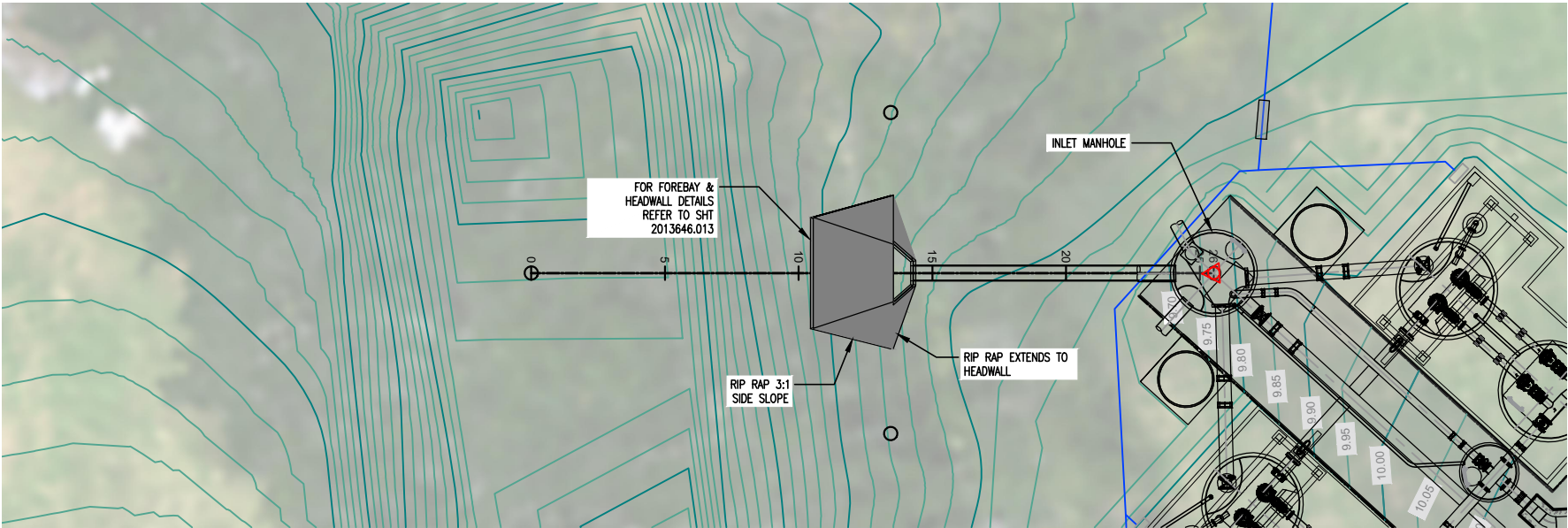
Watercare

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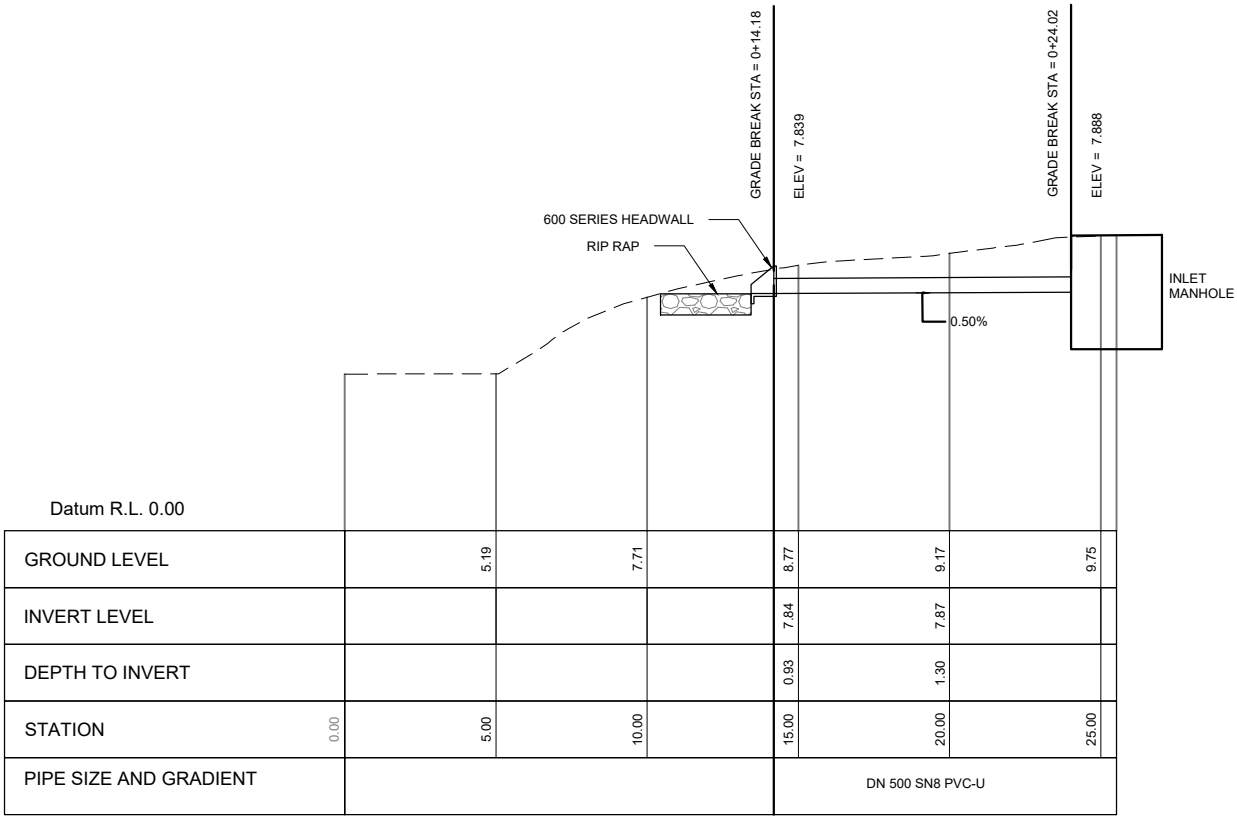
WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
SITE ROADING - ROAD MARKING AND BOLLARDS

wsp **GHD**

CAD FILE	2013646.006	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391	3-AWD32	
DWG No.	2013646.009	ISSUE	1



PLAN
SCALE: 1:250



EMERGENCY OVERFLOW LONGITUDINAL SECTION
SCALE: 1:250

DETAILED DESIGN
NOT FOR CONSTRUCTION

U:\Projects\NZ\3A\3-AWD32.00 Whenuapai-Redhills Wastewater Servicing\Home\800 Drawings\VC\Civil-AutoCAD\2013646.012.dwg

1:250 0 2 4 6 8 10 12 m

				DESIGNED	SA	11-21
				DES. APPROVED	RG	11-21
				DRAWN	SA	11-21
				DWG. APPROVED	WC	11-21
				WSL DESIGN MGMT.	RB	11-21
				WSL PROJ. LEAD	RB	11-21
1	01-22	DETAILED DESIGN ISSUE	SA	WC		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE



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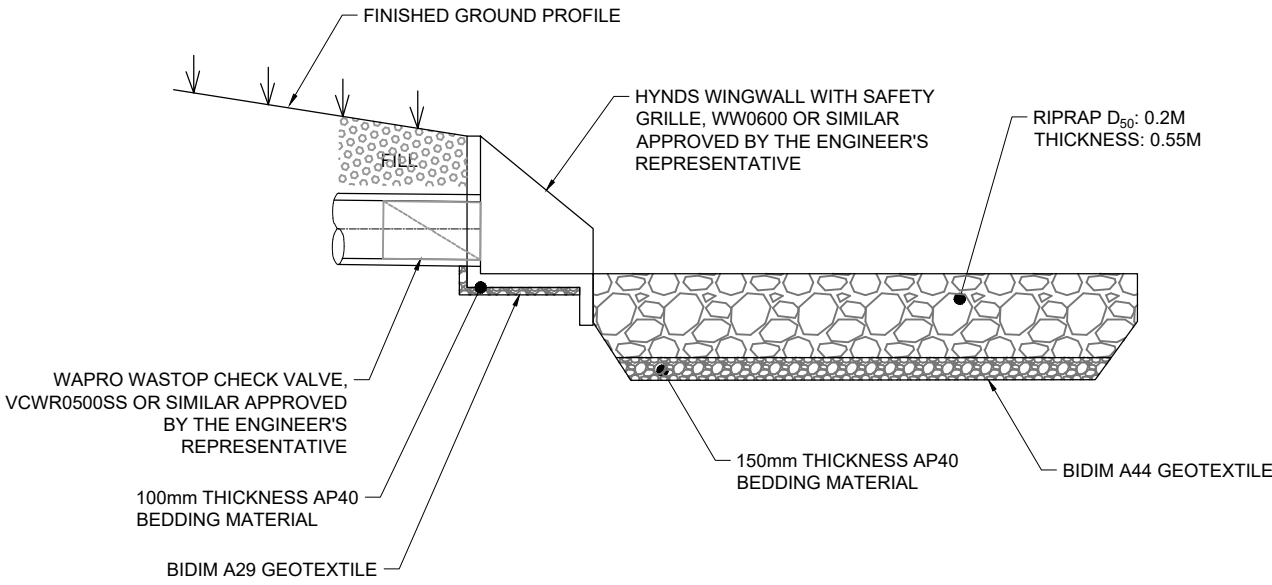
WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
EMERGENCY OVERFLOW PLAN & LONGITUDINAL SECTION



CAD FILE	2013646.012	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391 3-AWD32		
DWG No.	2013646.012	ISSUE	1

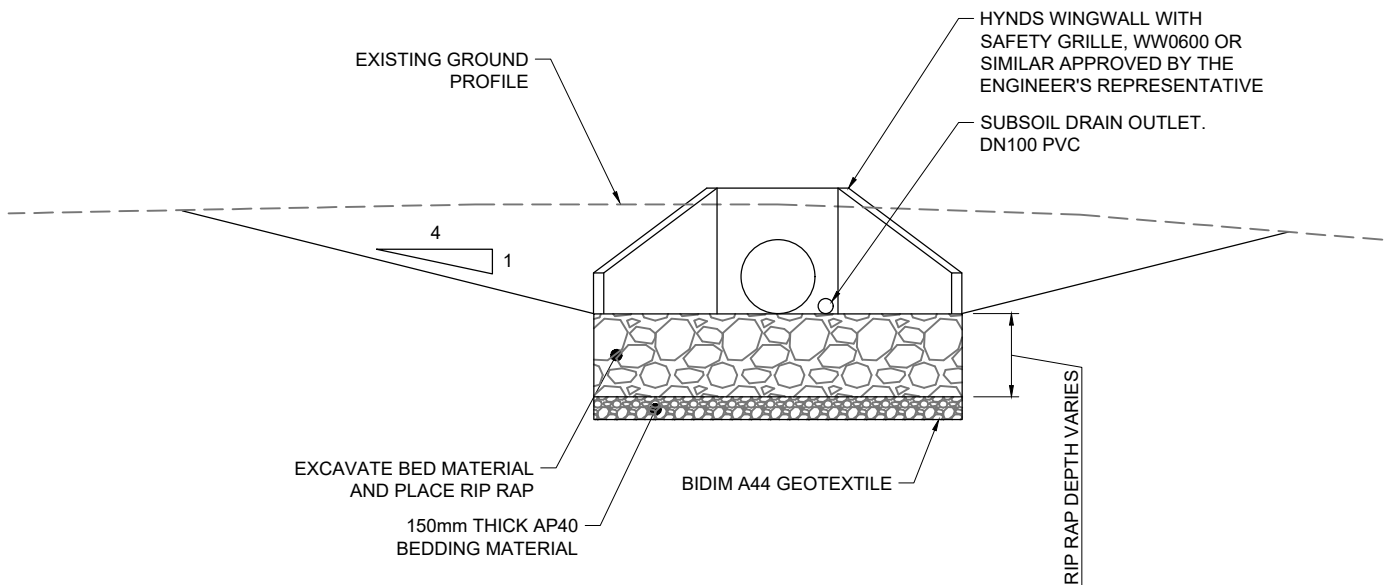
APRON NOTES:

1. RIP-RAP APRON IS TO BE PLACED FLAT LONGITUDINALLY (0% GRADE), WHEREVER POSSIBLE.
2. GEOTEXTILE MATERIAL SHOULD OVERLAP 300mm AND EXTEND 300mm BEYOND ROCK. SECURE THE FILTER CLOTH AT THE EDGES VIA SECURE PINS.
3. WINGWALL TO INCLUDE PROPRIETARY SAFETY GRILLE



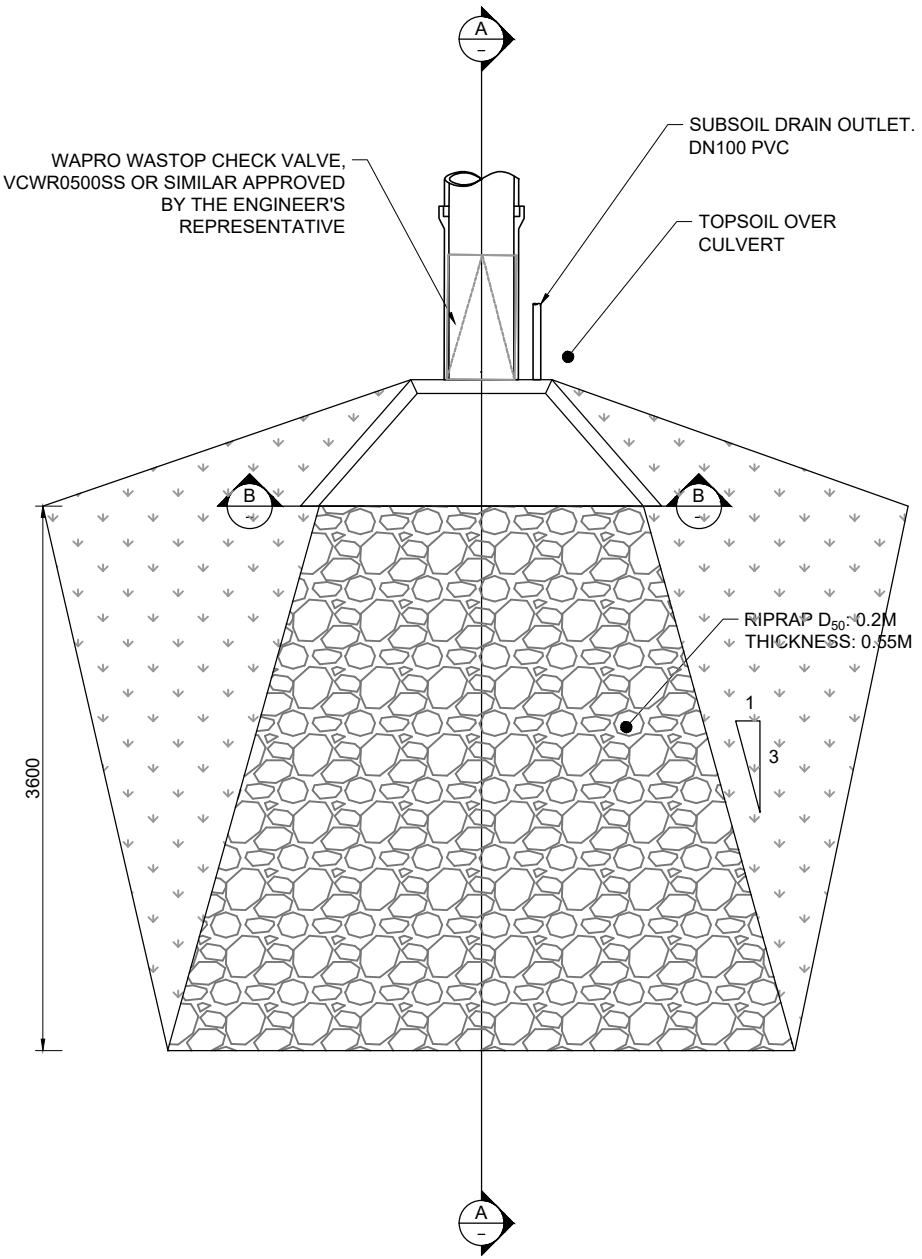
SECTION A-A - RIP-RAP APRON ENERGY DISSIPATOR

Scale: NTS



SECTION B-B - RIP-RAP APRON ENERGY DISSIPATOR

Scale: NTS



PLAN - RIP-RAP APRON ENERGY DISSIPATOR

Scale: NTS

1:25 @ A1
1:50 @ A3

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	RG	11-21
				DES. APPROVED	MG	11-21
				DRAWN	JG	11-21
				DWG. APPROVED	RG	11-21
2	04-22	RE-ISSUED FOR DETAILED DESIGN	JG	WSL DESIGN MGMT.	RB	-
1	01-22	DETAILED DESIGN ISSUE	JG	WSL PROJ. LEAD	RB	-
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

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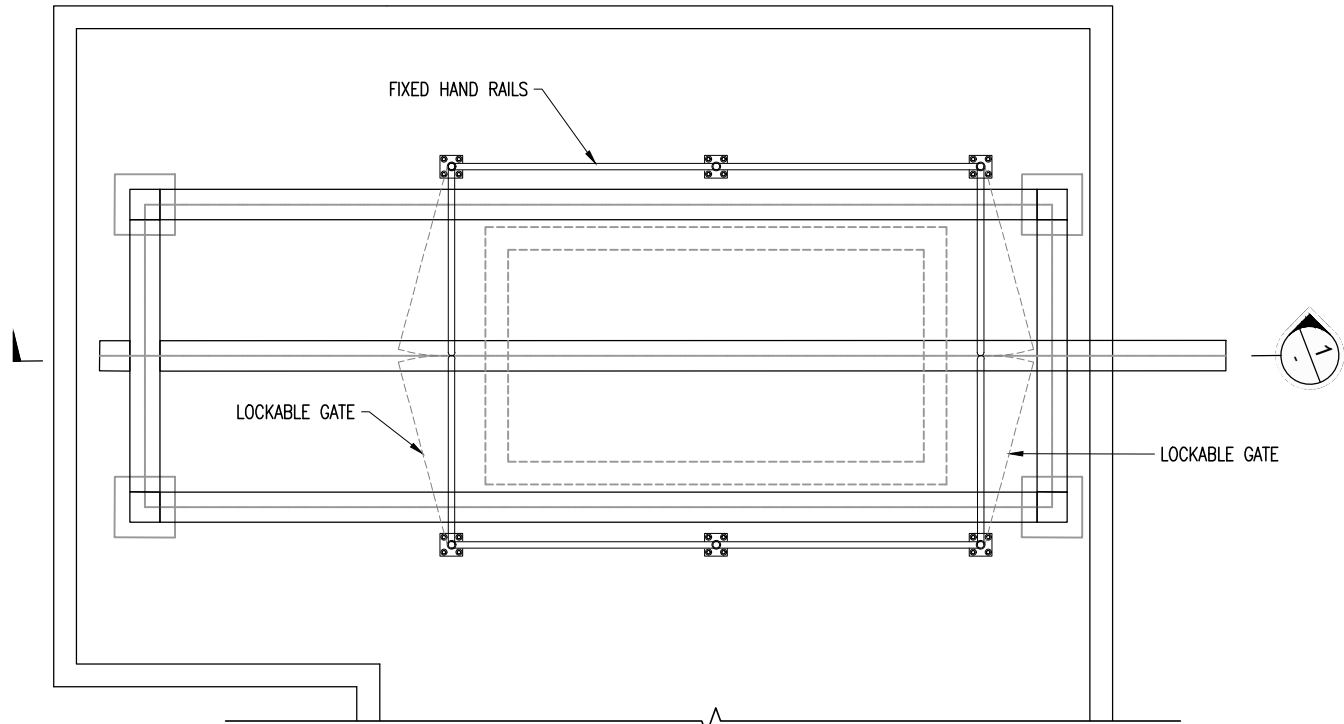
WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
EMERGENCY OVERFLOW - OUTFALL AND RIPRAP DETAIL



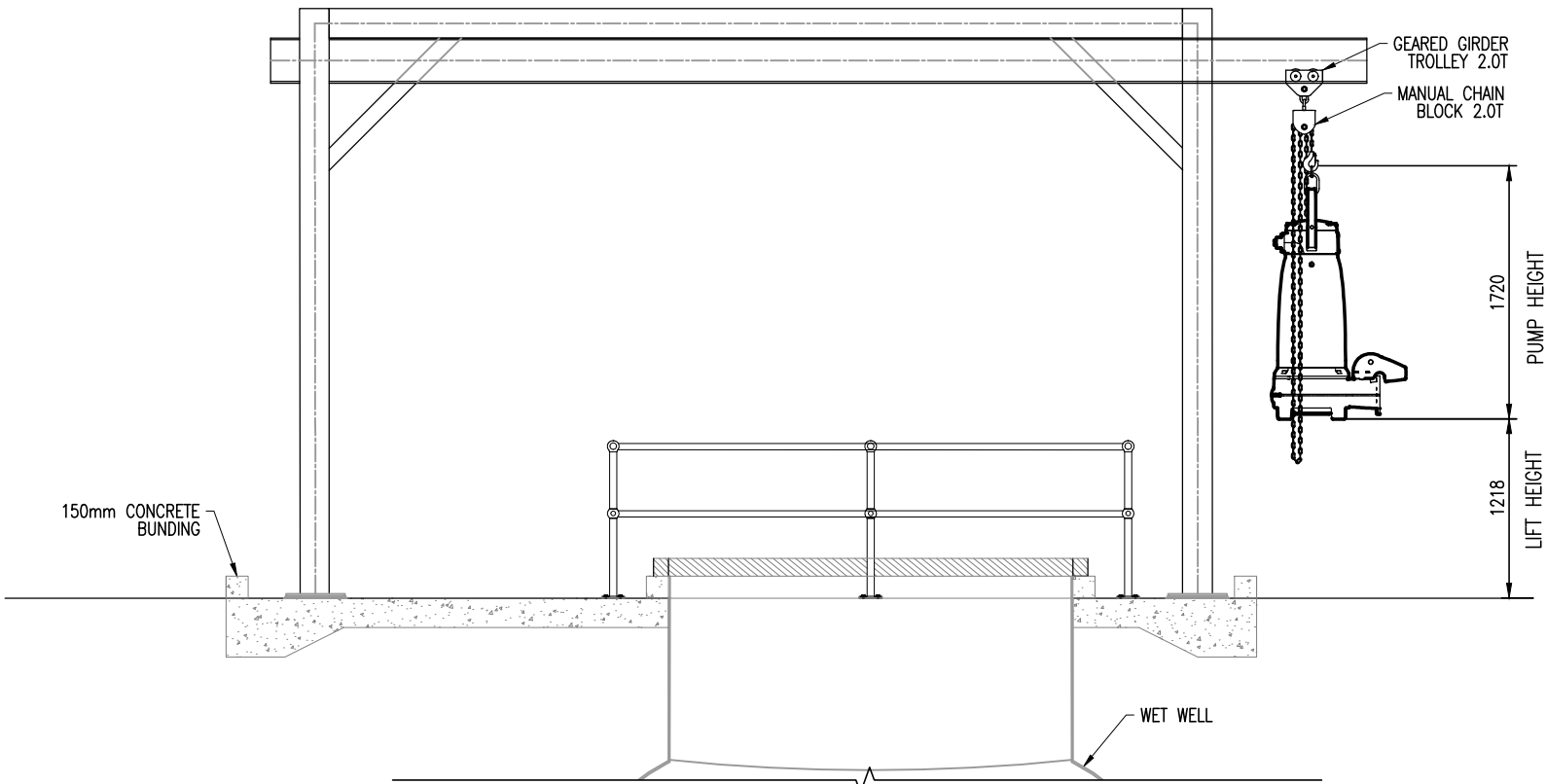
CAD FILE	2013646.013	DATE	08-04-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391	3-AWD32	
DWG No.	2013646.013	ISSUE	2

NOTE:

1. REFER TO STRUCTURAL DRAWINGS FOR GANTRY DIMENSIONS



LAYOUT PLAN
SCALE 1:50 (A3)



SECTION 1
SCALE: 1:50 (A3)

DETAILED DESIGN
NOT FOR CONSTRUCTION

					DESIGNED	JG	11-21
					DES. APPROVED	MG	11-21
					DRAWN	JG	11-21
					DWG. APPROVED	MG	05-21
					WSL DESIGN MGMT.	-	-
					WSL PROJ. LEAD	-	-
1	01-22	DETAILED DESIGN ISSUE		JG	MG		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE	

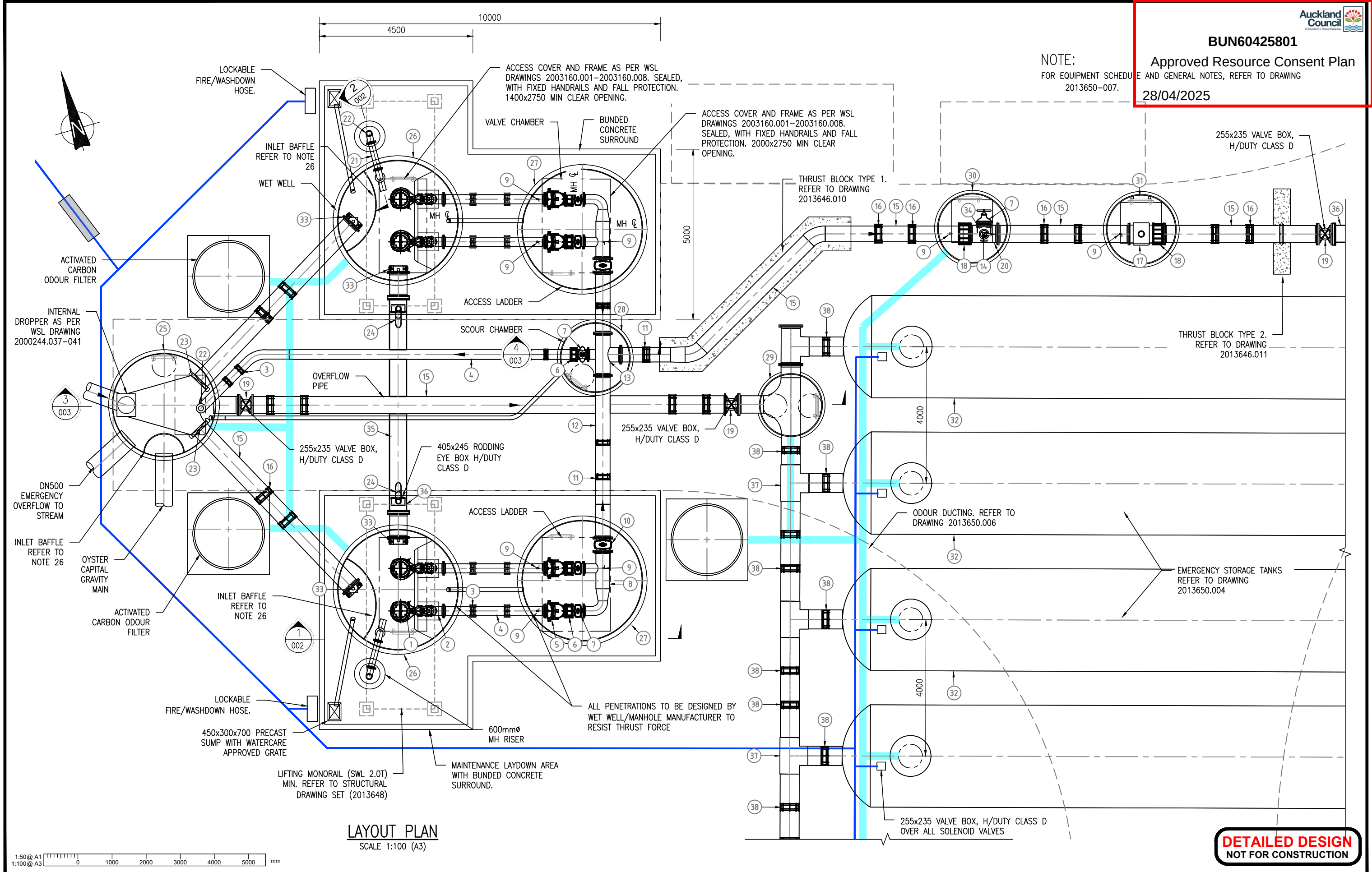
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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
WET WELL GANTRY LIFTING PLAN



CAD FILE	201346.014	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	6484-6934
REF No.	12508391	3-AWD32	
DWG No.	2013646.014	ISSUE	4



DETAILED DESIGN
NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	DES. APPROVED	DRAWN	DWG. APPROVED	WSL DESIGN MGMT.	WSL PROJ. LEAD	BY	DATE
4	01-22	DETAILED DESIGN ISSUE	JG	MG	AJ	BR	EW	EW	-	-	-	05-21
3	10-21	SAFETY IN DESIGN	SA	MK	SA	MK	EW	EW	-	-	-	05-21
2	08-21	RE-ISSUED FOR PRELIMINARY DESIGN	EVV	MK	EVV	MK	EW	EW	-	-	-	05-21
1	05-21	PRELIMINARY DESIGN ISSUE	AJ	BR	AJ	BR	EW	EW	-	-	-	05-21

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1

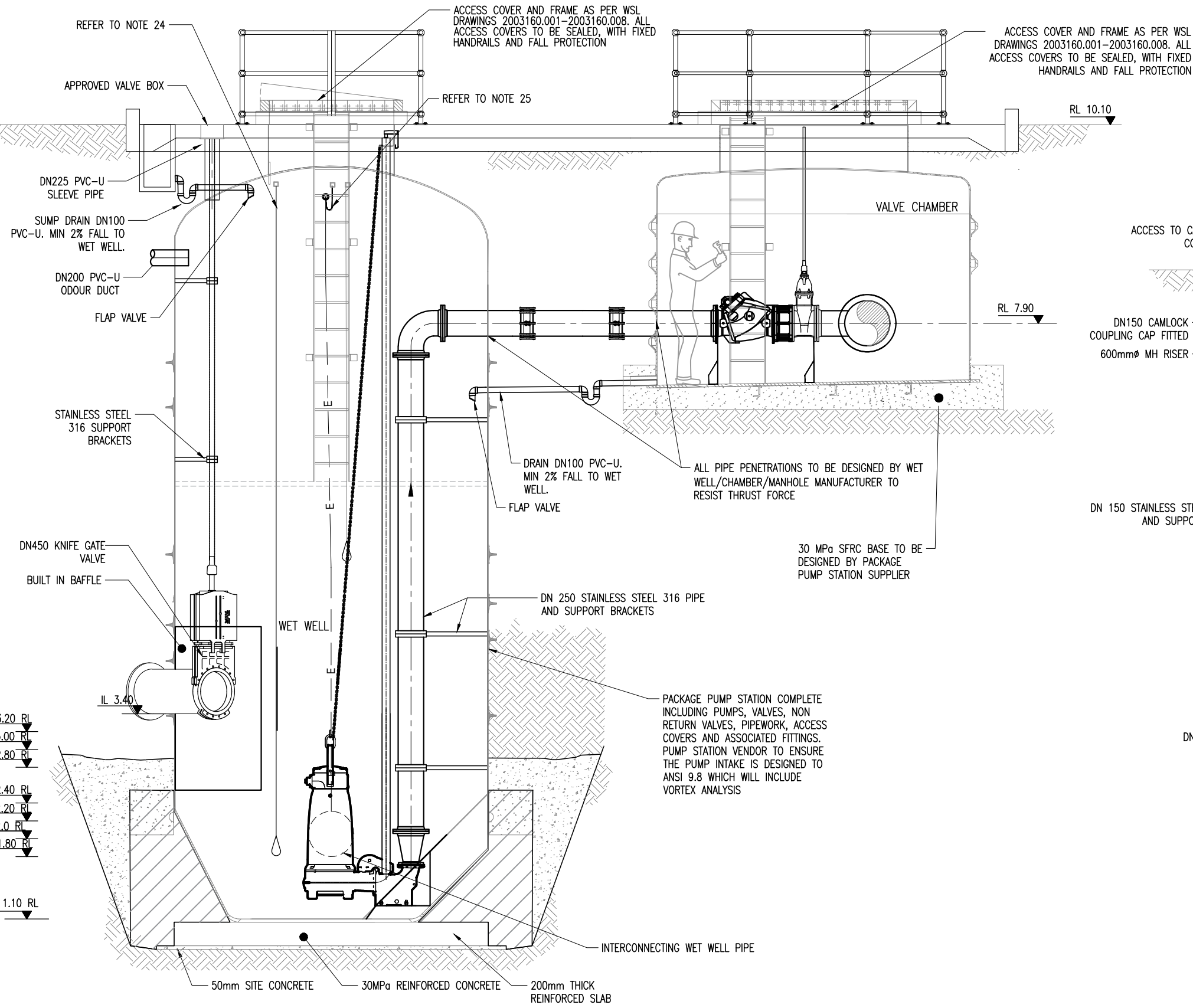
WASTEWATER PUMP STATION (DPISH)

PUMP STATION LAYOUT PLAN

wsp

GHD

CAD FILE	2013650.001	DATE	14-01-2022
ORIGINAL SCALE	A3	CONTRACT No.	6484-6934
AS SHOWN			
REF No.	12508391	3-AWD32	
DWG No.	2013650.001	ISSUE	4



SECTION 1
SCALE: 1:50 (A3) 001

SECTION 2
SCALE: 1:50 (A3) 001

DETAILED DESIGN
NOT FOR CONSTRUCTION

Plot Date: Jan 21, 2022 - 12:06pm U:\Project\NZ\13\13-AWD32.00 Whenuapai-Redhills Wastewater Servicing\Home\800 Drawings\13 Civil-AutoCAD\2013650.002.dwg

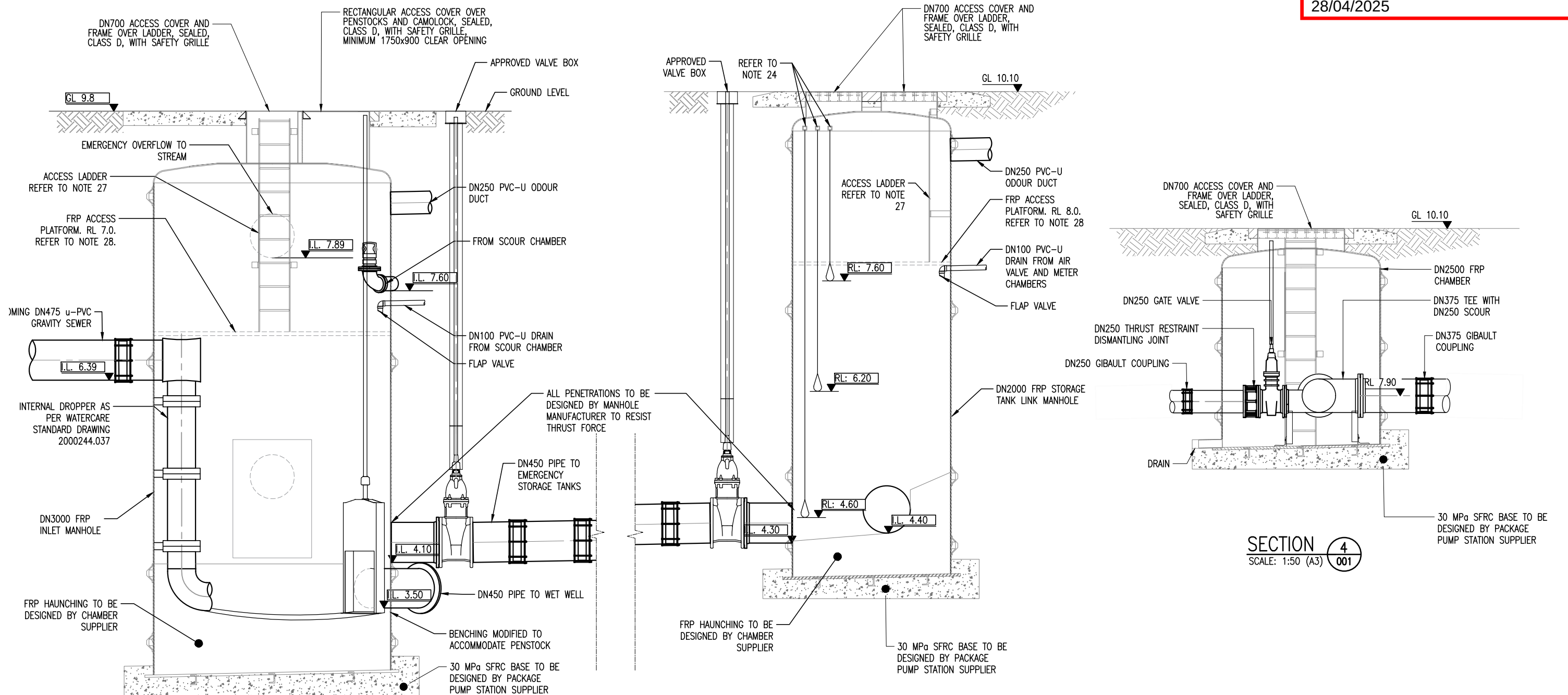
ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	DES. APPROVED	DATE
4	01-22	DETAILED DESIGN ISSUE	JG	MG	AJ	BR	05-21
3	10-21	SAFETY IN DESIGN	SA	MK	EW	EW	05-21
2	08-21	RE-ISSUED FOR PRELIMINARY DESIGN	EV	MK	EW	EW	05-21
1	05-21	PRELIMINARY DESIGN ISSUE	AJ	BR	-	-	-

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
WET WELL, FLOW METER CH. - DETAILED SECTIONS



CAD FILE	2013650.002	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	6484-6934
REF No.	12508391	3-AWD32	
DWG No.	203650.002	ISSUE	4



SECTION 3
SCALE: 1:50 (A3) 001

SECTION 4
SCALE: 1:50 (A3) 001

1:50 @ A3 0 400 800 1200 1600 2000 2400 mm

DETAILED DESIGN
NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
4	01-22	DETAILED DESIGN ISSUE	SA	BR		
3	10-21	SAFETY IN DESIGN	SA	MK		
2	08-21	RE-ISSUED FOR PRELIMINARY DESIGN	EV	MK		
1	05-21	PRELIMINARY DESIGN ISSUE	AJ	BR		

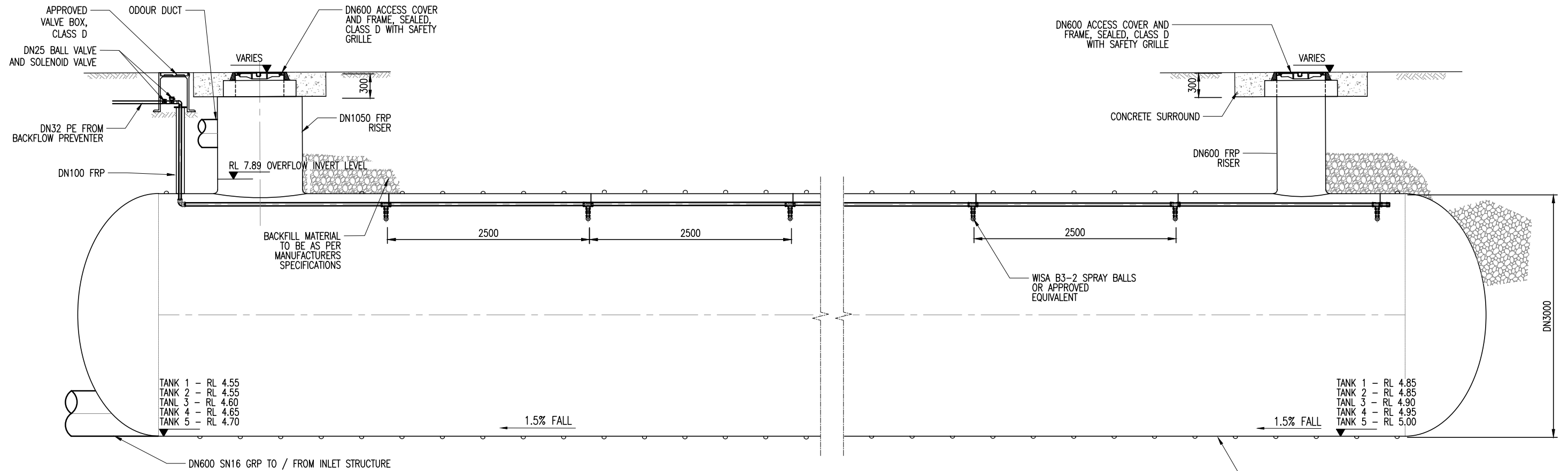
DESIGNED	AJ	05-21
DES. APPROVED	BR	05-21
DRAWN	EW	05-21
DWG. APPROVED	EW	05-21
WSL DESIGN MGMT.	-	-
WSL PROJ. LEAD	-	-

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
INLET MANHOLE - SECTION DETAILS



CAD FILE	2013650.003	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	6484-6934
REF No.	12508391	3-AWD32	
DWG No.	2013650.003	ISSUE	4



STORAGE TANK TYPICAL SECTION

SCALE 1:50 (A3)

1:25 @ A1
1:50 @ A3

DETAILED DESIGN
NOT FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
4	01-22	DETAILED DESIGN ISSUE	JG	BR		05-21
3	10-21	SAFETY IN DESIGN	SA	MK		05-21
2	08-21	RE-ISSUED FOR PRELIMINARY DESIGN	EVV	MK		05-21
1	05-21	PRELIMINARY DESIGN ISSUE	AJ	BR		05-21

DESIGNED	AJ	05-21
DES. APPROVED	BR	05-21
DRAWN	EW	05-21
DWG. APPROVED	EW	05-21
WSL DESIGN MGMT.	-	-
WSL PROJ. LEAD	-	-

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
22m STORAGE TANK - SECTION DETAILS



CAD FILE	2013650.004	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	6484-6934
REF No.	12508391	3-AWD32	
DWG No.	2013650.004	ISSUE	4

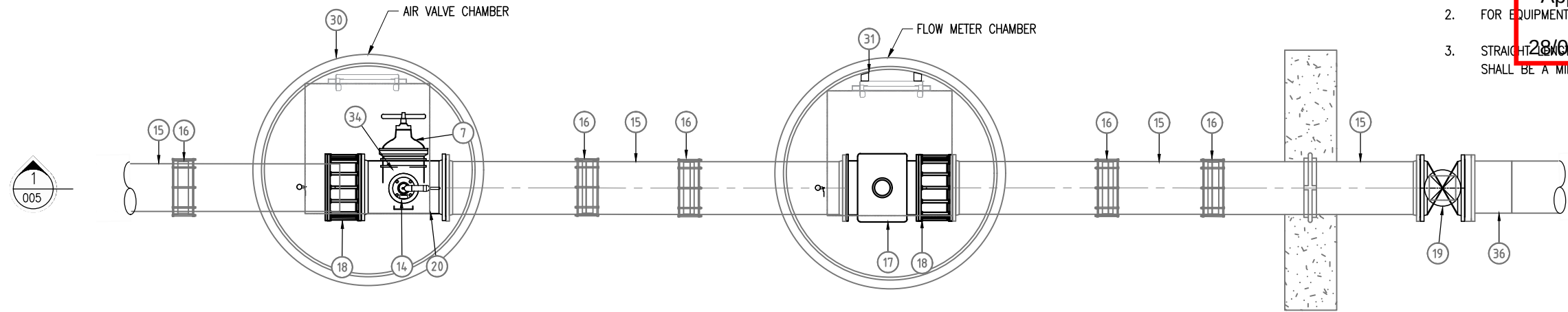
NOTES:

BUN60425801

Approved Resource Consent Plan

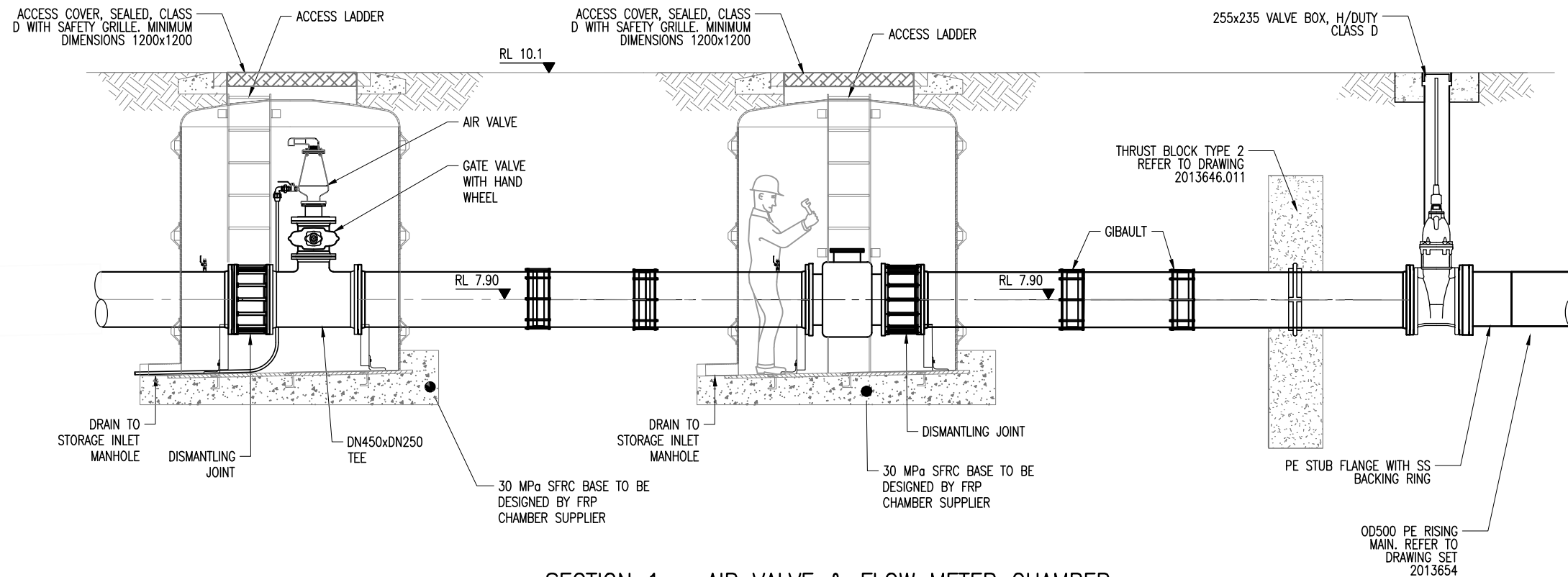
- FOR GENERAL NOTES REFER TO DRAWING 2013650-002
- FOR EQUIPMENT SCHEDULE REFER TO DRAWING 2013650-007.
- STRAIGHT LENGTHS OF PIPE BEFORE AND AFTER FLOW METER SHALL BE A MINIMUM OF 2250mm AND 950mm RESPECTIVELY

28/04/2025



PLAN – AIR VALVE & FLOW METER CHAMBER

SCALE 1:50 (A3)



SECTION 1 – AIR VALVE & FLOW METER CHAMBER

SCALE 1:50 (A3)

DETAILED DESIGN
NOT FOR CONSTRUCTION

U:\Project\NZ\3\3\3-AWD32.00 Whenuapai-Redhills Wastewater Servicing Home 800 Drawings\1\1\1-AutoCAD\2013650.005.dwg

1:50 @ A3 0 1000 2000 3000 4000 5000 mm

				DESIGNED	JG	03-21
				DES. APPROVED	MG	03-21
				DRAWN	SA	11-21
				DWG. APPROVED	JG	03-21
				WSL DESIGN MGMT.	-	-
				WSL PROJ. LEAD	-	-
1	01-22	DETAILED DESIGN ISSUE	SA	MG		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
AIR VALVE & FLOW METER CHAMBER – SECTION AND DETAILS

CAD FILE	2013650.005	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	12508391 3-AWD32		
DWG No.	2013650.005	ISSUE	1

NOTES:

1. FOR PIPEWORK DETAILS REFER TO DRAWING 2013650-006

2. DUCTING MINIMUM COVER 600mm

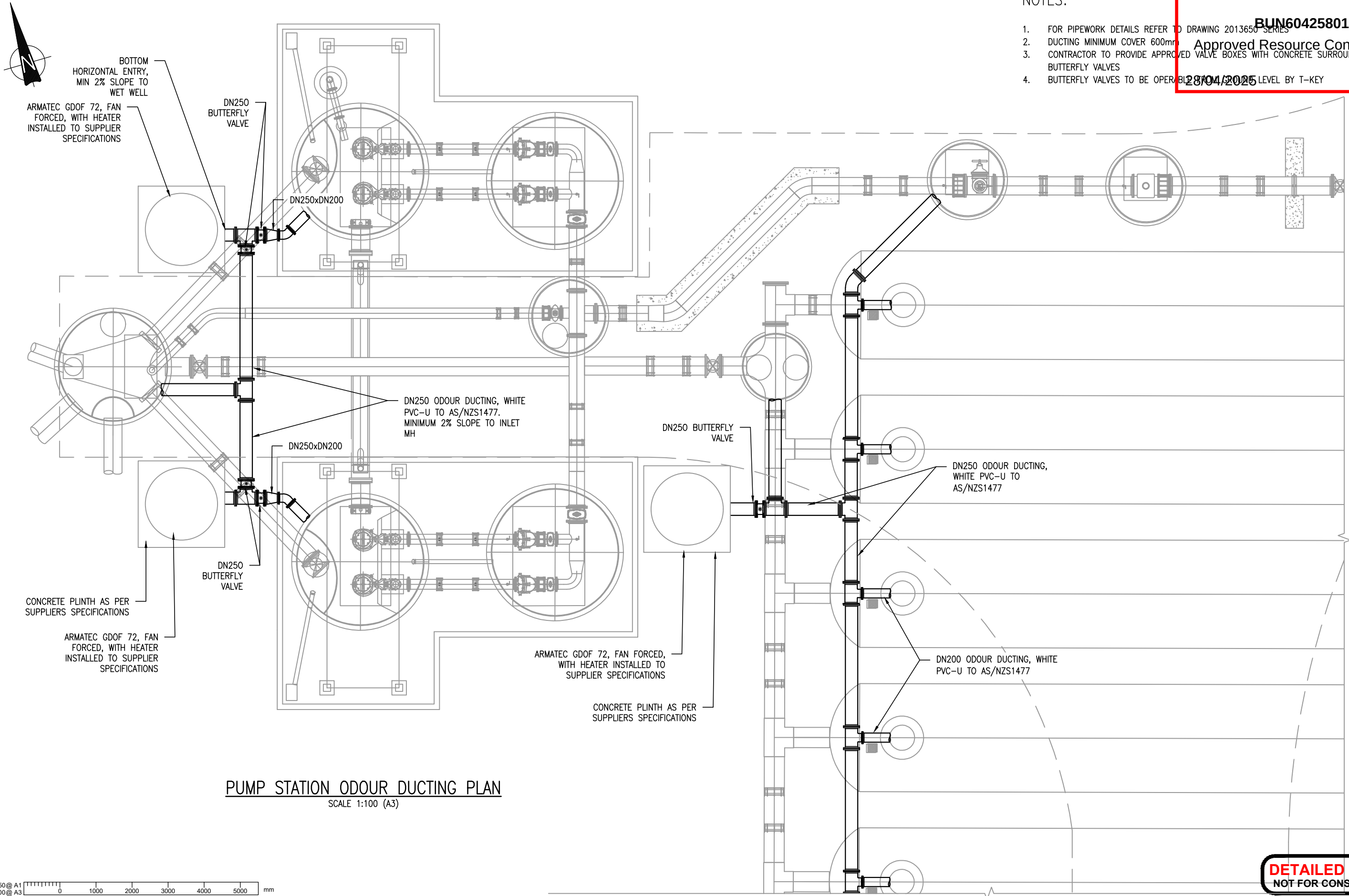
3. CONTRACTOR TO PROVIDE APPROVED VALVE BOXES WITH CONCRETE SURROUND FOR ALL BUTTERFLY VALVES

4. BUTTERFLY VALVES TO BE OPERABLE
- BUN60425801

Approved Resource Consent Plan

28/04/2025

LEVEL BY T-KEY



PUMP STATION ODOUR DUCTING PLAN
SCALE 1:100 (A3)

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	JG	11-21
				DES. APPROVED	MG	11-21
				DRAWN	JG	11-21
				DWG. APPROVED	MG	11-21
				WSL DESIGN MGMT.	RB	-
				WSL PROJ. LEAD	RB	-
1	01-22	DETAILED DESIGN ISSUE	JG	MG		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
PUMP STATION ODOUR DUCTING PLAN



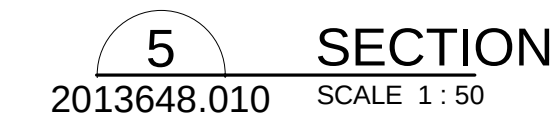
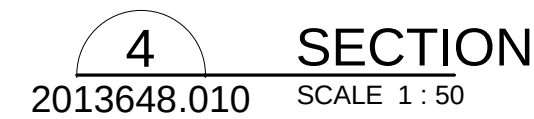
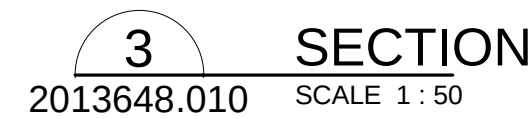
CAD FILE	2013650.006	DATE	14-01-2022
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	6484-6934
REF No.	12508391	3-AWD32	
DWG No.	2013650.006	ISSUE	1

NOTES:

1. ALL DWGS TO BE READ IN CONNECTION WITH THE WSP STRUCTURAL SPECIFICATION.
2. EXISTING STRUCTURE IS SHOWN INDICATIVELY ONLY. VERIFY DIMENSIONS & CONFIGURATION OF EXISTING STRUCTURE ON SITE BEFORE COMMENCING ANY WORKS & NOTIFY ENGINEER IF ANY DIFFERENCES TO WHAT IS INDICATED ON THE DWGS ARE ENCOUNTERED.
3. EXISTING SERVICES NOT SHOWN. VERIFY LOCATION OF ALL EXISTING SERVICES ON SITE BEFORE COMMENCING ANY WORKS.
4. REFER TO CIVILS DWGS FOR ALL SET OUT DIMENSIONS, LEVELS, FALLS, SLAB SET DOWNS, REBATES, EDGE DETAILS & EQUIPMENT.
5. ANY SERVICES PENETRATIONS & FIXTURES SHOWN ARE SHOWN INDICATIVELY ONLY. REFER SERVICES DWGS FOR LOCATION & SIZE OF SERVICES, SERVICES PENETRATIONS & SERVICES FIXTURES U.N.O.
6. ALL EXTERNALLY EXPOSED STEELWORK INCLUDING FIXINGS TO BE HOT DIP GALVANIZED U.N.O.

LEGEND:

- | | |
|-----|---|
| 200 | 200 THK SLAB WITH SE82 TOP & BTM. ON DPC ON 25 NOM SAND BLINDING ON 150 MIN WELL COMPACTED GAP65 HARDFILL ON WELL COMPACTED SUBGRADE. |
| 250 | 250 THK SLAB WITH SE82 TOP & BTM. ON DPC ON 25 NOM SAND BLINDING ON 150 MIN WELL COMPACTED GAP65 HARDFILL ON WELL COMPACTED SUBGRADE. |



									DESIGNED	P.PATEL	21/12/2021
									DES. APPROVED	A. SIMPSON	21/12/2021
									DRAWN	V.CARTER	21/12/2021
									DWG. APPROVED	S.JIANG	21/12/2021
									WSL DESIGN MGMT.		
									WSL PROJ. LEAD		
A	01-22	DETAILED DESIGN ISSUE					SJ	AS			
ISSUE	DATE	AMENDMENT					BY	APPD.		RY	DATE



WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1 WET WELL PUMP LIFTING GANTRY



CAD FILE	2013648.012	DATE	14-01-2022
ORIGINAL SCALE A1	As indicated @ A1	CONTRACT No.	-
REF. No.	2013648 3-AWD32		
DWG. No.	2013648.012		ISSUE A

U:\Projects\NZ-SA-13-AWD32.00 Whenuapai-Redhills Wastewater Servicing\Home\800 Drawings\LU Landscape\ 2013649.001-003.dwg

GENERAL NOTES:

THE GENERAL PHILOSOPHY FOR THE LANDSCAPE DESIGN ON THE PROJECT IS TO PROMOTE BIODIVERSITY AND ADD AMENITY VALUES THROUGH AN ENVIRONMENT SENSITIVE AND PLACE-BASED APPROACH. THE DESIGN WILL LOOK TO INCORPORATE LOW MAINTENANCE, SUSTAINABLE AND ENVIRONMENTALLY INTERVENTIONS.

THE PLANTING AREAS WITHIN THE PROJECT ARE THE IMMEDIATE SURROUNDING OF THE PUMP STATION AND WETLAND AND WILL BE DESIGNED WITH A NATIVE PLANT PALETTE.

PLANTING AREAS TO BE DEFINED AS:

- WETLAND RIPARIAN PLANTING
- PUMP STATION LOW AMENITY PLANTING
- PUMP STATION SCREENING PLANTING
- STREAM BANK REINSTATEMENT PLANTING

TREES WILL BE PLACED WITHIN PLANTING AREAS TO ADD AMENITY VALUE AND TO PROVIDE SCREENING EFFECTS AND BIODIVERSITY. THE TREES SELECTED ARE WET SOIL TOLERANT SPECIES INCLUDING CABBAGE TREE, KAHIKATEA, MAHOE, RIBBONWOOD AND PURIRI. THEY WILL BE POSITIONED TO AVOID OBSTRUCTING THE UNDERGROUND SERVICES.

PLANT SCHEDULE							
Code	Botanical Name	Common Name	Unit/ Grade	Max. Growth Size (H x W)	Plant Spacing (mm)	Percentage Mix	TOTAL (no.)
Wetland Riparian Planting							
CAR GEM	Carex geminata	Cutty Grass	1L/PB2	1.0 x 1.0m	750	10%	180
CAR VIR	Carex virgata	Pukio / Swamp Sedge	1L/PB2	1.0 x 1.0m	750	20%	360
COR FUL	Cortaderia fulvida	Toetoe	1L/PB2	1.5 x 1.5m	1000	30%	300
PHO COO	Phormium cookianum	Wharariki / Mountain Flax	1L/PB2	1.5 x 1.5m	1000	10%	100
PHO TEN	Phormium tenax	Harakeke / NZ Flax	1L/PB2	3.0 x 2.0m	1000	30%	300
Pump Station Low Amenity Planting							
CAR TES	Carex testacea	Grass / Sedge	2L/PB3	0.6 x 0.6m	500	20%	530
CAR VIR	Carex virgata	Pukio / Swamp Sedge	1L/PB2	1.0 x 1.0m	500	20%	530
COR FUL	Cortaderia fulvida	Toetoe	1L/PB2	1.5 x 1.5m	1000	10%	66
DIA NIG	Dianella nigra	Turutu	2L/PB3	0.5 x 0.5m	500	10%	265
PHO 'EG'	Phormium 'Emerald Gem'	Dwarf Flax	2L/PB3	0.6 x 0.6m	500	20%	530
PHO 'JS'	Phormium 'Jack Spratt'	Ornamental Flax	2L/PB3	0.6 x 0.6m	500	20%	530
Pump Station Screening Planting							
HEB STR	Hebe stricta	Koromiko	2L/PB3	2.5 x 1.5m	1000	25%	31
KUN ERI	Kunzea ericoides	Kanuka	2L/PB3	10.0 x 4.0m	2000	25%	31
LEP SCO	Leptospermum scoparium	Manuka	2L/PB3	4.0 x 3.0m	2000	25%	31
PHO TEN	Phormium tenax	Harakeke / NZ Flax	1L/PB2	3.0 x 2.0m	1000	25%	31
		Mahoe					
Stream Bank Reinstatement Planting							
COR FUL	Cortaderia fulvida	Toetoe	1L/PB2	1.5 x 1.5m	1000	30%	92
PHO COO	Phormium cookianum	Wharariki / Mountain Flax	1L/PB2	1.5 x 1.5m	1000	30%	92
PHO TEN	Phormium tenax	Harakeke / NZ Flax	1L/PB2	3.0 x 2.0m	1000	40%	122
						Sub Total	4121

TREE SCHEDULE						
Code	Botanical Name	Common Name	Unit/ Grade	Max. Growth Size (H x W)	Plant Spacing (mm)	TOTAL
CA	Cordyline asutralis	Cabbage Tree / Ti Kouka	PB18	10.0 x 2.0m	as shown	26
DD	Dacrycarpus dacrydioides	Kahikatea / White Pine	PB18	30.0 x 10.0m	as shown	6
MR	Melicytus ramiflorus	Mahoe / Whiteywood	PB18	5.0 x 4.0m	as shown	3
PR	Plagianthus regius	Manatu / Ribbonwood	PB18	12.0 x 4.0m	as shown	7
VL	Vitex lucens	Puriri	PB18	10.0 x 10.0m	as shown	3
					Sub Total	45

DETAILED DESIGN
NOT FOR CONSTRUCTION

				DESIGNED	AL	07-21
				DES. APPROVED	CN	07-21
				DRAWN	AL	07-21
				DWG. APPROVED	CN	07-21
				WSL DESIGN MGMT.	-	-
				WSL PROJ. LEAD	-	-
1	01-22	DETAILED DESIGN ISSUE	AL	CN		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

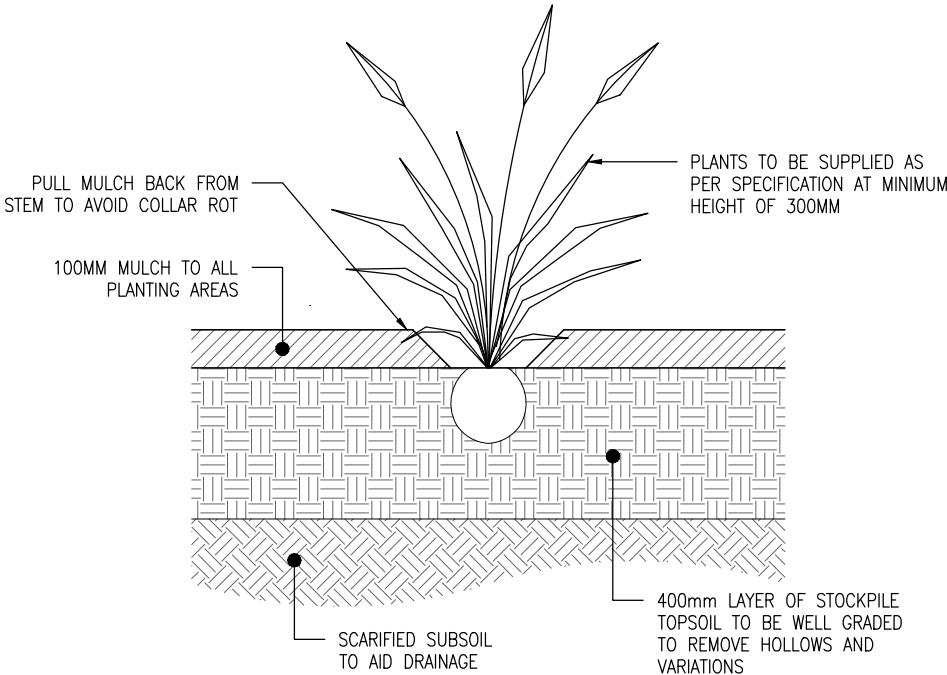


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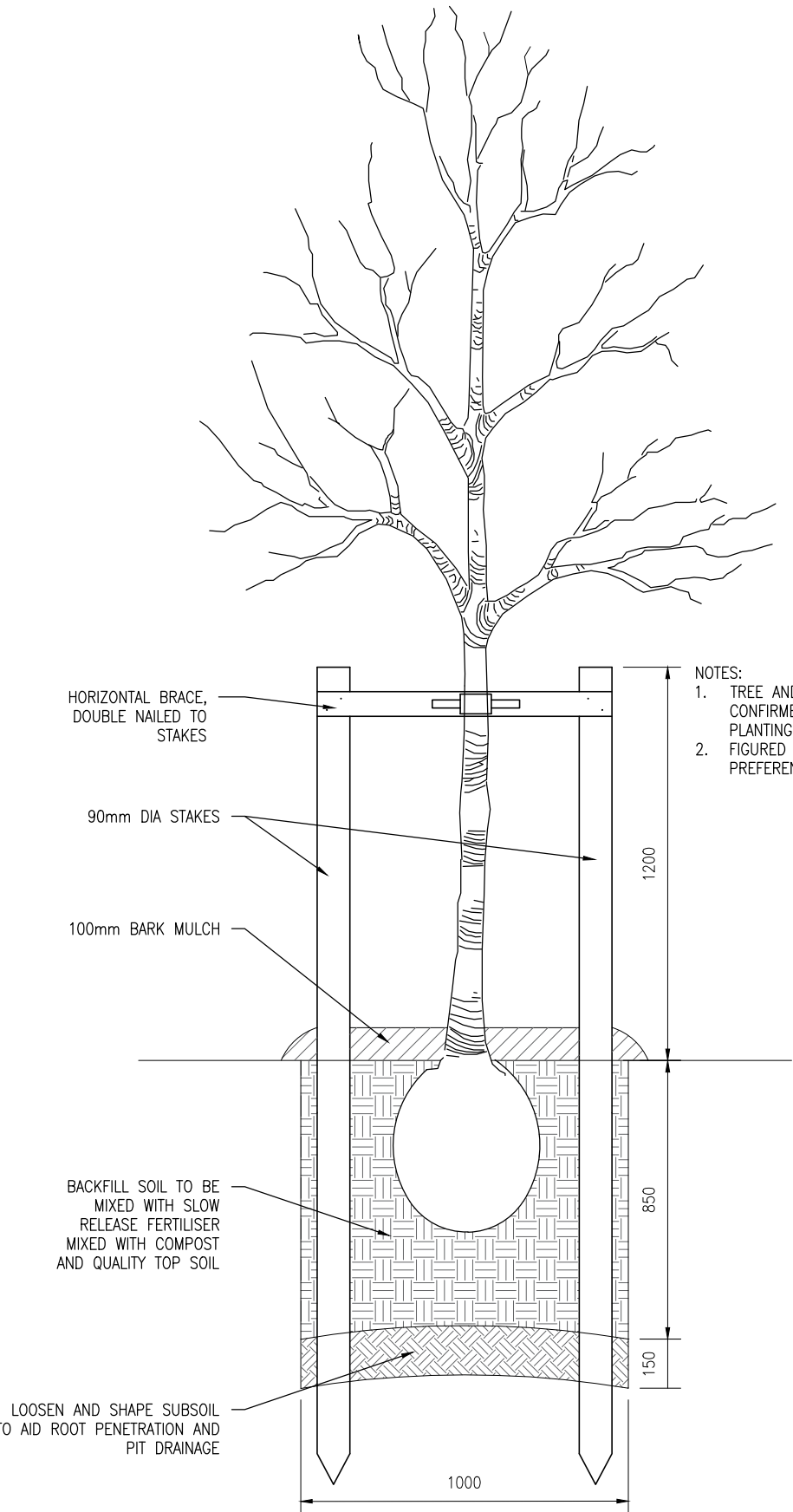
WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
PLANT SCHEDULE



CAD FILE	2013649.001-003	DATE	14-01-2022
ORIGINAL SCALE	A3 NOT TO SCALE	CONTRACT No.	6484-6934
REF No.	12508391 3-AWD32		
DWG No.	2013649.002	ISSUE	1



TYPICAL SHRUB PLANTING DETAIL
SCALE 1:20(A3)



- NOTES:
1. TREE AND PLANTING LOCATIONS TO BE CONFIRMED ON SITE ON SITE PRIOR TO PLANTING.
 2. FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

TYPICAL TREE PLANTING DETAIL
SCALE 1:20(A3)

DETAILED DESIGN
NOT FOR CONSTRUCTION

1:10 @ A1
1:20 @ A3
0 100 200 300 400 500 600 700 800 900 1000 mm

				DESIGNED	AL	07-21
				DES. APPROVED	CN	07-21
				DRAWN	AL	07-21
				DWG. APPROVED	CN	07-21
				WSL DESIGN MGMT.	-	-
				WSL PROJ. LEAD	-	-
1	01-22	DETAILED DESIGN ISSUE	AL	CN		
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE

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WHENUAPAI-REDHILLS WASTEWATER SERVICING PACKAGE 1
WASTEWATER PUMP STATION (DPISH)
PLANTING DETAILS

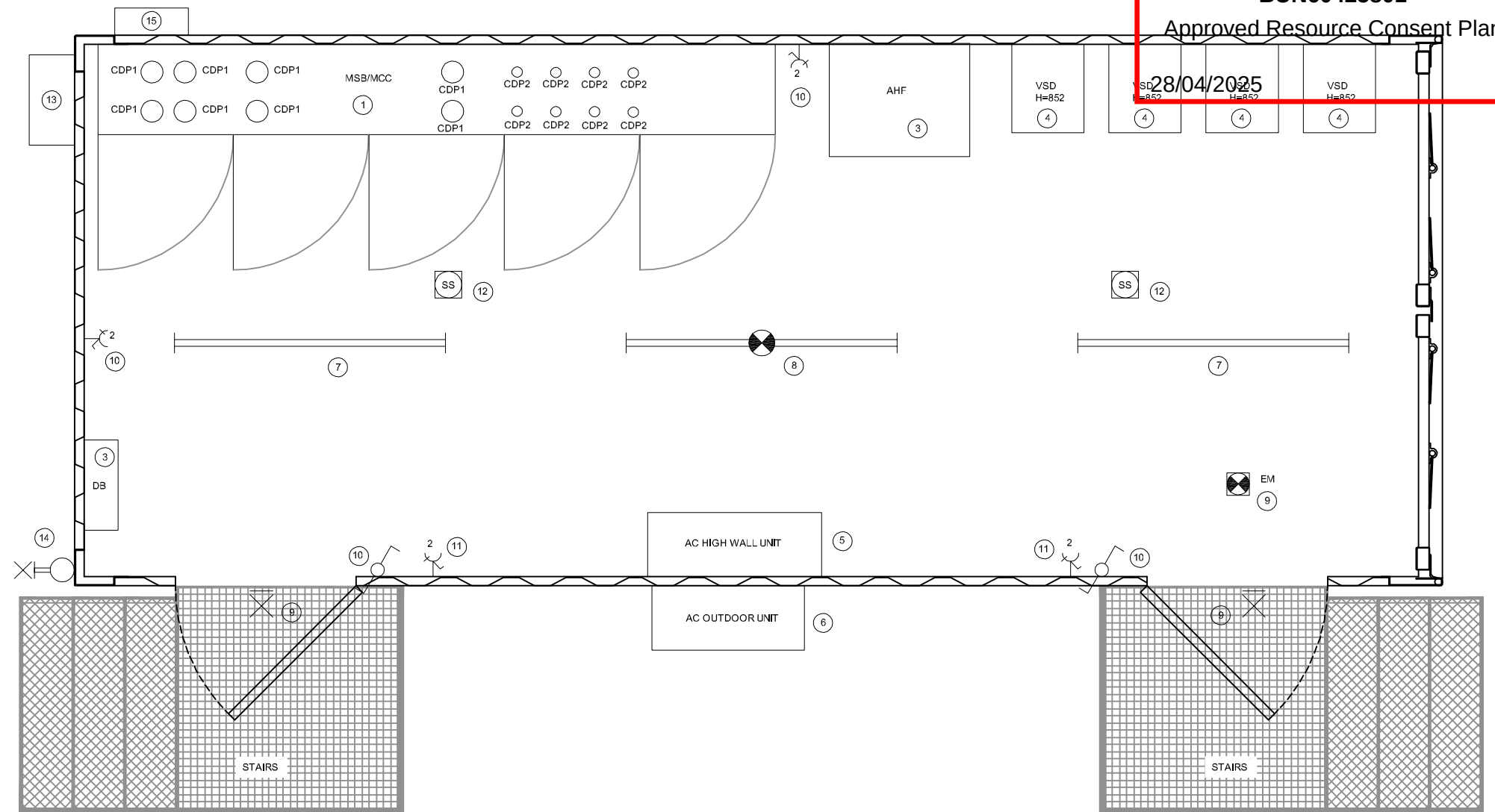


CAD FILE	2013649.001-003	DATE	14-01-22
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	6484-6934
REF No.	12508391	3-AWD32	
DWG No.	2013649.003	ISSUE	1

BUN60425801

Approved Resource Consent Plan

SD 28/04/2025 VSD
-852 H-852



EQUIPMENT SCHEDULE	
ID	DESCRIPTION
1	MAIN SWITCHBOARD, DISTRIBUTION BOARD, MOTOR CONTROL CENTRE
2	DISTRIBUTION BOARD
3	ACTIVE HARMONIC FILTER
4	VARIABLE SPEED DRIVE
5	HEAT PUMP HIGH WALL INDOOR UNIT
6	HEAT PUMP GROUND MOUNTED OUTDOOR UNIT
7	SURFACE MOUNT LED BATTEN LIGHTS
8	SURFACE MOUNT LED BATTEN LIGHT WITH INTEGRAL EMERGENCY KIT
9	WALL MOUNTED EXTERIOR LED IP44 LIGHTS
10	TWO WAY LIGHT SWITCH
11	VERTICAL DOUBLE SWITCHED GENERAL PURPOSE OUTLET
12	SMOKE DETECTORS
13	GENERATOR CONNECTION TERMINAL BOX
14	AREA FLOOD LIGHT MOUNTED ON ANTENNA MAST
15	CABLE DRAW PIT

A white mobile office container with two sets of stairs and ramps, situated outdoors on a paved area with green safety mats and yellow bollards in the foreground.

DETAILED DESIGN
NOT FOR CONSTRUCTION

						DESIGNED	BL	11-21	 Watercare COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.
						DES. APPROVED	PW	11-21	
						DRAWN	BL	11-21	
						DWG. APPROVED	PW	11-21	
2	01-22	CABLE DUCT PENETRATION DETAILS	BL	PW	WSL DESIGN MGMT.	-	-		
1	11-21	DETAIL DESIGN ISSUE	BL	PW	WSL PROJ. LEAD	-	-		
ISSUE	DATE	AMENDMENT	BY	APPD.			BY	DATE	

DPI&H WHENUAPAI – REDHILLS WASTEWATER SERVICING
BRINGHAM CREEK ROAD, WHENUAPAI
CONTAINER LAYOUT



CAD FILE	2013647.025-026	DATE	05-11-21
ORIGINAL SCALE	A3 NTS	CONTRACT No.	-
REF No. 12508391 3-AWD32			
DWG No.	2013647.025	ISSUE 2	