



TARAWERA WW RETICULATION SCHEME

LOCALITY PLAN



DETAILED DESIGN
30.05.23

CIVIL	
R-0034-310103621-01-RUN-00-C-001	COVER SHEET
R-0034-310103621-01-RUN-00-C-002	DRAWING INDEX SHEET
R-0034-310103621-01-RUN-00-C-005	CIVIL GENERAL NOTES
R-0034-310103621-01-RUN-00-C-010	DRAWING LAYOUT SHEET 1 TRUNK MAIN
R-0034-310103621-01-RUN-00-C-011	DRAWING LAYOUT SHEET 2 PRESSURE MAINS
R-0034-310103621-01-RUN-00-C-100	SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-101	SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-102	SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-103	SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-104	SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-105	SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-106	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-107	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-108	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-109	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-110	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-111	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-112	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-113	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-114	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-115	CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-150	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-151	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-152	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-153	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-154	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-155	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-156	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-157	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-158	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-159	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-200	STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-201	STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-202	STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-203	STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-204	STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-205	STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-220	LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-221	LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-222	LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-223	LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-224	LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-225	LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
R-0034-310103621-01-RUN-00-C-250	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-00-C-251	PRESSURE MAIN PLAN
R-0034-310103621-01-RUN-09-C-201	TYPICAL TRENCH DETAILS
R-0034-310103621-01-RUN-09-C-202	TYPICAL AIR VALVE DETAIL
R-0034-310103621-01-RUN-09-C-203	TYPICAL SCOUR VALVE DETAIL
R-0034-310103621-01-RUN-09-C-204	TYPICAL FLUSHING POINT DETAIL
R-0034-310103621-01-RUN-09-C-205	TYPICAL GATE VALVE DETAIL

REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23




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DESIGNED BY	DES CHK	PROJECT NAME	STATUS		
S. Sutton	W. Jacobson	TARAWERA WW RETICULATION SCHEME	DETAILED DESIGN		
DRAWN BY	DRN CHK	DRAWING TITLE	SCALE	SITE ID	AREA
S. Sutton	S. Sutton	DRAWING INDEX SHEET			
DRAWN DATE	APPROVED BY	APPROVED DATE	DRAWING NUMBER	REV.	SIZE
3.23	S. Shortt	30.05.23	R-0034-310103621-01-RUN-00-C-002	0.B	A1
		SHEET NUMBER			

GENERAL

1. READ THESE NOTES IN CONJUNCTION WITH OTHER ENGINEERING DRAWINGS (GENERAL ARRANGEMENTS, SECTIONS AND DETAILS) AND PROJECT SPECIFICATIONS, AND WITH SUCH OTHER WRITTEN INSTRUCTIONS ISSUED.
2. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE, BUT INDICATES REQUIRED PROPERTIES OF ITEM. SIMILAR ALTERNATIVES HAVING REQUIRED PROPERTIES MAY BE OFFERED FOR APPROVAL.
3. APPROVAL OF A SUBSTITUTION DOES NOT AUTOMATICALLY AUTHORISE A VARIATION TO THE CONTRACT. ANY VARIATION MUST BE FORMALLY RAISED WITH THE ENGINEER BEFORE THE WORK COMMENCES.
4. INSTALL PROPRIETARY ITEMS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
5. DO NOT OBTAIN DIMENSIONS BY SCALING FROM DRAWINGS.
6. DIMENSIONS ARE IN MILLIMETRES.
7. BUILD, FABRICATE AND PROCURE ONLY FROM DRAWINGS 'ISSUED FOR CONSTRUCTION'.
8. WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE PRINCIPAL'S REQUIREMENTS, OR FAILING THAT THE WAIKATO LOCAL AUTHORITY SHARED SERVICES 'REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS' (RITS).
9. THE CONTRACTOR SHALL ALLOW FOR DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS, BUT NECESSARY FOR THE COMPLETION OF THE WORKS.
10. ANY COORDINATES SHOWN ARE IN TERMS OF NZTM PROJECTION WITH LEVELS IN NZVD2016.
11. LEGAL BOUNDARIES AS SHOWN HAVE BEEN SOURCED FROM LINZ DATA SERVICES AND SHOULD BE REGARDED AS APPROXIMATE ONLY UNLESS PROVEN ON SITE BY A LICENSED CADASTRAL SURVEYOR.
12. FENCES MAY NOT BE ON PROPERTY BOUNDARIES. CONTRACTOR TO CONFIRM ACTUAL BOUNDARY WHERE REQUIRED TO FACILITATE WORKS.
 - DO NOT MOVE FENCELINES UNLESS REQUIRED.
 - DISTURBED FENCELINES TO BE REINSTATED.
 - NEW FENCELINES TO BE AGREED.
 - TEMPORARY FENCES TO BE USED TO MAINTAIN STOCK CONTAINMENT.
13. ALL LATERALS ARE SIZED AS DN40 PE100 PN16 PIPE. EXCEPTIONS FOR THIS HAVE BEEN CALLED OUT ON THE DRAWINGS. PRIVATE PROPERTY WORKS INCLUDING LATERALS IN PRIVATE PROPERTY ARE SHOWN INDICATIVELY ONLY AND ARE SUBJECT TO DETAILED SITE PROOFING AND PRIVATE PROPERTY AGREEMENTS.
14. BOUNDARY KIT ASSEMBLIES TO FOLLOW E-ONE MANUFACTURING STANDARDS AND GUIDELINES. CONTRACTOR TO CONFIRM TRAFFICABLE VS NON-TRAFFICABLE BOUNDARY KIT TYPE FOLLOWING SITE PROOFING.

EXISTING SERVICES

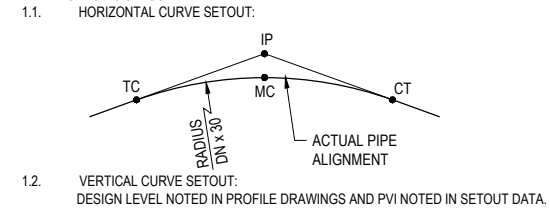
1. SERVICE RECORDS SHOWN ON THE DRAWINGS ARE AS OBTAINED FROM UTILITY OWNERS AT THE TIME OF REQUEST IN APRIL 2023. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUESTING UP TO DATE SERVICE PLANS PRIOR TO START OF WORKS ON SITE.
2. SERVICE DEPTHS ARE UNKNOWN AND HORIZONTAL LOCATIONS ARE INDICATIVE ONLY. CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SERVICES PRIOR TO STARTING CONSTRUCTION TO ENABLE ADJUSTMENT OF THE DESIGN ALIGNMENTS WITHOUT DELAYING PROGRAMME. REFER HDPE PIPE INSTALLATION NOTE 2. POSITION OF POWER CABLES, BOTH UNDERGROUND AND OVERHEAD, ARE BASED ON COUNCIL SUPPLIED GIS AND BEFOREUIG INFORMATION AND ARE SHOWN INDICATIVELY. CONTRACTOR SHALL CONFIRM LOCATION PRIOR TO EXCAVATION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT SERVICES AND ENSURE THE SAFETY OF ALL PERSONNEL WORKING IN THE VICINITY OF POWER CABLES.
3. CONTRACTOR SHALL LIASE WITH ELECTRICAL SERVICE PROVIDER, AHEAD OF FUTURE HV POWER CABLE CROSSINGS, TO DISCUSS REQUIREMENTS FOR CROSSING AND WHETHER A STANDOVER IS NECESSARY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ANY EXISTING STRUCTURES ARE NOT DAMAGED DURING CONSTRUCTION. ANY DAMAGE SHALL BE MADE GOOD BY REPAIR AS DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER.

GROUND CONDITIONS

1. ANY CHANGES IN GROUND CONDITIONS OBSERVED DURING CONSTRUCTION, FROM THOSE ASSUMED OR DOCUMENTED SHOULD BE REFERRED TO THE ENGINEER FOR APPROPRIATE ASSESSMENT AND COMMENT.
2. THE CONTRACTOR SHALL VERIFY THE GEOLOGICAL CONDITIONS AND ASSUMPTIONS IN THE FIELD. THE CONTRACTOR SHALL ALLOW FOR CONSTRUCTION VERIFICATION AND PERFORMANCE MONITORING BY GEOTECHNICAL PERSONNEL DURING CONSTRUCTION.
3. ALL IN-GROUND STRUCTURES/PITS SUBJECT TO UPLIFT FORCES SHALL BE MAINTAINED IN STABLE CONDITION DURING CONSTRUCTION AND PRIOR TO BACKFILLING AROUND THE STRUCTURES.
4. WATER AND DEWATERING: THE CONTRACTOR SHALL TAKE ALL NECESSARY ACTION TO PREVENT ANY SURFACE OR SUBSOIL WATER FROM INTERFERING WITH THE PROGRESS OF THE WORKS. THE WORK SHALL BE KEPT FREE FROM SUCH WATER. ANY EXISTING AREAS OF THE SITE SUBJECT TO INUNDATION SHALL BE DEWATERED PRIOR TO WORKING IN THOSE AREAS. ANY WORK OR MATERIAL DAMAGED BY WATER FROM ANY SOURCE SHALL BE REMOVED, REPLACED WITH FRESH MATERIAL AND RECONSTRUCTED BY THE CONTRACTOR.
5. TEMPORARY STABILITY OF ALL EXCAVATIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. SUPPORT ALL TRENCHES IN ACCORDANCE WITH THE REQUIREMENTS OF WORK SAFE NEW ZEALAND GOOD PRACTICE GUIDELINES EXCAVATION SAFETY, (LATEST EDITION).

HDPE PIPE INSTALLATION

1. THE FOLLOWING INFORMATION IS PROVIDED TO ASSIST THE CONTRACTOR IN INTERPRETING THE ELECTRONIC SETOUT DATA.



LEGEND		
IP	INTERSECTION POINT (LINE TO LINE)	MINOR DIRECTION CHANGES DRAWN AS SHARP BENDS. SHOWN IN DRAWINGS AND SETOUT DATA.
TC	LINE TO CURVE	DIRECTION CHANGES DRAWN AS CURVES. NOTED IN SETOUT DATA. NOT SHOWN ON DRAWINGS FOR CLARITY.
CT	CURVE TO LINE	
MC	MIDPOINT OF CURVE	DIRECTION CHANGES DRAWN AS CURVES. SHOWN IN DRAWINGS AND SETOUT DATA.
PVI	POINT OF VERTICAL INTERSECTION	DESIGN LEVEL IN PROFILE DRAWINGS AT GRADE CHANGES. REFERENCED IN SETOUT DATA AS PVI.
AS DEPICTED IN THE ABOVE DIAGRAMS, CURVES TO NEGOTIATE VERTICAL DEFLECTIONS AT GRADE CHANGES AND CURVES FOR SIGNIFICANT CHANGES IN HORIZONTAL DIRECTION SHOULD BE ACHIEVED BY BENDING THE PIPE AT A RADIUS OF NOT LESS THAN DN x 50		
IF IN DOUBT, CONSULT THE DESIGNER.		

2. MINIMUM COVERS: COVER AS PER DRAWINGS. MINIMUM COVER OF 1000mm, UNLESS SPECIFIED ON THE DRAWINGS AND APPROVED BY THE ENGINEER.

ACTUAL FIELD CONDITIONS MAY NECESSITATE ADJUSTMENT OF THE DESIGN PIPE GRADES AND LEVELS DURING CONSTRUCTION TO ENSURE MINIMUM COVER IS MET. EXTREME CARE SHALL BE TAKEN TO AVOID UNVENTED HIGH POINTS, UNDRAINED LOW POINTS, GRADE CHANGES OF MORE THAN -1.5% (NEGATIVE BREAKS WITHOUT AN AIR VALVE), OR ANY RISING GRADE FLATTER THEN 0.2% , OR FALLING GRADE FLATTER THEN -0.33%. POTENTIAL SOURCES OF VARIANCE INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO:

- TRUE GROUND LEVELS MAY VARY FROM THE LIDAR GROUND SURFACE MODEL UPON WHICH THE DESIGN IS BASED. VARIATIONS ARE GENERALLY IN THE REGION OF ±30mm, BUT MAY BE SIGNIFICANTLY LARGER.
- BURIED SERVICES
- TREE/SHELTERBELT ROOTS
- LOCALISED ADJUSTMENT OF GROUND LEVELS MAY BE A SOLUTION, BUT LANDOWNER AGREEMENT MUST BE OBTAINED BEFOREHAND.

IF IN DOUBT, CONSULT THE DESIGNER.

3. HORIZONTAL ALIGNMENTS SHOWN ON THE DRAWINGS HAVE BEEN DEVELOPED FROM INCOMPLETE INFORMATION. LAND STABILITY RISKS EXIST WHICH SHALL BE CONSIDERED IN THE SELECTION OF THE FINAL PIPELINE ALIGNMENTS. THE FOLLOWING LIST OF REQUIREMENTS SHALL BE CONSIDERED:
 - i. PROXIMITY TO ENGINEERED RETAINING WALLS - CONTRACTOR TO ENSURE EXISTING STRUCTURES WHICH MAY BE BUTTRESSED BY THE EXISTING ROAD STRUCTURE ARE CONSIDERED IN THE TEMPORARY WORKS DESIGN. SPECIFIC DESIGNS SIGNED OFF BY CHARTERED STRUCTURAL ENGINEERS MAY BE REQUIRED. IN GENERAL ENSURE OPEN EXCAVATIONS PROVIDE MINIMUM 2.0 m CLEARANCE TO THE BOTTOM/FRONT OF THE RETAINING WALL TO ALLOW SPACE FOR SUBSURFACE RETAINING WALL FOUNDATIONS.
 - ii. PROXIMITY TO TOE OF STEEP SLOPES - WHERE STEEP SLOPES EXIST ON THE UPHILL SIDE OF THE ALIGNMENT, ENSURE THE PIPELINES ARE INSTALLED IN THE CENTRE OF THE LANE THAT IS NEAREST TO THE UPHILL SLOPE. WHERE TWO OR MORE SERVICES EXISTING IN THE TRENCH, POSITION THE CENTRE OF THE COMMON TRENCH TOWARDS TO CENTRELINE OF THE ROAD MORE
 - iii. AVOID PLACING THE PIPELINES IN THE CENTRE OF THE LANE ON THE DOWNHILL SIDE OF THE ROAD DUE TO RISK OF BLOW OUT FROM TRENCHLESS INSTALLATION, AVOID TUNNELLING FAILURE OF SLOPES FROM SURFACE STORMWATER, AND REDUCE RISKS TO ASSETS FROM FUTURE SLIPS/LANDSLIDES
 - iv. IT MAY BE POSSIBLE TO INSTALL THE PIPELINE CLOSE TO THE UPHILL SIDE IF SPECIFIC SOILS INFORMATION DEMONSTRATES THAT TOE SUPPORT IS NOT CRITICAL
 - v. ENSURE PIPING FAILURE OF TRENCHES IS AVOID BY INSTALLING TRENCHSTOPS - REFER TRENCH INSTATEMENT NOTE 10.
4. 32mm DUCT REQUIRED FOR FIBRE OPTIC CABLE INSTALLATION BETWEEN CLIFF ROAD PUMP STATION TO STONEY POINT PUMP STATION, AND STONEY POINT PUMP STATION TO BURIED VILLAGE PUMP STATION. CONTRACTOR TO CONFIRM DUCT SPECIFICATION AND LOCATE PULL PITS AS REQUIRED FOR BLOWING IN FIBRE OPTIC CABLE.
5. IF HDPE PIPES HEAT UP IN THE SUN AND MECHANICAL CONNECTIONS ARE COMPLETED WITHOUT ALLOWING PIPES TO COOL, EXCESSIVE THERMAL CONTRACTION FORCES WILL DEVELOP AND THIS CAN LEAD TO FAILURE OF FITTINGS. TO PREVENT THIS, CONNECTION ENDS OF PIPELINES SHOULD NOT BE DROPPED INTO TRENCHES DURING THE HEAT OF THE DAY, NOR SHOULD THESE CONNECTIONS BE MADE DURING THE HEAT OF THE DAY. FURTHERMORE PIPELINES NEED TO COOL DOWN TO GROUND TEMPERATURES PRIOR TO COMPLETING MECHANICAL CONNECTIONS. THE CONTRACTOR'S WORK METHOD STATEMENT FOR HDPE INSTALLATION SHALL INCLUDE SUITABLE PROCESSES FOR THIS. THE FOLLOWING STEPS ARE PROVIDED AS AN EXAMPLE.
 - i. LAY PIPELINE IN TRENCH UP TO OR FROM CONNECTION POINT WITH DISMANTLING JOINT

HDPE PIPE INSTALLATION - CONTINUED

- ii. CONNECT DISMANTLING JOINT TO HDPE PIPE , ENSURING FREEDOM OF MOVEMENT OF THE TIE RODS AND NUTS. NOMINAL LENGTH OF DISMANTLING JOINT AT THIS STAGE SHOULD BE THE MINIMUM LENGTH PLUS 10mm.
- iii. PLACE WITNESS MARK ON DISMANTLING JOINT RECORDING THE POSITION OF THE SEALING RING RELATIVE TO THE BODY OF THE FITTING.
- iv. FULLY BACKFILL PIPELINE TO WITHIN 3 M OF THE DISMANTLING JOINT FOR A LENGTH OF AT LEAST 50m.
- v. ALLOW PIPELINE TO COOL TO GROUND TEMPERATURE FOR A PERIOD OF NOT LESS THAN 24 HOURS FOR CONNECTIONS TO HDPE TEES OR LINE FITTINGS, AND THEN CONFIRM THAT DISMANTLING JOINT MOVEMENT RELATIVE TO THE WITNESS MARK HAS NOT EXCEEDED THE TOLERANCE OF THE FITTING.
- vi. CHECK THAT THE TIE RODS ARE NOT TRANSFERRING TENSION ON TO THE DISMANTLING JOINT FLANGES AND CHECK THAT THE DISMANTLING JOINT STILL HAS DIMENSIONAL FLEXIBILITY TO ALLOW FUTURE REMOVAL OF VALVE.
- vii. COMPLETE TIGHTENING OF DISMANTLING JOINT CONNECTION.

HDPE PIPE WELDING

1. HDPE PIPE WELDING SHALL BE AS FOLLOWS
 - BUTT WELDING TO PIPA POP003
 - ELECTROFUSION WELDING TO PIPA POP001
2. OTHER REQUIREMENTS AS NOTED ON THE DRAWINGS
3. PRE-CONSTRUCTION WELD TESTING AND DESTRUCTIVE WELD TESTING SHALL BE COMPLETED AS SET OUT IN THE PRINCIPALS REQUIREMENTS.

PRESSURE TESTS

1. PIPELINE SHALL BE PRESSURE TESTED AGAINST THE REQUIREMENTS SET OUT IN PRINCIPALS REQUIREMENTS.

FITTINGS

1. REQUIREMENTS FOR HDPE FITTINGS ARE GENERALLY PROVIDED ON THE DETAILS DRAWINGS. FOR SEGMENTED PE BENDS (AKA MITRE BENDS) FOLLOW PIPA POP006. ENSURE FITTINGS COMPLY WITH FULL PRESSURE RATING OF PIPELINE.
2. STEEL SPECIALS DESIGN, FABRICATION, INSPECTION AND TESTING SHALL BE TO AS 4041. MINIMUM PRESSURE CLASS FOR STEEL FITTINGS SHALL BE PN16 EXCEPT WHERE NOTED OTHERWISE ON THE DRAWINGS.
3. FLANGE BOLTS SHALL BE OF THE DIAMETERS PRESCRIBED FOR THE PARTICULAR FLANGE PATTERNS AND SHALL PROTRUDE AT LEAST TWO THREADS THROUGH SEATED NUT BUT NOT MORE THAN 12mm. THREADS SHALL BE ISO METRIC THREADS TO BS 3692. EACH BOLTED CONNECTION SHALL CONTAIN A WASHER UNDER ONE OR OTHER OF THE NUT OR THE BOLT-HEAD, BUT NOT BOTH. EACH BOLT ASSEMBLY SHALL BE LIBERALLY COATED WITH 'COPPER-COTE' AND THREADS OILED PRIOR TO ASSEMBLY
4. FLANGE DRESS SETS, INCLUDING BOLTS, NUTS AND WASHERS, SHALL BE GRADE 316L STAINLESS STEEL.
5. ALL STEEL, DUCTILE IRON AND OTHER METALLIC PIPE, VALVES AND/OR FITTINGS LAID BELOW GROUND OR ENCASED IN CONCRETE SHALL BE PROTECTED FROM DAMAGE DURING INSTALLATION AND PLACEMENT OF EMBEDMENT MATERIAL. PIPE, VALVES AND/OR FITTINGS SHALL FURTHERMORE BE PROTECTED FROM CORROSION WITH A 4-LAYER DENSO SYSTEM, INCLUDING PRIMER, PROFILING MASTIC PASTE, DENSO TAPE AND PVC OVER-TAPE, OR SUITABLE APPROVED ALTERNATIVE. REFER TO PROJECT SPECIFICATION OR PRINCIPAL REQUIREMENTS.
6. ANY DAMAGE TO EACH STAGE OF SURFACE COATING, SUSTAINED DURING TRANSIT OR INSTALLATION, SHALL BE MADE GOOD ACCORDING TO THE STANDARD SPECIFIED AND THE SUPPLIER'S INSTALLATION INSTRUCTIONS, BEFORE THE NEXT STAGE OF COATING/TREATMENT IS APPLIED, AND BEFORE PIPE IS BACKFILLED/BURIED.
7. AT LOCATIONS WHERE BURIED PIPEWORK ENTERS CONCRETE/SOIL, THE ABOVE SPECIFIED SURFACE TREATMENTS SHALL EXTEND NOT LESS THAN 150mm ABOVE GROUND BEFORE BEING TERMINATED ACCORDING TO SUPPLIER INSTALLATION INSTRUCTIONS.
8. GASKETS SHALL BE ELASTOMERIC (EPDM AS TO 1646), COMPLYING WITH WSA 109 'INDUSTRY STANDARD FOR FLANGE GASKETS AND O-RINGS'. THE PN RATING OF THE GASKET SHALL BE THE SAME AS THE PN RATING FOR THE ADJOINING FITTING.
9. CONTRACTOR TO ALLOW FOR PE REDUCERS IN ALL INSTANCES OF PIPE DIAMETER CHANGES ALONG THE ALIGNMENT. CHANGES IN PRESSURE CLASS ALONG THE ALIGNMENT TO BE MANAGED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

VALVES

1. ISOLATION VALVES DEPICTED SHALL BE RESILIENT SEAT GATE VALVE. REFER PRINCIPAL REQUIREMENTS FOR DETAILED REQUIREMENTS
2. THE SELECTION OF RESILIENT SEAT GATE VALVE SIZES TO SUIT THE PE PIPELINE SIZING SHALL FOLLOW THE TABLES PROVIDED IN PIPA-POP007. AN EXCEPTION APPLIES FOR DN50 PE PIPE - USE DN50 VALVES AND USE DN63x50mm REDUCERS AS REQUIRED.
3. LIFTING LUGS SHALL BE PROVIDED ON ALL VALVES OVER 25 KG.
4. ALL VALVES SHALL BE MINIMUM PN16. HOWEVER PN20 VALVES REQUIRED IN SOME LOCATIONS TO MATCH PIPELINE PRESSURE CLASS.

VALVES - CONTINUED

5. ALL VALVES SHALL BE PROVIDED WITH TAGGED LOCK OUT MECHANISMS.
6. VALVES BOXES, SHALL BE CONSTRUCTED AS PER THE PRINCIPAL REQUIREMENTS, RITS (LATEST EDITION) OR AS SHOWN ON CONSTRUCTION DRAWINGS (LATEST REVISION), AND SHALL BE CONSTRUCTED SUCH THAT NO LOADS ARE TRANSFERRED TO THE VALVE OR PIPE.

CONNECTIONS

1. FLANGES ON ALL PIPES SHALL BE TO AS/NZS 4087 OR AS 2129, AS SET OUT IN THE PRINCIPALS REQUIREMENTS.
2. PRESSURE CLASS OF FLANGES SHALL BE PN16 UNLESS OTHERWISE NOTED.
3. FLANGE CONNECTIONS FOR PE PIPE AS FOLLOWS:
 - PN16 PIPELINES TO USE PE100 PN16 STUB FLANGES AND PN16 BACKING RINGS TO AS/NZS 4087. REFER PIPA POP007 FOR FURTHER DETAILS.
 - PN20 PIPELINES TO USE FULL FACE PE100 STUB FLANGES DRILLED TO AS/NZS 2129 TABLE F (AKA MAXI STUB FLANGE) WITH PN21 BACKING RINGS TO AS/NZS 2129 TABLE F.
4. FOR LATERAL CONNECTIONS: ON MAINS DN63 TO DN160 USE EF TAPPING SADDLE WITH INTEGRAL CLAMP AND SERRATED CUTTER, ON DN50 MAINS USE EQUAL EF TEE AND EF REDUCER AS REQUIRED.

STRUCTURES (CIVIL)

1. SUITABLE HAND CONTROLLED COMPACTION EQUIPMENT SHALL BE USED WHEN COMPACTING IN CLOSE PROXIMITY TO STRUCTURES.
2. TEMPORARY WORKS, INCLUDING DEWATERING SHALL BE UTILISED AS REQUIRED TO ENSURE ADEQUATE COMPACTION CAN BE ACHIEVED.
3. FILL TYPE AND COMPACTION REQUIREMENTS:
 - BACKFILL MATERIAL WITHIN 1m OF CONCRETE STRUCTURES SHALL BE EITHER AP40 OR AP65. THE FILL MATERIAL SHALL BE COMPACTED IN LIFTS TO ACHIEVE MDD

REINSTATEMENT

1. REFER TO THE PRINCIPALS REQUIREMENTS FOR DETAILS ON REINSTATEMENT REQUIREMENTS.
2. EMBEDMENT/BEDDING MATERIAL TO BE GAP20 AND AS PER REQUIREMENTS OF AS/NZS 2566.2
3. GRANULAR BEDDING MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 150mm.
4. TRENCH FILL MATERIAL IN TRAFFICABLE AREAS, INCLUDING FOOTPATHS AND PRIVATE DRIVEWAYS, TO BE APPROVED SELECTED FILL MATERIAL OR GAP65 AS APPROVED BY THE ENGINEER. COMPACTED TO A DENSITY OF NOT LESS THAN 95% MDD AS DETERMINED BY TEST 4.1.3 OF NZS 4402: 1986 METHODS OF TESTING SOILS FOR CIVIL ENGINEERING PURPOSES.
5. SUB BASE LAYER TO BE AP65 AND AS PER REQUIREMENTS OF TNZ M/3, COMPACTED TO A DENSITY OF NO LESS THAN 98% MDD.
6. BASE COURSE MATERIAL TO BE AP40 AND AS PER REQUIREMENTS OF TNZ M/4, COMPACTED TO A DENSITY OF NO LESS THAN 98% MDD.
7. REINSTATEMENT OF EXISTING ROAD WORKS AND SURFACES SHALL BE IN ACCORDANCE WITH THE PRINCIPALS REQUIREMENTS OR ROTORUA LAKES COUNCIL STANDARDS.
8. ALL EXCAVATIONS TO BE BACKFILLED AS SOON AS POSSIBLE FOLLOWING PIPE INSTALLATION, TESTING AND ACCEPTANCE.
9. FOR ALL TRENCHES INSTALLED WITH PIPELINE GRADIENTS EXCEEDING 5%, INSTALL SAND BAG TRENCH STOPS AT REGULAR INTERVALS TO PREVENT TUNNELLING OF GROUNDWATER THROUGH ALONG THE TRENCH. REFER STD DETAILS FOR FURTHER DETAIL INCLUDING MINIMUM SPACING REQUIREMENT.

SEDIMENT & EROSION CONTROL

1. THE WORKS ARE TO BE UNDERTAKEN USING SEDIMENT & EROSION CONTROL MEASURES AND PLACED IN ACCORDANCE WITH THE PRINCIPAL'S REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL REQUIRED SEDIMENT AND EROSION CONTROL MEASURES FOR THE DURATION OF THE WORKS. ALL CONTROL MEASURES ARE TO BE REGULARLY INSPECTED TO ENSURE CORRECT AND CONTINUING OPERATION.

TRENCH REINSTATEMENT STABILISATION

CONTRACTOR TO CONTACT ENGINEER IF NATIVE MATERIAL IN TRENCH CONTAINS GAP GRADED GRANULAR MATERIAL. ENGINEER TO ADVISE POTENTIAL MITGATIONS.

CONTRACTOR TO REPLACE PAVEMENT AND SUBGRADE LAYER ON A LIKE FOR LIKE BASIS UNLESS APPROVED OTHERWISE BY ENGINEER. LIME STABILISATION IS REQUIRED FOR TRENCH REINSTATEMENT UNDER THESE CONDITIONS, FOLLOWING THESE RULES:

1. IF THE PAVEMENT OR SUBGRADE HAS NOT BEEN STABILISED USE TRENCH REINSTATEMENT STANDARD DRAWING PROVIDED. NO STABILISATION IS REQUIRED.
2. IF THE PAVEMENT OR SUBGRADE HAS BEEN STABILISED, THEN BACKFILL WITH EXCAVATED MATERIAL MAY REQUIRE LIME STABILISATION OR OTHERWISE USE APPROVED ENGINEERED FILL. IF IN DOUBT CONSULT A PAVEMENT ENGINEER.

PIPELINE INFRASTRUCTURE

1. PLAN DRAWINGS DO NOT SHOW POSITIONS OF ODOUR FILTERS FOR AIR VALVES NOR SCOUR VALVE CHAMBER. REFER DETAIL DRAWINGS FOR SITE PROOFING REQUIREMENTS NECESSARY TO CONFIRM THE LOCATIONS OF EQUIPMENT AND AGREE WITH ENGINEER PRIOR TO PHYSICAL WORKS.

						<p>TRILITY PTY LTD 4/23 Tukorako Drive, Mt Maunganui, Tauranga, 3150 New Zealand www.trility.com.au</p>		DESIGNED BY M. Vorster	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN		
								DRAWN BY S. Sutton	DRN CHK S. Sutton	DRAWING TITLE CIVIL GENERAL NOTES	SCALE	SITE ID	
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23					APPROVED BY S. Shortt	DRAWING NUMBER R-0034-310103621-01-RUN-00-C-005		REV. 0.B	
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23					APPROVED DATE 30.05.23				
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23					SHEET NUMBER				
REV	REVISIONS	DRN	APP	DATE									



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY D. Terry	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE DRAWING LAYOUT SHEET 1 TRUNK MAIN
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE NTS	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-010			REV. 0.A



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

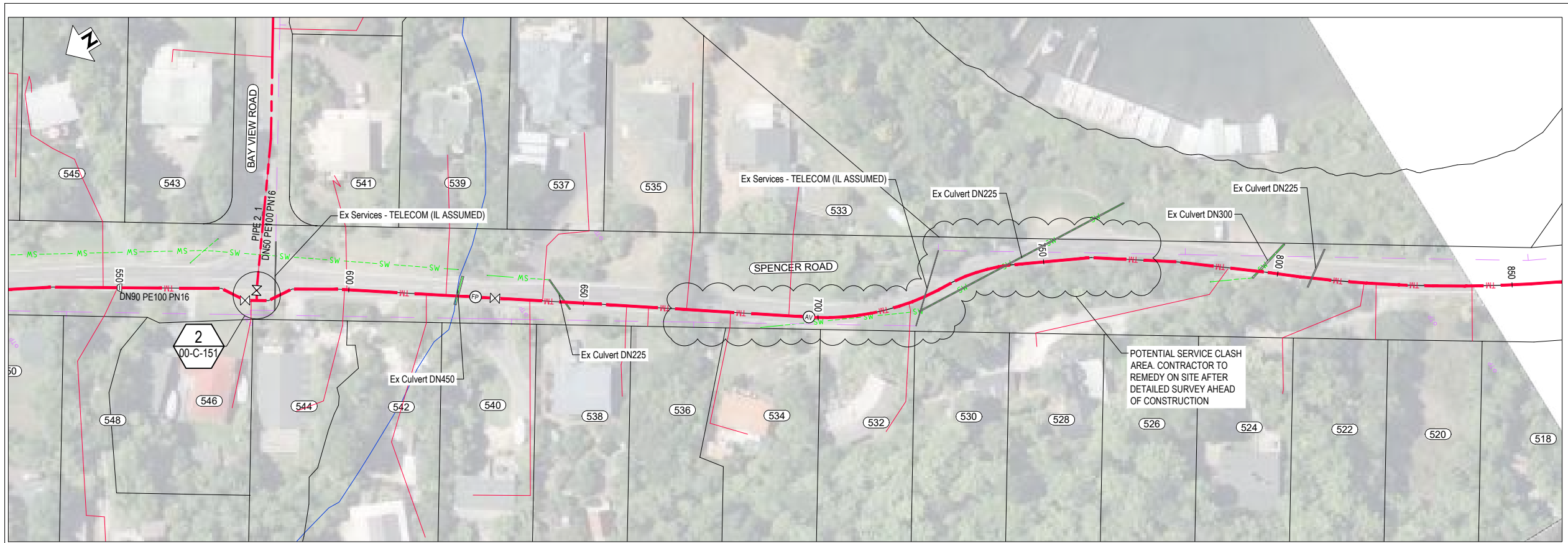



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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY D. Terry	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE DRAWING LAYOUT SHEET 2 PRESSURE MAINS
SHEET NUMBER

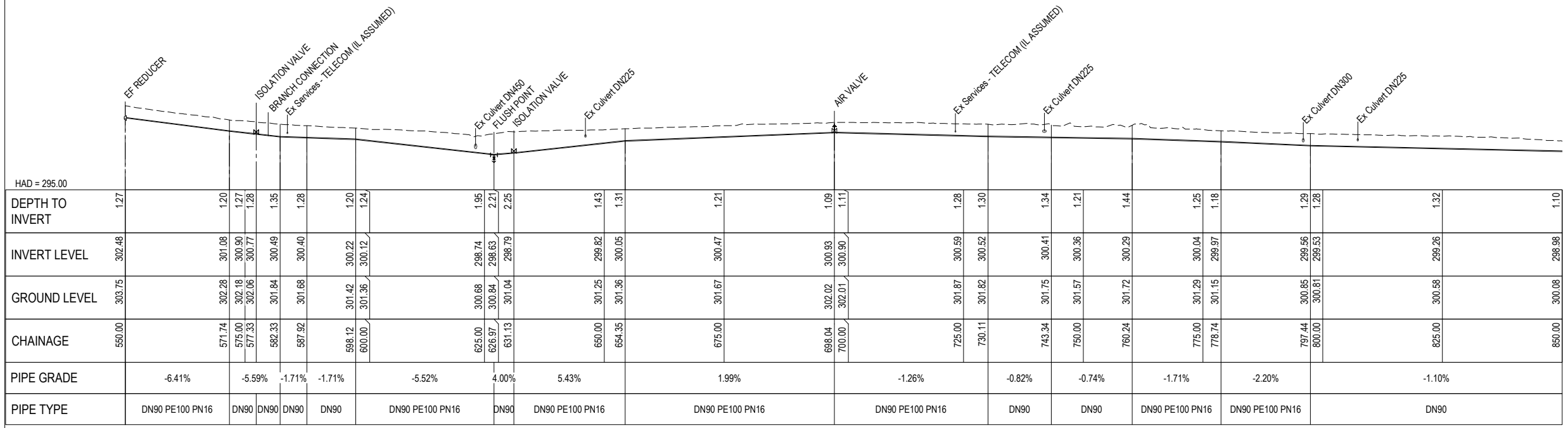
STATUS DETAILED DESIGN			
SCALE NTS	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-011			REV. 0.A



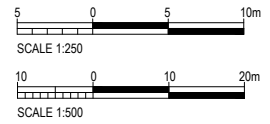
PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - O/H
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - O/H
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - SPENCER RD TO CLIFF RD PS
SCALES HORIZ 1 : 500 VERT 1 : 250



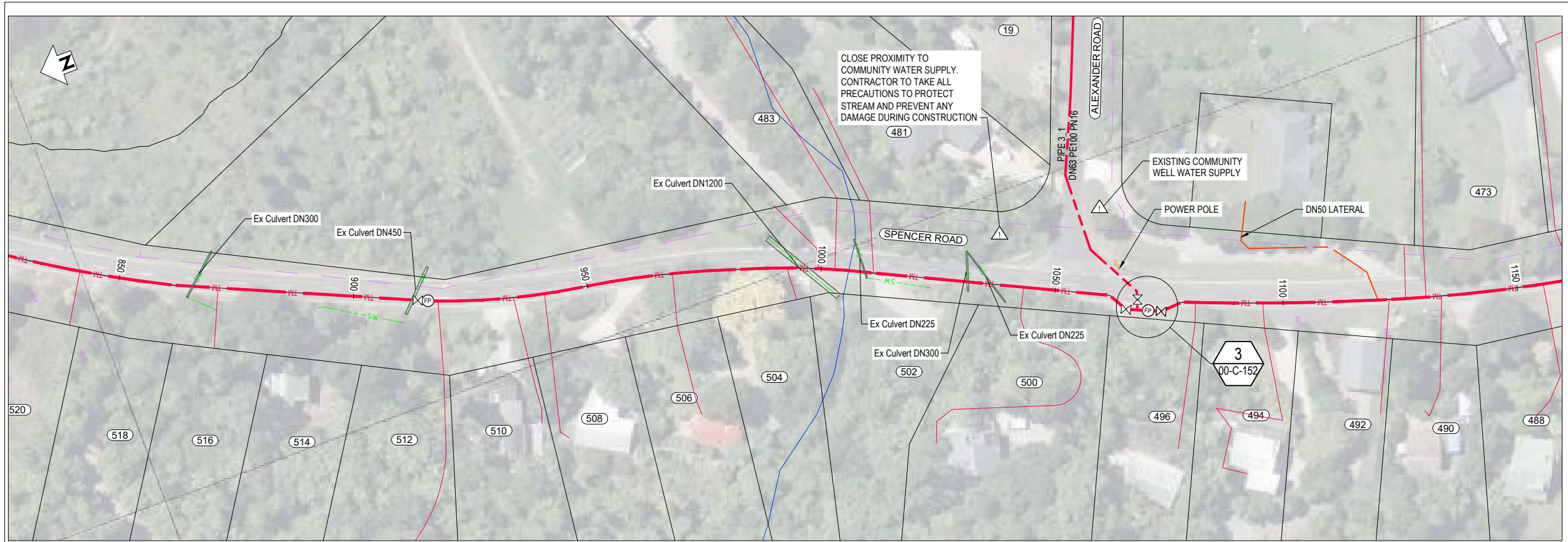
REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

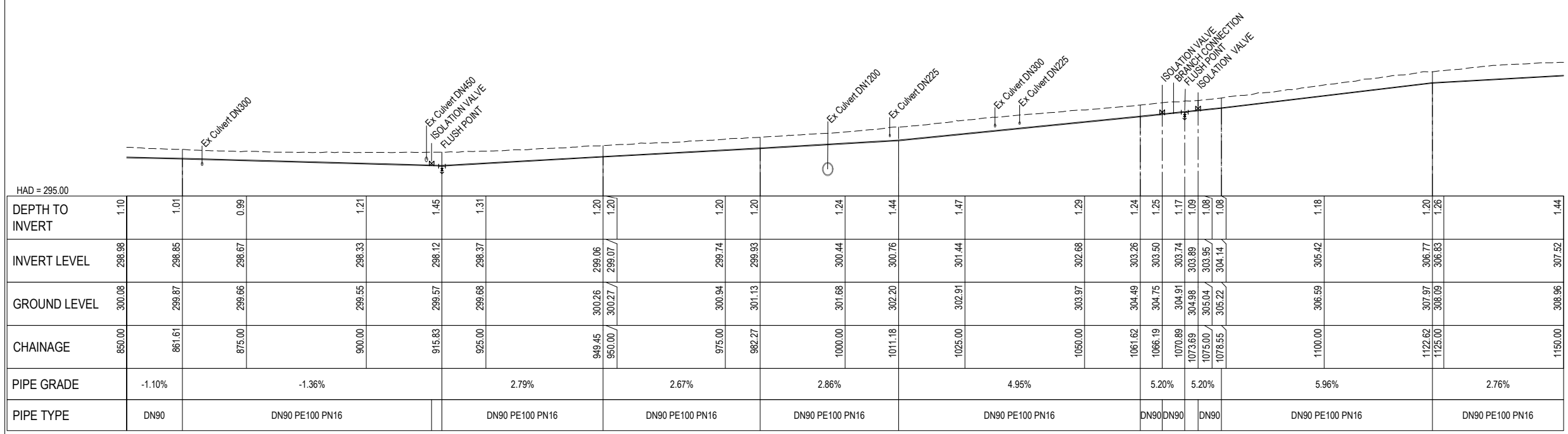
STATUS DETAILED DESIGN		SIZE A1	
SCALE AS SHOWN	SITE ID	AREA	REV. 0.B
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-102			



PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - SPENCER RD TO CLIFF RD PS
SCALES HORIZ 1 : 500 VERT 1 : 250

REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

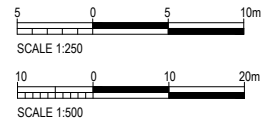


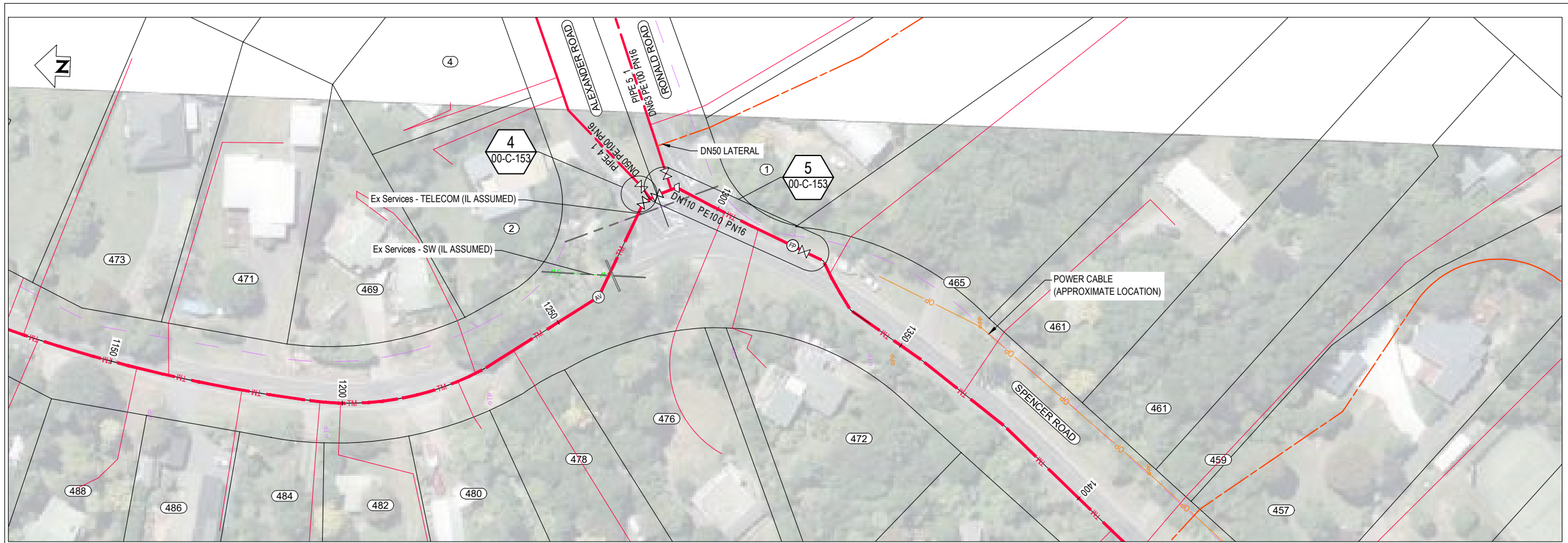
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New Zealand
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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
SHEET NUMBER

STATUS DETAILED DESIGN	SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-103	REV. 0.B			





LEGEND

NEW SERVICES:

- TM Sewer Trunk Main
- SP Sewer Pressure Main
- SL DN50 Sewer Lateral - DN50
- SL DN40 Sewer Lateral - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - OH
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

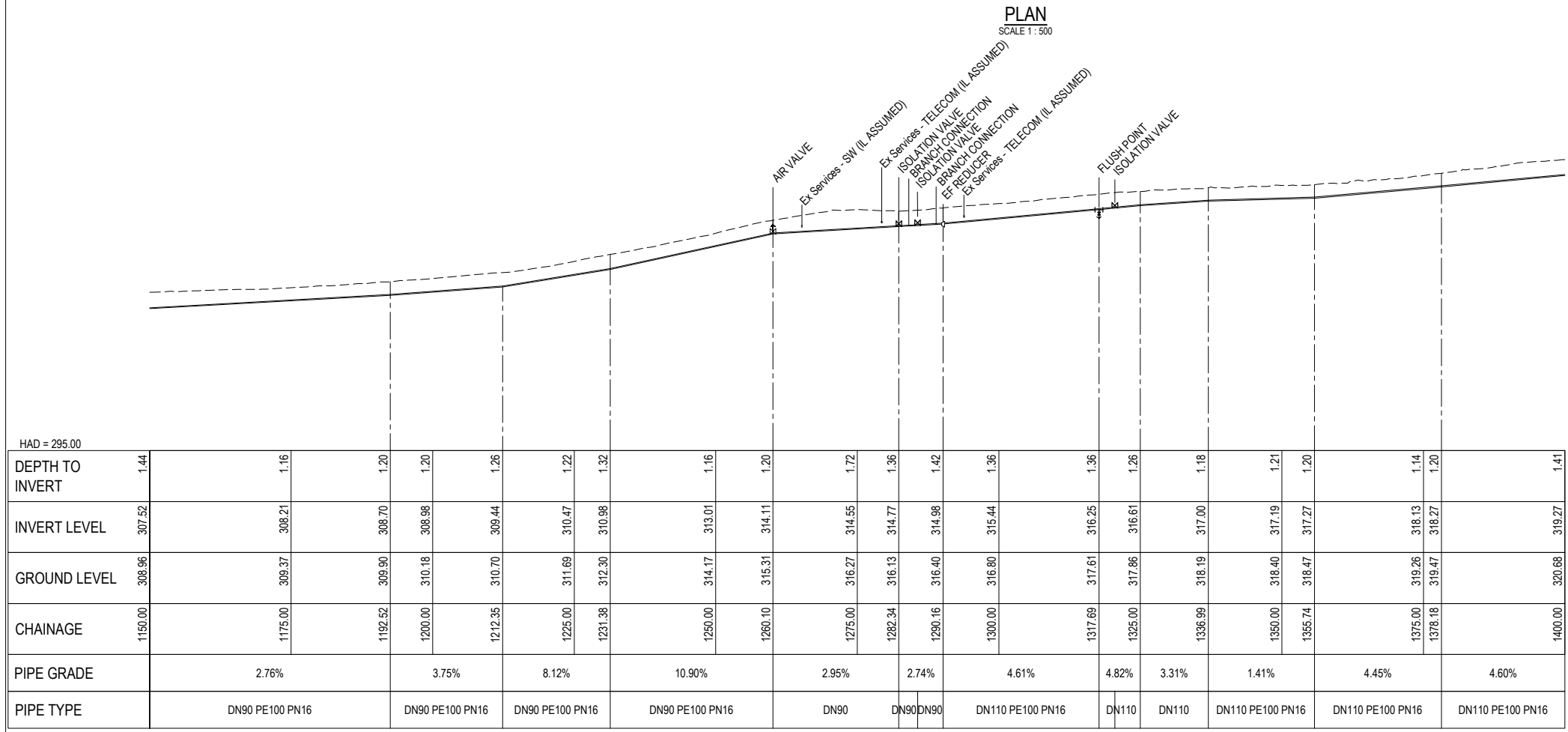
Other Symbols:

- X X SERVICE TO BE ABANDONED
- △ SURVEY MARK
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER METER

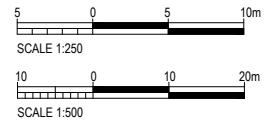
NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.

PLAN
SCALE 1:500



LONGITUDINAL SECTION - SPENCER RD to CLIFF RD PS
SCALES HORIZ 1:500 VERT 1:250

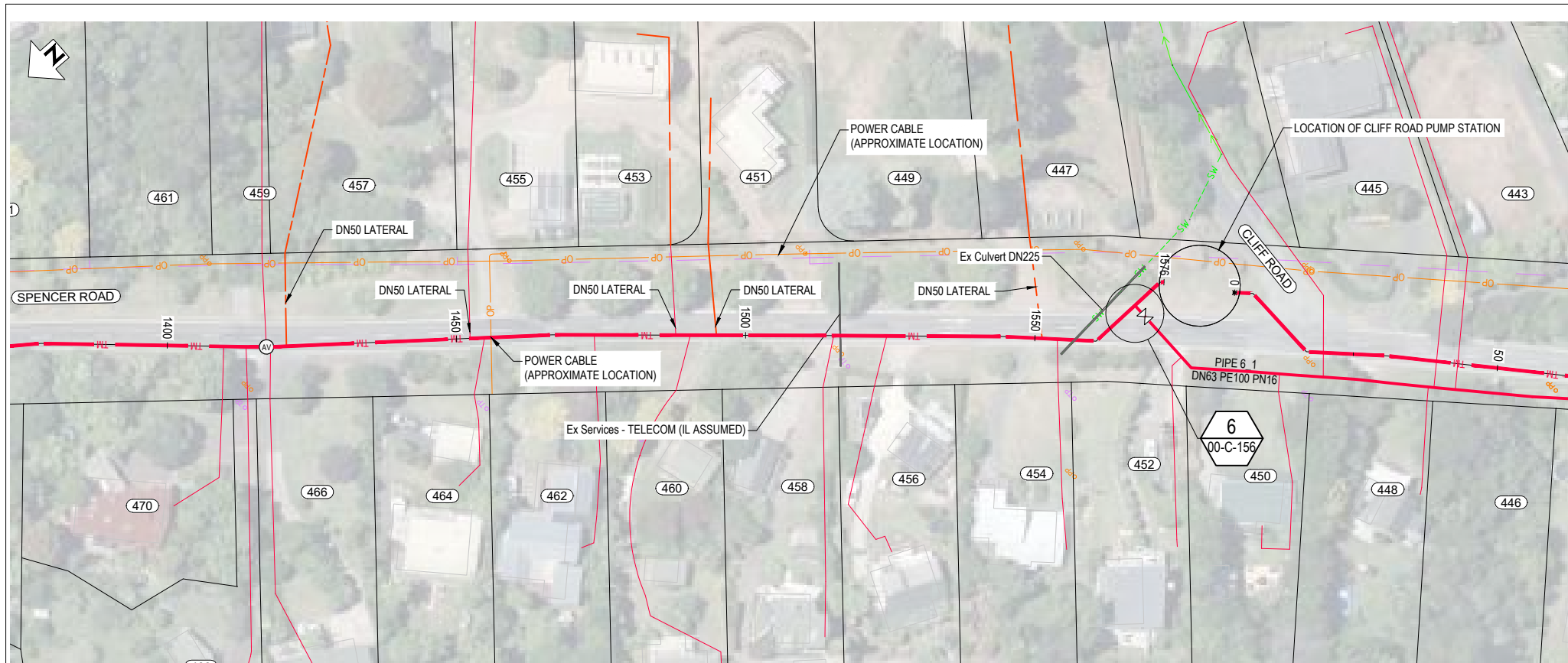


REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

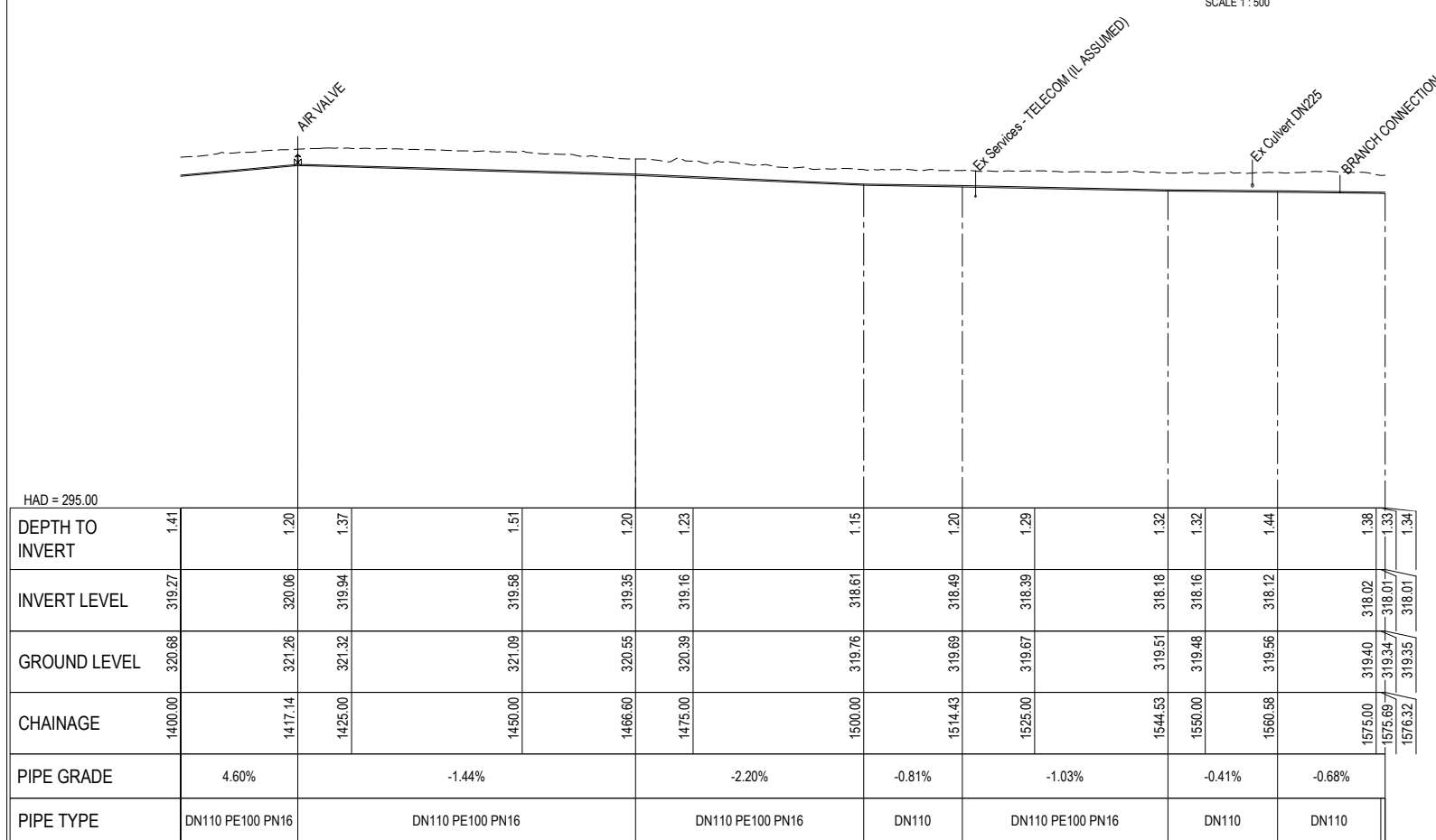
PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE SPENCER RD TO CLIFF RD PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.B
	DRAWING NUMBER R-0034-310103621-01-RUN-00-C-104



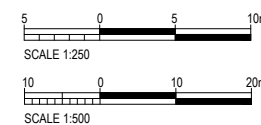
PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - O/H
	TELECOMMS - P/OLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - SPENCER RD to CLIFF RD PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

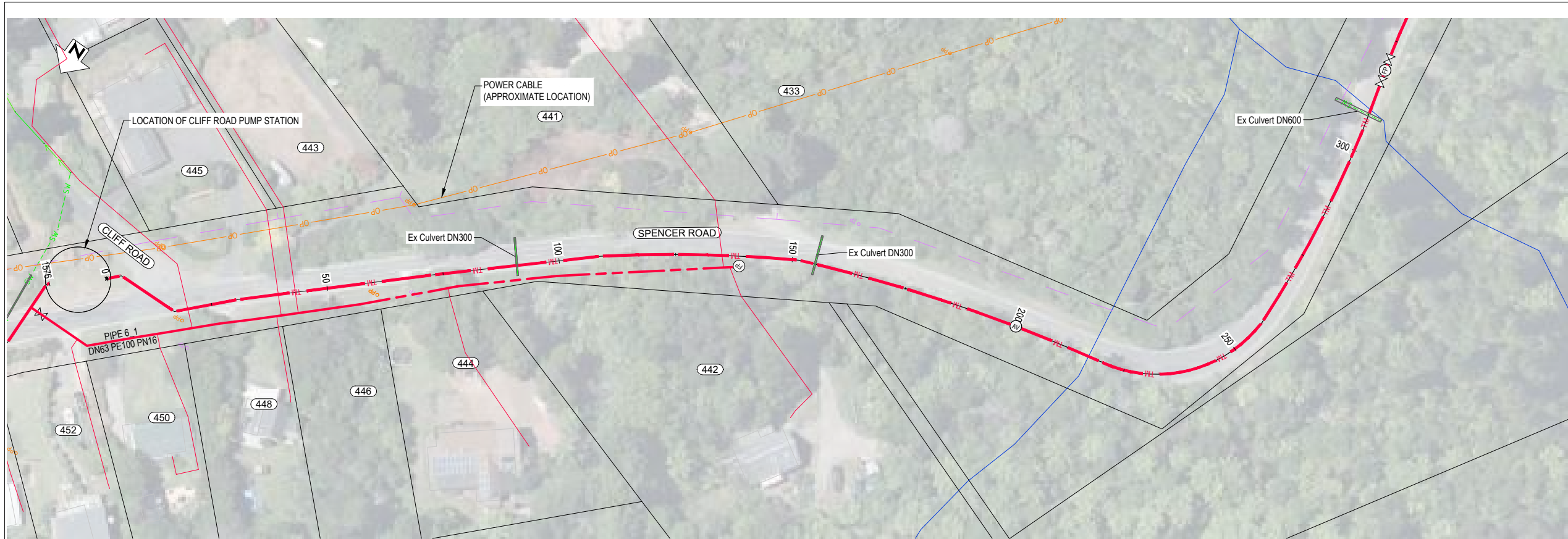


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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

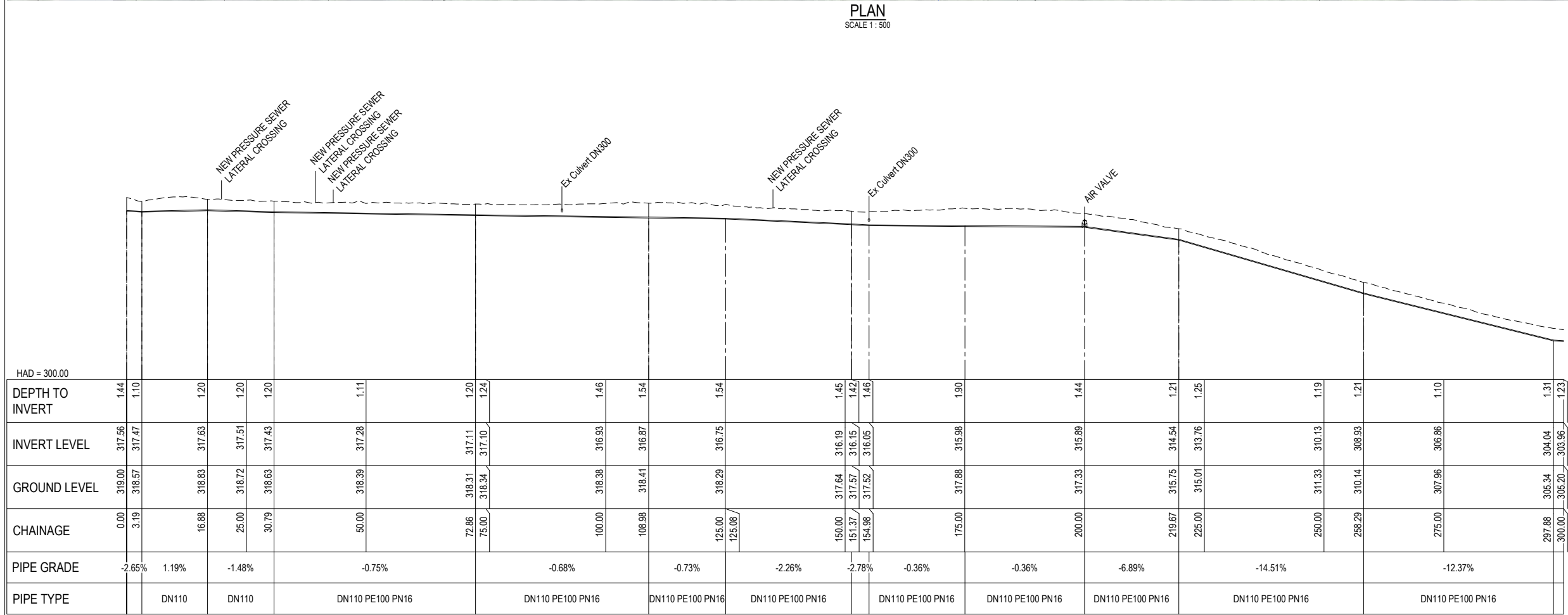
PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE SPENCER RD TO CLIFF RD PLAN AND LONGSECTION
SHEET NUMBER

STATUS DETAILED DESIGN	SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-105	REV. 0.B			

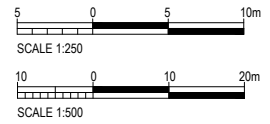


LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.B

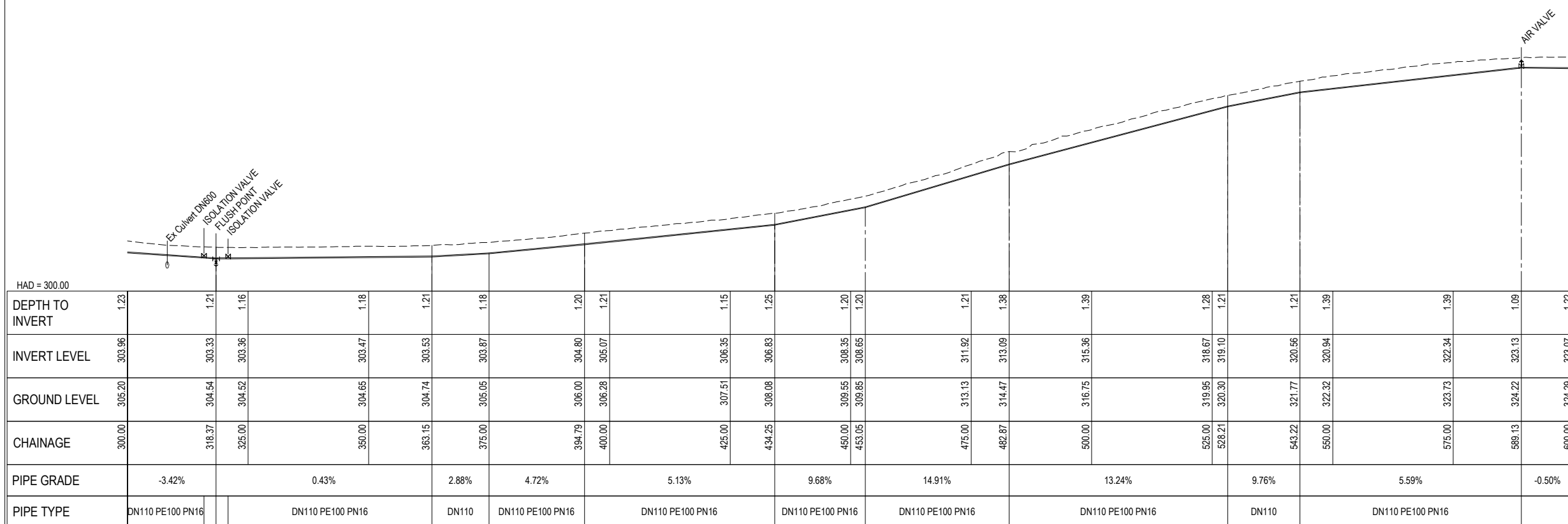
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-106



PLAN
SCALE 1 : 500

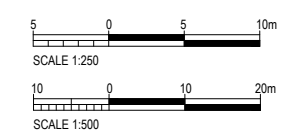
LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DEPTH TO INVERT	INVERT LEVEL	GROUND LEVEL	CHAINAGE	PIPE GRADE	PIPE TYPE
1.23	303.96	305.20	300.00	-3.42%	DN110 PE100 PN16
1.21	303.33	304.54	318.37	0.43%	DN110 PE100 PN16
1.16	303.36	304.52	325.00	2.88%	DN110
1.18	303.47	304.65	350.00	4.72%	DN110 PE100 PN16
1.21	303.53	304.74	363.15	5.13%	DN110 PE100 PN16
1.18	303.87	305.05	375.00	9.68%	DN110 PE100 PN16
1.20	304.80	306.00	394.79	14.91%	DN110 PE100 PN16
1.21	305.07	306.28	400.00	13.24%	DN110 PE100 PN16
1.15	306.35	307.51	425.00	9.76%	DN110
1.25	306.83	308.08	434.25	5.59%	DN110 PE100 PN16
1.20	308.35	309.55	450.00	-0.50%	DN110 PE100 PN16
1.20	308.65	309.85	453.05		
1.21	311.92	313.13	475.00		
1.38	313.09	314.47	482.87		
1.39	315.36	316.75	500.00		
1.28	318.67	319.95	525.00		
1.21	319.10	320.30	528.21		
1.21	320.56	321.77	543.22		
1.39	320.94	322.32	550.00		
1.39	322.34	323.73	575.00		
1.09	323.13	324.22	588.13		
1.22	323.07	324.29	600.00		

LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES HORIZ 1 : 500 VERT 1 : 250



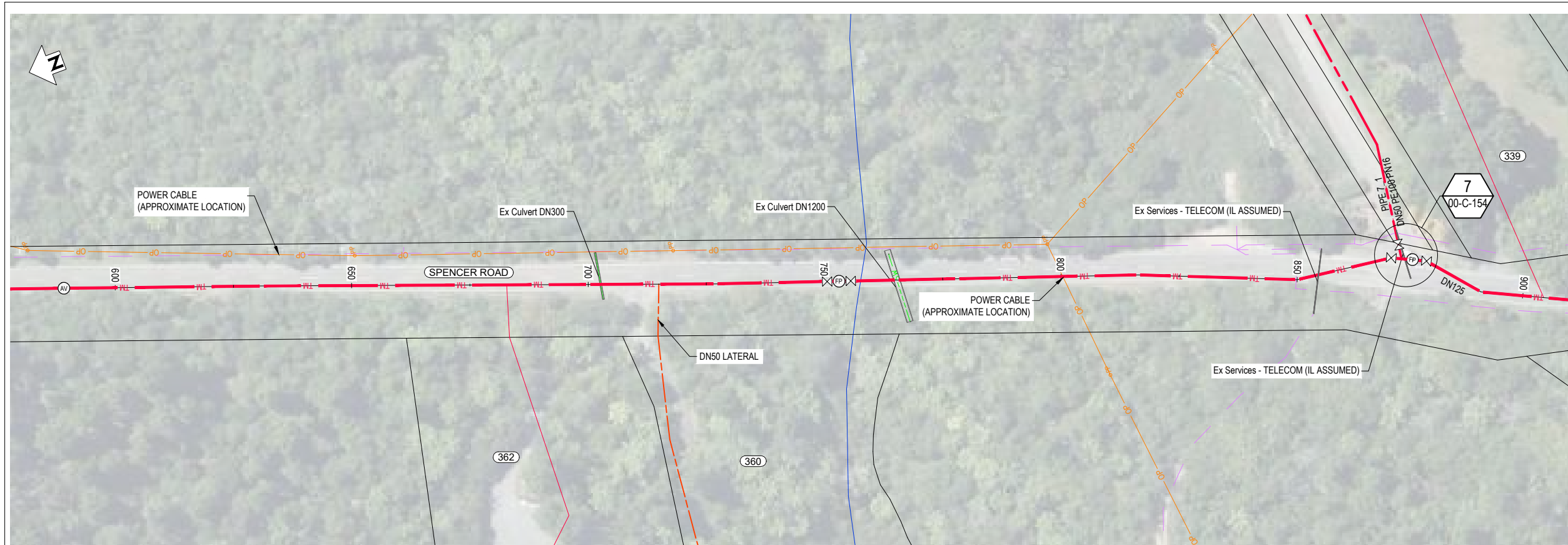
REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.B

DRAWING NUMBER R-0034-310103621-01-RUN-00-C-107



PLAN
SCALE 1 : 500

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SP SEWER PRESSURE MAIN
- SL SEWER LATERAL - DN50
- SL SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

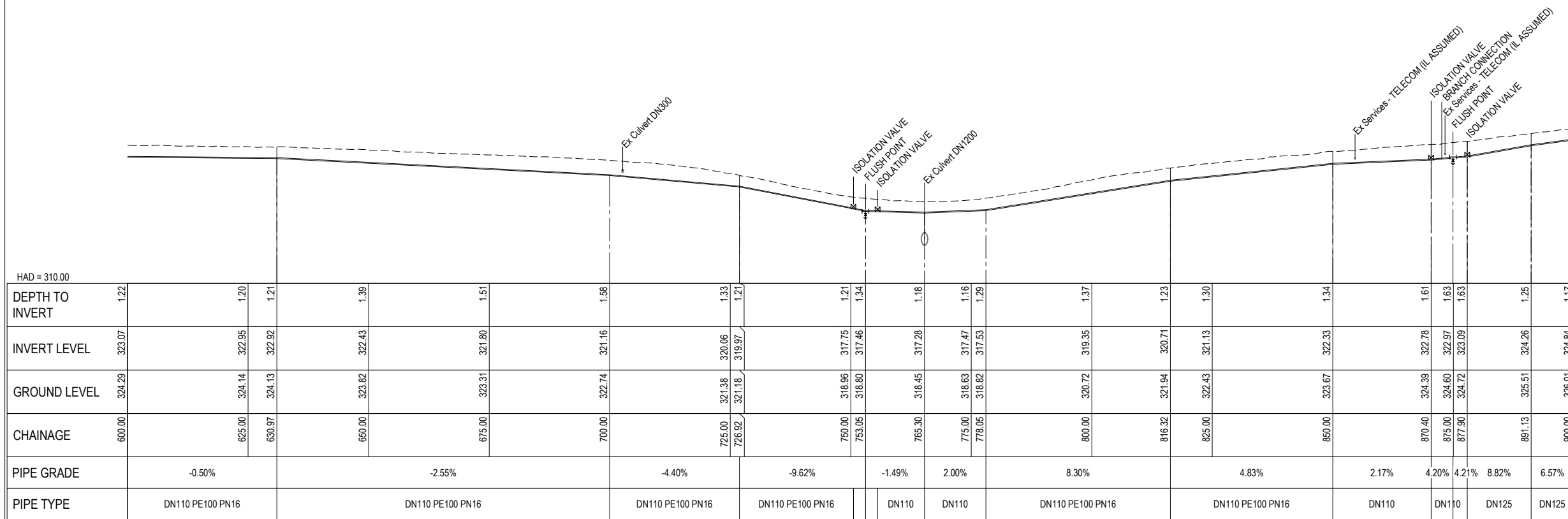
- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMS
- FIBRE OPTIC
- TELECOMS - O/H
- TELECOMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

Other Symbols:

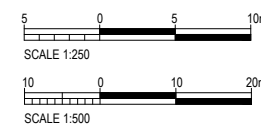
- X X SERVICE TO BE ABANDONED
- Survey Mark
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES HORIZ 1 : 500 VERT 1 : 250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



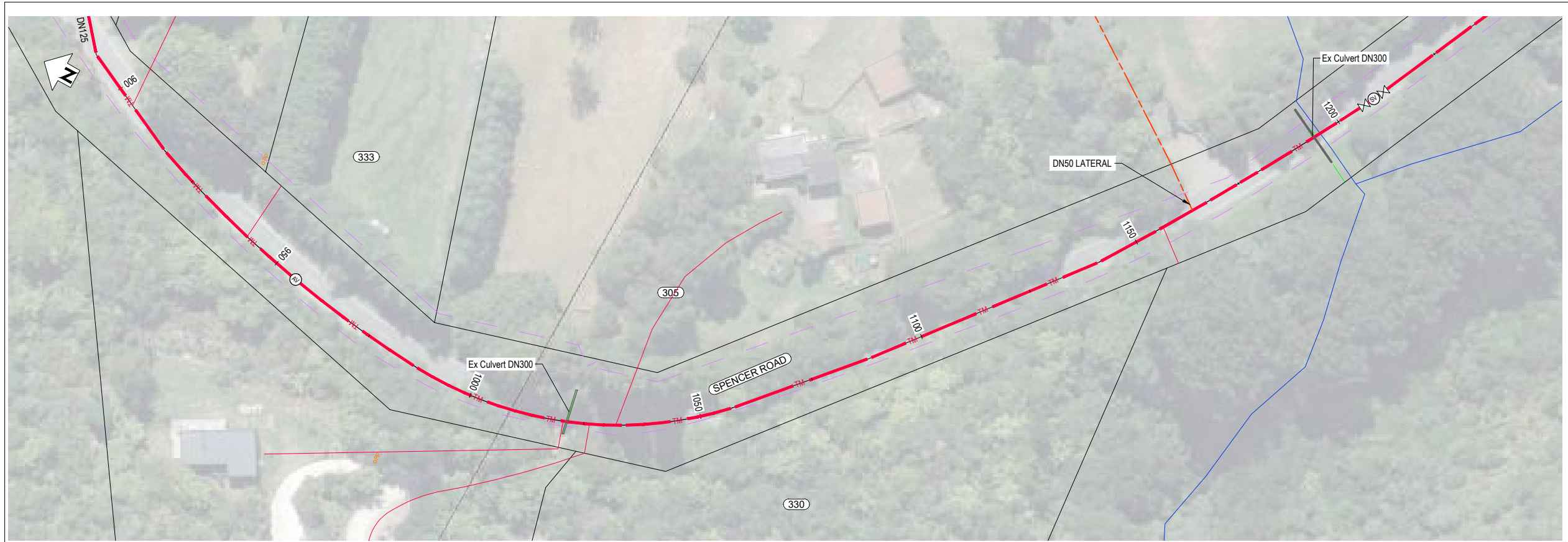
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New Zealand
www.trility.com.au

DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
SHEET NUMBER

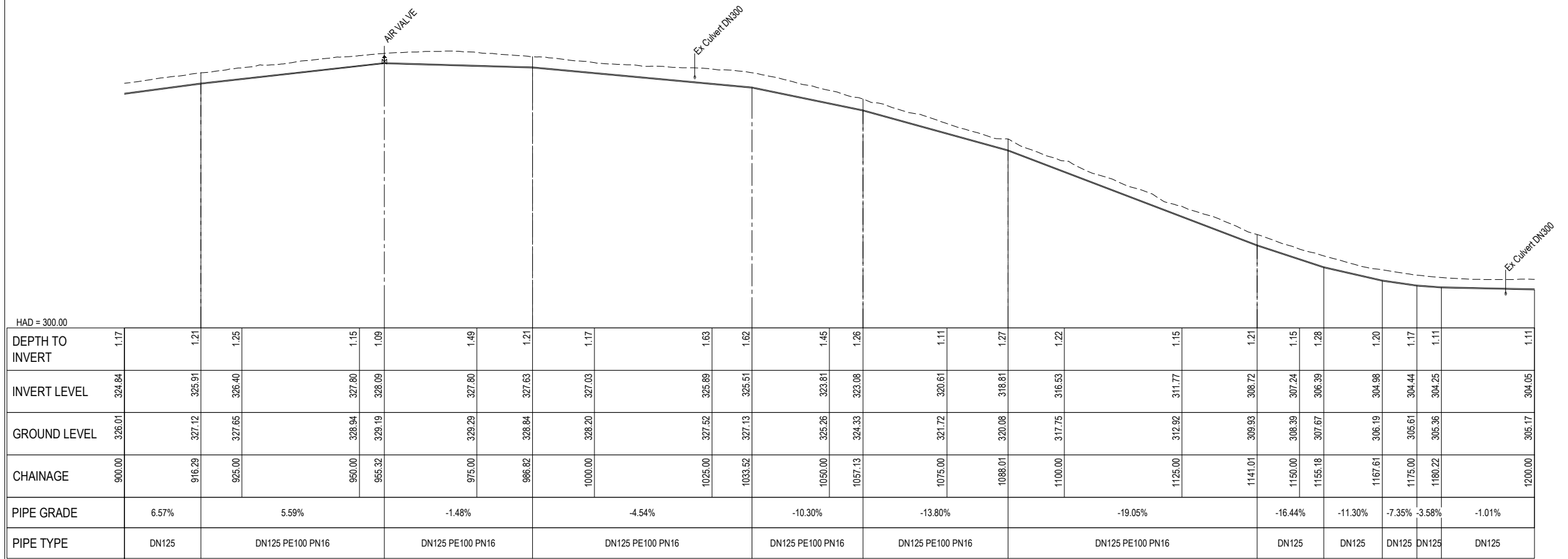
STATUS DETAILED DESIGN	SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-108	REV. 0.B			



PLAN
SCALE 1 : 500

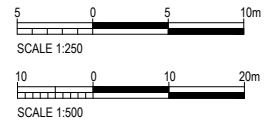
LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DEPTH TO INVERT	1.17	1.21	1.25	1.15	1.09	1.49	1.21	1.17	1.63	1.62	1.45	1.26	1.11	1.27	1.22	1.15	1.21	1.15	1.28	1.20	1.17	1.11	1.11	1.11	
INVERT LEVEL	324.84	325.91	326.40	327.80	328.09	327.80	327.63	327.03	325.89	325.51	323.81	323.08	320.61	318.81	316.53	311.77	308.72	307.24	306.39	304.98	304.44	304.25	304.05	304.05	304.05
GROUND LEVEL	326.01	327.12	327.65	328.94	329.19	329.29	328.84	328.20	327.52	327.13	325.26	324.33	321.72	320.08	317.75	312.92	309.93	308.39	307.67	306.19	305.61	305.36	305.17	305.17	305.17
CHAINAGE	900.00	916.29	925.00	950.00	955.32	975.00	986.82	1000.00	1025.00	1033.52	1050.00	1057.13	1075.00	1088.01	1100.00	1125.00	1141.01	1150.00	1155.18	1167.61	1175.00	1180.22	1180.22	1200.00	1200.00
PIPE GRADE	6.57%	5.59%		-1.48%		-4.54%			-10.30%		-13.80%		-19.05%			-16.44%	-11.30%	-7.35%	-3.58%	-1.01%					
PIPE TYPE	DN125	DN125 PE100 PN16		DN125 PE100 PN16		DN125 PE100 PN16			DN125 PE100 PN16		DN125 PE100 PN16		DN125 PE100 PN16			DN125	DN125	DN125	DN125	DN125					

LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES HORIZ 1 : 500 VERT 1 : 250



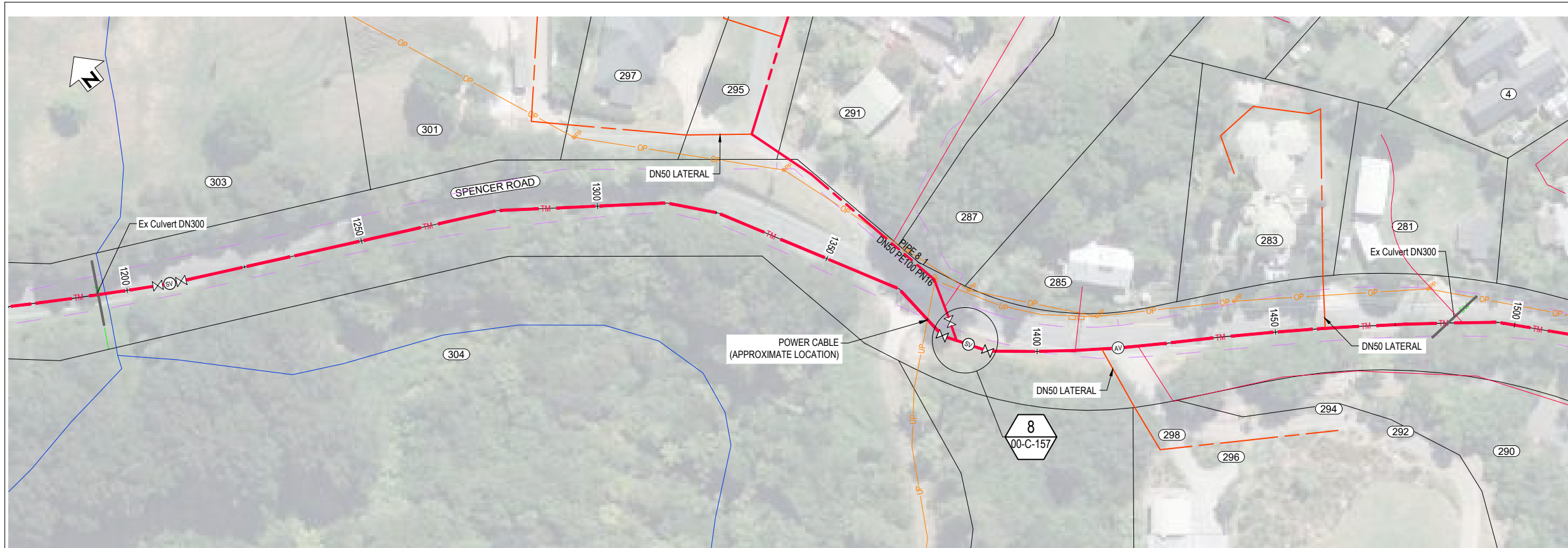
REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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3150
New Zealand
www.trility.com.au

DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

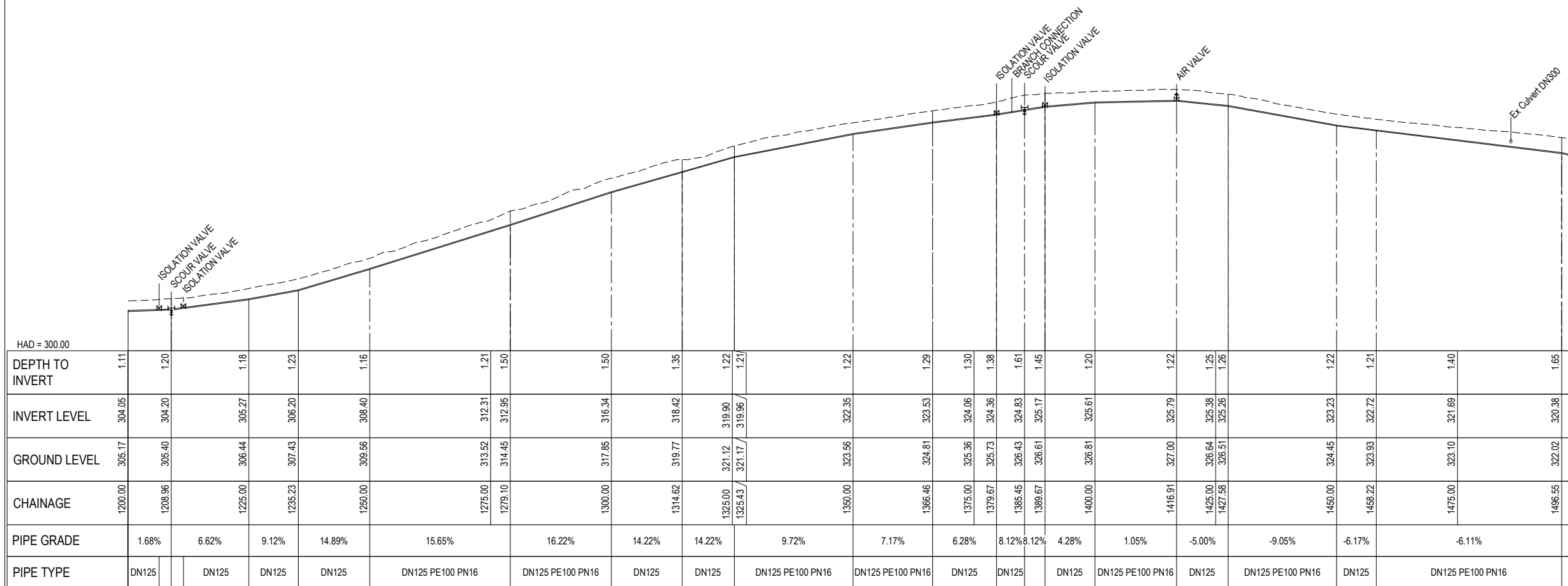
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DRAWING NUMBER R-0034-310103621-01-RUN-00-C-109		REV. 0.B							



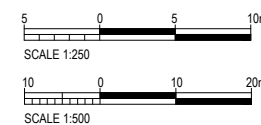
PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - CLIFF RD PS TO STONEY POINT PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
SHEET NUMBER

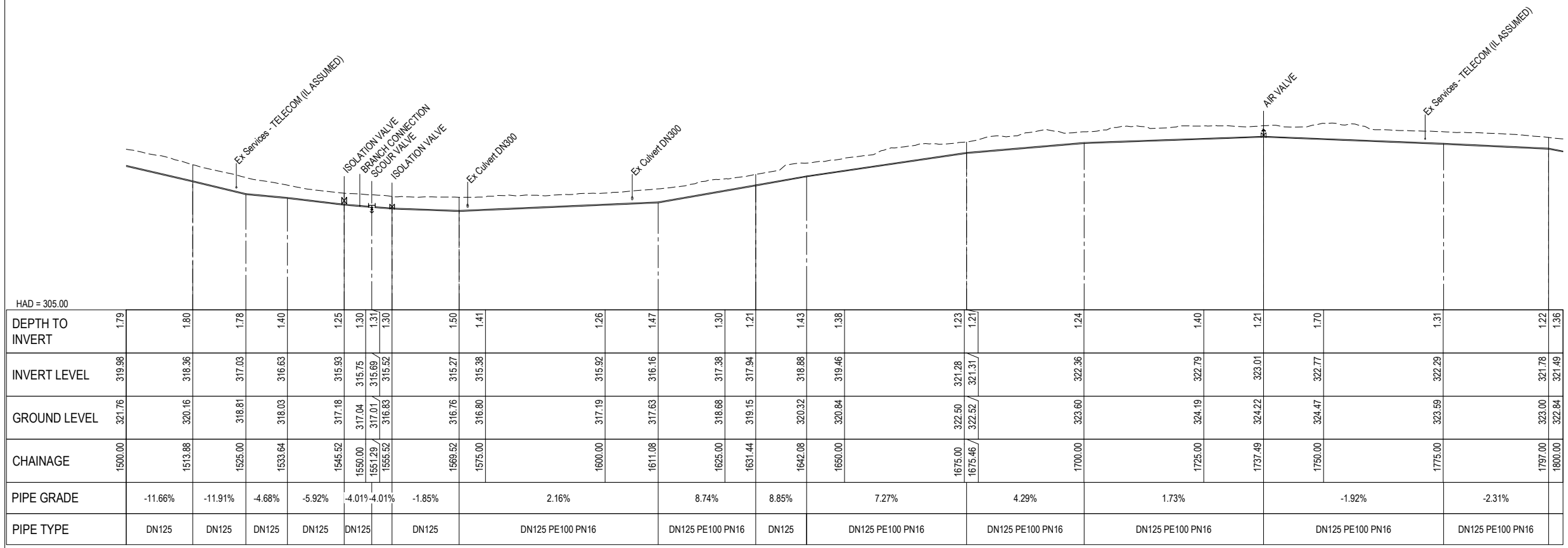
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DRAWING NUMBER R-0034-310103621-01-RUN-00-C-110	REV. 0.B			



PLAN
SCALE 1:500

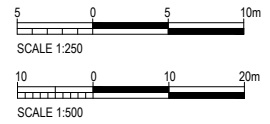
LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DEPTH TO INVERT	179	180	178	140	125	130	131	130	150	141	126	147	130	121	143	138	123	121	124	140	121	170	131	122	136
INVERT LEVEL	319.88	318.36	317.03	316.63	315.93	315.75	315.69	315.52	315.27	315.38	315.92	316.16	317.38	317.94	318.88	319.46	321.28	321.31	322.36	322.79	323.01	322.77	322.29	321.78	321.49
GROUND LEVEL	321.76	320.16	318.81	318.03	317.18	317.04	317.01	316.83	316.76	316.80	317.19	317.63	318.68	319.15	320.32	320.84	322.50	322.52	323.60	324.19	324.22	324.47	323.59	323.00	322.84
CHAINAGE	1500.00	1513.88	1525.00	1533.64	1545.52	1550.00	1551.29	1555.52	1569.52	1575.00	1600.00	1611.08	1625.00	1631.44	1642.08	1650.00	1675.00	1675.46	1700.00	1725.00	1737.49	1750.00	1775.00	1797.00	1800.00
PIPE GRADE	-11.66%	-11.91%	-4.68%	-5.92%	-4.01%	-4.01%	-1.85%		2.16%			8.74%	8.85%		7.27%		4.29%		1.73%			-1.92%		-2.31%	
PIPE TYPE	DN125	DN125	DN125	DN125	DN125	DN125	DN125	DN125	DN125 PE100 PN16	DN125 PE100 PN16	DN125	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	DN125 PE100 PN16	

LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
SHEET NUMBER

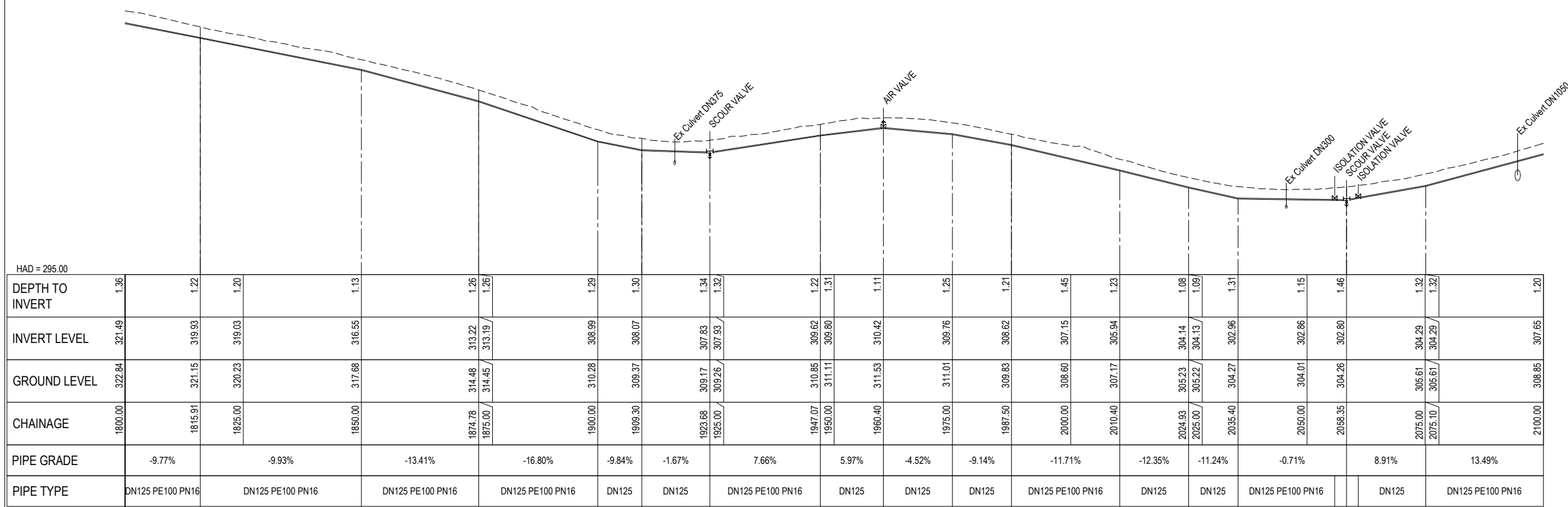
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SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-111			REV. 0.B



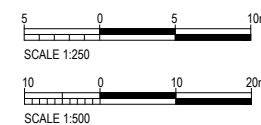
PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - O/H
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES HORIZ 1:500 VERT 1:250



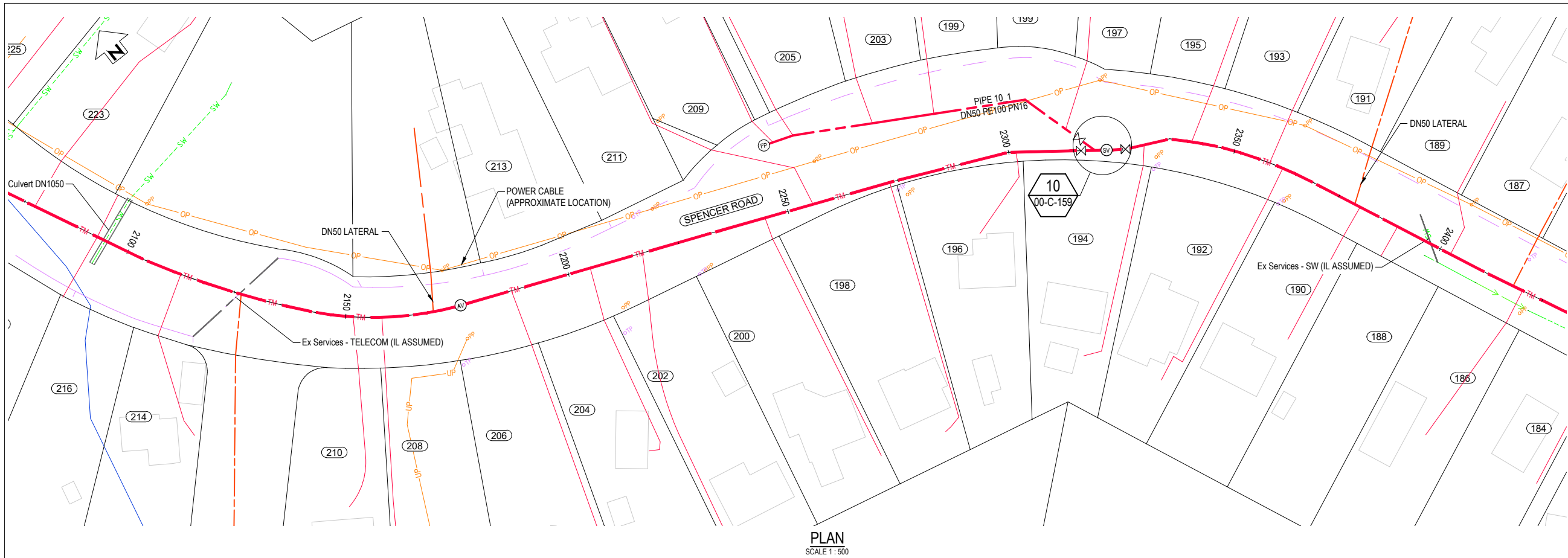
REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-112			REV. 0.B



LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- PM SEWER PRESSURE MAIN
- SEWER LATERAL - DN50
- SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

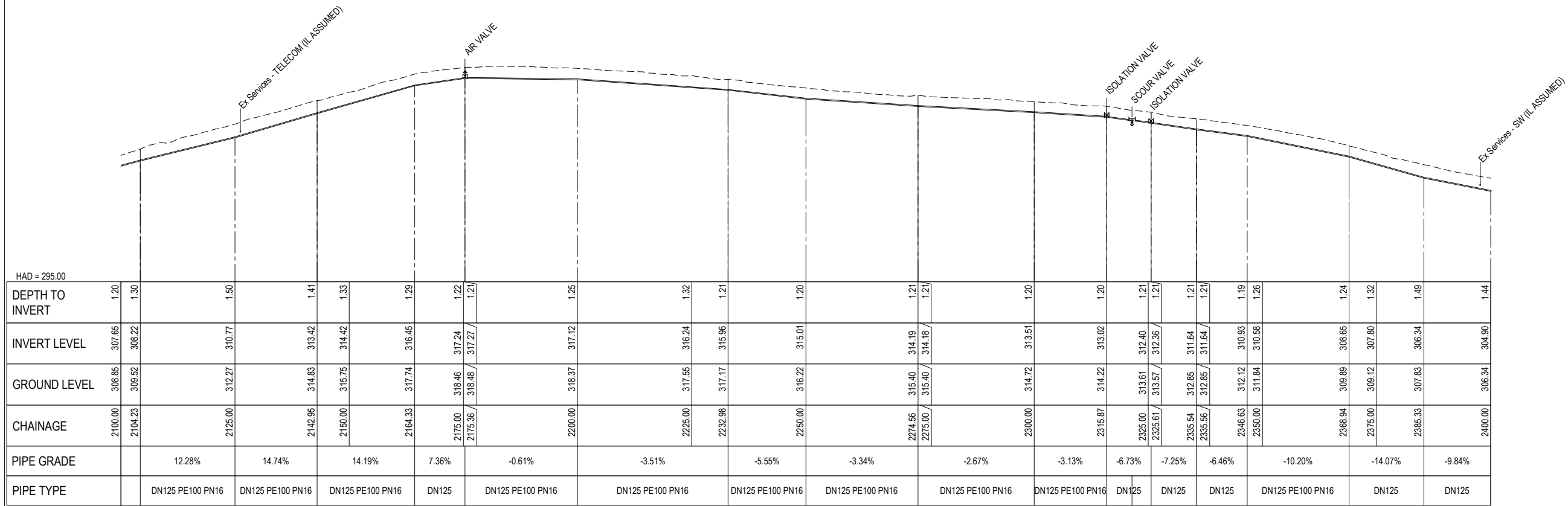
- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - OH
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

ABANDONED SERVICES:

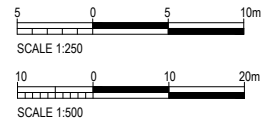
- X · X SERVICE TO BE ABANDONED
- △ SURVEY MARK
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALES: HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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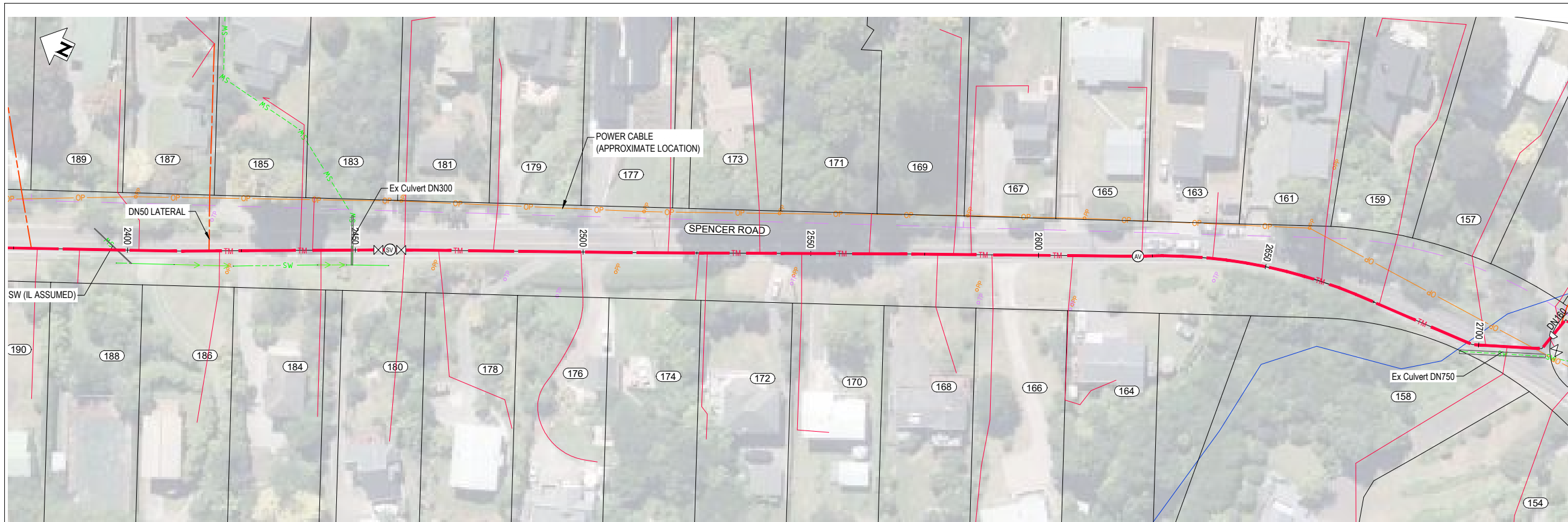
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3150
New Zealand
www.trility.com.au

DESIGNED BY: C. Clague
DRAWN BY: E. Fromont
DRAWN DATE: 3.22
APPROVED BY: S. Shortt
APPROVED DATE: 30.05.23

DES CHK: W. Jacobson
DRN CHK: S. Sutton

PROJECT NAME: TARAWERA WW RETICULATION SCHEME
DRAWING TITLE: CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
SHEET NUMBER:

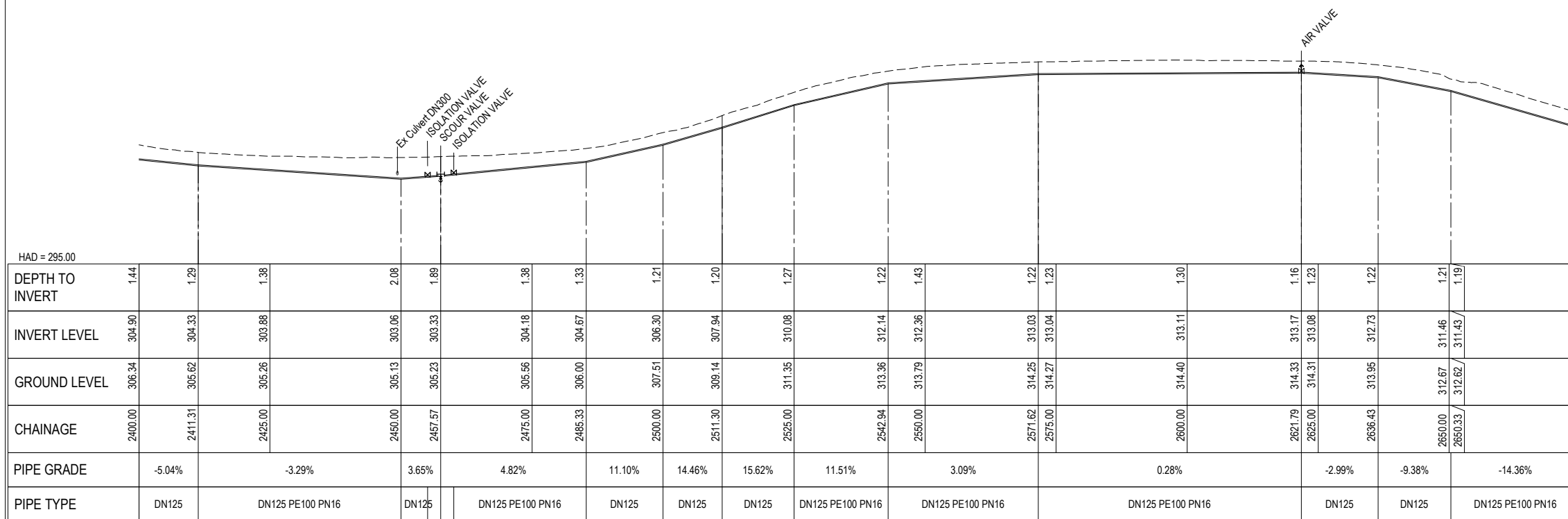
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REV: 0.B



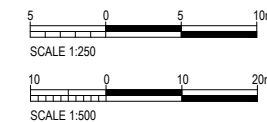
PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - CLIFF RD PS to STONEY POINT PS
SCALE: HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

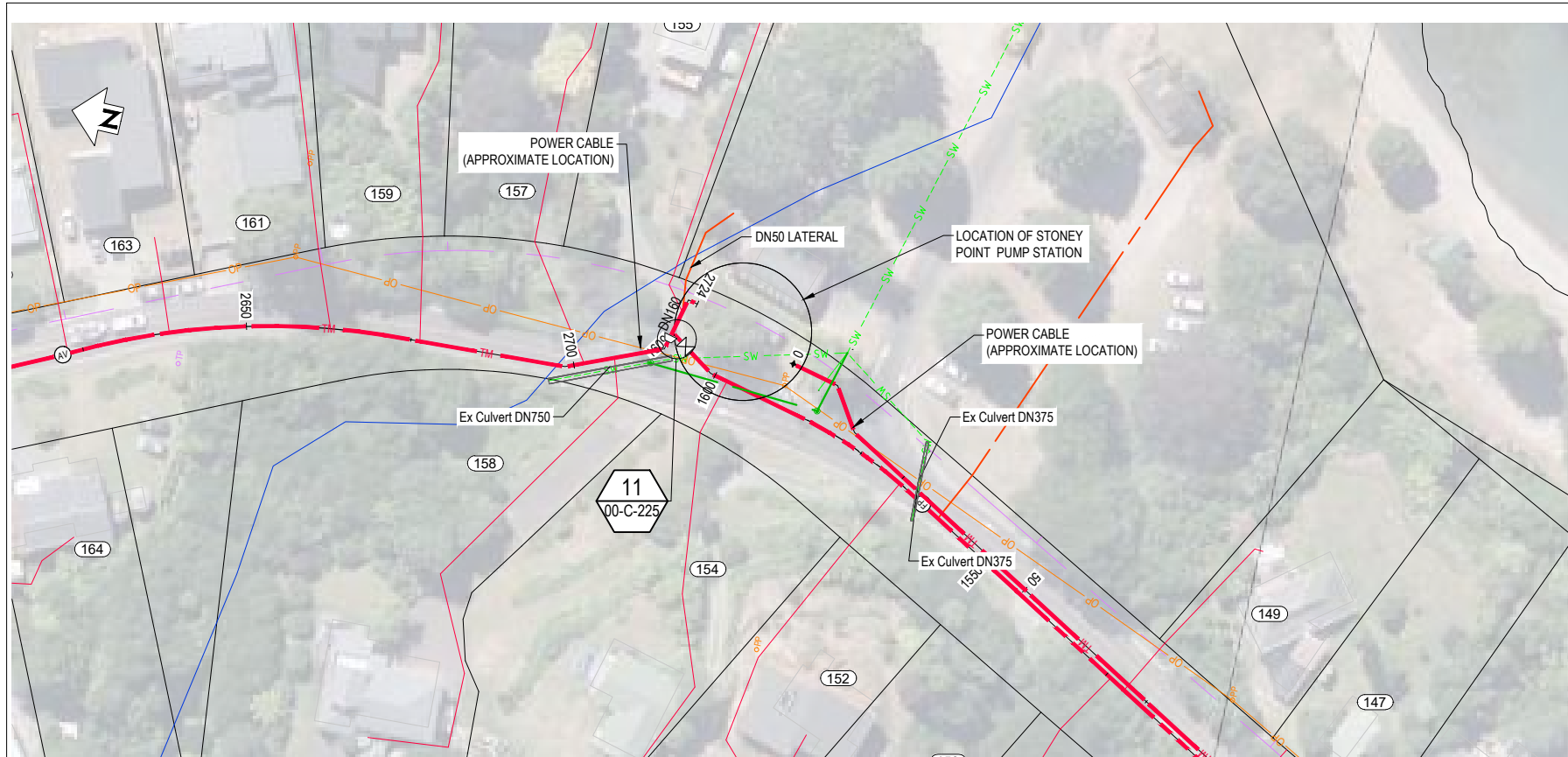


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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
SHEET NUMBER

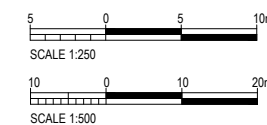
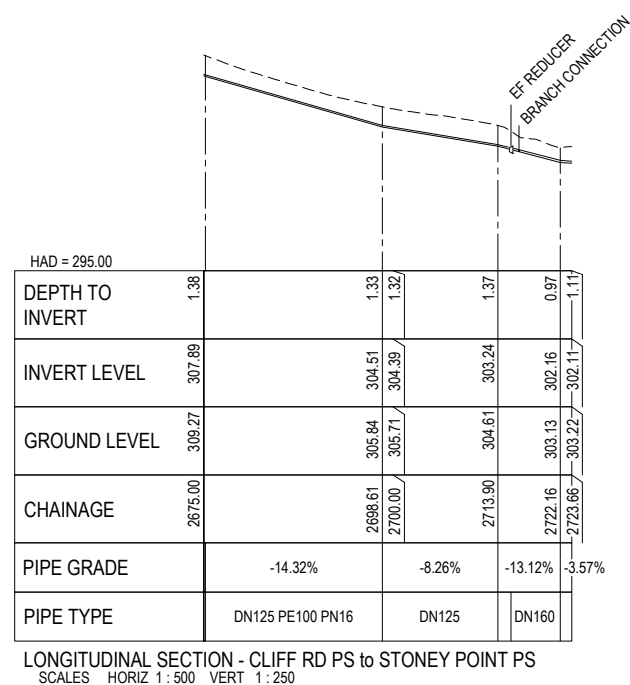
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DRAWING NUMBER R-0034-310103621-01-RUN-00-C-114			REV. 0.B



PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



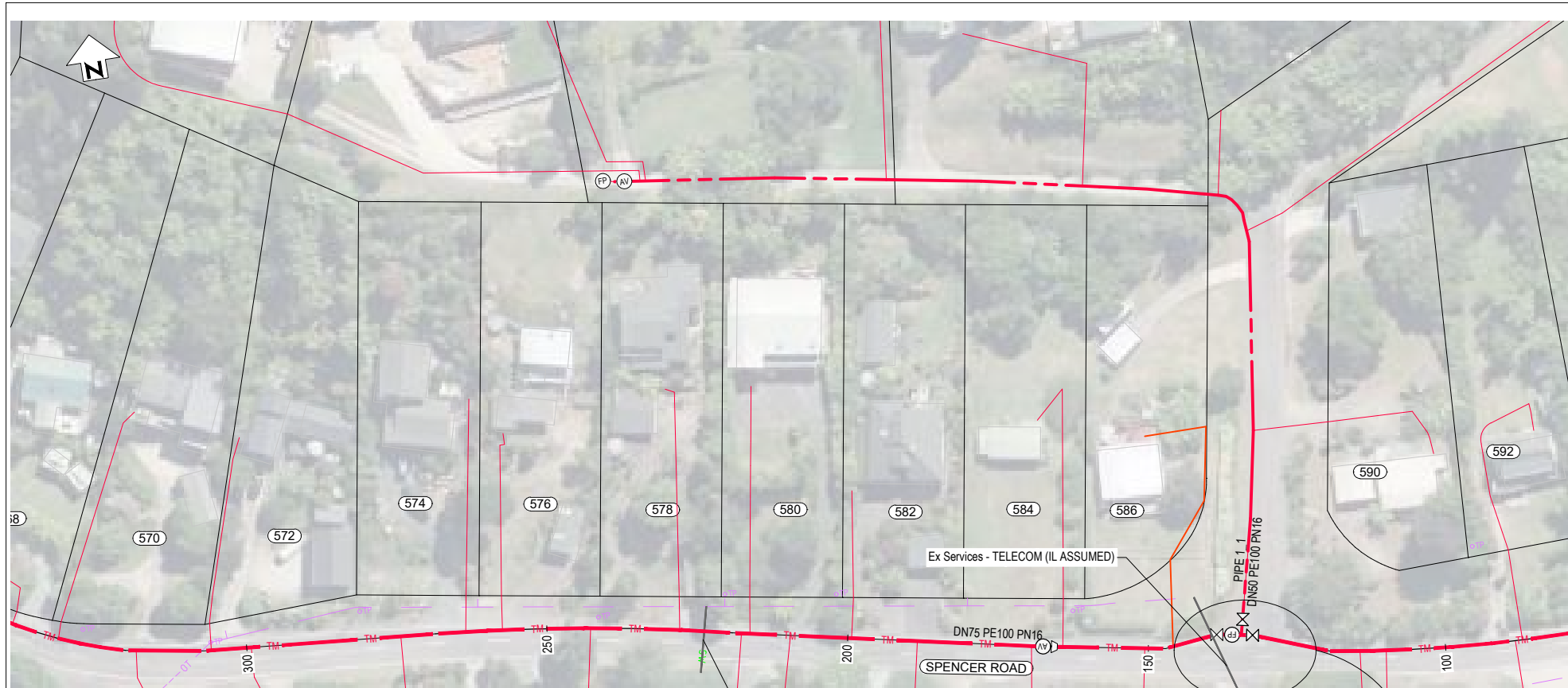
REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



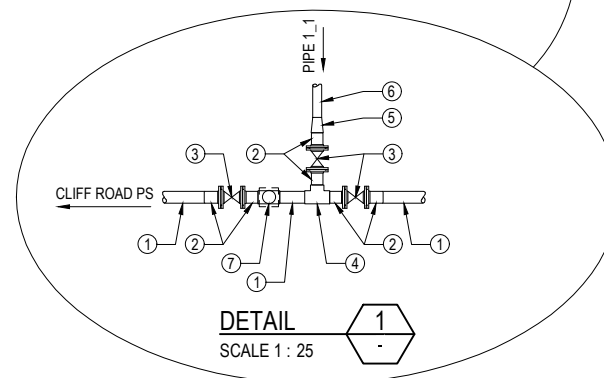
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4/23 Tukorako Drive,
Mt Maunganui, Tauranga,
3150
New Zealand
www.trility.com.au

DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE CLIFF RD TO STONEY POINT PLAN AND LONGSECTION
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

STATUS DETAILED DESIGN		SIZE A1	
SCALE AS SHOWN	SITE ID	AREA	REV. 0.B
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-115			



PLAN
SCALE 1:500

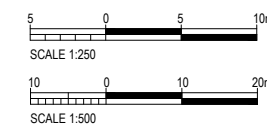


PRESSURE MAIN CONNECTION 1 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN63 PE100 PN16 PIPE
2	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN50 DI FLANGED GATE VALVE
4	DN63 PE100 PN16 EQUAL TEE (ELECTROFUSION)
5	DN63 x DN50 PE100 PN16 REDUCER
6	DN50 PE100 PN16 PIPE (PIPE 1_1)
7	INLINE FLUSHING POINT (COMPLETE ASSEMBLY) AS PER SHEET 09-C-204

LEGEND	
NEW SERVICES:	
TM	SEWER TRUNK MAIN
PP	SEWER PRESSURE MAIN
DL	SEWER LATERAL - DN50
DL	SEWER LATERAL - DN40
M	MANHOLE
V	ISOLATION VALVE
A	AIR VALVE
S	SCOUR VALVE
FP	FLUSH POINT
ER	EF REDUCER
EXISTING SERVICES:	
G	GAS
PP	POWER - POLE
OP	POWER - OH
UP	POWER - U/G
TE	TELECOMMS
FO	FIBRE OPTIC
OT	TELECOMMS - OH
TP	TELECOMMS - POLE
C	CONDUIT
W	WATER
S	SEWER
SW	STORMWATER
SW	SWALE
RS	RIVER/STREAM
X	SERVICE TO BE ABANDONED
SM	SURVEY MARK
EM	EXISTING SEWER MANHOLE
ESM	EXISTING STORMWATER MANHOLE
EH	EXISTING HYDRANT
EW	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

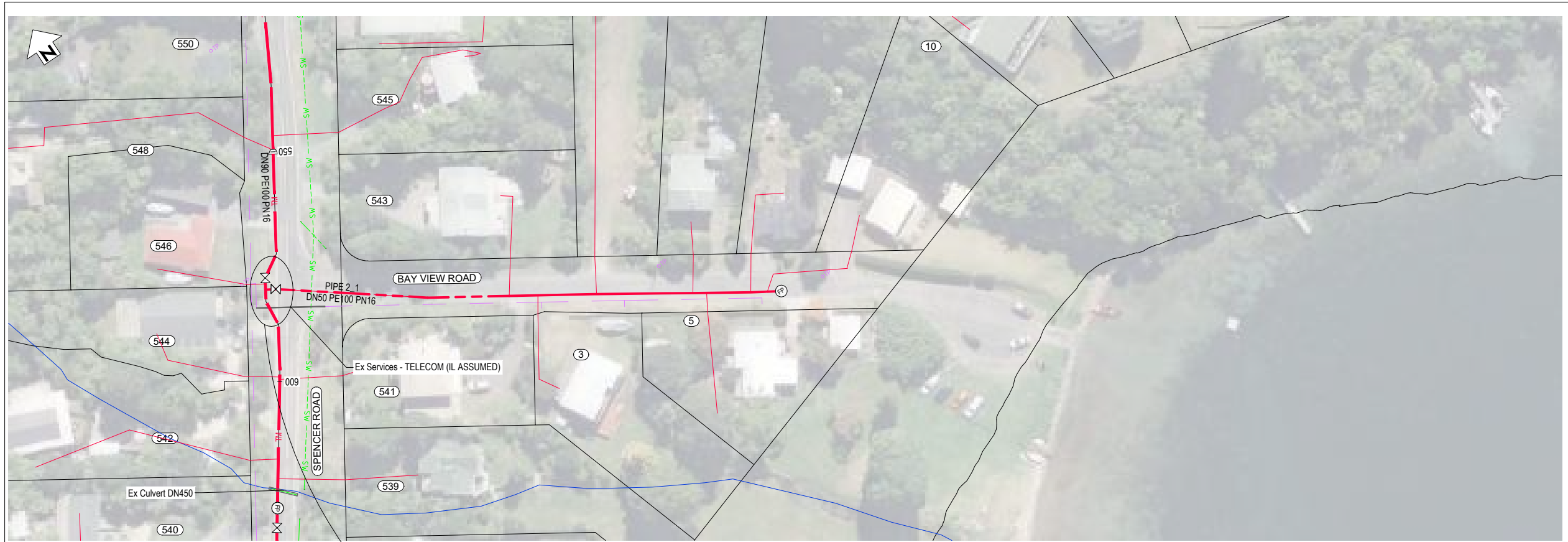


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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE PRESSURE MAIN PLAN
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-150			REV. 0.B



PLAN
SCALE 1 : 500

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SP SEWER PRESSURE MAIN
- SL SEWER LATERAL - DN50
- SL SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

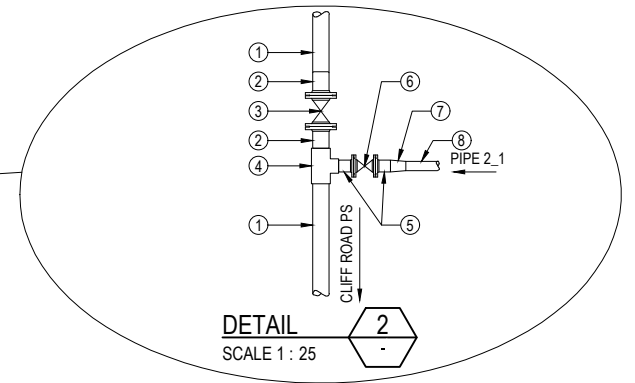
EXISTING SERVICES:

- OP GAS POWER - POLE
- OP POWER - OH
- UP POWER - U/G
- TELECOMMS
- FO FIBRE OPTIC
- OT TELECOMMS - OH
- TP TELECOMMS - POLE
- C CONDUIT
- W WATER
- S SEWER
- SW STORMWATER
- SW SWALE
- RIVER/STREAM

X X SERVICE TO BE ABANDONED
 SURVEY MARK
 EXISTING SEWER MANHOLE
 EXISTING STORMWATER MANHOLE
 EXISTING HYDRANT
 EXISTING WATER METER

NOTES

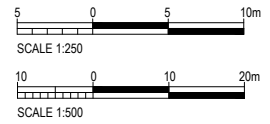
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DETAIL
SCALE 1 : 25

PRESSURE MAIN CONNECTION 2 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN90 PE100 PN16 PIPE
2	DN90 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN80 DI FLANGED GATE VALVE
4	DN90 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN50 DI FLANGED GATE VALVE
7	DN63 x DN50 PE100 PN16 REDUCER (ELECTROFUSION)
8	DN50 PE100 PN16 PIPE (PIPE 2_1)



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



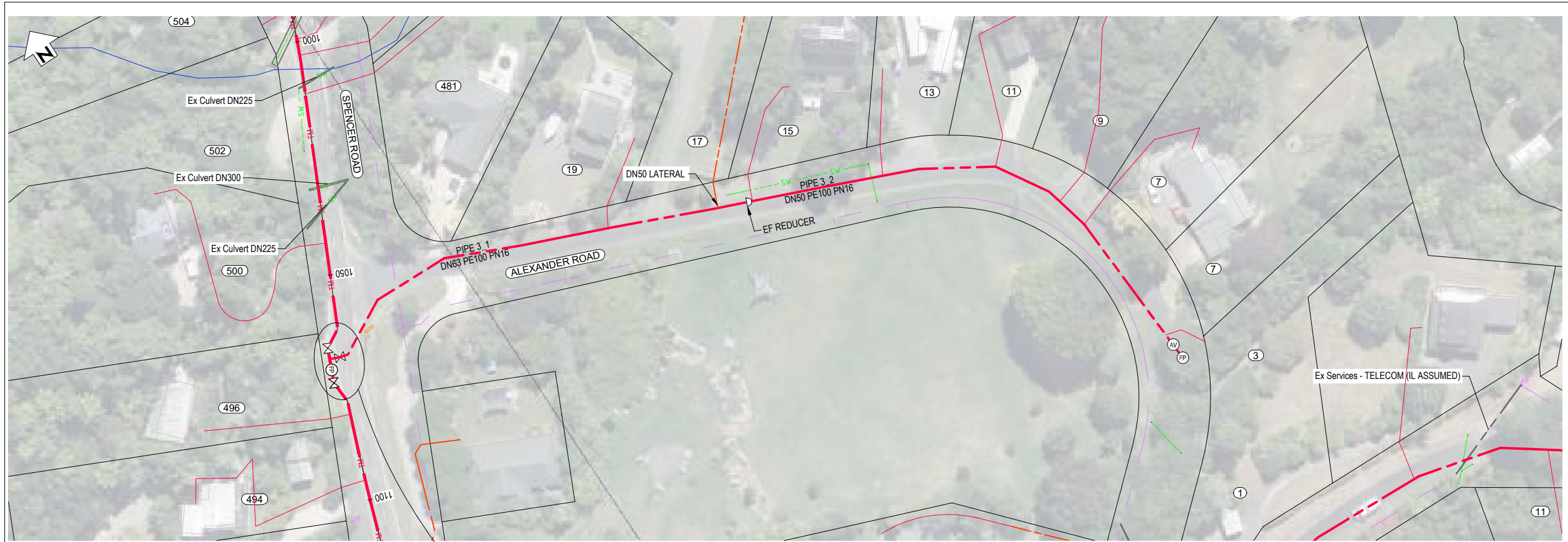
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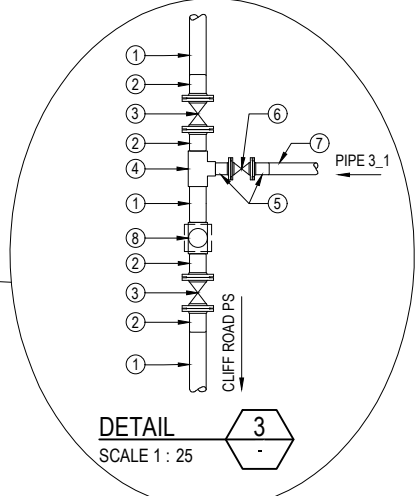
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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE PRESSURE MAIN PLAN
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

STATUS DETAILED DESIGN		SIZE A1	
SCALE AS SHOWN	SITE ID	AREA	REV. 0.B
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-151			



PLAN
SCALE 1 : 500



DETAIL
SCALE 1 : 25

PRESSURE MAIN CONNECTION 3 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN90 PE100 PN16 PIPE
2	DN90 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN80 DI FLANGED GATE VALVE
4	DN90 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN50 DI FLANGED GATE VALVE
7	DN63 PE100 PN16 PIPE (PIPE 3_1)
8	INLINE FLUSHING POINT (COMPLETE ASSEMBLY) AS PER SHEET 09-C-204

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SEWER PRESSURE MAIN
- SEWER LATERAL - DN50
- SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

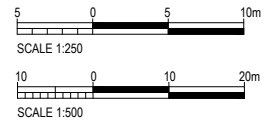
- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - OH
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

SYMBOLS:

- X X SERVICE TO BE ABANDONED
- △ SURVEY MARK
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

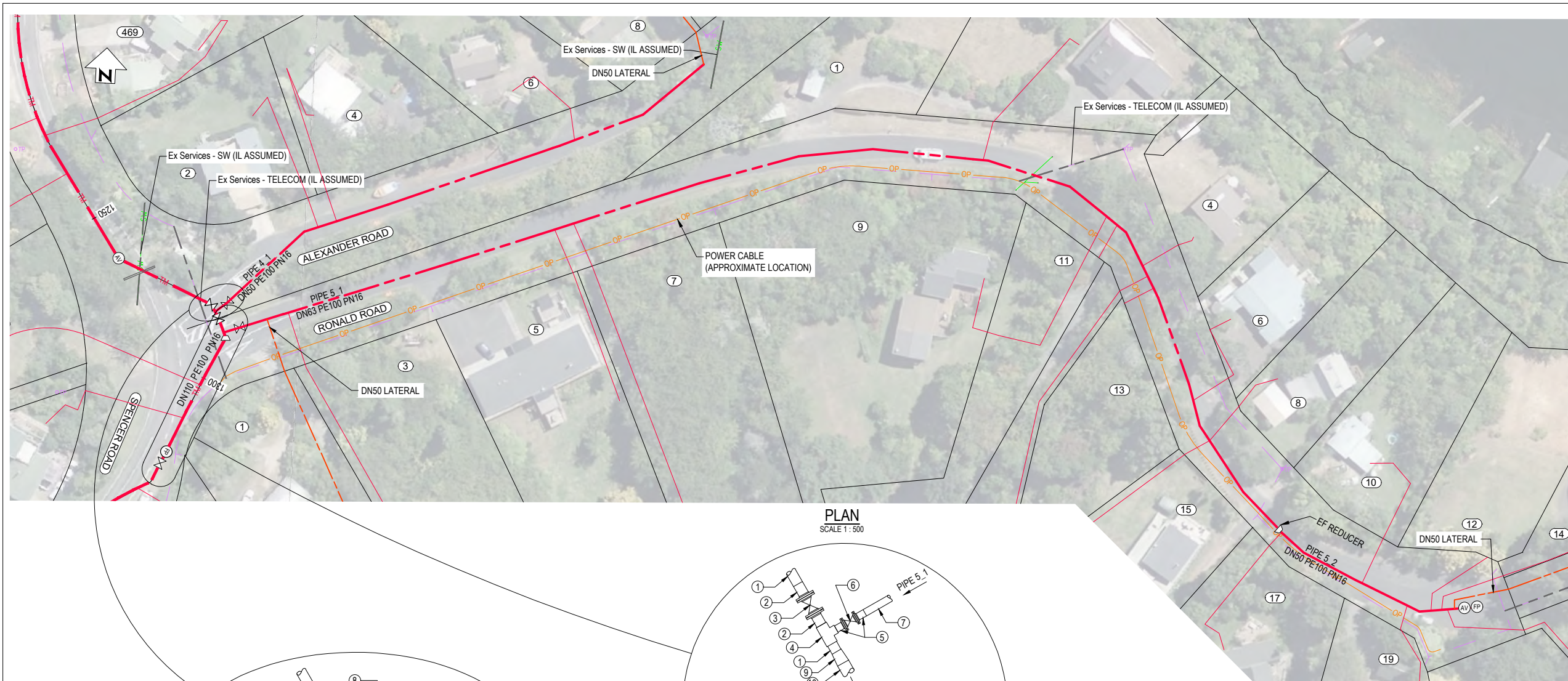


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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE PRESSURE MAIN PLAN
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

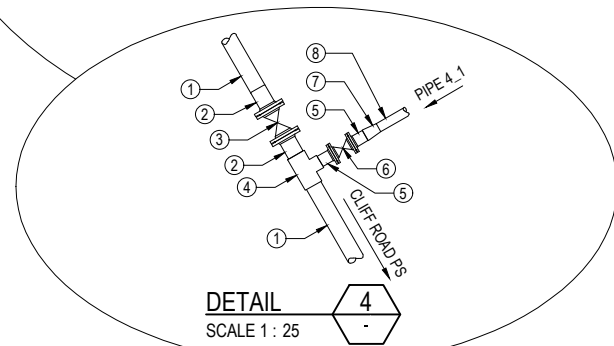
STATUS DETAILED DESIGN		SIZE A1	
SCALE AS SHOWN	SITE ID	AREA	REV. 0.B
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-152			



PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

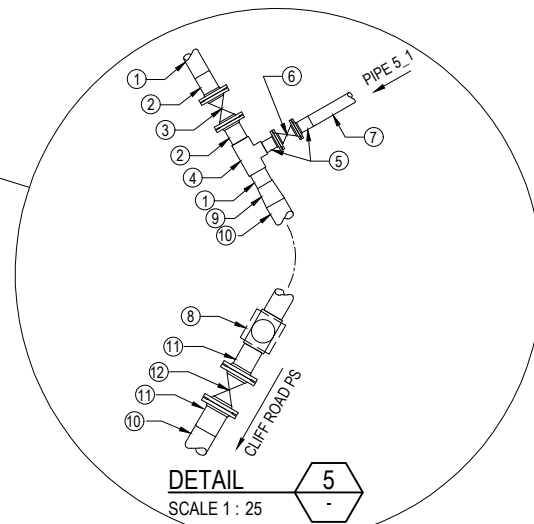
NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DETAIL
SCALE 1:25

PRESSURE MAIN CONNECTION 4 PLAN

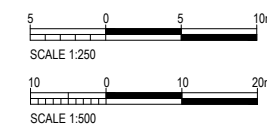
PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN90 PE100 PN16 PIPE
2	DN90 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN80 DI FLANGED GATE VALVE
4	DN90 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN50 DI FLANGED GATE VALVE
7	DN63 x DN50 PE100 PN16 REDUCER (ELECTROFUSION)
8	DN50 PE100 PN16 PIPE (PIPE 4_1)



DETAIL
SCALE 1:25

PRESSURE MAIN CONNECTION 5 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN90 PE100 PN16 PIPE
2	DN90 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN80 DI FLANGED GATE VALVE
4	DN90 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN50 DI FLANGED GATE VALVE
7	DN63 PE100 PN16 PIPE
8	INLINE FLUSHING POINT (COMPLETE ASSEMBLY) AS PER SHEET 09-C-204
9	DN110 x DN90 PE100 PN16 REDUCER
10	DN110 PE100 PN16 PIPE
11	DN110 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
12	DN100 DI FLANGED GATE VALVE



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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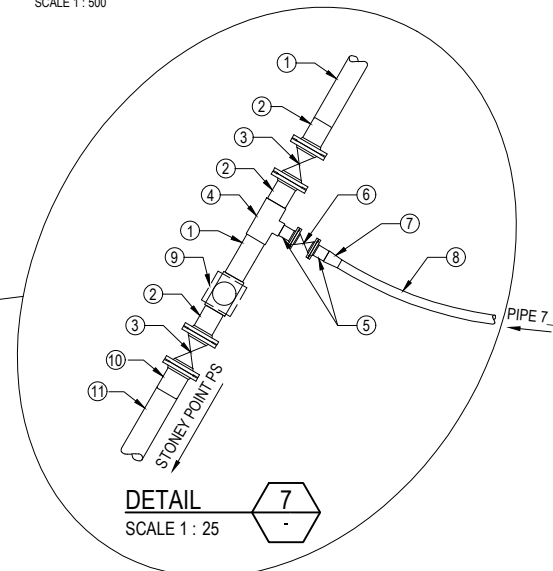
DESIGNED BY	C. Clague
DRAWN BY	E. Fromont
DRAWN DATE	3.22
APPROVED BY	S. Shortt
APPROVED DATE	30.05.23

DES CHK	W. Jacobson
DRN CHK	S. Sutton
PROJECT NAME	TARAWERA WW RETICULATION SCHEME
DRAWING TITLE	PRESSURE MAIN PLAN
SHEET NUMBER	

STATUS	DETAILED DESIGN		
SCALE	AS SHOWN	SITE ID	AREA
DRAWING NUMBER	R-0034-310103621-01-RUN-00-C-153		
SIZE	A1		
REV.	0.B		



PLAN
SCALE 1 : 500



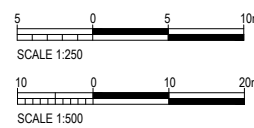
DETAIL
SCALE 1 : 25

PRESSURE MAIN CONNECTION 7 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN110 PE100 PN16 PIPE
2	DN110 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN100 DI FLANGED GATE VALVE
4	DN110 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN50 DI FLANGED GATE VALVE
7	DN63 x DN50 PE100 PN16 REDUCER
8	DN50 PE100 PN16 PIPE (PIPE 7_1)
9	INLINE FLUSHING POINT (COMPLETE ASSEMBLY) AS PER SHEET 09-C-204
10	DN125 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
11	DN125 PE100 PN16 PIPE

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

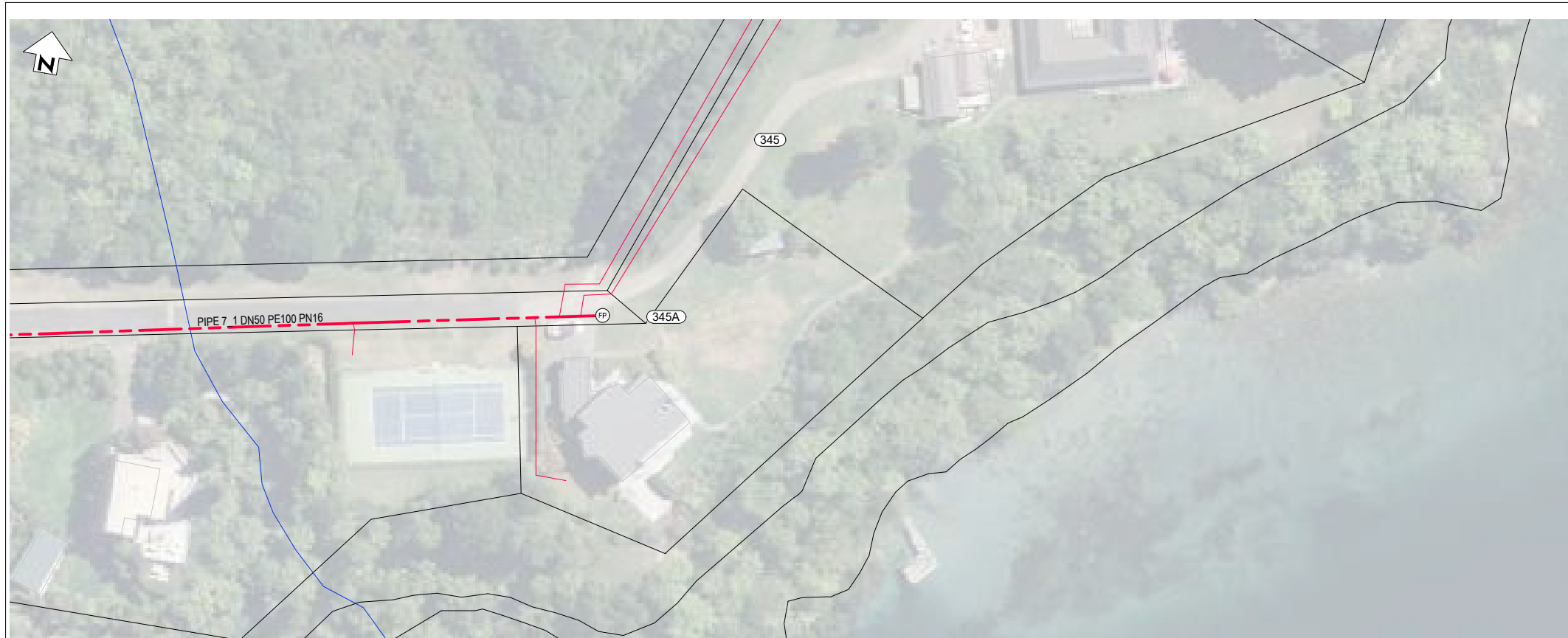


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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE PRESSURE MAIN PLAN
SHEET NUMBER

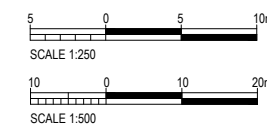
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SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-154			REV. 0.B



PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

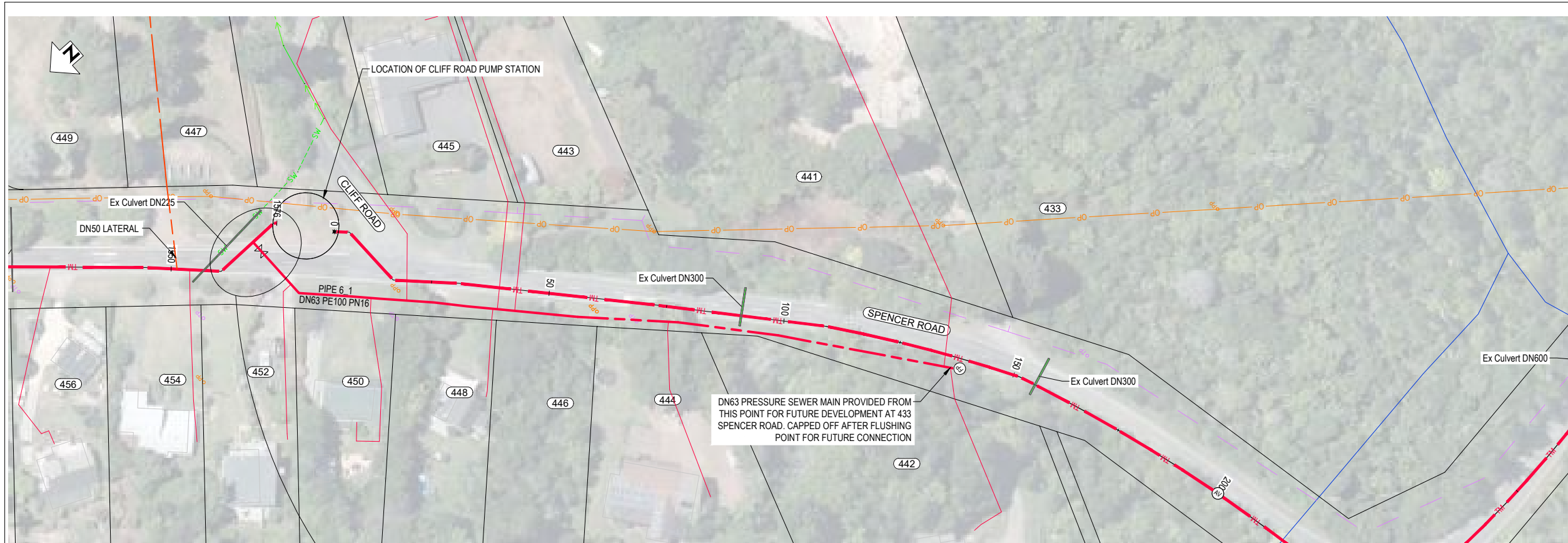


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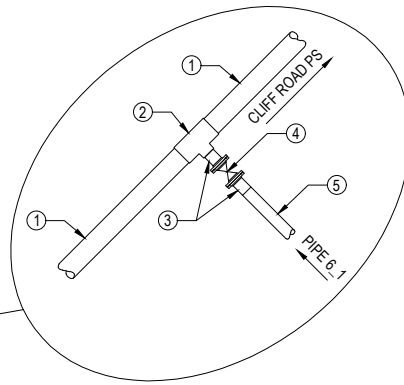
DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE PRESSURE MAIN PLAN
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-155			REV. 0.B



PLAN
SCALE 1 : 500



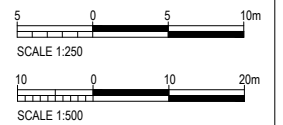
DETAIL 6
SCALE 1 : 25

PRESSURE MAIN CONNECTION 6 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN110 PE100 PN16 PIPE
2	DN110 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
3	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
4	DN50 DI FLANGED GATE VALVE
5	DN63 PE100 PN16 PIPE (PIPE 6_1)

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES	
1.	REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



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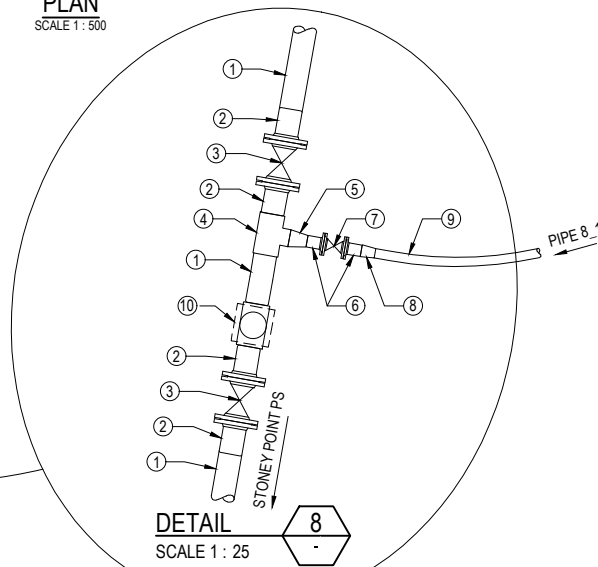
DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE PRESSURE MAIN PLAN
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-156			REV. 0.B



PLAN
SCALE 1 : 500

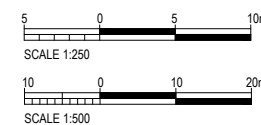


PRESSURE MAIN CONNECTION 8 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN125 PE100 PN16 PIPE
2	DN125 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN100 DI FLANGED GATE VALVE
4	DN125 x DN90 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN90 x DN63 PE100 PN16 REDUCER
6	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
7	DN50 DI FLANGED GATE VALVE
8	DN63 x DN50 PE100 PN16 REDUCER (ELECTROFUSION)
9	DN50 PE100 PN16 PIPE (PIPE 8.1)
10	SCOUR VALVE (COMPLETE ASSEMBLY) AS PER SHEET 09-C-203

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SURVEY TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.

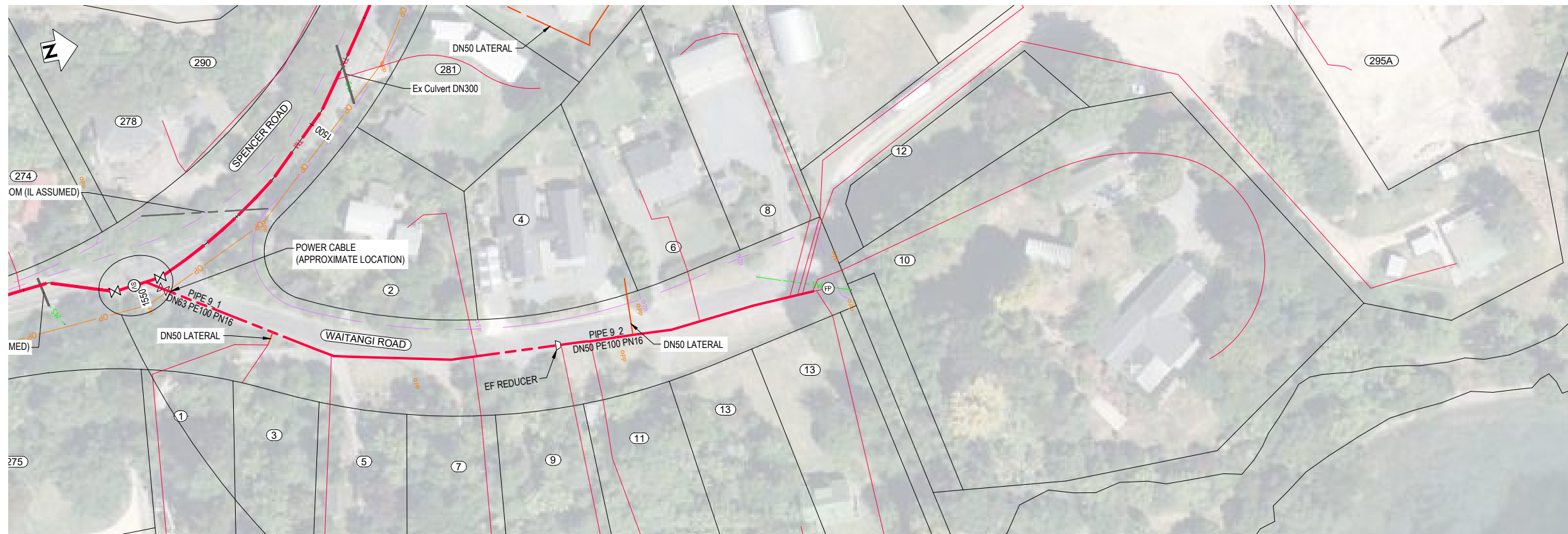


REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

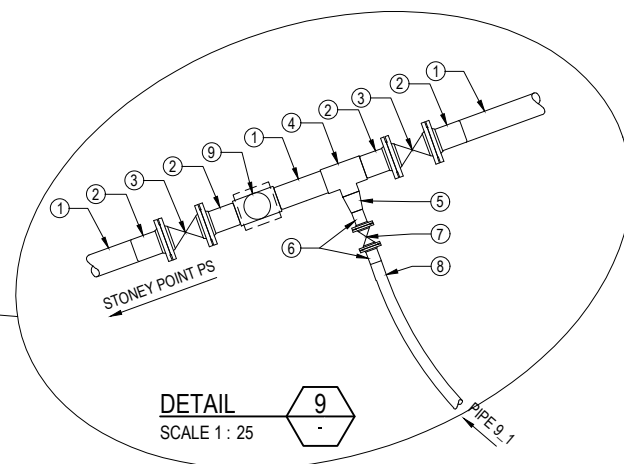


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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN	
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE PRESSURE MAIN PLAN	SCALE AS SHOWN	SITE ID
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER	AREA	SIZE A1
APPROVED DATE 30.05.23			DRAWING NUMBER R-0034-310103621-01-RUN-00-C-157	REV. 0.B



PLAN
SCALE 1 : 500



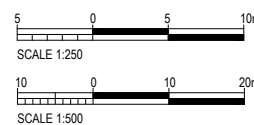
DETAIL
SCALE 1 : 25

PRESSURE MAIN CONNECTION 9 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN125 PE100 PN16 PIPE
2	DN125 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN100 DI FLANGED GATE VALVE
4	DN125 x DN90 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN90 x DN63 PE100 PN16 REDUCER
6	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
7	DN50 DI FLANGED GATE VALVE
8	DN63 PE100 PN16 PIPE (PIPE 9_1)
9	SCOUR VALVE (COMPLETE ASSEMBLY) AS PER SHEET 09-C-203

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23

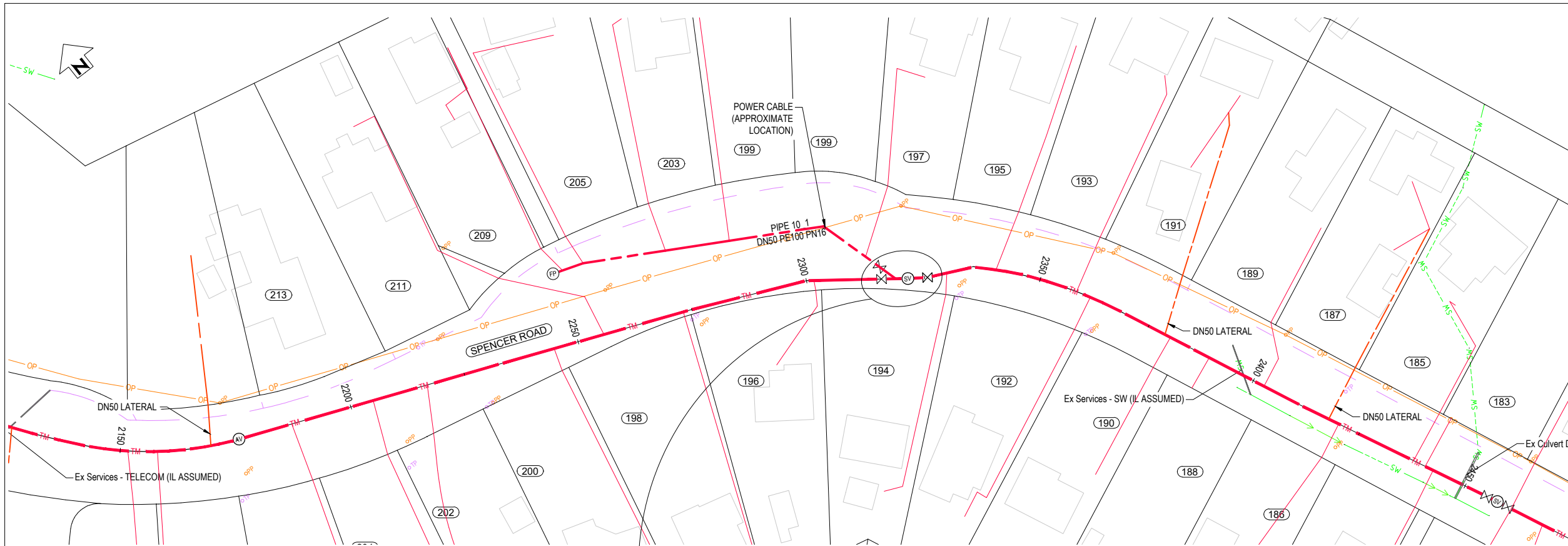


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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE PRESSURE MAIN PLAN
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-158			REV. 0.B



LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SP SEWER PRESSURE MAIN
- SL DN50 SEWER LATERAL - DN50
- SL DN40 SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - OH
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

· X · X · SERVICE TO BE ABANDONED

△ SURVEY MARK

○ EXISTING SEWER MANHOLE

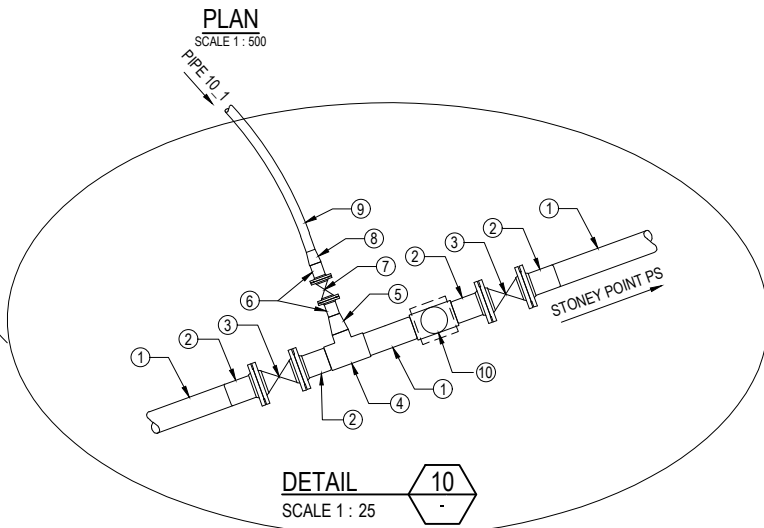
○ EXISTING STORMWATER MANHOLE

□ EXISTING HYDRANT

⊠ EXISTING WATER METER

NOTES

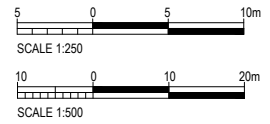
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DETAIL
SCALE 1 : 25

PIPE SCHEDULE

ITEM	DESCRIPTION
1	DN125 PE100 PN16 PIPE
2	DN125 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN100 DI FLANGED GATE VALVE
4	DN125 x DN90 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN90 x DN63 PE100 PN16 REDUCER
6	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
7	DN50 DI FLANGED GATE VALVE
8	DN63 x DN50 PE100 PN16 REDUCER
9	DN50 PE100 PN16 PIPE (PIPE 10_1)
10	SCOUR VALVE (COMPLETE ASSEMBLY) AS PER SHEET 09-C-203



REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



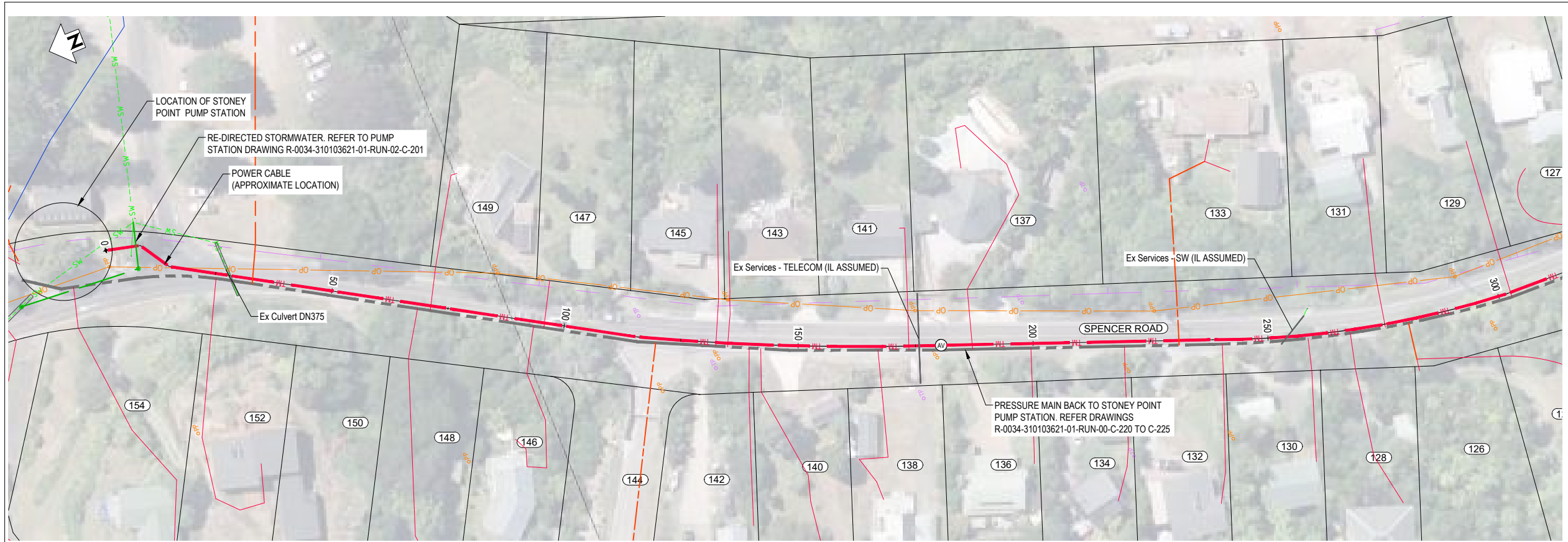
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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE PRESSURE MAIN PLAN
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

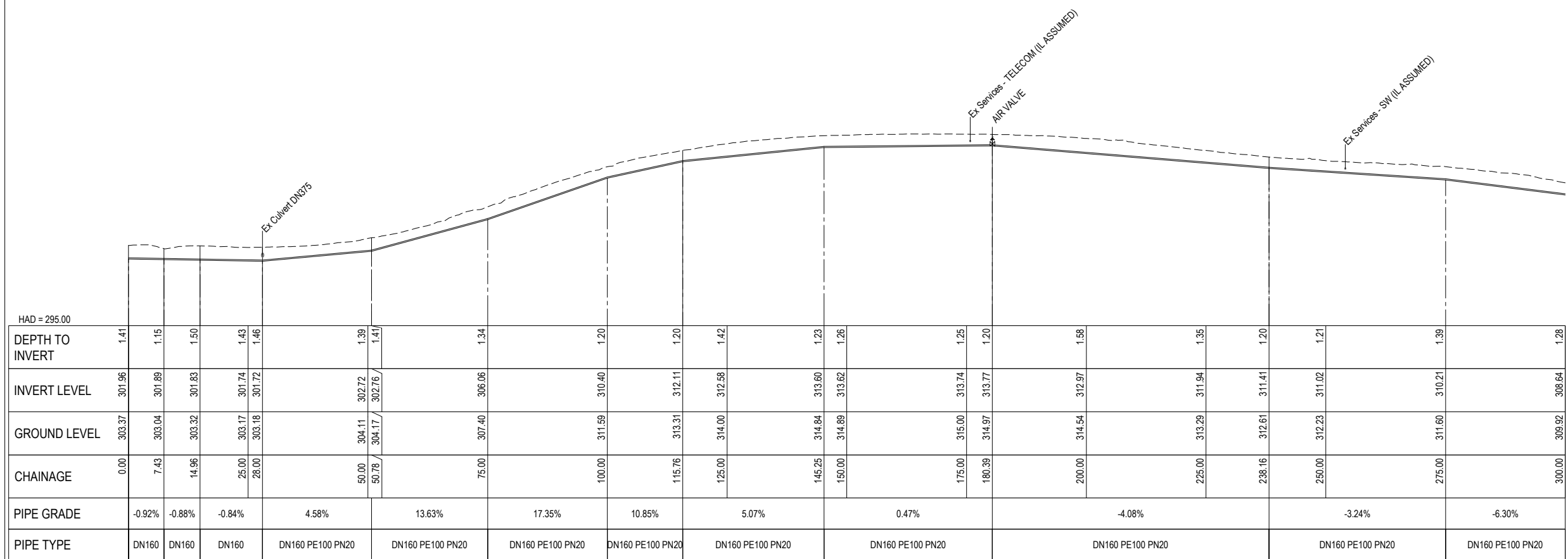
STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-159			REV. 0.B



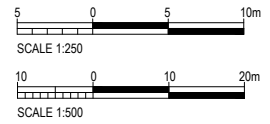
PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - STONEY POINT PS to BURIED VILLAGE PS
SCALES HORIZ 1:500 VERT 1:250



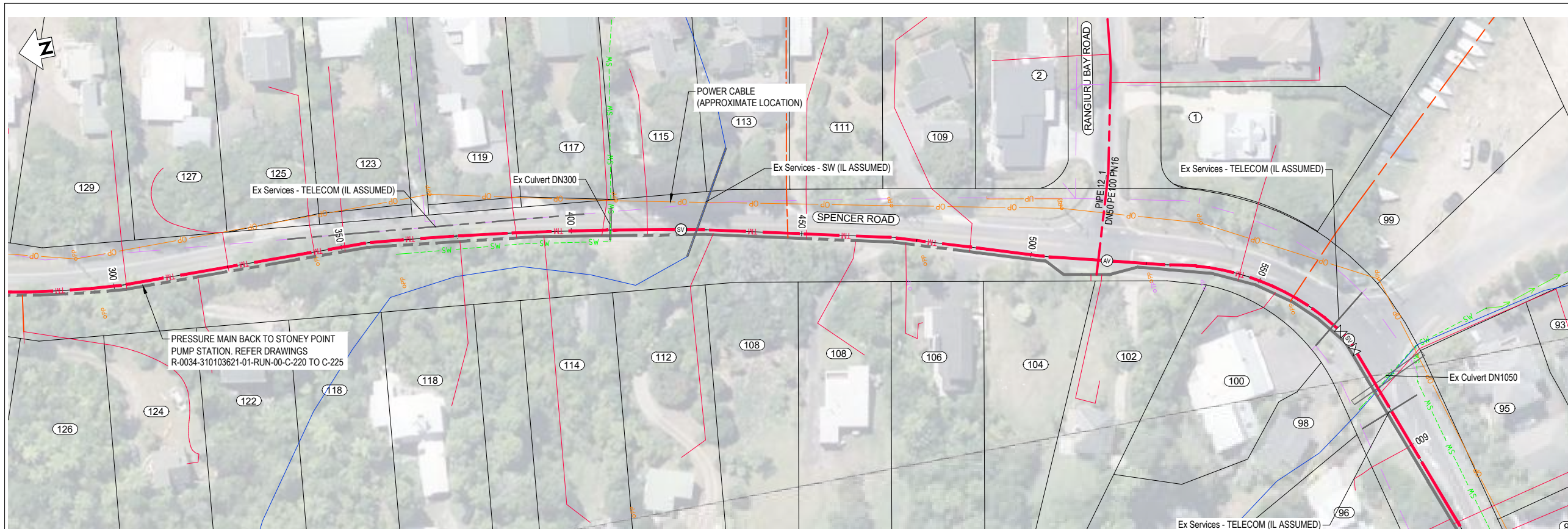
REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS AS SHOWN
DRAWING TITLE STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION	DRAWING NUMBER R-0034-310103621-01-RUN-00-C-200
SHEET NUMBER	SIZE A1

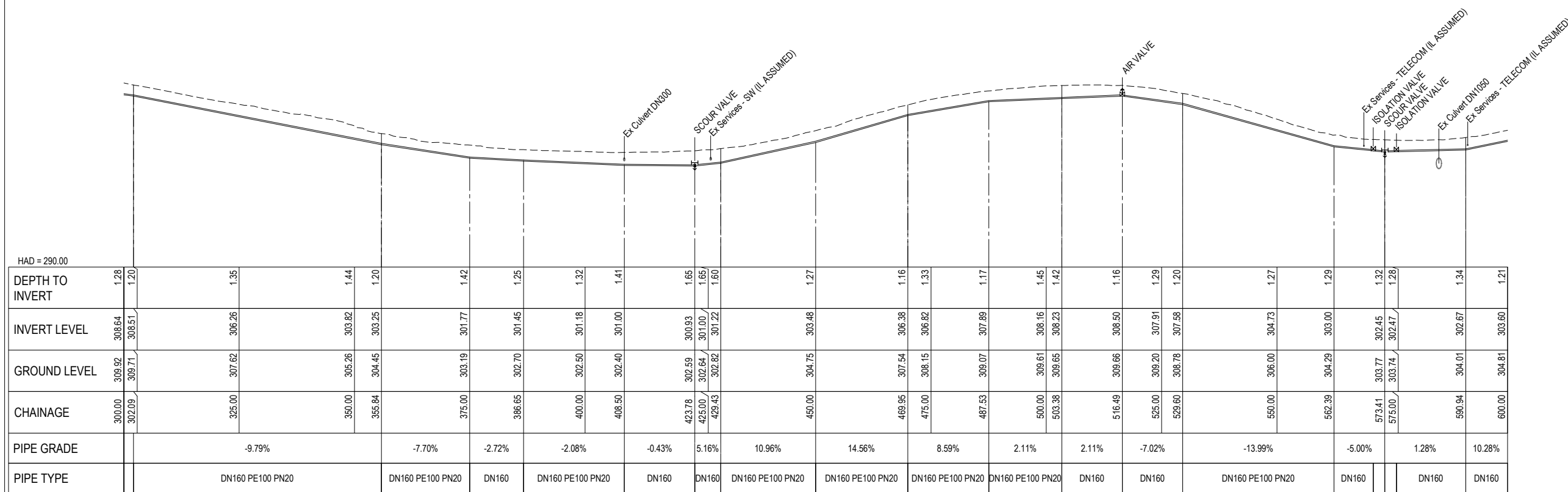
SCALE	SITE ID	AREA	SIZE A1
AS SHOWN			REV. 0.A



PLAN
SCALE 1 : 500

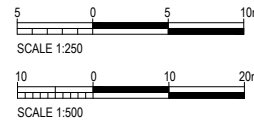
LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DEPTH TO INVERT	INVERT LEVEL	GROUND LEVEL	CHAINAGE	PIPE GRADE	PIPE TYPE
1.28	308.64	309.92	300.00		
1.20	308.51	309.71	302.09		
1.35	306.26	307.62	325.00	-9.79%	DN160 PE100 PN20
1.44	303.82	305.26	350.00		
1.20	303.25	304.45	355.84		
1.42	301.77	303.19	375.00	-7.70%	DN160 PE100 PN20
1.25	301.45	302.70	386.65	-2.72%	DN160
1.32	301.18	302.50	400.00	-2.08%	DN160 PE100 PN20
1.41	301.00	302.40	408.50		
1.65	300.93	302.59	423.78	-0.43%	DN160
1.65	301.00	302.64	425.00	5.16%	DN160
1.60	301.22	302.82	429.43	10.96%	DN160 PE100 PN20
1.27	303.48	304.75	450.00	14.56%	DN160 PE100 PN20
1.16	306.38	307.54	469.95		
1.33	306.82	308.15	475.00	8.59%	DN160 PE100 PN20
1.17	307.89	309.07	487.53	2.11%	DN160 PE100 PN20
1.45	308.16	309.61	500.00		
1.42	308.23	309.65	503.38	2.11%	DN160
1.16	308.50	309.66	516.49	-7.02%	DN160
1.29	307.91	309.20	525.00		
1.20	307.58	308.78	529.60	-13.99%	DN160 PE100 PN20
1.29	303.00	304.29	562.39		
1.32	302.45	303.77	573.41	-5.00%	DN160
1.28	302.47	303.74	575.00		
1.34	302.67	304.01	590.94	1.28%	DN160
1.21	303.60	304.81	600.00	10.28%	DN160

LONGITUDINAL SECTION - STONEY POINT PS to BURIED VILLAGE PS
SCALES HORIZ 1:500 VERT 1:250



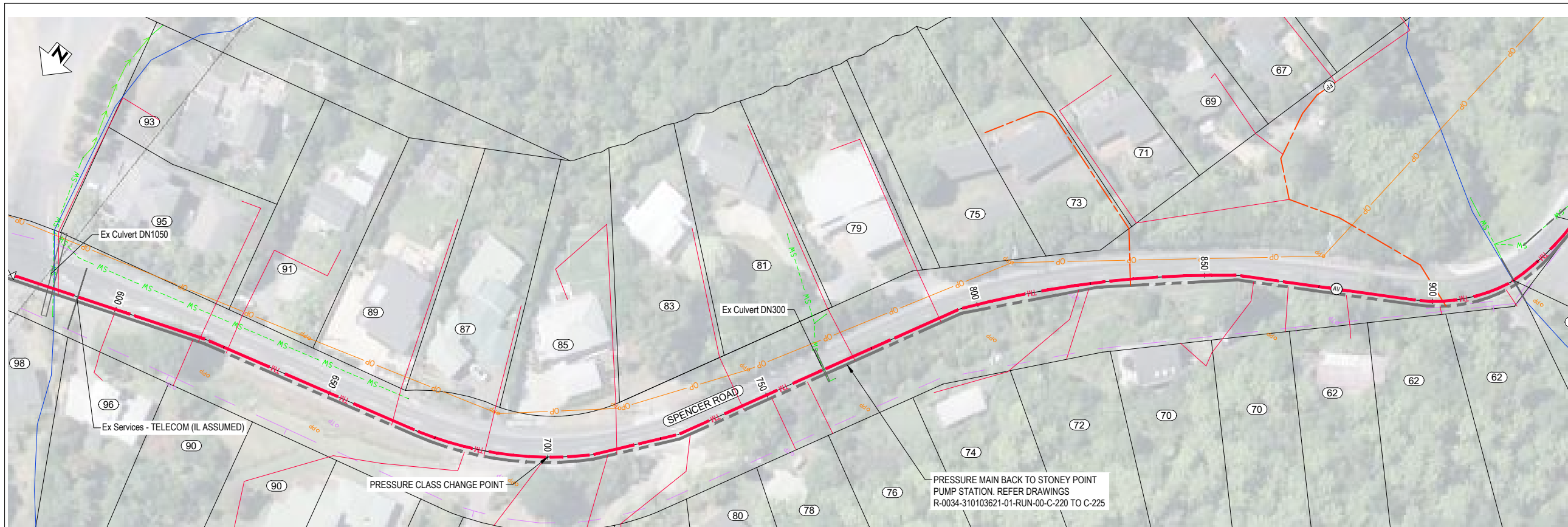
REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.A
	DRAWING NUMBER R-0034-310103621-01-RUN-00-C-201

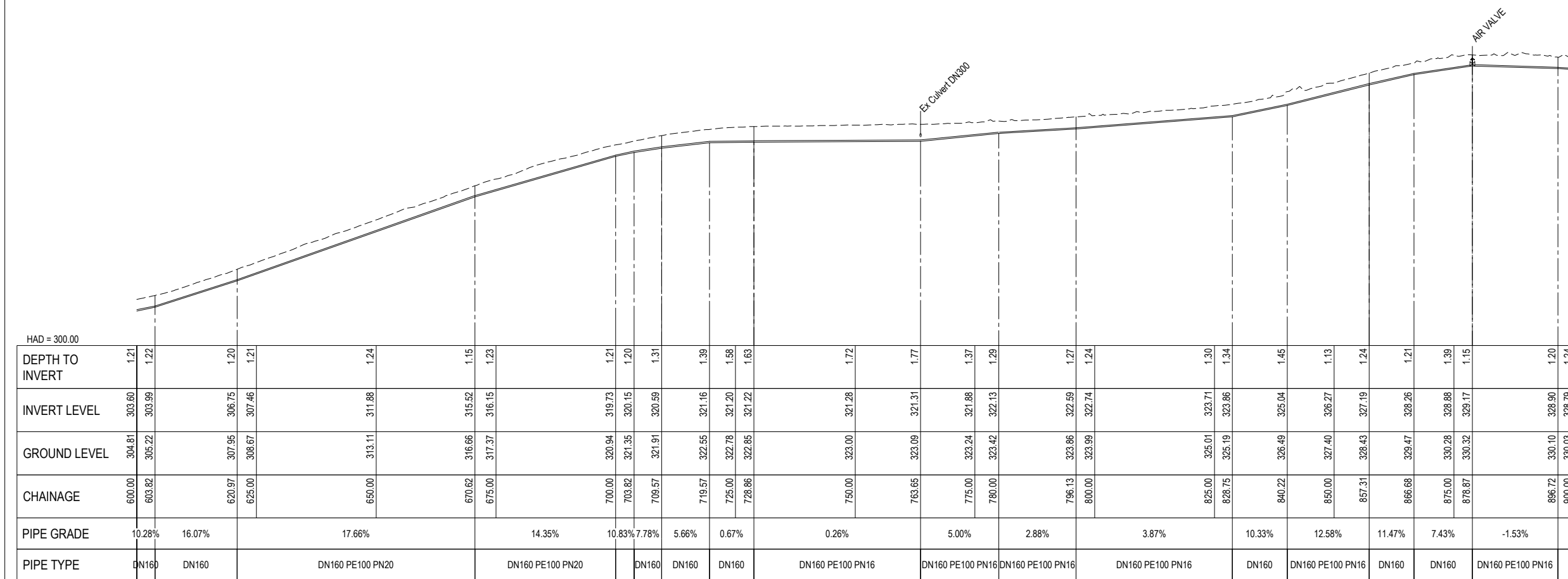
SCALE	SITE ID	AREA	SIZE
AS SHOWN			A1
DRAWING NUMBER	R-0034-310103621-01-RUN-00-C-201		REV.
			0.A



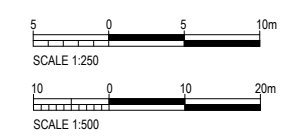
PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - STONEY POINT PS to BURIED VILLAGE PS
SCALES HORIZ 1 : 500 VERT 1 : 250



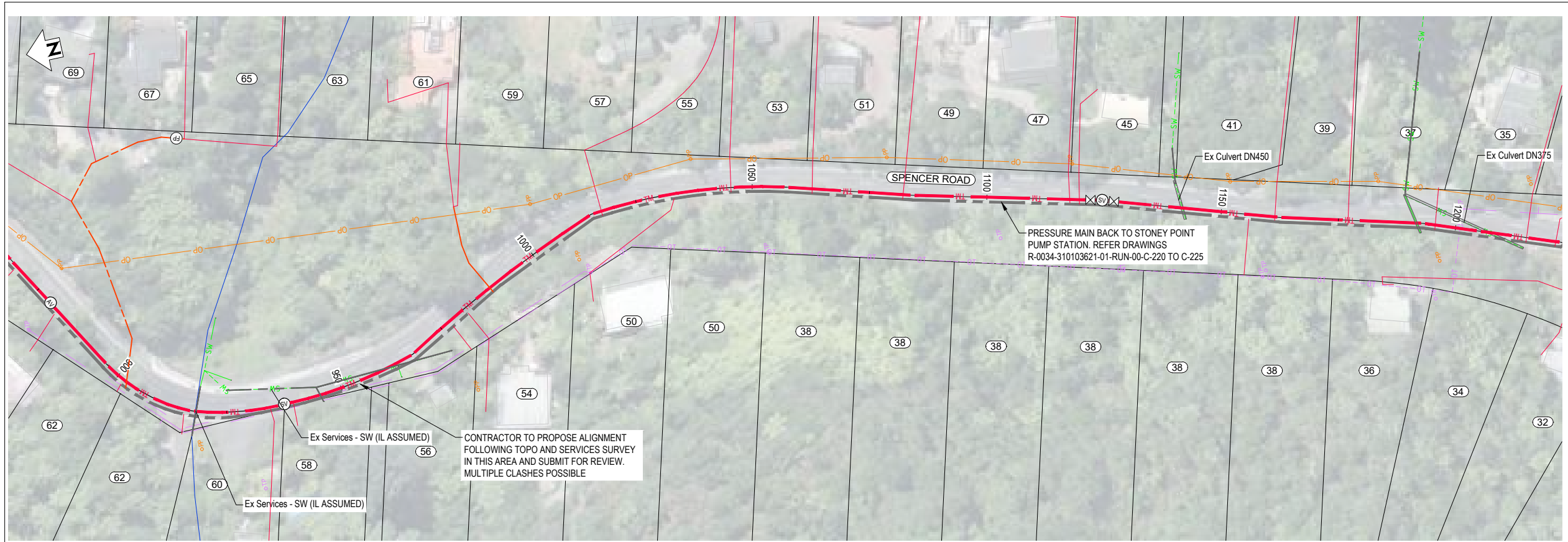
REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.A

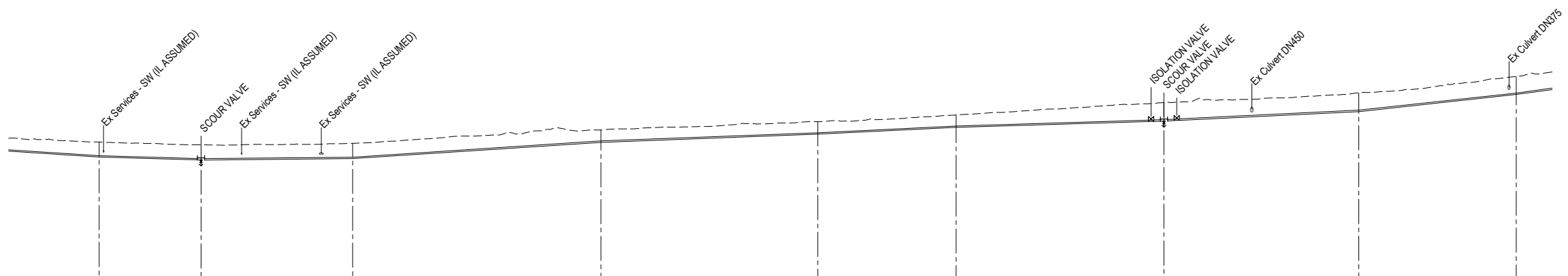
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-202



PLAN
SCALE 1 : 500

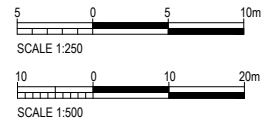
LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



HAD = 315.00	
DEPTH TO INVERT	1.24 1.46 1.47 1.47 1.44 1.49 1.44 1.35 1.20 1.24 1.22 1.15 1.20 1.46 1.81 1.83 1.70 1.81 1.56 1.74 1.70
INVERT LEVEL	328.79 328.21 328.11 327.93 327.99 328.06 328.33 329.15 329.64 329.83 330.31 330.87 331.10 331.34 331.71 331.72 332.33 332.63 333.32 334.29 334.77
GROUND LEVEL	330.03 329.68 329.57 329.40 329.43 329.55 329.77 330.50 330.84 331.07 331.62 332.02 332.30 332.79 333.52 333.55 334.02 334.45 334.88 336.03 336.46
CHAINAGE	900.00 917.61 925.00 937.39 950.00 966.88 975.00 1000.00 1015.13 1025.00 1050.00 1057.30 1075.00 1084.17 1100.00 1124.55 1125.00 1150.00 1162.41 1175.00 1193.01 1200.00
PIPE GRADE	-3.27% -1.44% 0.45% 3.28% 1.90% 2.43% 1.51% 2.45% 5.43% 6.75%
PIPE TYPE	DN160 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160 PE100 PN16 DN160

LONGITUDINAL SECTION - STONEY POINT PS to BURIED VILLAGE PS
SCALES HORIZ 1 : 500 VERT 1 : 250



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



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DESIGNED BY
C. Clague

DRAWN BY
E. Fromont

DRAWN DATE
3.22

APPROVED BY
S. Shortt

APPROVED DATE
30.05.23

DES CHK
W. Jacobson

DRN CHK
S. Sutton

PROJECT NAME
TARAWERA WW RETICULATION SCHEME

DRAWING TITLE
STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION

SHEET NUMBER

STATUS
DETAILED DESIGN

SCALE
AS SHOWN

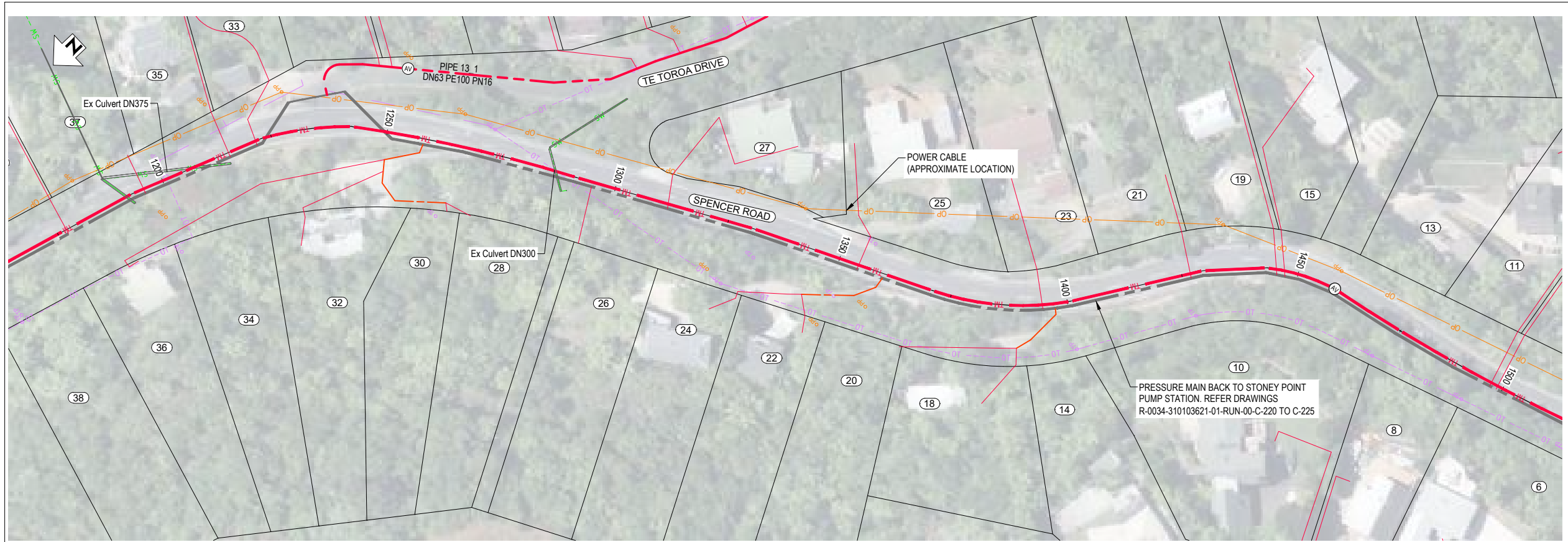
SITE ID

AREA

SIZE
A1

DRAWING NUMBER
R-0034-310103621-01-RUN-00-C-203

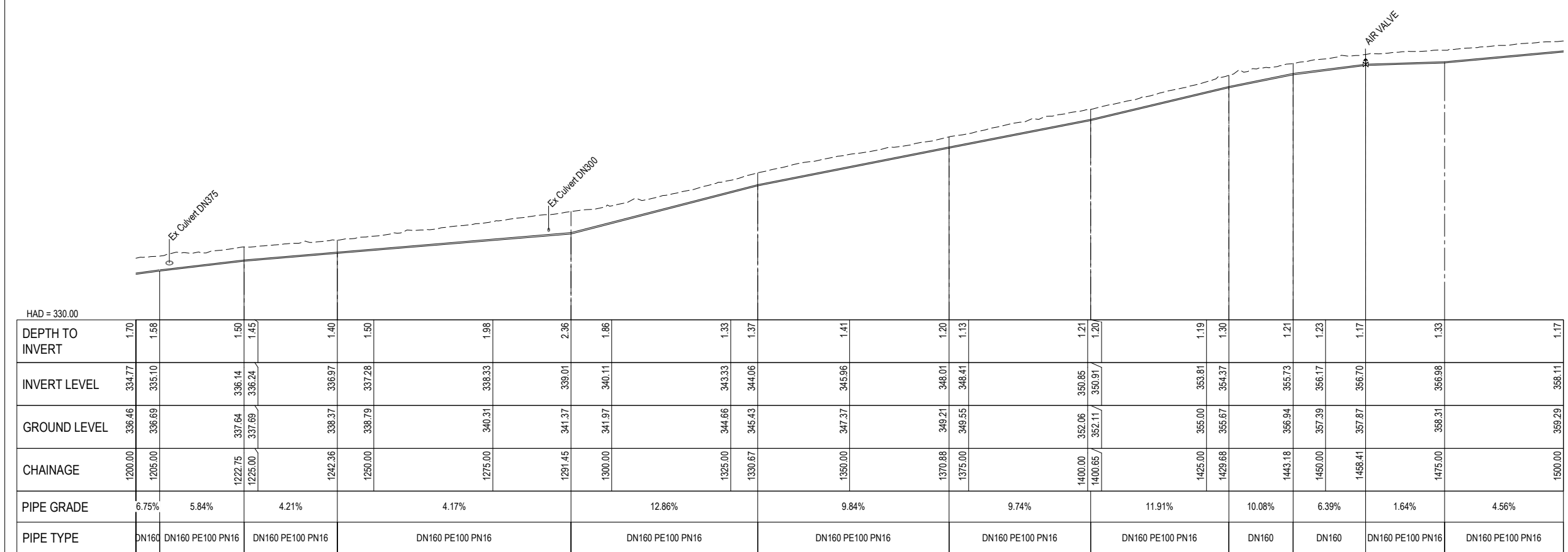
REV.
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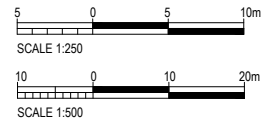
PLAN
SCALE 1:500

LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - STONEY POINT PS to BURIED VILLAGE PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



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3150
New Zealand
www.trility.com.au

DESIGNED BY
C. Clague

DRAWN BY
E. Fromont

DRAWN DATE
3.22

APPROVED BY
S. Shortt

APPROVED DATE
30.05.23

DES CHK
W. Jacobson

DRN CHK
S. Sutton

PROJECT NAME
TARAWERA WW RETICULATION SCHEME

DRAWING TITLE
STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION

SHEET NUMBER

STATUS
DETAILED DESIGN

SCALE
AS SHOWN

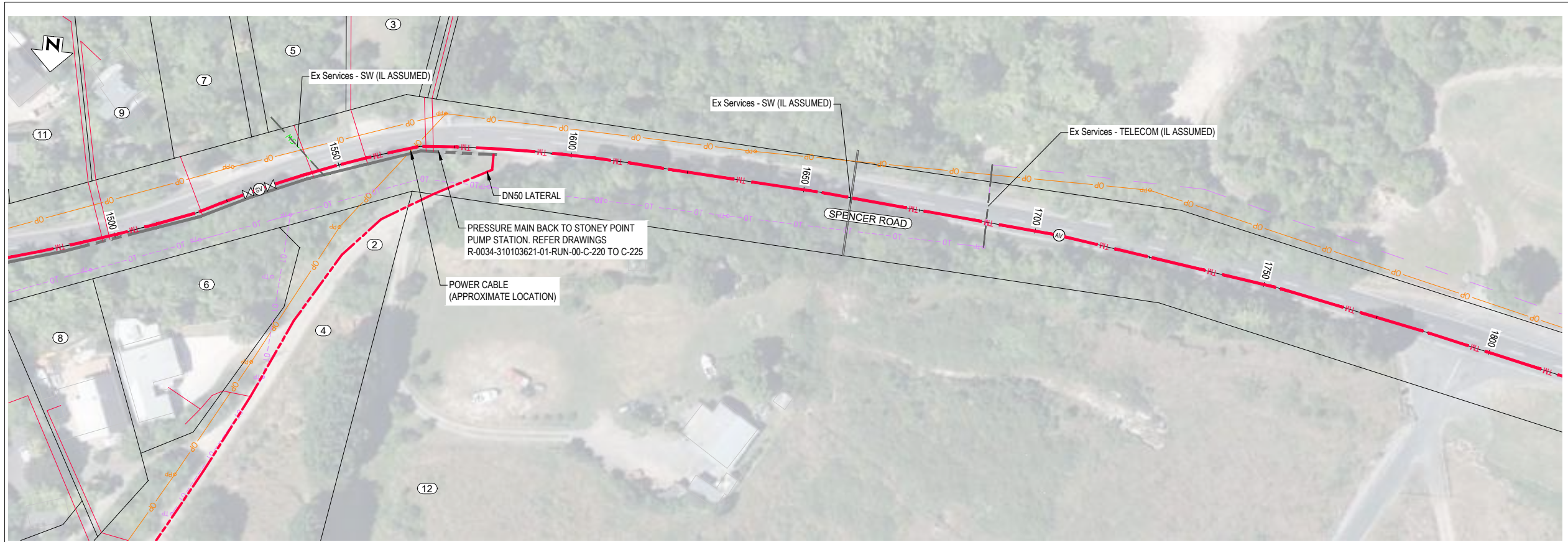
SITE ID

AREA

SIZE
A1

DRAWING NUMBER
R-0034-310103621-01-RUN-00-C-204

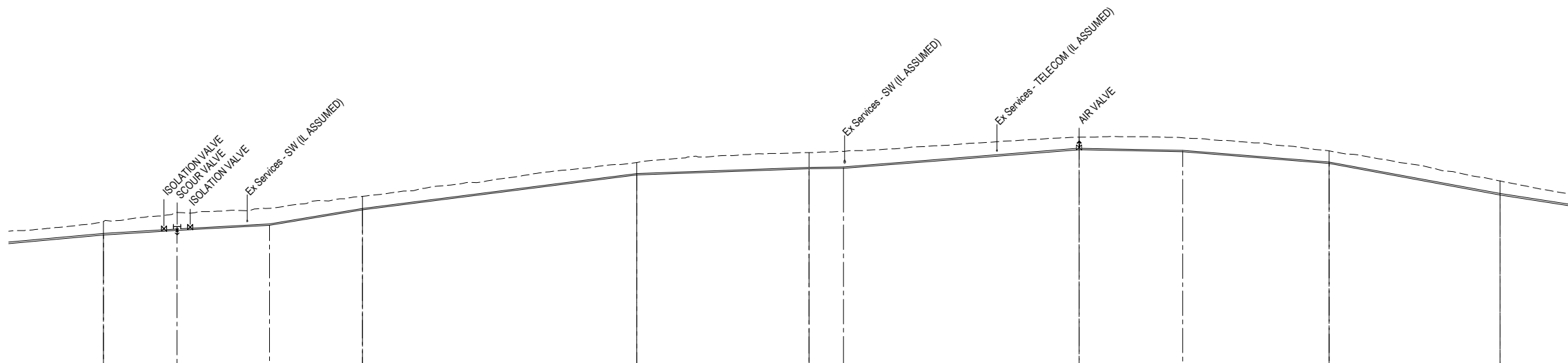
REV.
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PLAN
SCALE 1 : 500

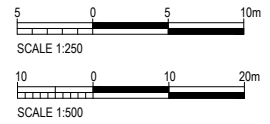
LEGEND	
NEW SERVICES:	
	SEWER TRUNK MAIN
	SEWER PRESSURE MAIN
	SEWER LATERAL - DN50
	SEWER LATERAL - DN40
	MANHOLE
	ISOLATION VALVE
	AIR VALVE
	SCOUR VALVE
	FLUSH POINT
	EF REDUCER
EXISTING SERVICES:	
	GAS
	POWER - POLE
	POWER - OH
	POWER - U/G
	TELECOMMS
	FIBRE OPTIC
	TELECOMMS - OH
	TELECOMMS - POLE
	CONDUIT
	WATER
	SEWER
	STORMWATER
	SWALE
	RIVER/STREAM
	SERVICE TO BE ABANDONED
	SURVEY MARK
	EXISTING SEWER MANHOLE
	EXISTING STORMWATER MANHOLE
	EXISTING HYDRANT
	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



DEPTH TO INVERT	1.17	1.29	1.44	1.72	1.63	1.30	1.30	1.35	1.20	1.38	1.56	1.55	1.63	1.48	1.30	1.20	1.34	1.25	1.20	1.31	1.34	1.14	
INVERT LEVEL	368.11	368.94	369.15	369.37	369.86	361.34	361.80	363.29	364.69	364.77	365.22	365.28	365.32	365.91	366.90	367.11	366.91	365.91	365.79	363.77	362.78	362.81	361.67
GROUND LEVEL	369.29	360.23	360.59	361.10	361.49	362.64	363.10	364.74	365.89	366.15	366.83	366.95	367.40	367.40	368.20	368.31	368.25	367.16	366.99	365.09	364.11	362.81	362.81
CHAINAGE	1500.00	1518.17	1525.00	1532.28	1550.00	1567.80	1575.00	1600.00	1620.36	1625.00	1650.00	1653.41	1660.00	1675.00	1700.00	1705.15	1725.00	1750.00	1753.07	1775.00	1785.83	1800.00	1800.00
PIPE GRADE	4.56%	3.07%	2.74%	8.31%	6.37%	1.80%	0.58%	3.96%	-1.00%	-3.98%	-9.21%	-7.79%											
PIPE TYPE	DN160 PE100 PN16	DN160	DN160	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16	DN160 PE100 PN16

LONGITUDINAL SECTION - STONEY POINT PS to BURIED VILLAGE PS
SCALES HORIZ 1 : 500 VERT 1 : 250



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



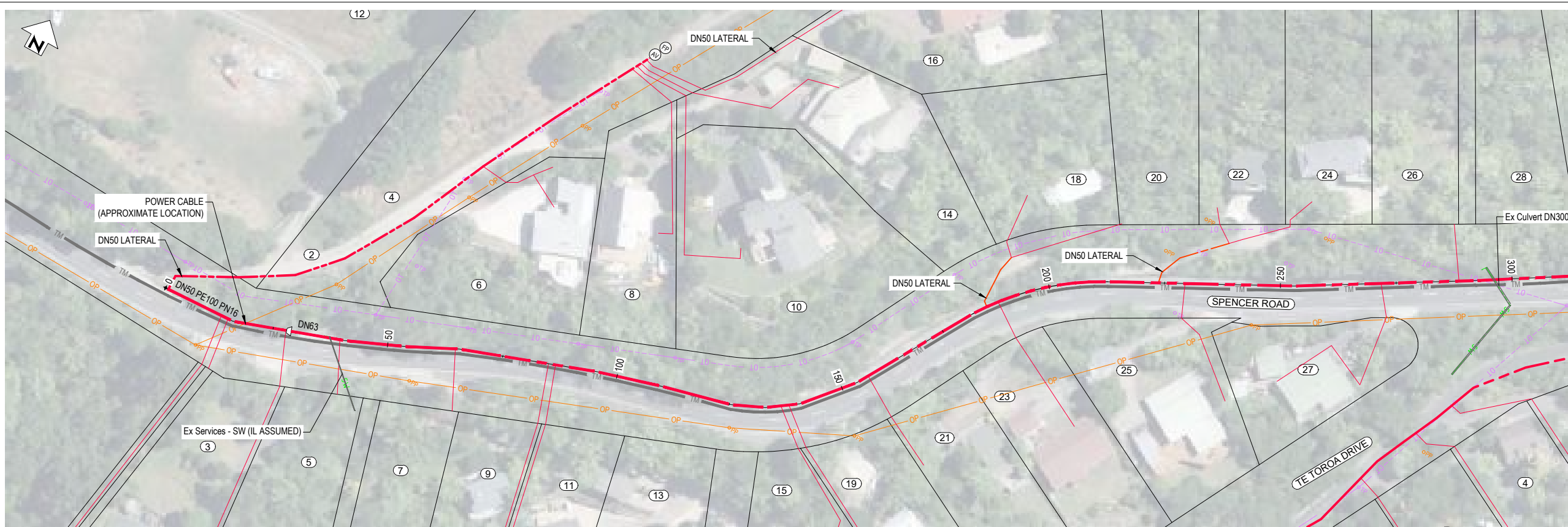
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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE STONEY POINT TO BURIED VILLAGE PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.A

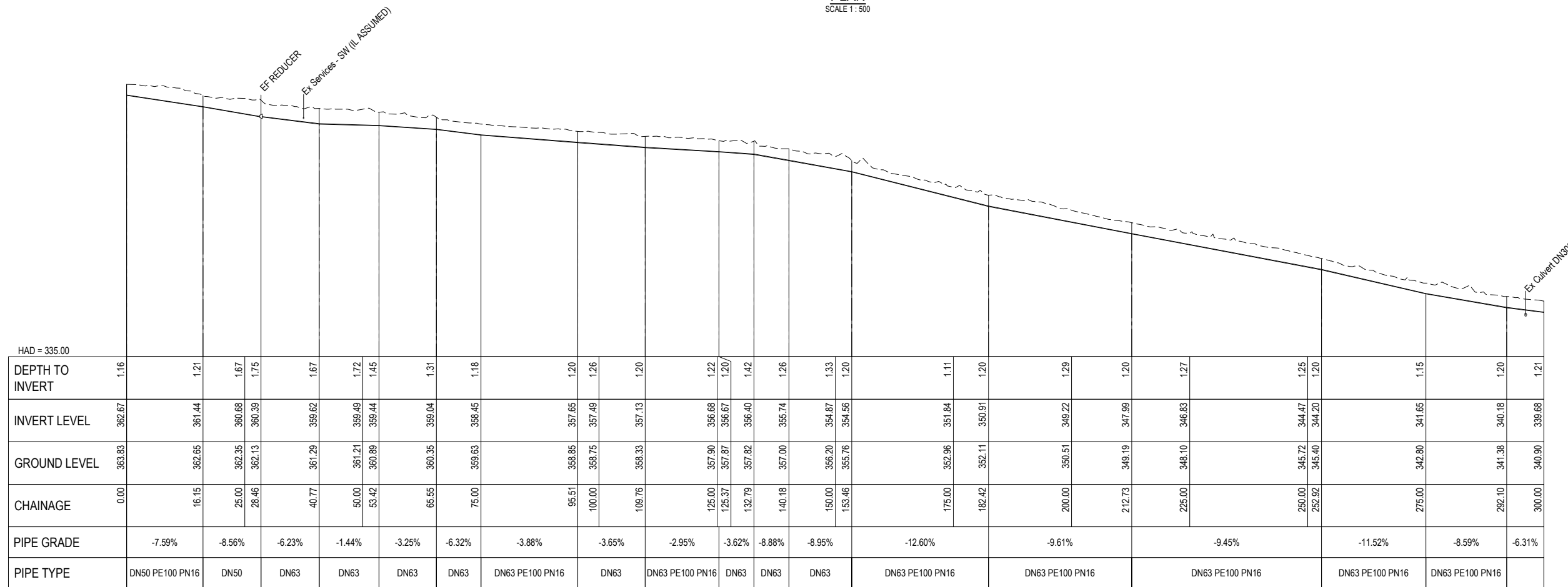
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-205	REVISION 0.A
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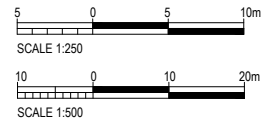
PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
TM	SEWER TRUNK MAIN
---	SEWER PRESSURE MAIN
---	SEWER LATERAL - DN50
---	SEWER LATERAL - DN40
●	MANHOLE
⊗	ISOLATION VALVE
⊙	AIR VALVE
⊖	SCOUR VALVE
⊕	FLUSH POINT
∇	EF REDUCER
EXISTING SERVICES:	
---	GAS
---	POWER - POLE
---	POWER - OH
---	POWER - U/G
---	TELECOMMS
---	FIBRE OPTIC
---	TELECOMMS - OH
---	TELECOMMS - POLE
---	CONDUIT
---	WATER
---	SEWER
---	STORMWATER
---	SWALE
---	RIVER/STREAM
X · X	SERVICE TO BE ABANDONED
△	SURVEY MARK
○	EXISTING SEWER MANHOLE
○	EXISTING STORMWATER MANHOLE
⊕	EXISTING HYDRANT
⊕	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - ALGN-REVERSE PM TO STONEY POINT PS
SCALES HORIZ 1 : 500 VERT 1 : 250



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23

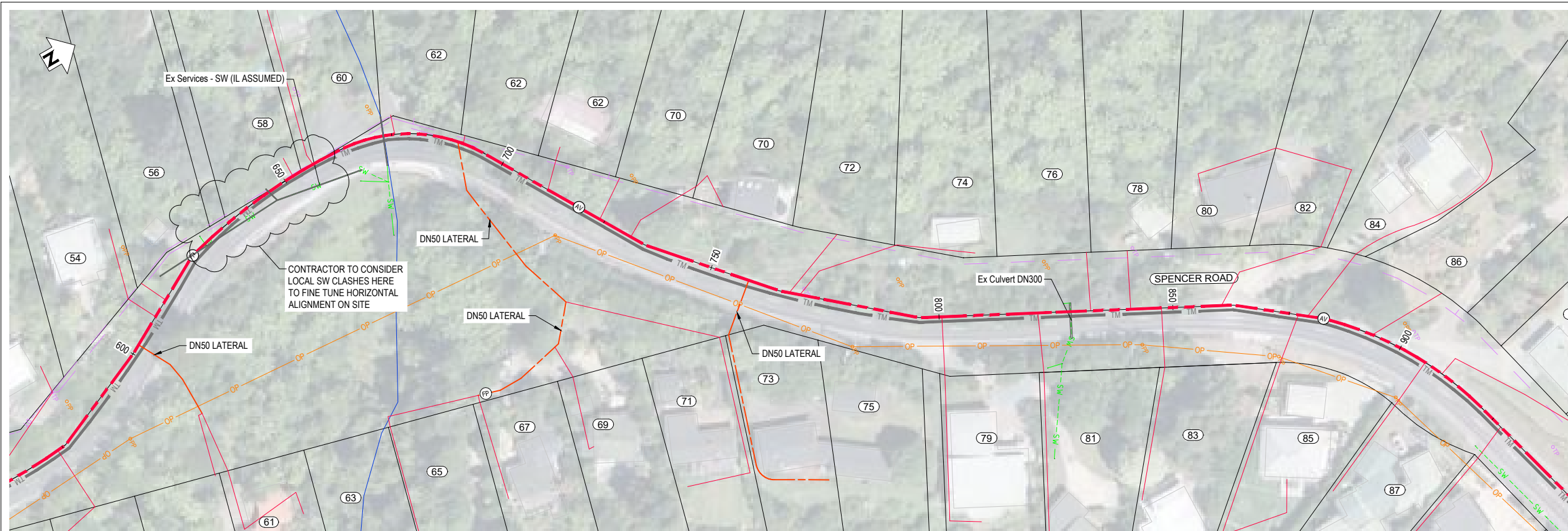


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DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY P. Ghube	DRN CHK S. Sutton
DRAWN DATE 4.23	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION
SHEET NUMBER

STATUS DETAILED DESIGN	SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-220	REV. 0.A			



PLAN
SCALE 1:500

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SEWER PRESSURE MAIN
- SEWER LATERAL - DN50
- SEWER LATERAL - DN40
- MH MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

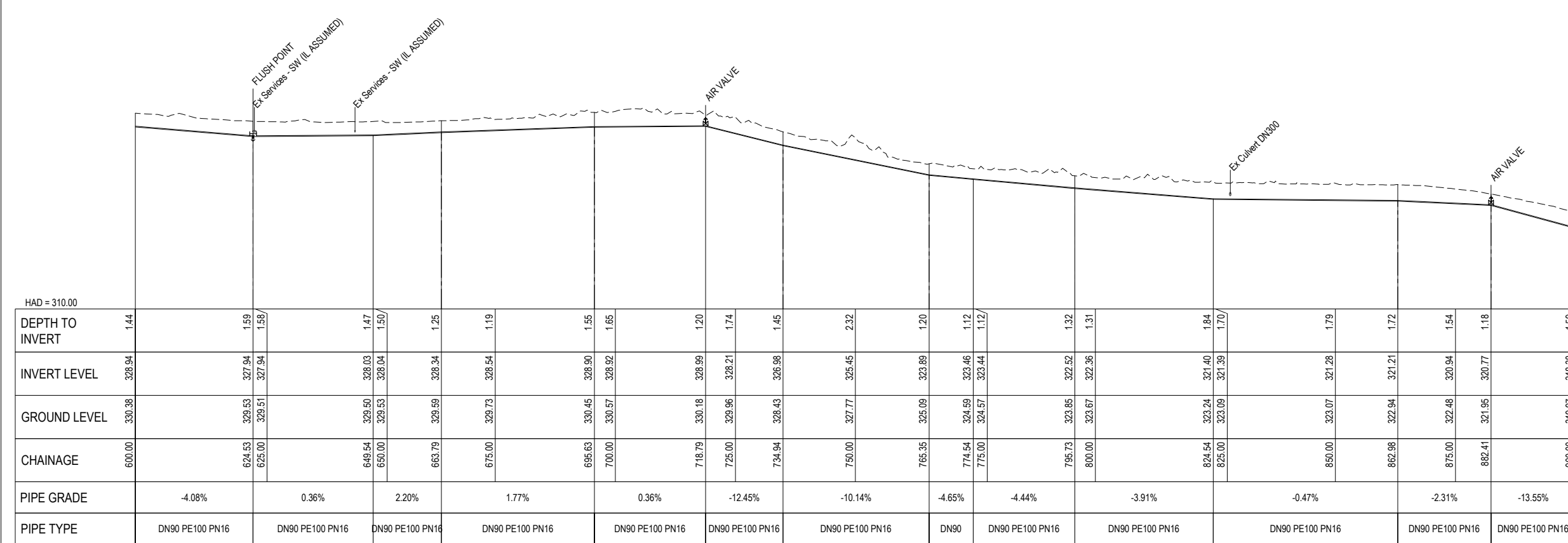
- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - OH
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

OTHER:

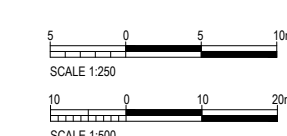
- X X SERVICE TO BE ABANDONED
- △ SURVEY MARK
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - ALGN-REVERSE PM TO STONEY POINT PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
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New Zealand
www.trility.com.au

DESIGNED BY
C. Clague

DRAWN BY
P. Ghube

DRAWN DATE
4.23

APPROVED BY
S. Shortt

APPROVED DATE
30.05.23

DES CHK
W. Jacobson

DRN CHK
S. Sutton

PROJECT NAME
TARAWERA WW RETICULATION SCHEME

DRAWING TITLE
LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION

SHEET NUMBER

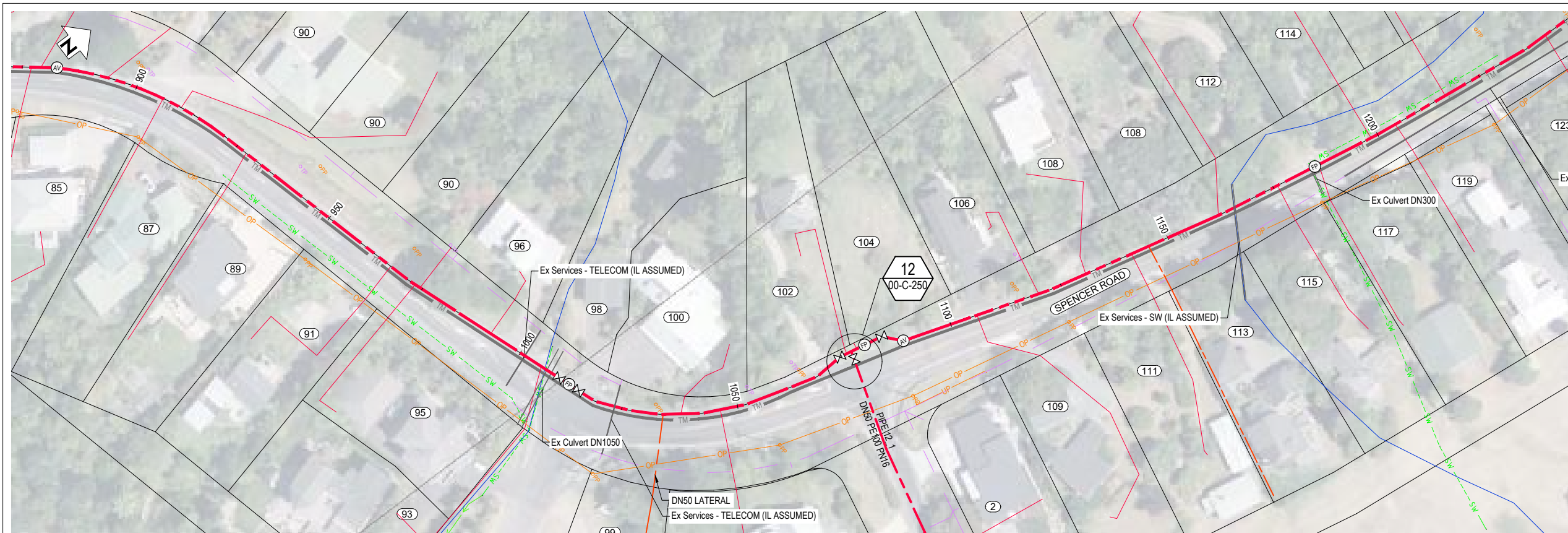
STATUS
DETAILED DESIGN

SCALE
AS SHOWN

DRAWING NUMBER
R-0034-310103621-01-RUN-00-C-222

SIZE
A1

REV.
0.A



PLAN
SCALE 1:500

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SEWER PRESSURE MAIN
- SEWER LATERAL - DN50
- SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

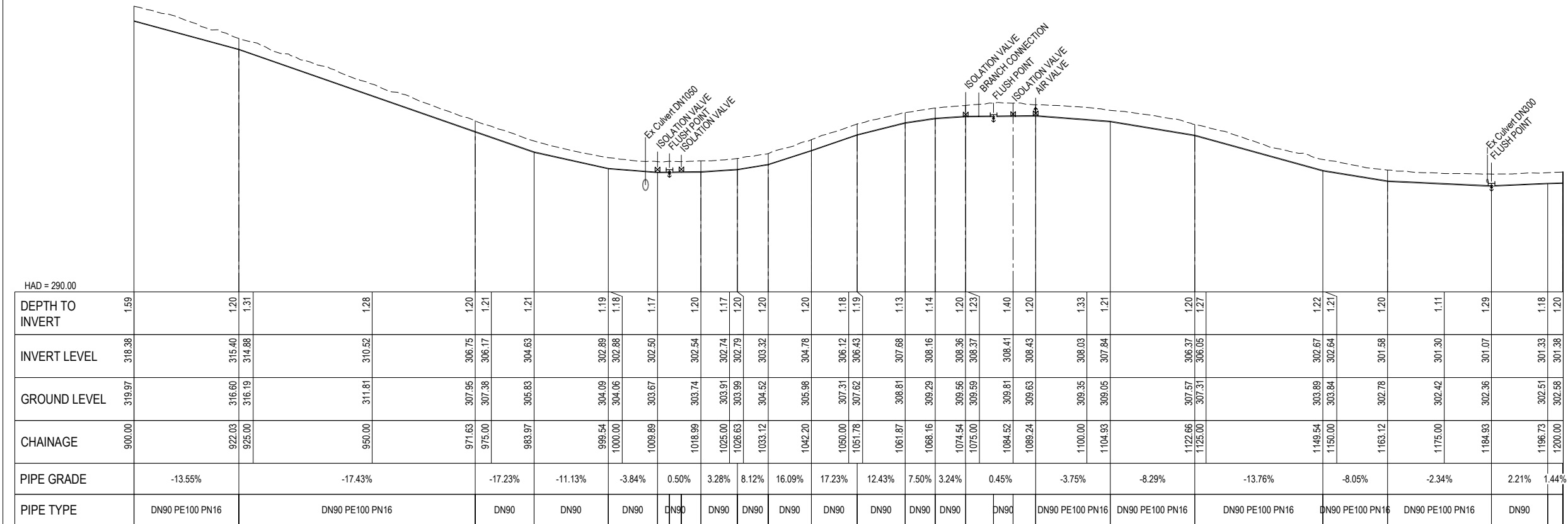
- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - OH
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

Other Symbols:

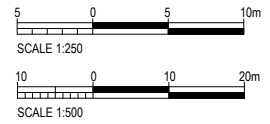
- X · X SERVICE TO BE ABANDONED
- △ SURVEY MARK
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



LONGITUDINAL SECTION - ALGN-REVERSE PM TO STONEY POINT PS
SCALES HORIZ 1:500 VERT 1:250



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
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DESIGNED BY
C. Clague

DRAWN BY
P. Ghube

DRAWN DATE
4.23

APPROVED BY
S. Shortt

APPROVED DATE
30.05.23

DES CHK
W. Jacobson

DRN CHK
S. Sutton

PROJECT NAME
TARAWERA WW RETICULATION SCHEME

DRAWING TITLE
LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION

SHEET NUMBER

STATUS
DETAILED DESIGN

SCALE
AS SHOWN

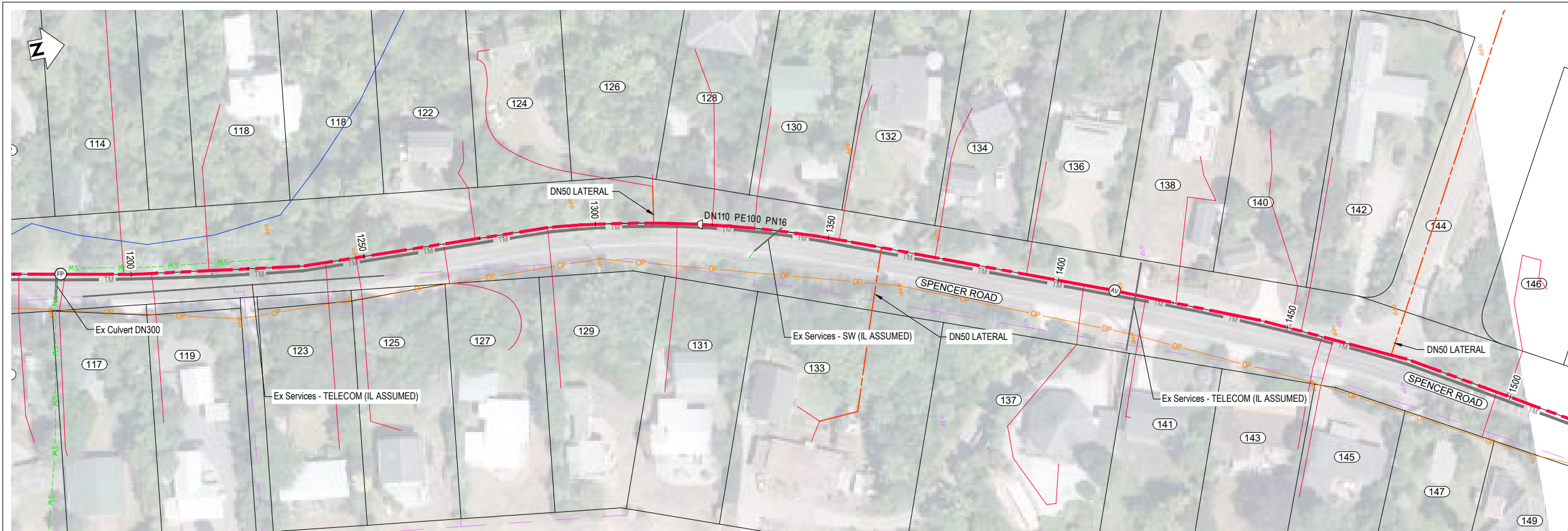
SITE ID

AREA

SIZE
A1

DRAWING NUMBER
R-0034-310103621-01-RUN-00-C-223

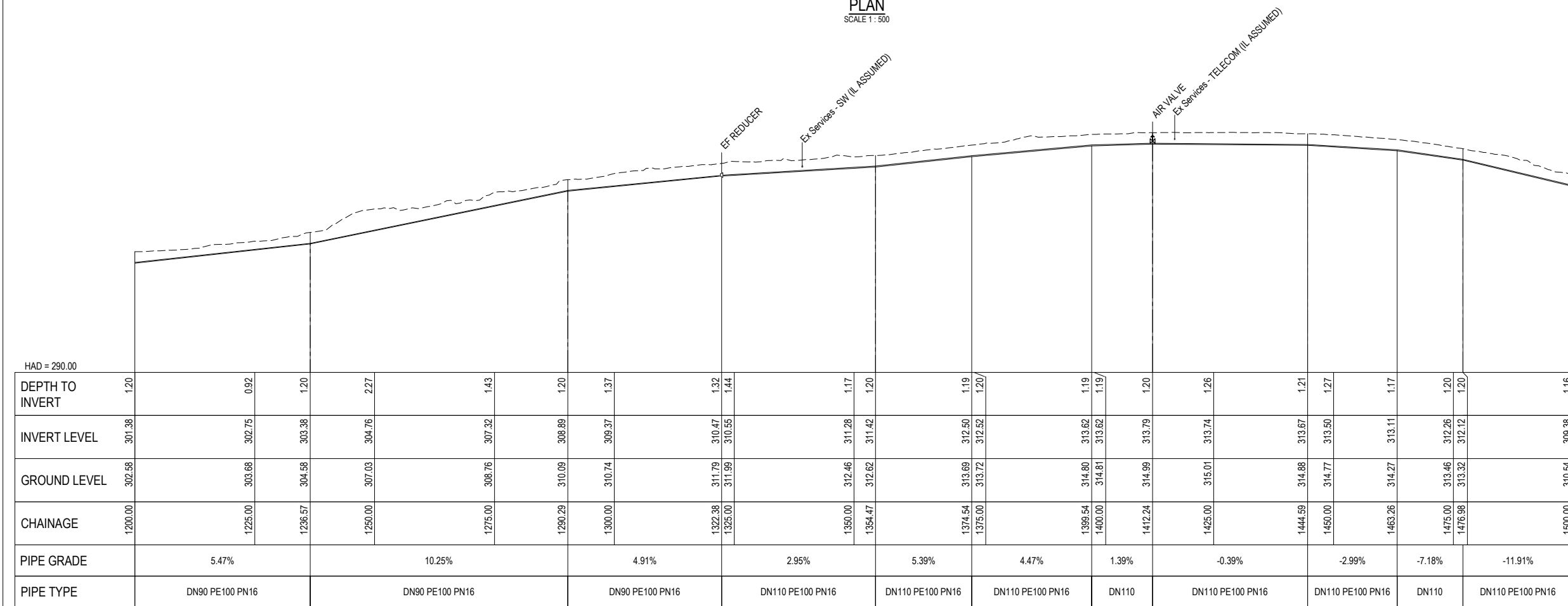
REV.
0.A



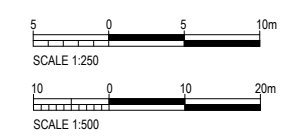
LEGEND	
NEW SERVICES:	
TM	SEWER TRUNK MAIN
---	SEWER PRESSURE MAIN
---	SEWER LATERAL - DN50
---	SEWER LATERAL - DN40
●	MANHOLE
⊗	ISOLATION VALVE
⊙	AIR VALVE
⊖	SCOUR VALVE
⊕	FLUSH POINT
∇	EF REDUCER
EXISTING SERVICES:	
---	GAS
OP	POWER - POLE
OP	POWER - OH
UP	POWER - U/G
---	TELECOMMS
FO	FIBRE OPTIC
OT	TELECOMMS - OH
TP	TELECOMMS - POLE
C	CONDUIT
W	WATER
S	SEWER
SW	STORMWATER
SW	SWALE
---	RIVER/STREAM
X	SERVICE TO BE ABANDONED
△	SURVEY MARK
○	EXISTING SEWER MANHOLE
○	EXISTING STORMWATER MANHOLE
⊕	EXISTING HYDRANT
⊕	EXISTING WATER METER

NOTES
 1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.

PLAN
SCALE 1 : 500



LONGITUDINAL SECTION - ALGN-REVERSE PM TO STONEY POINT PS
 SCALES HORIZ 1 : 500 VERT 1 : 250



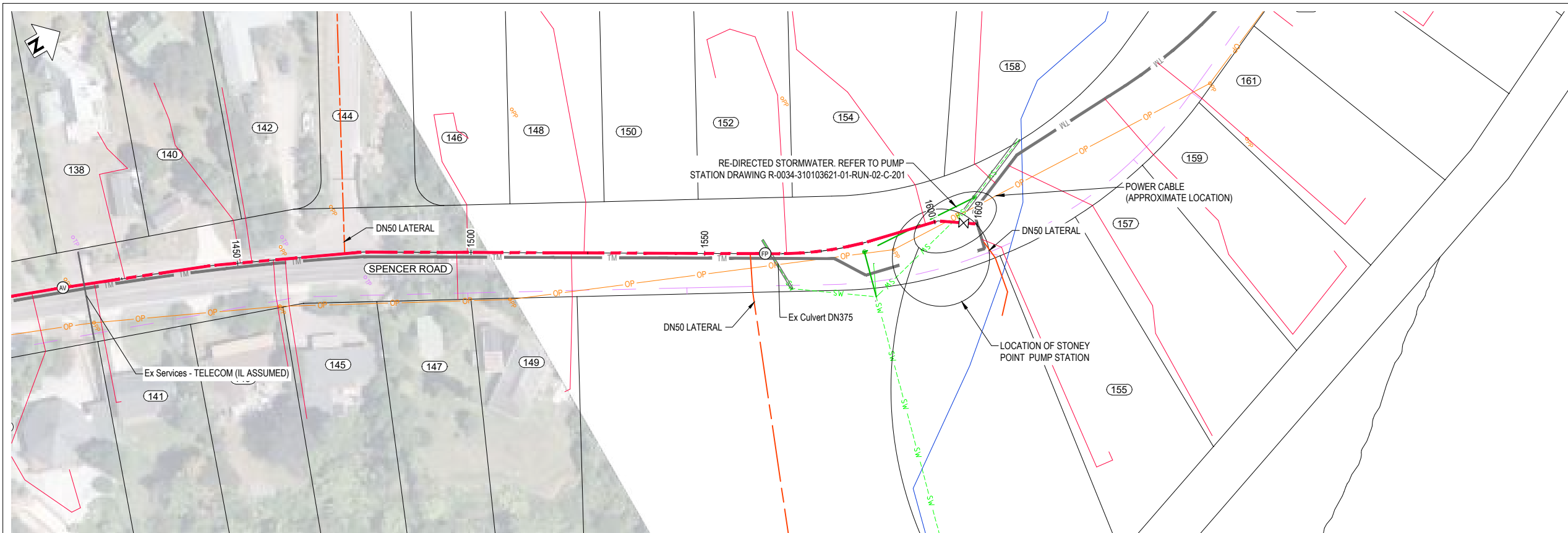
REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY P. Ghube	DRN CHK S. Sutton
DRAWN DATE 4.23	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.A

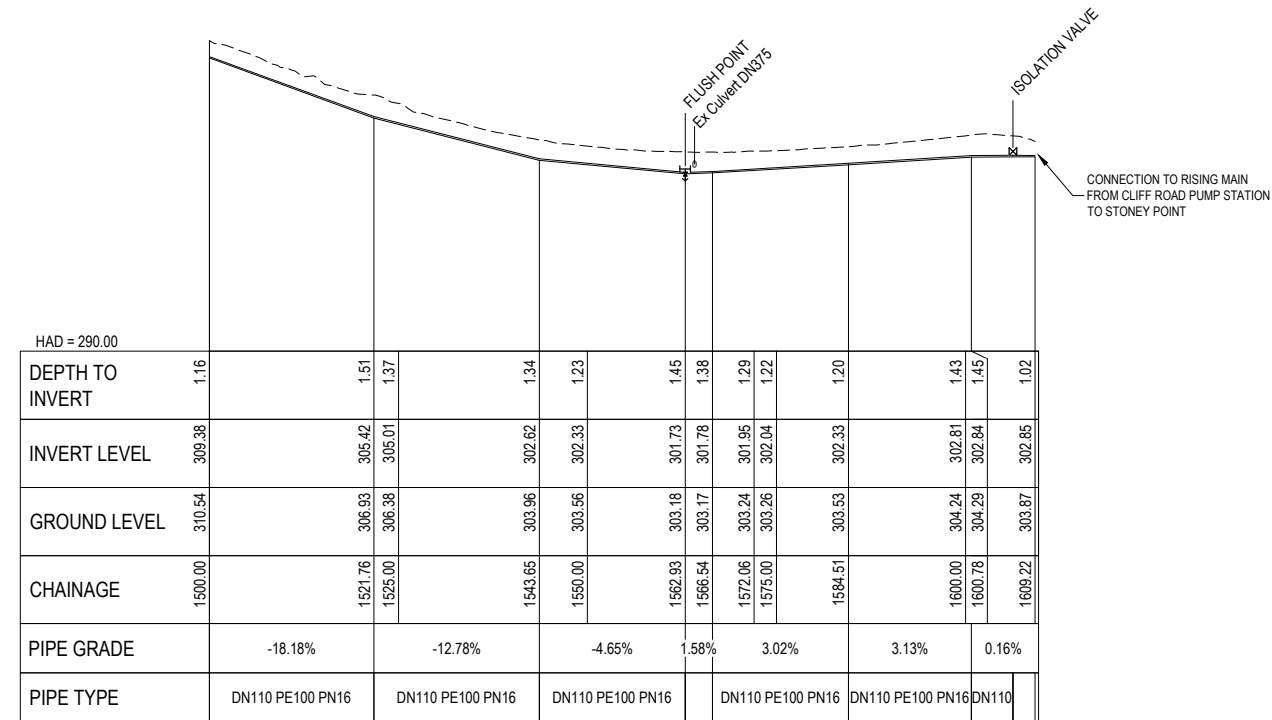
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-224



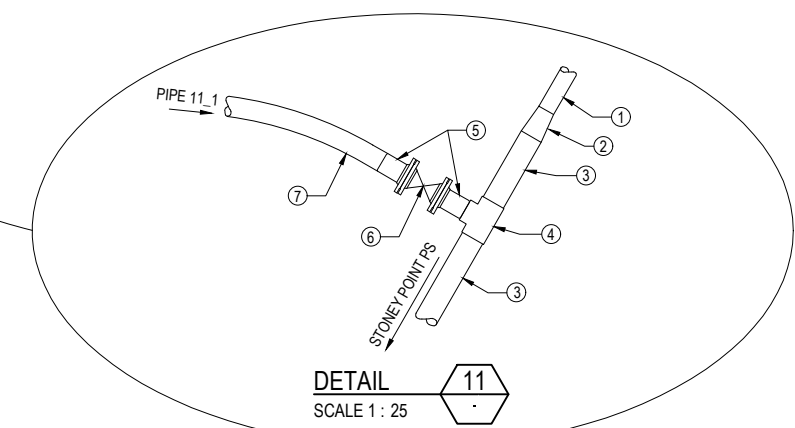
PLAN
SCALE 1 : 500

LEGEND	
NEW SERVICES:	
TM	SEWER TRUNK MAIN
---	SEWER PRESSURE MAIN
---	SEWER LATERAL - DN50
---	SEWER LATERAL - DN40
●	MANHOLE
⊗	ISOLATION VALVE
⊙	AIR VALVE
⊖	SCOUR VALVE
⊕	FLUSH POINT
∠	EF REDUCER
EXISTING SERVICES:	
---	GAS
OP	POWER - POLE
OP	POWER - OH
UP	POWER - U/G
---	TELECOMS
FO	FIBRE OPTIC
OT	TELECOMS - OH
TP	TELECOMS - POLE
C	CONDUIT
W	WATER
S	SEWER
SW	STORMWATER
SW	SWALE
---	RIVER/STREAM
X	SERVICE TO BE ABANDONED
△	SURVEY MARK
○	EXISTING SEWER MANHOLE
○	EXISTING STORMWATER MANHOLE
⊕	EXISTING HYDRANT
⊕	EXISTING WATER METER

NOTES
1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.

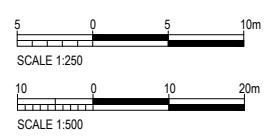


LONGITUDINAL SECTION - ALGN-REVERSE PM TO STONEY POINT PS
SCALES HORIZ 1 : 500 VERT 1 : 250



DETAIL 11
SCALE 1 : 25

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN125 PE100 PN16 PIPE
2	DN160 x DN125 REDUCER (ELECTROFUSION)
3	DN160 PE100 PN16 PIPE
4	DN160 x DN110 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN110 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN100 DI FLANGED GATE VALVE
7	DN110 PE100 PN16 PIPE (PIPE 11_1)



REV	REVISIONS	DRN	APP	DATE
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0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23

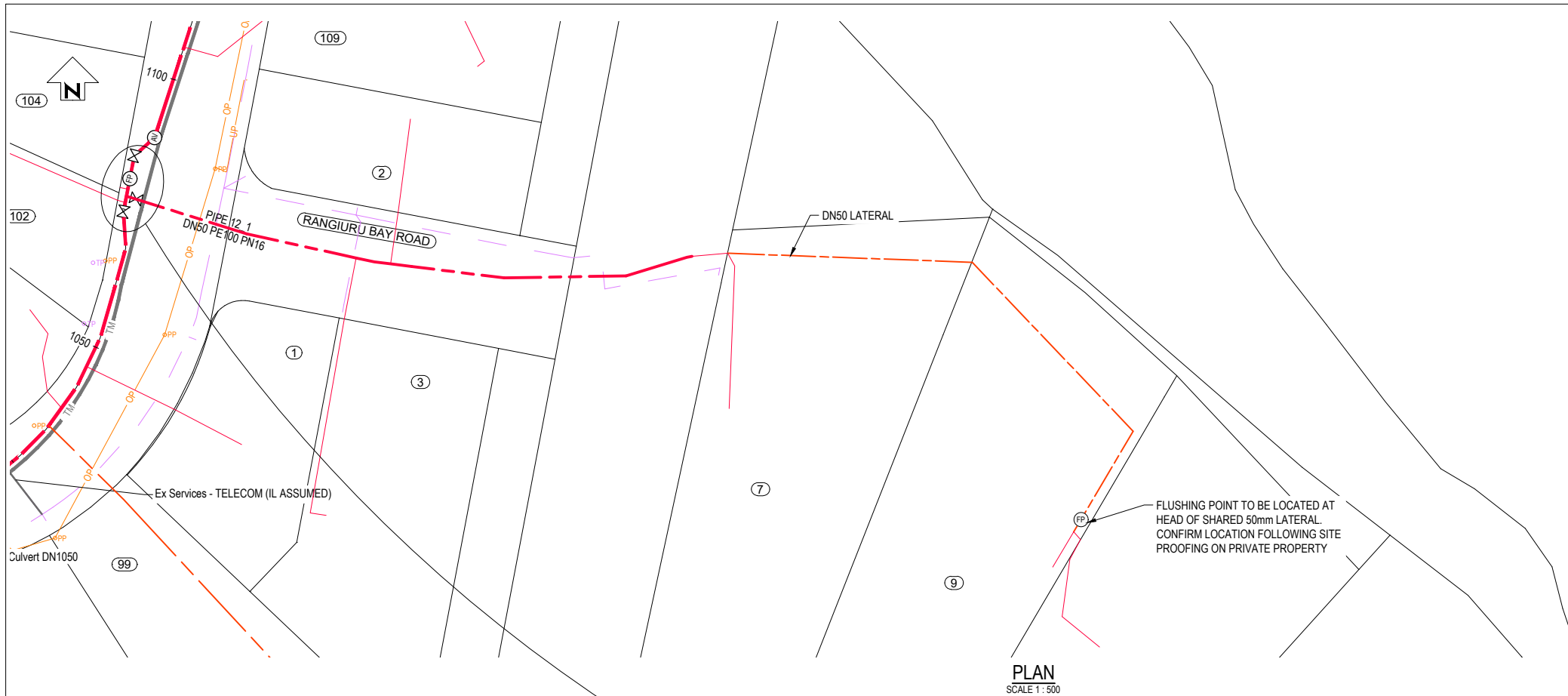


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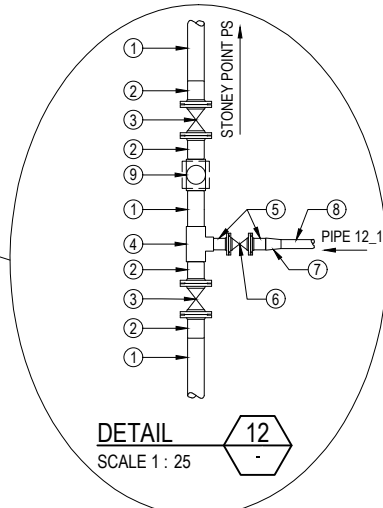
DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY P. Ghube	DRN CHK S. Sutton
DRAWN DATE 4.23	APPROVED BY S. Shortt
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN
DRAWING TITLE LOCAL PRESSURE WASTEWATER MAIN PLAN AND LONGSECTION	SCALE AS SHOWN
SHEET NUMBER	SITE ID
	AREA
	SIZE A1
	REV. 0.A

DRAWING NUMBER R-0034-310103621-01-RUN-00-C-225	SCALE	SITE ID	AREA	SIZE A1
				REV. 0.A



PLAN
SCALE 1 : 500



DETAIL
SCALE 1 : 25

PRESSURE MAIN CONNECTION 12 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN90 PE100 PN16 PIPE
2	DN90 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
3	DN80 DI FLANGED GATE VALVE
4	DN90 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
5	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
6	DN50 DI FLANGED GATE VALVE
7	DN63 x DN50 PE100 PN16 REDUCER (ELECTROFUSION)
8	DN50 PE100 PN16 PIPE (PIPE 12_1)
9	INLINE FLUSHING POINT (COMPLETE ASSEMBLY) AS PER SHEET 09-C-204

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SEWER PRESSURE MAIN
- SEWER LATERAL - DN50
- SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

- GAS
- POWER - POLE
- POWER - OH
- POWER - U/G
- TELECOMS
- FIBRE OPTIC
- TELECOMS - O/H
- TELECOMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

· X · X · SERVICE TO BE ABANDONED

△ SURVEY MARK

○ EXISTING SEWER MANHOLE

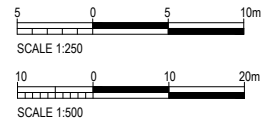
○ EXISTING STORMWATER MANHOLE

□ EXISTING HYDRANT

⊗ EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



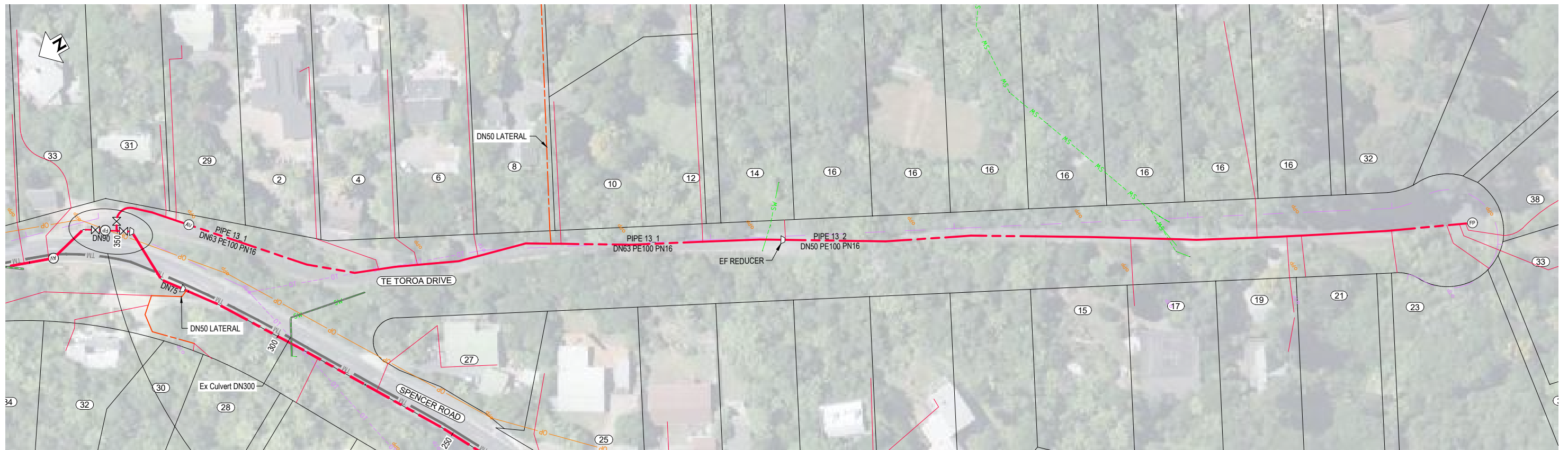
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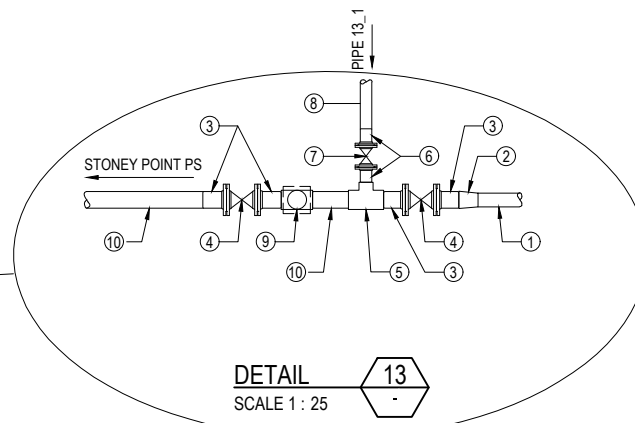
DESIGNED BY C. Clague	DES CHK W. Jacobson
DRAWN BY E. Fromont	DRN CHK S. Sutton
DRAWN DATE 3.22	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE PRESSURE MAIN PLAN
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-00-C-250			REV. 0.A



PLAN
SCALE 1 : 500



DETAIL
SCALE 1 : 25

PRESSURE MAIN CONNECTION 13 PLAN

PIPE SCHEDULE	
ITEM	DESCRIPTION
1	DN75 PE100 PN16 PIPE
2	DN90 x DN75 PE100 PN16 REDUCER
3	DN90 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
4	DN80 DI FLANGED GATE VALVE
5	DN90 x DN63 PE100 PN16 REDUCER TEE (ELECTROFUSION)
6	DN63 PE100 PN16 STUB FLANGE (WITH BACKING RING ASSEMBLY)
7	DN50 DI FLANGED GATE VALVE
8	DN63 PE100 PN16 PIPE (PIPE 13_1)
9	INLINE FLUSHING POINT (COMPLETE ASSEMBLY) AS PER SHEET 09-C-204
10	DN90 PE100 PN16 PIPE (PIPE 11_2)

LEGEND

NEW SERVICES:

- TM SEWER TRUNK MAIN
- SEWER PRESSURE MAIN
- SEWER LATERAL - DN50
- SEWER LATERAL - DN40
- MANHOLE
- ISOLATION VALVE
- AIR VALVE
- SCOUR VALVE
- FLUSH POINT
- EF REDUCER

EXISTING SERVICES:

- GAS
- POWER - POLE
- POWER - O/H
- POWER - U/G
- TELECOMMS
- FIBRE OPTIC
- TELECOMMS - O/H
- TELECOMMS - POLE
- CONDUIT
- WATER
- SEWER
- STORMWATER
- SWALE
- RIVER/STREAM

X - X SERVICE TO BE ABANDONED

▲ SURVEY MARK

○ EXISTING SEWER MANHOLE

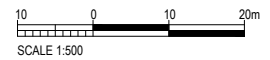
○ EXISTING STORMWATER MANHOLE

□ EXISTING HYDRANT

⊠ EXISTING WATER METER

NOTES

1. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23

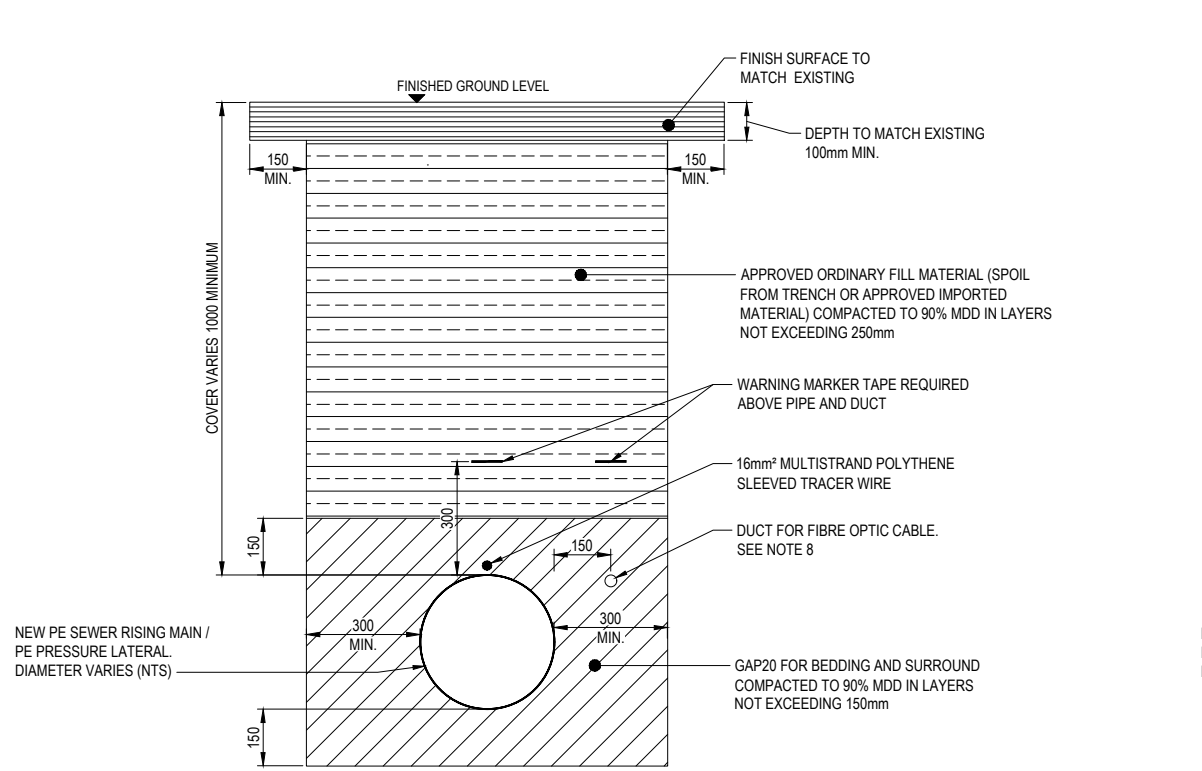


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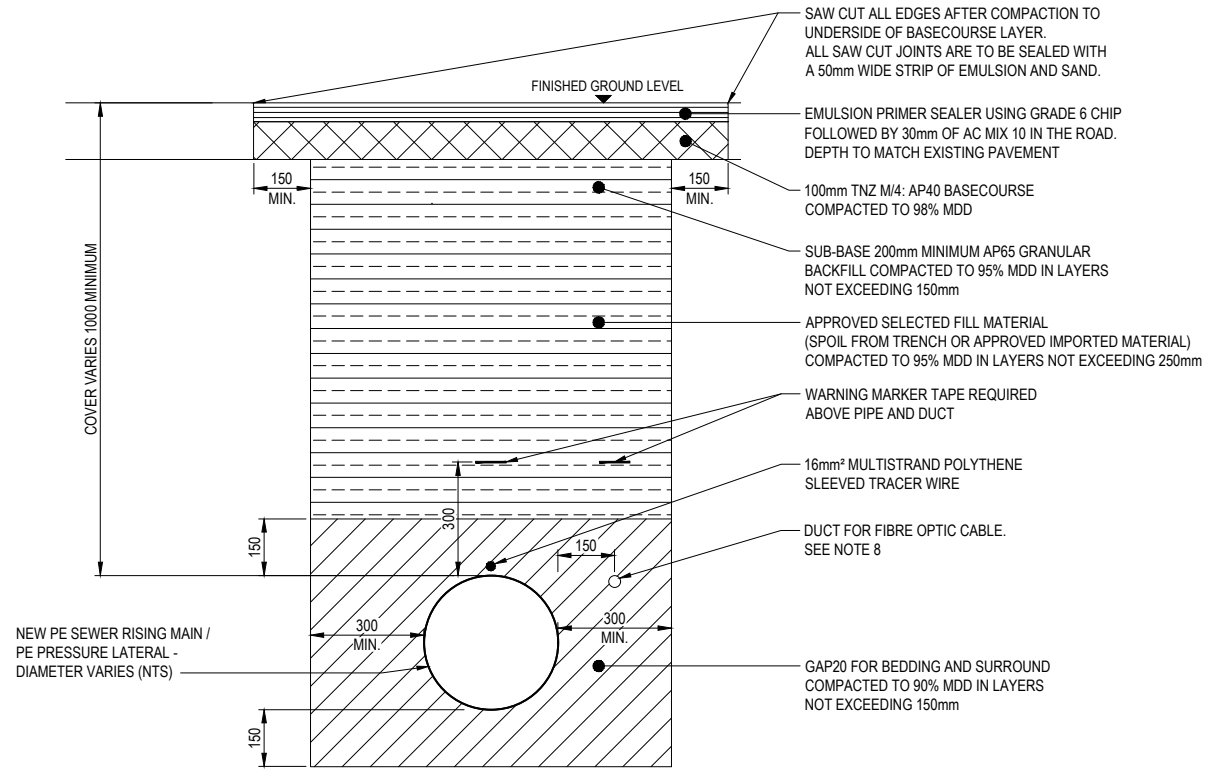
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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME	STATUS DETAILED DESIGN	
DRAWN BY E. Fromont	DRN CHK S. Sutton	DRAWING TITLE PRESSURE MAIN PLAN	SCALE AS SHOWN	SITE ID
DRAWN DATE 3.22	APPROVED BY S. Shortt	SHEET NUMBER	AREA	SIZE A1
APPROVED DATE 30.05.23			DRAWING NUMBER R-0034-310103621-01-RUN-00-C-251	REV. 0.A

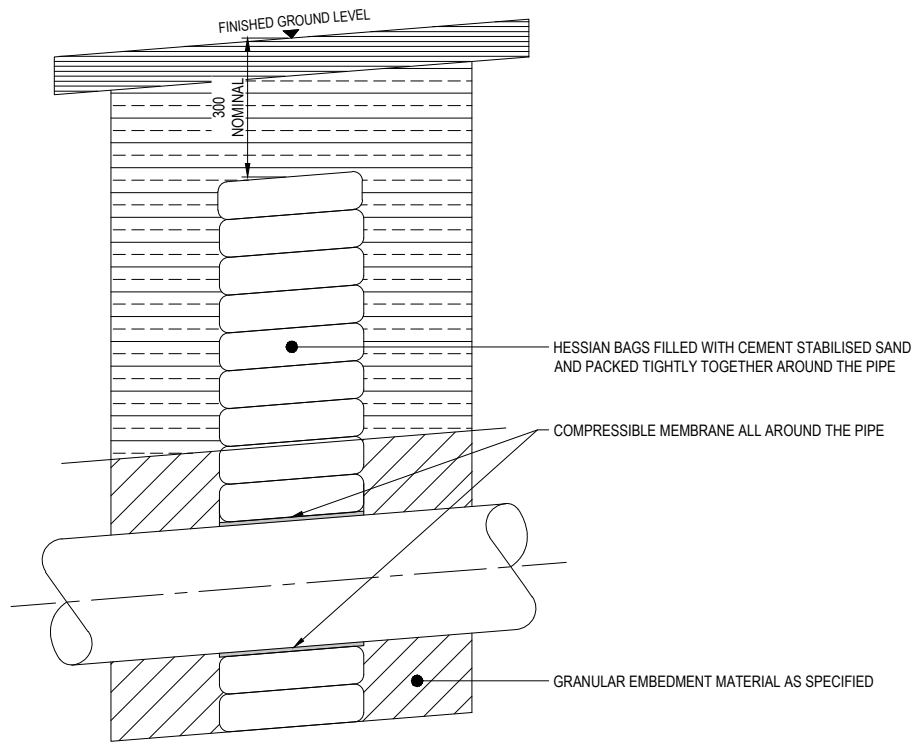


TYPICAL TRENCH IN BERM
SCALE 1 : 10

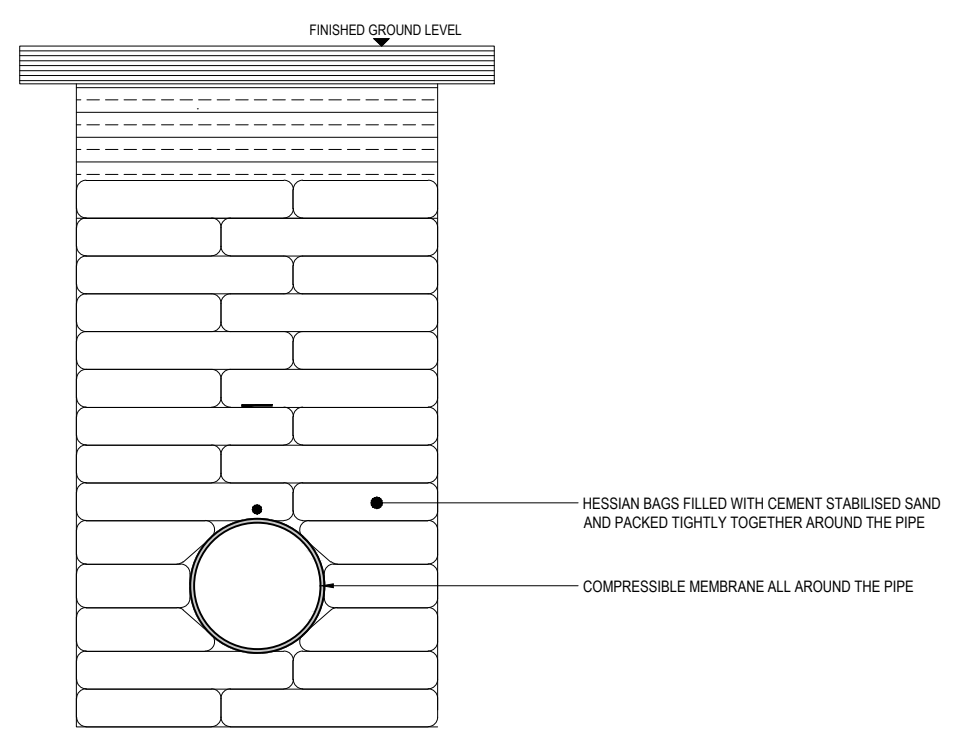


TYPICAL SHARED TRENCH IN CARRIAGEWAY
SCALE 1 : 10

- NOTE**
- ALLOWABLE MINIMUM BEARING CAPACITY OF TRENCH BASE IS 50 KPa AS PER PRINCIPALS SPECIFICATIONS.
 - CONTRACTOR TO CONFIRM NATIVE MATERIAL IS SUITABLE FOR PIPE LAYING AND SHALL INFORM ENGINEER IF THERE ARE ANY CONCERNS.
 - TRACER WIRE TO BE INSTALLED WHERE PIPE IS DIRECTIONALLY DRILLED. TERMINATE TRACER WIRE COILS IN SURFACE BOXES (VALVES OR OTHER) FOR LATER SERVICE LOCATING.
 - REFER TO PRINCIPAL'S CONSTRUCTION REQUIREMENTS SPECIFICATION.
 - THE CONTRACTOR SHALL INSTALL TRENCHSTOPS ON ALL SLOPES GREATER THAN 10% IN ACCORDANCE WITH NZS4404:2010 STANDARD DETAIL CM-003. THE CONTRACTOR SHALL USE THE TYPICAL TRENCHSTOP DETAIL.
 - SEE GENERAL NOTES FOR TRENCH REINSTATEMENT STABILISATION.
 - TRENCHSTOP SPACING SHALL BE:
 $S(m) = 100/GRADE (\%)$
 - 32mm DUCT FOR FIBRE OPTIC CABLE INSTALLATION BETWEEN CLIFF ROAD PUMP STATION TO STONEY POINT PUMP STATION, AND STONEY POINT PUMP STATION TO BURIED VILLAGE PUMP STATION. DUCT NESTED WITH RISING MAIN IF COMPLETED IN SAME DRILL SHOT OR ALTERNATIVELY COMPLETED IN SEPARATE DRILL SHOT.



TYPICAL TRENCHSTOP DETAIL
NOT TO SCALE



REV	REVISIONS	DRN	APP	DATE
0.C	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	11.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	17.03.23



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DRAWN BY K. Ware	DRN CHK S. Sutton
DRAWN DATE 3.23	APPROVED BY S. Shortt
APPROVED DATE 30.05.23	

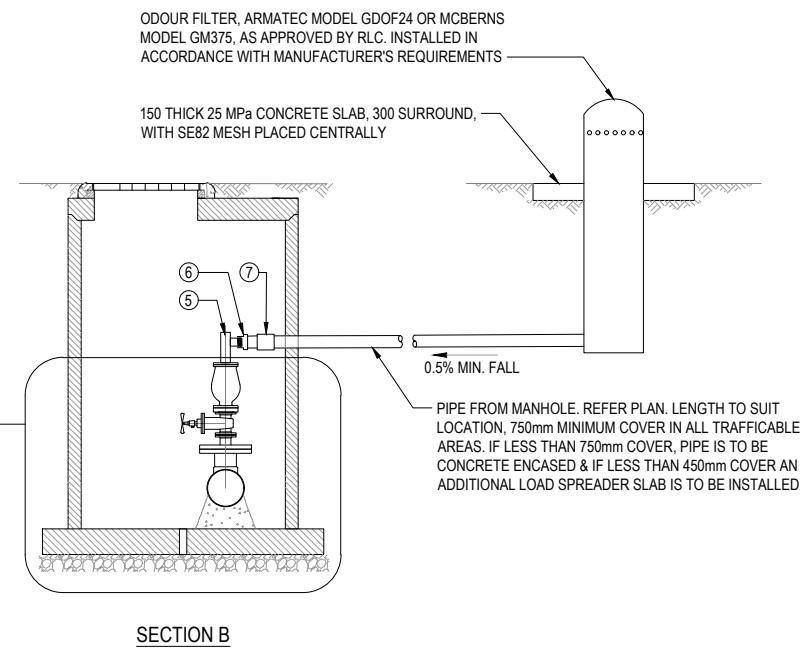
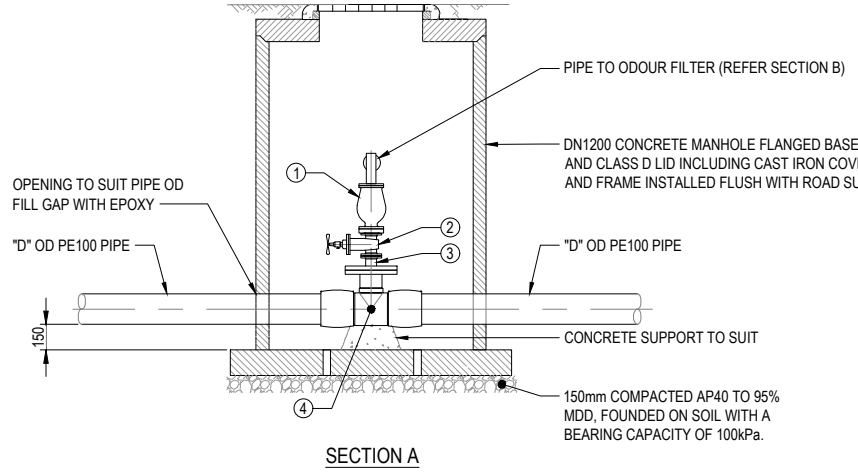
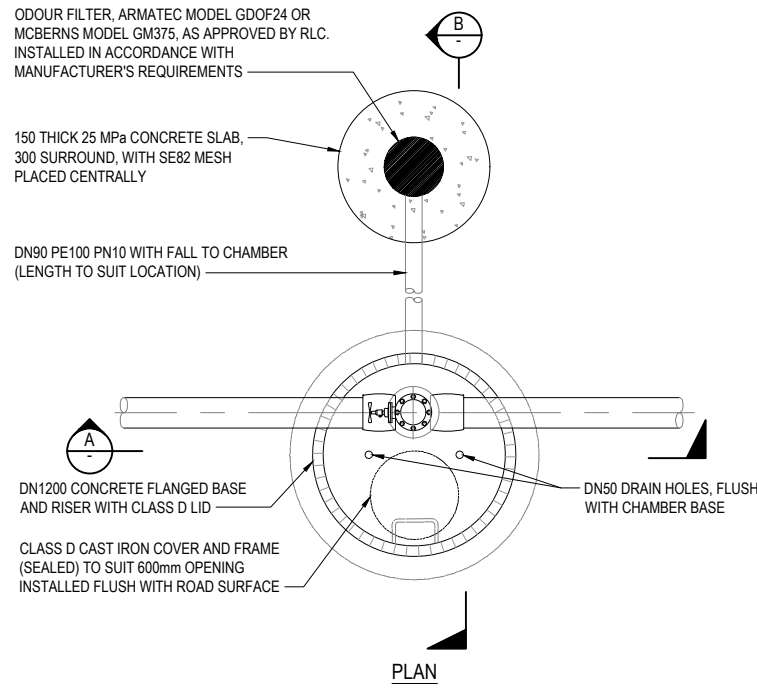
PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE TYPICAL TRENCH DETAILS
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-09-C-201			REV. 0.C

NOTE

1. LOCATE ODOUR FILTER AWAY FROM ROAD AND WITHIN 500mm OF BOUNDARY. CHECK DRAINAGE INTERACTION AND CONFIRM POSITION WITH ENGINEER ON SITE.
2. LIDS TO BE PAINTED RED.

PIPE SCHEDULE				
ITEM	DESCRIPTION	PN RATING	MATERIAL	HEIGHT
1	DN50 SS316 AIR VALVE, VENT-O-MAT RGXII WITH AIR VENT CONNECTION	16	SS	413
2	DN50 DI PN16 FLANGED RESILIENT SEATED GATE VALVE	16	DI	178
3	DN50 SS316 FLANGED SPOOL, ONE END TO SUIT MAIN DIAMETER, FLANGED	16	SS	150
4	"D" PE100 PN16 ELECTROFUSION EQUAL TEE TO SUIT MAIN DIAMETER WITH FLANGED BRANCH	16	PE	VARIES
5	DN50 MALE BSP CONNECTION			
6	DN50 BSP x DN90 FEMALE ADAPTOR COMPRESSION FITTING			
7	DN90 PLAIN COUPLING COMPRESSION FITTING			



AIR VALVE TYPE 1 DETAIL
SCALE 1 : 25

REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	11.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	17.03.23



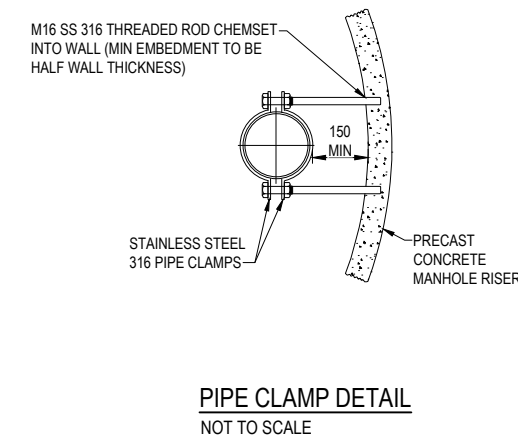
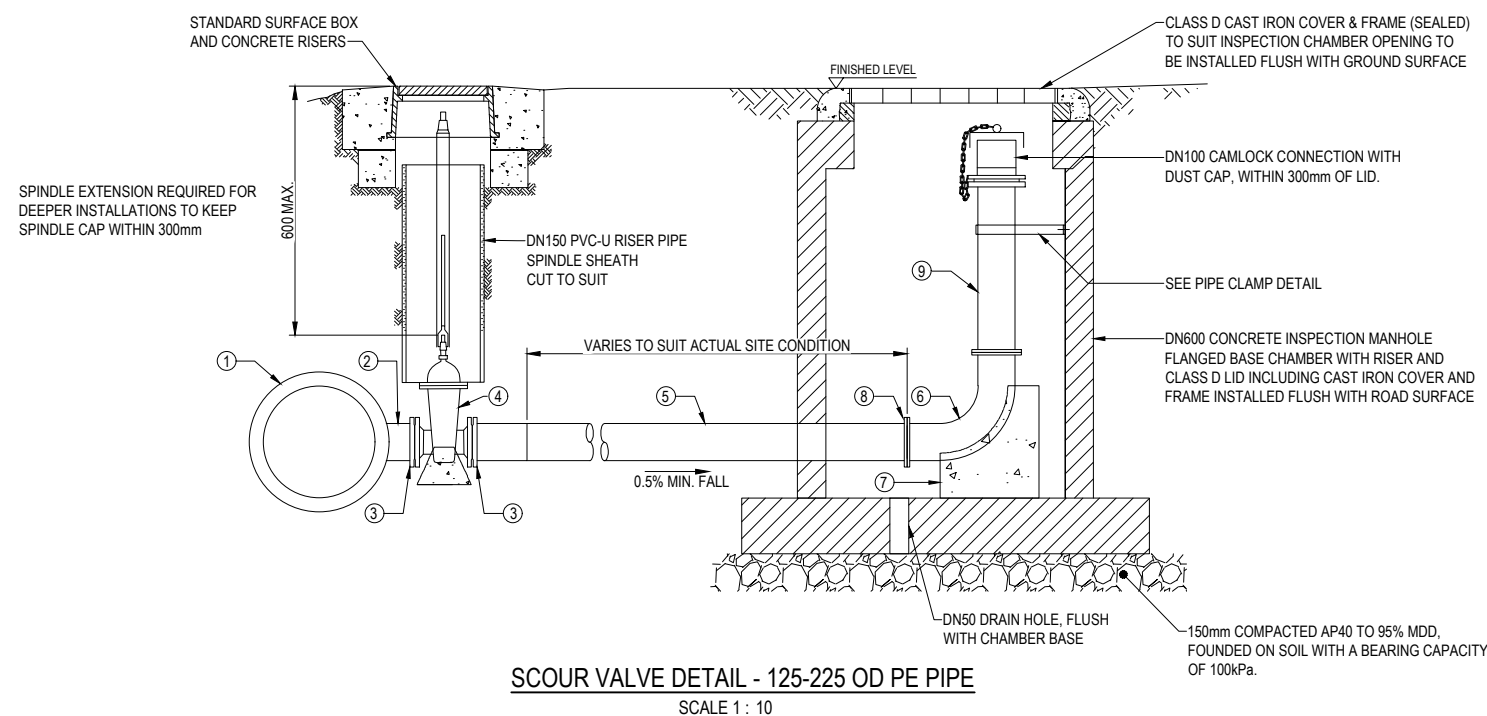
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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY K. Ware	DRN CHK C. Maaka	DRAWING TITLE TYPICAL AIR VALVE DETAIL
DRAWN DATE 3.23	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

STATUS DETAILED DESIGN		SCALE AS SHOWN		SITE ID		AREA		SIZE A1	
DRAWING NUMBER R-0034-310103621-01-RUN-09-C-202		REV. 0.B							

- NOTE**
- CONTRACTOR TO AGREE LOCATION OF SCOUR CHAMBER ON SITE WITH ENGINEER PRIOR TO WORKS. LOCATE OUT OF THE CARRIAGEWAY.
 - LIDS TO BE PAINTED RED.

PIPE SCHEDULE				
ITEM	DESCRIPTION	PN RATING	MATERIAL	No. OF ITEM
1	"D" PE100 PIPE	10/16/20	PE	1
2	"D" x DN125 PE100 REDUCED OR EQUAL BRANCH TEE TO SUIT PIPE (ITEM 1) PRESSURE CLASS	16/20	PE	1
3	DN125 PE STUB FLANGE AND BACKING RING TYPE TO SUIT PIPE (ITEM 1) PRESSURE CLASS	16/20	PE/GMS	2
4	DN100 DI PN16 GATE VALVE TO SUIT PIPE (ITEM 1) PRESSURE CLASS	16/20	DI	1
5	DN125 PE100 PN16 PIPE	16	PE	VARIES
6	DN125 DI 90° BEND	16	DI	1
7	CONCRETE THRUST BLOCK	16	CONCRETE	1
8	DN125 PE100 PN16 STUB FLANGE AND BACKING RING	16	PE	1
9	DN100 DI FLANGED SPOOL, LENGTH TO SUIT	16	DI	1



REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	11.04.23

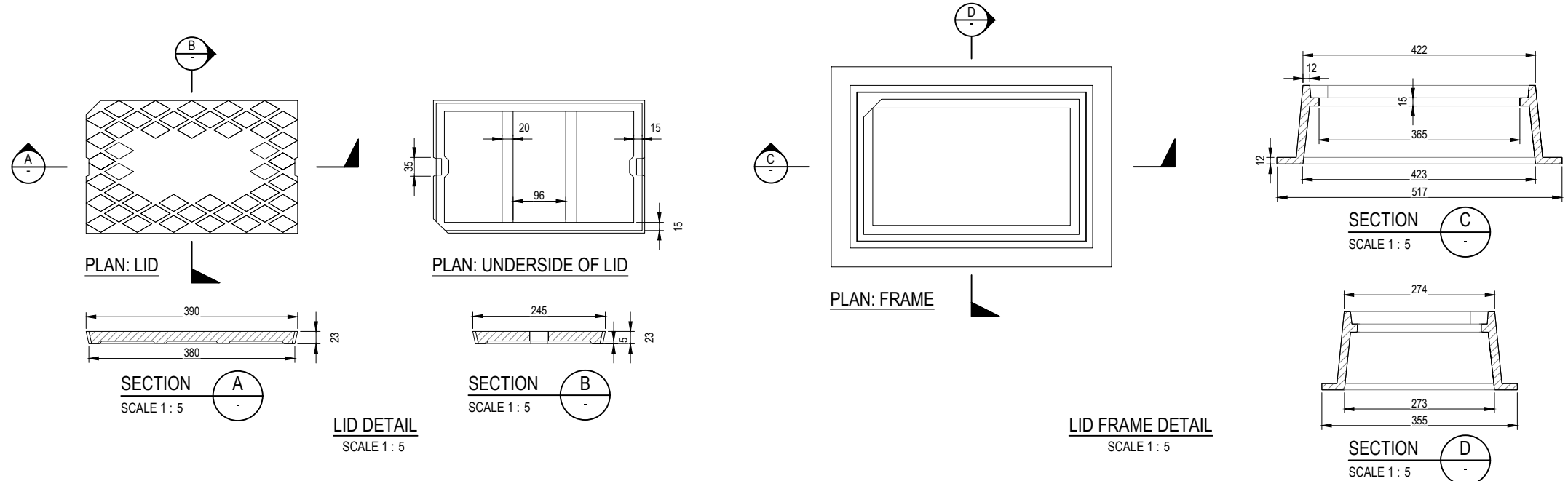


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DRAWN BY K. Ware	DRN CHK C. Maaka
DRAWN DATE 3.23	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

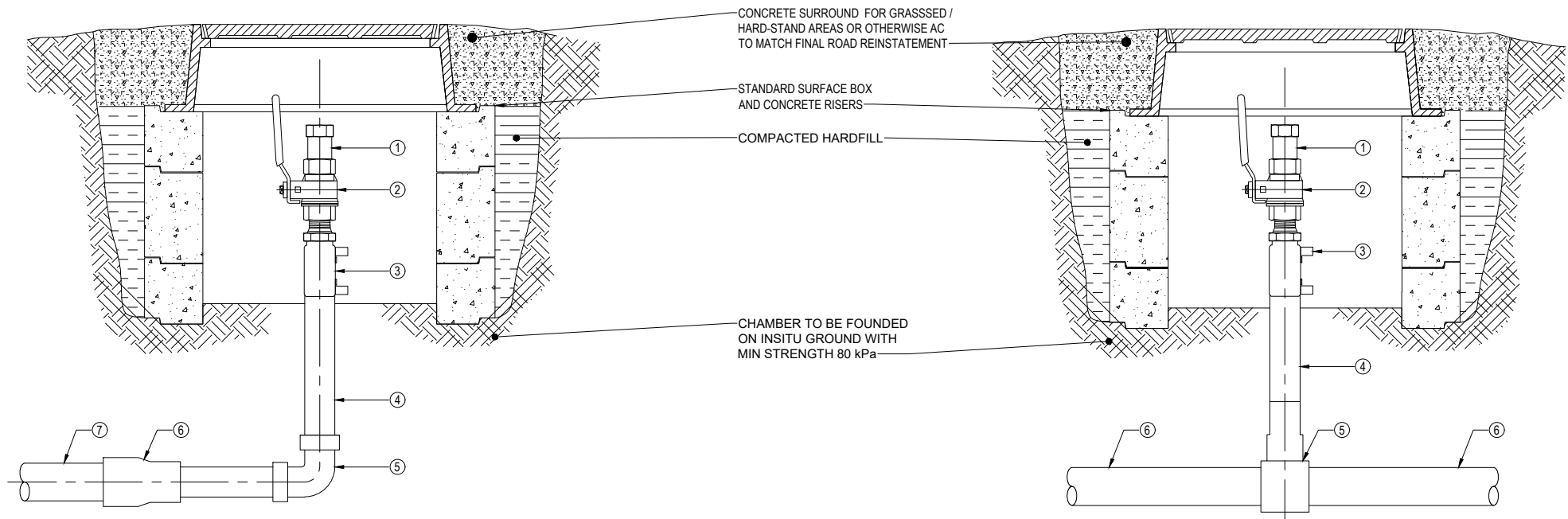
PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE TYPICAL SCOUR VALVE DETAIL
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-09-C-203			REV. 0.A



- LID AND FRAME NOTES:**
1. ALL CASTINGS TO BE COATED IN BLACK BITUMINOUS PAINT.
 2. ALL CASTINGS TO BE MADE FROM GREY CAST IRON TO AS 1830 GR H229.
 3. ALL LETTERS AND DIAMOND TREADS TO BE RAISED 3mm.
 4. APPROXIMATE TOTAL WEIGHT = 33kg.
 5. LIDS TO BE PAINTED RED.

- NOTES**
1. MINIMUM PRESSURE RATING FOR ALL PIPEWORK AND FITTINGS IS TO BE PN16.
 2. REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.



PIPING SCHEDULE	
ITEM	DESCRIPTION
1	1-1/2" BSP SS316 BARREL NIPPLE WITH DUST CAP
2	1-1/2" BSP SS316 BALL VALVE, LOCKABLE
3	50 x 1 1/2" PE / STAINLESS STEEL TRANSITION COUPLER
4	DN50 PE100 PN16 PIPE
5	DN50 PE100 PN16 90° EF PE BEND
6	"D" x DN50 PE100 PN16 EF REDUCER, IF REQUIRED
7	"D" PE100 PN16 PIPE

DEAD END CLEAN OUT / FLUSHING POINT FOR PE PRESSURE SEWER MAIN
50 - 110 OD PE PIPE

PIPING SCHEDULE	
ITEM	DESCRIPTION
1	1-1/2" BSP SS316 BARREL NIPPLE WITH DUST CAP
2	1-1/2" BSP SS316 BALL VALVE, LOCKABLE
3	50 x 1 1/2" PE / STAINLESS STEEL TRANSITION COUPLER (MALE THREADED)
4	DN50 PE100 PN16 PIPE
5	"D" x DN50 PE100 PN16 EF REDUCING TEE
6	"D" PE100 PN16 PIPE

IN - LINE CLEAN OUT / FLUSHING POINT
50 - 110 OD PE PIPE

FLUSHING POINT DETAIL - 50-110 OD PE PIPE
SCALE 1 : 5

REV	REVISIONS	DRN	APP	DATE
0.B	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	28.04.23
0	DETAILED DESIGN ISSUE	SRS	SS	21.04.23



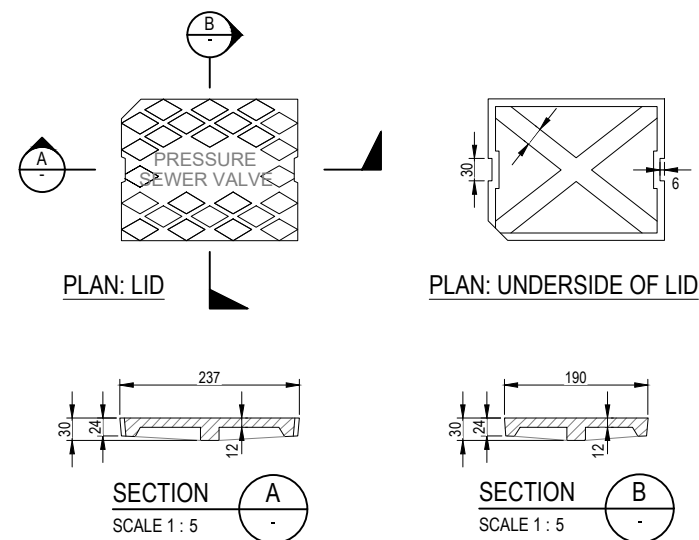
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DRAWN BY K. Ware	DRN CHK S. Sutton
DRAWN DATE 4.23	
APPROVED BY S. Shortt	
APPROVED DATE 30.05.23	

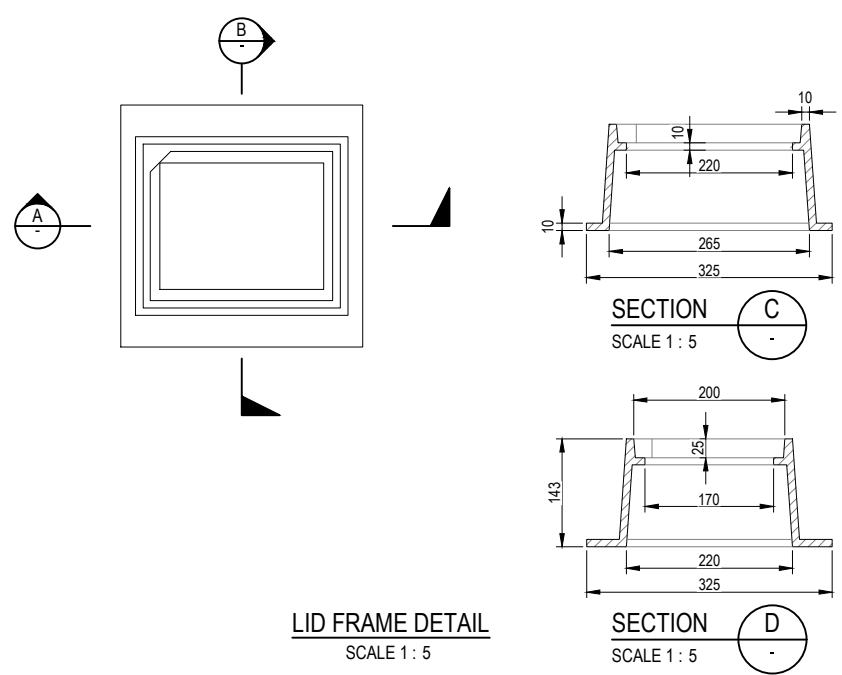
PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWING TITLE TYPICAL FLUSHING POINT DETAIL
SHEET NUMBER

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-09-C-204			REV. 0.B

- NOTES:**
- REFER TO R-0034-310103621-01-RUN-00-C-005 FOR GENERAL NOTES.
 - LIDS TO BE PAINTED RED. ALL OTHER CASTINGS TO BE COATED IN BLACK BITUMINOUS PAINT.
 - ALL CASTINGS TO BE MADE FROM GREY CAST IRON TO AS 1830 GR H229.
 - ALL LETTERS AND DIAMOND TREADS TO BE RAISED 3mm.
 - APPROXIMATE TOTAL WEIGHT = 33kg.
 - VALVE SIZING REQUIREMENTS OUTLINED IN GENERAL NOTES.

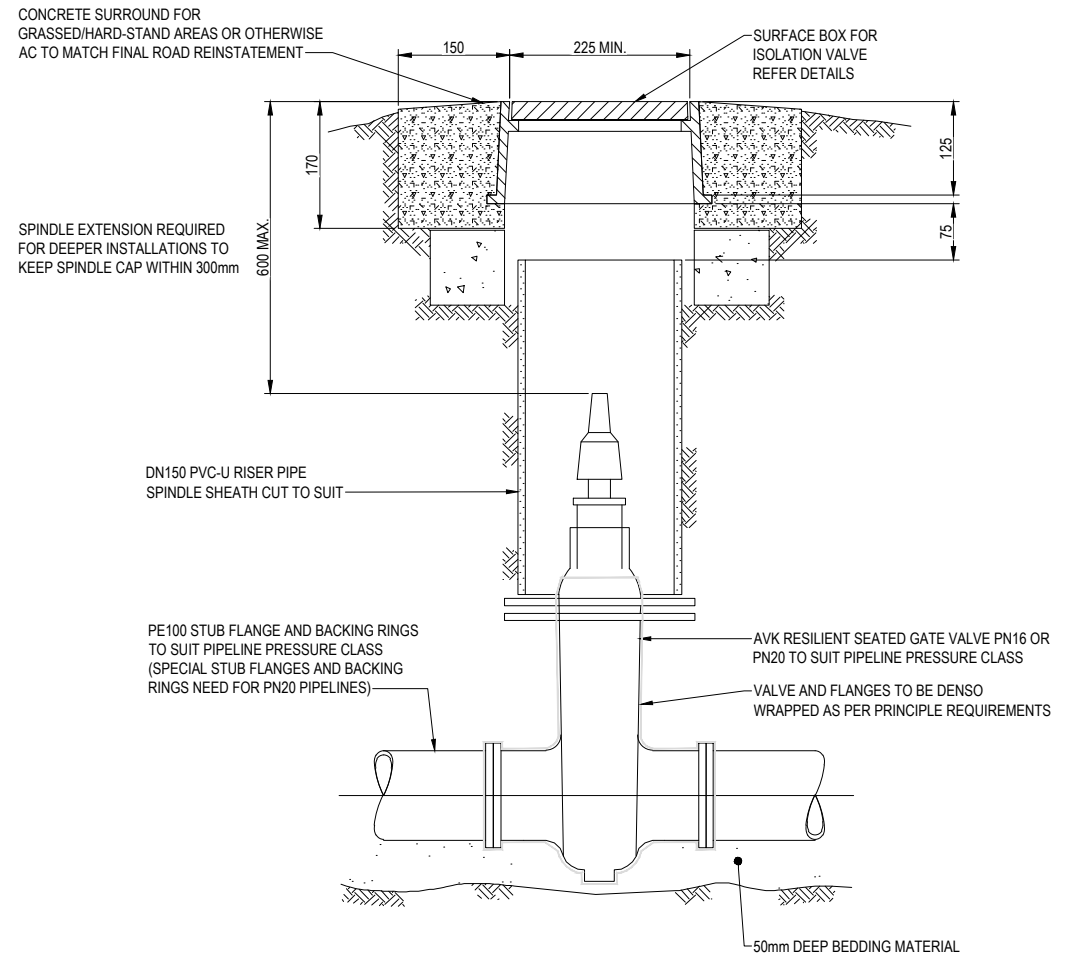


LID DETAIL
SCALE 1:5



LID FRAME DETAIL
SCALE 1:5

DETAIL OF SURFACE BOX FOR ISOLATION VALVE



GATE VALVE INSTALLATION DETAIL
SCALE 1:5

REV	REVISIONS	DRN	APP	DATE
0.A	DETAILED DESIGN RE-ISSUE	SRS	SS	30.05.23
0	DETAILED DESIGN ISSUE	SRS	SS	28.04.23



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DESIGNED BY C. Clague	DES CHK W. Jacobson	PROJECT NAME TARAWERA WW RETICULATION SCHEME
DRAWN BY K. Ware	DRN CHK S. Sutton	DRAWING TITLE TYPICAL GATE VALVE DETAIL
DRAWN DATE 4.23	APPROVED BY S. Shortt	SHEET NUMBER
APPROVED DATE 30.05.23		

STATUS DETAILED DESIGN			
SCALE AS SHOWN	SITE ID	AREA	SIZE A1
DRAWING NUMBER R-0034-310103621-01-RUN-09-C-205			REV. 0.A