



**ENG60371708**  
Approved Engineering Plan

22/03/2021

LEGEND

- PROPOSED STORMWATER LINE
- PROPOSED LOT CONNECTION
- EXISTING STORMWATER LINE
- SITE BOUNDARY
- OVERLAND FLOW DIRECTION
- MANHOLE PROPOSED
- MANHOLE EXISTING
- CESSPIT PROPOSED

SCALEBAR (m) 0 10 20 SCALE | 1:1000 @A3 | 1:500 @A1 | 1:50

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	MB	19/06/20
2	S92 RESPONSE	MRB	18/09/20
3	LOA DESIGN CHANGES	MRB	29/10/20
6	PIPE SIZES AMENDED	MRB	17/03/21

SURVEYED	WOODS	25 BANKSIDE ROAD SILVERDALE AUCKLAND
DESIGNED	MRB	
DRAWN	MRB	
CHECKED	MRB	
APPROVED	MRB	
		WOODS.CO.NZ



**MILLWATER**  
**25 BANKSIDE ROAD**

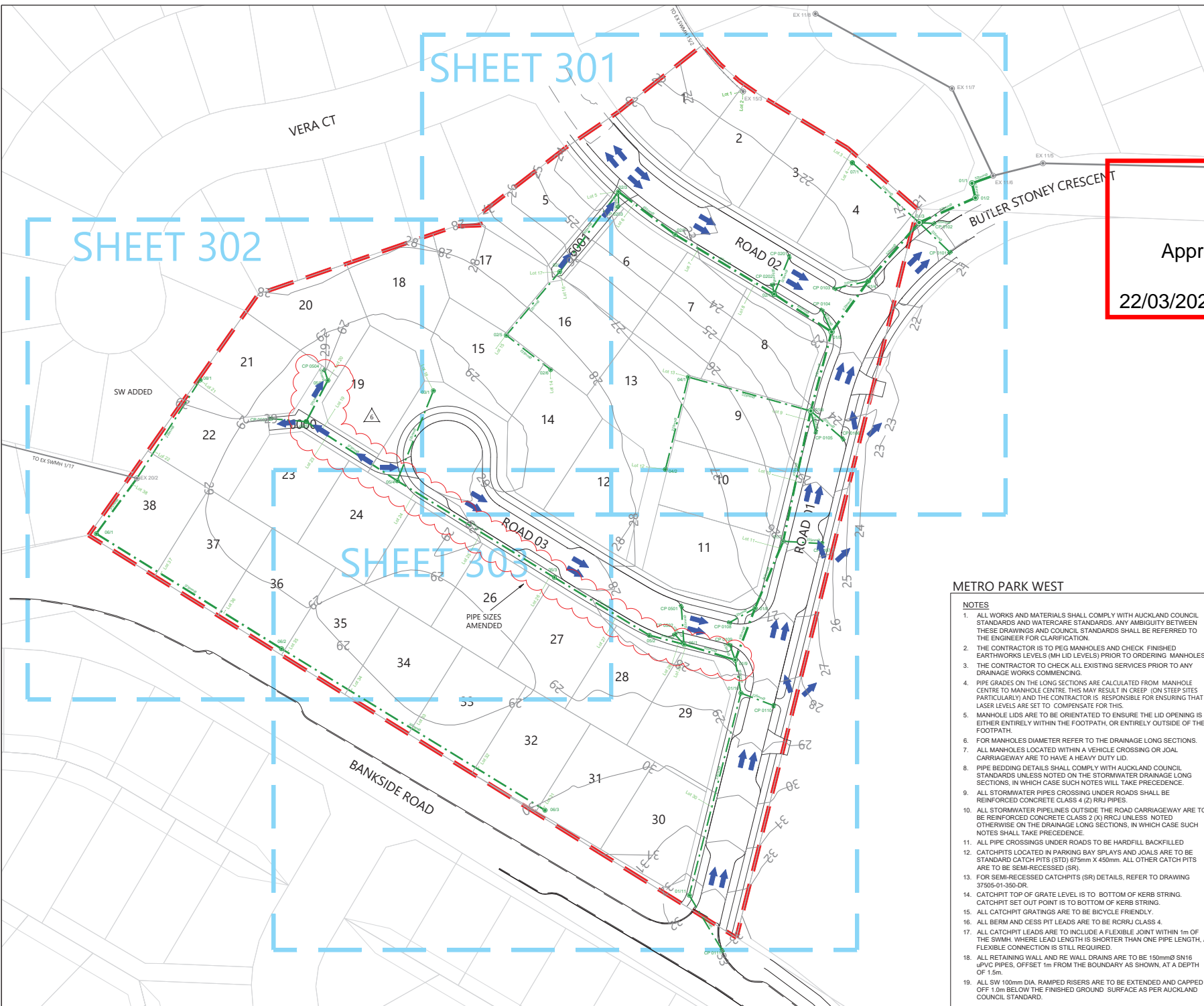
OVERALL STORMWATER  
LAYOUT PLAN

STATUS	ISSUED FOR EPA	REV
SCALE	1:1000 @ A3	6
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-300-DR	

**METRO PARK WEST**

NOTES

- ALL WORKS AND MATERIALS SHALL COMPLY WITH AUCKLAND COUNCIL STANDARDS AND WATERCARE STANDARDS. ANY AMBIGUITY BETWEEN THESE DRAWINGS AND COUNCIL STANDARDS SHALL BE REFERRED TO THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR IS TO PEG MANHOLES AND CHECK FINISHED EARTHWORKS LEVELS (MH LID LEVELS) PRIOR TO ORDERING MANHOLES.
- THE CONTRACTOR TO CHECK ALL EXISTING SERVICES PRIOR TO ANY DRAINAGE WORKS COMMENCING.
- PIPE GRADES ON THE LONG SECTIONS ARE CALCULATED FROM MANHOLE CENTRE TO MANHOLE CENTRE. THIS MAY RESULT IN CREEP (ON STEEP SITES PARTICULARLY) AND THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT LASER LEVELS ARE SET TO COMPENSATE FOR THIS.
- MANHOLE LIDS ARE TO BE ORIENTATED TO ENSURE THE LID OPENING IS EITHER ENTIRELY WITHIN THE FOOTPATH, OR ENTIRELY OUTSIDE OF THE FOOTPATH.
- FOR MANHOLES DIAMETER REFER TO THE DRAINAGE LONG SECTIONS.
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- ALL STORMWATER PIPES CROSSING UNDER ROADS SHALL BE REINFORCED CONCRETE CLASS 4 (Z) R/RJ PIPES.
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- ALL PIPE CROSSINGS UNDER ROADS TO BE HARDFILL BACKFILLED
- CATCHPITS LOCATED IN PARKING BAY SPLAYS AND JOALS ARE TO BE STANDARD CATCH PITS (STD) 675mm X 450mm. ALL OTHER CATCH PITS ARE TO BE SEMI-RECESSED (SR).
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- CATCHPIT TOP OF GRATE LEVEL IS TO BOTTOM OF KERB STRING. CATCHPIT SET OUT POINT IS TO BOTTOM OF KERB STRING.
- ALL CATCHPIT GRATINGS ARE TO BE BICYCLE FRIENDLY.
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- ALL CATCHPIT LEADS ARE TO INCLUDE A FLEXIBLE JOINT WITHIN 1m OF THE SWHM. WHERE LEAD LENGTH IS SHORTER THAN ONE PIPE LENGTH, A FLEXIBLE CONNECTION IS STILL REQUIRED.
- ALL RETAINING WALL AND RE WALL DRAINS ARE TO BE 150mmØ SNI16 uPVC PIPES, OFFSET 1m FROM THE BOUNDARY AS SHOWN, AT A DEPTH OF 1.5m.
- ALL SW 100mm DIA. RAMPED RISERS ARE TO BE EXTENDED AND CAPPED OFF 1.0m BELOW THE FINISHED GROUND SURFACE AS PER AUCKLAND COUNCIL STANDARD.

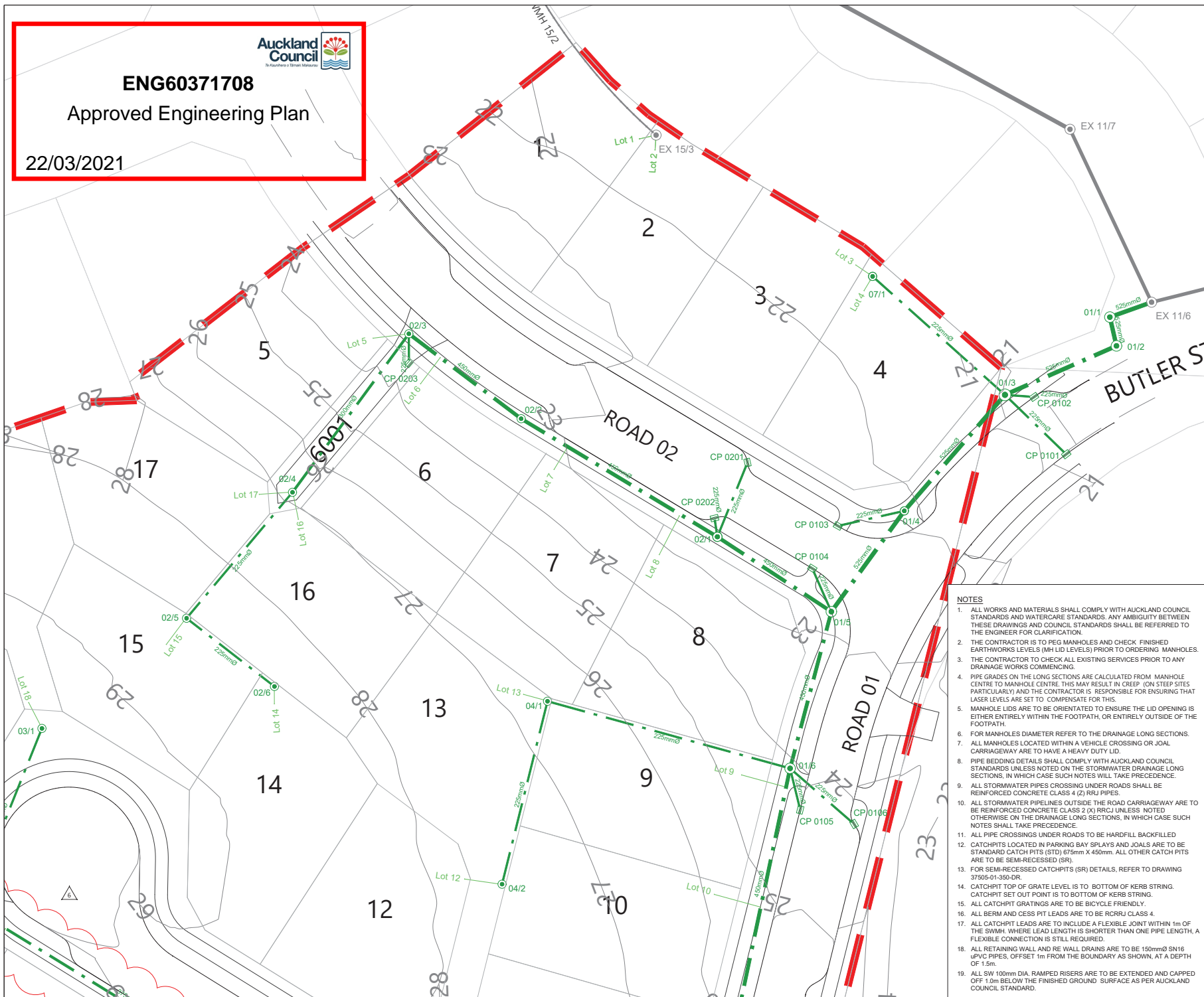


SHEET 301

SHEET 302

SHEET 303

Document No. C:\1205\ENERGY\DATA\WP\PEL-APP-01\37050 - BARTLETT BLOCK\_359\CAD\ENG\37050-300-DR - STORMWATER DRAINAGE LAYOUT PLAN.DWG



LEGEND

- PROPOSED STORMWATER LINE
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- EXISTING STORMWATER LINE
- SITE BOUNDARY
- OVERLAND FLOW DIRECTION
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SCALEBAR (m) 0 5 10 SCALE | 1:500 @A3 | 1:250 @A1 | 1:50

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DESIGNED	MRB	SILVERDALE
DRAWN	MRB	AUCKLAND
CHECKED	MB	
APPROVED	MB	WOODS.CO.NZ

MILLWATER  
25 BANKSIDE ROAD  
STORMWATER LAYOUT PLAN  
SHEET 1

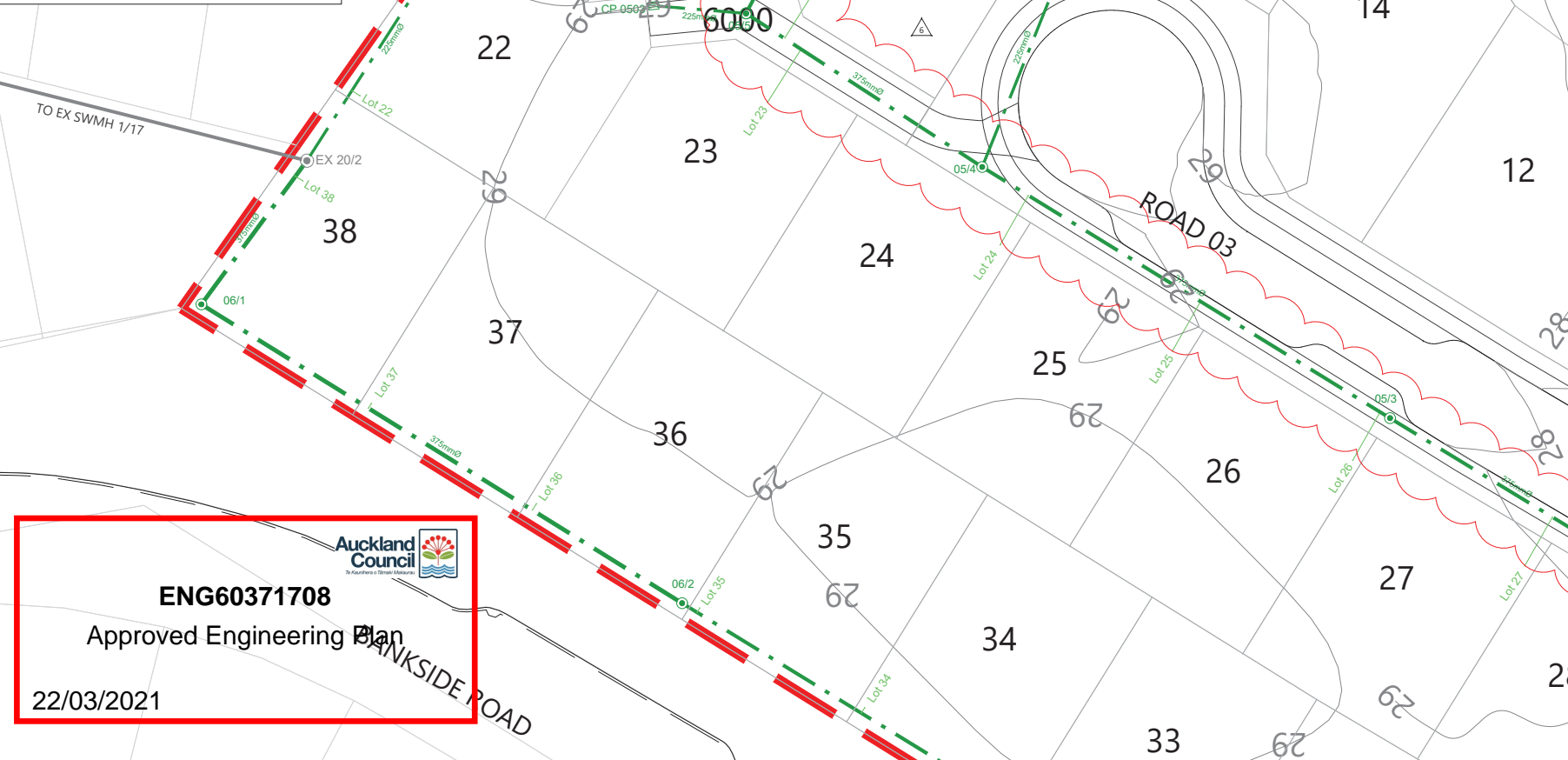
STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	6
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-301-DR	

NOTES

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- MANHOLE LIDS ARE TO BE ORIENTATED TO ENSURE THE LID OPENING IS EITHER ENTIRELY WITHIN THE FOOTPATH, OR ENTIRELY OUTSIDE OF THE FOOTPATH.
- FOR MANHOLES DIAMETER REFER TO THE DRAINAGE LONG SECTIONS.
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- ALL BERM AND CESS PIT LEADS ARE TO BE RCR/RJ CLASS 4.
- ALL CATCHPIT LEADS ARE TO INCLUDE A FLEXIBLE JOINT WITHIN 1m OF THE SWMH. WHERE LEAD LENGTH IS SHORTER THAN ONE PIPE LENGTH, A FLEXIBLE CONNECTION IS STILL REQUIRED.
- ALL RETAINING WALL AND RE WALL DRAINS ARE TO BE 150mmØ SNI16 uPVC PIPES, OFFSET 1m FROM THE BOUNDARY AS SHOWN, AT A DEPTH OF 1.5m.
- ALL SW 100mm DIA. RAMPED RISERS ARE TO BE EXTENDED AND CAPPED OFF 1.0m BELOW THE FINISHED GROUND SURFACE AS PER AUCKLAND COUNCIL STANDARD.

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- PROPOSED LOT CONNECTION:
- EXISTING STORMWATER LINE:
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- OVERLAND FLOW DIRECTION:
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SCALEBAR (m) 0 5 10 25  
SCALE | 1:500 @A3 | 1:250 @A1 | 1:50 @A2

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DESIGNED	MRB	
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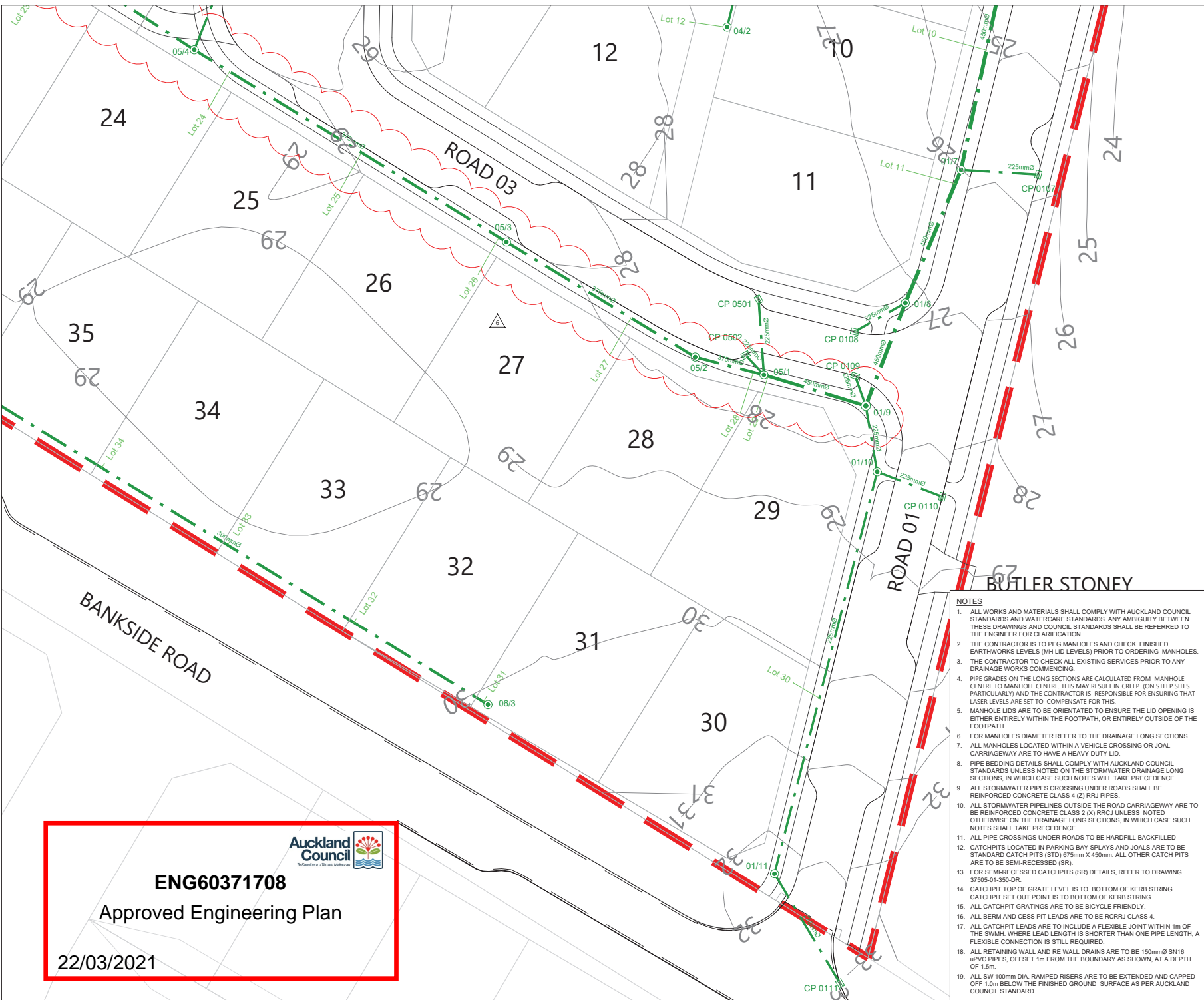


**MILLWATER**  
**25 BANKSIDE ROAD**  
**STORMWATER LAYOUT PLAN**  
**SHEET 2**

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	6
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-302-DR	

**Auckland Council**  
**ENG60371708**  
**Approved Engineering Plan**  
**22/03/2021**

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DRAWN	MRB	AUCKLAND
CHECKED	MRB	
APPROVED	MRB	WOODS.CO.NZ



**MILLWATER  
25 BANKSIDE ROAD**

**STORMWATER LAYOUT PLAN  
SHEET 3**

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	6
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-303-DR	

- NOTES**
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**Auckland Council**  
Te Kaitiaki o Te ōhanga Kaitiaki

**ENG60371708**

Approved Engineering Plan

22/03/2021

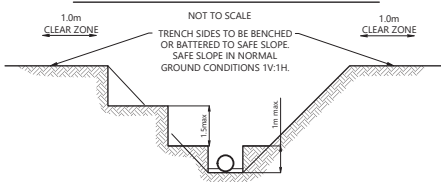
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**COMPLEX GROUND CONDITIONS:**

THIS PREFERRED SAFE TRENCHING SOLUTION DOES NOT APPLY WHEN TRENCHING IN COMPLEX GROUND CONDITIONS.

ALL TRENCH EXCAVATIONS IN COMPLEX GROUND CONDITIONS MUST BE ASSESSED BY AN 'EXPERIENCED TEMPORARY WORKS DESIGNER' IN ACCORDANCE WITH THE WORKSAFE GUIDELINES FOR EXCAVATION SAFETY.

**PREFERRED SAFE TRENCHING SOLUTION IN NORMAL GROUND CONDITIONS**



**SAFE TRENCHING NOTES:**

- THIS DIAGRAM SHOWS THE PREFERRED SAFE TRENCHING SOLUTION IN NORMAL GROUND CONDITIONS.
- ALL TRENCH EXCAVATIONS MUST BE ASSESSED BY A 'COMPETENT PERSON' ON SITE IN ACCORDANCE WITH THE WORKSAFE GUIDELINES FOR EXCAVATION SAFETY.
- IF THE PREFERRED TRENCHING SOLUTION IS NOT IMPLEMENTED THE CONTRACTOR MUST PROVIDE RECORDS OF THE SAFE TRENCHING ASSESSMENT COMPLETED BY THE 'COMPETENT PERSON'.
- TABLES 1 AND 2 OF THE WORKSAFE GUIDELINES SET OUT THE RECOMMENDED 'COMPETENCIES FOR THE 'COMPETENT PERSON'; TABLES 1 & 2 ARE INCLUDED IN THE CONTRACT DOCUMENTS.
- GROUND CONDITIONS AS DEFINED IN TABLES 1 AND 2 OF THE WORKSAFE GUIDELINES:
  - NORMAL GROUND CONDITIONS:
    - GENERALLY FLAT OPEN GROUND, WITH LITTLE OR NO SURCHARGE LOADING, FAVOURABLE GROUND CONDITIONS, OFF SET FROM NEARBY STRUCTURES AND SENSITIVE INFRASTRUCTURE. GROUNDWATER CAN BE CONTROLLED WITH SIMPLE METHODS, SUCH AS A SUMP PUMP ARRANGEMENT.
  - COMPLEX GROUND CONDITIONS:
    - THE GROUND CONDITIONS INCLUDE VERY WEAK OR SENSITIVE SOILS, GROUNDWATER THAT REQUIRES SPECIALIST DEWATERING, OR LOCATIONS NEAR STRUCTURES AND SENSITIVE INFRASTRUCTURE. THESE CONDITIONS WOULD RESULT IN AN ELEVATED RISK WHEN CONSTRUCTING THE EXCAVATION.

**NOTES**

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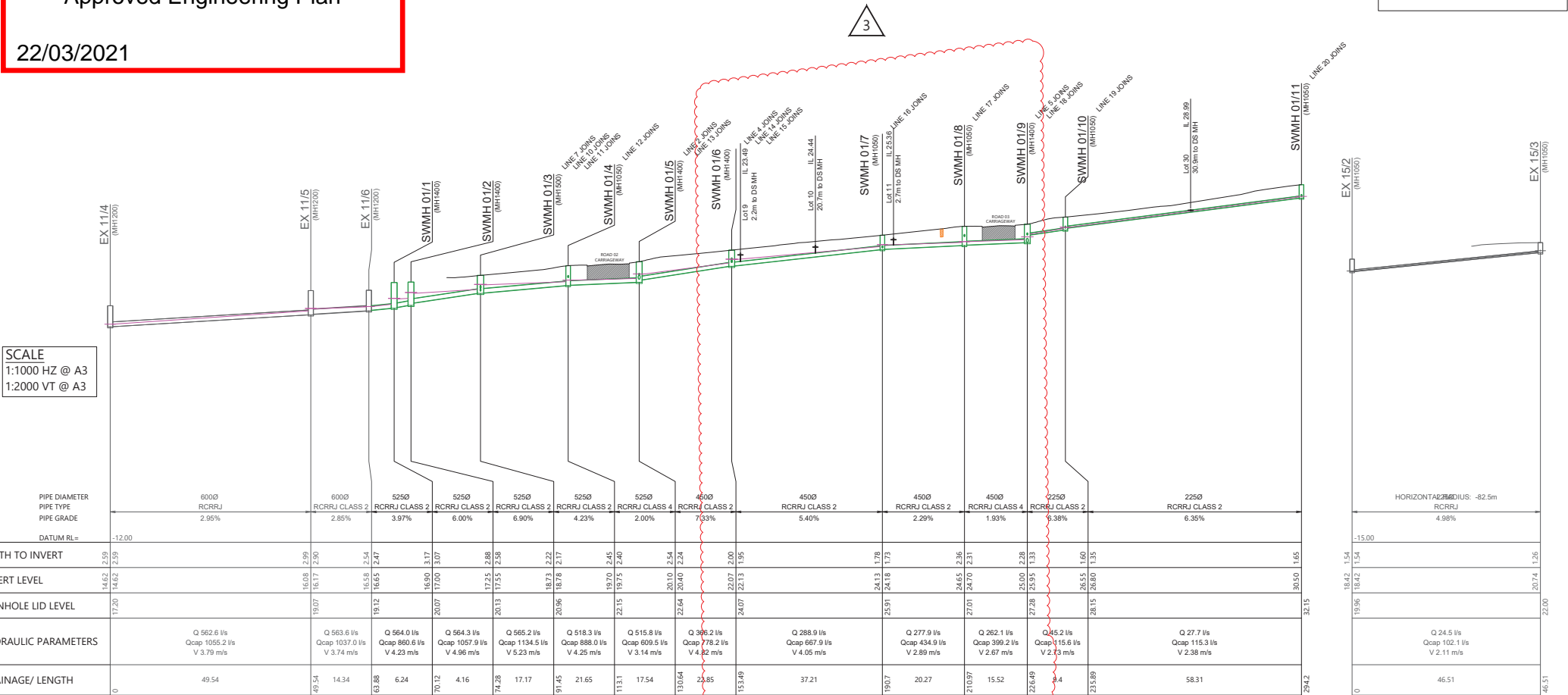
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**LEGEND**

- FINISHED GROUND
- EXISTING STORMWATER
- PROPOSED STORMWATER
- COMMON SERVICES TRENCH
- HARDFILL BACKFILL



SCALE  
1:1000 HZ @ A3  
1:2000 VT @ A3

PIPE DIAMETER	PIPE TYPE	PIPE GRADE	DATUM RL=	DEPTH TO INVERT	INVERT LEVEL	MANHOLE LID LEVEL	HYDRAULIC PARAMETERS	CHAINAGE/ LENGTH
6000	RCRRJ	2.95%	-12.00	14.62, 2.95	14.62, 2.95	17.20		0
6000	RCRRJ CLASS 2	2.85%		16.03, 2.99 16.17, 2.91	16.03, 2.99 16.17, 2.91	19.07	Q 562.6 l/s Qcap 1037.0 l/s V 3.74 m/s	49.54
5250	RCRRJ CLASS 2	3.97%		16.58, 2.54 16.69, 2.47	16.58, 2.54 16.69, 2.47	19.32	Q 564.0 l/s Qcap 860.6 l/s V 4.23 m/s	14.34
5250	RCRRJ CLASS 2	6.00%		16.90, 3.17 17.00, 3.07	16.90, 3.17 17.00, 3.07	20.07	Q 564.3 l/s Qcap 1057.9 l/s V 4.96 m/s	6.24
5250	RCRRJ CLASS 2	6.90%		17.24, 2.68 17.35, 2.58	17.24, 2.68 17.35, 2.58	20.33	Q 565.2 l/s Qcap 1134.5 l/s V 5.23 m/s	70.12
5250	RCRRJ CLASS 2	4.23%		18.71, 2.22 18.79, 2.17	18.71, 2.22 18.79, 2.17	20.96	Q 518.3 l/s Qcap 888.0 l/s V 4.25 m/s	4.16
5250	RCRRJ CLASS 2	2.00%		18.70, 2.45 18.75, 2.40	18.70, 2.45 18.75, 2.40	21.15	Q 515.8 l/s Qcap 609.5 l/s V 3.14 m/s	17.17
5250	RCRRJ CLASS 2	7.93%		20.10, 2.54 20.10, 2.54	20.10, 2.54 20.10, 2.54	22.64	Q 396.2 l/s Qcap 778.2 l/s V 4.82 m/s	91.45
4500	RCRRJ CLASS 2	5.40%		20.07, 2.00 20.13, 1.95	20.07, 2.00 20.13, 1.95	24.07	Q 288.9 l/s Qcap 667.9 l/s V 4.05 m/s	21.65
4500	RCRRJ CLASS 2	2.29%		24.13, 1.78 24.18, 1.73	24.13, 1.78 24.18, 1.73	25.91	Q 277.9 l/s Qcap 434.9 l/s V 2.89 m/s	113.1
4500	RCRRJ CLASS 2	1.93%		24.65, 2.36 24.70, 2.31	24.65, 2.36 24.70, 2.31	27.01	Q 262.1 l/s Qcap 399.2 l/s V 2.67 m/s	17.54
4500	RCRRJ CLASS 2	6.38%		26.00, 2.38 26.05, 2.33	26.00, 2.38 26.05, 2.33	27.28	Q 45.2 l/s Qcap 115.6 l/s V 2.73 m/s	130.64
2250	RCRRJ CLASS 2	6.35%		26.51, 1.60 26.55, 1.55	26.51, 1.60 26.55, 1.55	28.15	Q 27.7 l/s Qcap 115.3 l/s V 2.38 m/s	25.85
2250	RCRRJ CLASS 2	6.35%		30.50, 1.65	30.50, 1.65	32.15		153.49
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		37.21
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		190.7
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		20.27
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		210.97
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		15.52
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		226.49
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		3.4
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		235.89
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		58.31
2250	RCRRJ CLASS 2	6.35%		32.15, 1.65	32.15, 1.65	32.15		294.2

REVISION DETAILS	INT	DATE	SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED
1 FOR TENDER	MRB	10/11/20	MRB	MRB			
2 FOR EPA	MRB	03/02/21	MRB	MRB			
3 LONGSECTIONS UPDATED	MRB	24/02/21	MRB	MRB			

25 BANKSIDE ROAD  
SILVERDALE

WOODS.CO.NZ

**OREWA WEST - BARTLETT BLOCK**  
STORMWATER LONGSECTIONS  
SHEET 1 OF 5

STATUS	ISSUED FOR EPA	REV
SCALE	AS SHOWN	3
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-320-DR	

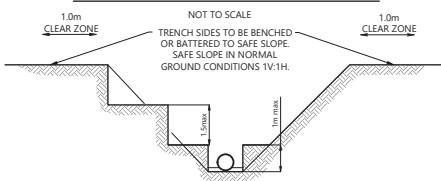
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**COMPLEX GROUND CONDITIONS:**

THIS PREFERRED SAFE TRENCHING SOLUTION DOES NOT APPLY WHEN TRENCHING IN COMPLEX GROUND CONDITIONS.

ALL TRENCH EXCAVATIONS IN COMPLEX GROUND CONDITIONS MUST BE ASSESSED BY AN 'EXPERIENCED TEMPORARY WORKS DESIGNER' IN ACCORDANCE WITH THE WORKSAFE GUIDELINES FOR EXCAVATION SAFETY.

**PREFERRED SAFE TRENCHING SOLUTION IN NORMAL GROUND CONDITIONS**




**SAFE TRENCHING NOTES:**

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  - COMPLEX GROUND CONDITIONS:
    - THE GROUND CONDITIONS INCLUDE VERY WEAK OR SENSITIVE SOILS, GROUNDWATER THAT REQUIRES SPECIALIST Dewatering, OR LOCATIONS NEAR STRUCTURES AND SENSITIVE INFRASTRUCTURE. THESE CONDITIONS WOULD RESULT IN AN ELEVATED RISK WHEN CONSTRUCTING THE EXCAVATION.

**NOTES**

- ALL WORKS AND MATERIALS TO COMPLY WITH AUCKLAND COUNCIL STANDARDS AND WATERCARE STANDARDS.
- ALL SW AND SW 100mm DIA. RAMPED RISERS ARE TO BE EXTENDED AND CAPPED OFF 1.0m BELOW THE FINISHED GROUND SURFACE.
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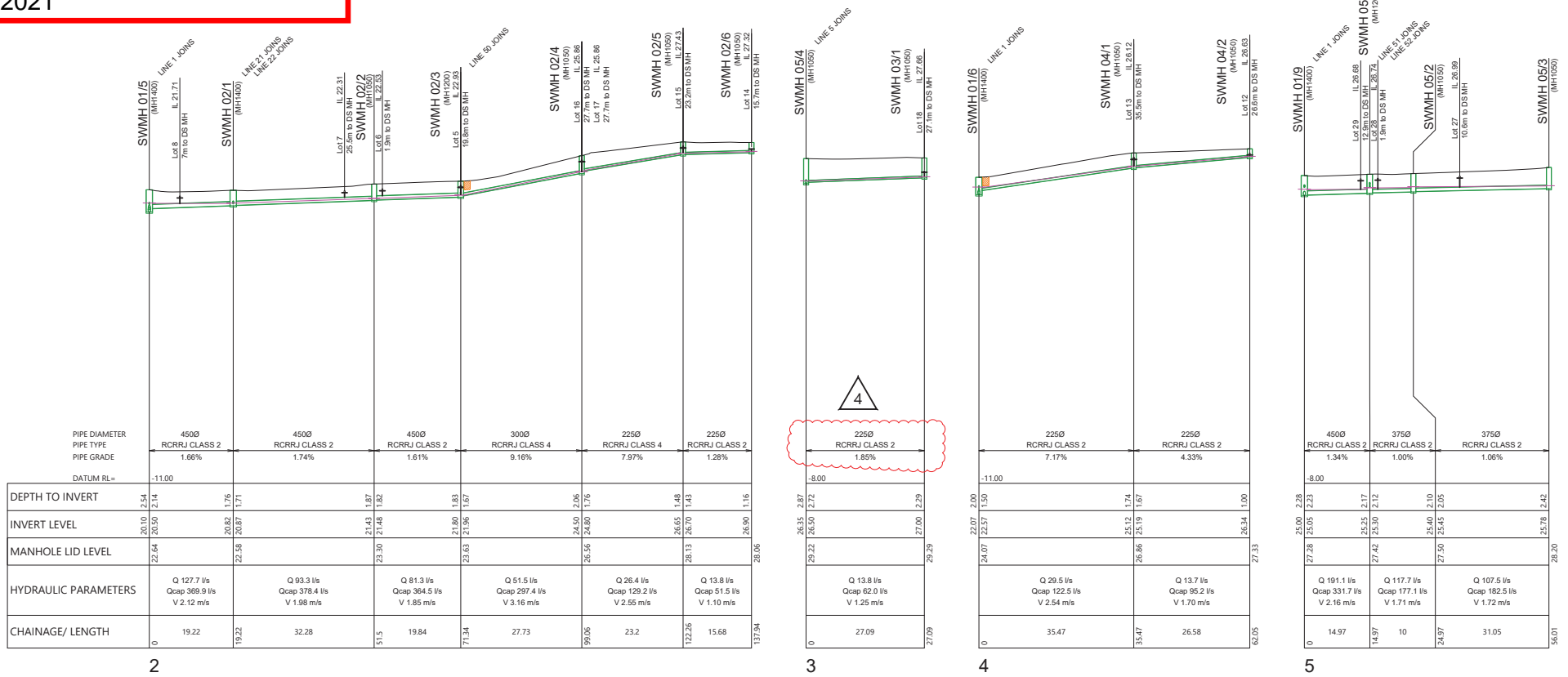
**ENG60371708**  
Approved Engineering Plan

22/03/2021

**LEGEND**

- FINISHED GROUND
- EXISTING STORMWATER
- PROPOSED STORMWATER
- COMMON SERVICES TRENCH
- HARDFILL BACKFILL

SCALE  
1:1000 HZ @ A3  
1:2000 VT @ A3



REVISION DETAILS	INT	DATE	SURVEYED	
1 FOR TENDER	MRB	10/11/20	DESIGNED	MRB
2 FOR EPA	MRB	03/02/21	DRAWN	MRB
3 LONGSECTIONS UPDATED	MRB	24/02/21	CHECKED	MRB
4 PIPE CLASS AMENDMENTS	MRB	12/03/21	APPROVED	MRB

25 BANKSIDE ROAD  
SILVERDALE

WOODS.CO.NZ

**OREWA WEST - BARTLETT BLOCK**  
STORMWATER LONGSECTIONS  
SHEET 2 OF 5

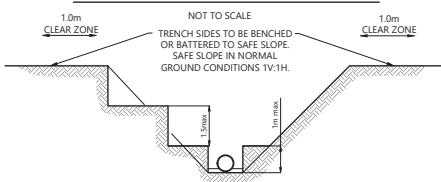
STATUS	ISSUED FOR EPA	REV
SCALE	AS SHOWN	4
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-321-DR	

**COMPLEX GROUND CONDITIONS:**

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**PREFERRED SAFE TRENCHING SOLUTION IN NORMAL GROUND CONDITIONS**



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**NOTES**

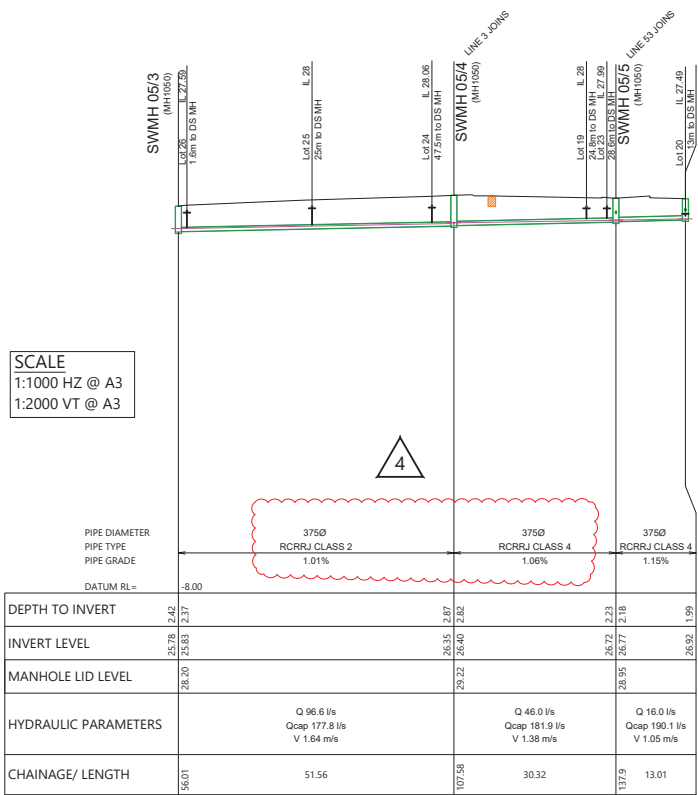
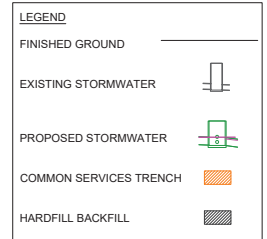
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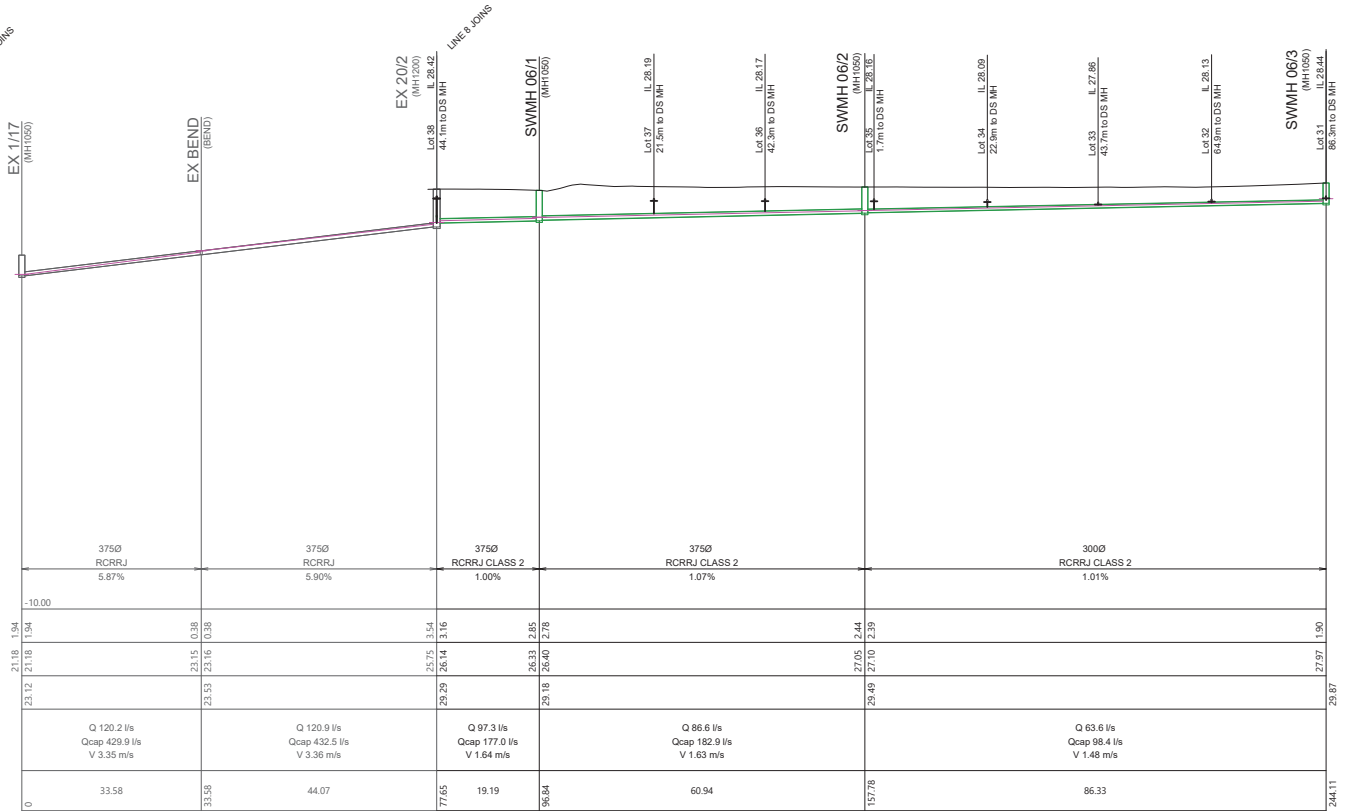
**ENG60371708**

Approved Engineering Plan

22/03/2021



SCALE  
1:1000 HZ @ A3  
1:2000 VT @ A3



REVISION DETAILS	INT	DATE	SURVEYED		
1 FOR TENDER	MRB	10/11/20	DESIGNED	MRB	25 BANKSIDE ROAD SILVERDALE
2 FOR EPA	MRB	03/02/21	DRAWN	MRB	
3 LONGSECTIONS UPDATED	MRB	24/02/21	CHECKED	MRB	
4 PIPE CLASS AMENDMENTS	MRB	12/03/21	APPROVED	MRB	



OREWA WEST - BARTLETT BLOCK  
STORMWATER LONGSECTIONS  
SHEET 3 OF 5

STATUS	ISSUED FOR EPA	REV
SCALE	AS SHOWN	4
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-322-DR	

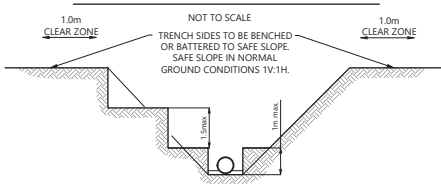
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**COMPLEX GROUND CONDITIONS:**

THIS PREFERRED SAFE TRENCHING SOLUTION DOES NOT APPLY WHEN TRENCHING IN COMPLEX GROUND CONDITIONS.

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**PREFERRED SAFE TRENCHING SOLUTION IN NORMAL GROUND CONDITIONS**

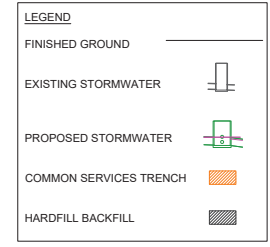


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**NOTES**

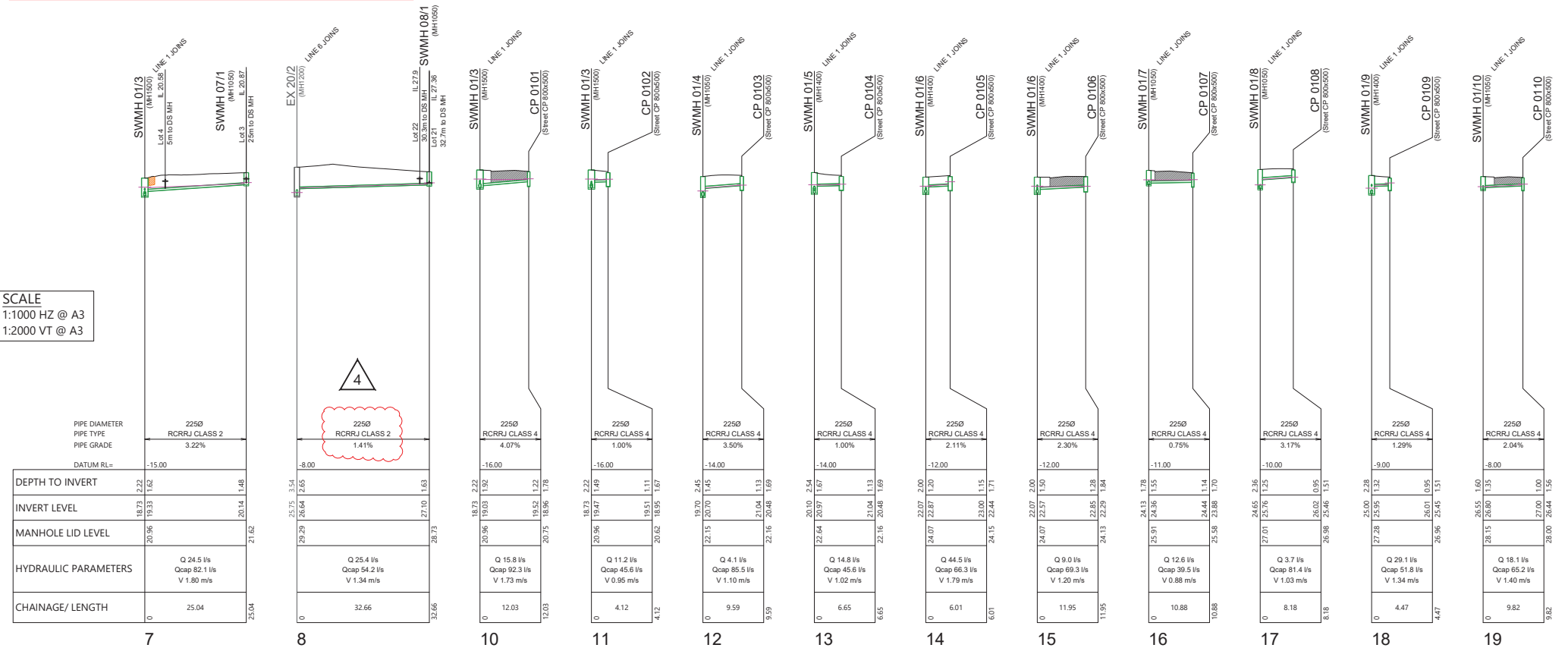
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**ENG60371708**
  
 Approved Engineering Plan

22/03/2021

**SCALE**  
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REVISION DETAILS	INT	DATE	SURVEYED	MRB
1 FOR TENDER	MRB	10/11/20	DESIGNED	MRB
2 FOR EPA	MRB	03/02/21	DRAWN	MRB
3 LONGSECTIONS UPDATED	MRB	24/02/21	CHECKED	MRB
4 PIPE CLASS AMENDMENTS	MRB	12/03/21	APPROVED	MRB

25 BANKSIDE ROAD  
 SILVERDALE  
**WOODS.CO.NZ**



**OREWA WEST - BARTLETT BLOCK**  
 STORMWATER LONGSECTIONS  
 SHEET 4 OF 5

STATUS	ISSUED FOR EPA	REV
SCALE	AS SHOWN	4
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-323-DR	

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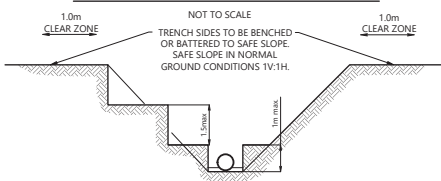


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LEGEND	
FINISHED GROUND	
EXISTING STORMWATER	
PROPOSED STORMWATER	
COMMON SERVICES TRENCH	
HARDFILL BACKFILL	

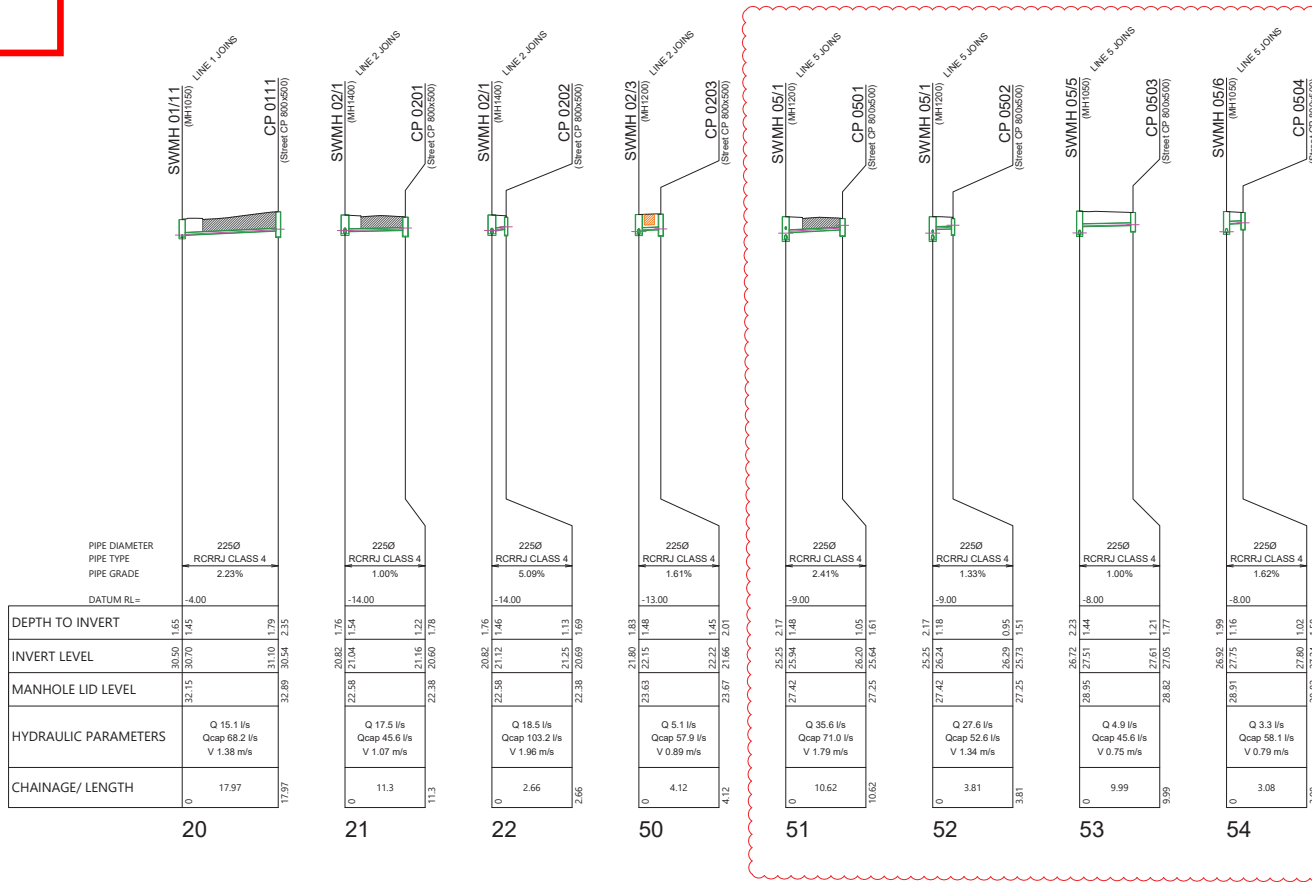




**ENG60371708**  
Approved Engineering Plan

22/03/2021

SCALE  
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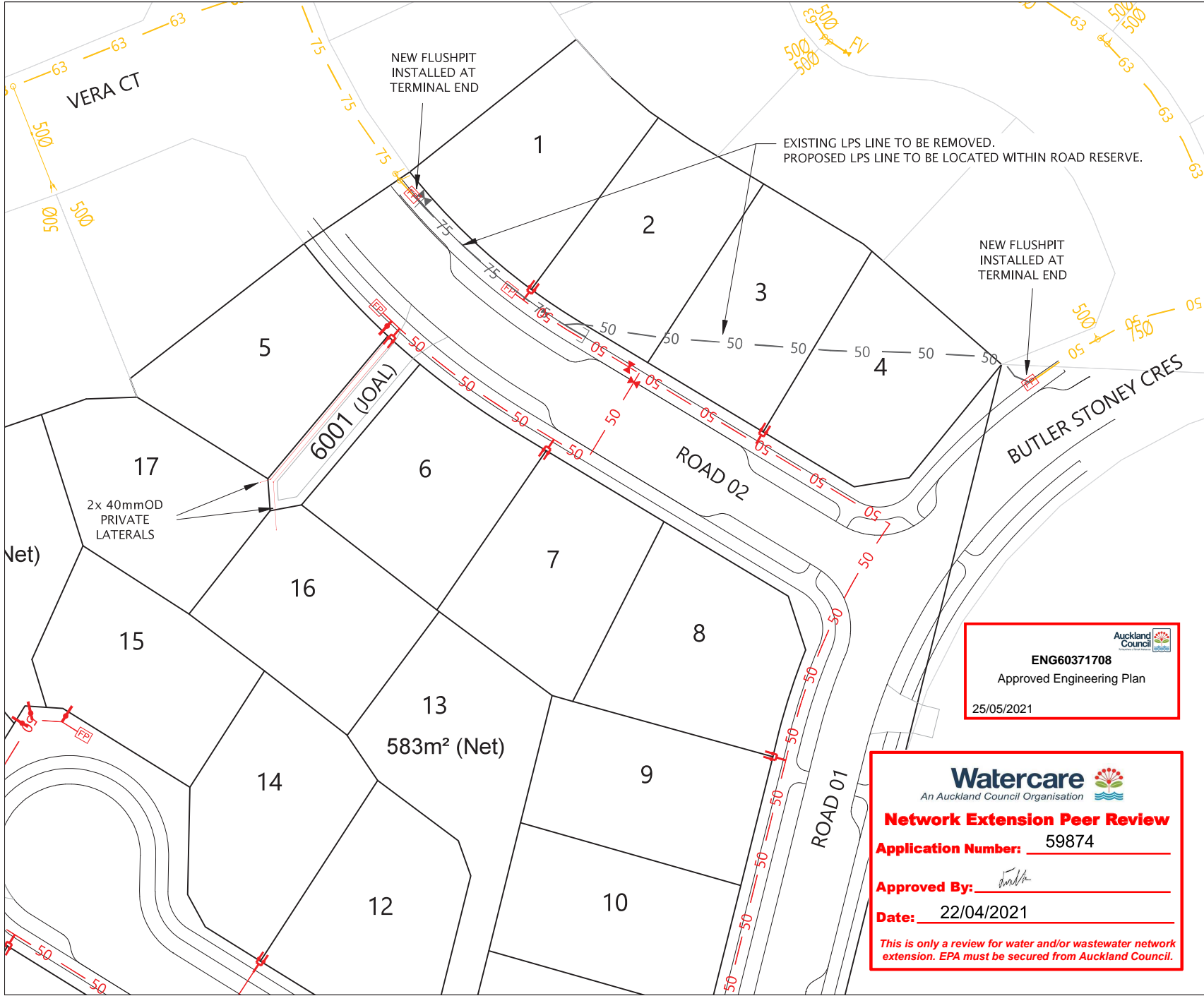


REVISION DETAILS	INT	DATE	SURVEYED		25 BANKSIDE ROAD SILVERDALE
1 FOR TENDER	MRB	10/11/20	DESIGNED	MRB	WOODS.CO.NZ
2 FOR EPA	MRB	03/02/21	DRAWN	MRB	
3 LONGSECTIONS UPDATED	MRB	24/02/21	CHECKED	MRB	
			APPROVED	MRB	



**OREWA WEST - BARTLETT BLOCK**  
STORMWATER LONGSECTIONS  
SHEET 5 OF 5

STATUS	ISSUED FOR EPA	REV
SCALE	AS SHOWN	3
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-324-DR	



**LEGEND**

PROPOSED LPS LINE - 63mmOD	63	63
PROPOSED LPS LINE - 50mmOD	50	50
PROPOSED LPS LINE - 40mmOD		
EXISTING LPS LINE	50	50
EXISTING LPS LINE (TO BE REMOVED)	50	50
SITE BOUNDARY		
BOUNDARY KIT - DOUBLE		
BOUNDARY KIT - SINGLE		
FLUSH PIT	FP	
VALVE		

- NOTES**
1. ALL WORKS AND MATERIALS SHALL COMPLY WITH AUCKLAND COUNCIL STANDARDS FOR ENGINEERING DESIGN AND CONSTRUCTION. ANY AMBIGUITY BETWEEN THESE DRAWINGS AND COUNCIL STANDARDS ARE TO BE REFERRED TO ENGINEER FOR CLARIFICATION.
  2. ALL PIPE CROSSINGS UNDER ROADS TO BE HARDFILL BACKFILLED.
  3. ALL LOW PRESSURE SANITARY SEWER PIPES SHALL BE SDR 11, PE100 PN16.



REVISION DETAILS	BY	DATE
1 ISSUED FOR EPA	MRB	09/03/21

SURVEYED	WOODS	25 BANKSIDE ROAD
DESIGNED	MB	SILVERDALE
DRAWN	MRB	AUCKLAND
CHECKED	ME	
APPROVED	ME	WOODS.CO.NZ

Auckland Council

**ENG60371708**

Approved Engineering Plan

25/05/2021

**Watercare**  
An Auckland Council Organisation

**Network Extension Peer Review**

Application Number: 59874

Approved By: *Frank*

Date: 22/04/2021

*This is only a review for water and/or wastewater network extension. EPA must be secured from Auckland Council.*

N

**WFH**  
PROPERTIES

**MILLWATER**  
25 BANKSIDE ROAD

WASTEWATER DRAINAGE LAYOUT PLAN  
SHEET 1

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-401-DR	

Document No. C:\1205\NEBREV\DATA\WAWE-EN-APP-01\37050-401\37050-401-DR - WASTEWATER DRAINAGE LAYOUT PLAN.DWG



**ENG6037108**  
**Approved Engineering Plan**  
 25/05/2021

**LEGEND**

PROPOSED LPS LINE - 63mmOD	63	63
PROPOSED LPS LINE - 50mmOD	50	50
PROPOSED LPS LINE - 40mmOD		
EXISTING LPS LINE	50	50
EXISTING LPS LINE (TO BE REMOVED)	50	50
SITE BOUNDARY		
BOUNDARY KIT - DOUBLE		
BOUNDARY KIT - SINGLE		
FLUSH FIT		FP
VALVE		

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SCALEBAR (m) 0 5 10 25  
 SCALE | 1:500 @A3 | 1:250 @A1

REVISION DETAILS	BY	DATE
1 ISSUED FOR EPA	MRB	03/03/21

SURVEYED	WOODS	25 BANKSIDE ROAD
DESIGNED	MB	SILVERDALE
DRAWN	MRB	AUCKLAND
CHECKED	ME	
APPROVED	ME	WOODS.CO.NZ



**MILLWATER**  
**25 BANKSIDE ROAD**  
**WASTEWATER DRAINAGE LAYOUT PLAN SHEET 2**

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-402-DR	

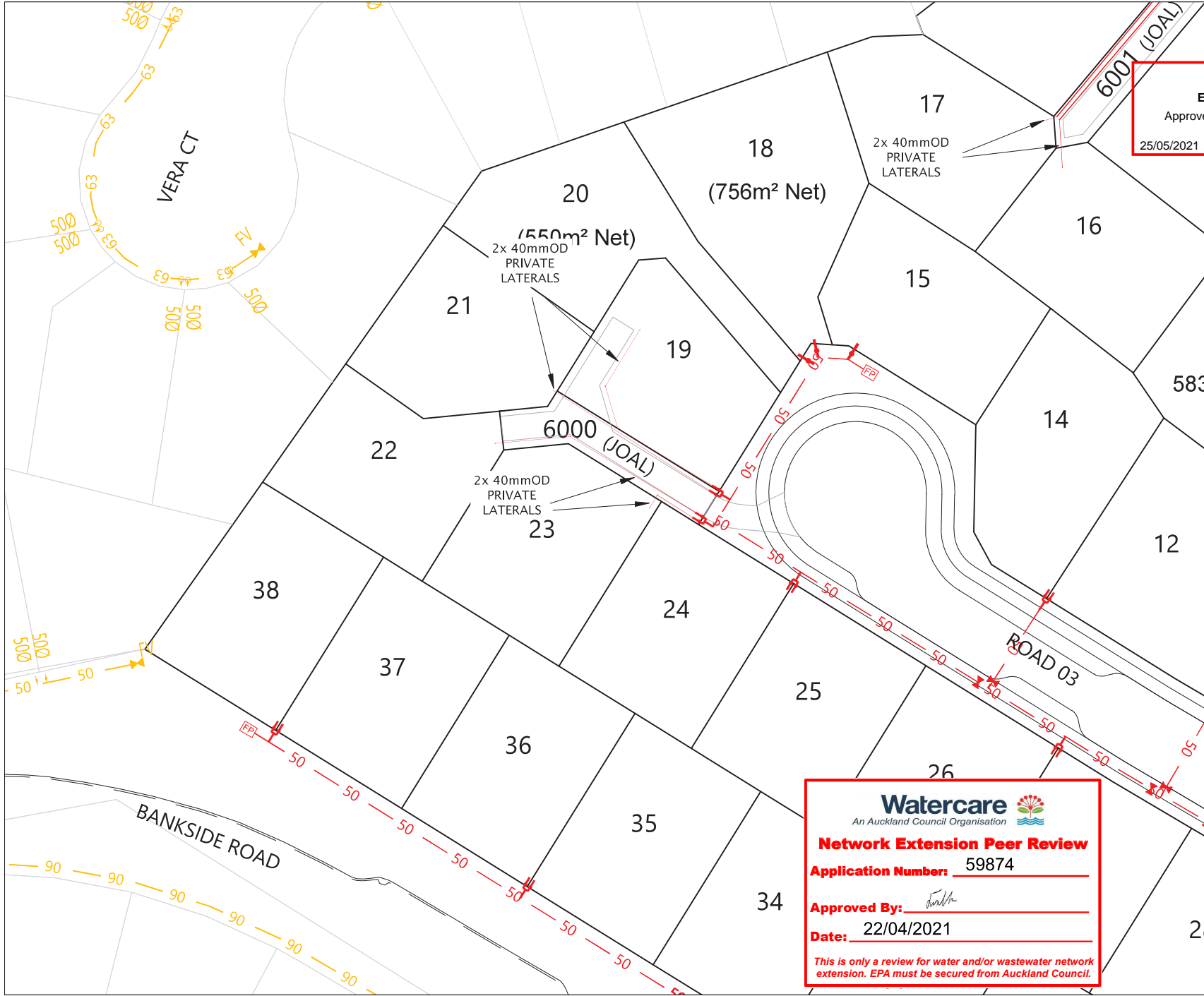
**Watercare**  
 An Auckland Council Organisation

**Network Extension Peer Review**  
**Application Number: 59874**

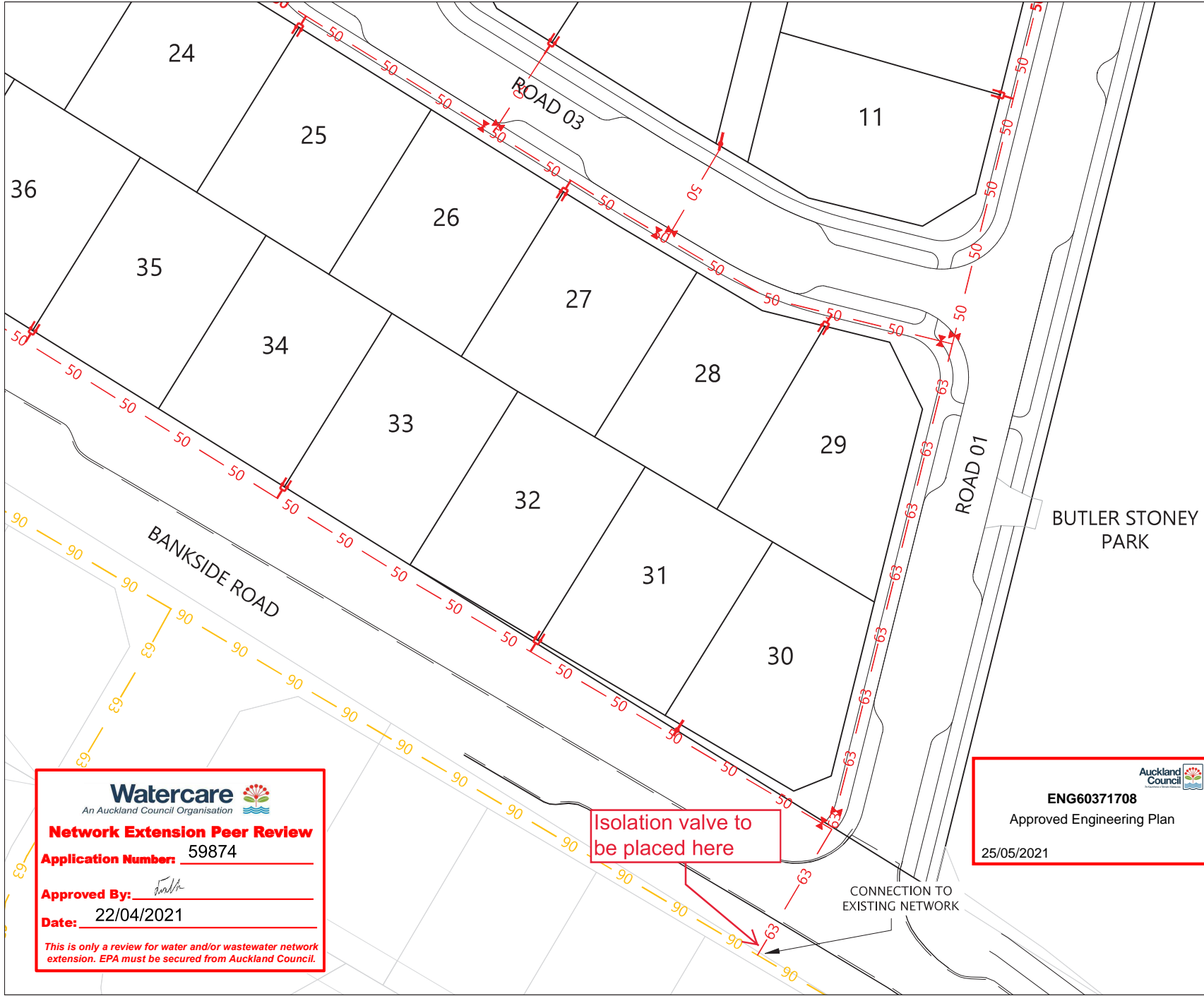
**Approved By:** *[Signature]*

**Date: 22/04/2021**

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Document No. C:\1205\REV\DATA\WPA-EN-APP\4137050 - BARTLET BLOCK\_3\9\CAD\ENG\37050-402-DR - WASTEWATER DRAINAGE LAYOUT PLAN.DWG



**LEGEND**

PROPOSED LPS LINE - 63mmOD	63	63
PROPOSED LPS LINE - 50mmOD	50	50
PROPOSED LPS LINE - 40mmOD		
EXISTING LPS LINE	50	50
EXISTING LPS LINE (TO BE REMOVED)	50	50
SITE BOUNDARY		
BOUNDARY KIT - DOUBLE		
BOUNDARY KIT - SINGLE		
FLUSH FIT		FP
VALVE		

- NOTES**
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REVISION DETAILS	BY	DATE
1 ISSUED FOR EPA	MRB	03/03/21

SURVEYED	WOODS	25 BANKSIDE ROAD
DESIGNED	MB	SILVERDALE
DRAWN	MRB	AUCKLAND
CHECKED	ME	
APPROVED	ME	WOODS.CO.NZ



**Watercare**  
An Auckland Council Organisation

**Network Extension Peer Review**  
Application Number: 59874

Approved By: *[Signature]*  
Date: 22/04/2021

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**ENG60371708**  
Approved Engineering Plan  
25/05/2021

**MILLWATER**  
**25 BANKSIDE ROAD**  
WASTEWATER DRAINAGE LAYOUT  
PLAN  
SHEET 3

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-403-DR	

Document No. C:\1205\NERR\DATA\WA-EN-APP\137050 - BARTLET BLOCK\_37050\CAD\ENG\37050-403-DR - WASTEWATER DRAINAGE LAYOUT PLAN.DWG

**Network Extension Peer Review**

**Application Number:** 59874

**Approved By:** *[Signature]*

**Date:** 22/04/2021

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**ENG60371708**

Approved Engineering Plan

25/05/2021

**LEGEND**

<b>PROPOSED WATERMAIN</b>	
50mm	
100mm	
200mm	
<b>EXISTING WATERMAIN</b>	
50mm	
100mm	
150mm	

SLUCE VALVE	
PEET VALVE	
FIRE HYDRANT	
BLANK CAP	
WATER METER	
WATER METER BANK	
LOT CONNECTION	
SITE BOUNDARY	

SCALEBAR (m) 0 5 10 SCALE | 1:500 @A3 | 1:250 @A1 | 25

REVISION DETAILS	BY	DATE
1 FOR EPA	MRB	11/01/21
2 NOTE ADDED	MRB	22/04/21

SURVEYED	WOODS	25 BANKSIDE ROAD SILVERDALE AUCKLAND
DESIGNED	MB	
DRAWN	MRB	
CHECKED	MS	
APPROVED	MS	WOODS.CO.NZ



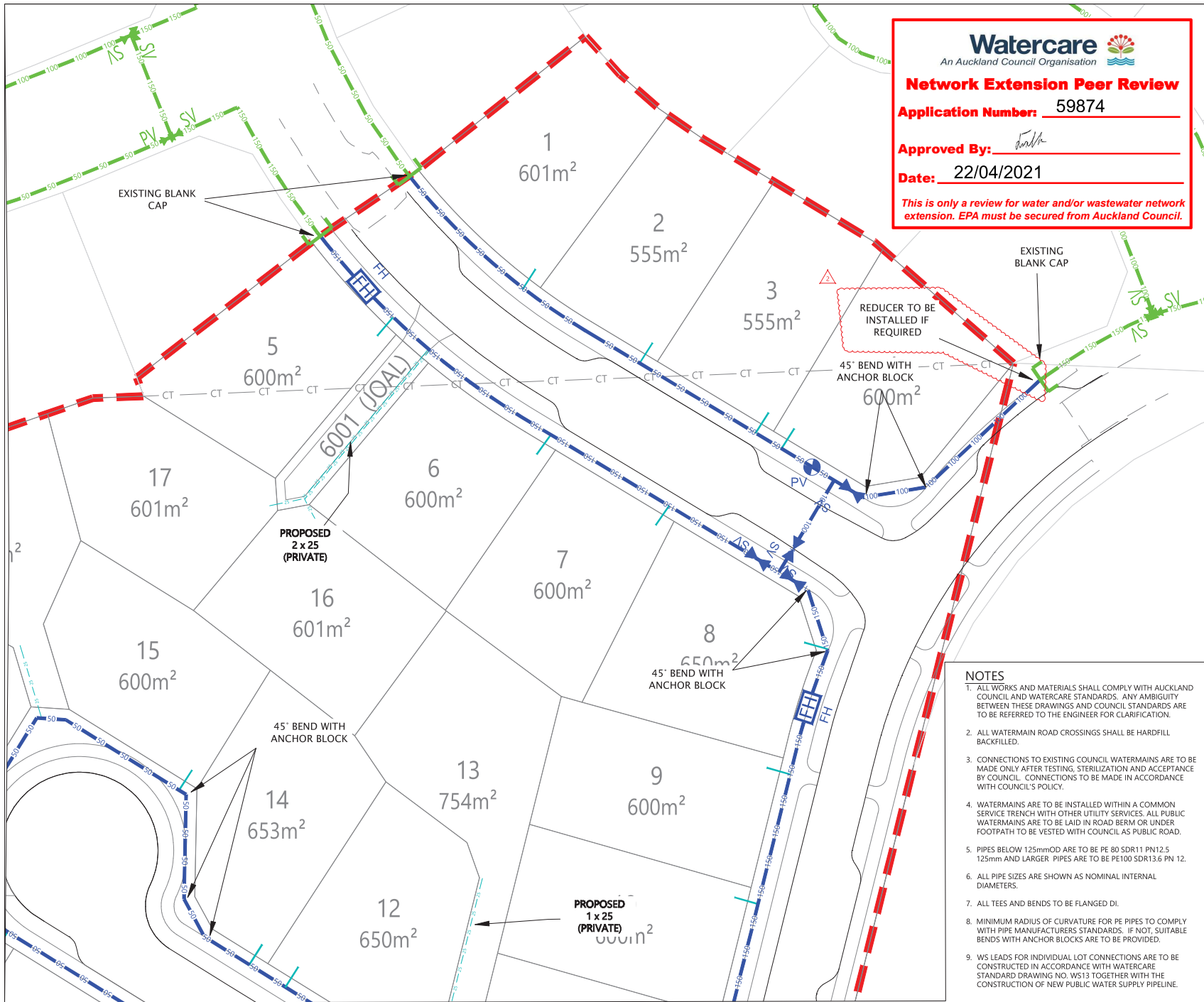
**MILLWATER  
25 BANKSIDE ROAD**

**WATER RETICULATION  
PLAN  
SHEET 2 OF 4**

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	2
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-601-WR	

**NOTES**

1. ALL WORKS AND MATERIALS SHALL COMPLY WITH AUCKLAND COUNCIL AND WATERCARE STANDARDS. ANY AMBIGUITY BETWEEN THESE DRAWINGS AND COUNCIL STANDARDS ARE TO BE REFERRED TO THE ENGINEER FOR CLARIFICATION.
2. ALL WATERMAIN ROAD CROSSINGS SHALL BE HARDFILL BACKFILLED.
3. CONNECTIONS TO EXISTING COUNCIL WATERMAINS ARE TO BE MADE ONLY AFTER TESTING, STERILIZATION AND ACCEPTANCE BY COUNCIL. CONNECTIONS TO BE MADE IN ACCORDANCE WITH COUNCIL'S POLICY.
4. WATERMAINS ARE TO BE INSTALLED WITHIN A COMMON SERVICE TRENCH WITH OTHER UTILITY SERVICES. ALL PUBLIC WATERMAINS ARE TO BE LAID IN ROAD BERM OR UNDER FOOTPATH TO BE VESTED WITH COUNCIL AS PUBLIC ROAD.
5. PIPES BELOW 125mmOD ARE TO BE PE 80 SDR11 PN12.5 125mm AND LARGER PIPES ARE TO BE PE100 SDR13.6 PN 12.
6. ALL PIPE SIZES ARE SHOWN AS NOMINAL INTERNAL DIAMETERS.
7. ALL TEES AND BENDS TO BE FLANGED DI.
8. MINIMUM RADIUS OF CURVATURE FOR PE PIPES TO COMPLY WITH PIPE MANUFACTURERS STANDARDS. IF NOT, SUITABLE BENDS WITH ANCHOR BLOCKS ARE TO BE PROVIDED.
9. WS LEADS FOR INDIVIDUAL LOT CONNECTIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH WATERCARE STANDARD DRAWING NO. WS13 TOGETHER WITH THE CONSTRUCTION OF NEW PUBLIC WATER SUPPLY PIPELINE.



**Network Extension Peer Review**

Application Number: 59874

Approved By: [Signature]

Date: 22/04/2021

*This is only a review for water and/or wastewater network extension. EPA must be secured from Auckland Council.*

**ENG60371708**

Approved Engineering Plan

25/05/2021

**LEGEND**

PROPOSED WATERMAIN	
50mm	
100mm	
200mm	
EXISTING WATERMAIN	
50mm	
100mm	
150mm	

SLUCE VALVE		SV
PEET VALVE		PV
FIRE HYDRANT		FH
BLANK CAP		B/C
WATER METER		M
WATER METER BANK		WMB
LOT CONNECTION		
SITE BOUNDARY		



REVISION DETAILS	BY	DATE
1 FOR EPA	MRB	11/01/21

SURVEYED	WOODS	25 BANKSIDE ROAD
DESIGNED	MB	SILVERDALE
DRAWN	MRB	AUCKLAND
CHECKED	MCS	
APPROVED	MCS	WOODS.CO.NZ



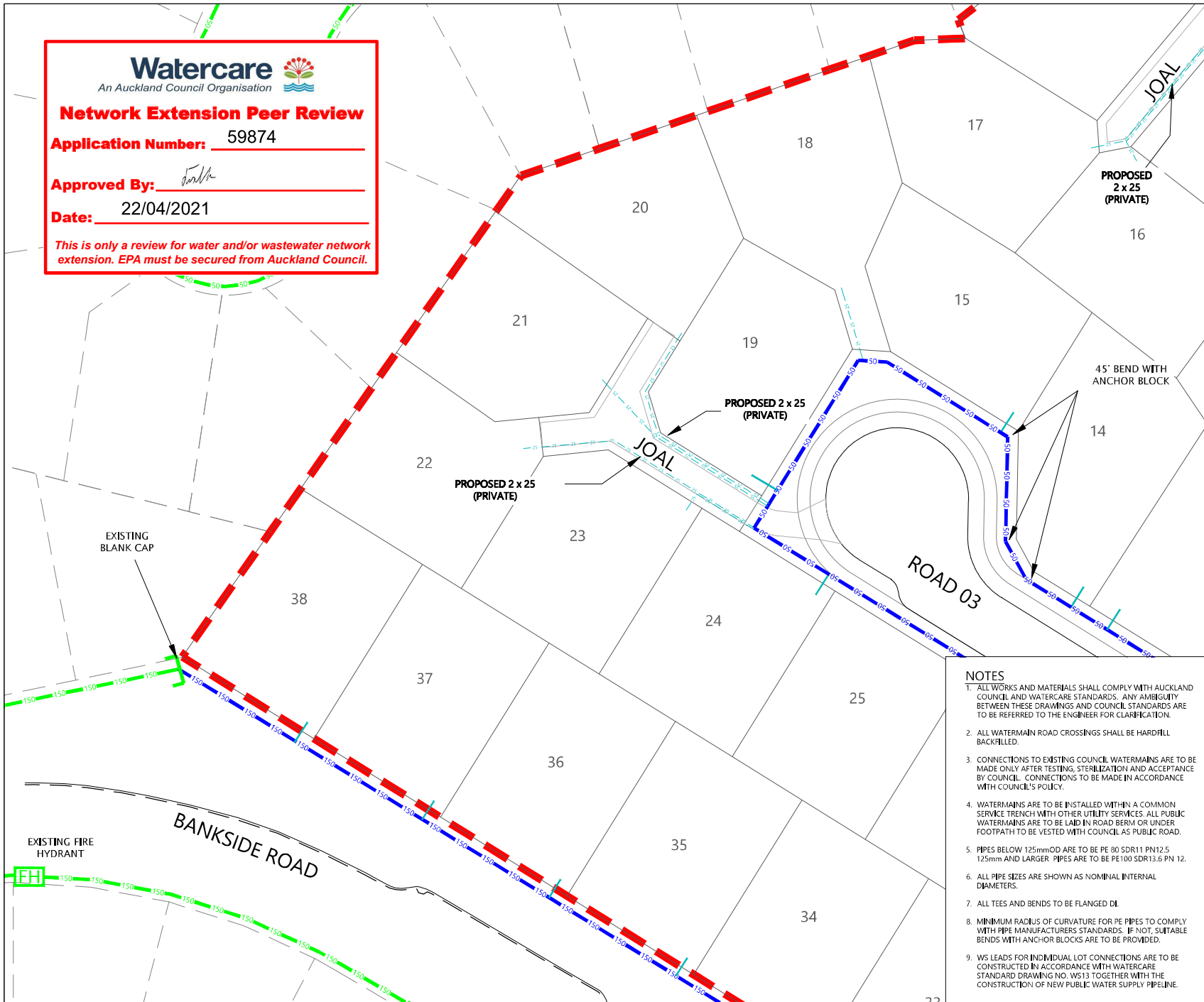
**MILLWATER  
25 BANKSIDE ROAD**

**WATER RETICULATION  
PLAN  
SHEET 3 OF 4**

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-602-WR	

**NOTES**

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**LEGEND**

<b>PROPOSED WATERMAIN</b>	
50mm	
100mm	
200mm	
<b>EXISTING WATERMAIN</b>	
50mm	
100mm	
150mm	

SLUCE VALVE		SV
PEET VALVE		PV
FIRE HYDRANT		FH
BLANK CAP		B/C
WATER METER		M
WATER METER BANK		WMB
LOT CONNECTION		
SITE BOUNDARY		



REVISION DETAILS	BY	DATE
1 FOR EPA	MRB	11/01/21

SURVEYED	WOODS	25 BANKSIDE ROAD
DESIGNED	MB	SILVERDALE
DRAWN	MRB	AUCKLAND
CHECKED	MCS	
APPROVED	MCS	WOODS.CO.NZ

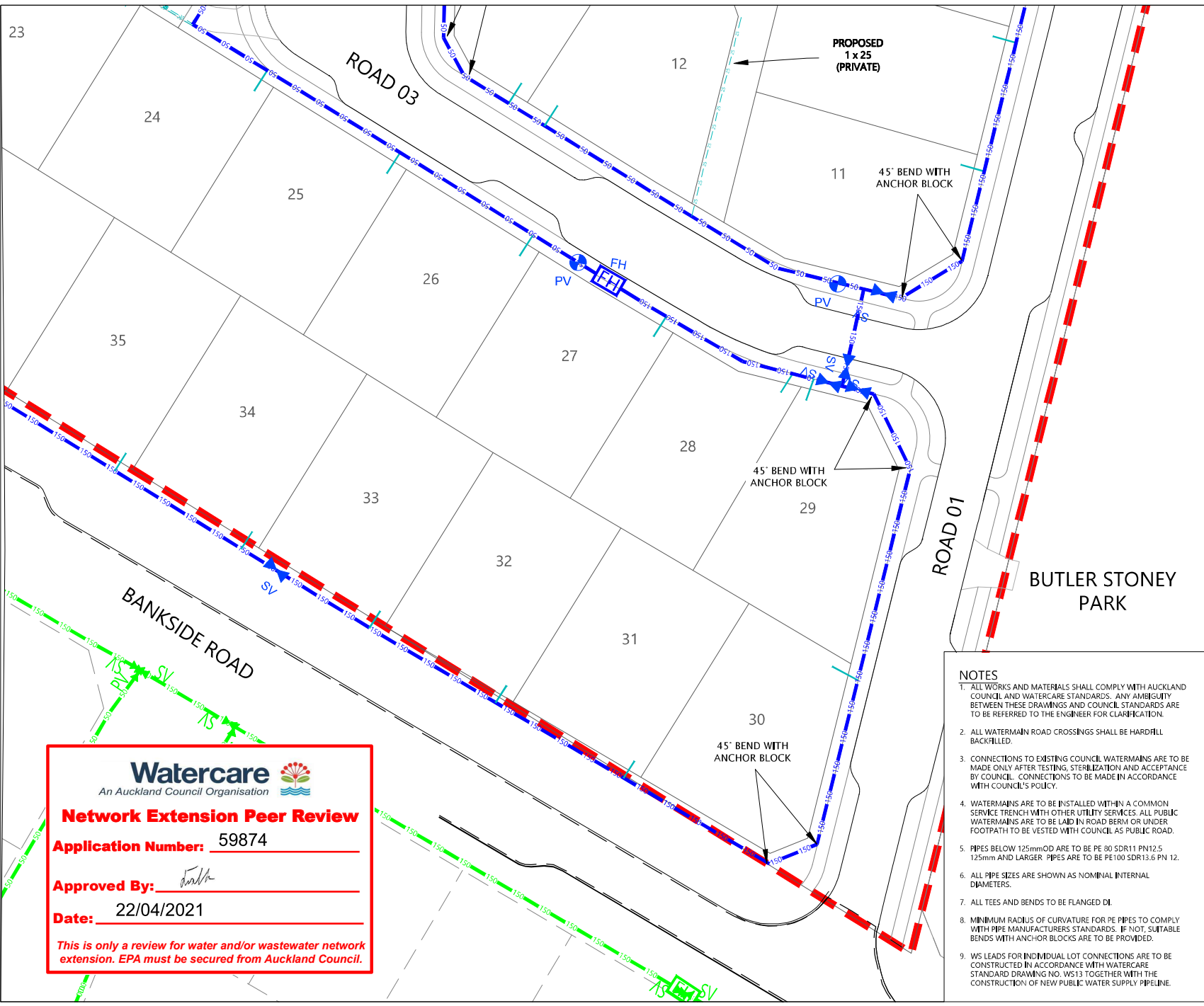


**MILLWATER**  
**25 BANKSIDE ROAD**

**WATER RETICULATION**  
**PLAN**  
**SHEET 4 OF 4**

STATUS	ISSUED FOR EPA	REV
SCALE	1:500 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	37050-603-WR	

- NOTES**
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**Watercare**  
 An Auckland Council Organisation

**Network Extension Peer Review**

**Application Number:** 59874

**Approved By:** *[Signature]*

**Date:** 22/04/2021

*This is only a review for water and/or wastewater network extension. EPA must be secured from Auckland Council.*

**Parks Planning Endorsement**  
 No.: ENG60371708  
 Date: 28.04.2021  
 Name: Ash Richards  
 Note: This endorsement does not constitute a formal approval of the application for Engineering Plan approval.

# STREETSCAPE TREE SCHEDULE




Botanical Name:	Common Name:	Grade:	Height at planting:	Mature heights:	Spacing:	Quantity:
Dysoxylum spectabile	Kohekohe	PB 150	2m	7m	As shown	5
Alectryon excelsus	Titoki	PB 150	2m	7m	As shown	7
Prunus awanui	Flowering Cherry	PB 150	1.8m	7m	As shown	13

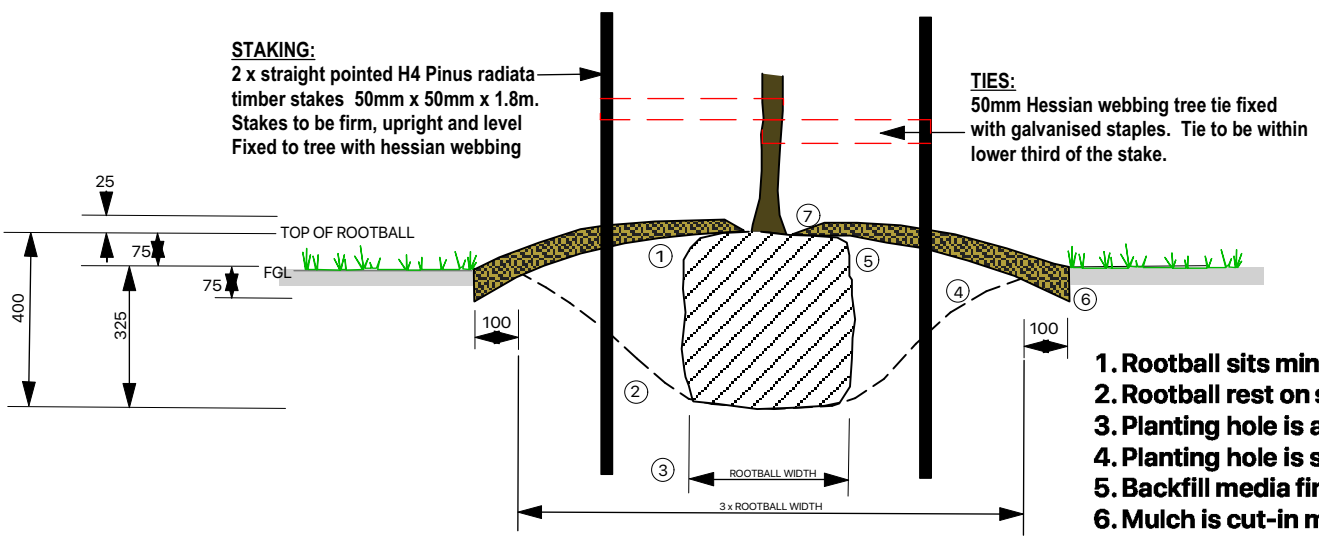
**AUCKLAND COUNCIL REQUIREMENT UNLESS INDICATED OTHERWISE ON THE DRAWINGS:**  
 Preparation and planting to be in accordance with THE AUCKLAND CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION - CHAPTER 7: GREEN ASSETS AND LANDSCAPING - NOV 2018

# PLANTING NOTES

All trees to be true to name and species. All substitutions to be approved by Landscape Architect.  
 All trees to be healthy and free of disease and/or injury at time of planting.  
 All trees to be planted to the same depth as growing in container.  
 All trees to be watered prior to planting.  
 All trees to be finished with 1.5m circle of 100mm layer of decorative mulch.  
 All trees to be double staked and tied.  
 All stakes to be stained black.  
 Tree numbers and locations indicated may vary. Final numbers will need to be confirmed on site prior to construction.

# TREE LEGEND

-  KOHEKOHE TREE
-  TITOKI TREE
-  PRUNUS TREES ( BUTLER STONEY CRES)



# AUCKLAND COUNCIL TYPICAL TREE PLANTING DETAIL



Auckland Council  
 ENG60371708  
 Approved Engineering Plan  
 25/05/2021

# STREET TREE PLAN

scale 1:1000

# RESIDENTIAL SUBDIVISION MILLWATER STREET TREE PLAN

ISSUE	DATE 16.2.21	REVISION B	PROJECT #
PROJECT	BARTLETT BLOCK - RESIDENTIAL SUBDIVISION		MWBT
CLIENT	WFH - MILLWATER	DATE # 16 FEB 2021	DWG #
DWG	STREET TREE PLAN	SCALE @ A3 1:1000	001
		DRAWN SJF	REVISION B
		CHKD MS	