

SHEET 3001-DR

SHEET 3002-DR

SHEET 3003-DR

TEMPORARY WASTEWATER  
TREATMENT PLANT

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

WAINUI ROAD

SUMMERSET  
RETIREMENT  
VILLAGE

MILLDALE PARK

MILLDALE  
SCHOOL

LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

NOTES

1. STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.
2. ALL WORKS AND MATERIALS TO COMPLY WITH AUCKLAND COUNCIL STANDARDS. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.
3. FOR PIPE BEDDING DETAILS REFER TO AUCKLAND COUNCIL STANDARD DETAIL SHEETS UNLESS OTHERWISE NOTED ON THE DRAINAGE LONG SECTIONS IN WHICH CASE SUCH NOTES TAKE PRECEDENCE.
4. ALL PIPE CROSSINGS UNDER ROADS TO BE HARDFILL BACKFILLED.
5. ALL MANHOLES ARE TO BE 1050mm DIA. UNLESS OTHERWISE NOTED ON THE DRAINAGE LONG SECTION IN WHICH CASE SUCH NOTES SHALL TAKE PRECEDENCE.
6. ALL CATCHPITS ARE TO BE STANDARD AT APPROVED RECESSED 800X500mm. UNLESS STATED OTHERWISE. ALL CATCHPIT LEADS TO BE 300mmØ CLASS 4 RCRRJ UNLESS STATED OTHERWISE.
7. ALL JOAL CATCHPIT TO BE FITTED WITH STORMWATER 360 LITTA TRAP FILTER
8. THE CONTRACTOR IS TO PEG MANHOLES AND CHECK FINISHED EARTHWORKS LEVELS (MH LID LEVELS) PRIOR TO ORDERING MANHOLES.
9. 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.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

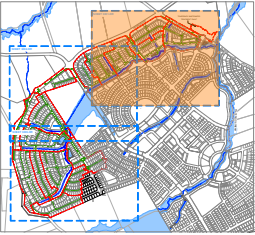
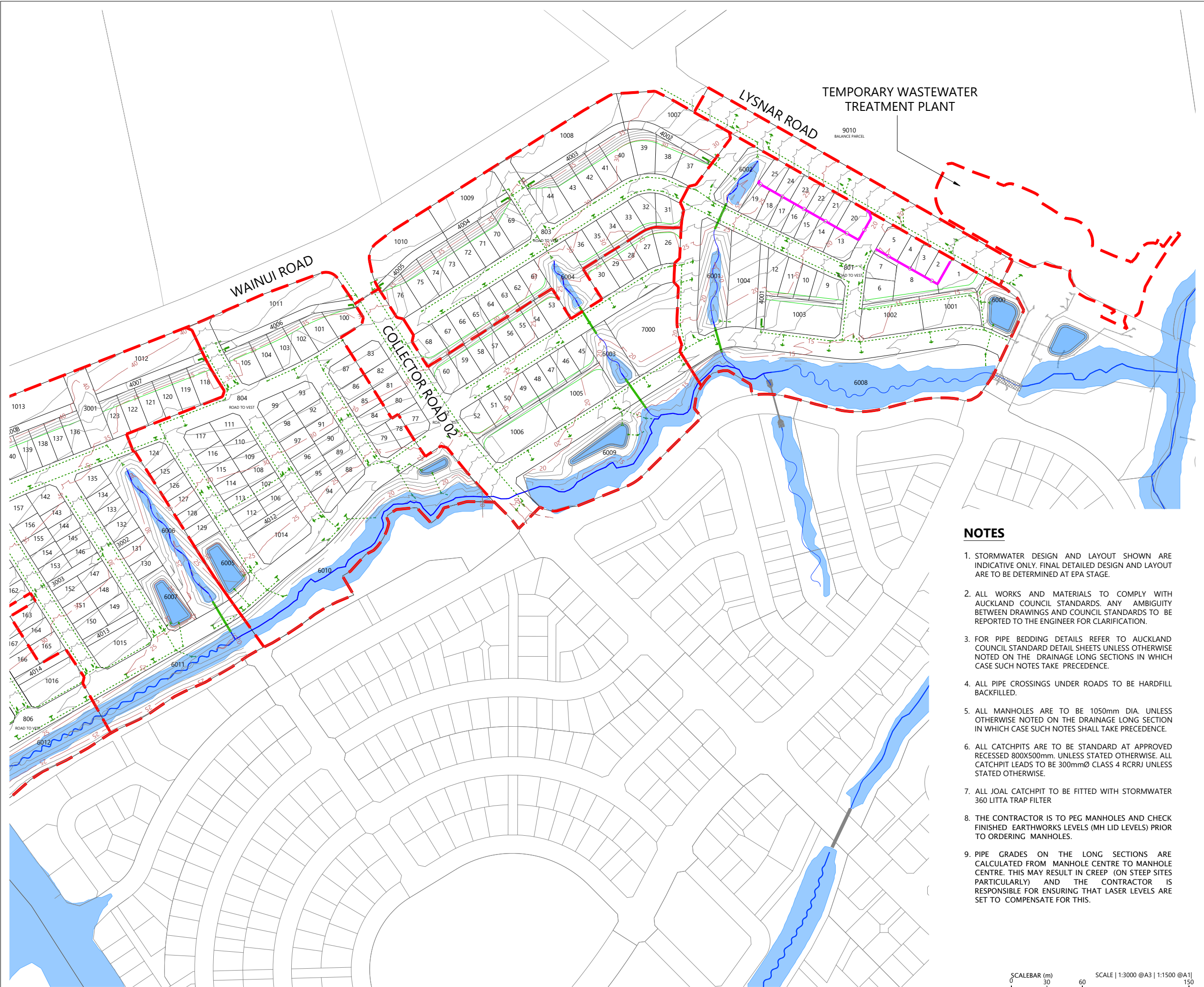
	
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MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRAINAGE  
LAYOUT OVERALL PLAN

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:6000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3000-DR	

SCALEBAR (m)  
0 60 1200  
SCALE | 1:6000 @A3 | 1:3000 @A1 | 300





LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

NOTES

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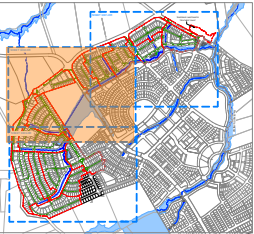
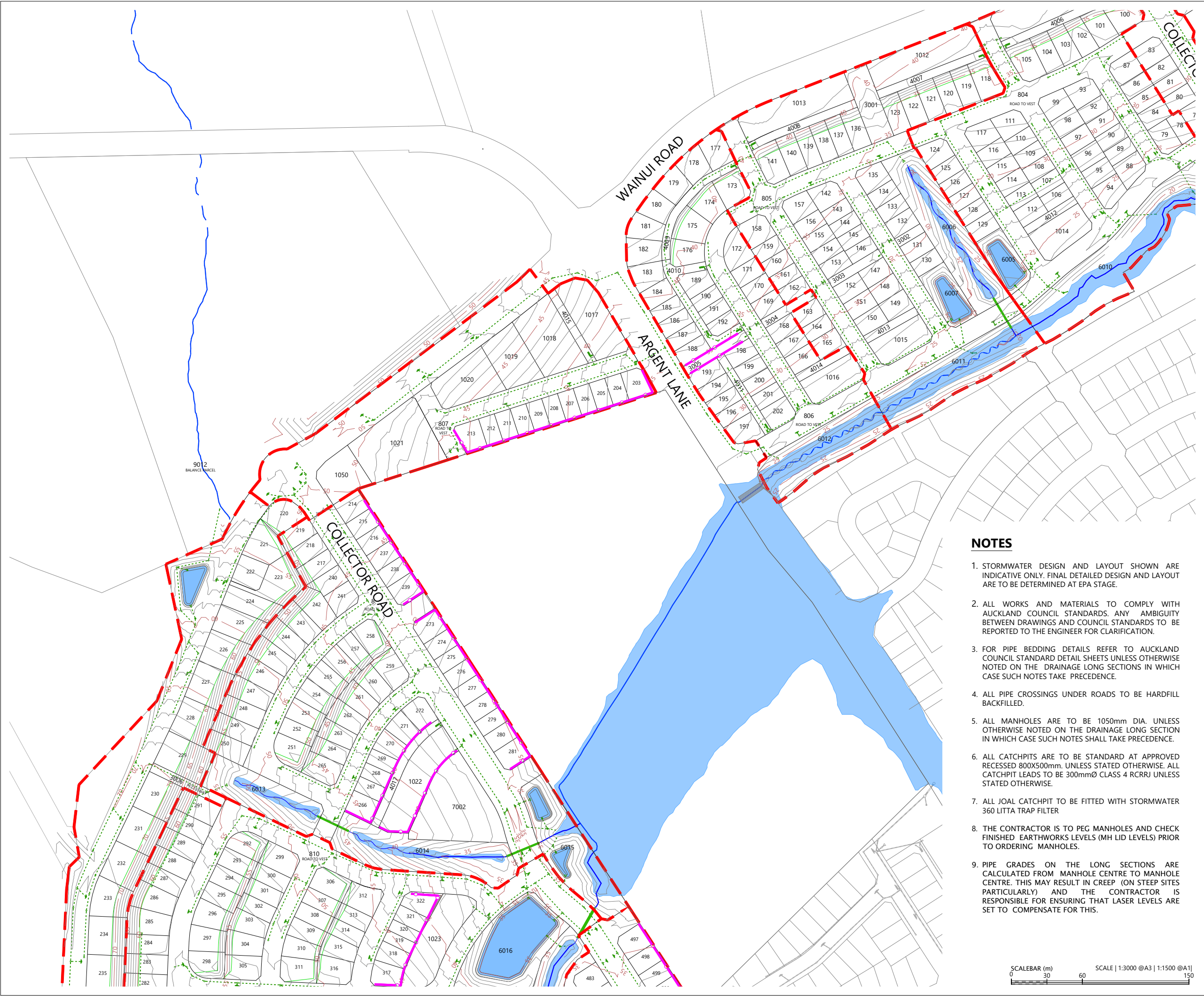
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	WOODS.CO.NZ
APPROVED	JW	

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRAINAGE  
LAYOUT PLAN  
SHEET 1

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3001-DR	





LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

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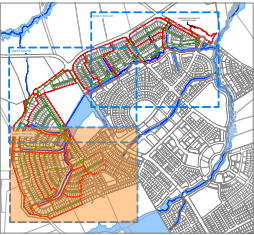
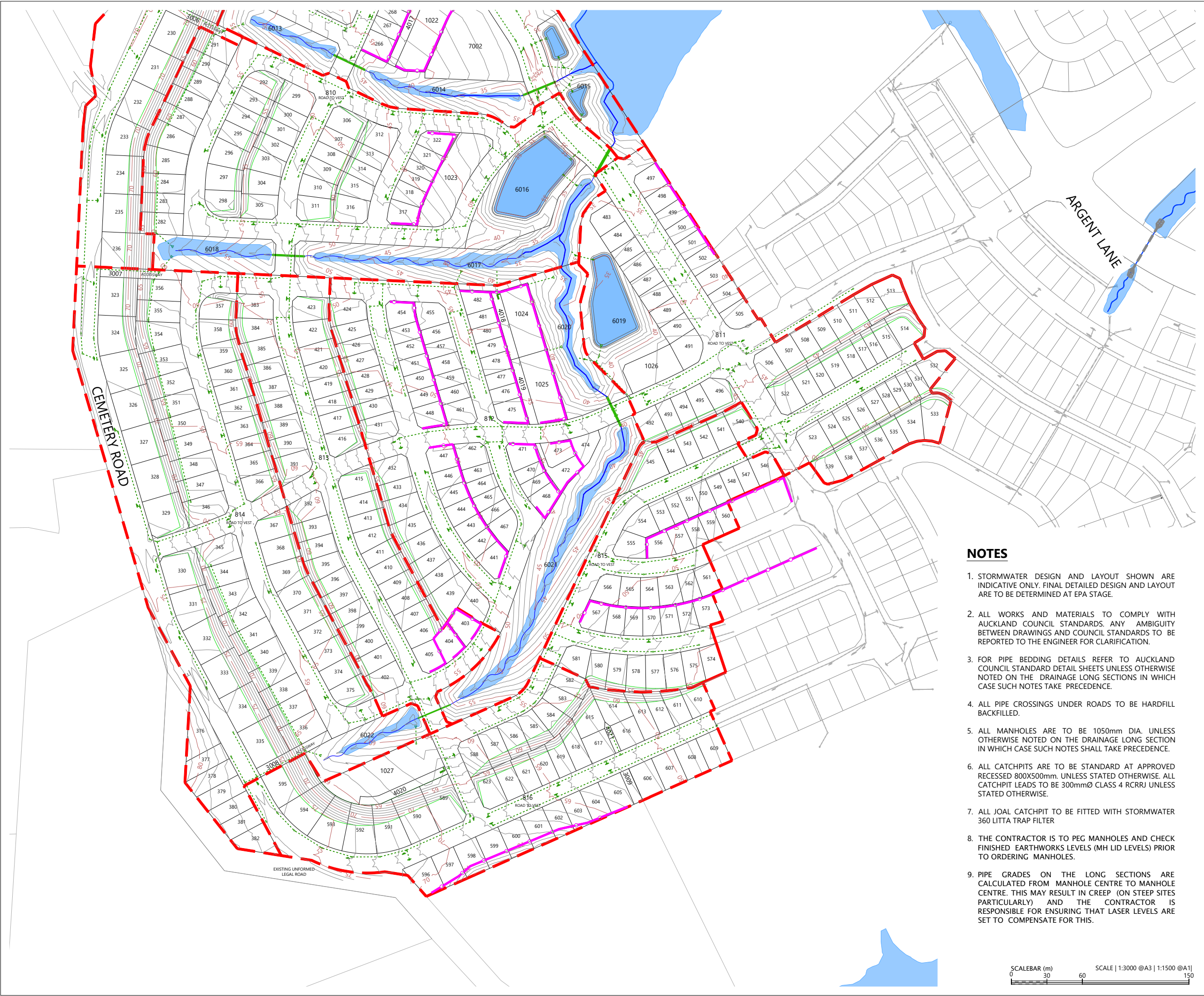
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRAINAGE  
LAYOUT PLAN  
SHEET 2

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3002-DR	





LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

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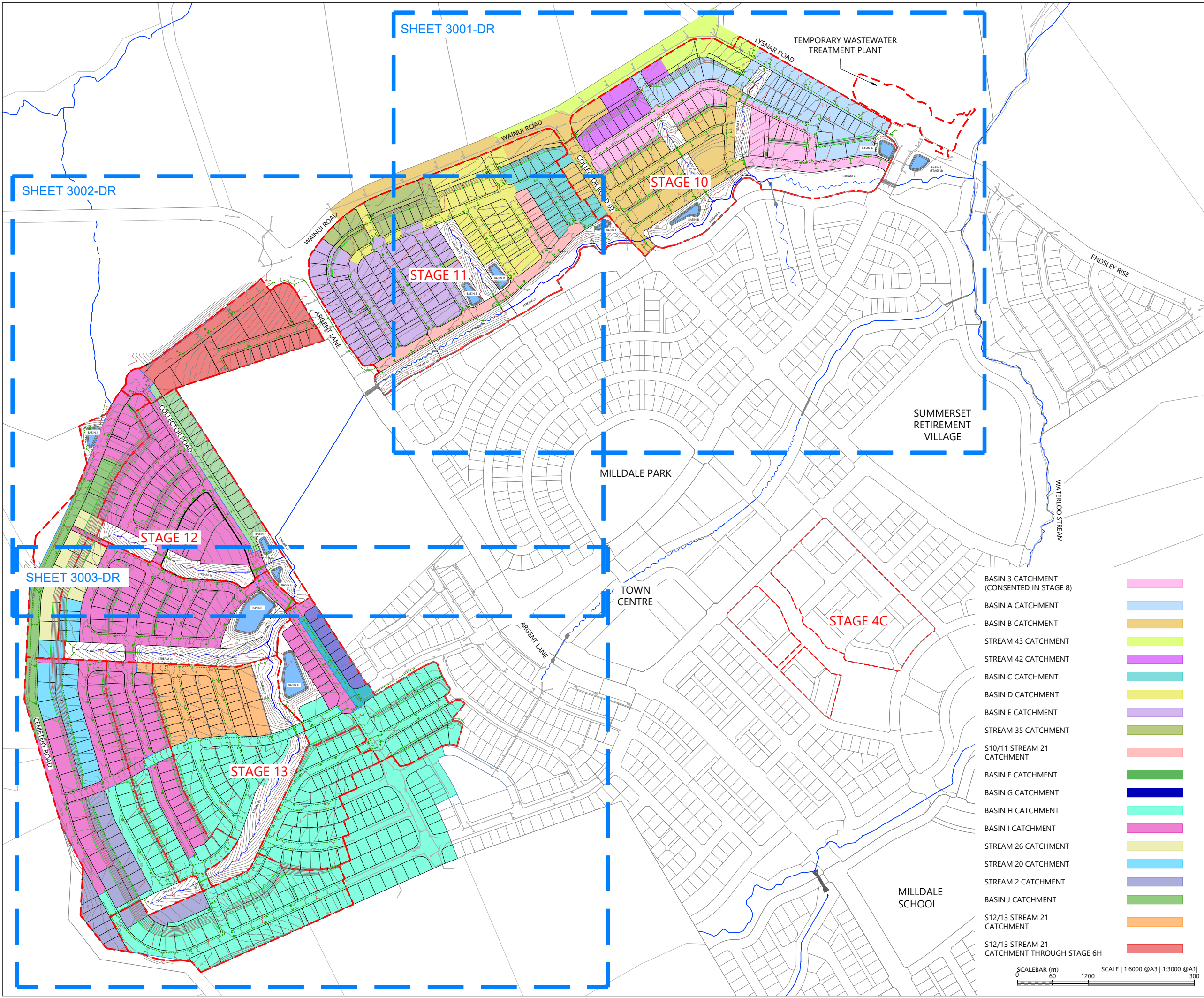
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRAINAGE  
LAYOUT PLAN  
SHEET 3

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3003-DR	





LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

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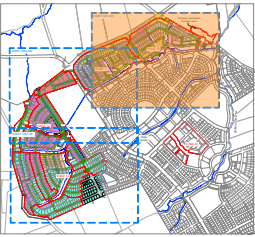
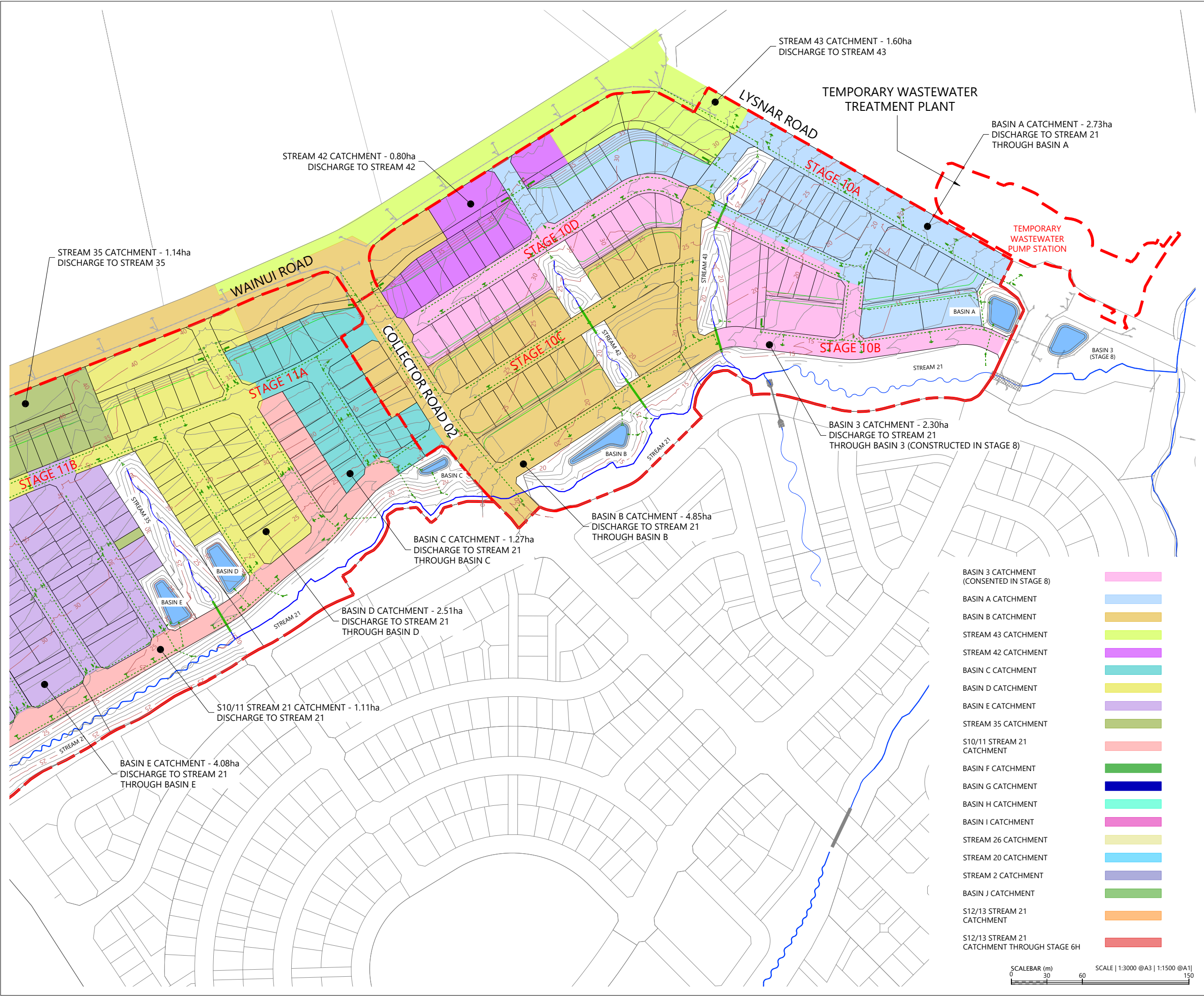
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER CATCHMENT  
OVERALL PLAN

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:6000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3010-DR	





LOCALITY PLAN  
N.T.S



**LEGEND**

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

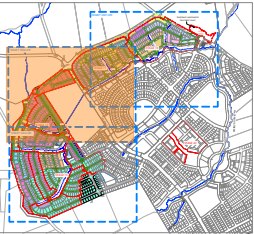
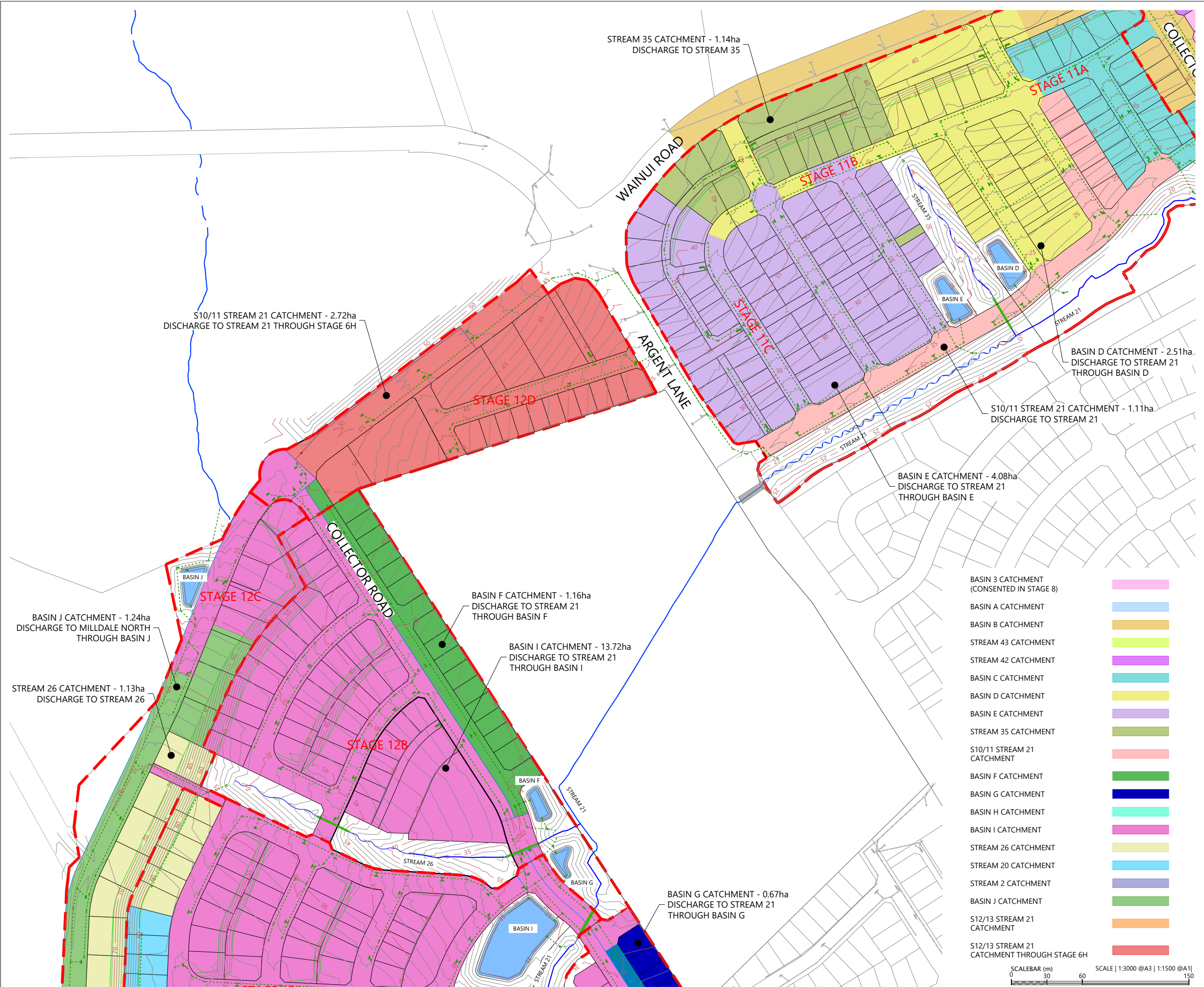
MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER CATCHMENT PLAN  
SHEET 1

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3011-DR	

- BASIN 3 CATCHMENT (CONSENTED IN STAGE 8)
- BASIN A CATCHMENT
- BASIN B CATCHMENT
- STREAM 43 CATCHMENT
- STREAM 42 CATCHMENT
- BASIN C CATCHMENT
- BASIN D CATCHMENT
- BASIN E CATCHMENT
- STREAM 35 CATCHMENT
- S10/11 STREAM 21 CATCHMENT
- BASIN F CATCHMENT
- BASIN G CATCHMENT
- BASIN H CATCHMENT
- BASIN I CATCHMENT
- STREAM 26 CATCHMENT
- STREAM 20 CATCHMENT
- STREAM 2 CATCHMENT
- BASIN J CATCHMENT
- S12/13 STREAM 21 CATCHMENT
- S12/13 STREAM 21 CATCHMENT THROUGH STAGE 6H







LOCALITY PLAN  
N.T.S



**LEGEND**

- EXTENTS OF FAST TRACK APPLICATION ---
- BOUNDARIES ---
- WATERCOURSE (SUBJECT TO ECOLOGY) ---
- DESIGN CONTOURS (1m INTERVAL) --- 55.0 ---
- PROPOSED STORMWATER ---
- EXISTING STORMWATER ---
- OUTLET ●
- 100 YEAR FLOOD EXTENTS ---
- PROPOSED STORMWATER DRY BASIN ---

**NOTES**

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	

**MILLDALE  
FAST TRACK  
STAGES 10 - 13**

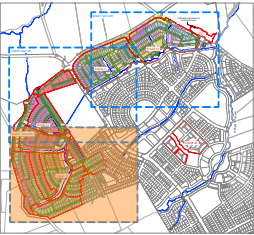
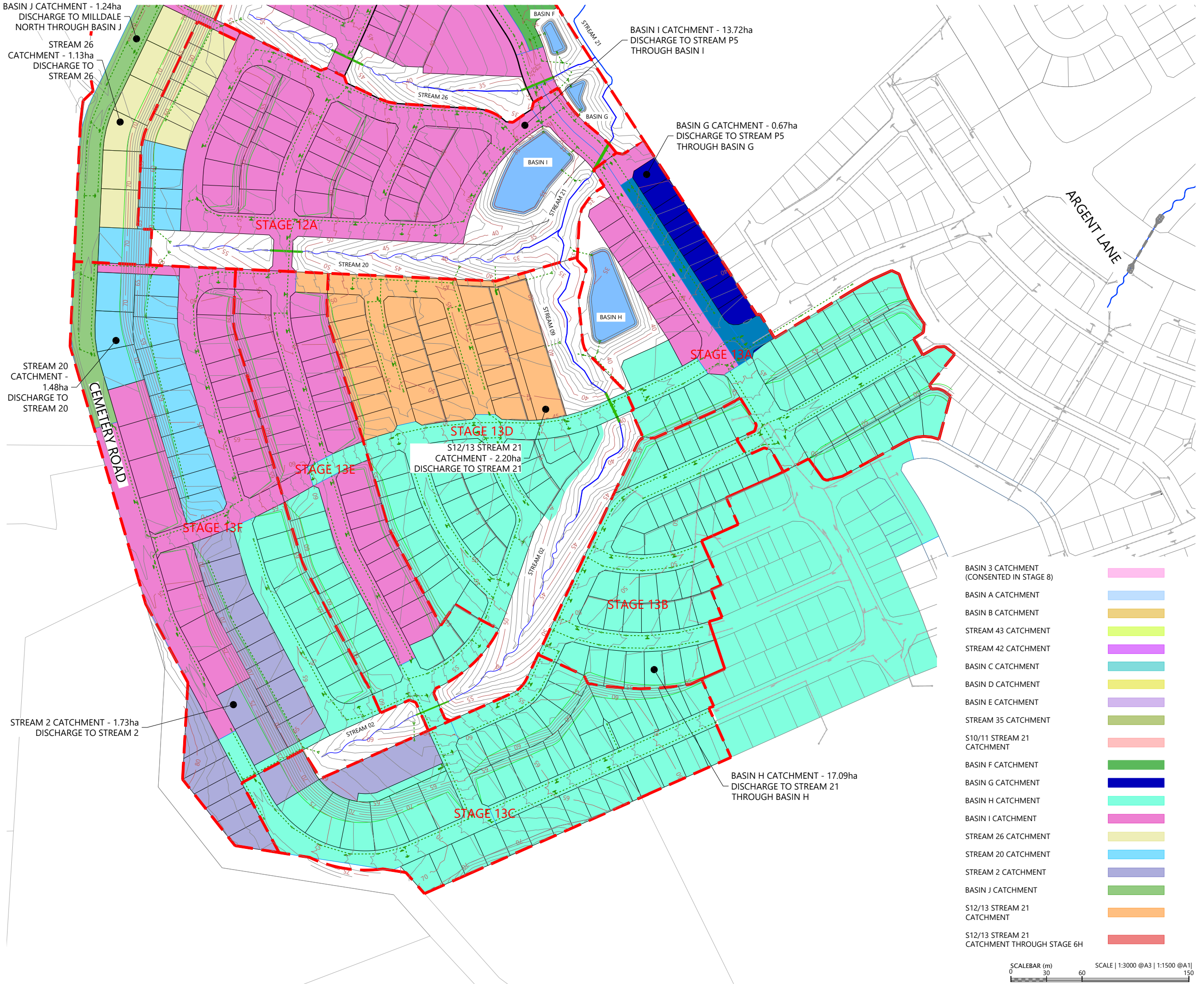
**STORMWATER CATCHMENT PLAN  
SHEET 2**

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3012-DR	

- BASIN 3 CATCHMENT (CONSENTED IN STAGE 8) ---
- BASIN A CATCHMENT ---
- BASIN B CATCHMENT ---
- STREAM 43 CATCHMENT ---
- STREAM 42 CATCHMENT ---
- BASIN C CATCHMENT ---
- BASIN D CATCHMENT ---
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- BASIN J CATCHMENT ---
- S12/13 STREAM 21 CATCHMENT ---
- S12/13 STREAM 21 CATCHMENT THROUGH STAGE 6H ---







LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
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- 100 YEAR FLOOD EXTENTS
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REVISION DETAILS		BY	DATE
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SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



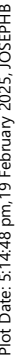
MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER CATCHMENT PLAN  
SHEET 3

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3013-DR	

- BASIN 3 CATCHMENT (CONSENTED IN STAGE 8)
- BASIN A CATCHMENT
- BASIN B CATCHMENT
- STREAM 43 CATCHMENT
- STREAM 42 CATCHMENT
- BASIN C CATCHMENT
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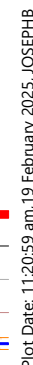
EXTENTS OF FAST TRACK APPLICATION		Plot Date: 5/14/88
LOT BOUNDARIES OF FAST TRACK APPLICATION		
DESIGN CONTOUR (1m)		
EXISTING CONTOUR (5m)		
STREAM PROPOSED		
STREAM RETAINED & ENHANCED		
PROPOSED CULVERT		
LOT OVERLAND FLOW		
ROAD OVERLAND FLOW		
ROAD CROSS FALL FLOW		

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3020-DR	





LOCAL ROAD SECTION A-A PARAMETERS

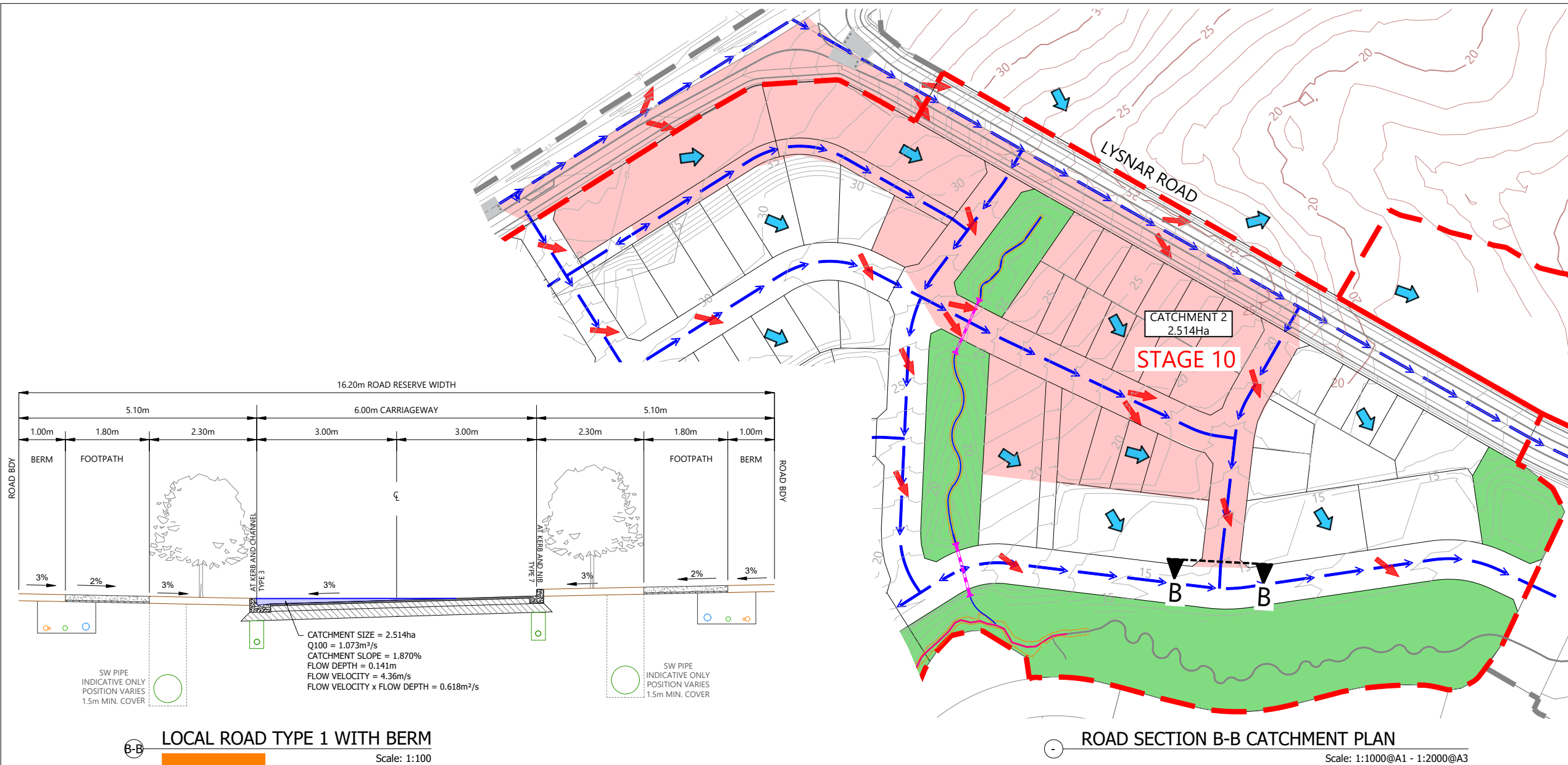
1. CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
2. CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
3. NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND  <b>WOODS.CO.NZ</b>
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	



STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3021-DR	





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
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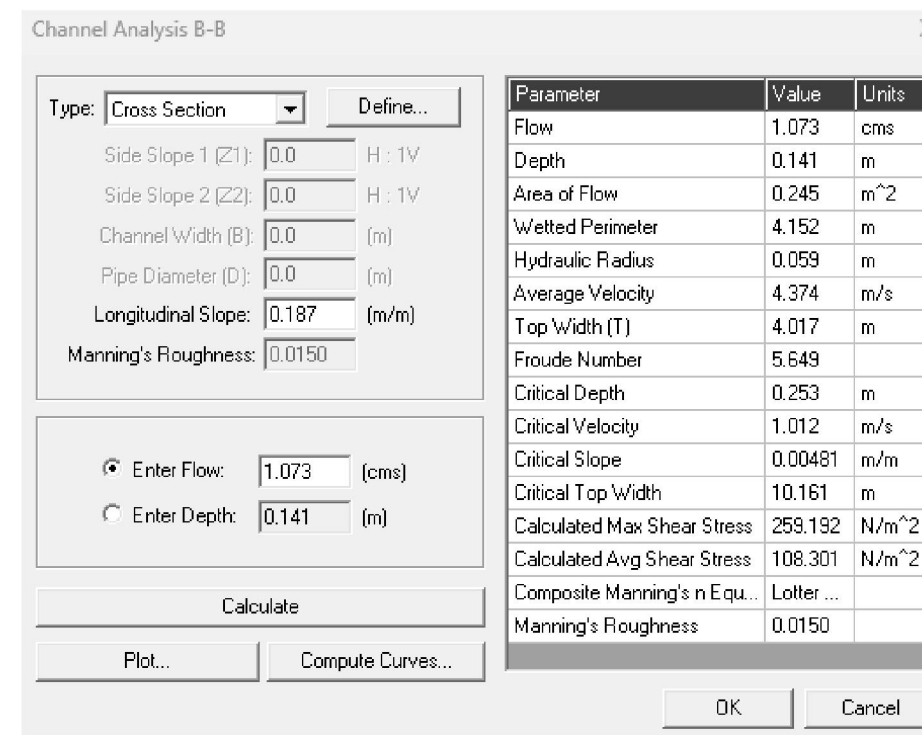
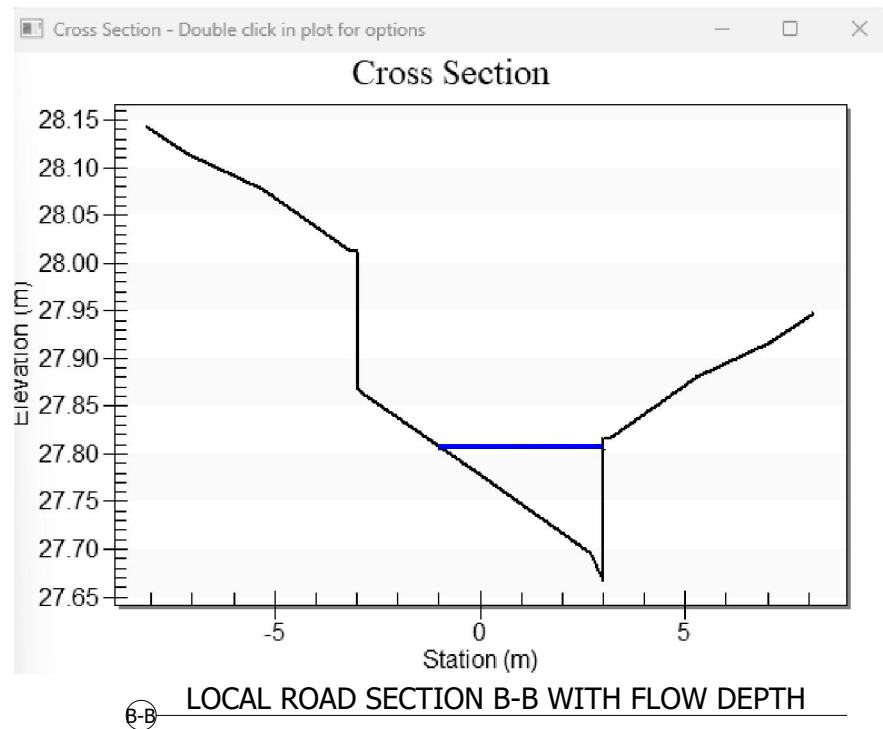
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND <a href="http://WOODS.CO.NZ">WOODS.CO.NZ</a>
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	



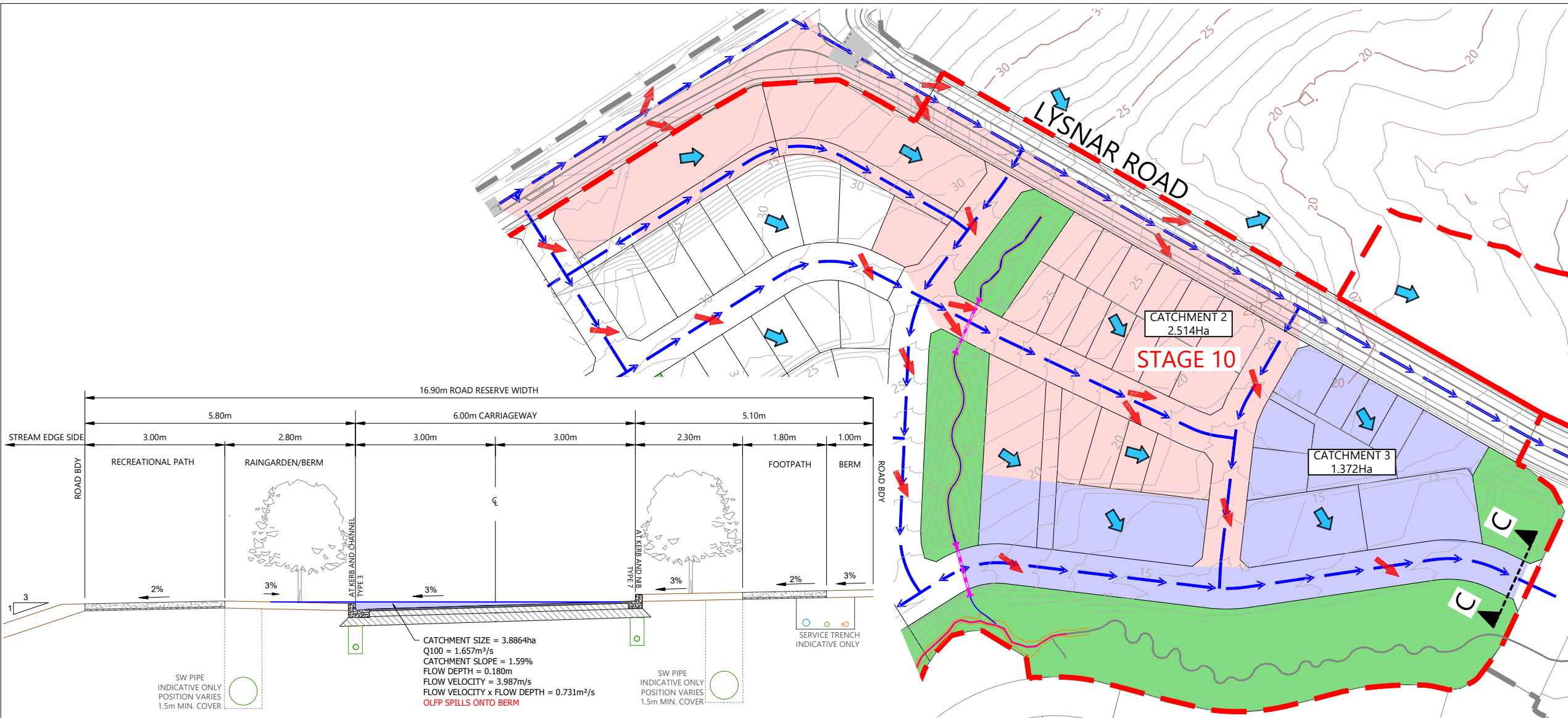
MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 2

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3022-DR	



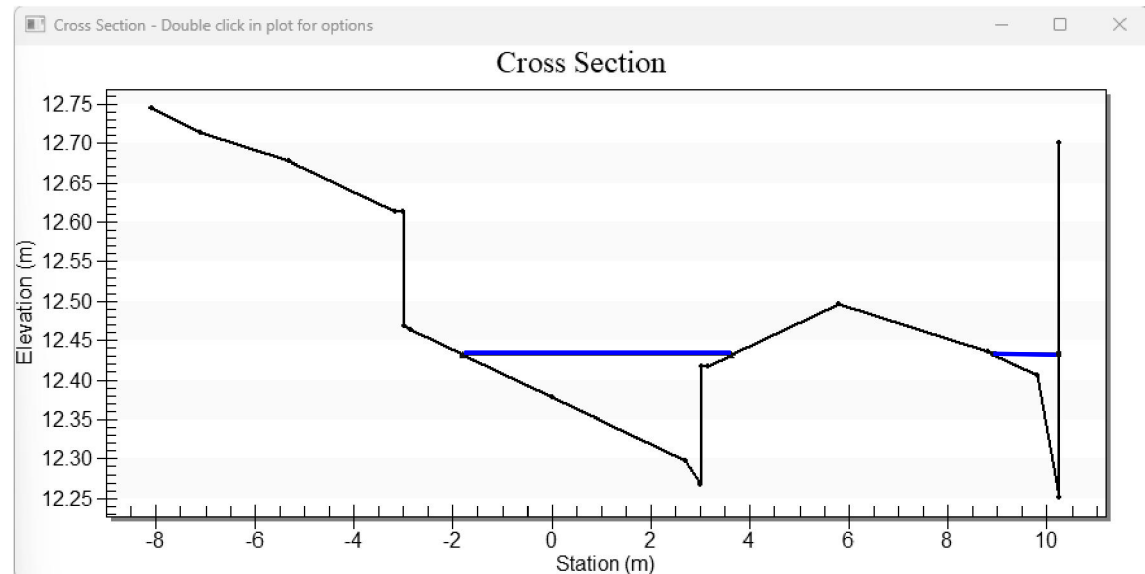
LOCAL ROAD SECTION B-B PARAMETERS



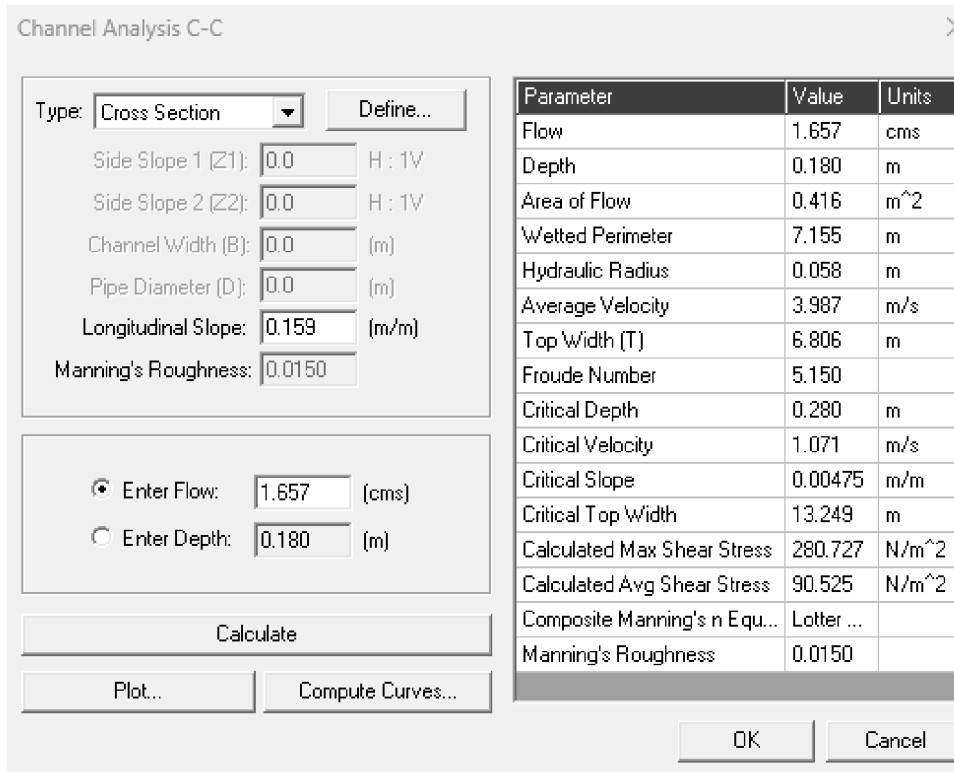


STREAM EDGE ROAD WITH RECREATIONAL PATH AND BERM/RAINGARDEN  
Scale: 1:100

ROAD SECTION C-C COMBINED CATCHMENT PLAN  
Scale: 1:1000@A1 - 1:2000@A3



LOCAL ROAD SECTION C-C WITH FLOW DEPTH



LOCAL ROAD SECTION C-C PARAMETERS

LEGEND:

- EXTENTS OF FAST TRACK APPLICATION
- LOT BOUNDARIES OF FAST TRACK APPLICATION
- DESIGN CONTOUR (1m)
- EXISTING CONTOUR (5m)
- STREAM PROPOSED
- STREAM RETAINED & ENHANCED
- PROPOSED CULVERT
- LOT OVERLAND FLOW
- ROAD OVERLAND FLOW
- ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

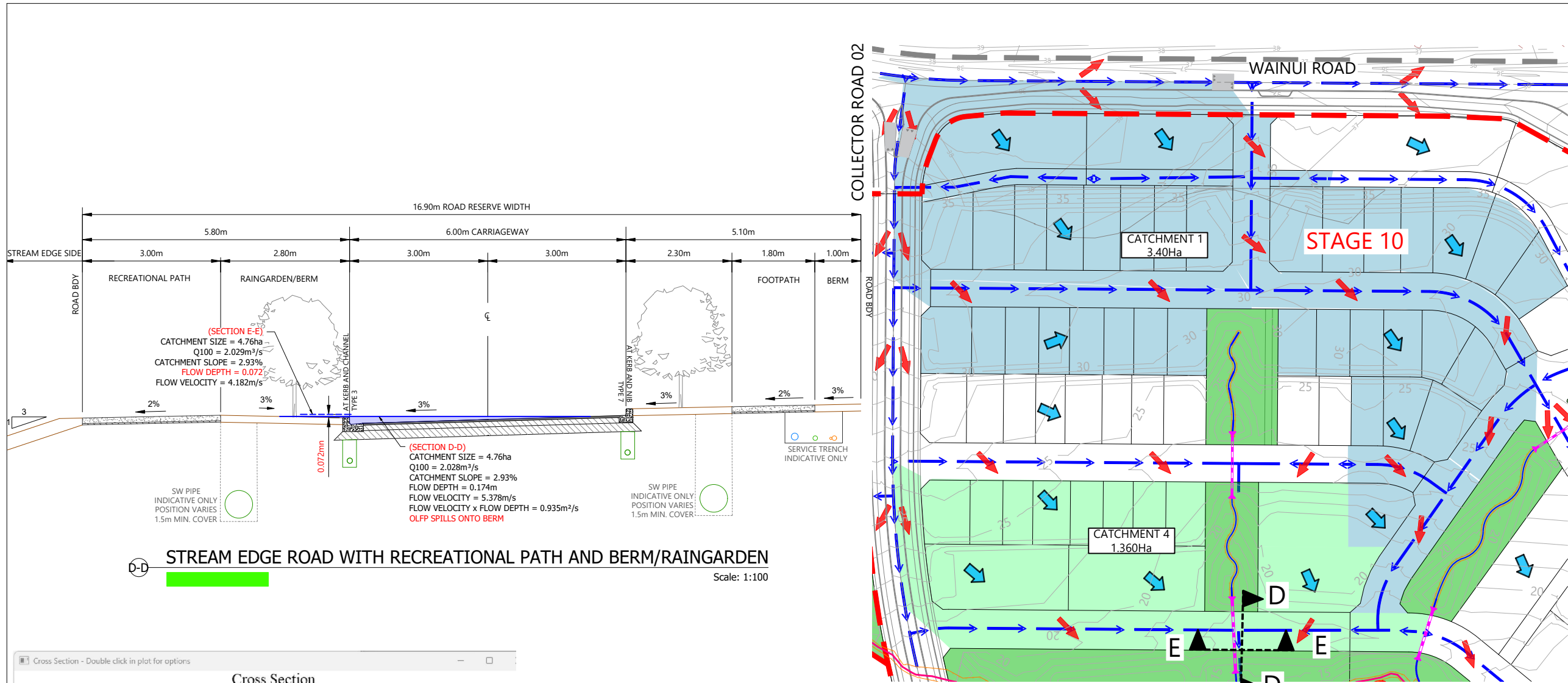
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND  WOODS.CO.NZ
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 3

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3023-DR	





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION
- LOT BOUNDARIES OF FAST TRACK APPLICATION
- DESIGN CONTOUR (1m)
- EXISTING CONTOUR (5m)
- STREAM PROPOSED
- STREAM RETAINED & ENHANCED
- PROPOSED CULVERT
- LOT OVERLAND FLOW
- ROAD OVERLAND FLOW
- ROAD CROSS FALL FLOW
- NOTES:
- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
  - ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

ROAD SECTION D-D & E-E COMBINED CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3

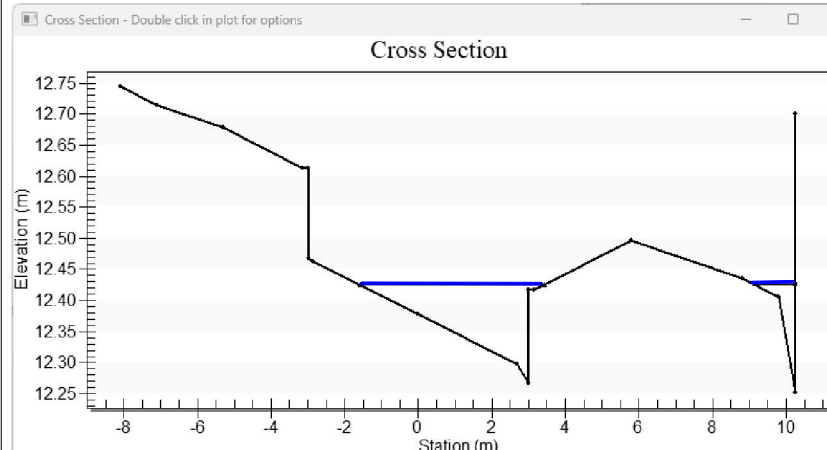
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ

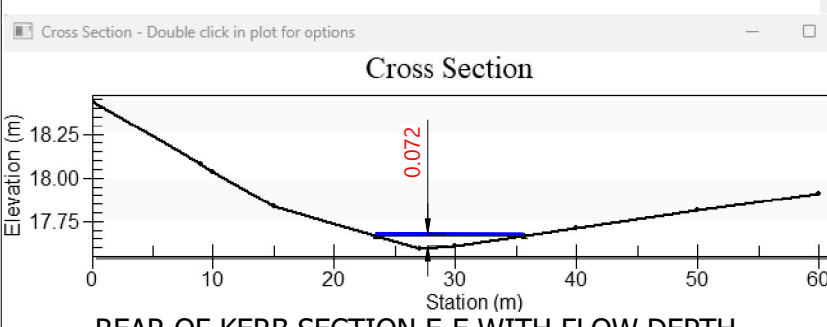


MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 4

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3024-DR	



LOCAL ROAD SECTION D-D WITH FLOW DEPTH



REAR OF KERB SECTION E-E WITH FLOW DEPTH

Channel Analysis E-E		
Type:	Cross Section	Define...
Side Slope 1 (Z1):	0.0	H : 1V
Side Slope 2 (Z2):	0.0	H : 1V
Channel Width (B):	0.0	(m)
Pipe Diameter (D):	0.0	(m)
Longitudinal Slope:	0.293	(m/m)
Manning's Roughness:	0.0150	
Enter Flow:	2.029	(cms)
Enter Depth:	0.072	(m)
Calculate		
Plot...		Compute Curves...
OK		Cancel

Parameter	Value	Units
Flow	2.029	cms
Depth	0.072	m
Area of Flow	0.485	m²
Wetted Perimeter	12.296	m
Hydraulic Radius	0.039	m
Average Velocity	4.182	m/s
Top Width (T)	12.295	m
Froude Number	6.721	
Critical Depth	0.163	m
Critical Velocity	0.916	m/s
Critical Slope	0.00501	m/m
Critical Top Width	25.883	m
Calculated Max Shear Stress	206.688	N/m²
Calculated Avg Shear Stress	113.315	N/m²
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0150	

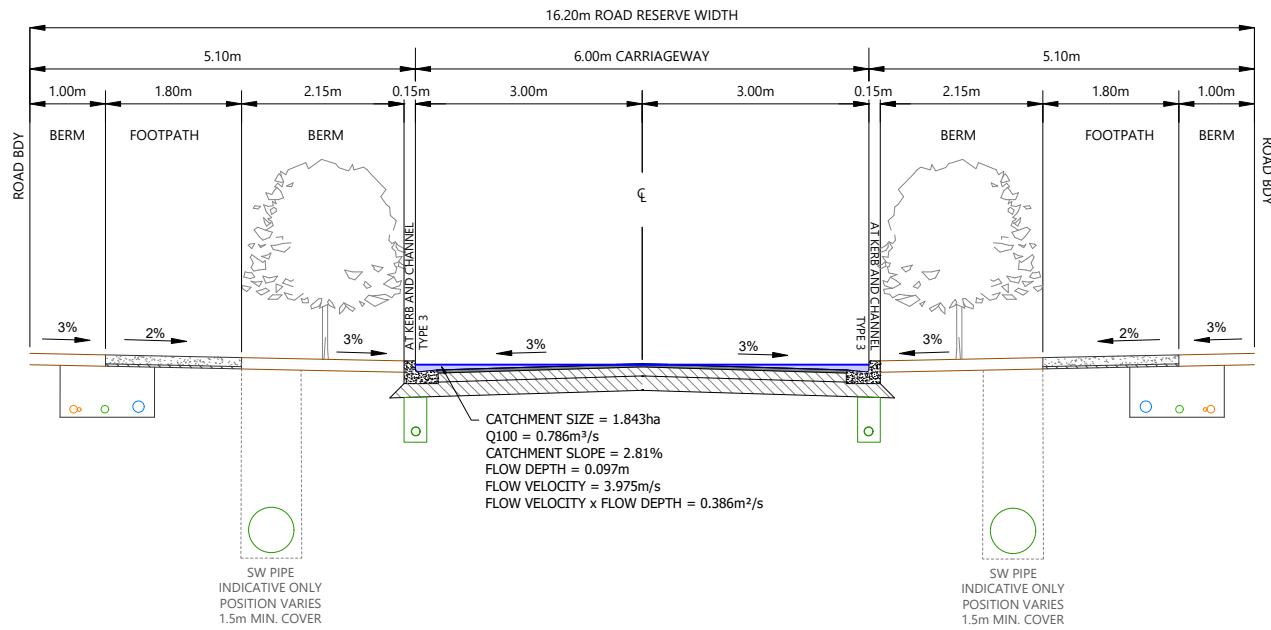
REAR OF KERB SECTION E-E PARAMETERS

Channel Analysis D-D		
Type:	Cross Section	Define...
Side Slope 1 (Z1):	0.0	H : 1V
Side Slope 2 (Z2):	0.0	H : 1V
Channel Width (B):	0.0	(m)
Pipe Diameter (D):	0.0	(m)
Longitudinal Slope:	0.293	(m/m)
Manning's Roughness:	0.0150	
Enter Flow:	2.028	(cms)
Enter Depth:	0.174	(m)
Calculate		
Plot...		Compute Curves...
OK		Cancel

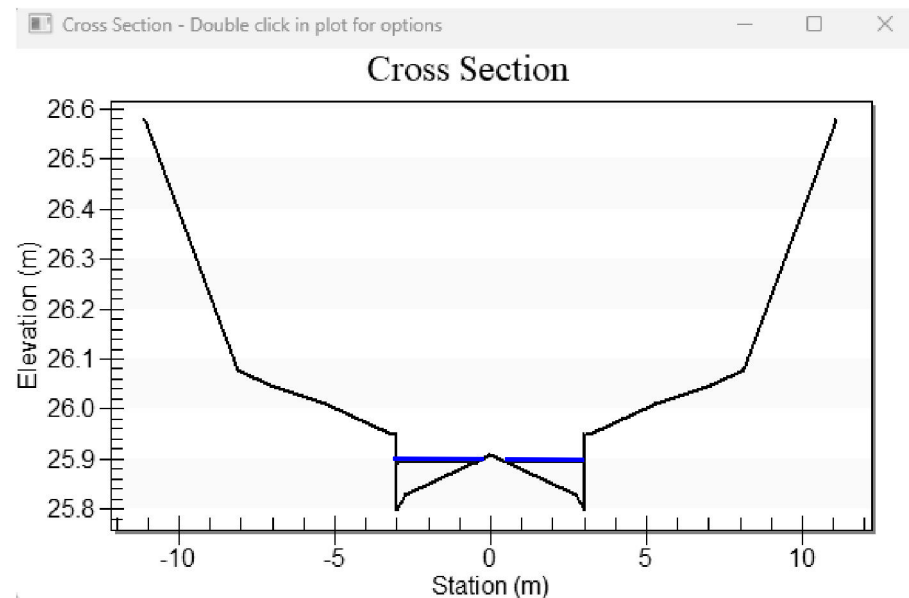
Parameter	Value	Units
Flow	2.028	cms
Depth	0.174	m
Area of Flow	0.377	m²
Wetted Perimeter	6.554	m
Hydraulic Radius	0.058	m
Average Velocity	5.378	m/s
Top Width (T)	6.211	m
Froude Number	6.968	
Critical Depth	0.297	m
Critical Velocity	1.145	m/s
Critical Slope	0.00455	m/m
Critical Top Width	13.253	m
Calculated Max Shear Stress	500.306	N/m²
Calculated Avg Shear Stress	165.234	N/m²
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0150	

LOCAL ROAD SECTION D-D PARAMETERS

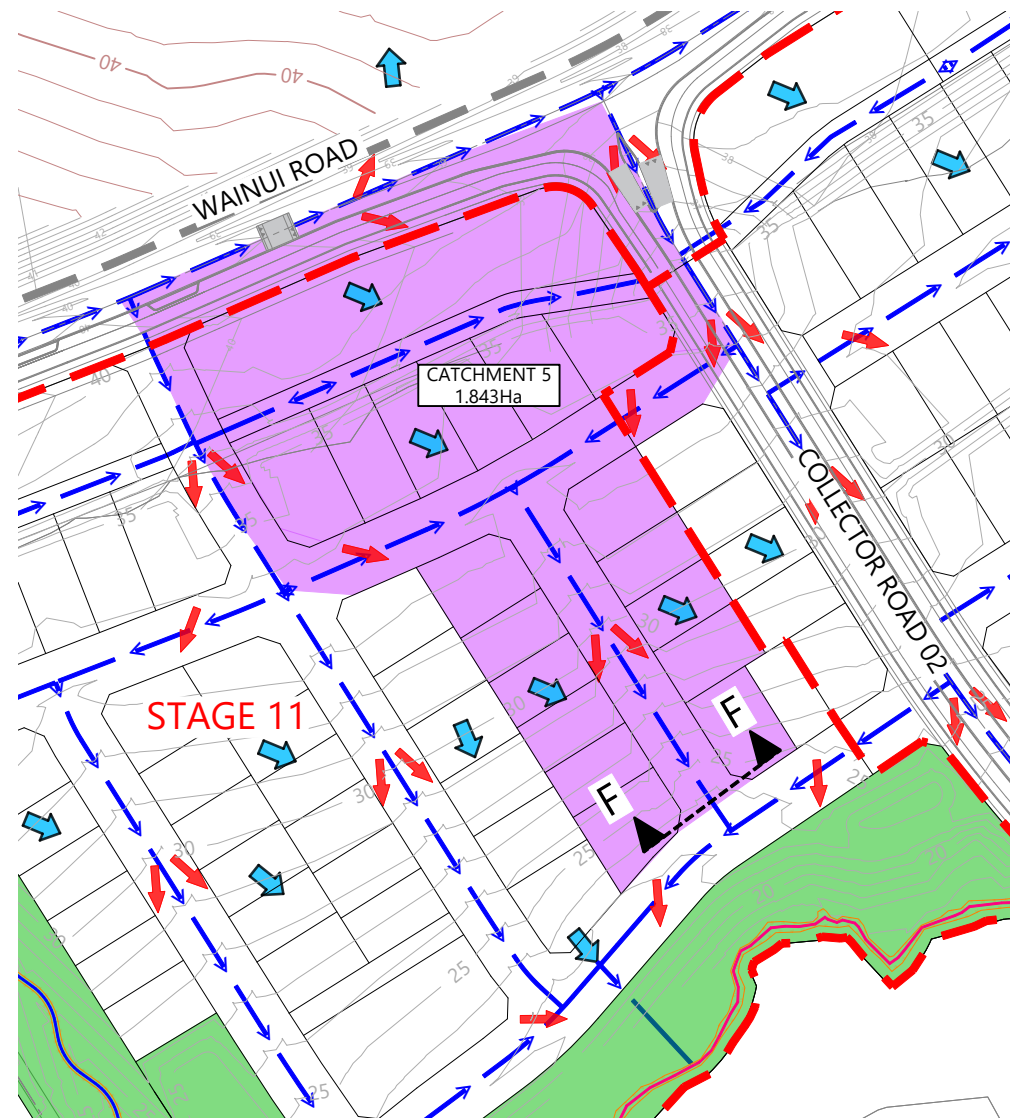




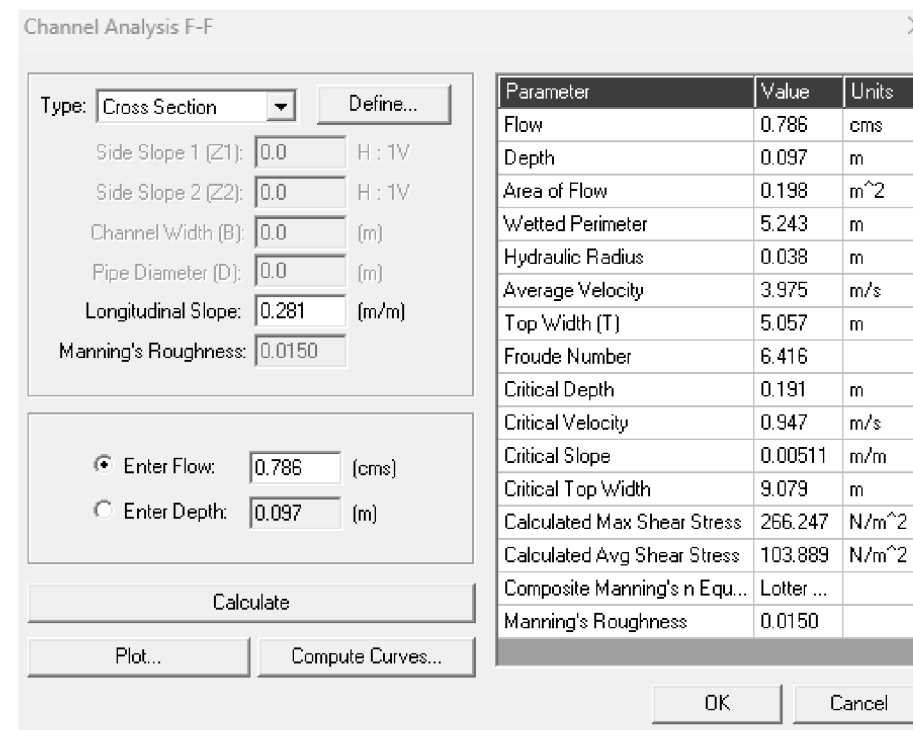
**LOCAL ROAD TYPE 2 AND CEMETERY ROAD LINK WITH BERM**  
 Scale: 1:100



**LOCAL ROAD SECTION F-F WITH FLOW DEPTH**



**ROAD SECTION F-F CATCHMENT PLAN**  
 Scale: 1:1000@A1 - 1:2000@A3



**LOCAL ROAD SECTION F-F PARAMETERS**

**CATCHMENT CALCULATIONS:**

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS	BY	DATE
1 ISSUED FOR CONSENT	JW	FEB 2025

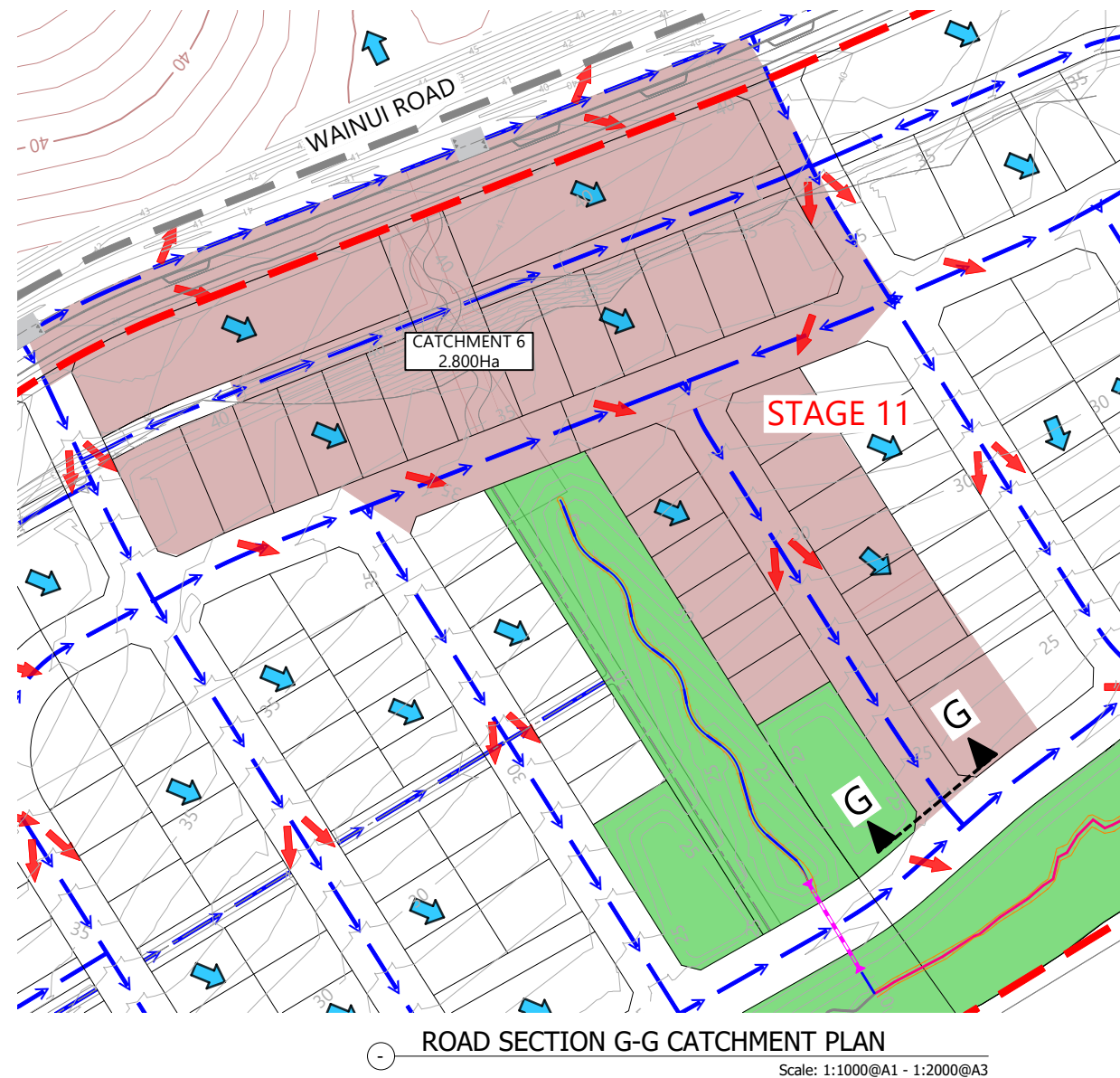
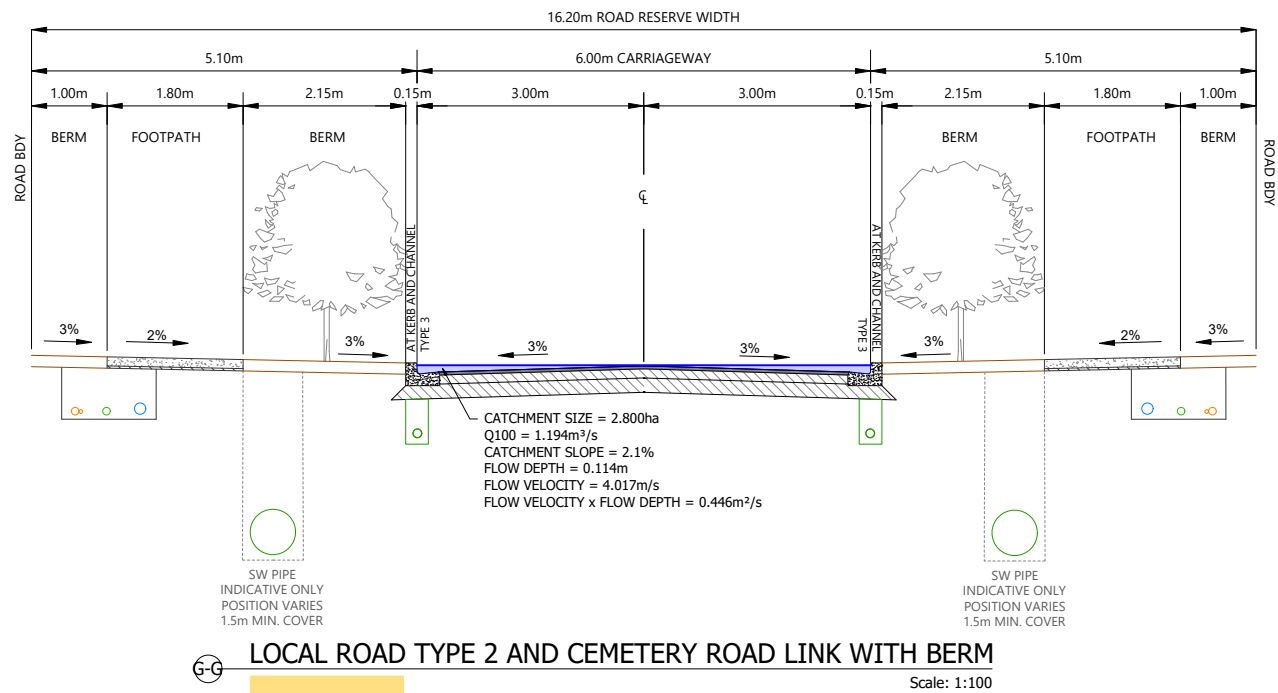
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



**MILLDALE  
 FAST TRACK  
 STAGES 10 - 13  
 STORMWATER 100 YEAR OVRLAND  
 FLOW PATH CATCHMENTS  
 LAYOUT PLAN  
 SHEET 5**

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3025-DR	





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION
- LOT BOUNDARIES OF FAST TRACK APPLICATION
- DESIGN CONTOUR (1m)
- EXISTING CONTOUR (5m)
- STREAM PROPOSED
- STREAM RETAINED & ENHANCED
- PROPOSED CULVERT
- LOT OVERLAND FLOW
- ROAD OVERLAND FLOW
- ROAD CROSS FALL FLOW
- NOTES:
- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
  - ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

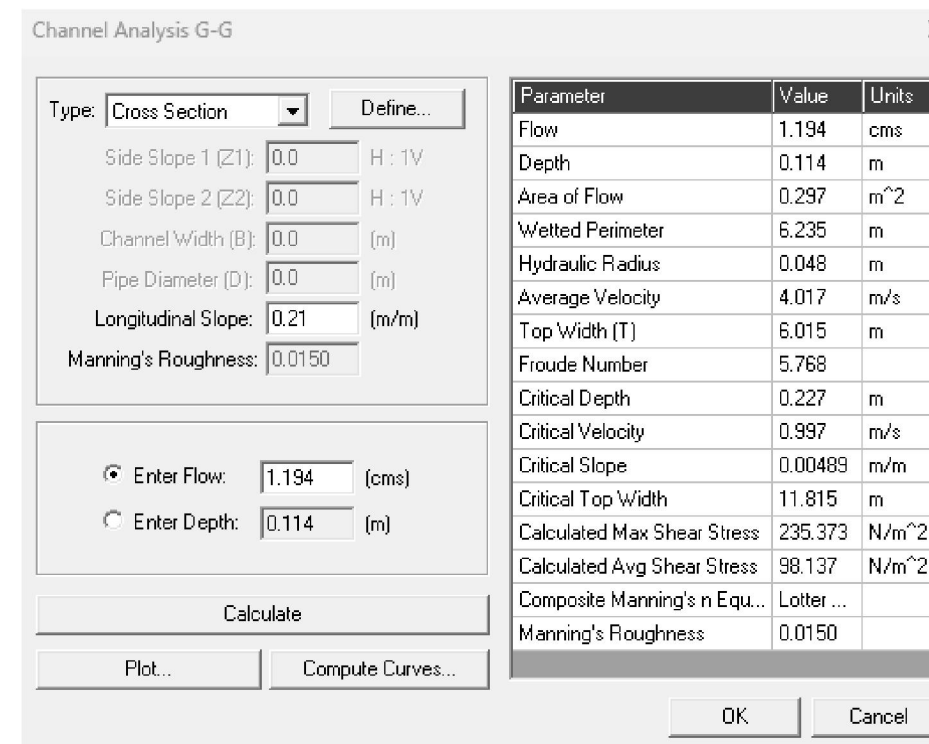
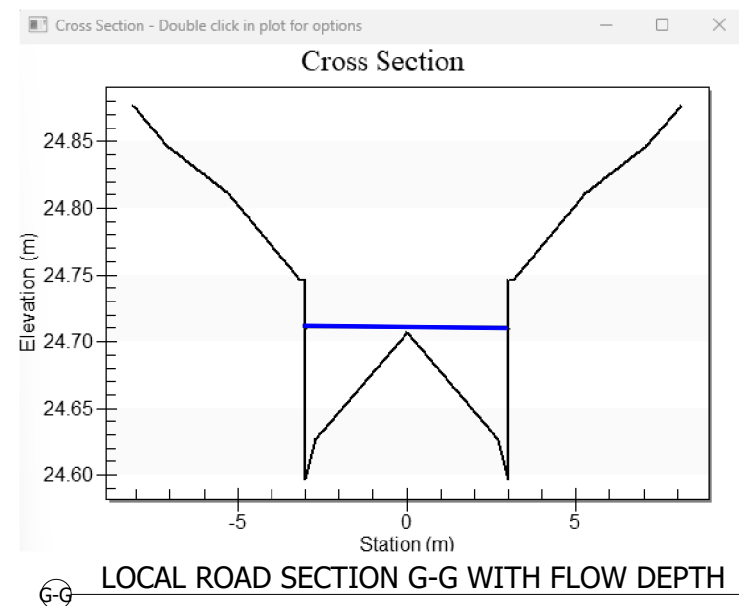
REVISION DETAILS	BY	DATE
1 ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 6

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3026-DR	



LOCAL ROAD SECTION G-G PARAMETERS



LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

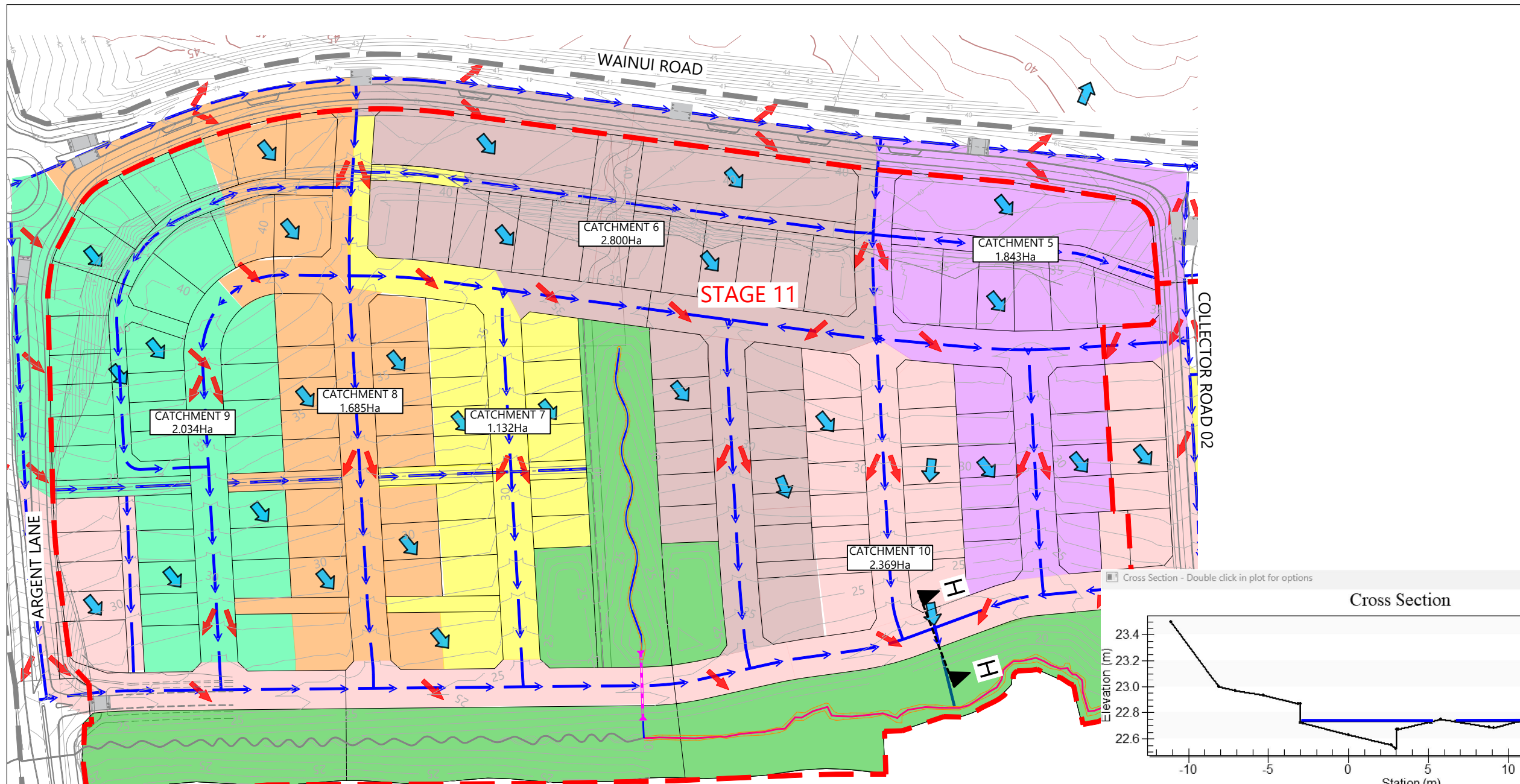
REVISION DETAILS	BY	DATE
1 ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 7

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3027-DR	



ROAD SECTION H-H CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3

LOCAL ROAD SECTION H-H WITH FLOW DEPTH

Channel Analysis H-H

Type: Cross Section Define...

Side Slope 1 (Z1): 0.0 H : 1V  
Side Slope 2 (Z2): 0.0 H : 1V  
Channel Width (B): 0.0 (m)  
Pipe Diameter (D): 0.0 (m)  
Longitudinal Slope: 0.385 (m/m)  
Manning's Roughness: 0.0150

Enter Flow: 5.060 (cms)  
Enter Depth: 0.211 (m)

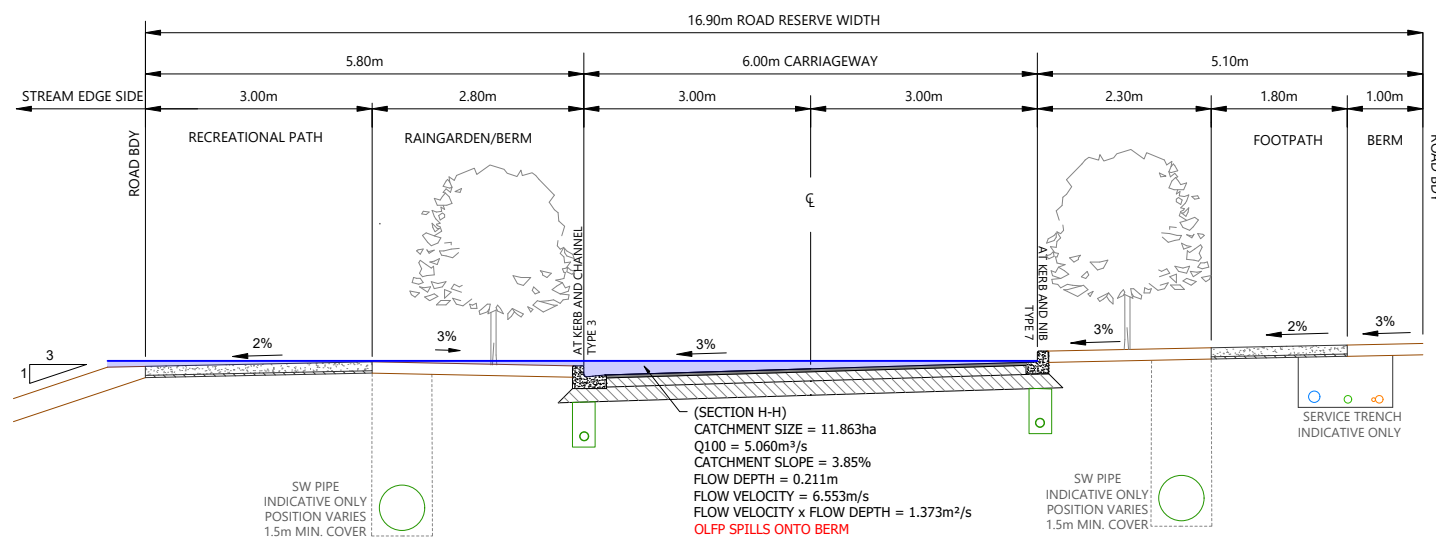
Calculate

Plot... Compute Curves...

Parameter	Value	Units
Flow	5.060	cms
Depth	0.211	m
Area of Flow	0.772	m <sup>2</sup>
Wetted Perimeter	12.250	m
Hydraulic Radius	0.063	m
Average Velocity	6.552	m/s
Top Width (T)	12.095	m
Froude Number	8.278	
Critical Depth	0.393	m
Critical Velocity	1.331	m/s
Critical Slope	0.00397	m/m
Critical Top Width	21.047	m
Calculated Max Shear Stress	797.521	N/m <sup>2</sup>
Calculated Avg Shear Stress	237.901	N/m <sup>2</sup>
Composite Manning's n Equ...	Lotter...	
Manning's Roughness	0.0150	

OK Cancel

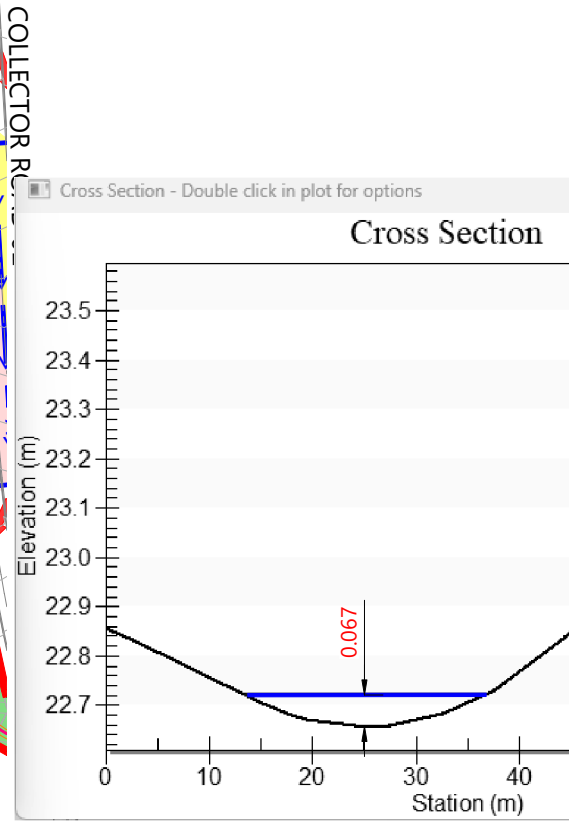
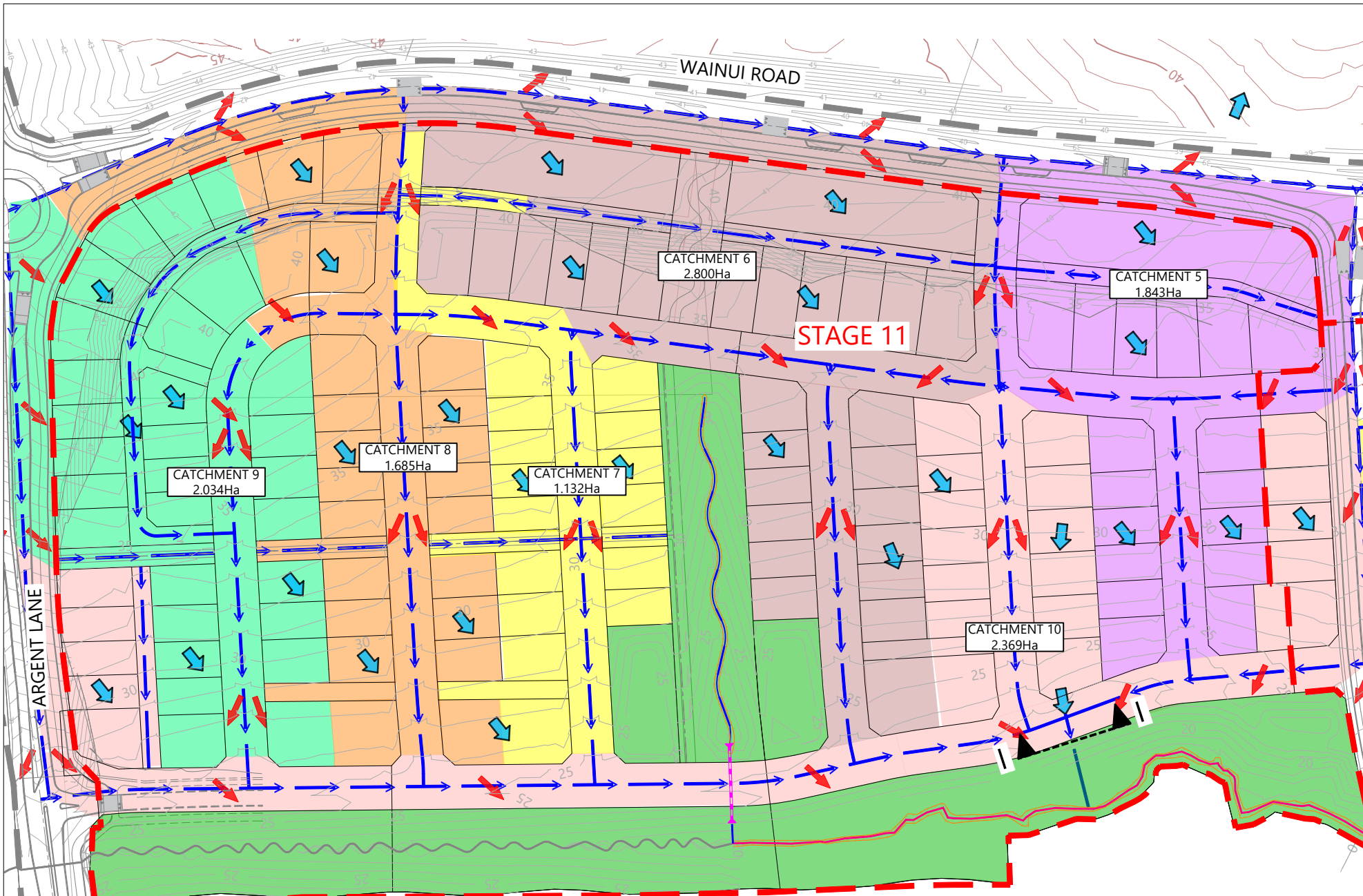
LOCAL ROAD SECTION H-H PARAMETERS



STREAM EDGE ROAD WITH RECREATIONAL PATH AND BERM/RAINGARDEN

Scale: 1:100





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND  WOODS.CO.NZ
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	

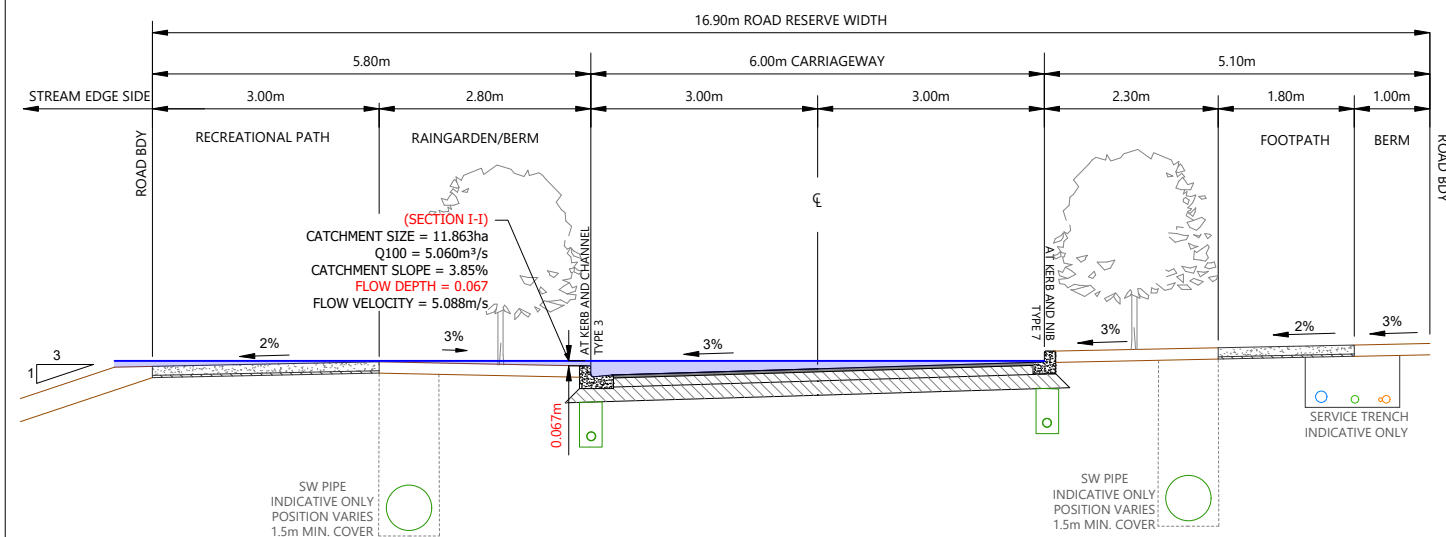


MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 8

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3028-DR	

REAR OF KERB SECTION I-I CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3



STREAM EDGE ROAD WITH RECREATIONAL PATH AND BERM/RAINGARDEN

Scale: 1:100

REAR OF KERB SECTION I-I WITH FLOW DEPTH

Channel Analysis I-I

Type: Cross Section Define...

Side Slope 1 (Z1): 0.0 H: 1V  
Side Slope 2 (Z2): 0.0 H: 1V  
Channel Width (B): 0.0 (m)  
Pipe Diameter (D): 0.0 (m)  
Longitudinal Slope: 0.385 (m/m)  
Manning's Roughness: 0.0150

Enter Flow: 5.060 (cms)  
Enter Depth: 0.067 (m)

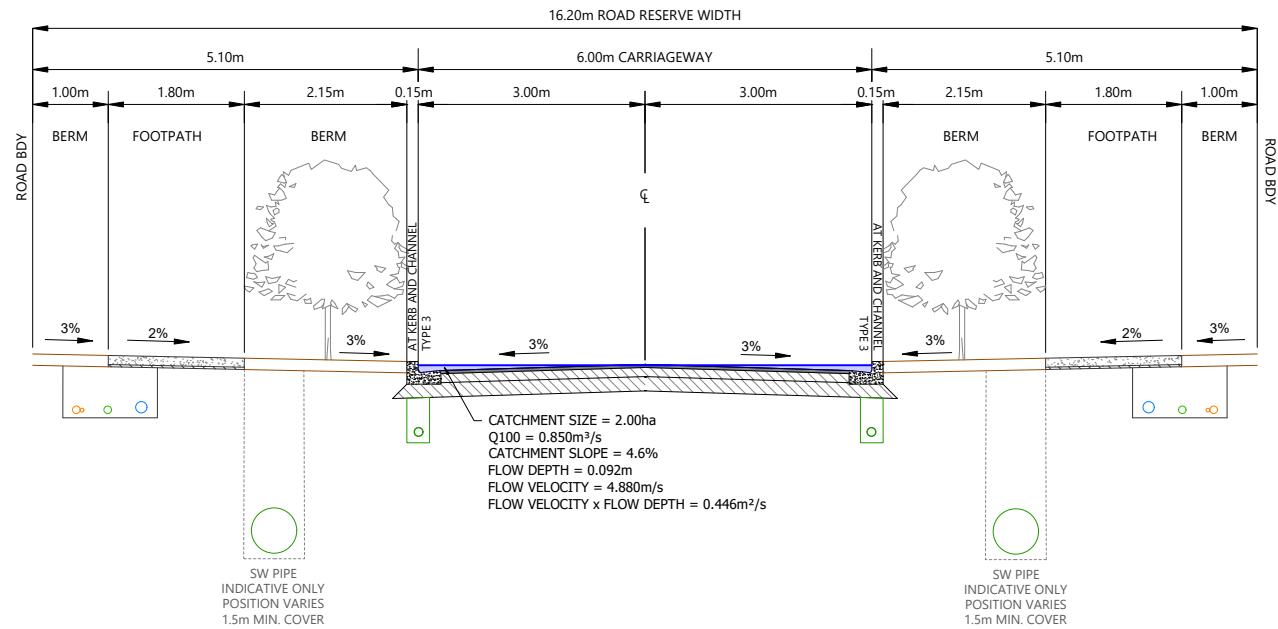
Calculate  
Plot... Compute Curves...

Parameter	Value	Units
Flow	5.060	cms
Depth	0.067	m
Area of Flow	0.994	m <sup>2</sup>
Wetted Perimeter	23.052	m
Hydraulic Radius	0.043	m
Average Velocity	5.088	m/s
Top Width (T)	23.051	m
Froude Number	7.820	
Critical Depth	0.183	m
Critical Velocity	1.055	m/s
Critical Slope	0.00456	m/m
Critical Top Width	42.327	m
Calculated Max Shear Stress	252.919	N/m <sup>2</sup>
Calculated Avg Shear Stress	162.800	N/m <sup>2</sup>
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0150	

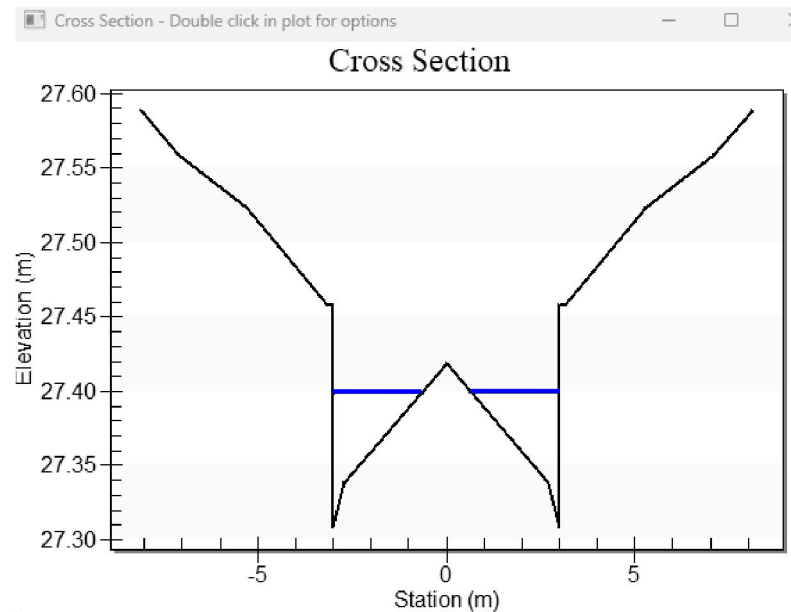
OK Cancel

REAR OF KERB SECTION I-I PARAMETERS

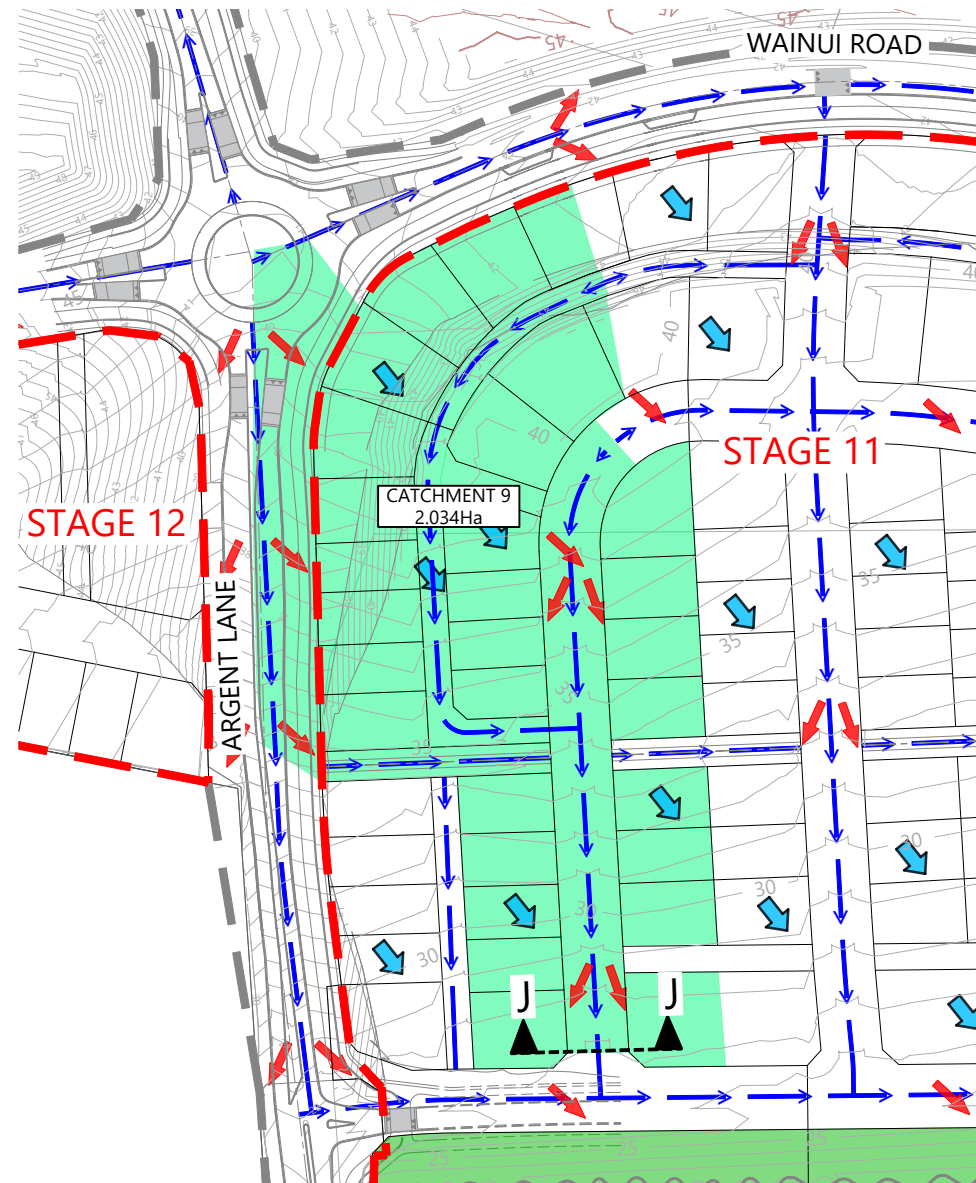




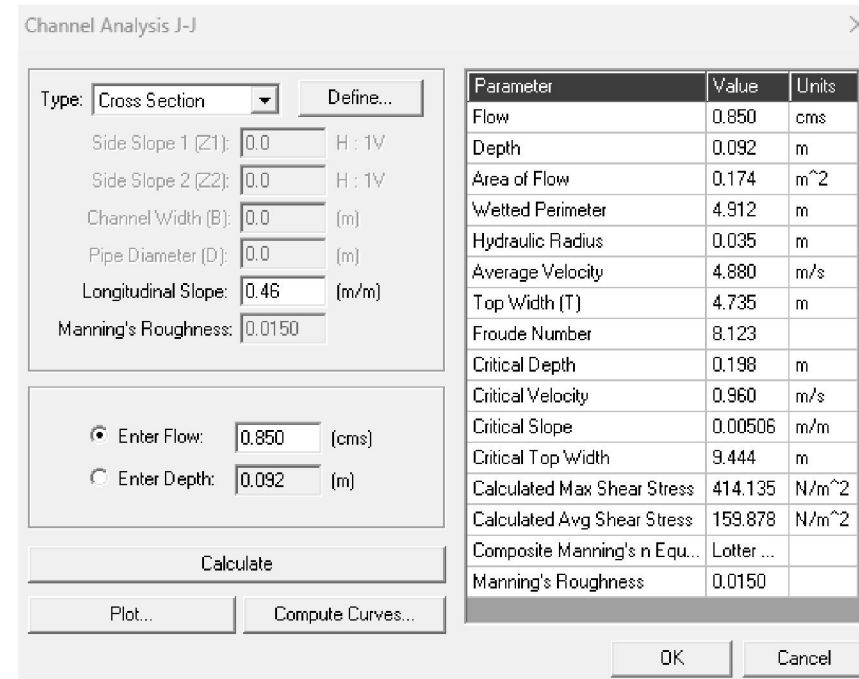
LOCAL ROAD TYPE 2 AND CEMETERY ROAD LINK WITH BERM  
Scale: 1:100



ROAD SECTION J-J CATCHMENT PLAN  
Scale: 1:1000@A1 - 1:2000@A3



LOCAL ROAD SECTION J-J WITH FLOW DEPTH



LOCAL ROAD SECTION J-J PARAMETERS

LEGEND:

- EXTENTS OF FAST TRACK APPLICATION
- LOT BOUNDARIES OF FAST TRACK APPLICATION
- DESIGN CONTOUR (1m)
- EXISTING CONTOUR (5m)
- STREAM PROPOSED
- STREAM RETAINED & ENHANCED
- PROPOSED CULVERT
- LOT OVERLAND FLOW
- ROAD OVERLAND FLOW
- ROAD CROSS FALL FLOW
- NOTES:

1. REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
2. ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

1. CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
2. CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
3. NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS	BY	DATE
1 ISSUED FOR CONSENT	JW	FEB 2025

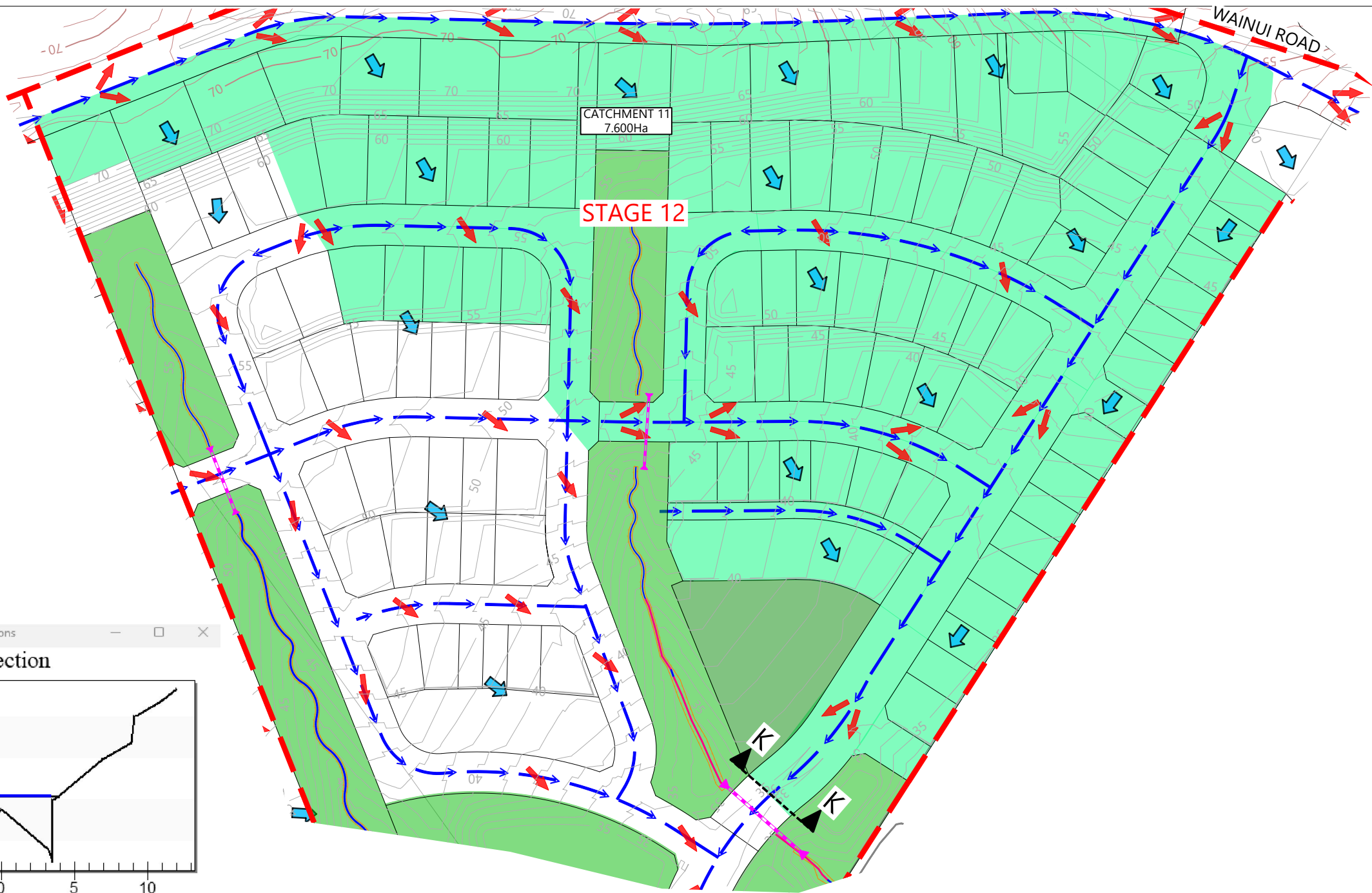
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND  WOODS.CO.NZ
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 9

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3029-DR	





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

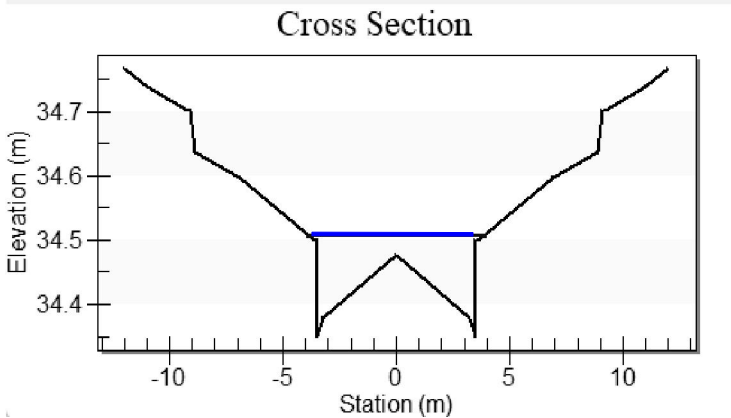
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 10

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3030-DR	

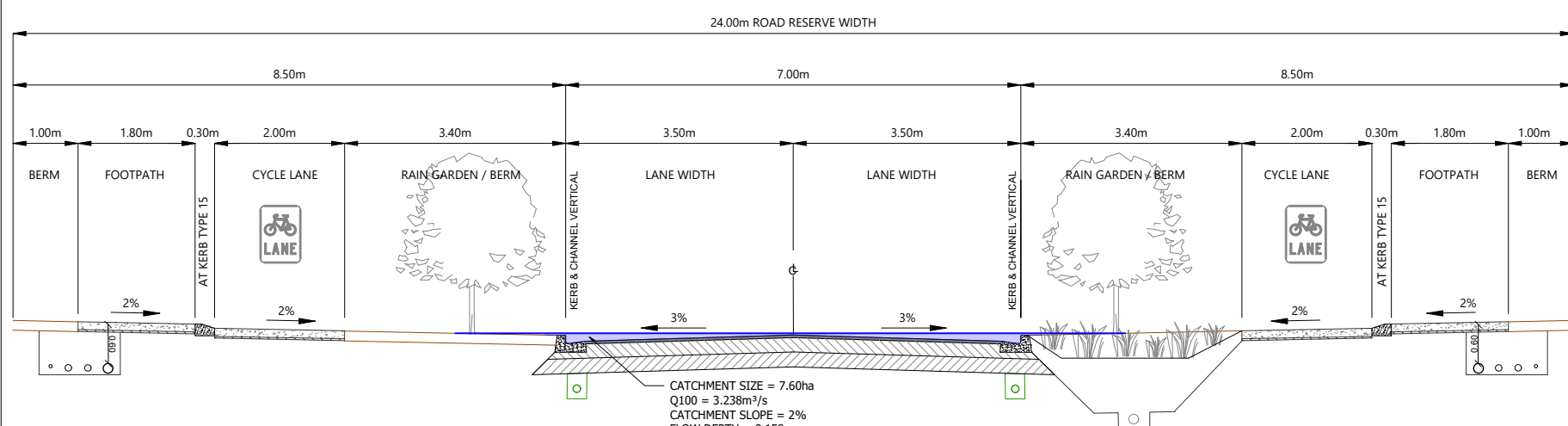
Cross Section - Double click in plot for options



LOCAL ROAD SECTION K-K WITH FLOW DEPTH

ROAD SECTION K-K CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3



COLLECTOR ROAD AND LYSNAR ROAD WITH BERM

Scale: 1:100

Channel Analysis K-K

Type: Cross Section Define...

Side Slope 1 (Z1): 0.0 H: 1V  
Side Slope 2 (Z2): 0.0 H: 1V  
Channel Width (B): 0.0 (m)  
Pipe Diameter (D): 0.0 (m)  
Longitudinal Slope: 0.206 (m/m)  
Manning's Roughness: 0.0150

Enter Flow: 3.238 (cms)  
Enter Depth: 0.158 (m)

Calculate

Plot... Compute Curves...

OK Cancel

Parameter	Value	Units
Flow	3.238	cms
Depth	0.158	m
Area of Flow	0.605	m <sup>2</sup>
Wetted Perimeter	8.133	m
Hydraulic Radius	0.074	m
Average Velocity	5.352	m/s
Top Width (T)	7.846	m
Froude Number	6.153	
Critical Depth	0.314	m
Critical Velocity	1.209	m/s
Critical Slope	0.00426	m/m
Critical Top Width	17.965	m
Calculated Max Shear Stress	319.333	N/m <sup>2</sup>
Calculated Avg Shear Stress	150.211	N/m <sup>2</sup>
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0150	

LOCAL ROAD SECTION K-K PARAMETERS





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

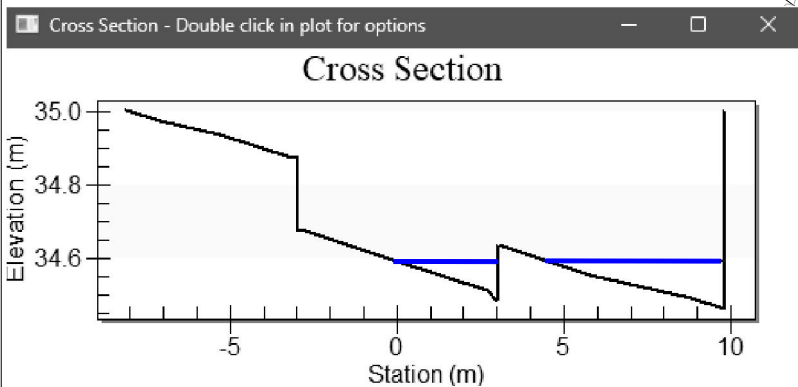
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 11

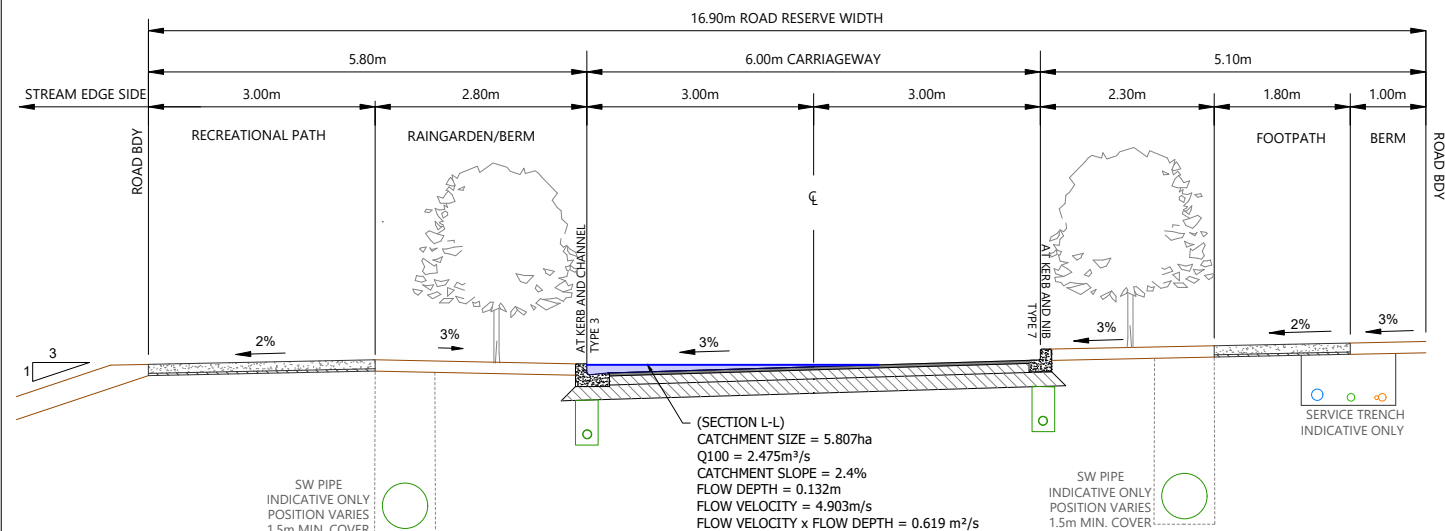
STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3031-DR	



LOCAL ROAD SECTION L-L WITH FLOW DEPTH

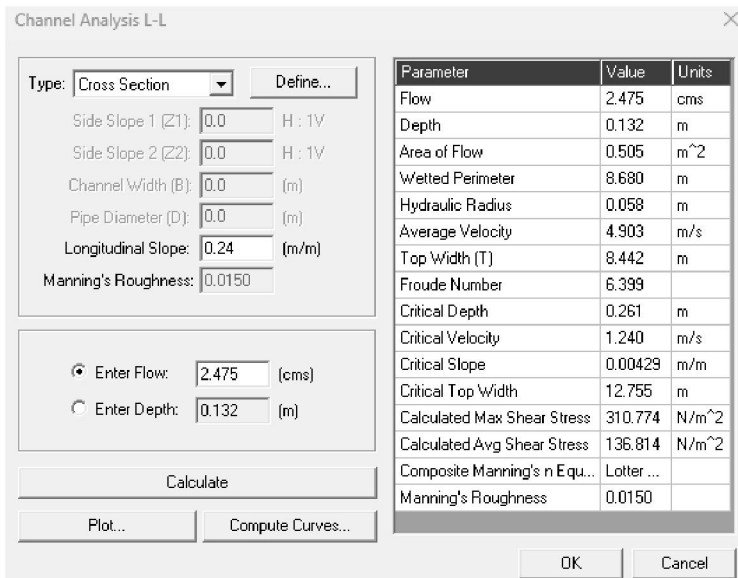
ROAD SECTION L-L CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3



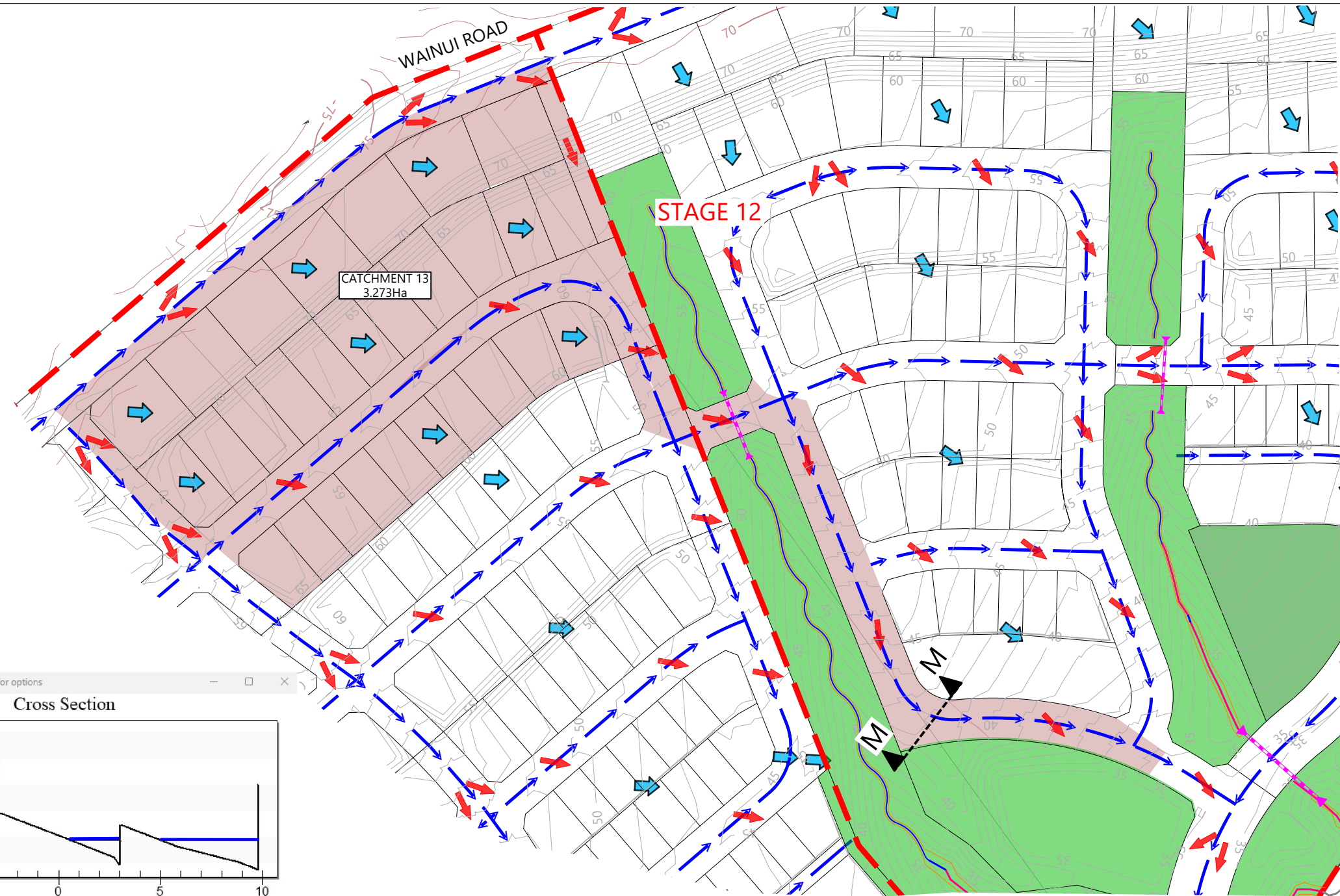
STREAM EDGE ROAD WITH RECREATIONAL PATH AND BERM/RAINGARDEN

Scale: 1:100



LOCAL ROAD SECTION L-L PARAMETERS





LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON  $C=0.8$  FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

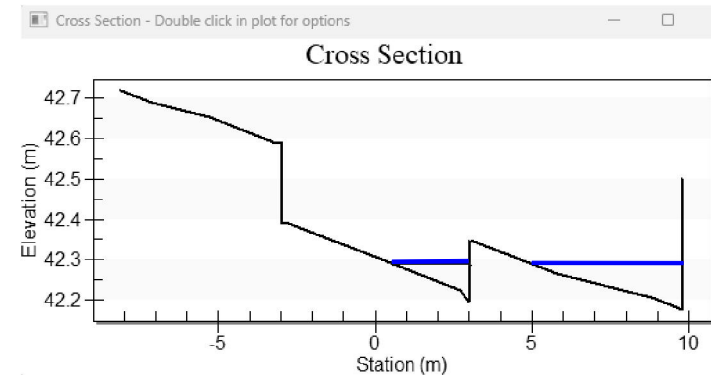
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



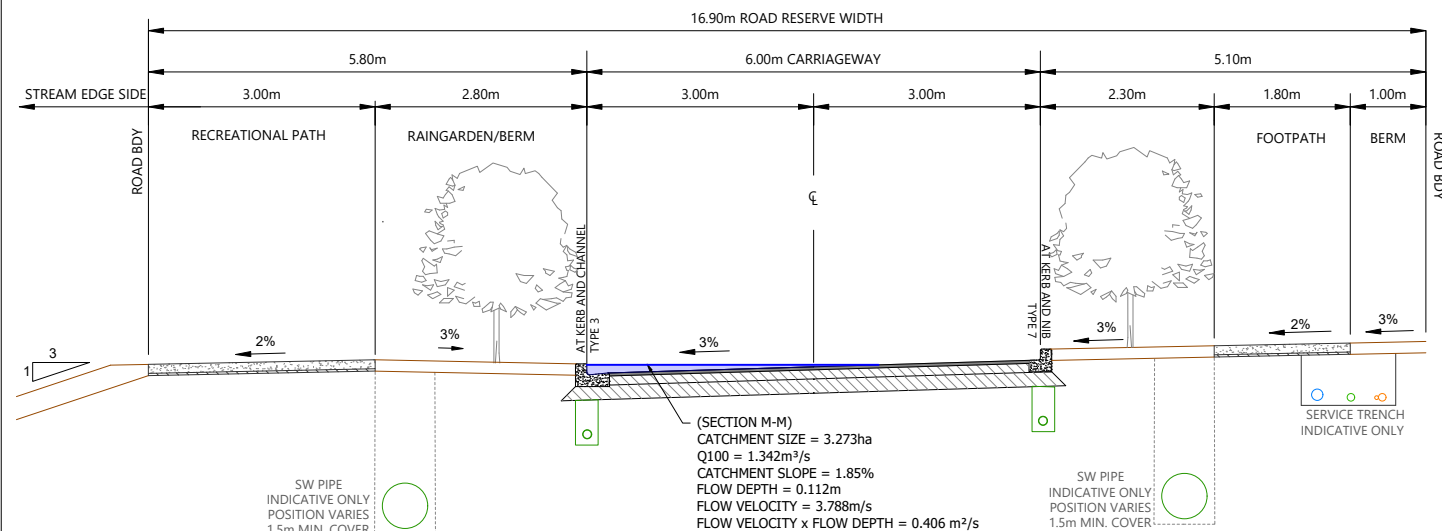
**MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 12**

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3032-DR	

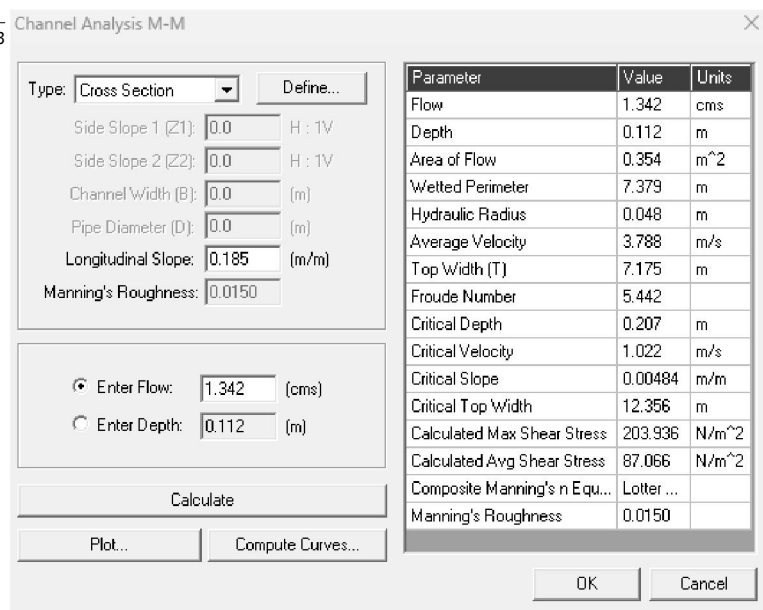


LOCAL ROAD SECTION M-M WITH FLOW DEPTH

ROAD SECTION M-M CATCHMENT PLAN  
Scale: 1:1000@A1 - 1:2000@A3

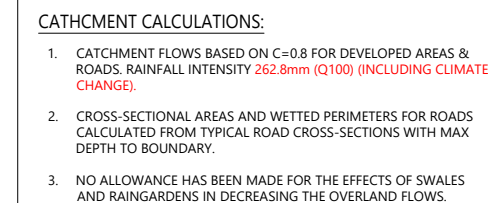


STREAM EDGE ROAD WITH RECREATIONAL PATH AND BERM/RAINGARDEN  
Scale: 1:100

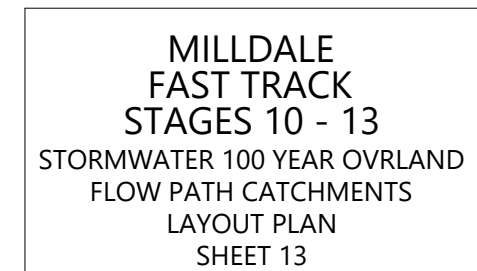


LOCAL ROAD SECTION M-M PARAMETERS

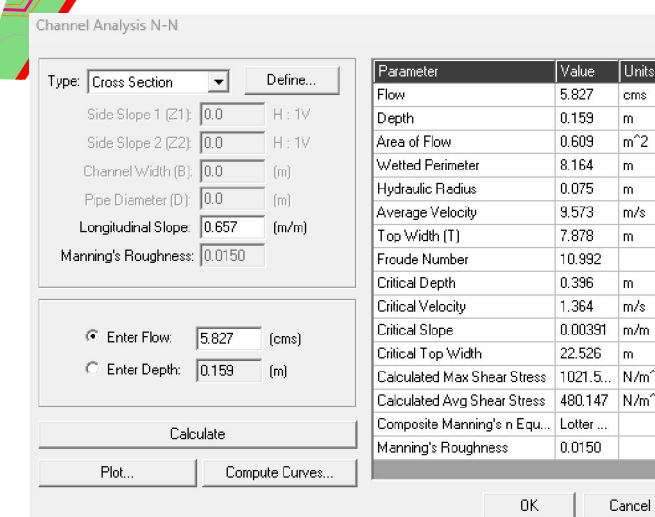
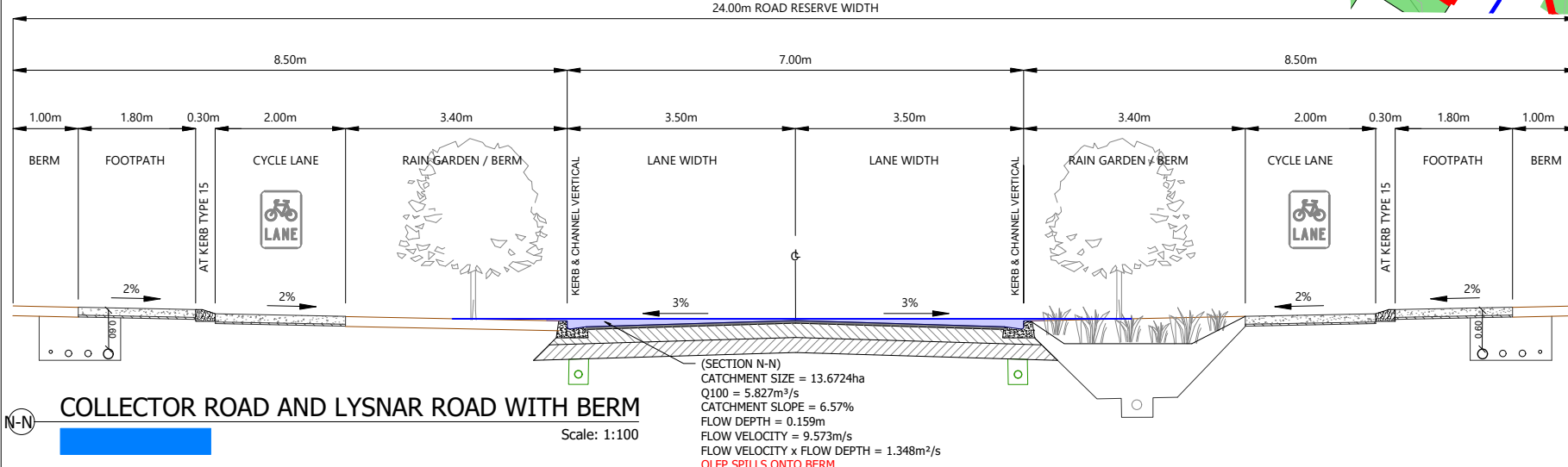




SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND  <a href="http://WOODS.CO.NZ">WOODS.CO.NZ</a>
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	



STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3033-DR	



### LOCAL ROAD SECTION N-N PARAMETERS

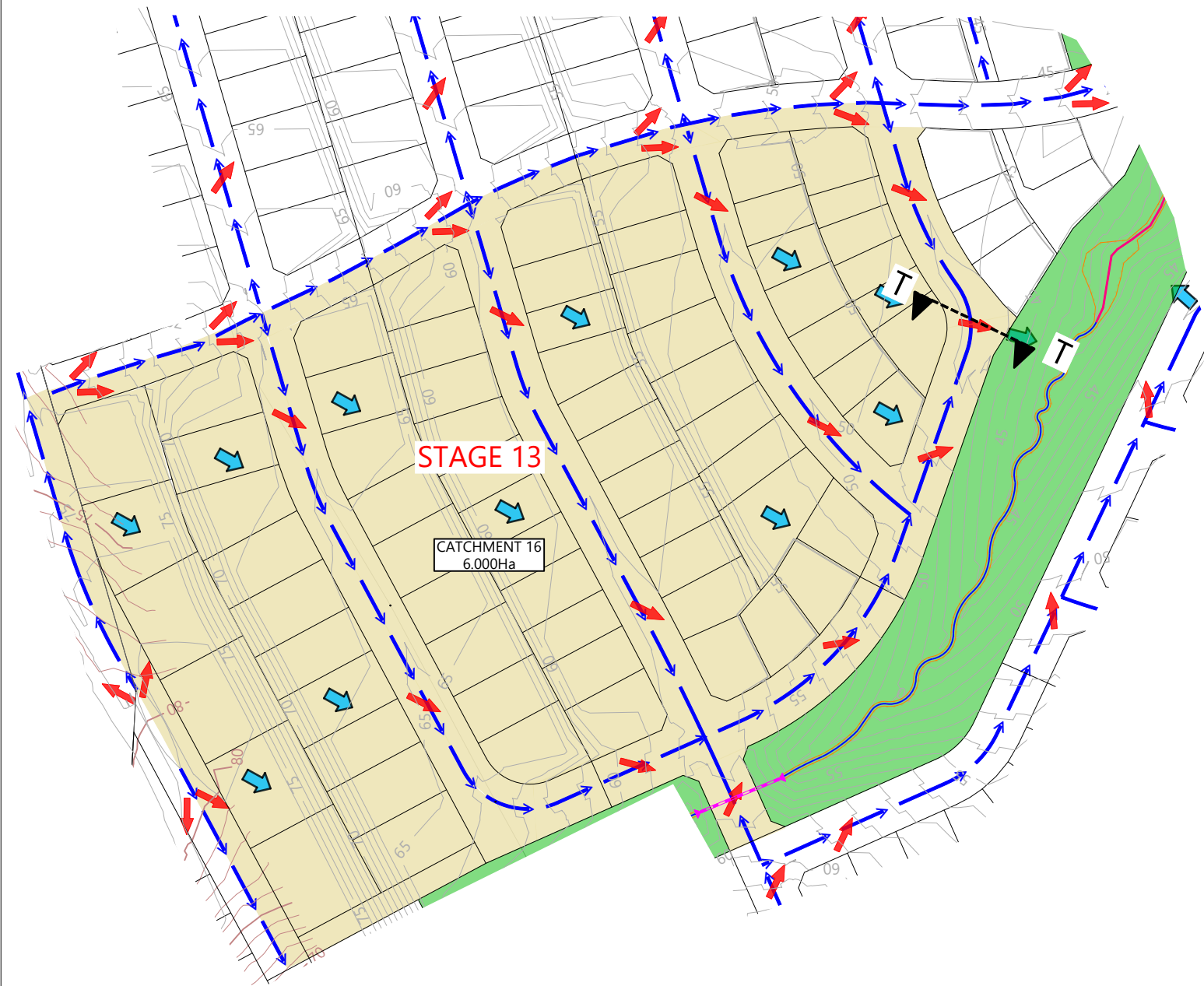




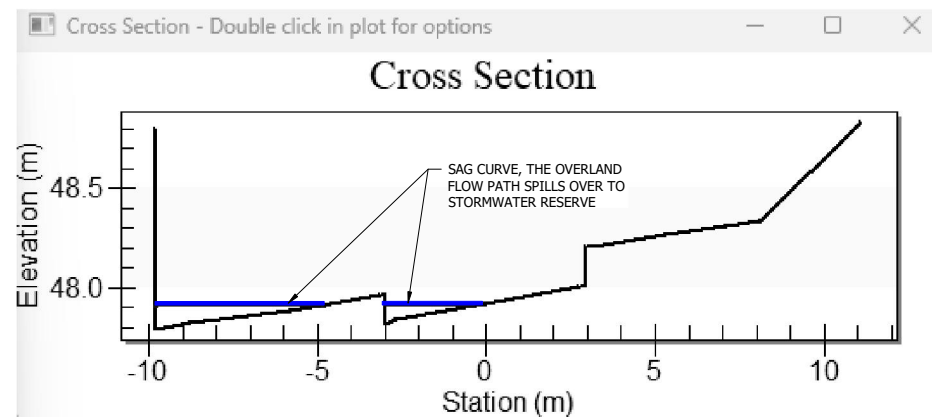




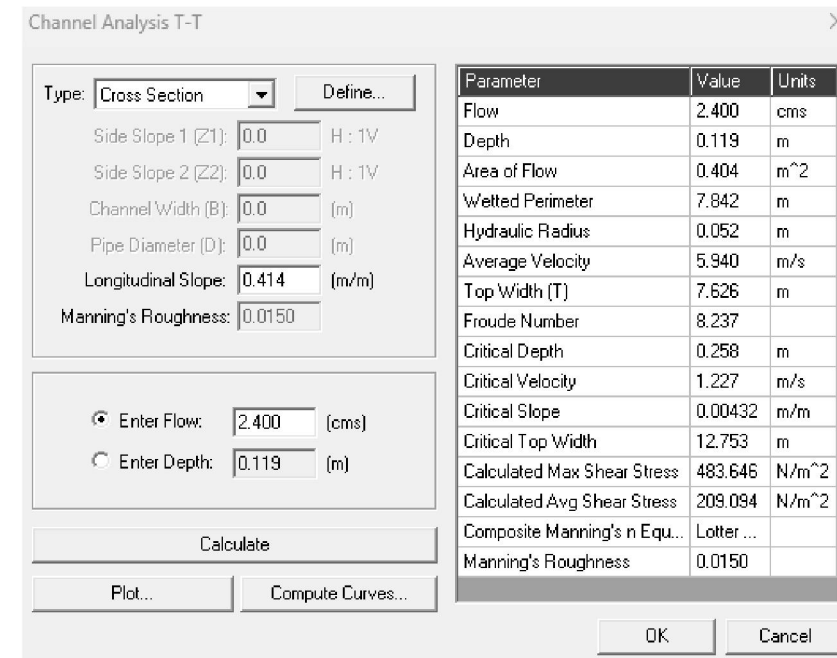




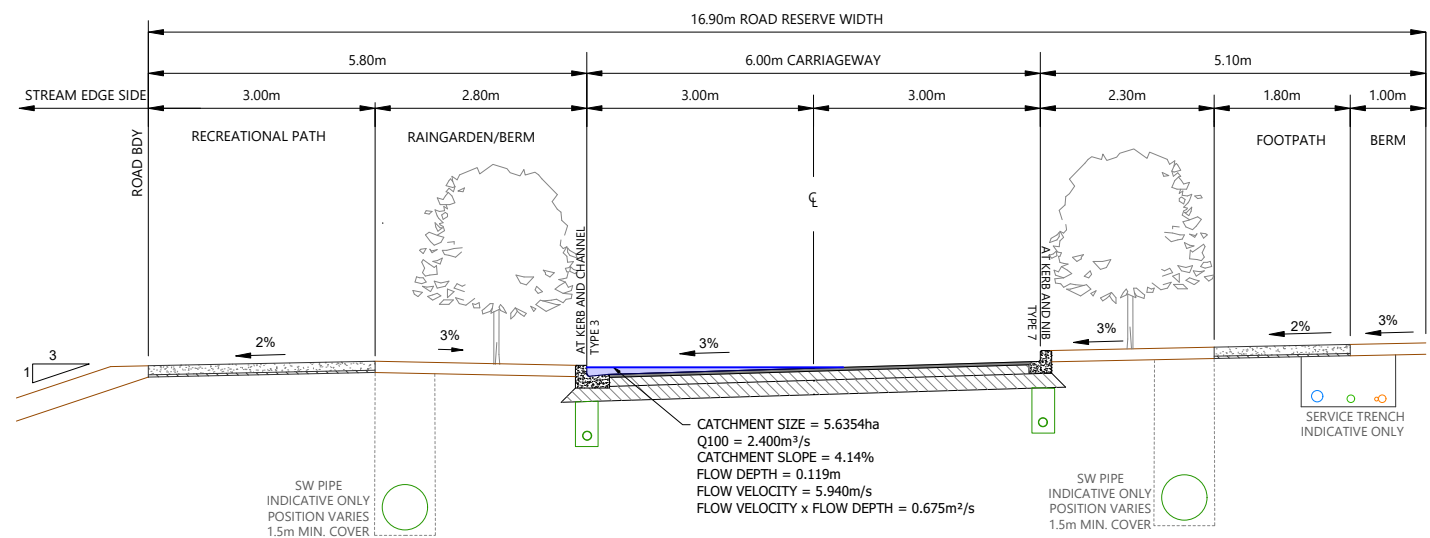
ROAD SECTION T-T CATCHMENT PLAN  
Scale: 1:1000@A1 - 1:2000@A3



LOCAL ROAD SECTION T-T WITH FLOW DEPTH



LOCAL ROAD SECTION T-T PARAMETERS



STREAM EDGE ROAD WITH RECREATIONAL PATH AND BERM/RAINGARDEN  
Scale: 1:100

LEGEND:

- EXTENTS OF FAST TRACK APPLICATION  
LOT BOUNDARIES OF FAST TRACK APPLICATION  
DESIGN CONTOUR (1m)  
EXISTING CONTOUR (5m)  
STREAM PROPOSED  
STREAM RETAINED & ENHANCED  
PROPOSED CULVERT  
LOT OVERLAND FLOW  
ROAD OVERLAND FLOW  
ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATCHMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

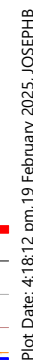
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 16

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3036-DR	





STATUS	ISSUED FOR CONSENT	REV  1
SCALE	AS SHOWN	
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3037-DR	



Channel Analysis X-X

Type: Cross Section

Define...

Side Slope 1 (Z1): 0.0

H : 1V

Side Slope 2 (Z2): 0.0

H : 1V

Channel Width (B): 0.0

(m)

Pipe Diameter (D): 0.0

(m)

Longitudinal Slope: 0.179

(m/m)

Manning's Roughness: 0.0150

Enter Flow: 3.249 (cms)

Enter Depth: 0.071 (m)

Calculate

Plot...

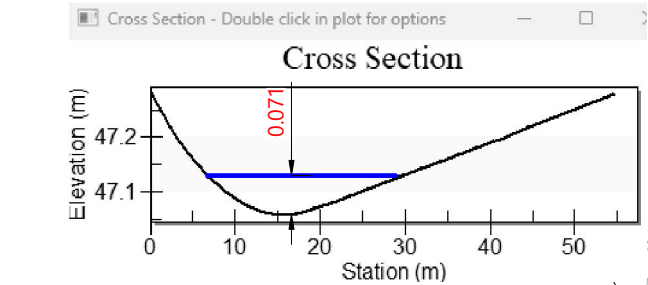
Compute Curves...

OK

Cancel

Parameter	Value	Units
Flow	3.249	cms
Depth	0.071	m
Area of Flow	0.951	m^2
Wetted Perimeter	22.537	m
Hydraulic Radius	0.042	m
Average Velocity	3.418	m/s
Top Width (T)	22.536	m
Froude Number	5.312	
Critical Depth	0.152	m
Critical Velocity	0.924	m/s
Critical Slope	0.00498	m/m
Critical Top Width	40.427	m
Calculated Max Shear Stress	124.451	N/m^2
Calculated Avg Shear Stress	74.008	N/m^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0150	

REAR OF KERB SECTION X-X PARAMETERS



REAR OF KERB SECTION X-X WITH FLOW DEPTH

Channel Analysis W-W

Type: Cross Section

Define...

Side Slope 1 (Z1): 0.0

H : 1V

Side Slope 2 (Z2): 0.0

H : 1V

Channel Width (B): 0.0

(m)

Pipe Diameter (D): 0.0

(m)

Longitudinal Slope: 0.179

(m/m)

Manning's Roughness: 0.0150

Enter Flow: 3.249 (cms)

Enter Depth: 0.205 (m)

Calculate

Plot...

Compute Curves...

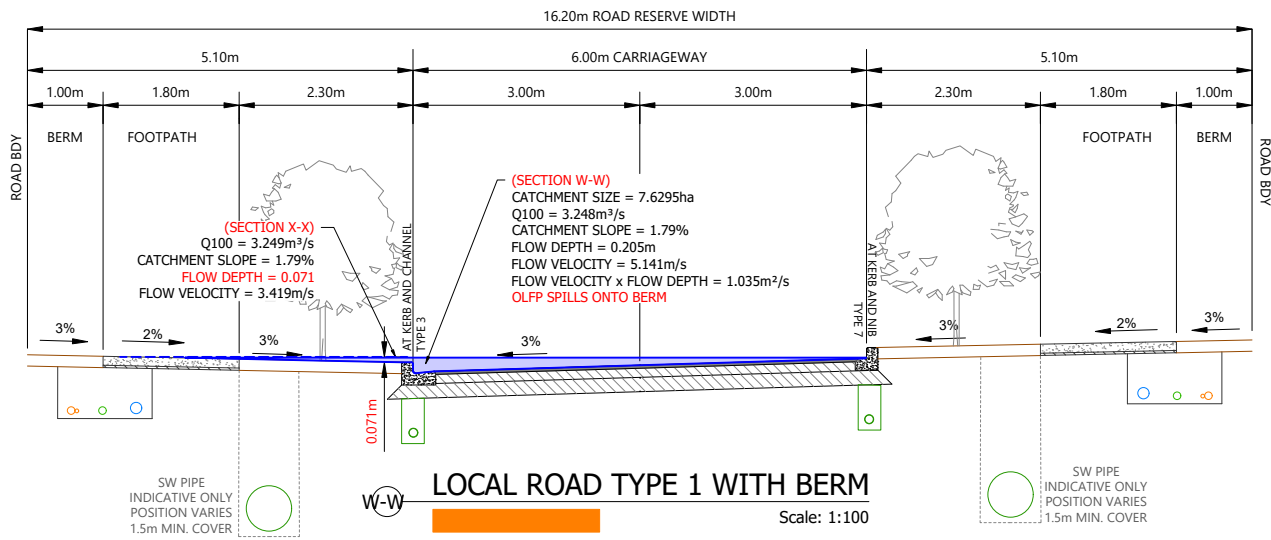
OK

Cancel

Parameter	Value	Units
Flow	3.249	cms
Depth	0.205	m
Area of Flow	0.632	m^2
Wetted Perimeter	8.121	m
Hydraulic Radius	0.078	m
Average Velocity	5.141	m/s
Top Width (T)	7.964	m
Froude Number	5.826	
Critical Depth	0.365	m
Critical Velocity	1.424	m/s
Critical Slope	0.00392	m/m
Critical Top Width	11.052	m
Calculated Max Shear Stress	360.540	N/m^2
Calculated Avg Shear Stress	136.531	N/m^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0150	

ROAD SECTION CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3



NOTE:  
WATER OVERFLOWING OVER THE ROAD CROWN FROM CATCHMENT 19 TO CATCHMENT 18. THIS WATER CONSIDERED LOST AND BEEN ADDED TO FLOW CALCS ON OTHERSIDE OF ROAD (CATCHMENT 18).

ROAD CATCHMENT 19  
0.4720Ha

TOTAL CATCHMENT 19  
1.195Ha

STAGE 13

CATCHMENT 18  
7.629Ha

LEGEND:

- EXTENTS OF FAST TRACK APPLICATION
- LOT BOUNDARIES OF FAST TRACK APPLICATION
- DESIGN CONTOUR (1m)
- EXISTING CONTOUR (5m)
- STREAM PROPOSED
- STREAM RETAINED & ENHANCED
- PROPOSED CULVERT
- LOT OVERLAND FLOW
- ROAD OVERLAND FLOW
- ROAD CROSS FALL FLOW
- NOTES:
- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
  - ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATHCMET CALCULATIONS:

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025
SURVEYED		WOODS	SIDWELL ROAD WAINUI AUCKLAND  WOODS.CO.NZ
DESIGNED		WOODS	
DRAWN		JB	
CHECKED		JW	
APPROVED		JW	



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 18

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3038-DR	





Channel Analysis Y-Y

Type: Cross Section

Define...

Side Slope 1 (Z1): 0.0

H : 1V

Side Slope 2 (Z2): 0.0

H : 1V

Channel Width (B): 0.0

(m)

Pipe Diameter (D): 0.0

(m)

Longitudinal Slope: 0.314

(m/m)

Manning's Roughness: 0.1500

Enter Flow: 0.510 (cms)

Enter Depth: 0.174 (m)

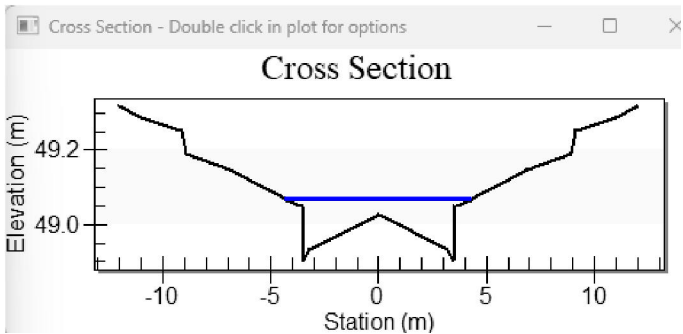
Calculate

Plot... Compute Curves...

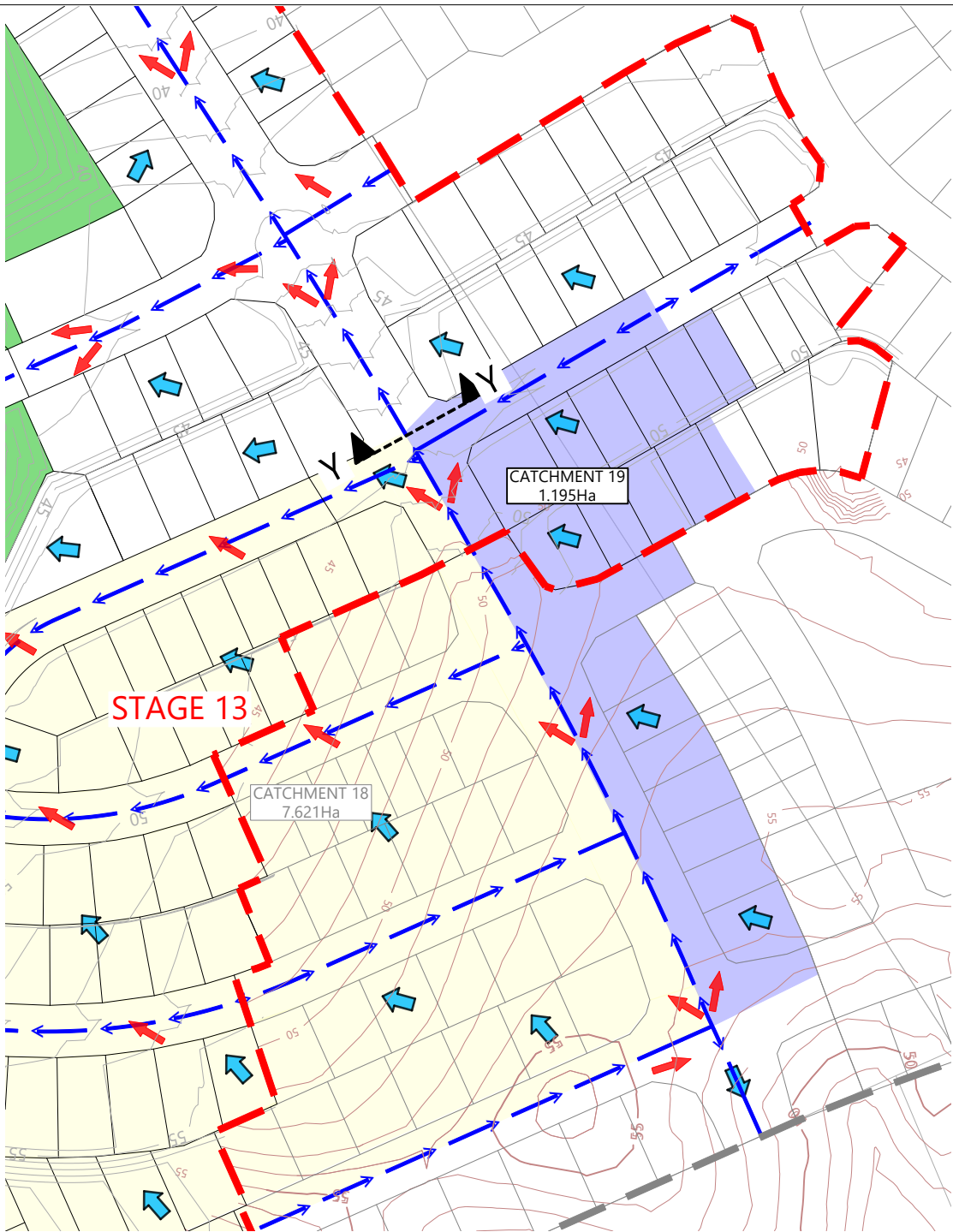
Parameter	Value	Units
Flow	0.510	cms
Depth	0.174	m
Area of Flow	0.735	m^2
Wetted Perimeter	9.172	m
Hydraulic Radius	0.080	m
Average Velocity	0.694	m/s
Top Width (T)	8.885	m
Froude Number	0.771	
Critical Depth	0.156	m
Critical Velocity	0.866	m/s
Critical Slope	0.54633	m/m
Critical Top Width	7.707	m
Calculated Max Shear Stress	534.467	N/m^2
Calculated Avg Shear Stress	246.537	N/m^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.1500	

OK Cancel

LOCAL ROAD SECTION Y-Y PARAMETERS

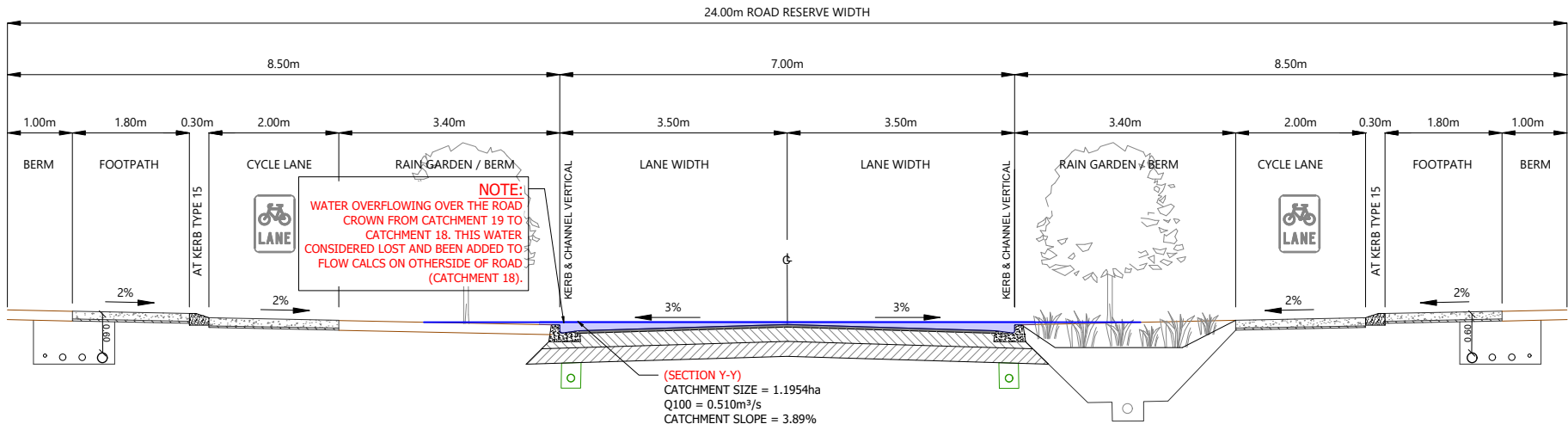


LOCAL ROAD SECTION Y-Y WITH FLOW DEPTH



ROAD SECTION Y-Y CATCHMENT PLAN

Scale: 1:1000@A1 - 1:2000@A3



COLLECTOR ROAD AND LYSNAR ROAD WITH BERM

Scale: 1:100

LEGEND:

- EXTENTS OF FAST TRACK APPLICATION
- LOT BOUNDARIES OF FAST TRACK APPLICATION
- DESIGN CONTOUR (1m)
- EXISTING CONTOUR (5m)
- STREAM PROPOSED
- STREAM RETAINED & ENHANCED
- PROPOSED CULVERT
- LOT OVERLAND FLOW
- ROAD OVERLAND FLOW
- ROAD CROSS FALL FLOW

NOTES:

- REFER TO TP108 OVERLAND FLOW - 100 YEARS STORM CALCULATIONS.
- ALL FLOWPATHS ARE WITHIN THE LEGAL ROAD WIDTH.

CATHCMENT CALCULATIONS:

- CATCHMENT FLOWS BASED ON C=0.8 FOR DEVELOPED AREAS & ROADS. RAINFALL INTENSITY 262.8mm (Q100) (INCLUDING CLIMATE CHANGE).
- CROSS-SECTIONAL AREAS AND WETTED PERIMETERS FOR ROADS CALCULATED FROM TYPICAL ROAD CROSS-SECTIONS WITH MAX DEPTH TO BOUNDARY.
- NO ALLOWANCE HAS BEEN MADE FOR THE EFFECTS OF SWALES AND RAINGARDENS IN DECREASING THE OVERLAND FLOWS.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

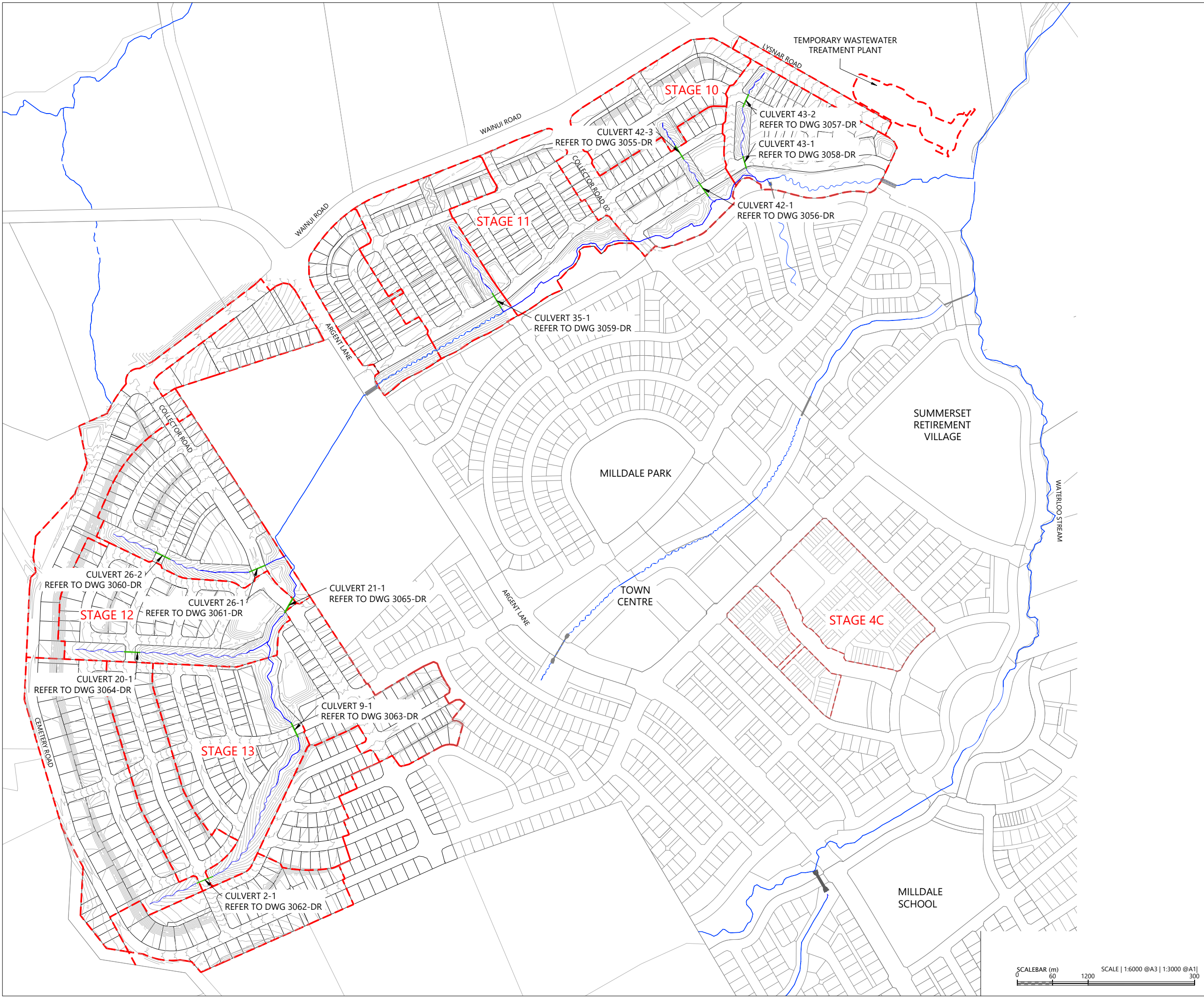
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JB	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER 100 YEAR OVRLAND  
FLOW PATH CATCHMENTS  
LAYOUT PLAN  
SHEET 19






STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3039-DR	







**LEGEND:**

EXTENTS OF FAST TRACK APPLICATION	
LOT BOUNDARIES OF FAST TRACK APPLICATION	
DESIGN CONTOUR (1m)	
STREAM RETAINED AND ENHANCED	
PROPOSED CULVERT	

REVISION DETAILS		BY	DATE
1	ISSUED FOR INFORMATION	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



N



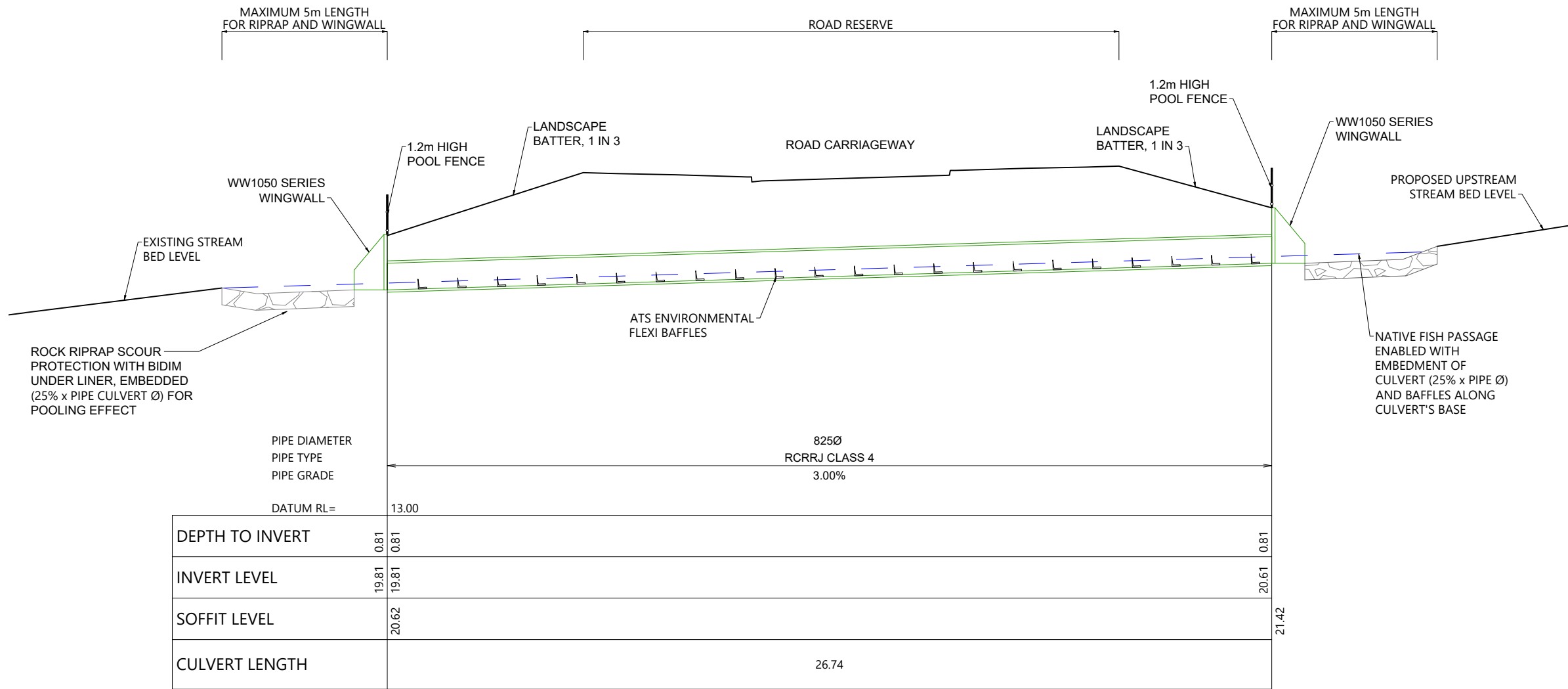
**MILLDALE**  
*Connecting Lifelines*

MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER CULVERTS  
LOCATION PLAN

STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3050-DR	





PIPE CULVERT 42-3 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

- ALL WORKS ARE TO COMPLY WITH THE TERRITORIAL AUTHORITIES' STANDARDS AND SPECIFICATIONS.
- CULVERT TO BE DESIGNED IN ACCORDANCE WITH THE NES-F FISH PASSAGE REQUIREMENTS. CULVERTS COUNTERSUNK INTO STREAM 25% OF DIAMETER OF CULVERT.
- FLEXI BAFFLES ARE TO BE USED IN THE CULVERT TO ASSIST WITH UPSTREAM FISH PASSAGE. FLEXI BAFFLES ARE TO BE CONSTRUCTED AND INSTALLED AS PER ATS ENVIRONMENTAL SPECIFICATIONS, i.e. REQUIRED BAFFLE LENGTH AND SPACINGS.
- FISH RELOCATION WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE NATIVE FISH CAPTURE AND RELOCATION PLAN.
- OUTLET DETAILS SUBJECT TO DETAILED DESIGN AT EPA STAGE IN ACCORDANCE WITH TP10.
- ALL CULVERTS TO BE CLASS 4 RCRRJ.
- SPECIFIC HEADWALL DESIGNS TO BE DESIGNED WITH GEOTECHNICAL AND STRUCTURAL SPECIALISTS AT TIME OF DETAILED DESIGN/EPA.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

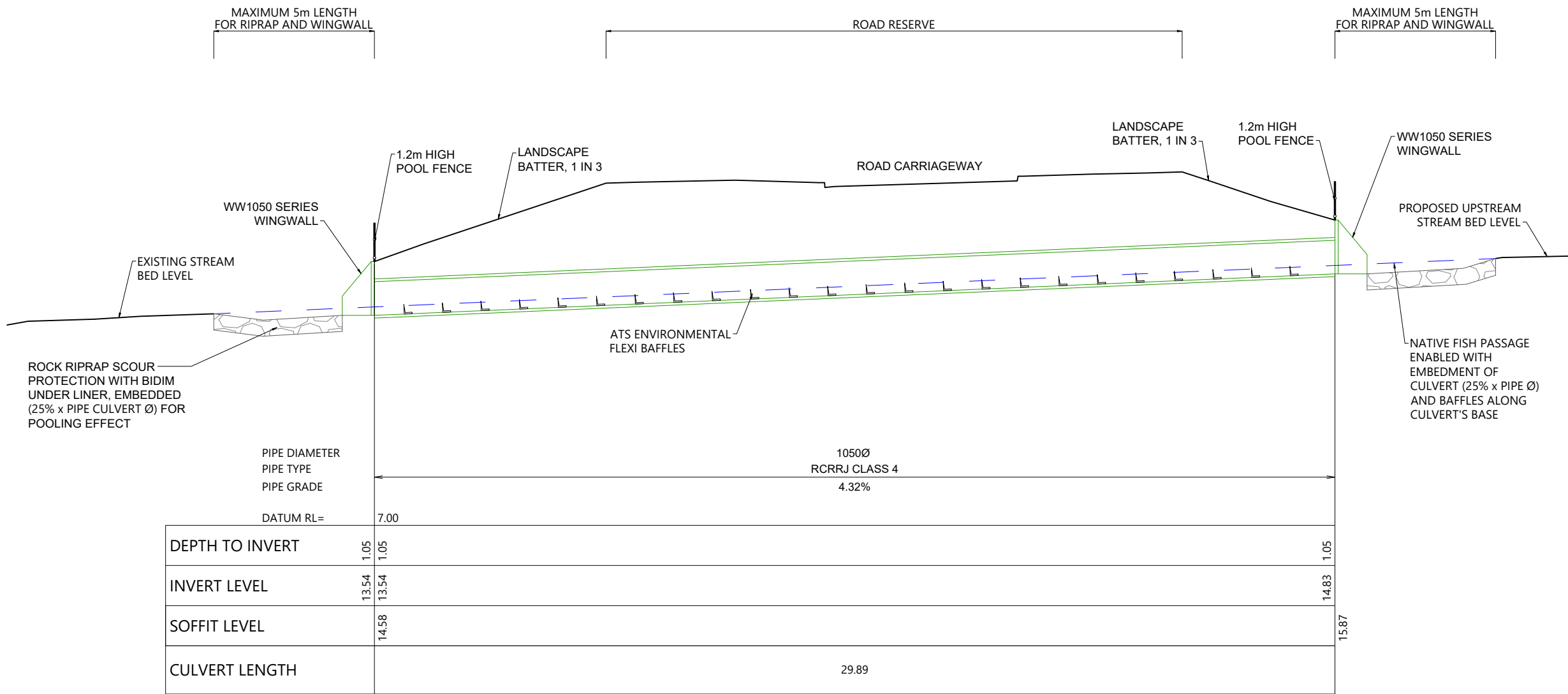
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MILLDALE  
FAST TRACK  
STAGES 10 - 13

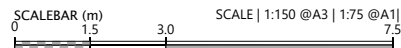
STORMWATER PIPE CULVERT  
42-3 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3055-DR	





PIPE CULVERT 42-1 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

- ALL WORKS ARE TO COMPLY WITH THE TERRITORIAL AUTHORITIES' STANDARDS AND SPECIFICATIONS.
- CULVERT TO BE DESIGNED IN ACCORDANCE WITH THE NES-F FISH PASSAGE REQUIREMENTS. CULVERTS COUNTERSUNK INTO STREAM 25% OF DIAMETER OF CULVERT.
- FLEXI BAFFLES ARE TO BE USED IN THE CULVERT TO ASSIST WITH UPSTREAM FISH PASSAGE. FLEXI BAFFLES ARE TO BE CONSTRUCTED AND INSTALLED AS PER *ATS ENVIRONMENTAL* SPECIFICATIONS, i.e. REQUIRED BAFFLE LENGTH AND SPACINGS.
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- OUTLET DETAILS SUBJECT TO DETAILED DESIGN AT EPA STAGE IN ACCORDANCE WITH TP10.
- ALL CULVERTS TO BE CLASS 4 RCRRJ.
- SPECIFIC HEADWALL DESIGNS TO BE DESIGNED WITH GEOTECHNICAL AND STRUCTURAL SPECIALISTS AT TIME OF DETAILED DESIGN/EPA.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	JAN 2025

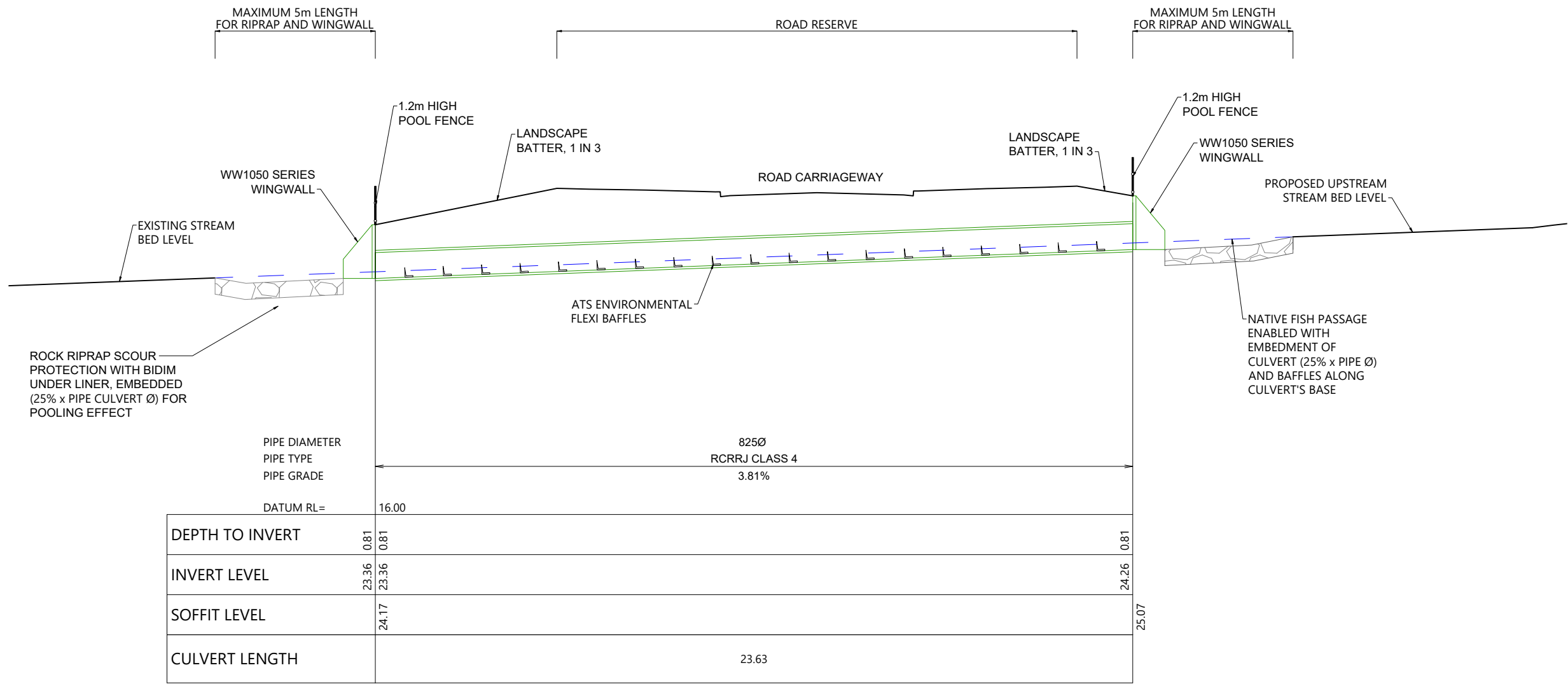
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

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MILLDALE FAST TRACK STAGES 10 - 13  STORMWATER PIPE CULVERT 42-1 LONGSECTION
---

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3056-DR	





PIPE CULVERT 43-2 LONGITUDINAL SECTION  
SCALE: 1:150

LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

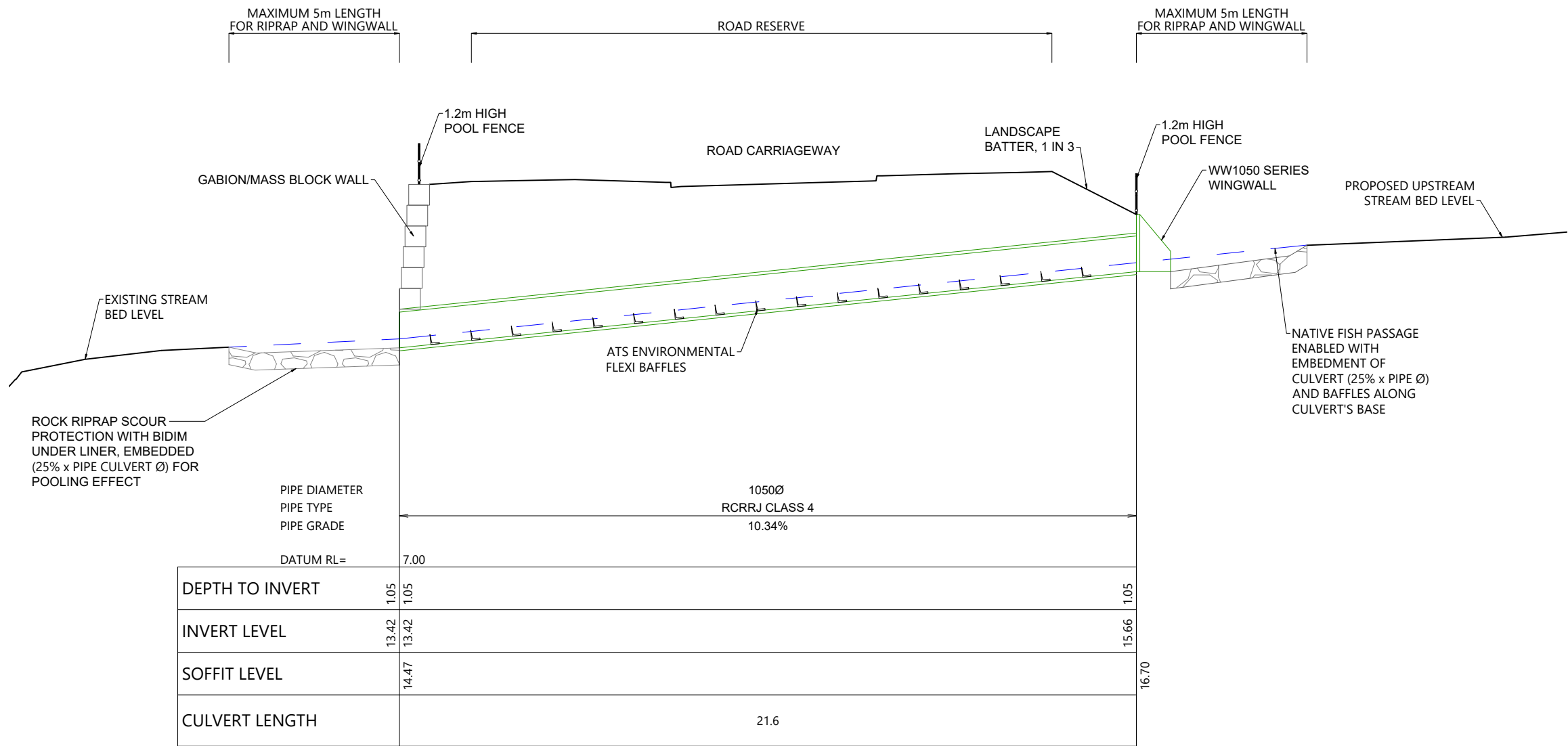
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	WOODS.CO.NZ

Consulting Engineers

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
  
STORMWATER PIPE CULVERT  
43-2 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3057-DR	





PIPE CULVERT 43-1 LONGITUDINAL SECTION  
SCALE: 1:150

LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

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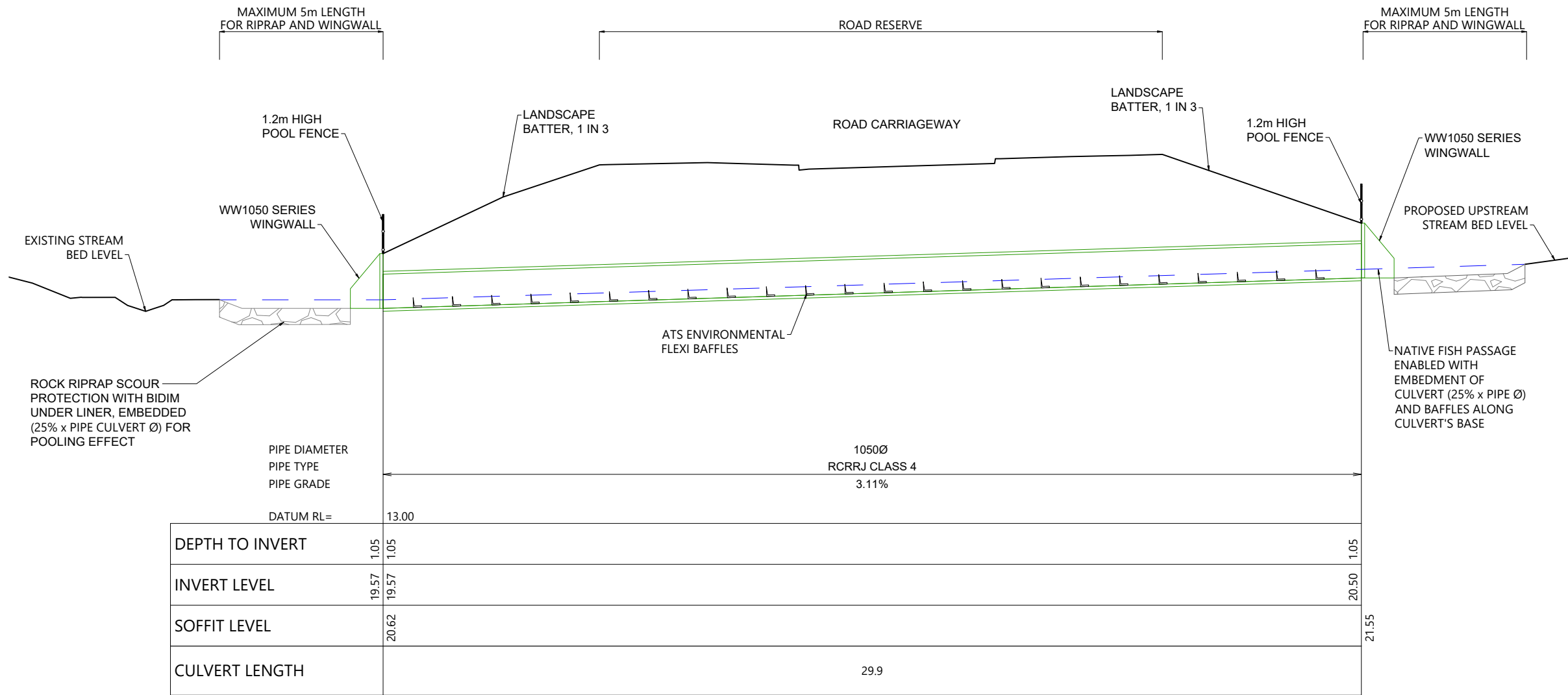
MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
43-1 LONGSECTION

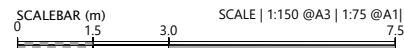
STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3058-DR	







PIPE CULVERT 35-1 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

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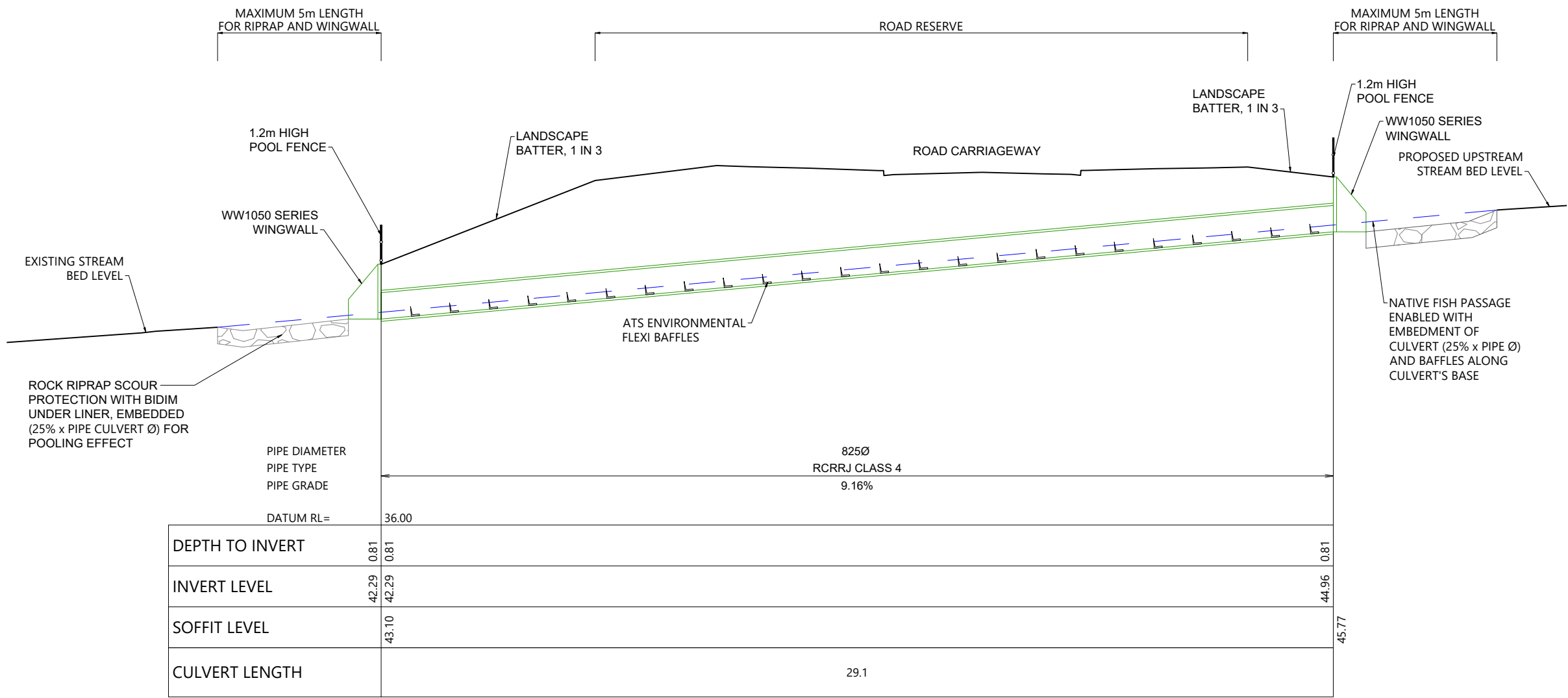
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	WOODS.CO.NZ

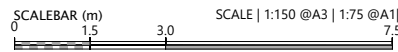
MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
35-1 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3059-DR	



PIPE CULVERT 26-2 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

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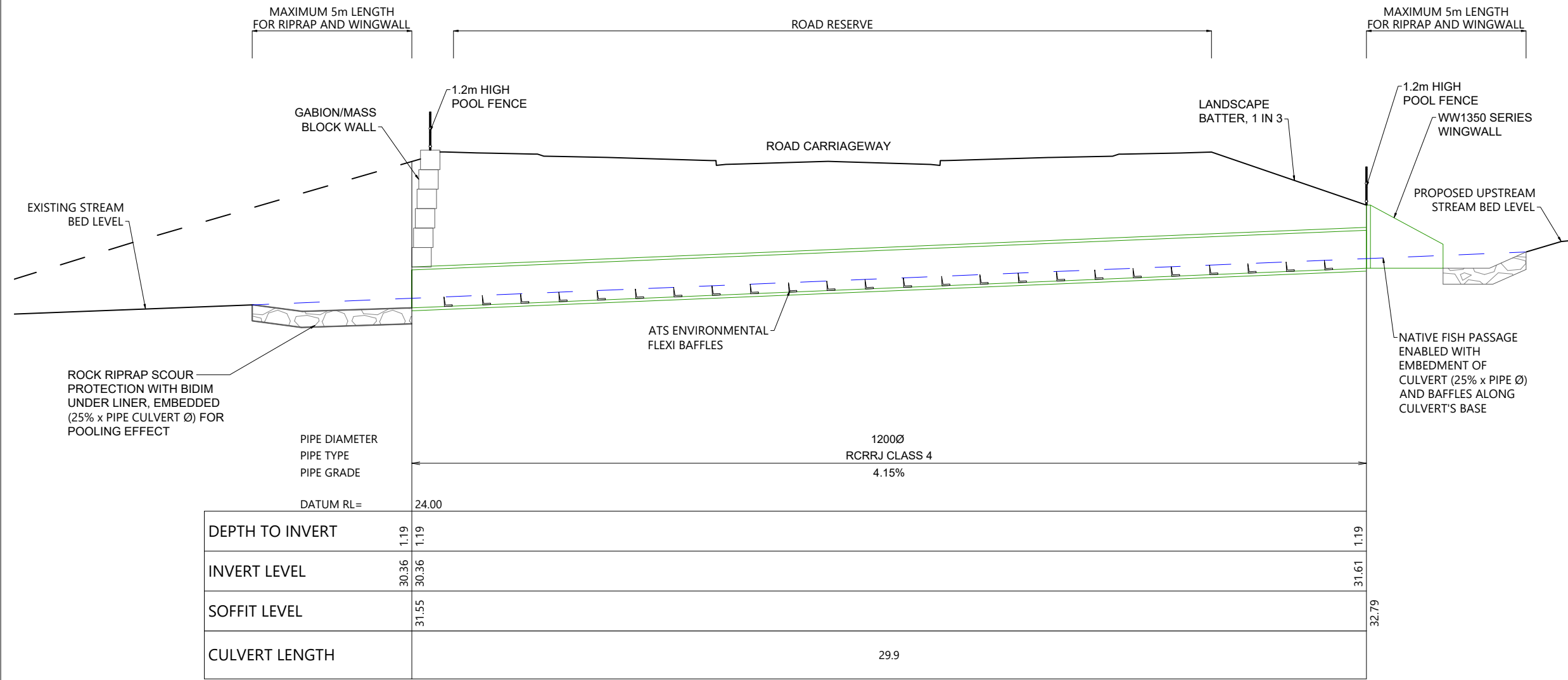
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
26-2 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3060-DR	





PIPE CULVERT 26-1 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

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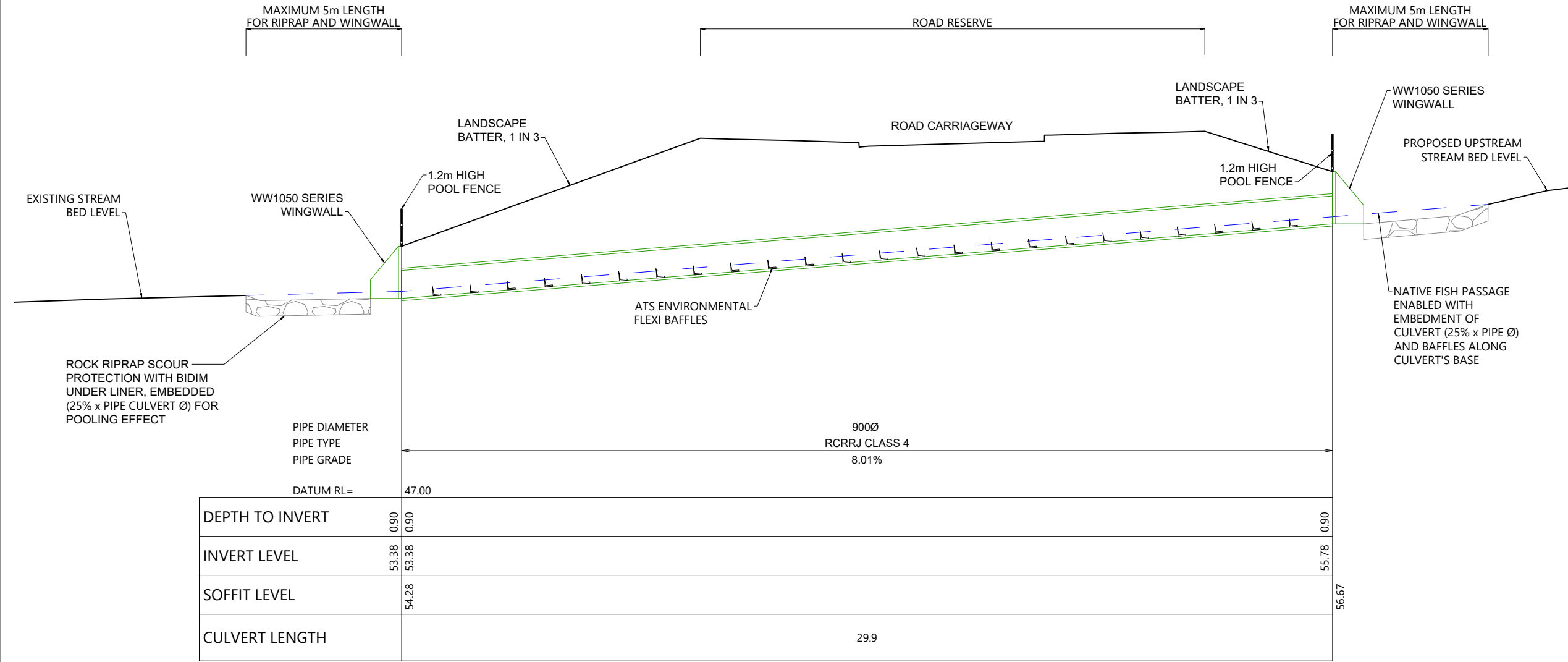
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
26-1 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3061-DR	



PIPE CULVERT 2-1 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

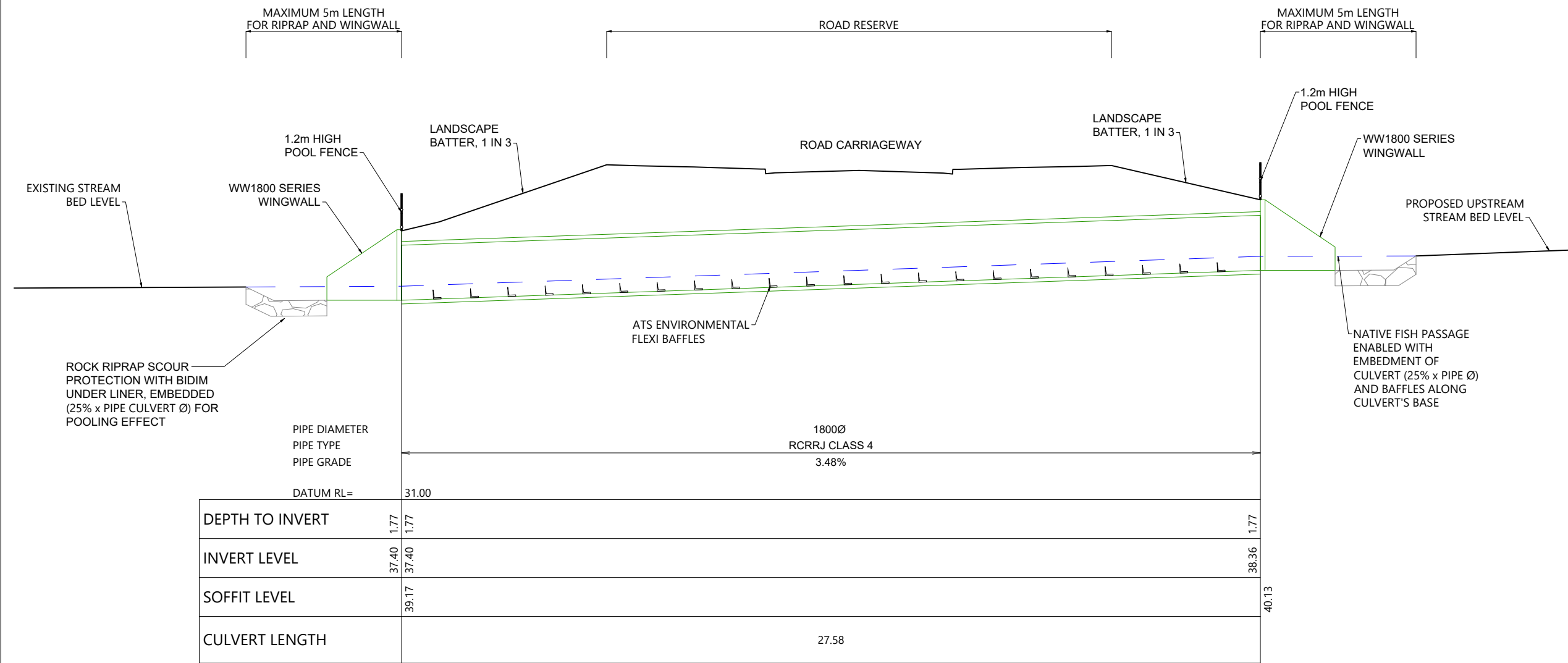
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MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
2-1 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3062-DR	





PIPE CULVERT 9-1 LONGITUDINAL SECTION  
SCALE: 1:150



LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

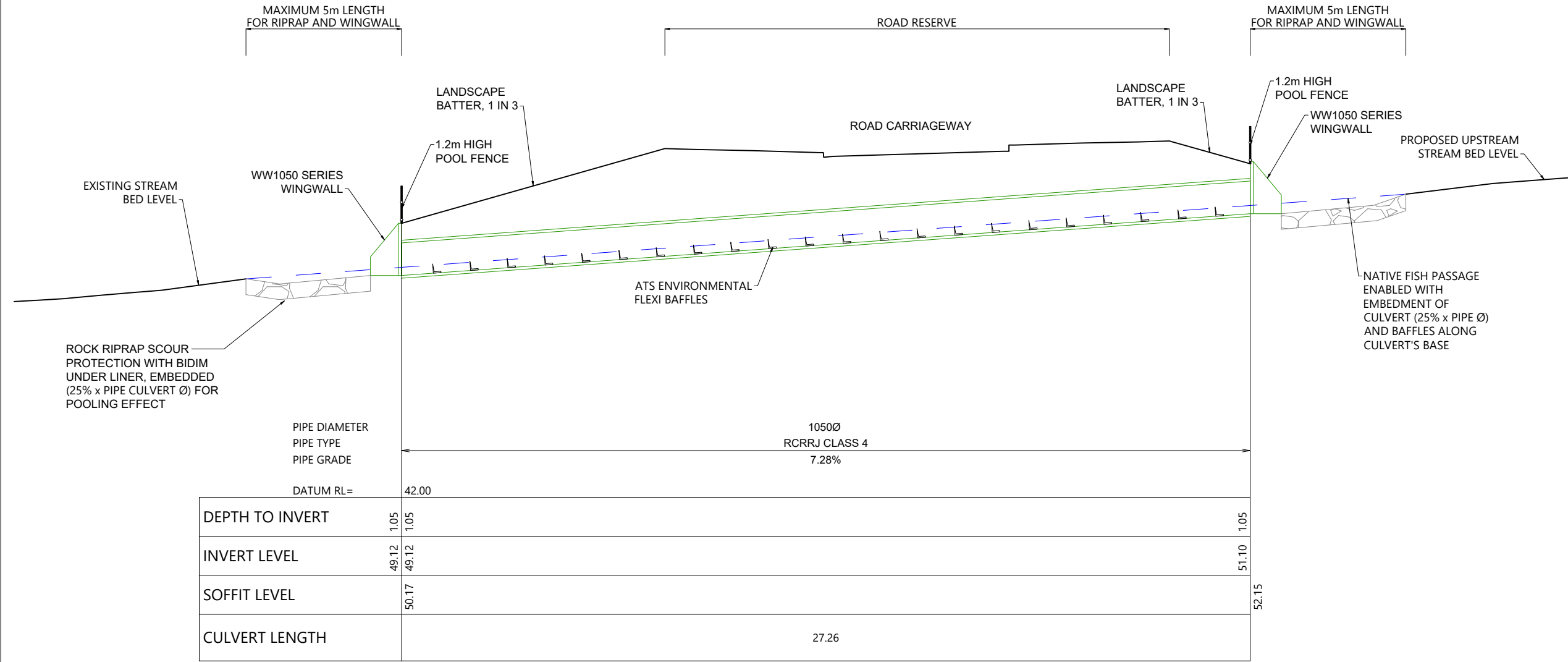
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

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MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
9-1 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3063-DR	



PIPE CULVERT 20-1 LONGITUDINAL SECTION  
SCALE: 1:150

LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

NOTES:

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

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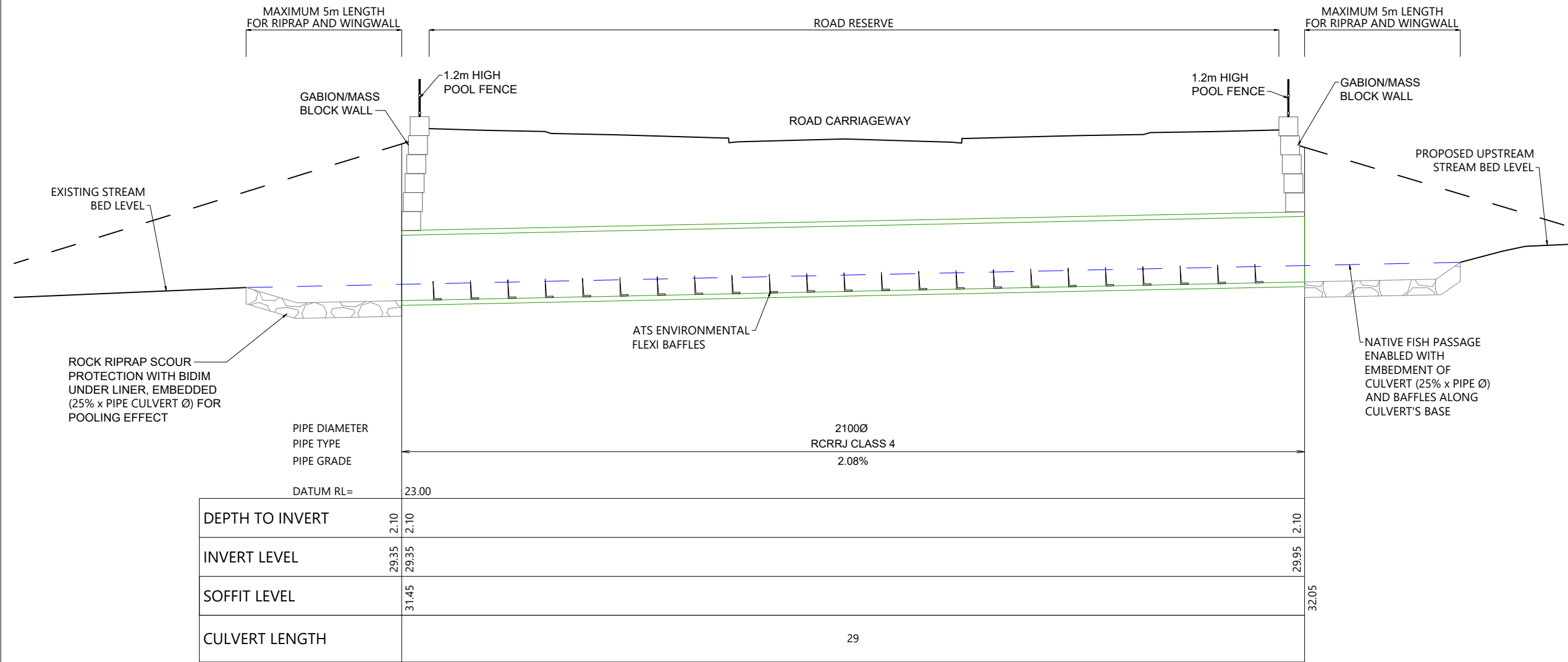
MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER PIPE CULVERT  
20-1 LONGSECTION

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3064-DR	







PIPE CULVERT 21-1 LONGITUDINAL SECTION  
SCALE: 1:150

LEGEND:

DESIGN SURFACE	
STREAM EMBEDMENT LEVEL	
PROPOSED CULVERT	
ATS-ENVIRONMENT FLEXI BAFFLES	

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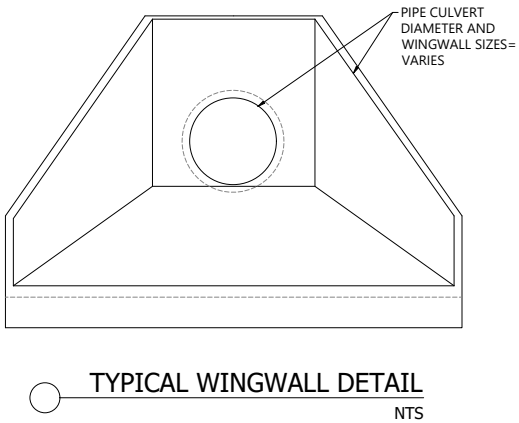
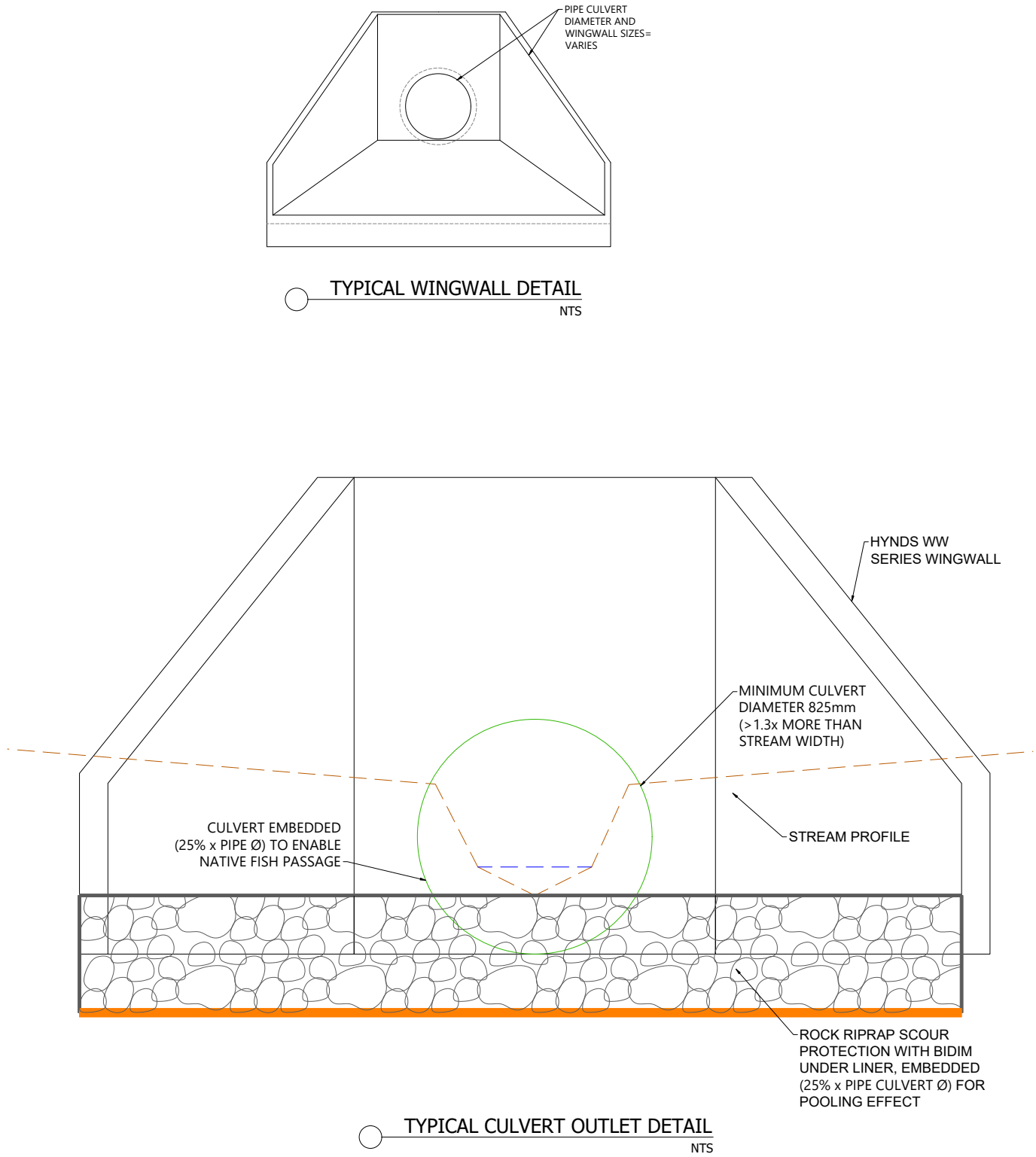
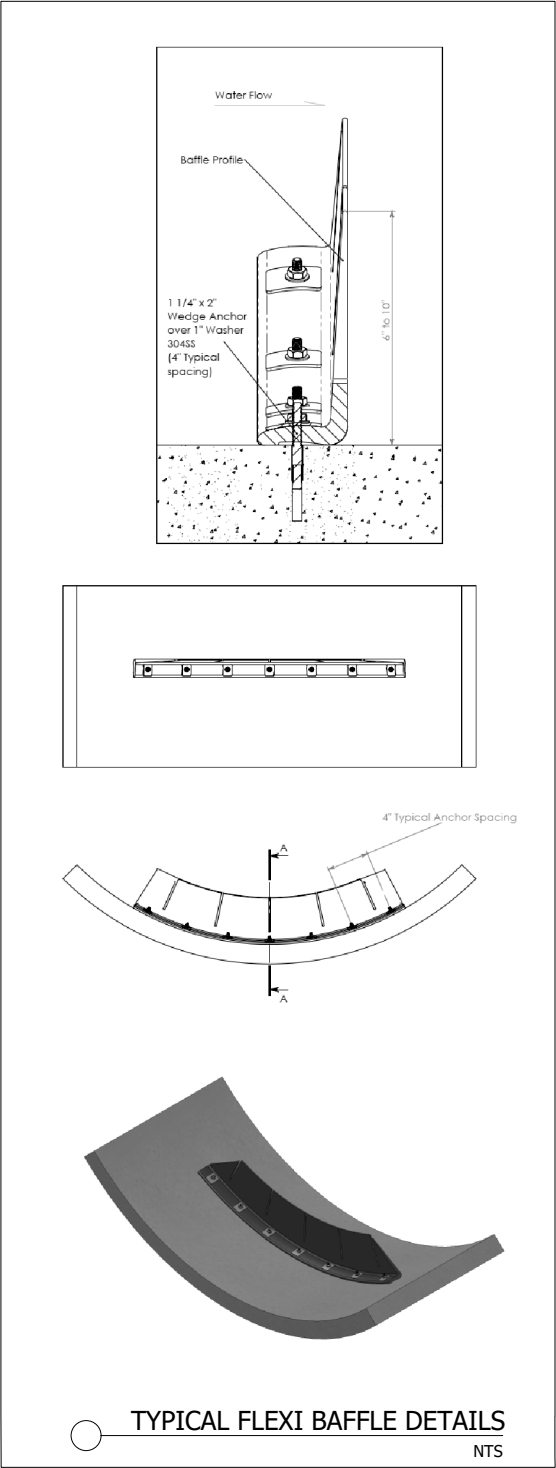
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	JB	
DRAWN	MW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

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MILLDALE FAST TRACK STAGES 10 - 13  STORMWATER PIPE CULVERT 21-1 LONGSECTION
---

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3065-DR	





NOTES:

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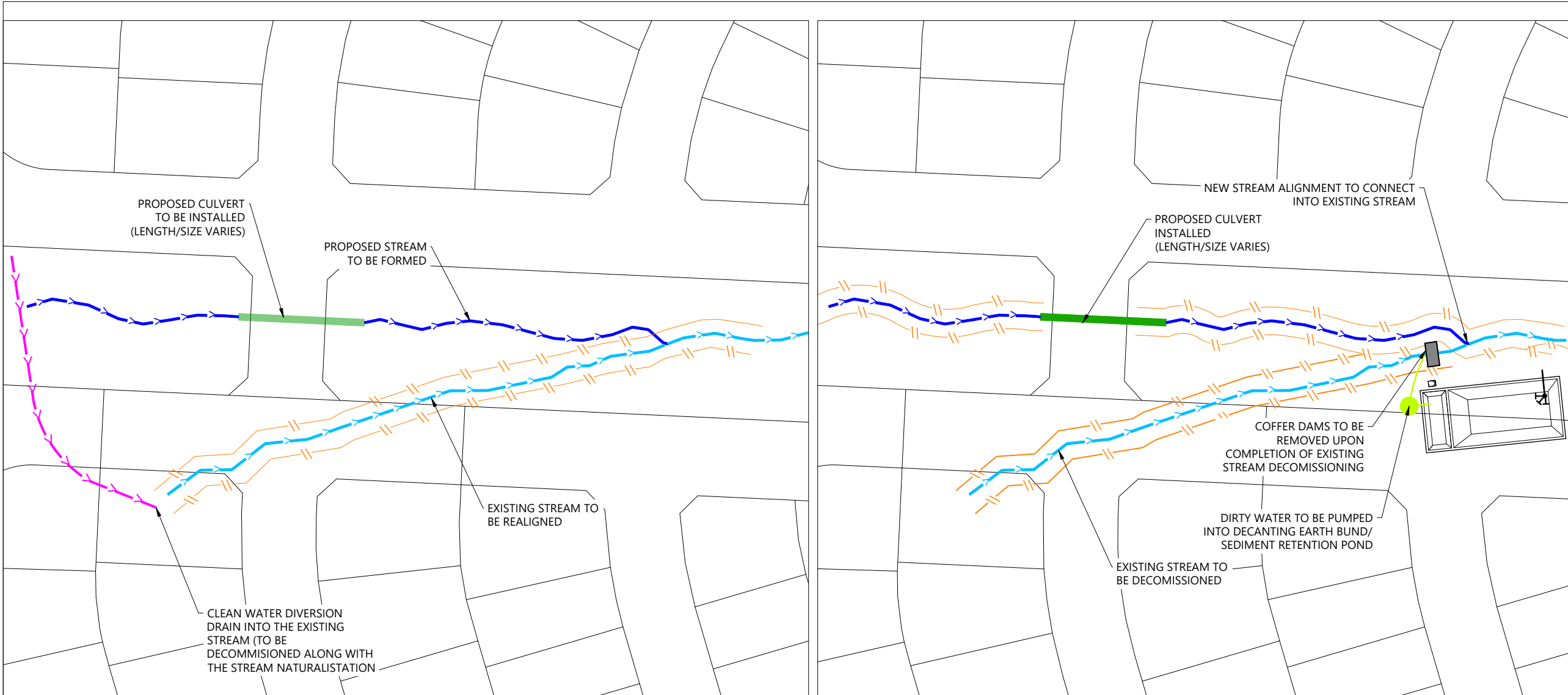
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	AP	
DRAWN	FA	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

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<b>MILLDALE FAST TRACK STAGES 10 - 13</b>
<b>TYPICAL STORMWATER PIPE CULVERT DETAIL PLAN</b>

STATUS	ISSUED FOR CONSENT	REV
SCALE	AS SHOWN	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3070-DR	





PHASE 1 & 2: ESTABLISH CONTROLS & CULVERT INSTALLATION  
SCALE: 1:800

PHASE 3: DECOMISSION EXISTING STREAM  
SCALE: 1:150

PHASE 1 - ESTABLISH CONTROLS:

1. SEDIMENT AND EROSION CONTROL PLAN TO BE APPROVED BY COUNCIL. SEDIMENT CONTROL PLANS LOCATED TO ENABLE PUMPING OF DIRTY WATER FLOWS DURING STREAM DEWATERING.
2. STREAMWORKS PRE-CONSTRUCTION MEETING TO BE HELD.
3. SEDIMENT AND EROSION CONTROL DEVICES INSTALLED AS PER APPROVED PLAN.
4. SEDIMENT AND EROSION CONTROL DEVICES CERTIFIED BY SUITABLY QUALIFIED PERSON.
5. DECANTING EARTH BUND/SEDIMENT RETENTION POND TO BE INSTALLED. FINAL POSITION TO BE CONFIRMED
6. CLEAN WATER DIVERSION DRAIN INTO EXISTING STREAM TO DIVERT CLEAN WATER AROUND SITE.
7. COFFER DAMS TO BE INSTALLED AT DOWNSTREAM OF BOTH EXISTING AND PROPOSED STREAMS. MESH INSTALLED TO ALLOW WATER FLOW.
8. DIRTY WATER PUMP OF PROPOSED STREAM TO DEB/SRP INSTALLED. CLEAN WATER DIVERSION DRAIN/PUMP FROM EXISTING STREAM TO DOWNSTREAM INSTALLED.
9. FISH CAPTURE AND RELOCATION TO BE UNDERTAKEN IN ACCORDANCE WITH THE APPROVED NATIVE FISH CAPTURE AND RELOCATION PLAN.
10. SITE ENABLED FOR BULK EARTHWORKS.

PHASE 2 - CULVERT INSTALLATION:

1. NEW STREAM ALIGNMENT TO BE FORMED IN ACCORDANCE WITH STREAM RESTORATION PLAN. STABILISED UPON COMPLETION.
2. NEW CULVERT TO BE INSTALLED. FISH PASSAGE INSTALLED.
3. ALL IN STREAM ENHANCEMENT FEATURES PLACED IN ACCORDANCE WITH THE APPROVED STREAM RESTORATION PLAN AND UNDER DIRECTION FROM ECOLOGIST ON SITE.
4. STREAMWORKS CERTIFIED BY ECOLOGIST ON SITE.
5. ANY REMAINING STREAMWORKS STABILISED.
6. NEW STREAM TO BE DAYLIGHTED INTO EXISTING STREAM, AND LIVENED FOR FLOW.

PHASE 3 - DECOMISSION EXISTING STREAM:

1. CLEAN WATER CATCHMENTS REDIRECTED TO REALIGNED STREAM HEAD.
2. COFFER DAMS TO BE INSTALLED AT DOWNSTREAM END OF EXISTING STREAM.
3. PUMP TO BE INSTALLED TO PUMP WATER FROM EXISTING STREAM TO DEB/SRP.
4. EXISTING WATERCOURSE DEWATERED IN ACCORDANCE WITH THE APPROVED NATIVE FISH CAPTURE AND RELOCATION PLAN.
5. EXISTING WATERCOURSE MUCKED OUT IN ACCORDANCE WITH THE APPROVED NATIVE FISH CAPTURE AND RELOCATION PLAN.
6. SUBSOIL/UNDERFILL DRAIN COILS INSTALLED AS PER GEOTECHNICAL RECCOMENDATIONS.
7. COFFER DAM REMOVED.
8. EXISTING STREAM FILLED TO DESIGN SURFACE SUBGRADE LEVELS.
9. RIPARIAN PLANTING TO BE COMPLETED IN ACCORDANCE WITH THE STREAM RESTORATION PLAN WITHIN THE FIRST PLANTING SEASON FOLLOWING COMPLETION OF THESE EARTHWORKS.
10. STREAM MONITORING PROGRAMME TO COMMENCE IN ACCORDANCE WITH THE STREAM MONITORING PLAN.

LEGEND:

EXTENTS OF FAST TRACK APPLICATION	
LOT BOUNDARIES OF FAST TRACK APPLICATION	
DESIGN CONTOUR (1m)	
STREAM RETAINED AND ENHANCED	
PROPOSED CULVERT	

REVISION DETAILS		BY	DATE
1	ISSUED FOR INFORMATION	JW	FEB 2025

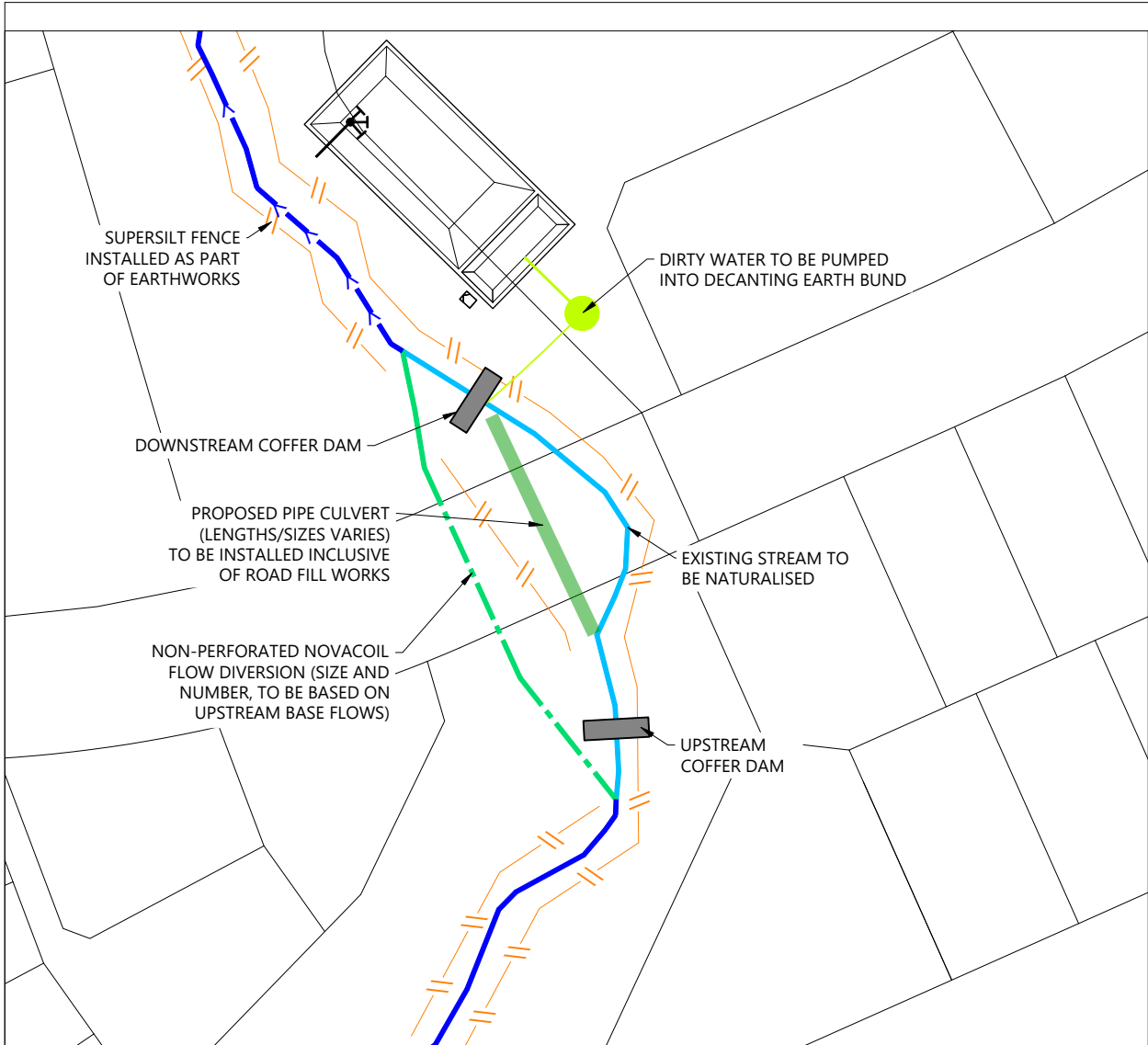
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER CULVERTS  
TYPICAL INSTALLATION PLAN  
-OFFLINE CULVERT

STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3075-DR	

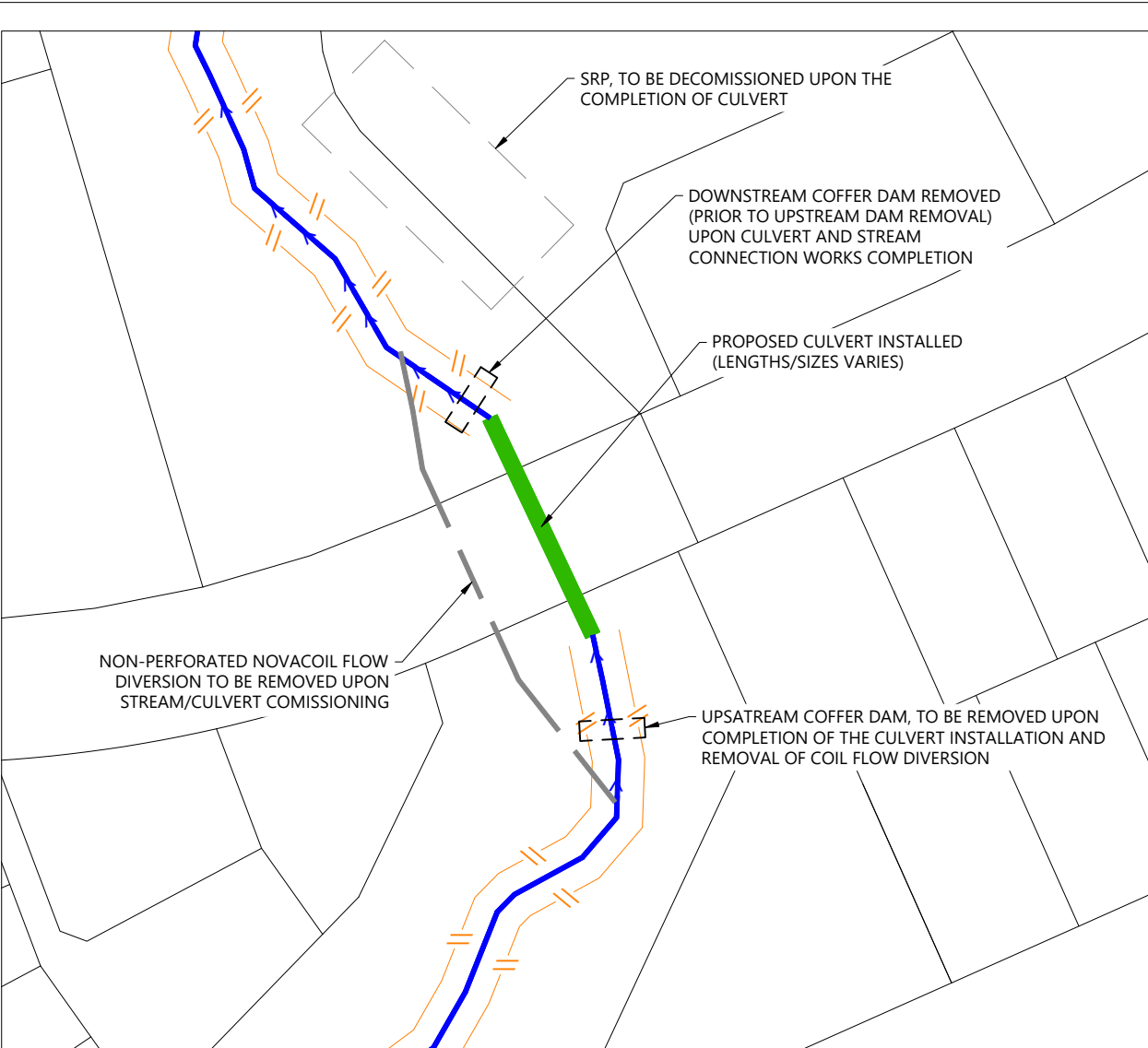




PHASE 1: ESTABLISH CONTROLS  
SCALE: 1:800

PHASE 1 - ESTABLISH CONTROLS:

1. SEDIMENT AND EROSION CONTROL PLAN TO BE APPROVED BY COUNCIL. SEDIMENT CONTROL PLANS LOCATED TO ENABLE PUMPING OF DIRTY WATER FLOWS DURING STREAM DEWATERING.
2. STREAMWORKS PRE-CONSTRUCTION MEETING TO BE HELD.
3. SEDIMENT AND EROSION CONTROL DEVICES INSTALLED AS PER APPROVED PLAN.
4. SEDIMENT AND EROSION CONTROL DEVICES CERTIFIED BY SUITABLY QUALIFIED PERSON.
5. BYPASS CHANNEL/NOVACOIL FLOW DIVERSION TO BE INSTALLED. (SIZES AND NUMBER TO BE BASED ON THE UPSTREAM BASE FLOW)
6. DECANTING EARTH BUND/SEDIMENT RETENTION POND TO BE INSTALLED. FINAL POSITION TO BE CONFIRMED
7. COFFER DAMS TO BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE CULVERT/STREAM NATURALISATION WORKS. MESH INSTALLED TO ALLOW WATER FLOW. PUMP INSTALLED TO PUMP DIRTY WATER INTO DEB/SRP.
8. FISH CAPTURE AND RELOCATION TO BE UNDERTAKEN IN ACCORDANCE WITH THE APPROVED NATIVE FISH CAPTURE AND RELOCATION PLAN.
9. UPPER MESH DAM TO BE REPLACED WITH COFFER DAM TO CEASE WATER FLOW FOR DEWATERING OPERATION.
10. EXISTING WATERCOURSE DEWATERED IN ACCORDANCE WITH THE APPROVED NATIVE FISH CAPTURE AND RELOCATION PLAN.
11. EXISTING WATERCOURSE MUCKED OUT IN ACCORDANCE WITH THE APPROVED NATIVE FISH CAPTURE AND RELOCATION PLAN.



PHASE 2: CULVERT INSTALLATION  
SCALE: 1:150

PHASE 2 - CULVERT INSTALLATION:

1. EXISTING WATERCOURSE TO BE MUCKED OUT AND GEOTECHNICAL RECOMMENDATIONS TO BE APPLIED TO CULVERT SUBGRADE.
2. NEW CULVERT TO BE INSTALLED. FISH PASSAGE INSTALLED.
3. ALL IN STREAM ENHANCEMENT FEATURES PLACED IN ACCORDANCE WITH THE APPROVED STREAM RESTORATION PLAN AND UNDER DIRECTION FROM ECOLOGIST ON SITE.
4. STREAMWORKS CERTIFIED BY ECOLOGIST ON SITE.
5. ANY REMAINING STREAMWORKS STABILISED.
6. COFFER DAMS TO BE REMOVED AND DOWNSTREAM END OF CULVERT DAYLIGHTED INTO EXISTING STREAM. NOVACOIL FLOW DIVERSION TO BE REMOVED.
7. RIPARIAN PLANTING TO BE COMPLETED IN ACCORDANCE WITH THE STREAM RESTORATION PLAN WITHIN THE FIRST PLANTING SEASON FOLLOWING COMPLETION OF THESE EARTHWORKS.
8. STREAM MONITORING PROGRAMME TO COMMENCE IN ACCORDANCE WITH THE STREAM MONITORING PLAN.

LEGEND:

EXTENTS OF FAST TRACK APPLICATION	
LOT BOUNDARIES OF FAST TRACK APPLICATION	
DESIGN CONTOUR (1m)	
STREAM RETAINED AND ENHANCED	
PROPOSED CULVERT	

REVISION DETAILS		BY	DATE
1	ISSUED FOR INFORMATION	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

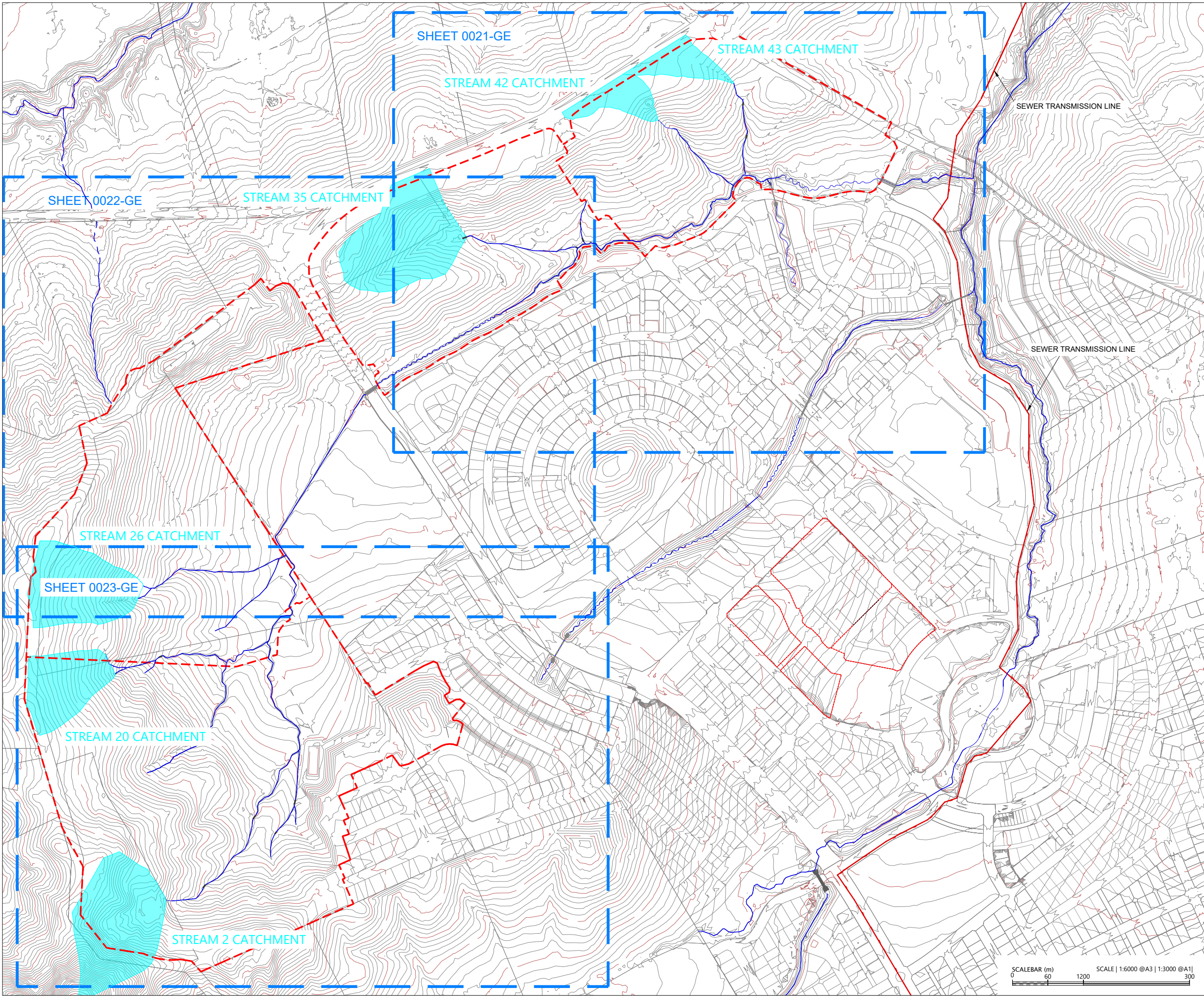
MILLDALE  
FAST TRACK  
STAGES 10 - 13

STORMWATER CULVERTS  
TYPICAL INSTALLATION PLAN  
-ONLINE CULVERT

STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3076-DR	







LEGEND:

- WAINUI PRECINCT BOUNDARY
- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARY
- WATERCOURSE
- TRANSMISSION SEWER LINE

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

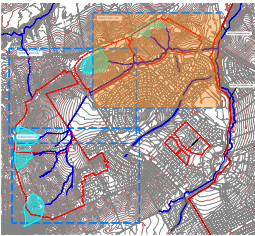
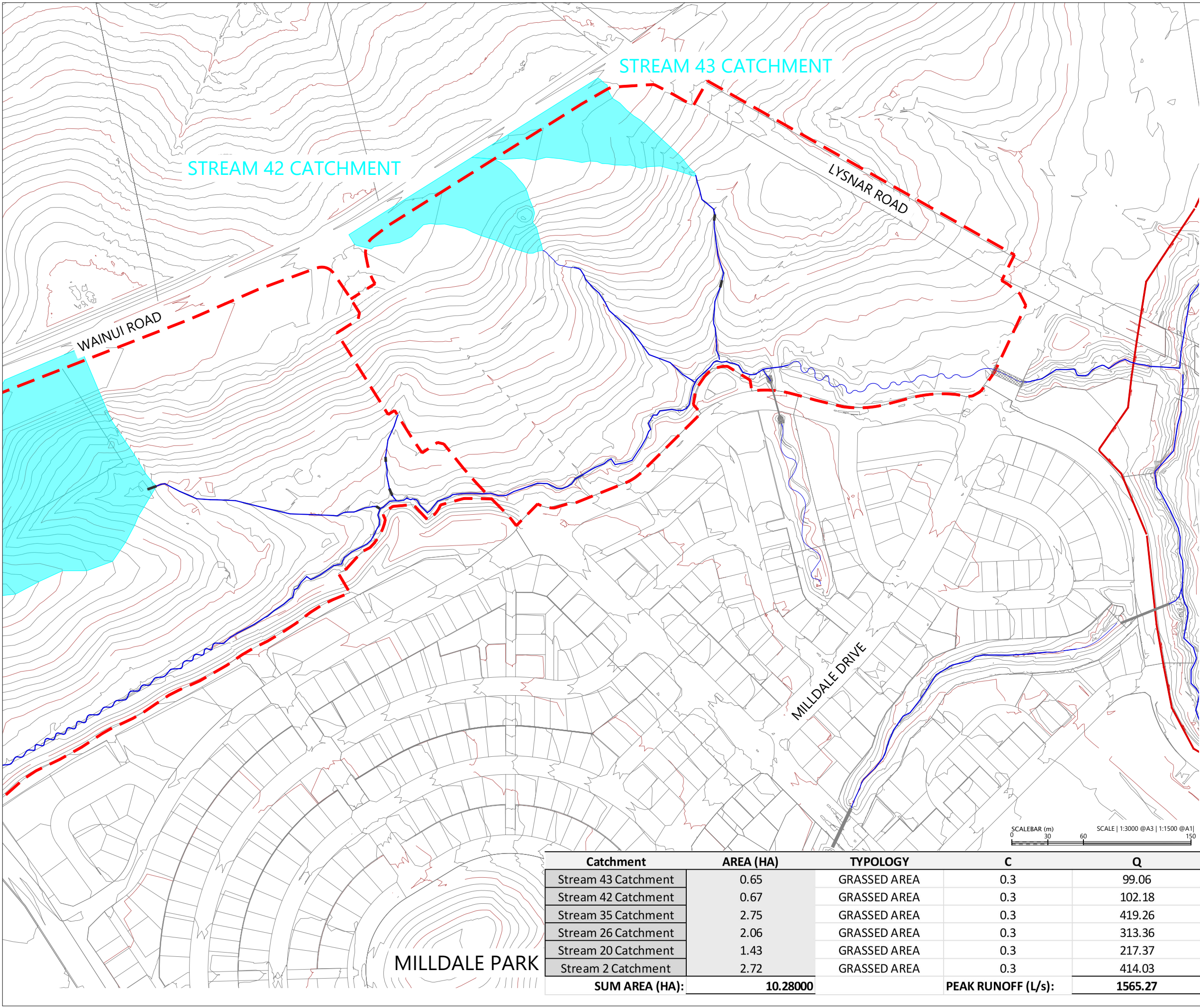
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
PRE-DEVELOPMENT STREAM  
CATCHMENT OVERALL PLAN

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:6000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3080-DR	





LOCALITY PLAN  
N.T.S



LEGEND:

- WAINUI PRECINCT BOUNDARY
- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARY
- WATERCOURSE
- TRANSMISSION SEWER LINE

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

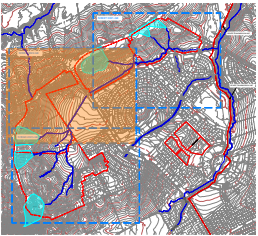
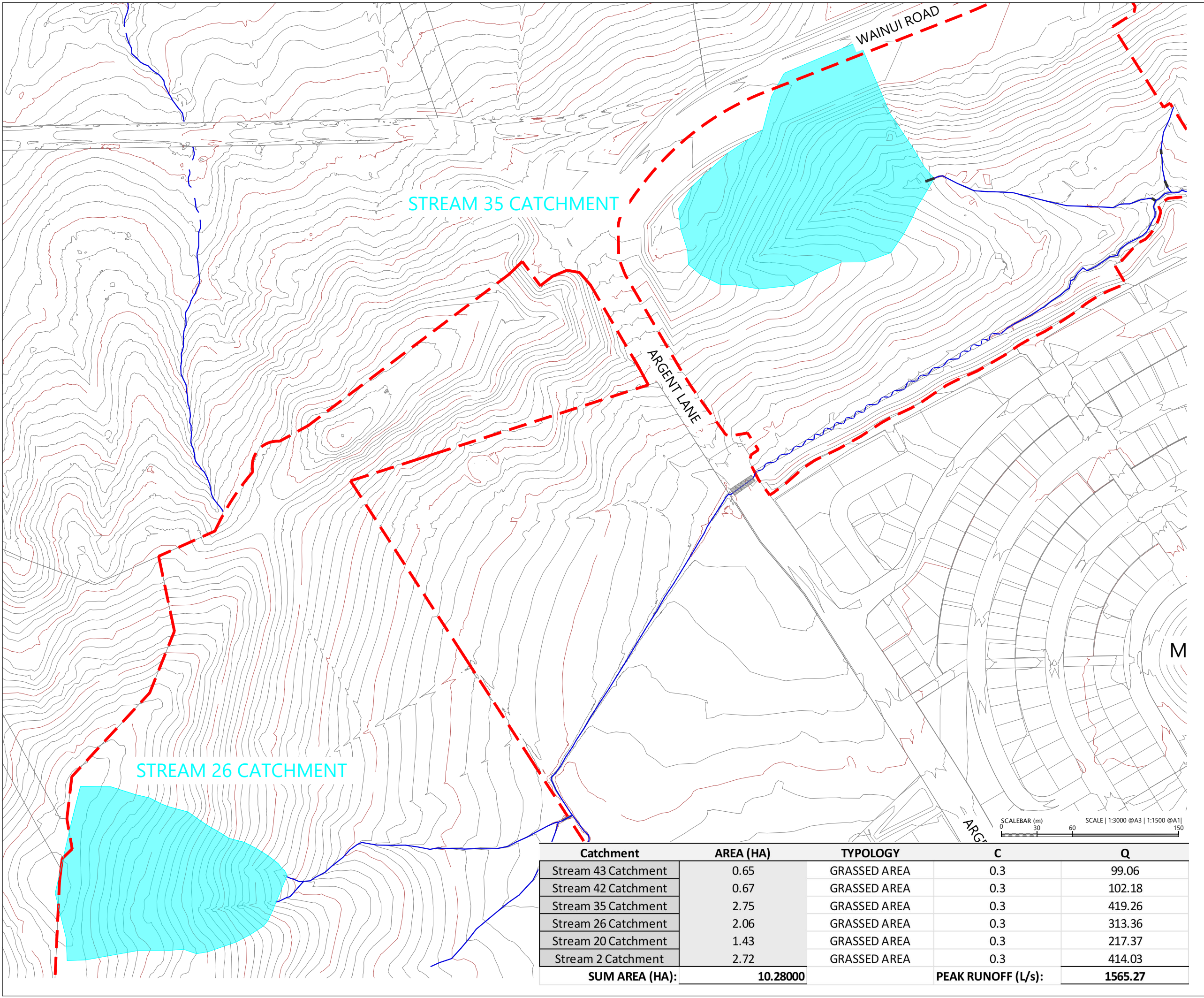


MILDALE  
FAST TRACK  
STAGES 10 - 13

PRE-DEVELOPMENT STREAM  
CATCHMENT PLAN  
SHEET 1

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3081-DR	





LOCALITY PLAN  
N.T.S



LEGEND:

- WAINUI PRECINCT BOUNDARY
- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARY
- WATERCOURSE
- TRANSMISSION SEWER LINE

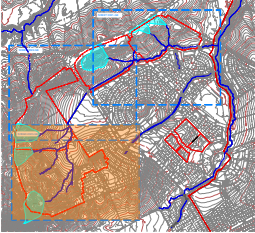
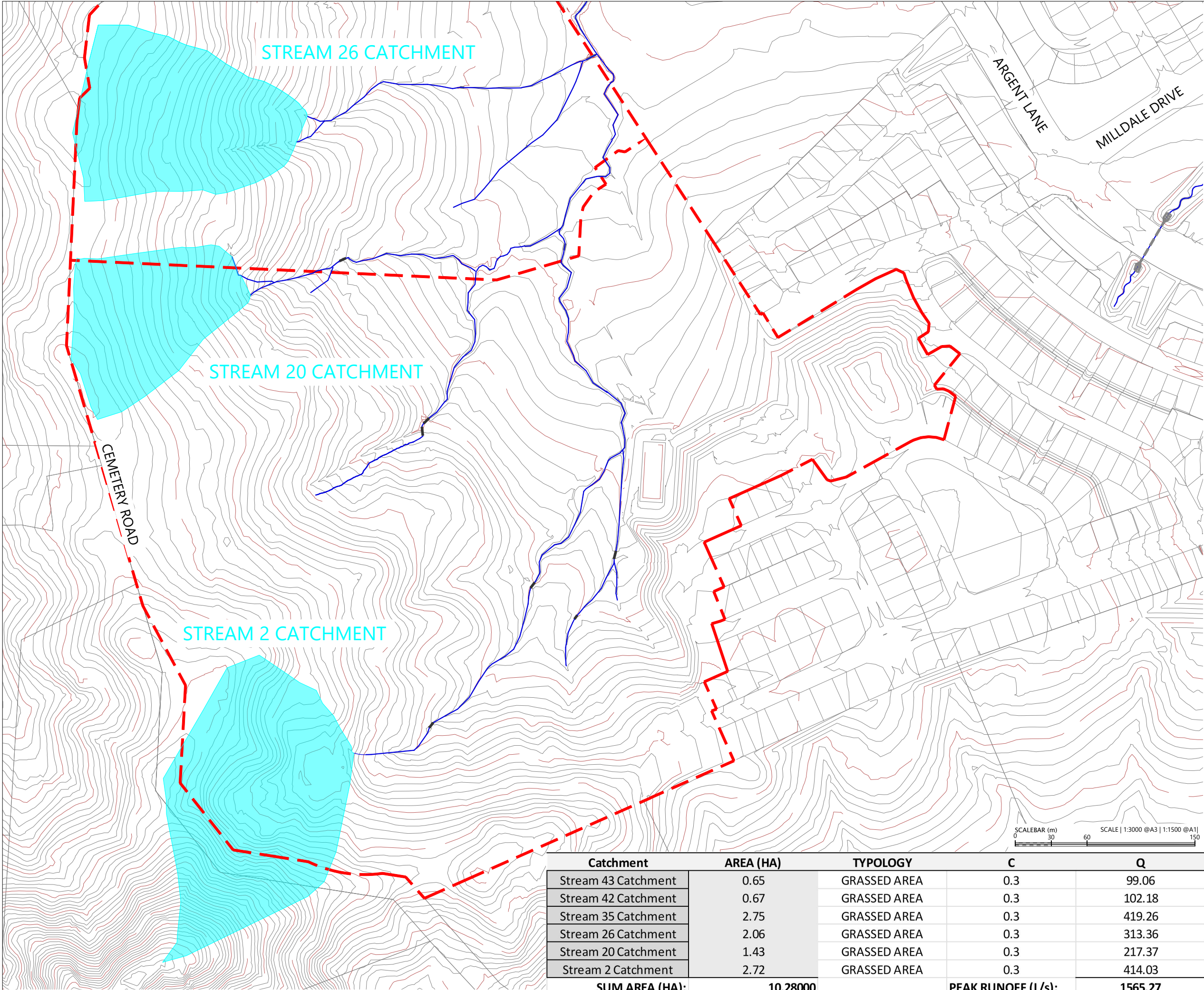
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
PRE-DEVELOPMENT STREAM  
& WETLAND CATCHMENT PLAN  
SHEET 2

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3082-DR	





LOCALITY PLAN  
N.T.S



**LEGEND:**

- WAINUI PRECINCT BOUNDARY
- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARY
- WATERCOURSE
- TRANSMISSION SEWER LINE

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

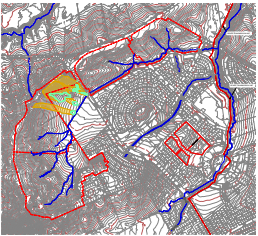
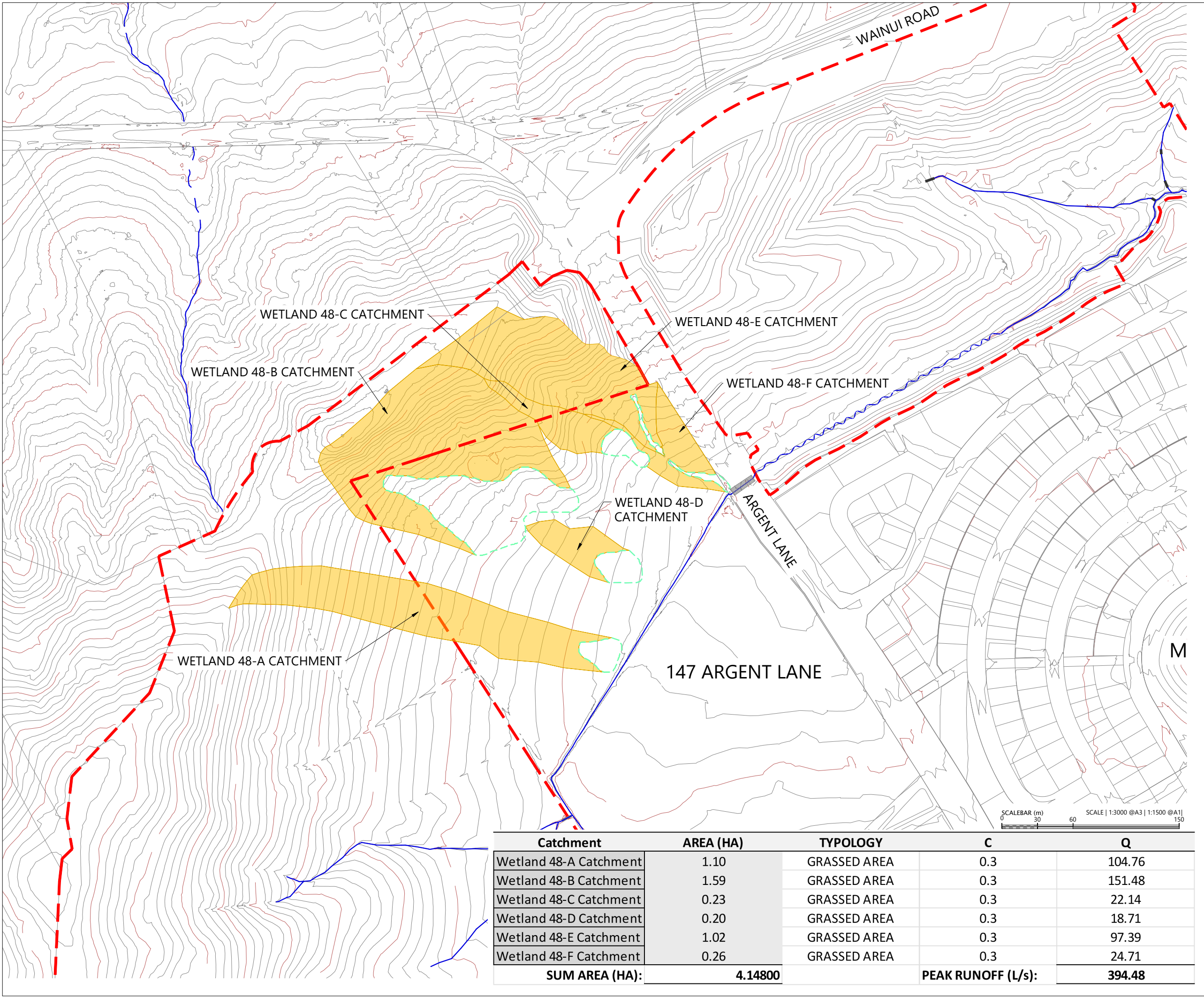
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

**MILLDALE  
FAST TRACK  
STAGES 10 - 13**

**PRE-DEVELOPMENT STREAM  
CATCHMENT PLAN  
SHEET 3**

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3083-DR	





LOCALITY PLAN  
N.T.S



LEGEND:

- WAINUI PRECINCT BOUNDARY
- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARY
- WATERCOURSE
- POTENTIAL WETLAND ON ADJOINING OWNER PROPERTY

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
  
147 ARGENT LANE  
PRE-DEVELOPMENT  
WETLAND CATCHMENT PLAN

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3085-DR	





SHEET 3001-DR

SHEET 3002-DR

SHEET 3003-DR

### LEGEND

- EXTENTS OF FAST TRACK APPLICATION — —
- BOUNDARIES — —
- WATERCOURSE (SUBJECT TO ECOLOGY) — —
- EXISTING SWALE — —
- DESIGN CONTOURS (1m INTERVAL) — 55.0 —
- PROPOSED STORMWATER — —
- EXISTING STORMWATER — —
- SINGLE CATCHPIT 
- OUTLET 
- POST-DEVELOPMENT  
STREAM 43 CATCHMENT- 1.11Ha —
- POST-DEVELOPMENT  
STREAM 42 CATCHMENT- 0.80Ha —
- POST-DEVELOPMENT  
STREAM 35 CATCHMENT- 1.12Ha —
- POST-DEVELOPMENT  
STREAM 26 CATCHMENT- 1.13Ha —
- POST-DEVELOPMENT  
STREAM 20 CATCHMENT- 1.47Ha —
- POST-DEVELOPMENT  
STREAM 2 CATCHMENT- 1.46Ha —

### NOTES

1. STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



N



MILLDALE  
Connecting Lives & Places

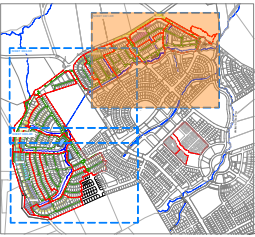
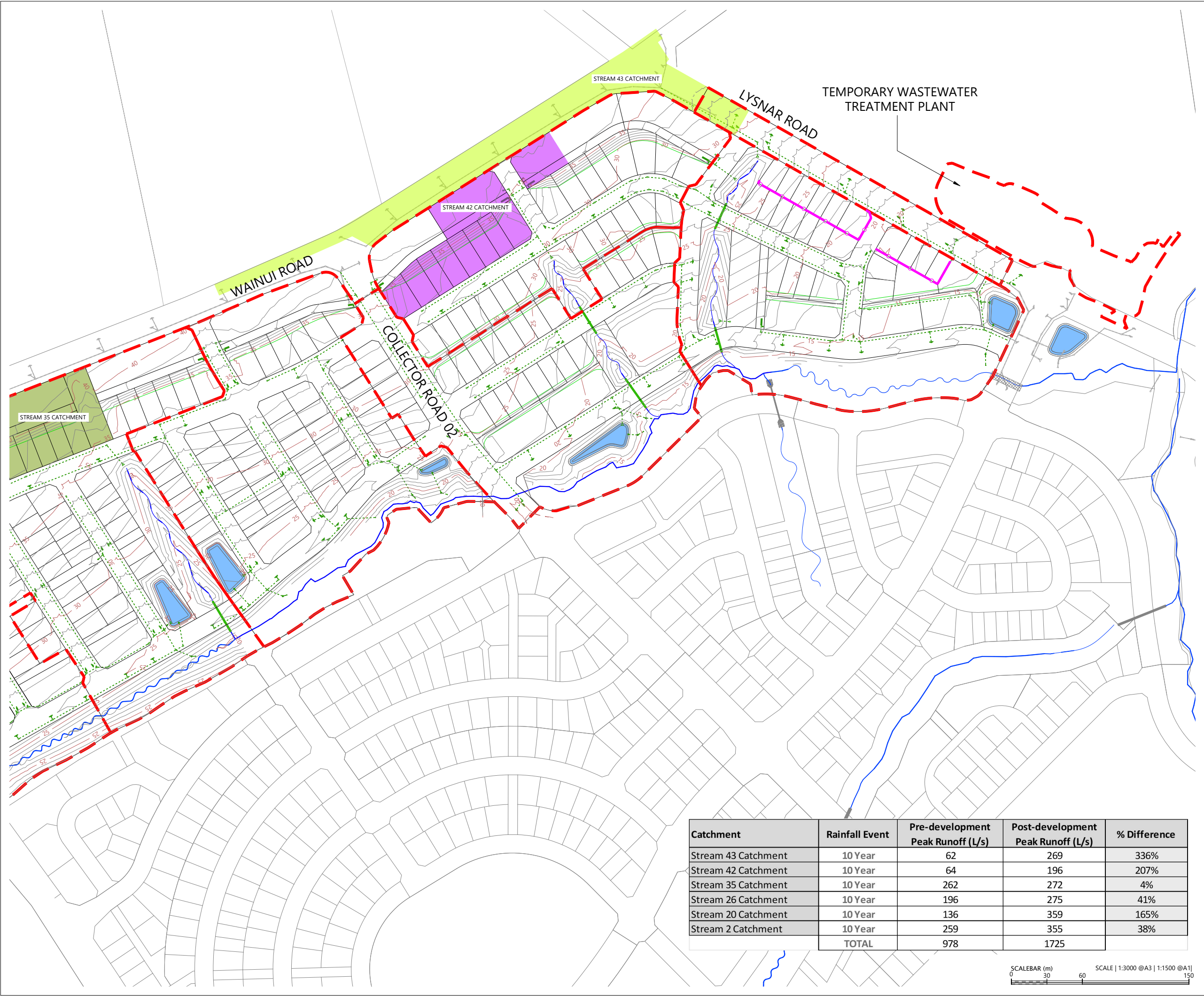
## MILLDALE FAST TRACK STAGES 10 - 13 POST-DEVELOPMENT STREAM CATCHMENT OVERALL PLAN

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:6000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3090-DR	

Catchment	Rainfall Event	Pre-development Peak Runoff (L/s)	Post-development Peak Runoff (L/s)	% Difference
Stream 43 Catchment	10 Year	62	269	336%
Stream 42 Catchment	10 Year	64	196	207%
Stream 35 Catchment	10 Year	262	272	4%
Stream 26 Catchment	10 Year	196	275	41%
Stream 20 Catchment	10 Year	136	359	165%
Stream 2 Catchment	10 Year	259	355	38%
	TOTAL	978	1725	







LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- POST-DEVELOPMENT  
STREAM 43 CATCHMENT- 1.11Ha
- POST-DEVELOPMENT  
STREAM 42 CATCHMENT- 0.80Ha
- POST-DEVELOPMENT  
STREAM 35 CATCHMENT- 1.12Ha
- POST-DEVELOPMENT  
STREAM 26 CATCHMENT- 1.13Ha
- POST-DEVELOPMENT  
STREAM 20 CATCHMENT- 1.47Ha
- POST-DEVELOPMENT  
STREAM 2 CATCHMENT- 1.46Ha

NOTES

- STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

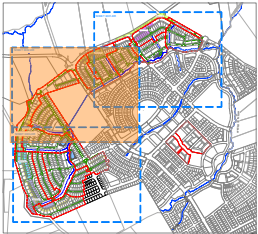
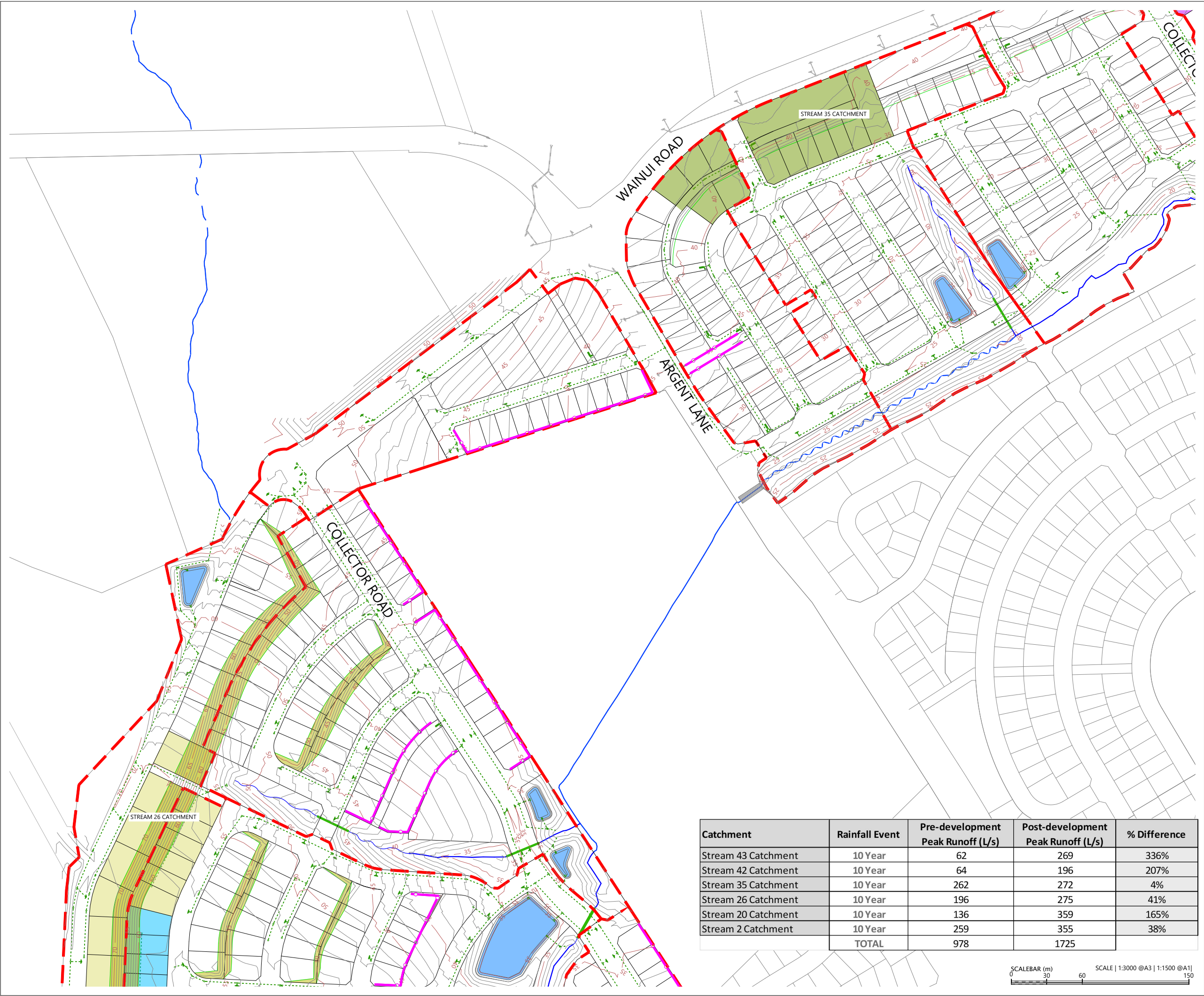
MILLDALE  
FAST TRACK  
STAGES 10 - 13  
POST-DEVELOPMENT STREAM  
CATCHMENT PLAN  
SHEET 1

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3091-DR	

Catchment	Rainfall Event	Pre-development Peak Runoff (L/s)	Post-development Peak Runoff (L/s)	% Difference
Stream 43 Catchment	10 Year	62	269	336%
Stream 42 Catchment	10 Year	64	196	207%
Stream 35 Catchment	10 Year	262	272	4%
Stream 26 Catchment	10 Year	196	275	41%
Stream 20 Catchment	10 Year	136	359	165%
Stream 2 Catchment	10 Year	259	355	38%
	TOTAL	978	1725	







LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- POST-DEVELOPMENT  
STREAM 43 CATCHMENT- 1.11Ha
- POST-DEVELOPMENT  
STREAM 42 CATCHMENT- 0.80Ha
- POST-DEVELOPMENT  
STREAM 35 CATCHMENT- 1.12Ha
- POST-DEVELOPMENT  
STREAM 26 CATCHMENT- 1.13Ha
- POST-DEVELOPMENT  
STREAM 20 CATCHMENT- 1.47Ha
- POST-DEVELOPMENT  
STREAM 2 CATCHMENT- 1.46Ha

NOTES

1. STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

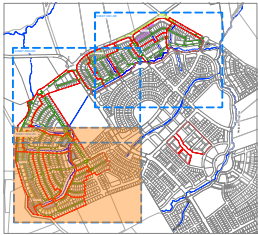
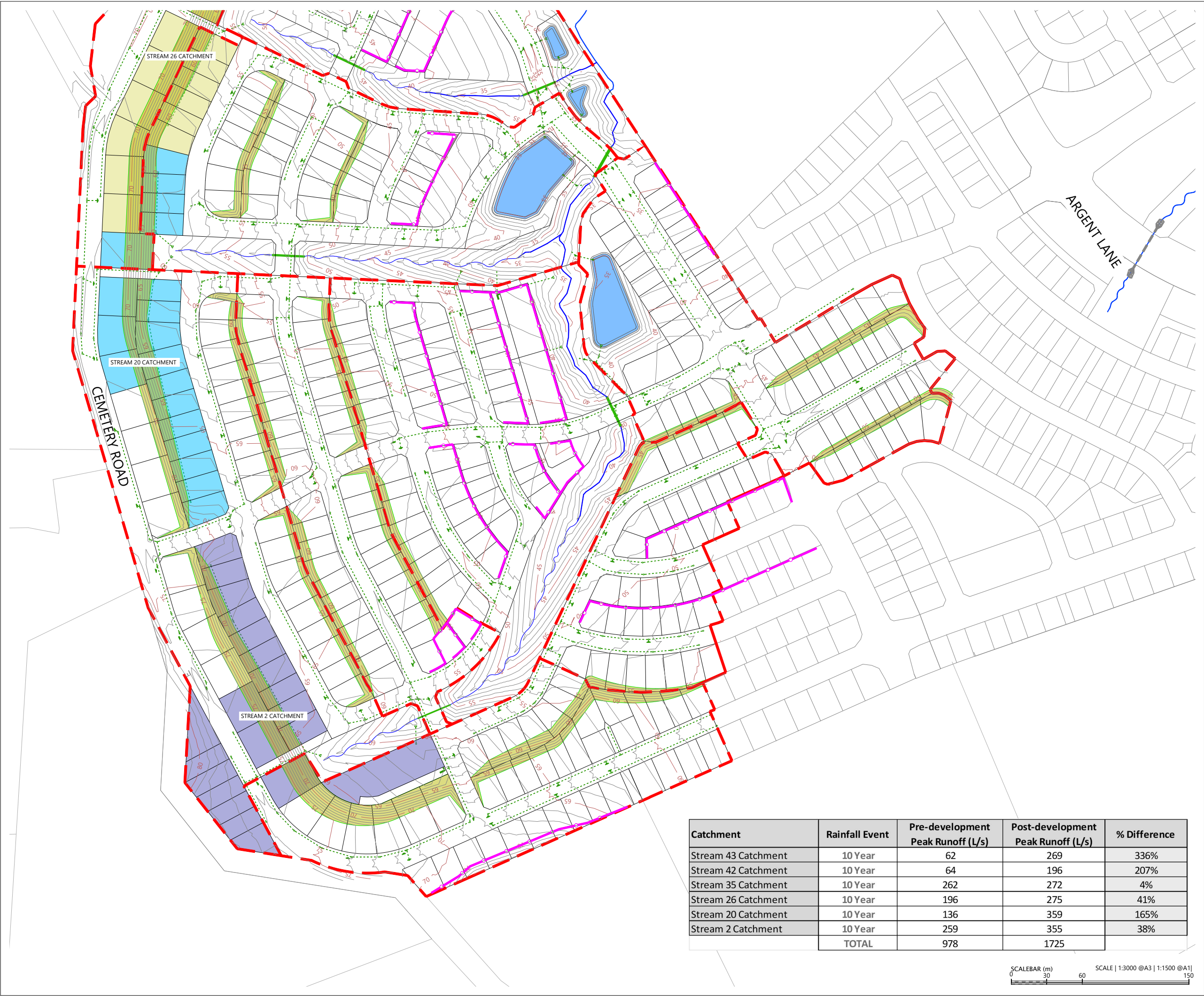
MILLDALE  
FAST TRACK  
STAGES 10 - 13  
POST-DEVELOPMENT STREAM  
CATCHMENT PLAN  
SHEET 2

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3092-DR	

Catchment	Rainfall Event	Pre-development Peak Runoff (L/s)	Post-development Peak Runoff (L/s)	% Difference
Stream 43 Catchment	10 Year	62	269	336%
Stream 42 Catchment	10 Year	64	196	207%
Stream 35 Catchment	10 Year	262	272	4%
Stream 26 Catchment	10 Year	196	275	41%
Stream 20 Catchment	10 Year	136	359	165%
Stream 2 Catchment	10 Year	259	355	38%
	TOTAL	978	1725	







LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- EXISTING SWALE
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- SINGLE CATCHPIT
- OUTLET
- POST-DEVELOPMENT  
STREAM 43 CATCHMENT- 1.11Ha
- POST-DEVELOPMENT  
STREAM 42 CATCHMENT- 0.80Ha
- POST-DEVELOPMENT  
STREAM 35 CATCHMENT- 1.12Ha
- POST-DEVELOPMENT  
STREAM 26 CATCHMENT- 1.13Ha
- POST-DEVELOPMENT  
STREAM 20 CATCHMENT- 1.47Ha
- POST-DEVELOPMENT  
STREAM 2 CATCHMENT- 1.46Ha

NOTES

1. STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	MW	
CHECKED	JW	WOODS.CO.NZ
APPROVED	JW	



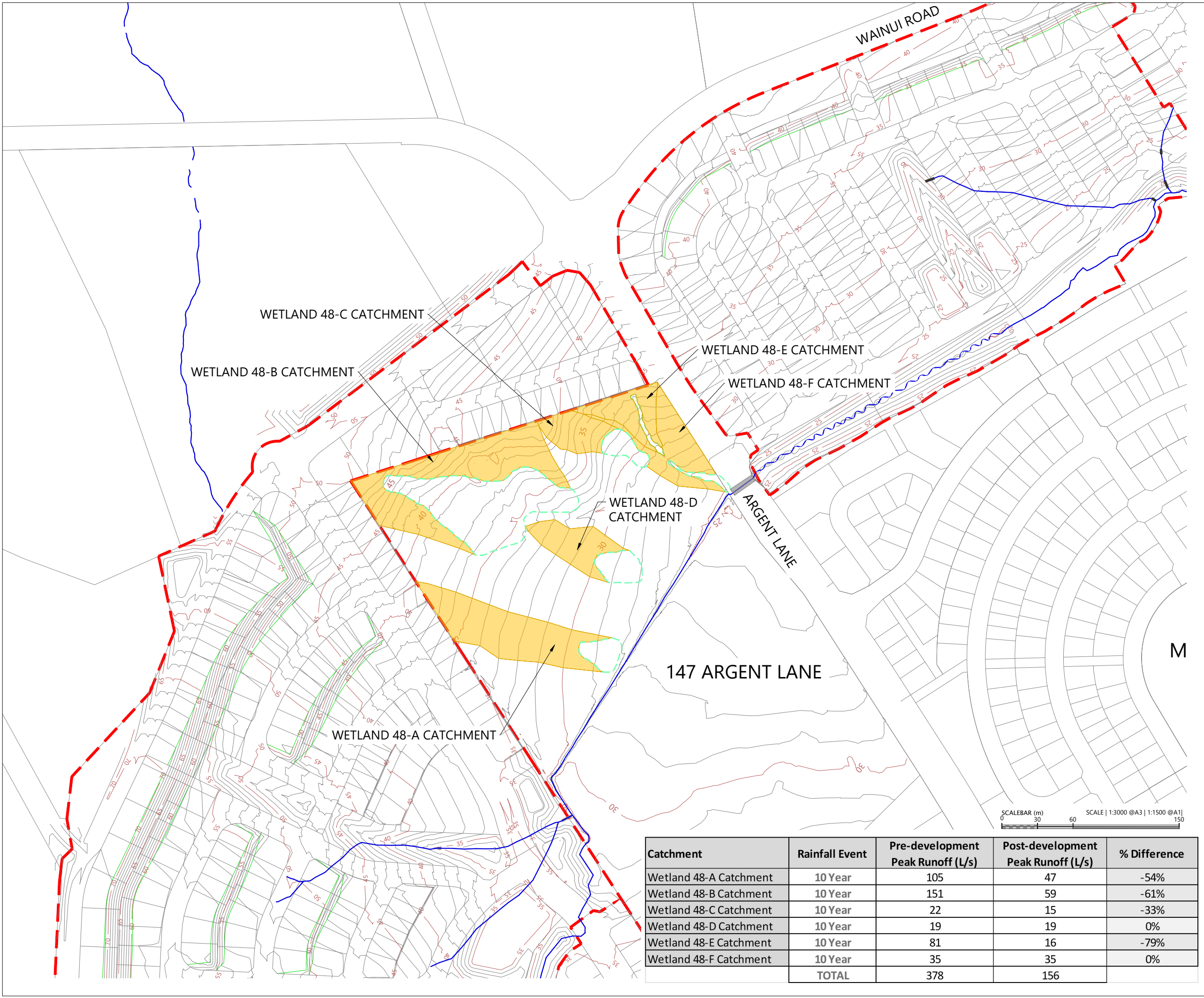
MILLDALE  
FAST TRACK  
STAGES 10 - 13  
POST-DEVELOPMENT STREAM  
CATCHMENT PLAN  
SHEET 3

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3093-DR	

Catchment	Rainfall Event	Pre-development Peak Runoff (L/s)	Post-development Peak Runoff (L/s)	% Difference
Stream 43 Catchment	10 Year	62	269	336%
Stream 42 Catchment	10 Year	64	196	207%
Stream 35 Catchment	10 Year	262	272	4%
Stream 26 Catchment	10 Year	196	275	41%
Stream 20 Catchment	10 Year	136	359	165%
Stream 2 Catchment	10 Year	259	355	38%
	TOTAL	978	1725	







**LEGEND:**

WAINUI PRECINCT BOUNDARY  
EXTENTS OF FAST TRACK APPLICATION  
BOUNDARY  
WATERCOURSE  
POTENTIAL WETLAND ON ADJOINING OWNER PROPERTY

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	JW	
CHECKED	AP	
APPROVED	JW	
		WOODS.CO.NZ

**MILLDALE  
FAST TRACK  
STAGES 10 - 13**

**147 ARGENT LANE  
POST-DEVELOPMENT  
WETLAND CATCHMENT PLAN**

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3095-DR	

Catchment	Rainfall Event	Pre-development Peak Runoff (L/s)	Post-development Peak Runoff (L/s)	% Difference
Wetland 48-A Catchment	10 Year	105	47	-54%
Wetland 48-B Catchment	10 Year	151	59	-61%
Wetland 48-C Catchment	10 Year	22	15	-33%
Wetland 48-D Catchment	10 Year	19	19	0%
Wetland 48-E Catchment	10 Year	81	16	-79%
Wetland 48-F Catchment	10 Year	35	35	0%
TOTAL		378	156	



SHEET 3001-DR

SHEET 3002-DR

SHEET 3003-DR

TEMPORARY WASTEWATER  
TREATMENT PLANT

STAGE 10

STAGE 11

STAGE 12

STAGE 13










STAGE 4C

MILLDALE PARK

SUMMERSET  
RETIREMENT  
VILLAGE

MILLDALE  
SCHOOL

### LEGEND

- EXTENTS OF FAST TRACK APPLICATION 
- BOUNDARIES 
- WATERCOURSE (SUBJECT TO ECOLOGY) 
- DESIGN CONTOURS (1m INTERVAL) 
- PROPOSED STORMWATER 
- EXISTING STORMWATER 
- OUTLET 
- 100 YEAR FLOOD EXTENTS 
- PROPOSED STORMWATER DRY BASIN 

### NOTES

1. STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ



N



**MILLDALE**  
*Connecting Lives & Land*

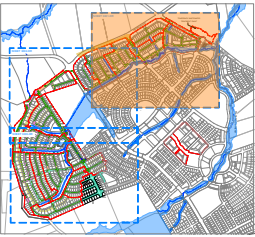
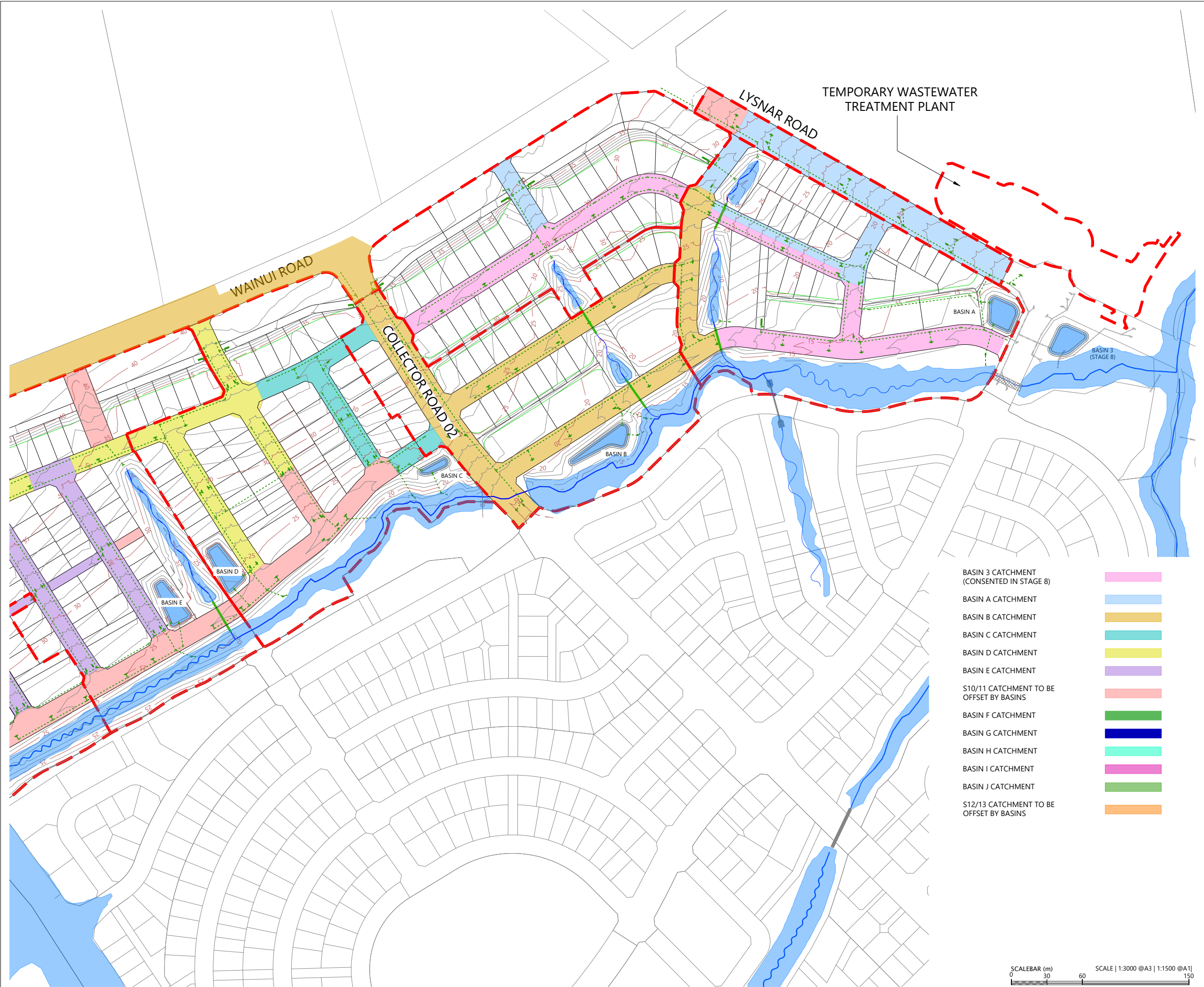
## MILLDALE FAST TRACK STAGES 10 - 13 STORMWATER DRY BASIN & CATCHMENT PLAN OVERALL PLAN

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:6000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3400-DR	

- BASIN 3 CATCHMENT (CONSENTED IN STAGE 8) 
- BASIN A CATCHMENT 
- BASIN B CATCHMENT 
- BASIN C CATCHMENT 
- BASIN D CATCHMENT 
- BASIN E CATCHMENT 
- S10/11 CATCHMENT TO BE OFFSET BY BASINS 
- BASIN F CATCHMENT 
- BASIN G CATCHMENT 
- BASIN H CATCHMENT 
- BASIN I CATCHMENT 
- BASIN J CATCHMENT 
- S12/13 CATCHMENT TO BE OFFSET BY BASINS 







LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

NOTES

1. STORMWATER DESIGN AND LAYOUT SHOWN ARE INDICATIVE ONLY. FINAL DETAILED DESIGN AND LAYOUT ARE TO BE DETERMINED AT EPA STAGE.

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- S12/13 CATCHMENT TO BE OFFSET BY BASINS

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

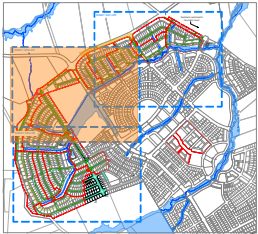
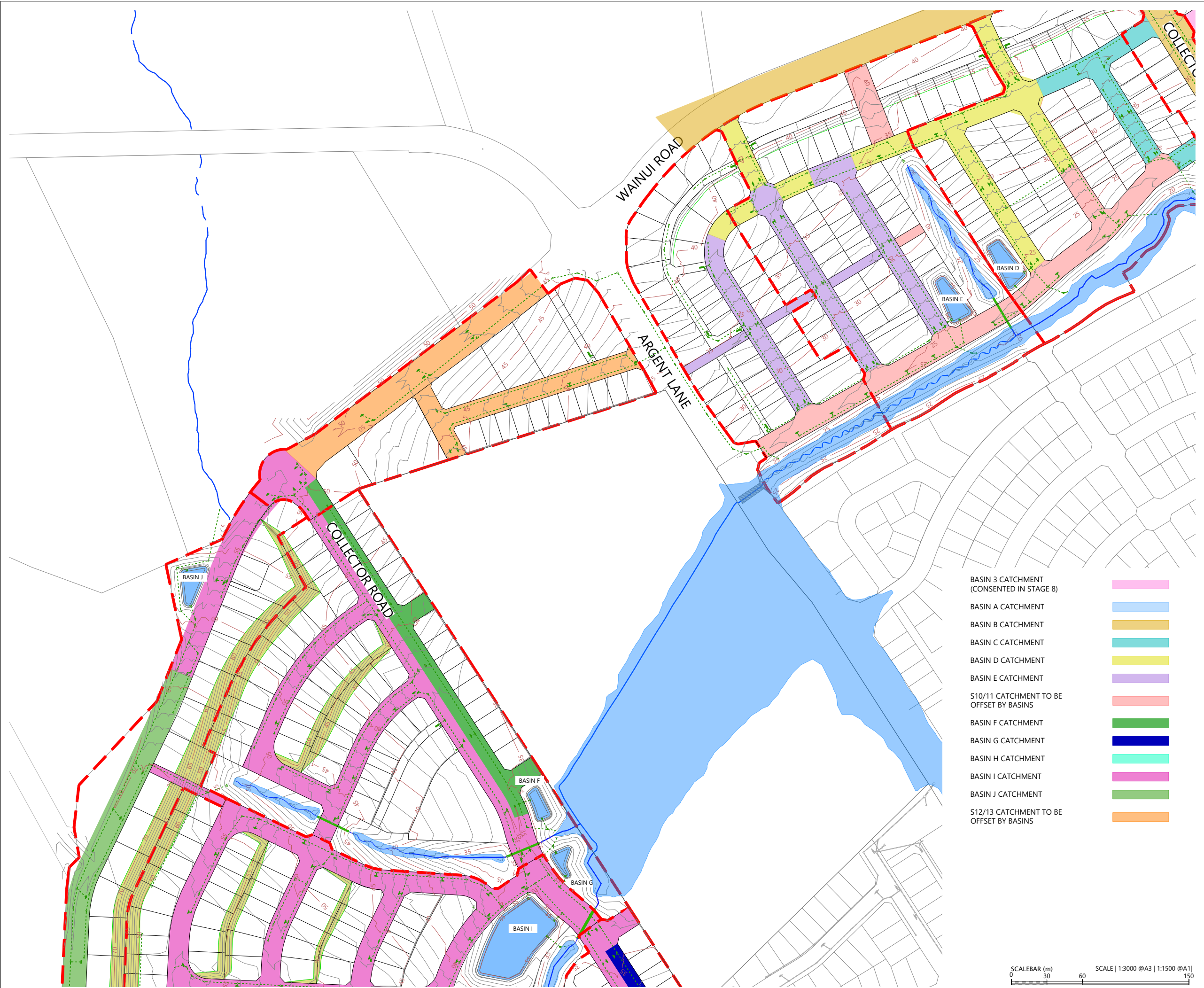
SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRY BASIN  
& CATCHMENT PLAN  
SHEET 1

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3401-DR	







LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- DESIGN CONTOURS (1m INTERVAL)
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- BASIN H CATCHMENT
- BASIN I CATCHMENT
- BASIN J CATCHMENT
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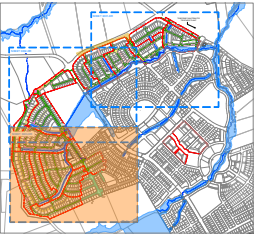
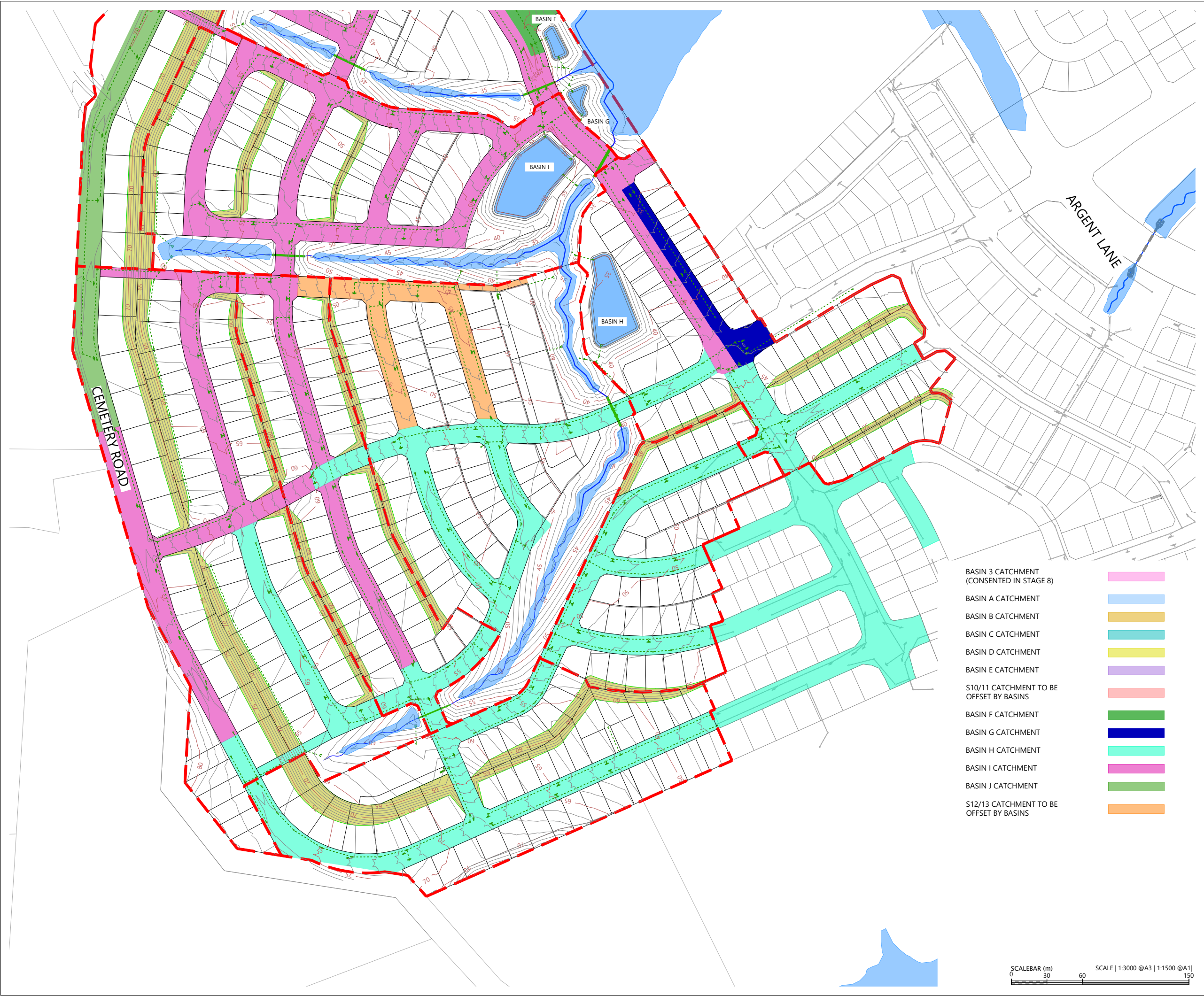
REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	
		WOODS.CO.NZ

MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRY BASIN  
& CATCHMENT PLAN  
SHEET 2

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3402-DR	





LOCALITY PLAN  
N.T.S



LEGEND

- EXTENTS OF FAST TRACK APPLICATION
- BOUNDARIES
- WATERCOURSE (SUBJECT TO ECOLOGY)
- DESIGN CONTOURS (1m INTERVAL)
- PROPOSED STORMWATER
- EXISTING STORMWATER
- OUTLET
- 100 YEAR FLOOD EXTENTS
- PROPOSED STORMWATER DRY BASIN

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	JW	FEB 2025

SURVEYED	WOODS	SIDWELL ROAD WAINUI AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	JW	
APPROVED	JW	WOODS.CO.NZ



MILLDALE  
FAST TRACK  
STAGES 10 - 13  
STORMWATER DRY BASIN  
& CATCHMENT PLAN  
SHEET 3

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:3000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-128-00-3403-DR	