PROPOSED SW BASIN D

ROAD 2

ROAD 3

ROAD 1

ROAD 2

ELDONWOOD DRIVE

LOT 5
DP 365568

LOT 18
DP 386534

LOT 20
DP 386534

LOT 24
DP 386534

LOT 26
DP 386534

LOT 28
DP 386534

PROPOSED SWMH
1050mmØ

ROADSIDE SOAKAGE TRENCH
1.2m (W) X 2.0m (H)

PROPOSED SCRUFFY DOME
600mmØ

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

PROPOSED RAINGARDEN
2.3m (W) X 1.0m (H)

200mmØ PERFORATED
uPVC PIPE

PROPOSED RAINGARDEN
1.2m (W) X 1.0m (H)

TYPICAL RAINGARDEN PROFILE
REFER TO C430-5

RESOURCE CONSENT

Notes

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7. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.

Legend

- EX BOUNDARY
- PROP LOT BOUNDARY
- PROP SWMH 1050mmØ
- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	RJM	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C400-STORMWATER.DWG		
Drawing no.	C400-3	Rev	B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\ ASHBOURNE RESIDENTIAL\C400-STORMWATER.DWG

LOT 14
DP 562902

LOT 16
DP 562902

LOT 17
DP 562902

LOT 18
DP 562902

LOT 2
DP 21055

HIGHGROVE AVENUE

ROAD 2

ROAD 4

ROAD 5

ROAD 5

ROAD 9

TYPICAL RAINGARDEN PROFILE
REFER TO C430-5

PROPOSED RAINGARDEN
2.3m (W) X 1.0m (H)

PROPOSED SCRUFFY DOME
600mmØ

PROPOSED SWMH
1050mmØ

200mmØ PERFORATED
uPVC PIPE

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

RESOURCE CONSENT

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\DRAWING\1 ASHBOURNE RESIDENTIAL\CAD\STORMWATER.DWG

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- PROP SWMH 1050mmØ
- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APPLICATION	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

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Title
PROPOSED STORMWATER PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C400-STORMWATER.DWG		
Drawing no.	C400-4	Rev	B

200mmØ PERFORATED uPVC PIPE

PROPOSED RAINGARDEN 2.3m (W) X 1.0m (H)

ROAD 2

PROPOSED SWMH 1050mmØ

ROADSIDE SOAKAGE TRENCH 1.2m (W) X 2.0m (H)

TYPICAL RAINGARDEN PROFILE REFER TO C430-5

PROPOSED SCRUFFY DOME 600mmØ

ROAD 1

PROPOSED RAINGARDEN 1.2m (W) X 1.0m (H)

CHESTNUT LANE

LOT 44 DP 386534

LOT 47 DP 393306

LOT 43 DP 393306

LOT 36 DP 393306

456 457 476 475 425 426 424 429 423 427 428 422 421 420 334 281 280 279 278 277 276 275 322

RESOURCE CONSENT

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Legend

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- PROP LOT BOUNDARY
- PROP SWMH 1050mmØ
- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C400-STORMWATER.DWG		
Drawing no.	C400-5	Rev	B

DATE: 02/05 FILE PATH: Z:\MAVEN HAMILTON_PROJECTS\2025\01 STATION ROAD\7 DRAWING\01 ASHBOURNE RESIDENTIAL\C400-STORMWATER.DWG

ROAD 5

ROAD 6

ROAD 9

ROAD 7

ROAD 4

ROAD 14

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

200mmØ PERFORATED
uPVC PIPE

PROPOSED RAINGARDEN
2.3m (W) X 1.0m (H) 01

PROPOSED SCRUFFY DOME
600mmØ

PROPOSED SWMH
1050mmØ

ROADSIDE SOAKAGE TRENCH
1.2m (W) X 2.0m (H)

TYPICAL RAINGARDEN PROFILE
REFER TO C430-5

PROPOSED RAINGARDEN
1.2m (W) X 1.0m (H)

PROPOSED SW BASIN B

GREEN
SPACE

COMMERCIAL HUB

PROPOSED RAINGARDEN
2.3m (W) X 1.0m (H)

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

PROPOSED
SOUTHERN SOLAR FARM

RESOURCE CONSENT

Notes

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- PROP LOT BOUNDARY
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- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C400-STORMWATER.DWG
Drawing no.	C400-6 Rev B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C400-STORMWATER.DWG



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Legend

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- PROP LOT BOUNDARY
- PROP SWMH 1050mmØ
- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

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Project

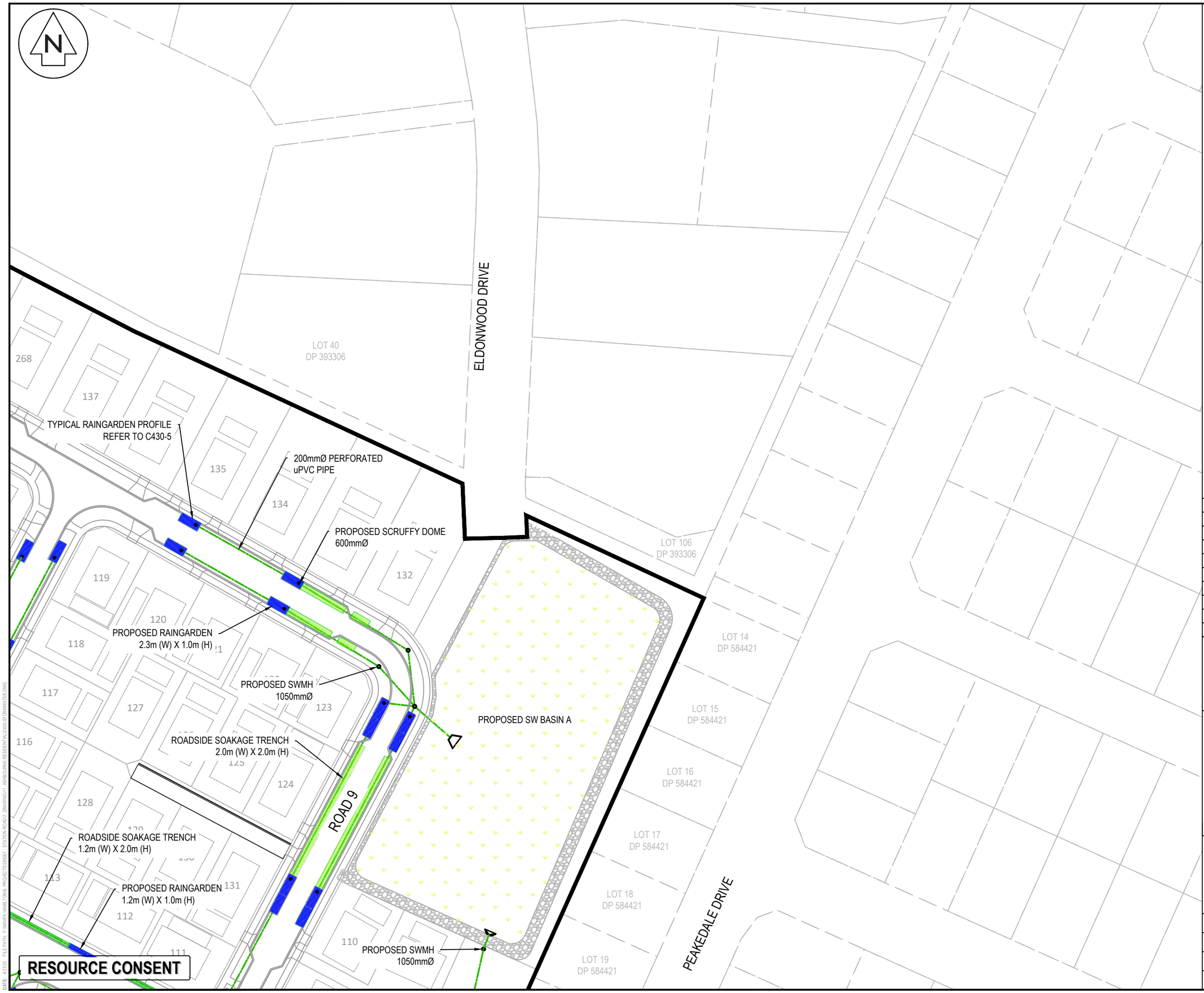
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C400-STORMWATER.DWG		
Drawing no.	C400-7	Rev	B

DATE: 4/2025 FILE PATH: Z:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C400-STORMWATER.DWG



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- PROP LOT BOUNDARY
- PROP SWMH 1050mmØ
- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

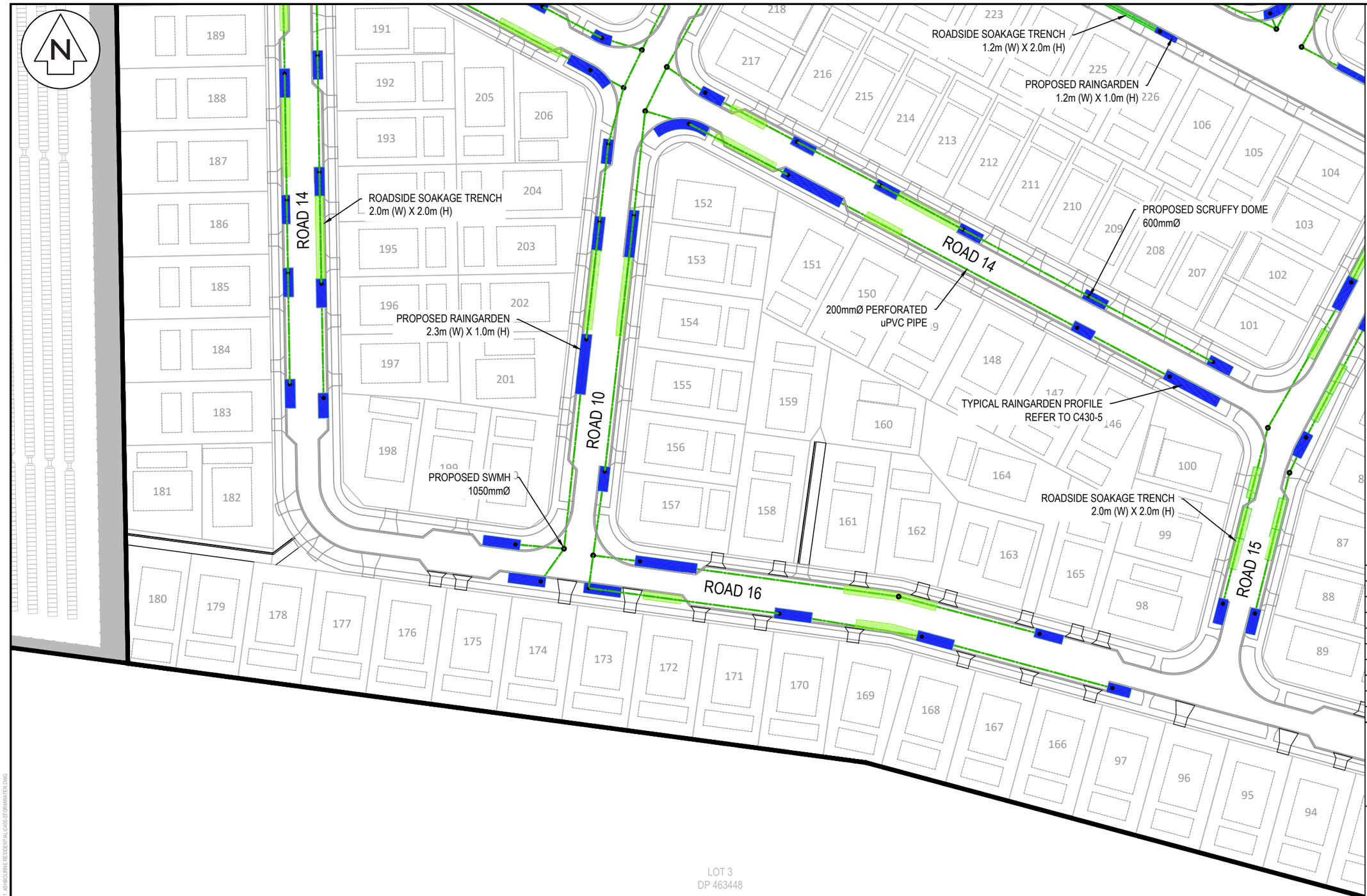
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C400-STORMWATER.DWG
Drawing no.	C400-8 Rev B

DATE: 4/2025 FILEPATH: F:\MAVEN\HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C400-STORMWATER.DWG



RESOURCE CONSENT

Notes

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- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C400-STORMWATER.DWG
Drawing no.	C400-9 Rev B

DATE 4/2025 - FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C400 STORMWATER.DWG

PROPOSED SW BASIN A

ROAD 9

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

PROPOSED SWMH
1050mmØ

PEAKEDALE DRIVE

LOT 17 DP 584421

LOT 18 DP 584421

LOT 19 DP 584421

LOT 20 DP 584421

LOT 21 DP 584421

LOT 71 DP 584421

LOT 72 DP 584421

LOT 73 DP 584421

ROADSIDE SOAKAGE TRENCH
1.2m (W) X 2.0m (H)

PROPOSED RAINGARDEN
1.2m (W) X 1.0m (H)

PROPOSED SWMH
1050mmØ

PROPOSED SCRUFFY DOME
600mmØ

ROAD 1

PROPOSED SWMH
1050mmØ

200mmØ PERFORATED
uPVC PIPE

TYPICAL RAINGARDEN PROFILE
REFER TO C430-5

PROPOSED RAINGARDEN
2.3m (W) X 1.0m (H)

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

ROAD 13

ROAD 8

ROADSIDE SOAKAGE TRENCH
2.0m (W) X 2.0m (H)

ROAD 16

LOT 3
DP 463448

RESOURCE CONSENT

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\DRAWING\1 ASHBOURNE RESIDENTIAL\C400-STORMWATER.DWG

Notes

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Legend

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- PROP LOT BOUNDARY
- PROP SWMH 1050mmØ
- PROP SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE

Rev	Description	By	Date
B	FAST TRACK APP	NDL	04/2025
A	FAST TRACK APP	NDL	04/2025

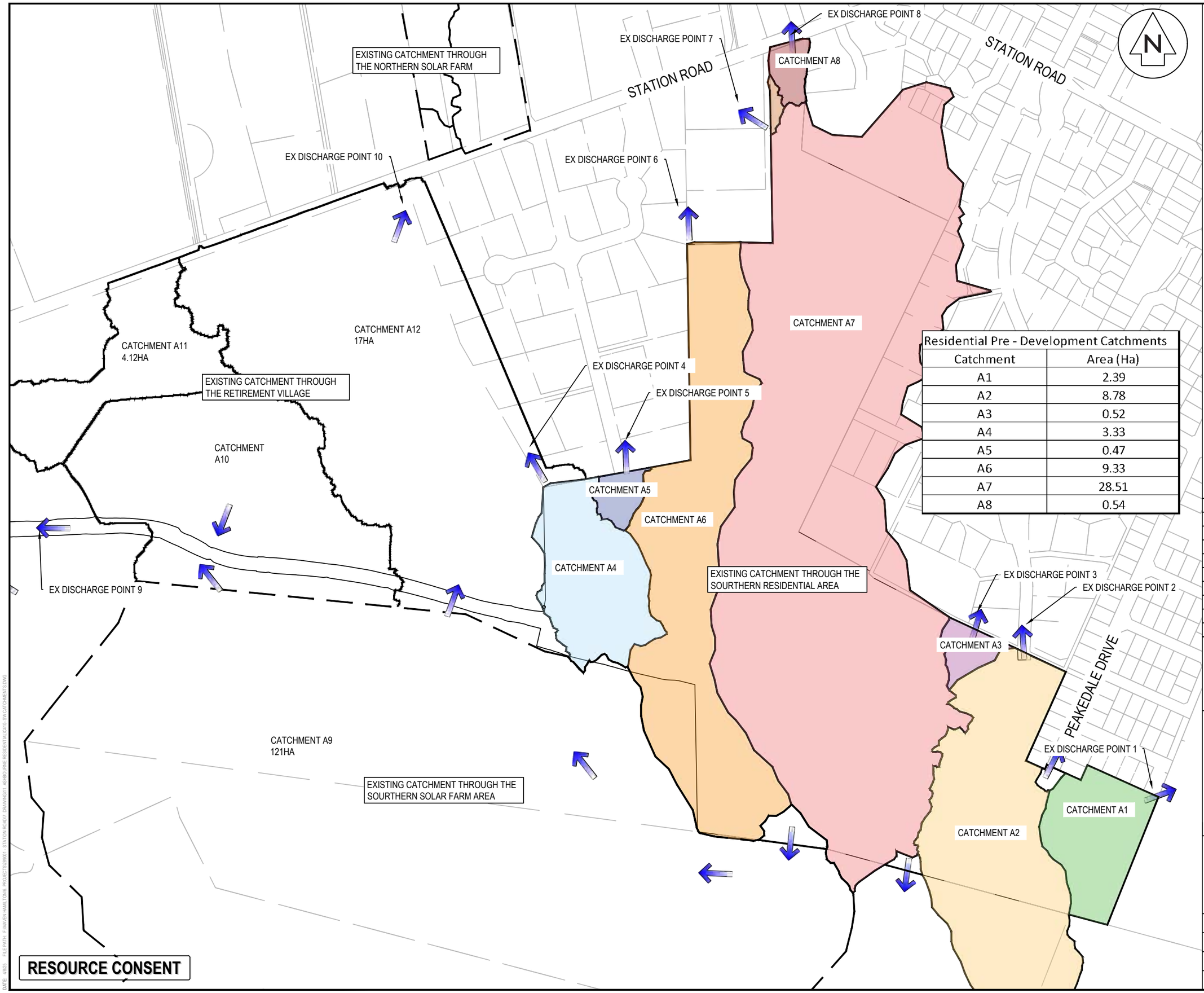
	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	NDL	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C400-STORMWATER.DWG		
Drawing no.	C400-10	Rev	B



Residential Pre - Development Catchments	
Catchment	Area (Ha)
A1	2.39
A2	8.78
A3	0.52
A4	3.33
A5	0.47
A6	9.33
A7	28.51
A8	0.54

RESOURCE CONSENT

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	02/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PRE DEVELOPMENT CATCHMENT DISCHARGE PLAN - RES/RV & S.SF

Project no.	289001
Scale	1:5000 @ A3
Cad file	C410- SW CATCHMENTS.DWG
Drawing no.	C410-1 Rev A

DATE: 04/25 FILEPATH: P:\MAVEN HAMILTON\ PROJECTS\289001 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C410 SW CATCHMENT.DWG

STATION ROAD

STATION ROAD

POST DEVELOPMENT DISCHARGE
POINT A FOR RV SITE

DRY BASIN H

DRY BASIN D

INFLOW INTO CATCHMENT D

DRY BASIN C

CATCHMENT D

CATCHMENT C: 17.50HA

CATCHMENT C

RETIREMENT VILLAGE AREA

CATCHMENT C: 8.2HA

POST DEVELOPMENT DISCHARGE
POINT WITH FLOW CONTROL INTO WAITOA RIVER

DRY BASIN G

CATCHMENT F: 25HA

CATCHMENT B

RESIDENTIAL AREA

DRY BASIN A

PEAKEDALE DRIVE

SOUTHERN SOLAR FARM AREA

CATCHMENT E: 127HA

CATCHMENT A

INFLOW INTO CATCHMENT A

RESOURCE CONSENT

Residential Post - Deveopemnt Catchments	
Catchment	Area (Ha)
A	10.09
INFLOW TO A	3.28
B	19.5
C	4.33
D	8.03
INFLOW TO D	6.23

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	02/2025

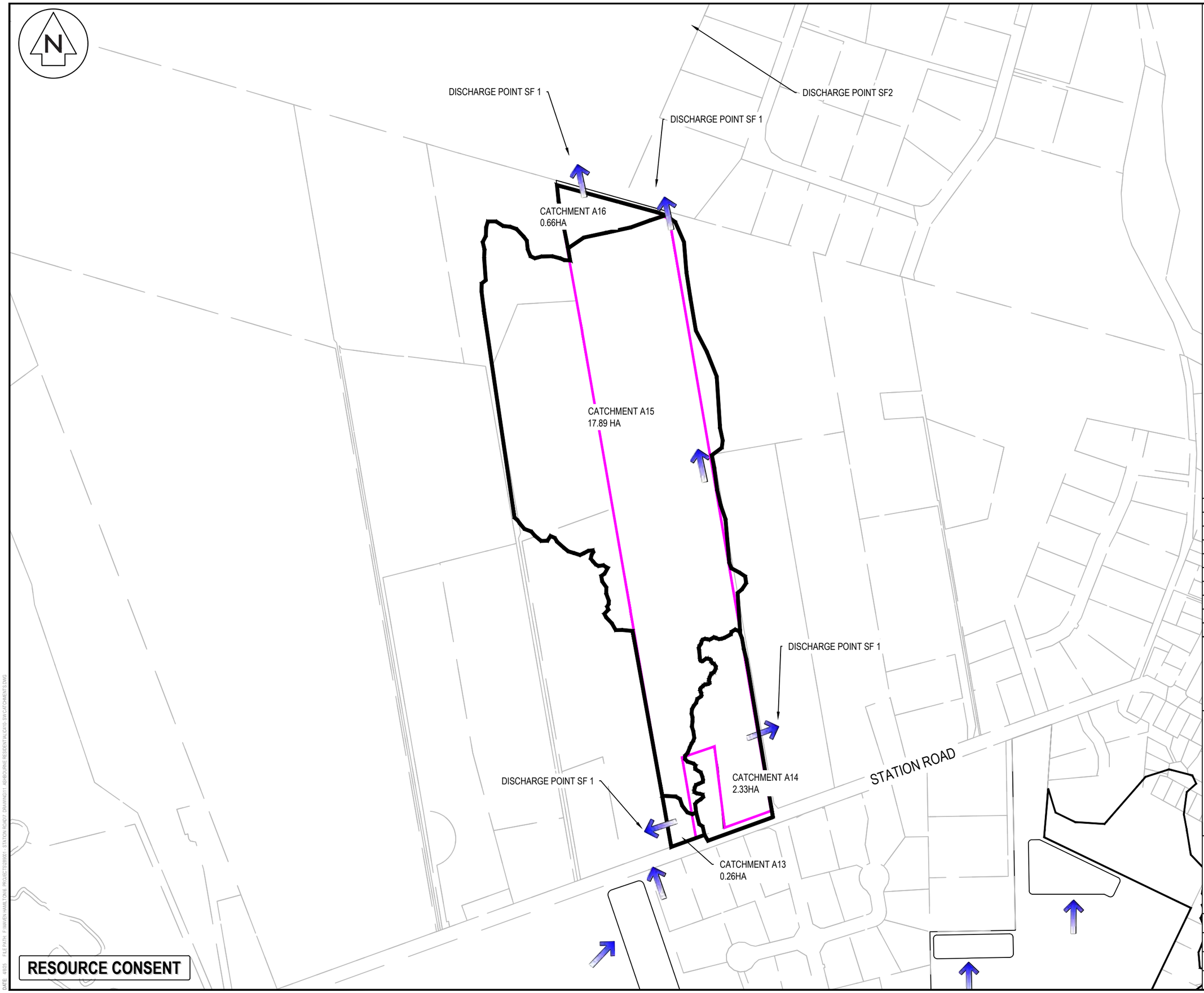
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
POST DEVELOPMENT CATCHMENT DISCHARGE POINTS PLAN - RES

Project no.	289001
Scale	1:5000 @ A3
Cad file	C410- SW CATCHMENTS.DWG
Drawing no.	C410-2 Rev A

DATE 4/25 FILEPATH P:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C410 SW CATCHMENTS.DWG



RESOURCE CONSENT

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	02/2025

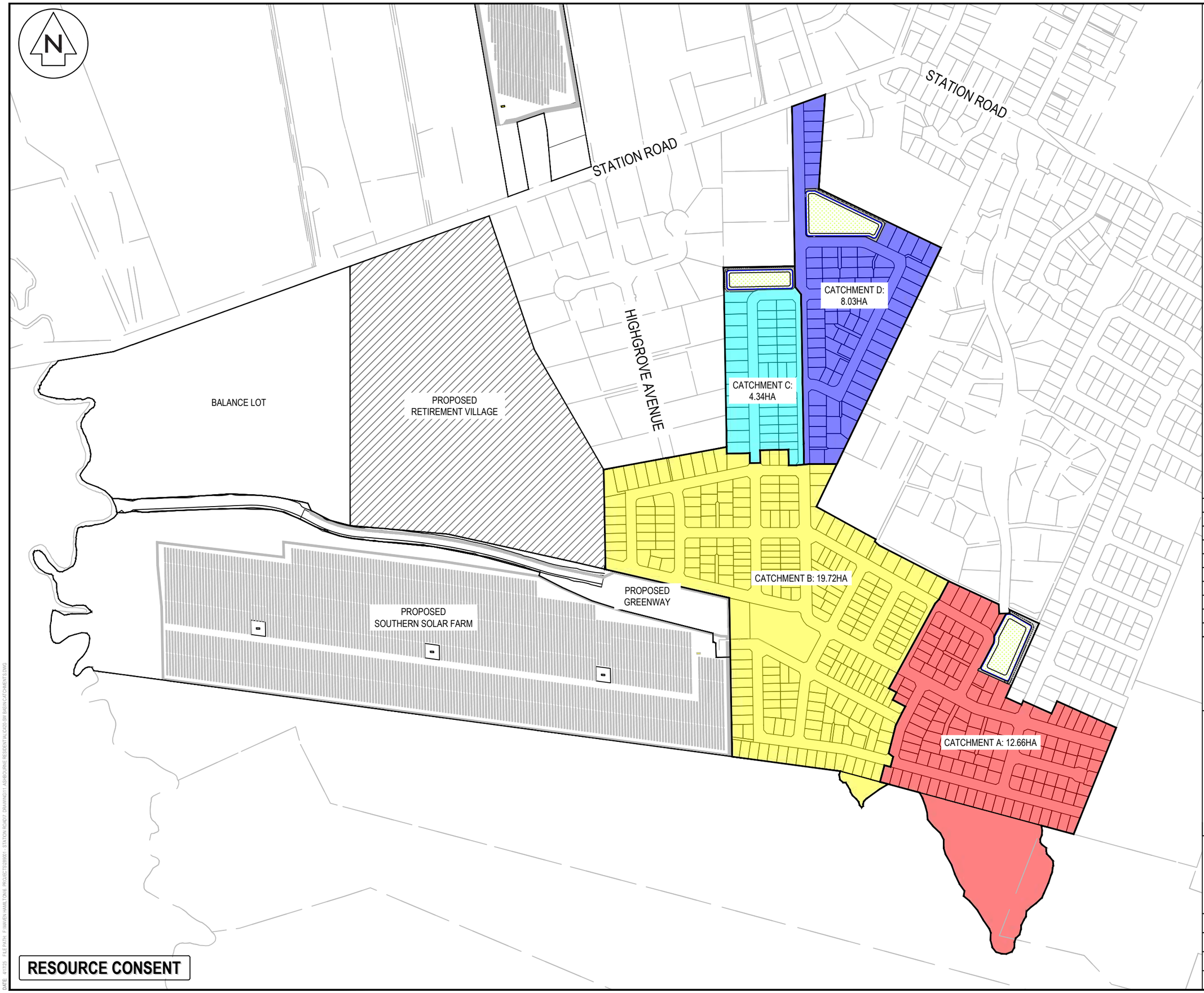
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Auckland 1023

Project
ASHBOURNE SOLAR FARMS FOR MATAMATA DEVELOPMENTS LTD

Title
PRE & POST DEVELOPMENT CATCHMENT & DISCHARGE PLAN - NORTH SOLAR FARM

Project no.	289001		
Scale	1:8000 @ A3		
Cad file	C410- SW CATCHMENTS.DWG		
Drawing no.	C410-3	Rev	A

DATE: 16/05 FILEPATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C410 SW CATCHMENTS.DWG



RESOURCE CONSENT

Notes

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Legend

- EX BOUNDARY
- CATCHMENT BDY
- PROP LOT BOUNDARY
- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
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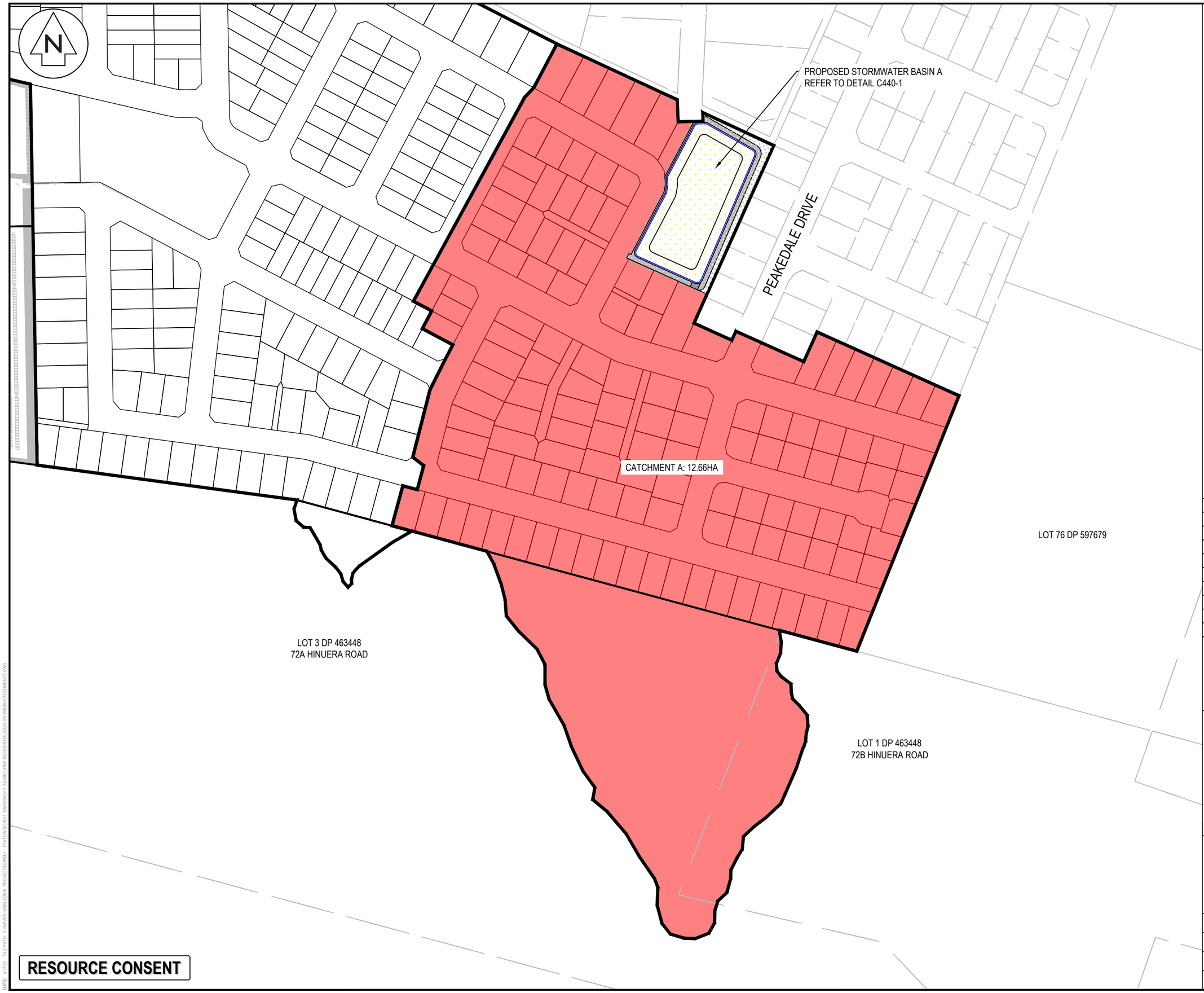
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Project
ASHBOURNE RESIDENTIAL FOR MARAMARA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER BASIN CATCHMENT OVERVIEW PLAN

Project no.	289001		
Scale	1:5000 @ A3		
Cad file	C420-SW BASIN CATCHMENTS.DWG		
Drawing no.	C420	Rev	B

DATE 4/7/25 FILE PATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\CAD\SW BASIN CATCHMENTS.DWG



RESOURCE CONSENT

Notes

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3. Levels in terms of the New Zealand Vertical Datum 2016.
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Legend

- EX BOUNDARY
- CATCHMENT BDY
- PROP LOT BOUNDARY
- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	04/2025

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Auckland 1023

Project

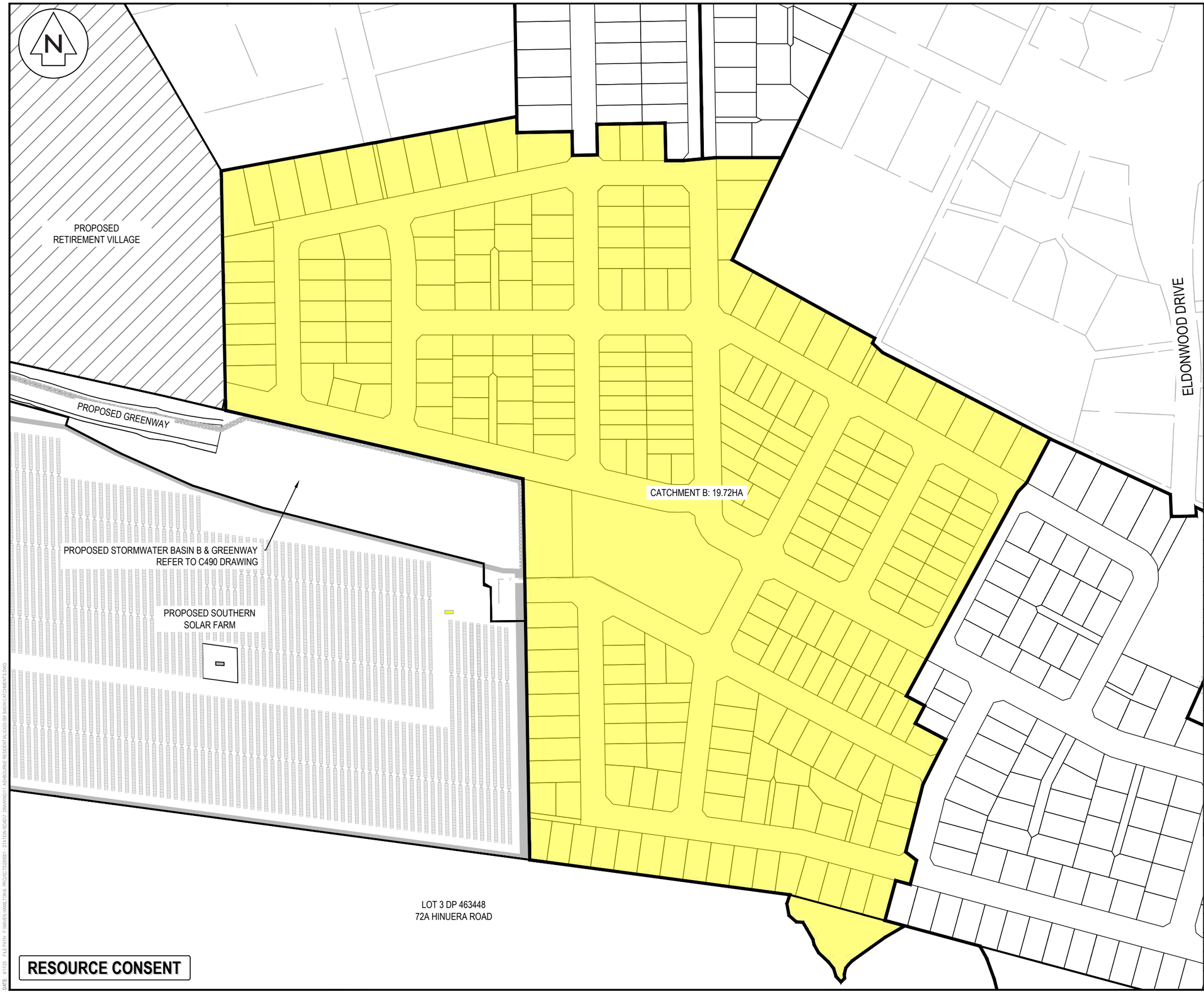
ASHBOURNE RESIDENTIAL FOR MARAMARA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER BASIN CATCHMENT PLAN A

Project no.	289001		
Scale	1:2000 @ A3		
Cad file	C420-SW BASIN CATCHMENTS.DWG		
Drawing no.	C420-1	Rev	B

DATE A1 F25 FILEPATH P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C420-SW BASIN CATCHMENTS.DWG



Notes

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Legend

- EX BOUNDARY
- CATCHMENT BDY
- PROP LOT BOUNDARY
- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	04/2025

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Project

ASHBOURNE RESIDENTIAL FOR MARAMARA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER BASIN CATCHMENT PLAN B

Project no.	289001
Scale	1:2500 @ A3
Cad file	C420-SW BASIN CATCHMENTS.DWG
Drawing no.	C420-2 Rev B

RESOURCE CONSENT

DATE 4/7/25 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\1 DRAWING\1 ASHBOURNE RESIDENTIAL\C420-SW BASIN CATCHMENTS.DWG



Notes

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Legend

- EX BOUNDARY
- CATCHMENT BDY
- PROP LOT BOUNDARY
- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	04/2025

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Project

ASHBOURNE RESIDENTIAL FOR MARAMARA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER BASIN CATCHMENT PLAN C

Project no.	289001
Scale	1:2000 @ A3
Cad file	C420-SW BASIN CATCHMENTS.DWG
Drawing no.	C420-3 Rev B

RESOURCE CONSENT

DATE 4/7/25 FILEPATH F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C420-SW BASIN CATCHMENTS.DWG



Notes

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Legend

- EX BOUNDARY
- CATCHMENT BDY
- PROP LOT BOUNDARY
- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2025
Drawn	MKS	02/2025
Checked	DJM	04/2025

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Project

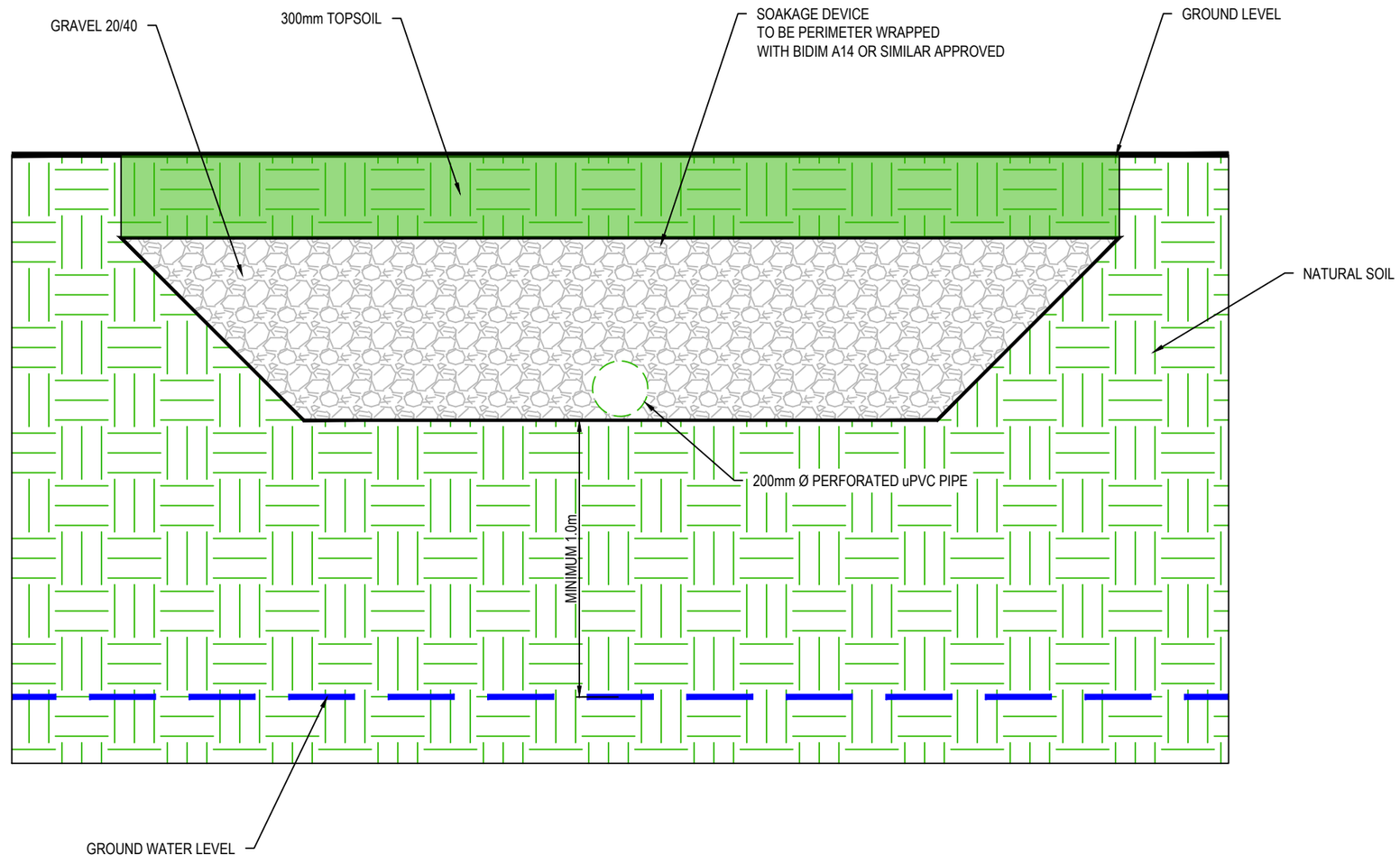
ASHBOURNE RESIDENTIAL FOR MARAMARA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER BASIN CATCHMENT PLAND D

Project no.	289001
Scale	1:2500 @ A3
Cad file	C420-SW BASIN CATCHMENTS.DWG
Drawing no.	C420-4 Rev B

DATE: 4/7/25 FILE PATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWINGS\ ASHBOURNE RESIDENTIAL C420-SW BASIN CATCHMENTS.DWG



SOAKAGE DEVICE - TYPICAL CROSS SECTION

SCALE: 1:20 @ A3

RESOURCE CONSENT

Notes

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Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	02/2024
Drawn	MKS	02/2024
Checked	DJM	04/2025

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Project

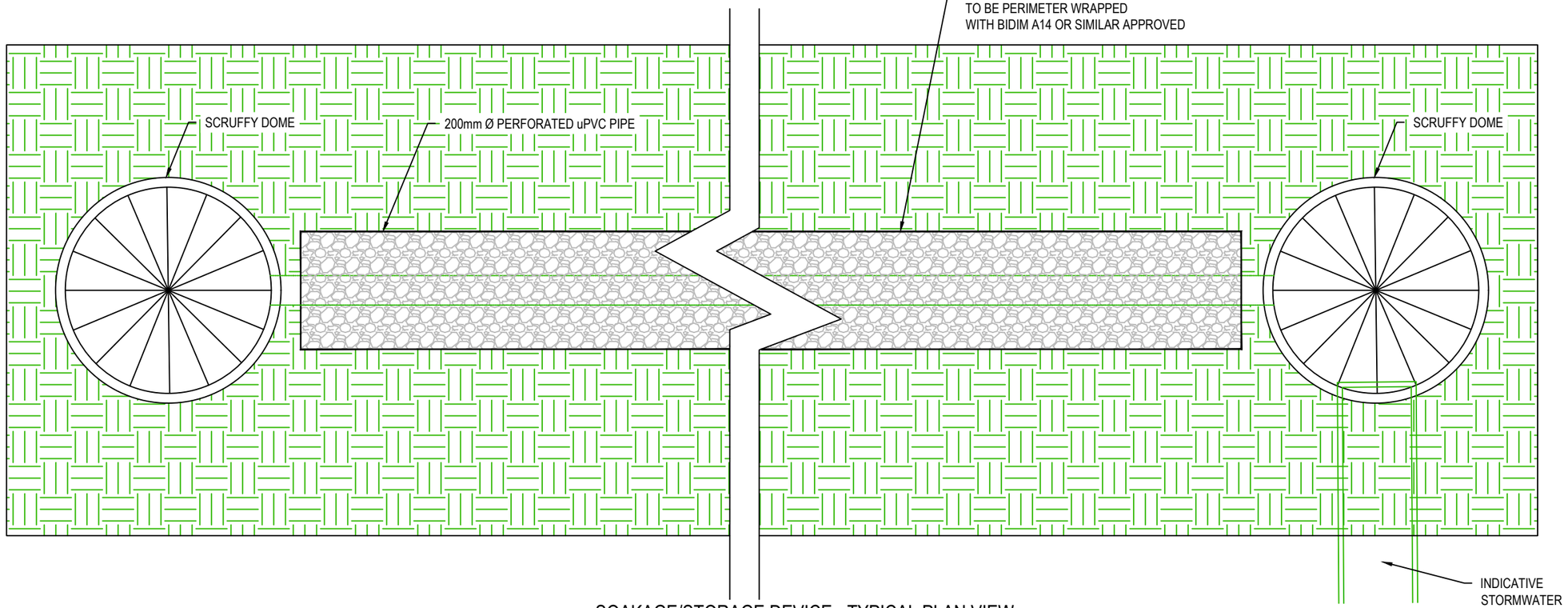
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title

PROPOSED SOAKAGE DEVICE CROSS SECTION

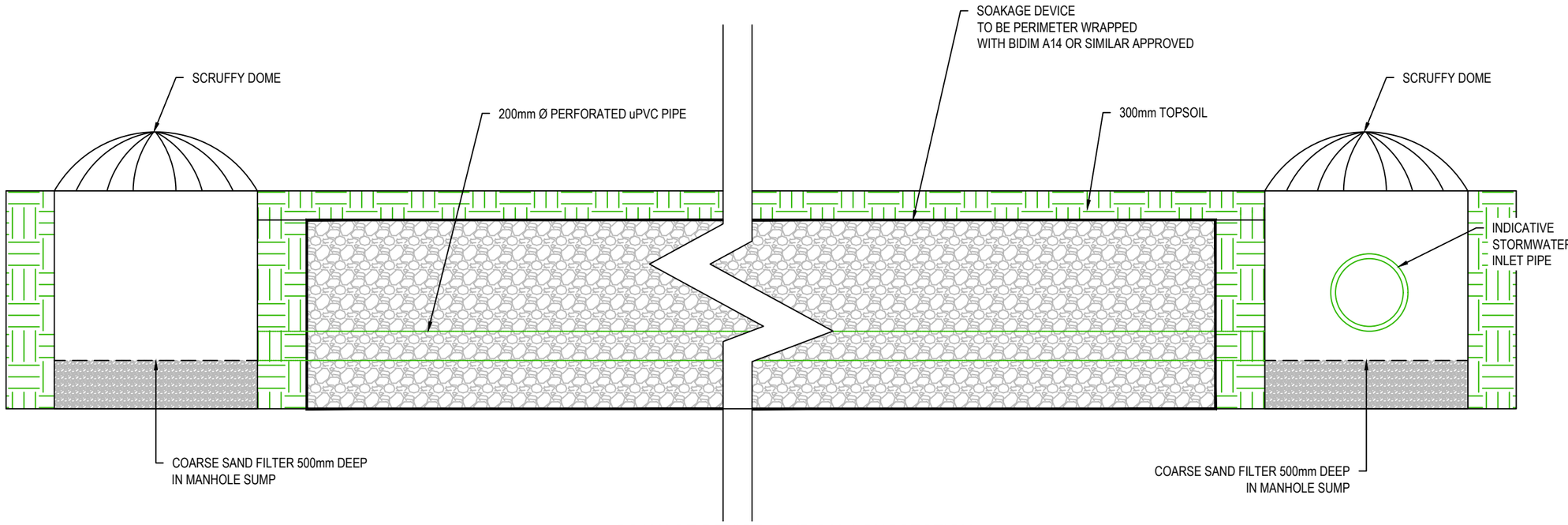
Project no.	289001		
Scale	1:20 @ A3		
Cad file	C430-SW DEVICE DETAILS.DWG		
Drawing no.	C430-1	Rev	A

DATE: 04/25 FILE PATH: P:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C430-SW DEVICE DETAILS.DWG



SOAKAGE/STORAGE DEVICE - TYPICAL PLAN VIEW

SCALE: 1:50 @ A3



SOAKAGE DEVICE - TYPICAL LONGSECTION

SCALE: 1:50 @ A3

RESOURCE CONSENT

Notes

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A	FAST TRACK APP	MKS	04/2025

	By	Date
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Design	MKS	02/2024
Drawn	MKS	02/2024
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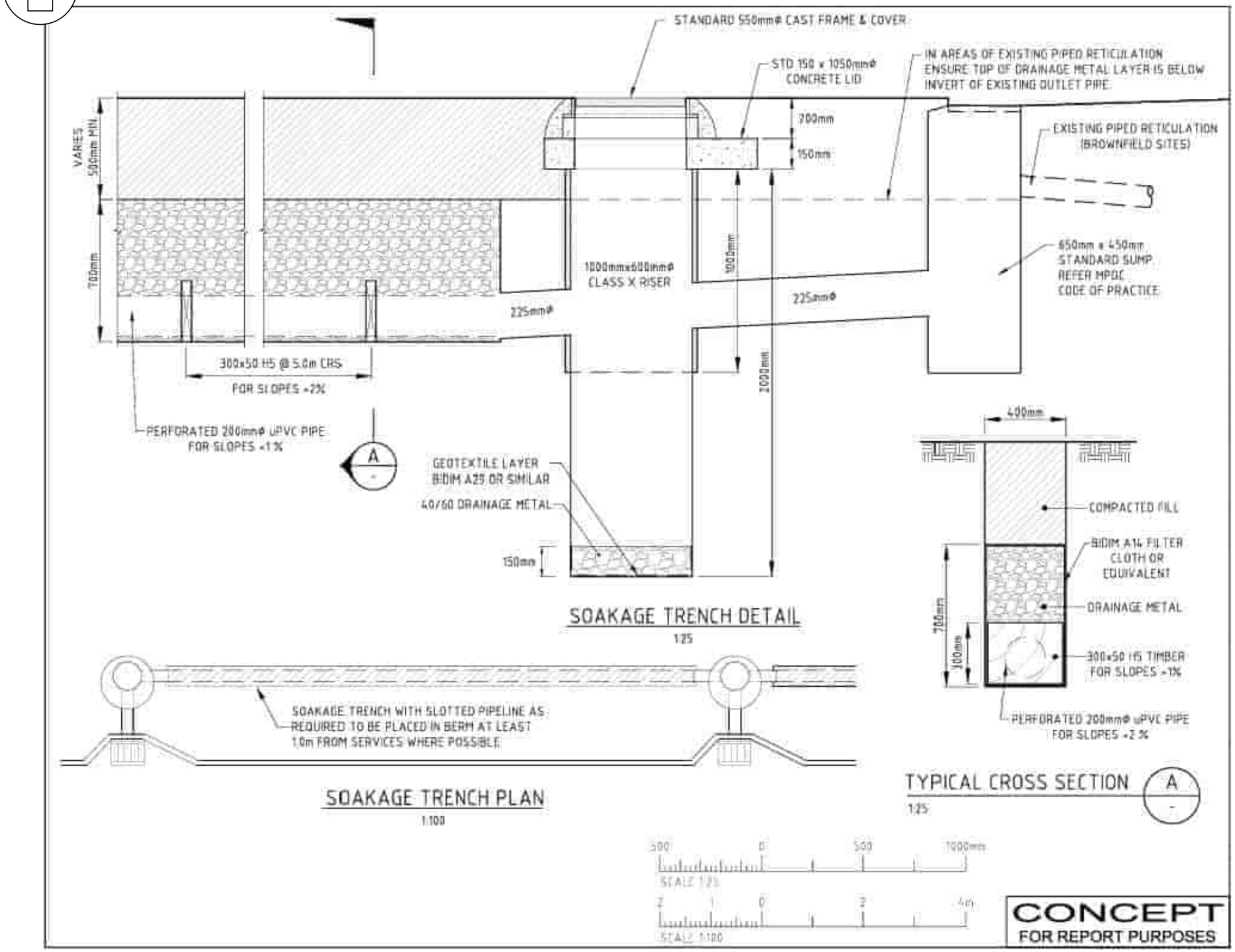
Title

PROPOSED SOAKAGE DEVICE CROSS SECTION

Project no.	289001		
Scale	AS SHOWN		
Cad file	C430-SW DEVICE DETAILS.DWG		
Drawing no.	C430-2	Rev	A

DATE: 4/025 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C430-SW DEVICE DETAILS.DWG

SOAKAGE TRENCH DETAIL PLAN DERIVED FROM MPDC SOAKAGE DESIGN PROCEDURES AND GUIDELINES - APPENDIX C



RESOURCE CONSENT

TYPICAL SOAKAGE TRENCH - DETAIL PLAN
SCALE: N.T.S

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	11/2024
Drawn	MKS	11/2024
Checked	DJM	04/2025

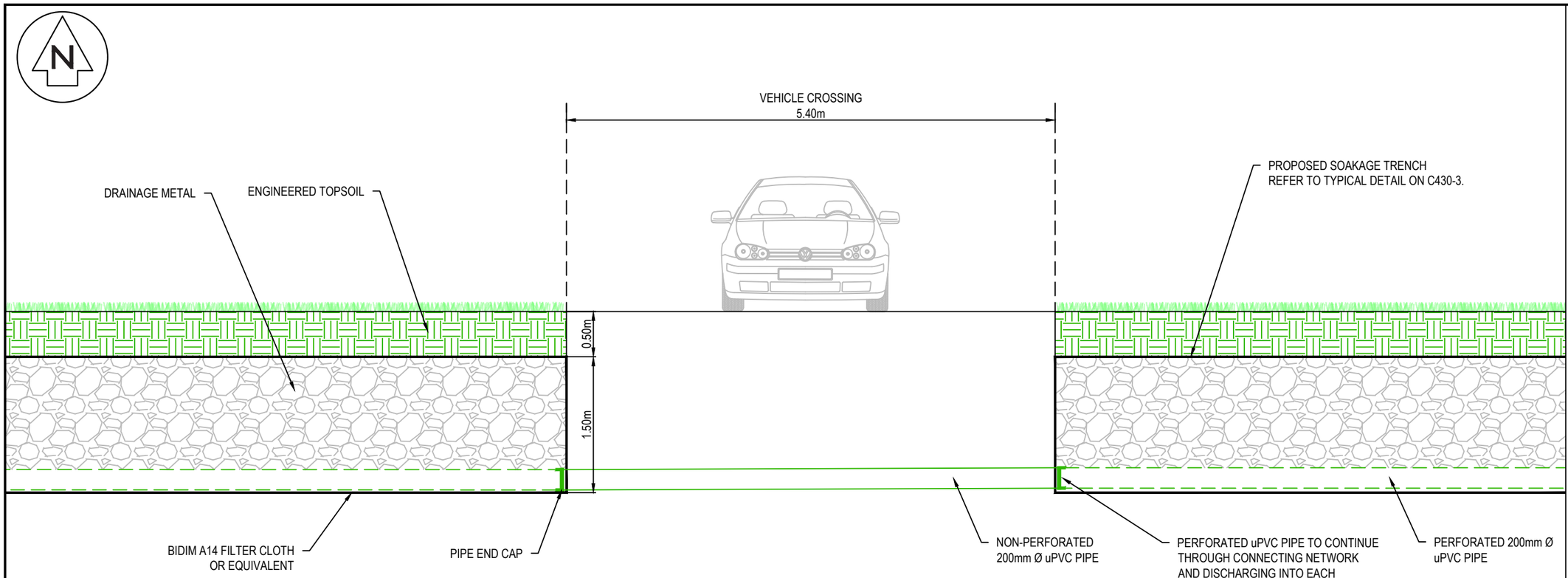
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New Zealand

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
MPDC SOAKAGE TRENCH DETAIL PLAN

Project no.	289001
Scale	-
Cad file	C430-SW DEVICE DETAILS.DWG
Drawing no.	C430-3 Rev A

DATE: 4/25 FILEPATH: P:\MAVEN HAULTOWN PROJECTS\289001 - STATION ROAD\ DRAWINGS\1 ASHBOURNE RESIDENTIAL\C430-SW DEVICE DETAILS.DWG



TYPICAL SOAKAGE TRENCH DETAIL - 2.0m DEEP

1:50 @ A3

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	By	Date
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Design	MKS	12/2024
Drawn	MKS	12/2024
Checked	DJM	04/2025

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Project

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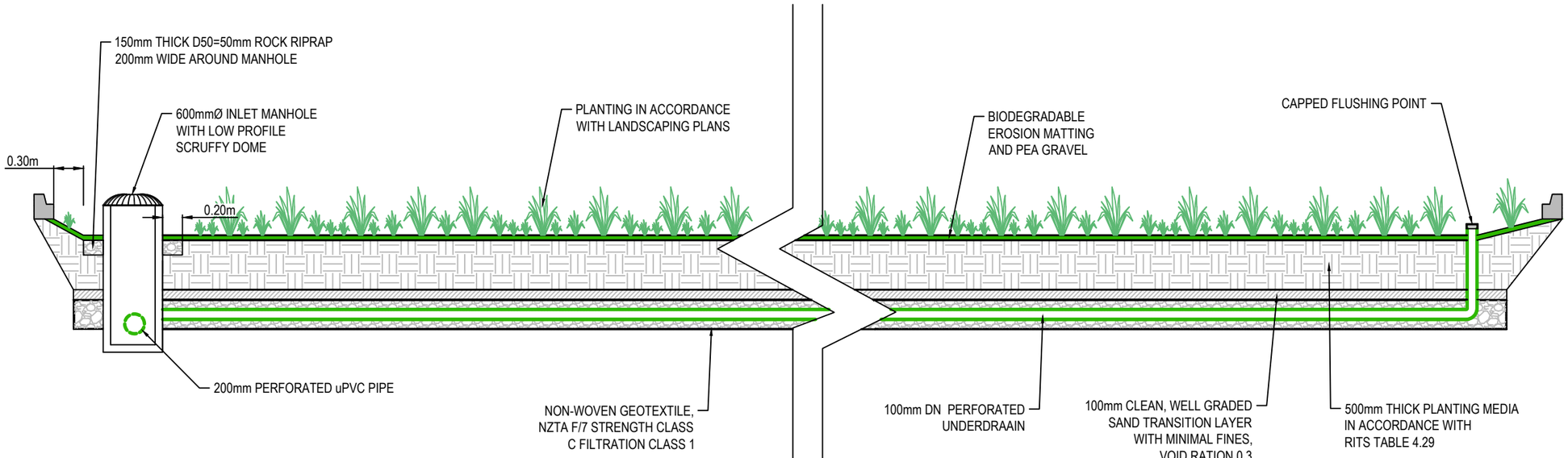
Title

ROADSIDE TYPICAL SOAKAGE TRENCH DETAILS

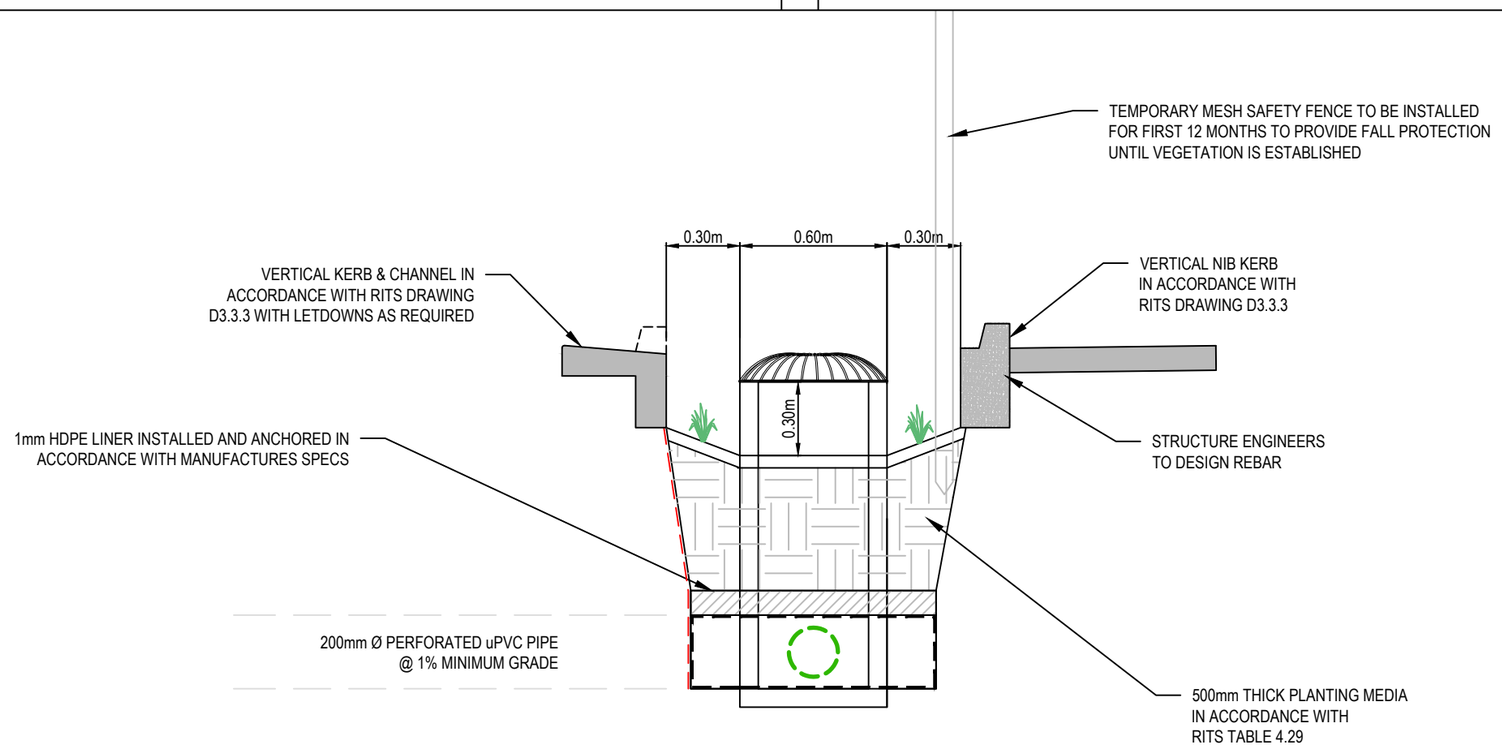
Project no.	289001		
Scale	AS SHOWN		
Cad file	C430-SW DEVICE DETAILS.DWG		
Drawing no.	C430-4	Rev	A

RESOURCE CONSENT

DATE: 4/025 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C430-SW DEVICE DETAILS.DWG



TYPICAL RAINGARDEN PROFILE
1:50 @ A3



TYPICAL RAINGARDEN PROFILE
1:50 @ A3

RESOURCE CONSENT

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Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
TYPICAL RAINGARDEN DETAILS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C430-SW DEVICE DETAILS.DWG		
Drawing no.	C430-5	Rev	A

DATE - 4/025 FILE PATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C430-SW DEVICE DETAILS.DWG



RESOURCE CONSENT

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Legend

- EX BOUNDARY
- EX STORMWATER
- PROP LOT BOUNDARY
- PROP SW BASIN
- PROP SHARED PATH / MAINTENANCE TRACK

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER BASIN OVERVIEW PLAN

Project no.	289001
Scale	1:5000 @ A3
Cad file	C440- SW BASIN.DWG
Drawing no.	C440 Rev B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C440 SW BASIN.DWG

EMERGENCY OLFP ROUTE
VIA EXISTING ELDONWOOD DRIVE
ROADSIDE SWALE

EMERGENCY SPILLWAY
TO DISCHARGE FLOW NORTH
VIA ELDONWOOD DRIVE

3.5m WIDE SHARED PATH / MAINTENANCE TRACK
OF 50mm MAP20 ON 200mm GAP 65
OR SIMILAR APPROVED

OLFP INLET WEIR PROTECTED WITH RIPRAP
TOP OF WEIR SET AT 65.1mRL.
4.3m (L) X 0.3m (H)

BATTER SLOPE TO EXISTING GROUND

FLAT BASIN FLOOR WITH GRASS TURF

STORMWATER BASIN A
VOLUME: 9,612m³
CATCHMENT AREA: 10.1 HA

200mm PVC SOAKAGE TRENCH OUTLET
@ 0.5% MINIMUM GRADE
TO SW BASIN SCRUFFY DOME MANHOLE

RL66.50

PERFORATED 200mm uPVC PIPE

1m WIDE MAINTENANCE TRACK

SCRUFFY DOME MANHOLE
REFER TO DETAIL C430-2

OLFP INLET WEIR PROTECTED WITH RIPRAP
TOP OF WEIR SET AT 65.1mRL.
4.3m (L) X 0.3m (H)

OVERLAND FLOW ROUTE
THROUGH STORMWATER RESERVE

SHARED PATH / MAINTENANCE TRACK

200mm PVC SOAKAGE TRENCH OUTLET
@ 0.5% MINIMUM GRADE
TO SW BASIN SCRUFFY DOME MANHOLE

ROAD 9

ROAD 1

PEAKEDALE DRIVE

LOT 40 DP 393306
LOT 106 DP 393306
LOT 14 DP 584421
LOT 15 DP 584421
LOT 16 DP 584421
LOT 17 DP 584421
LOT 18 DP 584421
LOT 19 DP 584421
LOT 21 DP 584421

66.00
65.50
65.00
64.50
64.00
RL63.90
RL63.90

A1 C440-2
A2 C440-2
A2 C440-2
A1 C440-2

136 135 134 133 132
119 120 121 122 123
118 127 126 125 124
117
116 128 129 130 131
115
114 113 112 111
110 109
107 108
8

RESOURCE CONSENT

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\11 ASHBOURNE RESIDENTIAL\C440 SW BASIN.DWG

Notes

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Legend

- EX BOUNDARY
- EX STORMWATER
- PROP LOT BOUNDARY
- PROP SW BASIN
- PROP SHARED PATH / MAINTENANCE TRACK

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

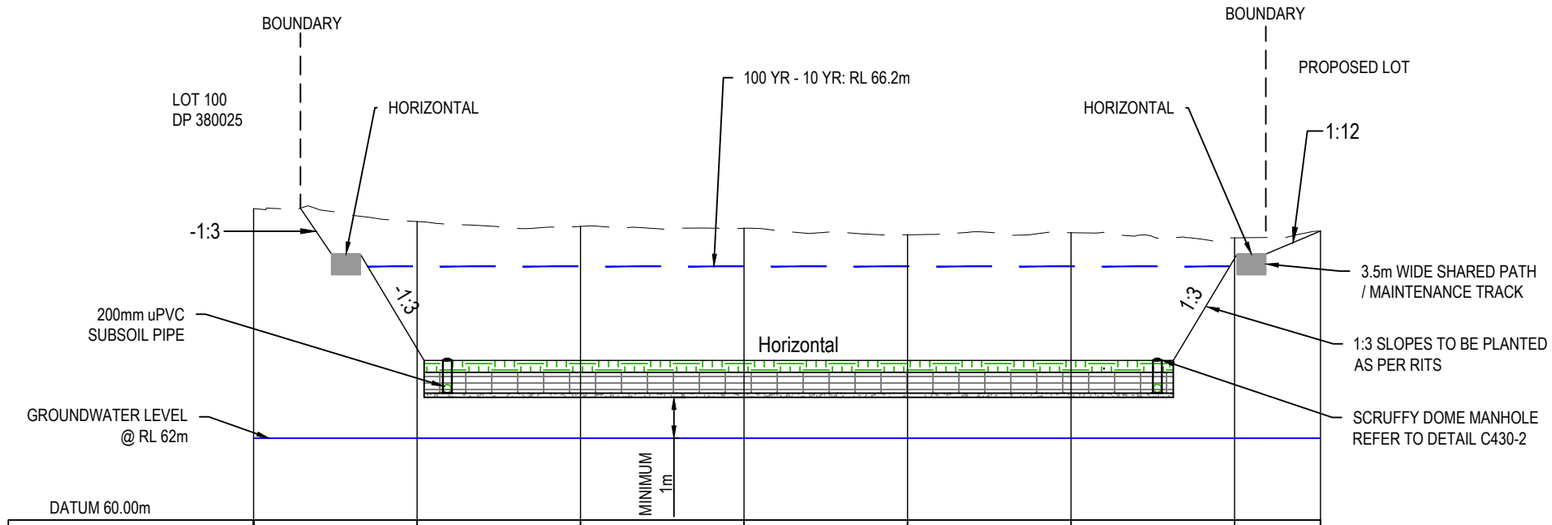
	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
Drawn	MKS	12/2024
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

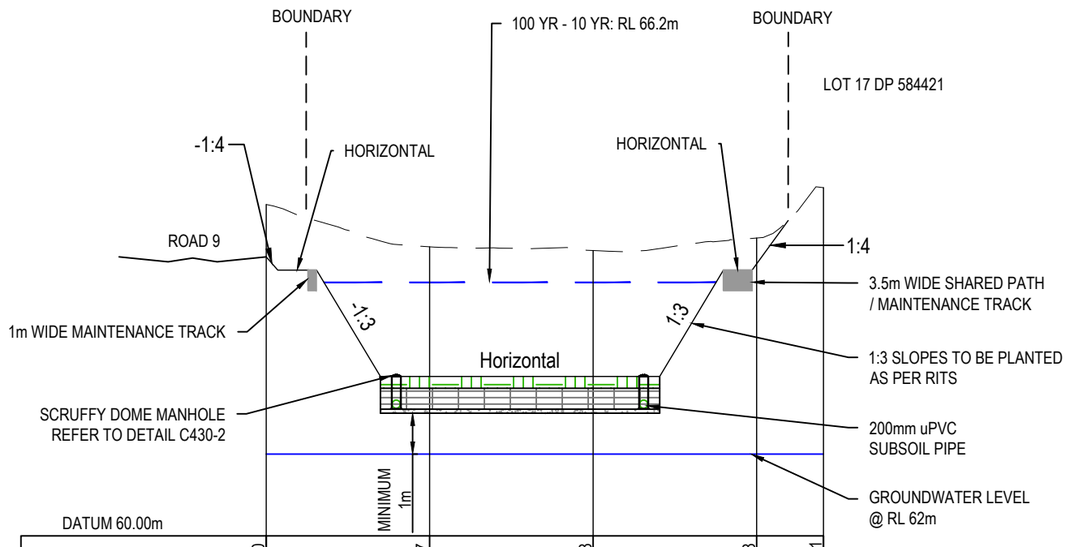
Title
PROPOSED STORMWATER BASIN A PLAN

Project no.	289001		
Scale	1:750 @ A3		
Cad file	C440- SW BASIN.DWG		
Drawing no.	C440-1	Rev	B



EXISTING LEVELS	67.61	67.30	67.18	67.13	66.97	67.02	66.90	67.07
DESIGN LEVELS		64.19	63.90	63.90	63.90	63.90	66.40	67.07
CUT/FILL		-3.11	-3.28	-3.23	-3.07	-3.12	-0.50	0.00
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	130.51

A1
SCALE: HORI 1:750 VERT 1:150



EXISTING LEVELS	68.10	67.07	66.98	67.28	68.51
DESIGN LEVELS	66.82	63.90	63.90	66.65	
CUT/FILL	-1.28	-3.17	-3.08	-0.63	
CHAINAGE	0.00	20.00	40.00	60.00	68.18

A2
SCALE: HORI 1:750 VERT 1:150

RESOURCE CONSENT

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8. Flood levels are per stromwater modelling dated 10/02/2025.
9. Groundwater levels provided by CMW per testpit logs dated 17/12/2024.
10. Batter slopes to be verified by Geotechnical Engineer.

Legend
- EX GROUND LEVEL
- PROP GROUND LEVEL
- 100YR - 10 YR LEVEL
- GROUNDWATER LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER BASIN A DETAILS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C440- SW BASIN.DWG		
Drawing no.	C440-2	Rev	B

DATE 4/2/25 FILE PATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C440 SW BASIN.DWG

N

EXISTING CHANNEL

LOT 3
DP 404835

EMERGENCY OLFP ROUTE
VIA EXISTING CHANNEL

EMERGENCY SPILLWAY
TO DISCHARGE FLOW NORTH
VIA EXISTING CHANNEL

STORMWATER BASIN C
VOLUME: 4,024m³
CATCHMENT AREA: 4.33 HA

3.5m WIDE SHARED PATH / MAINTENANCE TRACK
OF 50mm MAP20 ON 200mm GAP 65
OR SIMILAR APPROVED

FLAT BASIN FLOOR
WITH GRASS TURF

C2
C440-4

RL66.00

ROAD 1

OLFP OUTLET WEIR PROTECTED WITH RIPRAP
TOP OF WEIR SET AT 65.3mRL.
1.5m (L) X 0.3m (H)

66.00
65.50
65.00
64.50

C1
C440-4

RL64.40

RL64.40

C1
C440-4

LOT 2
DP 562902

PERFORATED 200mm uPVC PIPE

SCRUFFY DOME MANHOLE
REFER TO DETAIL C430-2

RL66.00

C2
C440-4

OLFP INLET WEIR PROTECTED WITH RIPRAP
TOP OF WEIR SET AT 65.3mRL.
1.5m (L) X 0.3m (H)

1m WIDE MAINTENANCE TRACK

BATTER SLOPE TO EXISTING GROUND

403

OVERLAND FLOW ROUTE
THROUGH STORMWATER RESERVE

200mm PVC SOAKAGE TRENCH OUTLET
@ 0.5% MINIMUM GRADE
TO SW BASIN SCRUFFY DOME MANHOLE

402

440

441

ROAD 4

439

442

RESOURCE CONSENT

DP 562902

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all stormwater lines within the road reserve.
6. All catchpit leads shall be laid at 1% unless otherwise specified.
7. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.

Legend

- EX BOUNDARY
- EX STORMWATER
- PROP LOT BOUNDARY
- EX CHANNEL
- PROP SW BASIN
- PROP SHARED PATH / MAINTENANCE TRACK

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
Drawn	MKS	12/2024
Checked	DJM	04/2025

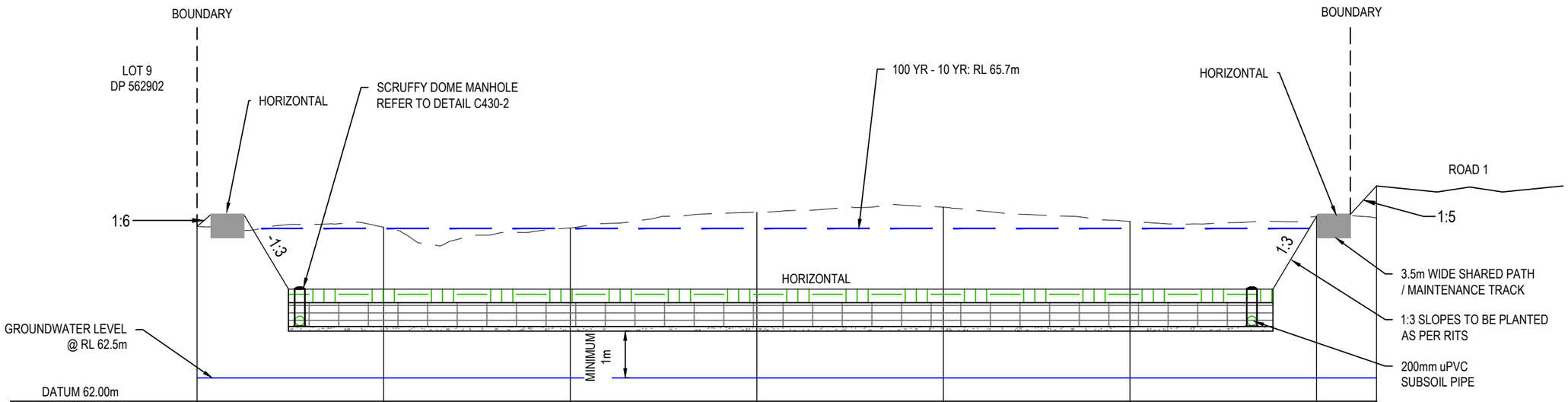
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www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER BASIN C PLAN

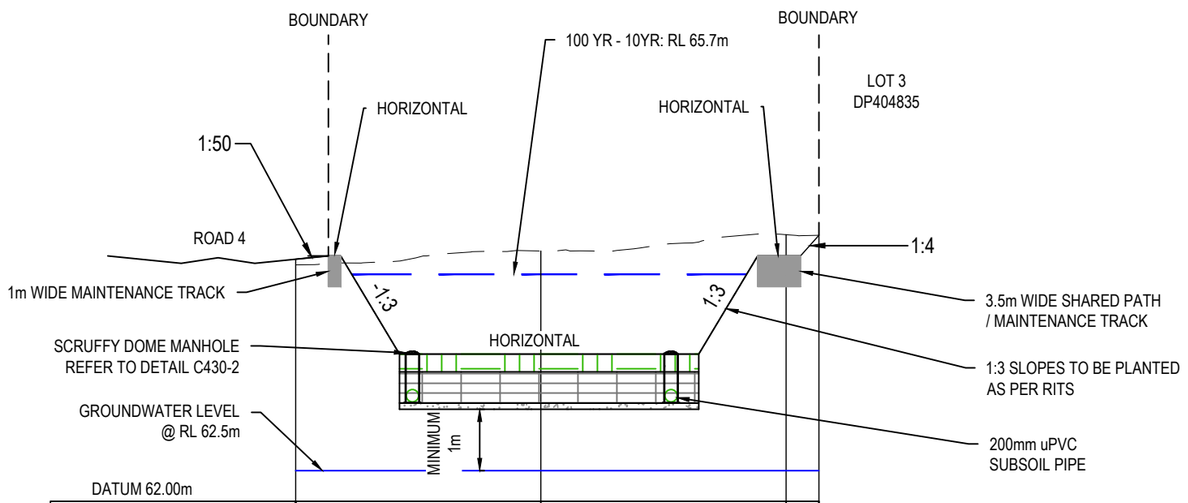
Project no.	289001		
Scale	1:500 @ A3		
Cad file	C440- SW BASIN.DWG		
Drawing no.	C440-3	Rev	B

DATE: 4/21/25 FILE PATH: F:\MAVEN HAML TONS\ PROJECTS\289001 - STATION ROAD\7 DRAWINGS\11 ASHBOURNE RESIDENTIAL\CAD\ SW BASIN.DWG



EXISTING LEVELS	65.74	65.72	65.71	66.05	66.15	65.85	65.96	65.92
DESIGN LEVELS	65.74	64.40	64.40	64.40	64.40	64.40	65.96	66.61
CUT/FILL	0.00	-1.32	-1.31	-1.65	-1.75	-1.45	0.00	0.69
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	126.43

C1
SCALE: HORI 1:500 VERT 1:100



EXISTING LEVELS	65.85	66.08	66.35	66.34
DESIGN LEVELS	65.95	64.40	66.00	66.34
CUT/FILL	0.09	-1.68	-0.35	0.00
CHAINAGE	0.00	20.00	40.00	42.67

C2
SCALE: HORI 1:500 VERT 1:100

RESOURCE CONSENT

Notes
1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all stormwater lines within the road reserve.
6. All catchpit leads shall be laid at 1% unless otherwise specified.
7. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.
8. Flood levels are per stromwater modelling dated 10/02/2025.
9. Groundwater levels provided by CMW per testpit logs dated 17/12/2024.
10. Batter slopes to be verified by Geotechnical Engineer.

Legend
- EX GROUND LEVEL
- PROP GROUND LEVEL
- 100YR - 10 YR LEVEL
- GROUNDWATER LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
Drawn	MKS	12/2024
Checked	DJM	04/2025

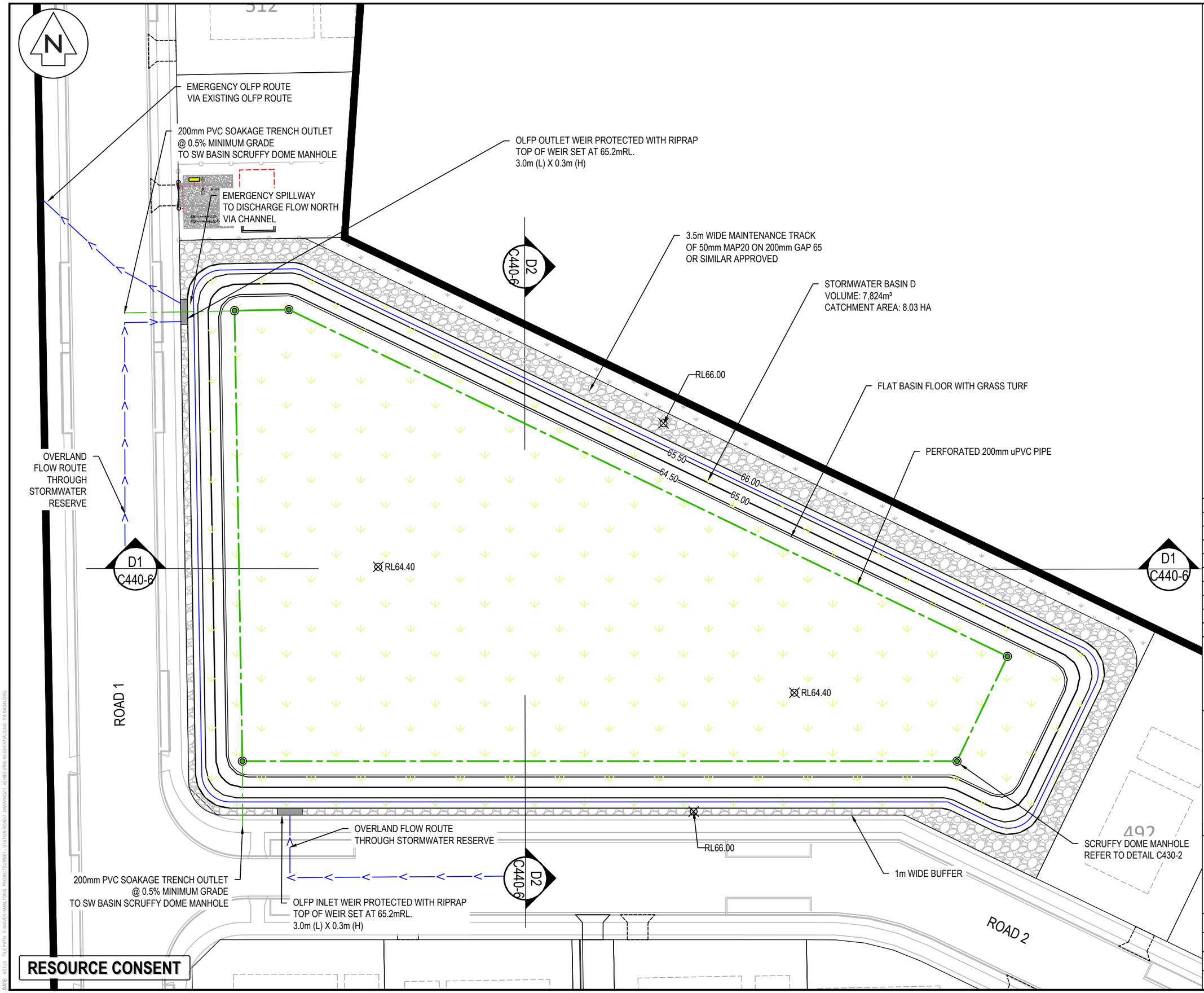
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER BASIN C DETAILS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C440- SW BASIN.DWG		
Drawing no.	C440-4	Rev	B

DATE 4/2/25 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWINGS\1 ASHBOURNE RESIDENTIAL\C440 SW BASIN.DWG



Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
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Legend

- EX BOUNDARY
- EX STORMWATER
- PROP LOT BOUNDARY
- PROP SW BASIN
- PROP SHARED PATH / MAINTENANCE TRACK

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
Drawn	MKS	12/2024
Checked	DJM	04/2025

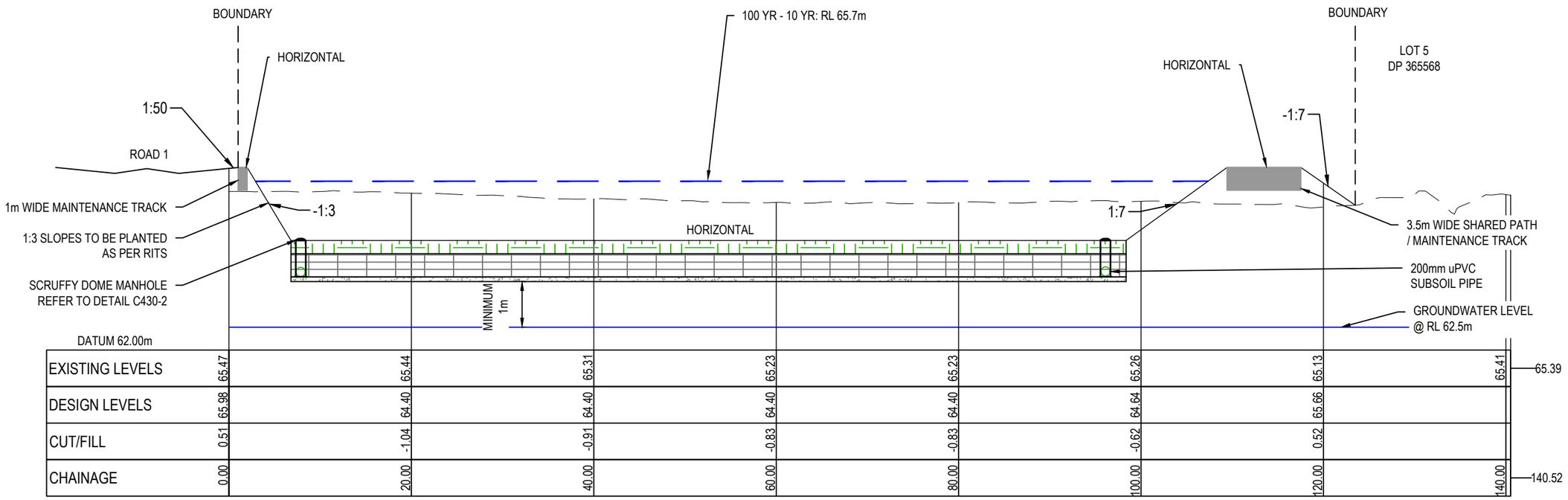
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www.maven.co.nz
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER BASIN D PLAN

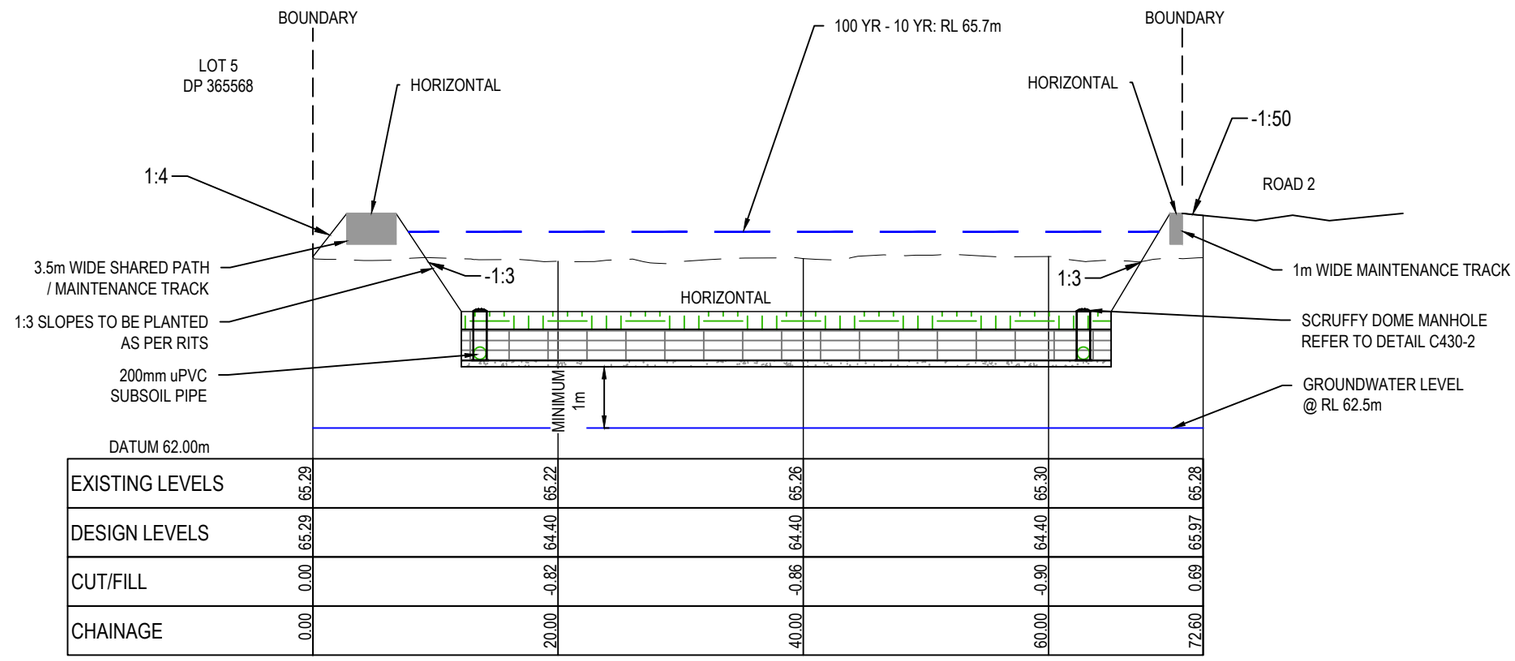
Project no.	289001
Scale	1:500 @ A3
Cad file	C440- SW BASIN.DWG
Drawing no.	C440-5 Rev B

DATE 4/2025 FILEPATH R:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C440 SW BASIN.DWG



D1

SCALE: HORI 1:500 VERT 1:100



D2

SCALE: HORI 1:500 VERT 1:100

RESOURCE CONSENT

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
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9. Groundwater levels provided by CMW per testpit logs dated 17/12/2024.
10. Batter slopes to be verified by Geotechnical Engineer.

Legend

- EX GROUND LEVEL
- PROP GROUND LEVEL
- 100YR - 10 YR LEVEL
- GROUNDWATER LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
Drawn	MKS	12/2024
Checked	DJM	04/2025

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Project

ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER BASIN D DETAILS

Project no.	289001
Scale	AS SHOWN
Cad file	C440- SW BASIN.DWG
Drawing no.	C440-6 Rev B

DATE 4/2/25 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C440 SW BASIN.DWG

HIGHGROVE AVE

PROPOSED SW BASIN A

CHESTNUT LANE

ELDONWOOD DRIVE

PEAKED DRIVE

	SECTION	CATCHMENT AREA HA	FLOWRATE m3/s	MAX DEPTH m	VELOCITY m/s	DEPTH x VELOCITY
CATCHMENT A	1	3.1	0.6	0.137	0.77	0.105
	2	6.2	1.1	0.158	0.97	0.153
	3	2.9	0.6	0.131	0.82	0.107
CATCHMENT B	1	5.9	0.9	0.167	0.81	0.135
	2	2.3	0.3	0.116	0.59	0.068
	3	1.1	0.2	0.091	0.61	0.056
	4	12.5	1.5	0.216	0.79	0.171
	5	4.2	0.8	0.121	0.912	0.110
CATCHMENT C	1	2.3	0.5	0.125	0.81	0.101
CATCHMENT D	1	2.8	0.3	0.116	0.59	0.068
	2	2.7	0.3	0.109	0.59	0.064

CATCHMENT B SECTION 5
AREA 4.2 ha

CATCHMENT B SECTION 3
AREA 1.1 ha

CATCHMENT B SECTION 2
AREA 2.3 ha

CATCHMENT B SECTION 4
AREA 12.5 ha

CATCHMENT B SECTION 1
AREA 5.9 ha

CATCHMENT A SECTION 3
AREA 2.9 ha

CATCHMENT A SECTION 2
AREA 6.2 ha

CATCHMENT A SECTION 1
AREA 3.1 ha

SECTION 5B
SECTION 4B
SECTION 3B
SECTION 2B
SECTION 1B
SECTION 3
SECTION 2
SECTION 1

LOT 3 DP 463448

LOT 76 DP 597

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
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Legend

- EX BOUNDARY
- PROP LOT BOUNDARY
- PROP SWCP SINGLE
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	12/2024
Drawn	RJM	12/2024
Checked	DJM	12/2024

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED OVERLAND FLOWPATH CATCHMENT PLAN

Project no.	289001		
Scale	1:3000 @ A3		
Cad file	C460-OLFP.DWG		
Drawing no.	C460-1	Rev	A

RESOURCE CONSENT

DATE - 4/25 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C460-OLFP.DWG

	SECTION	CATCHMENT AREA HA	FLOWRATE m3/s	MAX DEPTH m	VELOCITY m/s	DEPTH x VELOCITY
CATCHMENT A	1	3.1	0.6	0.137	0.77	0.105
	2	6.2	1.1	0.158	0.97	0.153
	3	2.9	0.6	0.131	0.82	0.107
CATCHMENT B	1	5.9	0.9	0.167	0.81	0.135
	2	2.3	0.3	0.116	0.59	0.068
	3	1.1	0.2	0.091	0.61	0.056
	4	12.5	1.5	0.216	0.79	0.171
	5	4.2	0.6	0.121	0.912	0.110
CATCHMENT C	1	2.3	0.5	0.125	0.81	0.101
CATCHMENT D	1	2.8	0.3	0.116	0.59	0.068
	2	2.7	0.3	0.109	0.59	0.064

CATCHMENT D SECTION 2
AREA 2.7 ha

CATCHMENT D SECTION 1
AREA 2.8 ha

SECTION 1D

SECTION 2D

CATCHMENT C SECTION 1
AREA 2.3 ha

SECTION 1C

ODLUM DRIVE

OLIVE PLACE

HIGHGROVE AVENUE

CHESTNUT LANE

ELDONWOOD DRIVE

RESOURCE CONSENT

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
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Legend

EX BOUNDARY

SITE BOUNDARY

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	RJM	12/2024
Drawn	NAK	12/2024
Checked	DJM	12/2024

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED OVERLAND FLOWPATH CATCHMENT PLAN

Project no.	289001		
Scale	1:2500 @ A3		
Cad file	C460-OLFP.DWG		
Drawing no.	C460-2	Rev	A

DATE: 04/25 - FILEPATH: F:\MAVEN HAMILTON_PROJECTS\289001 - STATION ROAD\7. DRAWINGS\11. ASHBOURNE RESIDENTIAL\C460-OLFP.DWG

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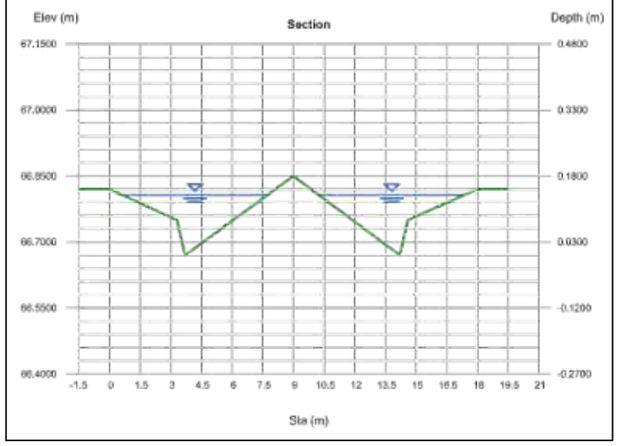
Hydroflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt A Section 1

User-defined		Highlighted	
Invert Elev (m)	= 66.6700	Depth (m)	= 0.1372
Slope (%)	= 0.7000	Q (cms)	= 0.6000
N-Value	= 0.015	Area (sqm)	= 0.7825
		Velocity (m/s)	= 0.7668
Calculations		Wetted Perim (m)	= 14.2849
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1402
Known Q (cms)	= 0.6000	Top Width (m)	= 14.2631
		EGL (m)	= 0.1671

(Sta, El, n)-(Sta, El, n)...

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Channel Report

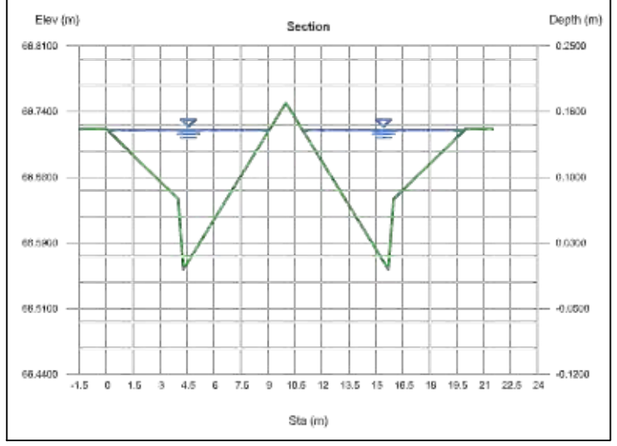
Hydroflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt A Section 2

User-defined		Highlighted	
Invert Elev (m)	= 66.5600	Depth (m)	= 0.1585
Slope (%)	= 0.9000	Q (cms)	= 1.1000
N-Value	= 0.015	Area (sqm)	= 1.1324
		Velocity (m/s)	= 0.9714
Calculations		Wetted Perim (m)	= 17.9771
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1707
Known Q (cms)	= 1.1000	Top Width (m)	= 17.9492
		EGL (m)	= 0.2066

(Sta, El, n)-(Sta, El, n)...

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Channel Report

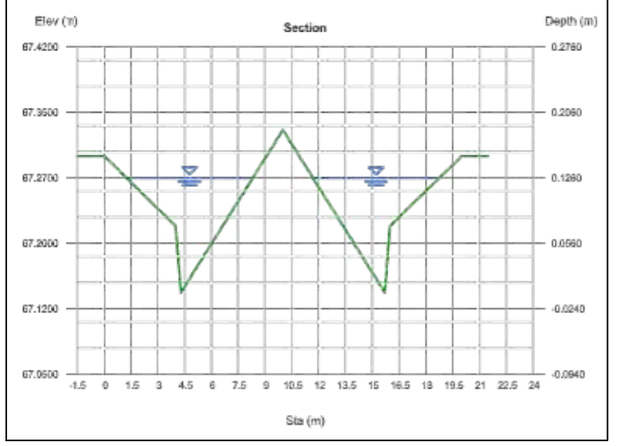
Hydroflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt A Section 3

User-defined		Highlighted	
Invert Elev (m)	= 67.1440	Depth (m)	= 0.1311
Slope (%)	= 0.9000	Q (cms)	= 0.6000
N-Value	= 0.015	Area (sqm)	= 0.7336
		Velocity (m/s)	= 0.8179
Calculations		Wetted Perim (m)	= 14.1554
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1372
Known Q (cms)	= 0.6000	Top Width (m)	= 14.1310
		EGL (m)	= 0.1652

(Sta, El, n)-(Sta, El, n)...

(0.0100, 67.3800)-(4.0000, 67.2800, 0.015)-(4.3000, 67.1440, 0.015)-(10.0000, 67.3300, 0.015)-(15.7000, 67.1440, 0.015)-(16.0000, 67.2200, 0.015)-(20.0000, 67.



RESOURCE CONSENT

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	RJM	12/2024
Drawn	NAK	12/2024
Checked	DJM	12/2024

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED OVERLAND FLOWPATH SECTIONS 1 OF 3

Project no.	289001		
Scale	1:2500 @ A3		
Cad file	C460-OLFP.DWG		
Drawing no.	C460-3	Rev	A

DATE: 4/25 FILEPATH: F:\MAVEN HAMILTON_PROJECTS\289001 - STATION ROAD\7. DRAWINGS\11. ASHBOURNE RESIDENTIAL\C460-OLFP.DWG

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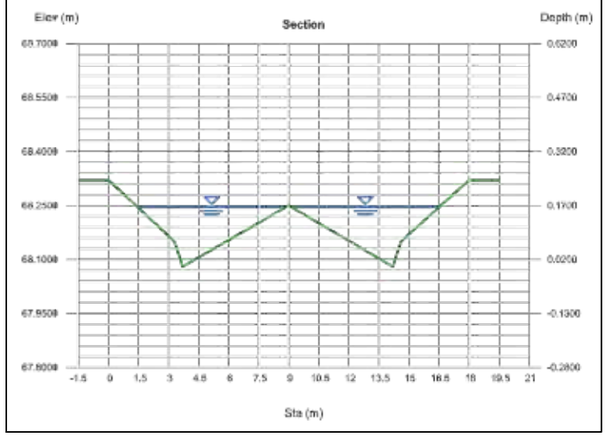
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Catchemnt B Section 1

User-defined		Highlighted	
Invert Elev (m)	= 66.0800	Depth (m)	= 0.1646
Slope (%)	= 0.5000	Q (cms)	= 0.9000
N-Value	= 0.015	Area (sqm)	= 1.1164
		Velocity (m/s)	= 0.8062
Calculations		Wetted Perim (m)	= 14.7110
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1615
Known Q (cms)	= 0.9000	Top Width (m)	= 14.6887
		EGL (m)	= 0.1977

(Sta, El, n)-(Sta, El, n)...

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Channel Report

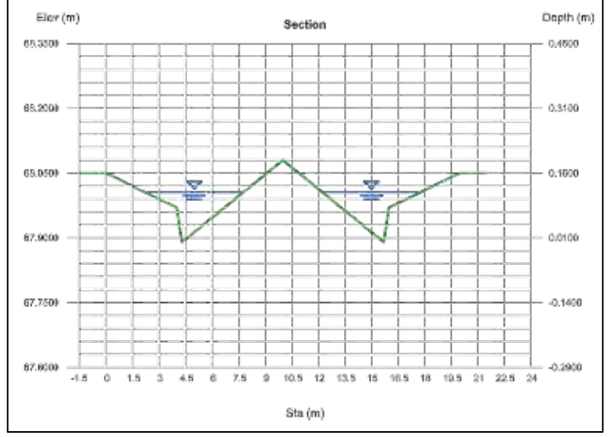
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Catchemnt B Section 2

User-defined		Highlighted	
Invert Elev (m)	= 67.8900	Depth (m)	= 0.1158
Slope (%)	= 0.5000	Q (cms)	= 0.3000
N-Value	= 0.015	Area (sqm)	= 0.5120
		Velocity (m/s)	= 0.5859
Calculations		Wetted Perim (m)	= 11.1529
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1128
Known Q (cms)	= 0.3000	Top Width (m)	= 11.1273
		EGL (m)	= 0.1333

(Sta, El, n)-(Sta, El, n)...

(0.0000, 68.0800)-(4.0000, 67.9700, 0.015)-(4.8000, 67.8900, 0.015)-(13.0000, 68.0500, 0.015)-(15.7000, 67.8900, 0.015)-(16.6000, 67.7000, 0.015)-(20.0000, 68.



Channel Report

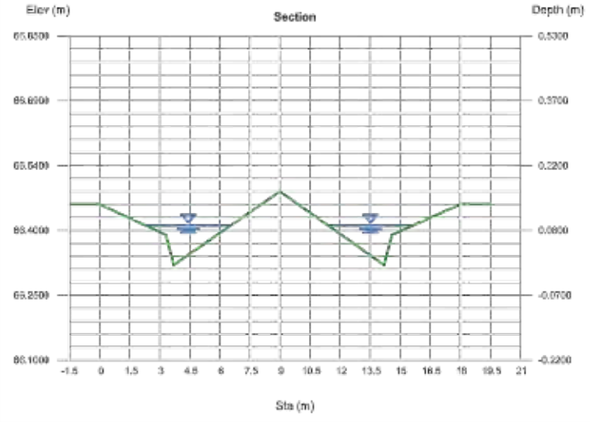
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Catchemnt B Section 3

User-defined		Highlighted	
Invert Elev (m)	= 66.3200	Depth (m)	= 0.0914
Slope (%)	= 0.7000	Q (cms)	= 0.200
N-Value	= 0.015	Area (sqm)	= 0.3253
		Velocity (m/s)	= 0.6147
Calculations		Wetted Perim (m)	= 8.5125
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.0845
Known Q (cms)	= 0.2000	Top Width (m)	= 8.4970
		EGL (m)	= 0.1107

(Sta, El, n)-(Sta, El, n)...

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Channel Report

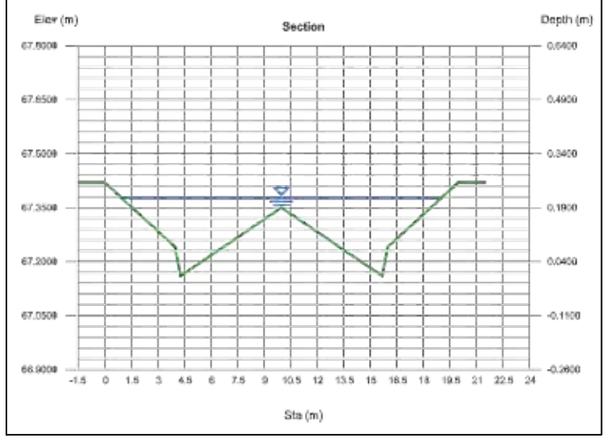
HydroFlow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt D Section 4

User-defined		Highlighted	
Invert Elev (m)	= 67.1600	Depth (m)	= 0.2164
Slope (%)	= 0.3000	Q (cms)	= 1.5000
N-Value	= 0.015	Area (sqm)	= 1.9030
		Velocity (m/s)	= 0.7882
Calculations		Wetted Perim (m)	= 18.0886
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.2012
Known Q (cms)	= 1.5000	Top Width (m)	= 18.0554
		EGL (m)	= 0.2481

(Sta, El, n)-(Sta, El, n)...

(0.0000, 67.4200)-(4.0000, 67.2400, 0.015)-(4.9000, 67.1600, 0.015)-(13.8000, 67.3600, 0.015)-(15.7000, 67.1600, 0.015)-(18.0000, 67.2400, 0.015)-(20.0000, 67.



Channel Report

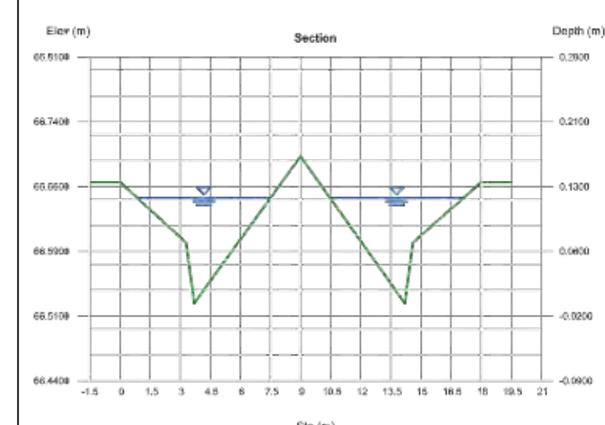
HydroFlow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt B Section 5

User-defined		Highlighted	
Invert Elev (m)	= 66.5300	Depth (m)	= 0.1219
Slope (%)	= 1.1000	Q (cms)	= 0.6000
N-Value	= 0.015	Area (sqm)	= 0.6574
		Velocity (m/s)	= 0.9127
Calculations		Wetted Perim (m)	= 13.3086
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1341
Known Q (cms)	= 0.6000	Top Width (m)	= 13.2927
		EGL (m)	= 0.1644

(Sta, El, n)-(Sta, El, n)...

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RESOURCE CONSENT

DATE: 4/25 FILEPATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C460-OLFP.DWG

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	RJM	12/2024
Drawn	NAK	12/2024
Checked	DJM	12/2024

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED OVERLAND FLOWPATH SECTIONS 2 OF 3

Project no.	289001
Scale	1:2500 @ A3
Cad file	C460-OLFP.DWG
Drawing no.	C460-4 Rev A

Channel Report

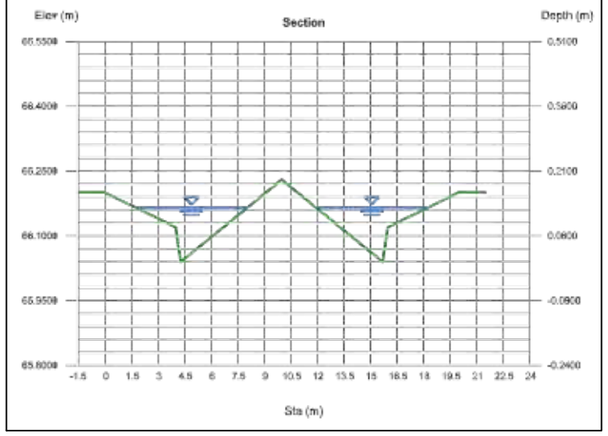
HydraFlow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt C Section 1

User-defined		Highlighted	
Invert Elev (m)	= 66.0400	Depth (m)	= 0.1250
Slope (%)	= 0.9000	Q (cms)	= 0.5000
N-Value	= 0.015	Area (sqm)	= 0.6205
		Velocity (m/s)	= 0.8058
Calculations		Wetted Perim (m)	= 12.8157
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1341
Known Q (cms)	= 0.5000	Top Width (m)	= 12.5896
		EGL (m)	= 0.1581

(Sta, El, n)-(Sta, El, n)...

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Channel Report

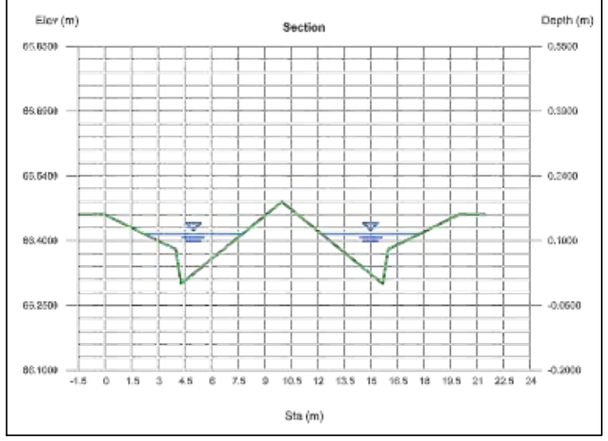
HydraFlow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt D Section 1

User-defined		Highlighted	
Invert Elev (m)	= 66.3000	Depth (m)	= 0.1158
Slope (%)	= 0.5000	Q (cms)	= 0.3000
N-Value	= 0.015	Area (sqm)	= 0.5121
		Velocity (m/s)	= 0.5858
Calculations		Wetted Perim (m)	= 11.1542
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1128
Known Q (cms)	= 0.3000	Top Width (m)	= 11.1286
		EGL (m)	= 0.1333

(Sta, El, n)-(Sta, El, n)...

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Channel Report

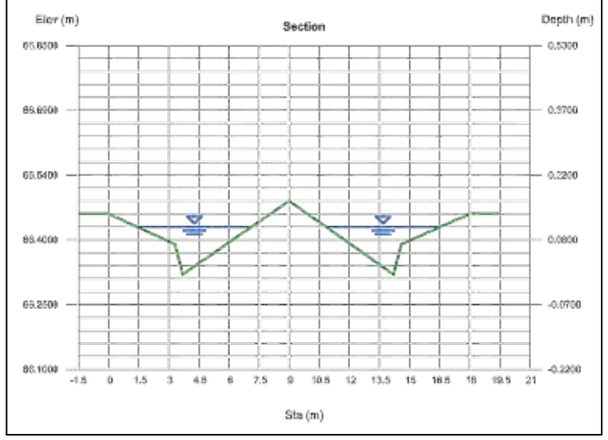
HydraFlow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 17 2025

Catchemnt D Section 2

User-defined		Highlighted	
Invert Elev (m)	= 66.3200	Depth (m)	= 0.1097
Slope (%)	= 0.5000	Q (cms)	= 0.3000
N-Value	= 0.015	Area (sqm)	= 0.5070
		Velocity (m/s)	= 0.5917
Calculations		Wetted Perim (m)	= 11.3907
Compute by:	Known Q	Crit Depth, Yc (m)	= 0.1067
Known Q (cms)	= 0.3000	Top Width (m)	= 11.3742
		EGL (m)	= 0.1276

(Sta, El, n)-(Sta, El, n)...

(0.0100, 66.4600)-(3.0000, 66.3800, 0.015) (3.7000, 66.3200, 0.015)-(3.8000, 66.4800, 0.015)-(14.2000, 66.3200, 0.015)-(14.6000, 66.3800, 0.015)-(18.0000, 66.4



RESOURCE CONSENT

Rev	Description	By	Date
A	FAST TRACK APP	RK	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	RJM	12/2024
Drawn	NAK	12/2024
Checked	DJM	12/2024

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Project

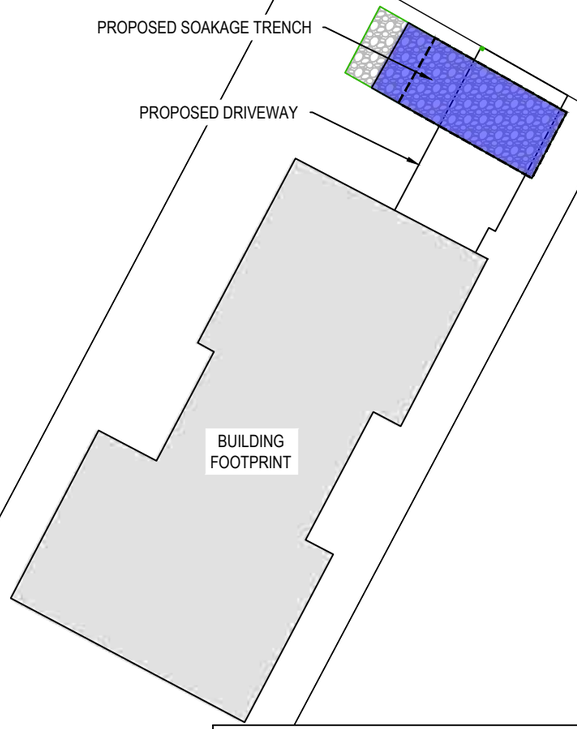
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

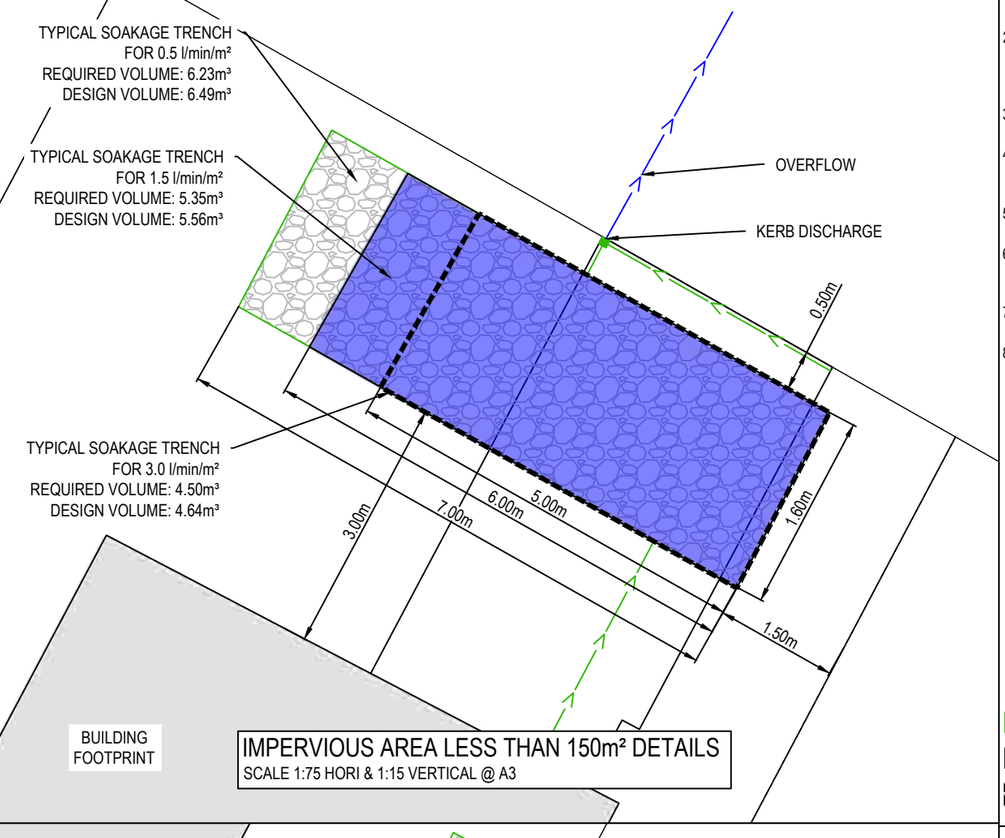
PROPOSED OVERLAND FLOWPATH SECTIONS 3 OF 3

Project no.	289001		
Scale	1:2500 @ A3		
Cad file	C460-OLFP.DWG		
Drawing no.	C460-5	Rev	A

DATE 4/25 FILEPATH: F:\MAVEN HAMILTON\0 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C460-OLFP.DWG



IMPERVIOUS AREA LESS THAN 150m²
SCALE 1:200 HORI & 1:40 VERTICAL @ A3



IMPERVIOUS AREA LESS THAN 150m² DETAILS
SCALE 1:75 HORI & 1:15 VERTICAL @ A3



IMPERVIOUS AREA BETWEEN 150m² AND 200m²
SCALE 1:200 HORI & 1:40 VERTICAL @ A3



IMPERVIOUS AREA BETWEEN 150m² AND 200m² DETAILS
SCALE 1:75 HORI & 1:15 VERTICAL @ A3

RESOURCE CONSENT

Notes

1. Site specific testing is required at Building Consent to determine the soakage rate and optimal soakage trench location.
2. On-lot soakage trench size is to be determined using the attached table by selecting the appropriate impervious area and corresponding soakage rate.
3. Invert of soakage device must be above the winter groundwater table.
4. Sizing is based on assumed depth of 1m. If 2m depth is chosen, the area of the soakage device can be halved.
5. Soakage trench device is sized to cater for the 10-year ARI event including climate change.
6. Soakage trench must maintain minimum 3m clearance from building footprint in accordance with RITS.
7. Soakage device to be either a soakage trench, soak hole or an approved alternative.
8. Soakage device must be constructed in accordance with the MPDC and Building Consent requirements.

Legend

- SOAKAGE TRENCH - 0.5l/min/m²
- SOAKAGE TRENCH - 1.5l/min/m²
- SOAKAGE TRENCH - 3.0l/min/m²

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	03/2025
Drawn	MKS	03/2025
Checked	DJM	04/2025

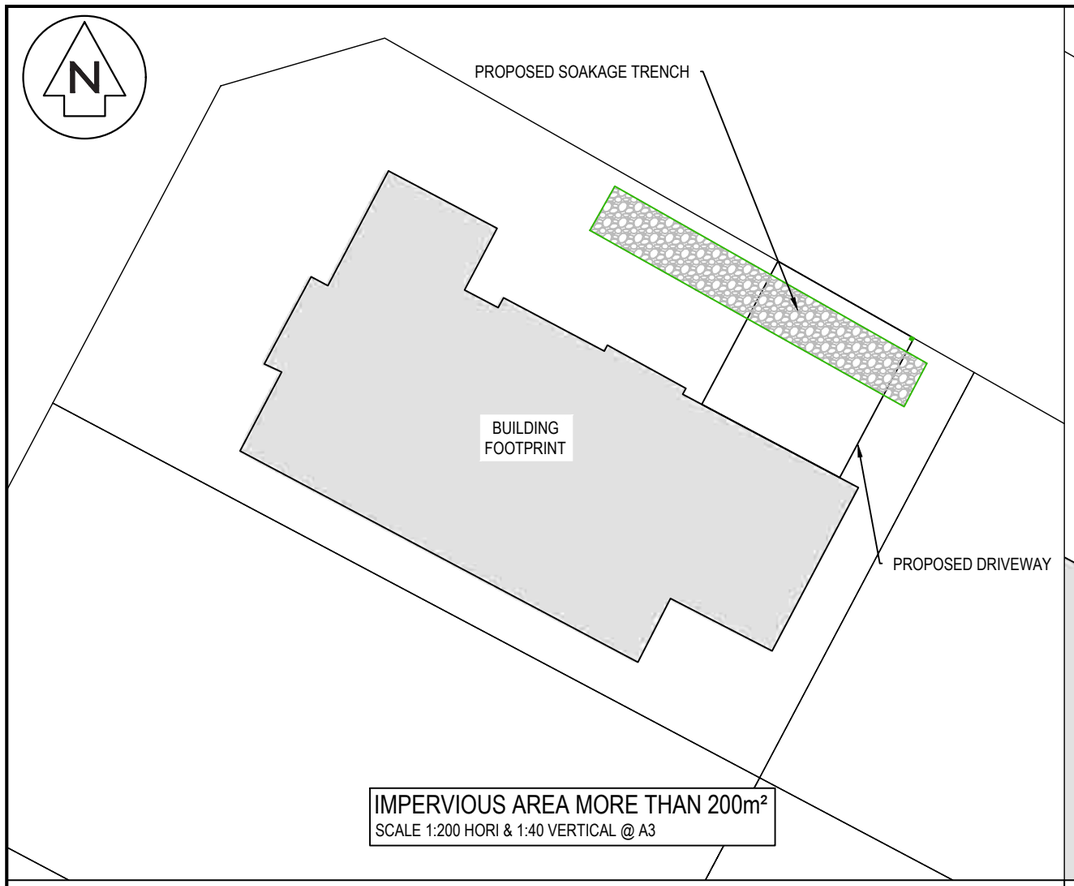
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

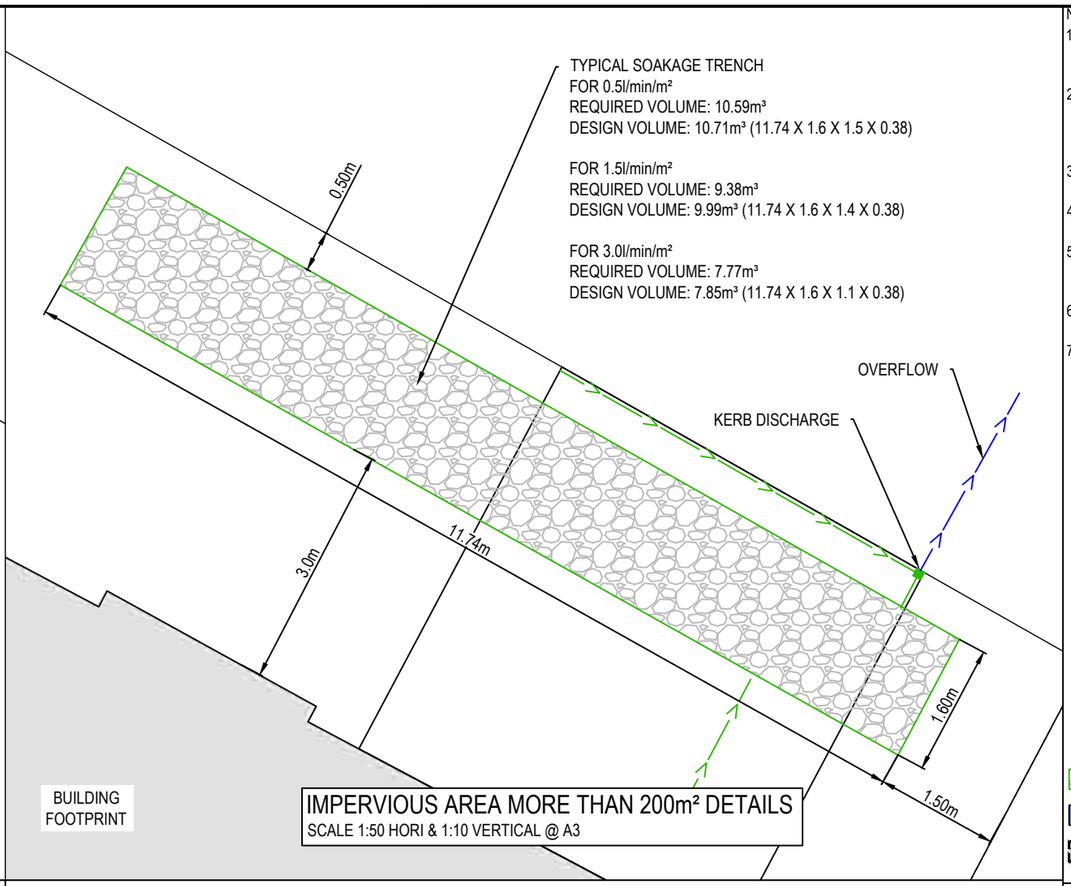
Title
PROPOSED STORMWATER ON-LOT TYPICAL PLAN

Project no.	289001		
Scale	AS SHOWN		
Cad file	C470-SW ON-LOT TYP PLAN.DWG		
Drawing no.	C470-1	Rev	A

DATE 4/25 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\DRAWING\1 ASHBOURNE RESIDENTIAL\C470-SW ON-LOT TYP PLAN.DWG



IMPERVIOUS AREA MORE THAN 200m²
SCALE 1:200 HORI & 1:40 VERTICAL @ A3



IMPERVIOUS AREA MORE THAN 200m² DETAILS
SCALE 1:50 HORI & 1:10 VERTICAL @ A3

Notes
1. Site specific testing is required at Building Consent to determine the soakage rate and optimal soakage trench location.
2. On-lot soakage trench size is to be determined using the attached table by selecting the appropriate impervious area and corresponding soakage rate.
3. Invert of soakage device must be above the winter groundwater table.
4. Soakage trench device is sized to cater for the 10-year ARI event including climate change.
5. Soakage trench must maintain minimum 3m clearance from building footprint in accordance with RITS.
6. Soakage device to be either a soakage trench, soak hole or an approved alternative.
7. Soakage device must be constructed in accordance with the MPDC and Building Consent requirements.

Legend
- SOAKAGE TRENCH - 0.5l/min/m²
- SOAKAGE TRENCH - 1.5l/min/m²
- SOAKAGE TRENCH - 3.0l/min/m²

ON-LOT SOAKAGE TRENCH TABLE			
ON-LOT SOAKAGE TRENCH SIZE REQUIREMENT	SOAKAGE RATE (l / min / m²)		
IMPERVIOUS AREA (m²)	0.5 < 1.5	1.5 - 3.0	> 3.0
< 150	6.49m³	5.56m³	4.64m³
150 - 200	8.46m³	7.21m³	6.27m³
200 - 250	10.71m³	9.99m³	7.85m³

ON-LOT SOAKAGE TRENCH TABLE
SCALE: NTS

RESOURCE CONSENT

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	03/2025
Drawn	MKS	03/2025
Checked	DJM	04/2025

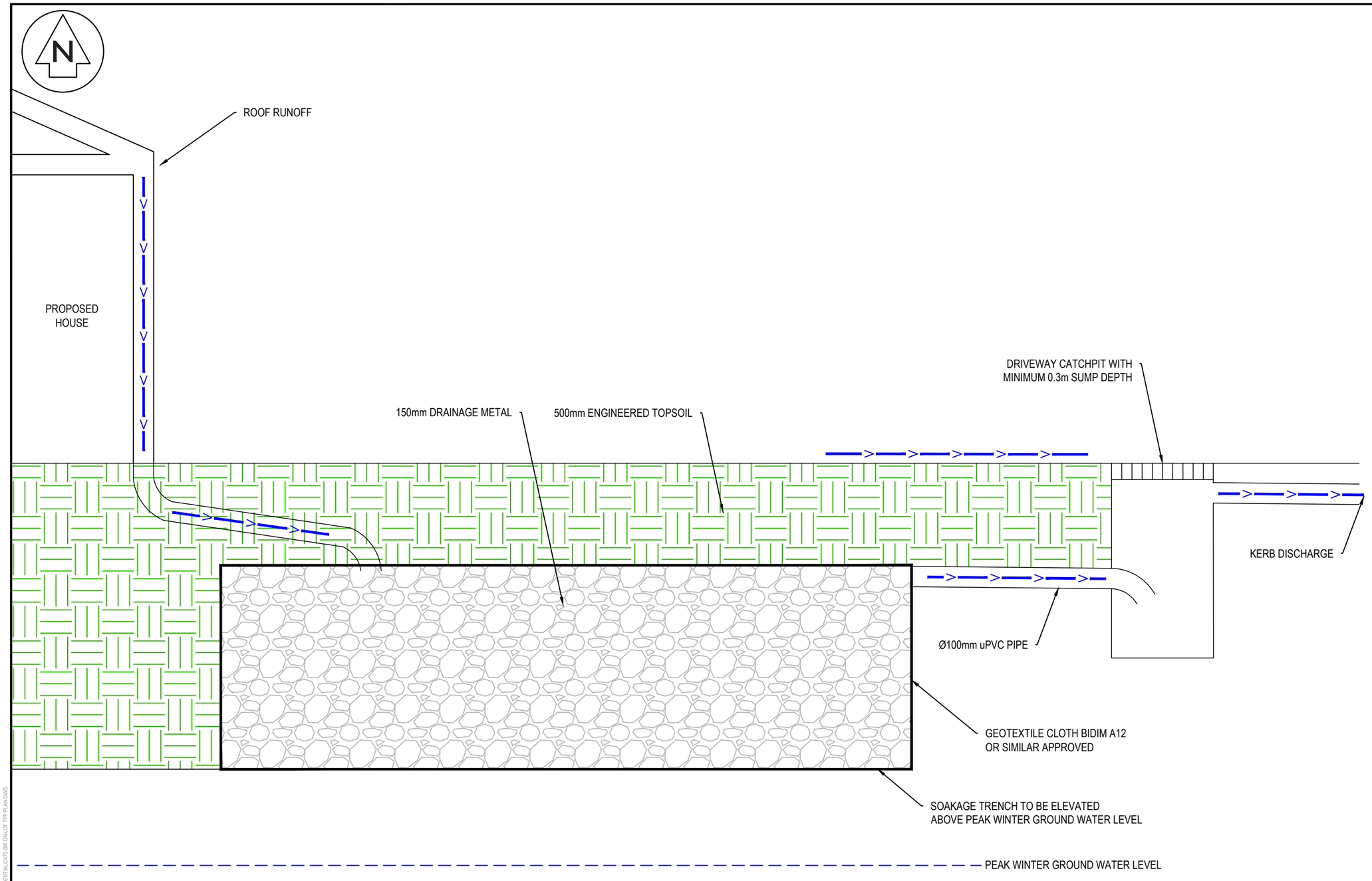
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER ON-LOT TYPICAL PLAN

Project no.	289001		
Scale	AS SHOWN		
Cad file	C470-SW ON-LOT TYP PLAN.DWG		
Drawing no.	C470-2	Rev	A

DATE - 4/025 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\2890\ - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C470-SW ON-LOT TYP PLAN.DWG



ON-LOT TYPICAL CROSS SECTION
SCALE 1:20 HORI & 1:4 VERTICAL @ A3

RESOURCE CONSENT

Notes

1. Site specific testing is required at Building Consent to determine the soakage rate and optimal soakage trench location.
2. On-lot soakage trench size is to be determined using the attached table by selecting the appropriate impervious area and corresponding soakage rate.
3. Invert of soakage device must be above the winter groundwater table.
4. Soakage trench device is sized to cater for the 10-year ARI event including climate change.
5. Soakage trench must maintain minimum 3m clearance from building footprint in accordance with RITS.
6. Soakage device to be either a soakage trench, soak hole or an approved alternative.
7. Soakage device must be constructed in accordance with the MPDC and Building Consent requirements.

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

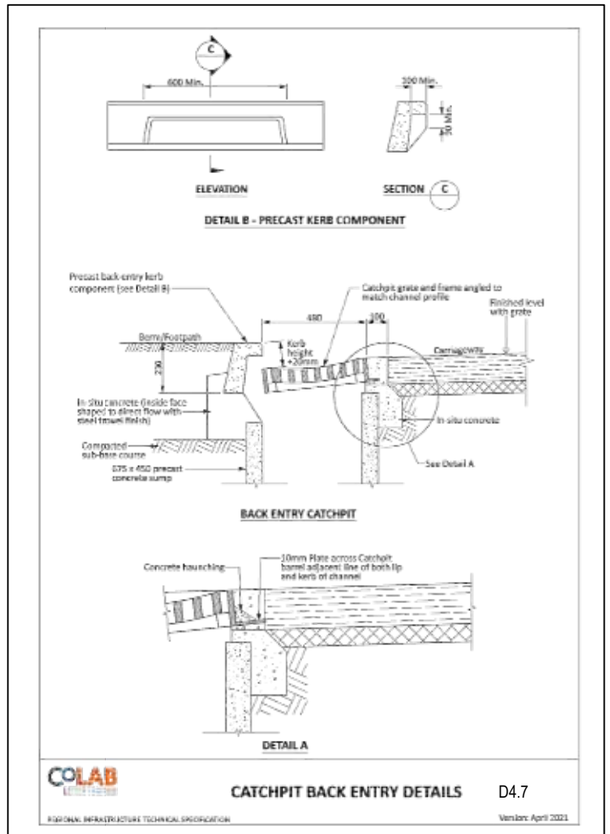
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Auckland 1023

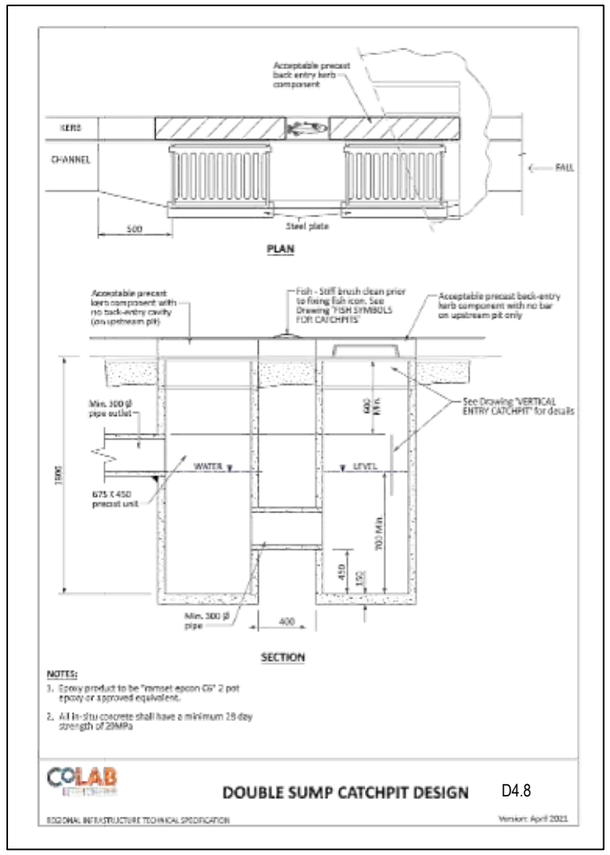
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER ON-LOT TYPICAL CROSS-SECTION

Project no.	289001		
Scale	1:20 @ A3		
Cad file	C470-SW ON-LOT TYP PLAN.DWG		
Drawing no.	C470-3	Rev	A

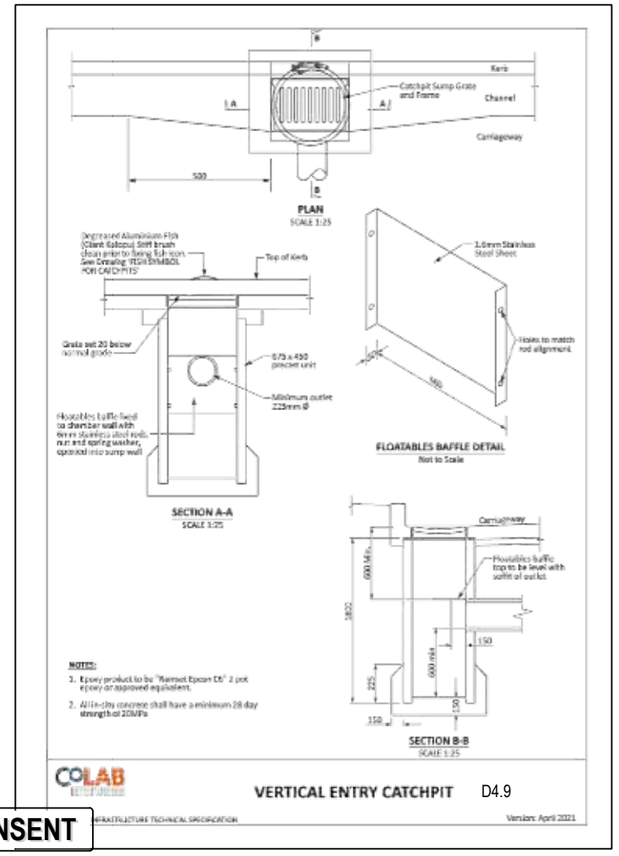
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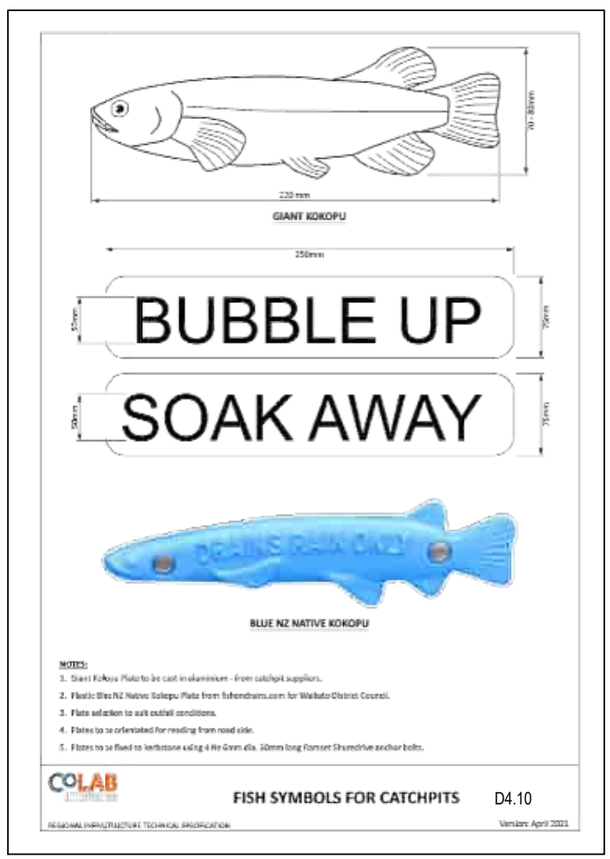




Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all stormwater lines within the road reserve.
6. All catchpit leads shall be laid at 1% unless otherwise specified.
7. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.





RESOURCE CONSENT

DATE: 4/2025

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

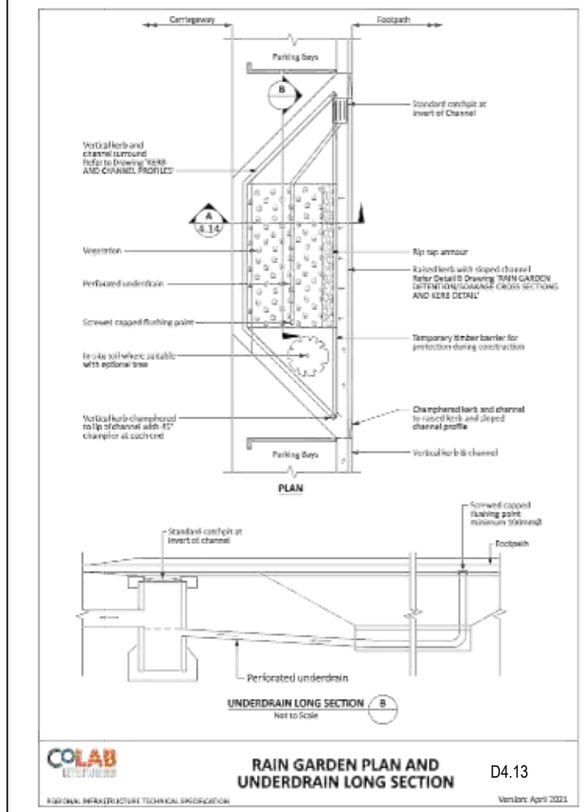
	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

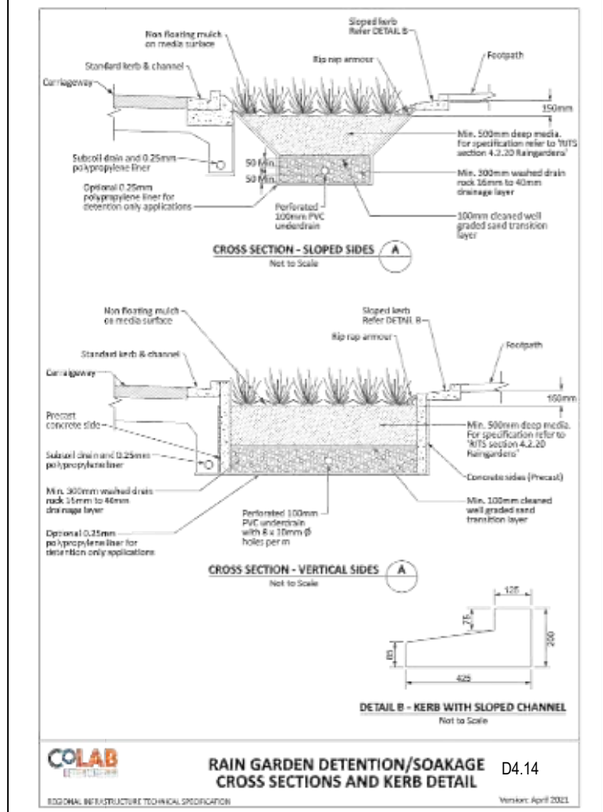
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER STANDARD DETAILS

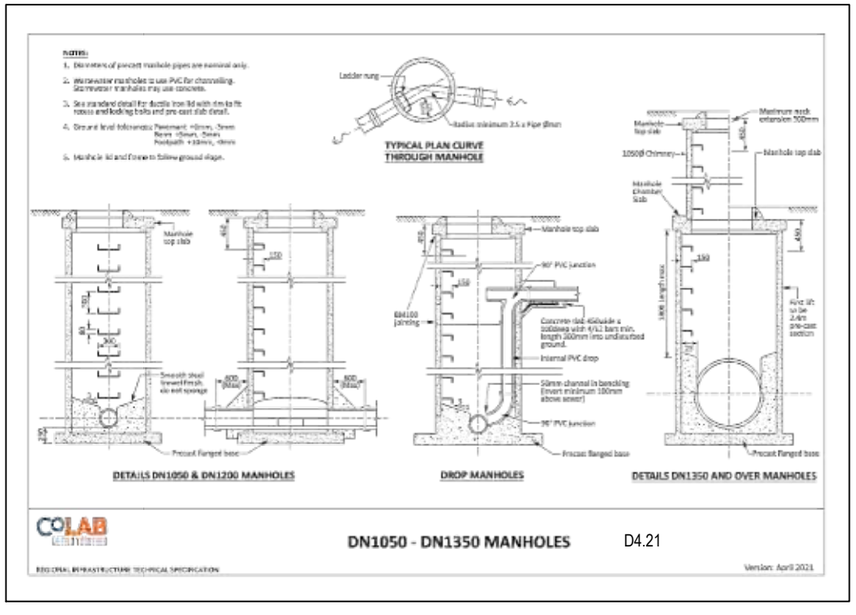
Project no.	289001
Scale	NTS
Cad file	C480-SW STANDARD DETAILS.DWG
Drawing no.	C480-1 Rev A

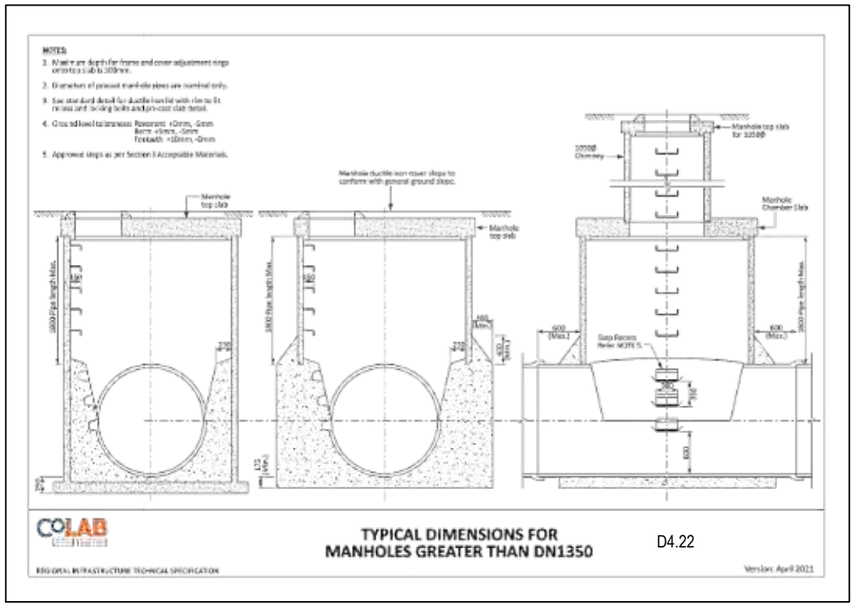




Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all stormwater lines within the road reserve.
6. All catchpit leads shall be laid at 1% unless otherwise specified.
7. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.





RESOURCE CONSENT

DATE: 4/2025

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

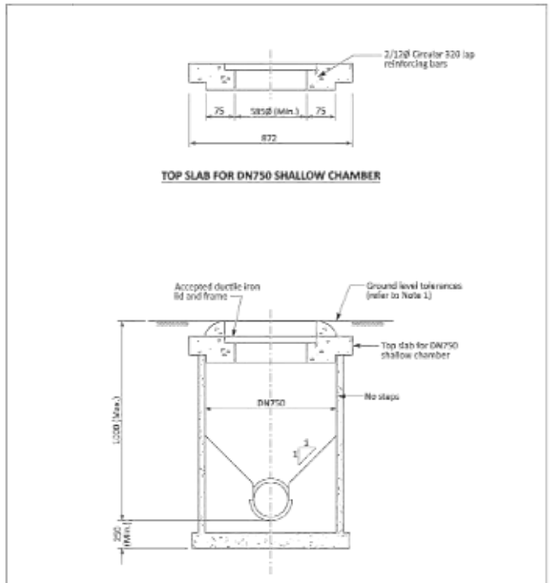
	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED STORMWATER STANDARD DETAILS

Project no.	289001
Scale	NTS
Cad file	C480-SW STANDARD DETAILS.DWG
Drawing no.	C480-2 Rev A



TOP SLAB FOR DN750 SHALLOW CHAMBER

DN750 INTERNAL SHALLOW CHAMBER

To be used only on pipes of DN100 to DN300 and where depth of invert is less than 1000mm

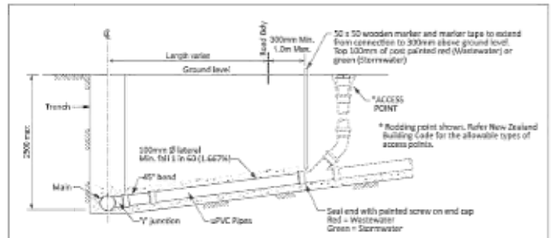
NOTES:

1. Ground level tolerances: Pavement +0mm, -5mm
   Berm +5mm, -5mm
   Footpath +10mm, -0mm

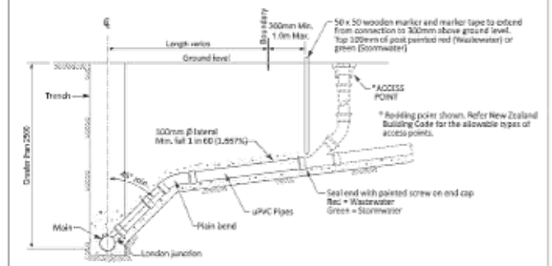
COLAB

SHALLOW MANHOLE/CHAMBER D4.23

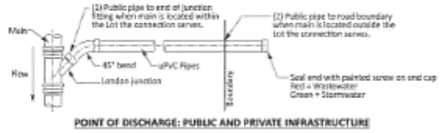
REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION — Version: April 2021



STANDARD CONNECTION WITH A DEPTH TO INVERT LESS THAN 2500mm - SECTION



RAMP RISER CONNECTION WITH A DEPTH TO INVERT GREATER THAN 2500mm - SECTION



POINT OF DISCHARGE: PUBLIC AND PRIVATE INFRASTRUCTURE

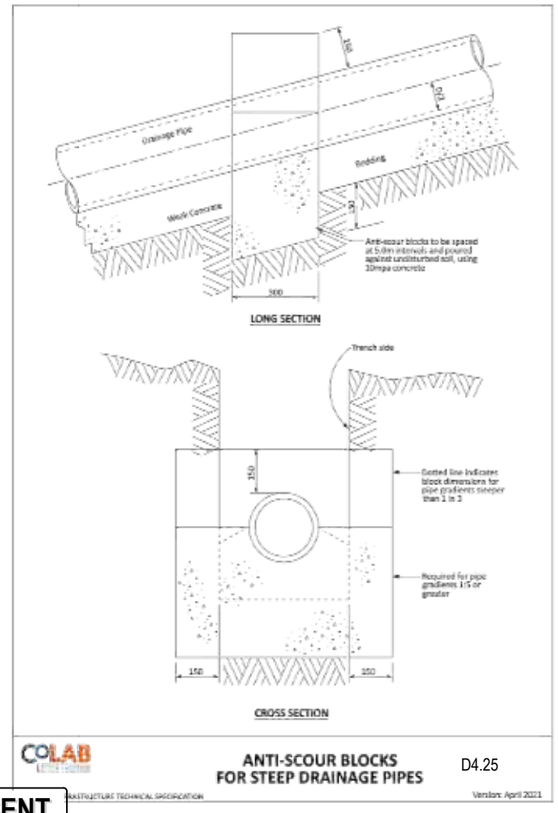
COLAB

LATERAL CONNECTION D4.24

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION — Version: April 2021

Notes

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3. Levels in terms of the New Zealand Vertical Datum 2016.
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6. All catchpit leads shall be laid at 1% unless otherwise specified.
7. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.



LONG SECTION

CROSS SECTION

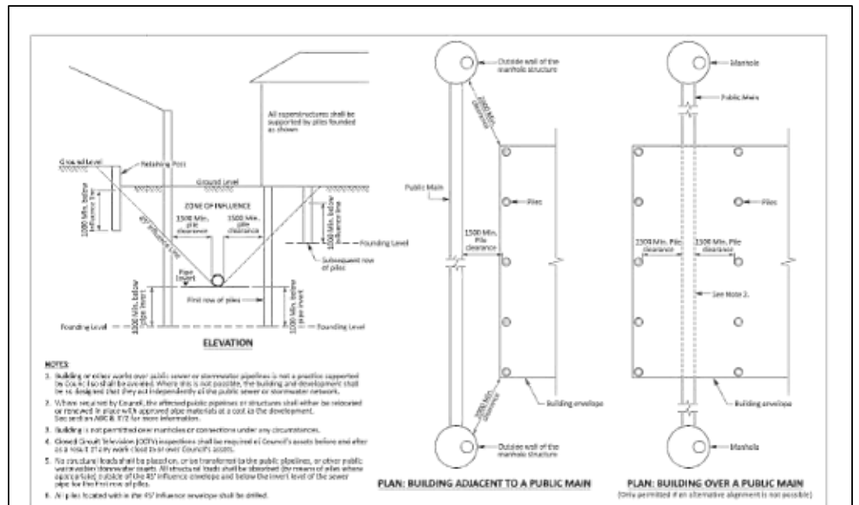
COLAB

ANTI-SCOUR BLOCKS FOR STEEP DRAINAGE PIPES D4.25

INFRASTRUCTURE TECHNICAL SPECIFICATION — Version: April 2021

RESOURCE CONSENT

DATE: 4/2025



NOTES:

1. Building or other works over public sewer or stormwater pipelines is not a practice supported by Council but will be considered. Where this is not possible, the building and development shall be so designed that they are independently of the public sewer or stormwater network.
2. Where required by Council, the affected public pipelines or structures shall either be relocated or replaced in place with approved pipe materials at a cost to the development. See section ABC B. 9.2 for more information.
3. Building is not permitted over manholes or connections under any circumstances.
4. Closed Circuit Television (CCTV) inspections shall be required of Council's assets before and after as a result of any work close to or over Council's assets.
5. No concrete loads shall be placed on, or be transferred to the public pipelines, or other public wastewater/stormwater assets. All structural loads shall be absorbed (by means of piles where required) outside of the 45° influence envelope and below the invert level of the sewer pipe for the first row of piles.
6. Any piles located within the 45° influence envelope shall be drilled.

COLAB

BUILDING OVER AND ADJACENT TO PUBLIC WASTEWATER OR STORMWATER PIPELINES D4.26

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION — Version: April 2021

Rev	Description	By	Date
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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5 Owens Road, Epsom
Auckland 1023

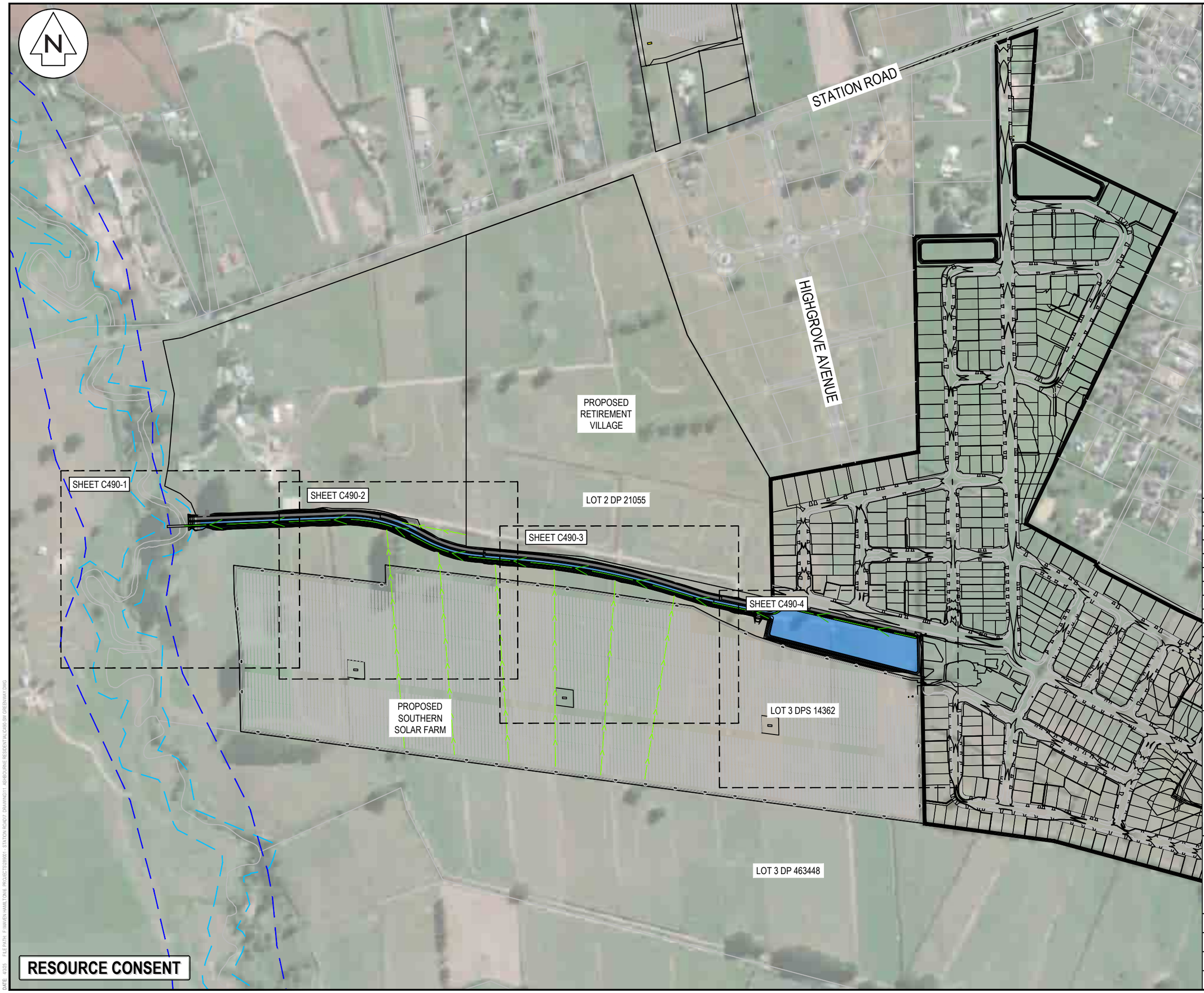
Project

ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED STORMWATER STANDARD DETAILS

Project no.	289001
Scale	NTS
Cad file	C480-SW STANDARD DETAILS.DWG
Drawing no.	C480-3 Rev A



Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
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9. All concrete lines are to be Class 4 RCRRJ unless otherwise specified.
10. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.
11. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

- EX BOUNDARY
- PROP LOT BOUNDARY
- EX STORMWATER
- PROP STORMWATER
- PROP WASTEWATER
- EX/PROP SWMH
- EX/PROP WWMH
- PROP SW LOT CON
- PROP SWCP SINGLE
- PROP LOW FLOW CHANNEL
- PROP FLOOD ZONE

Rev	Description	By	Date
A	FAST TRACK APPLICATION	TCH	04/2025

	By	Date
Survey	LINZ	10/2023
Design	MHS	10/2024
Drawn	RJM	11/2024
Checked	DJM	11/2024

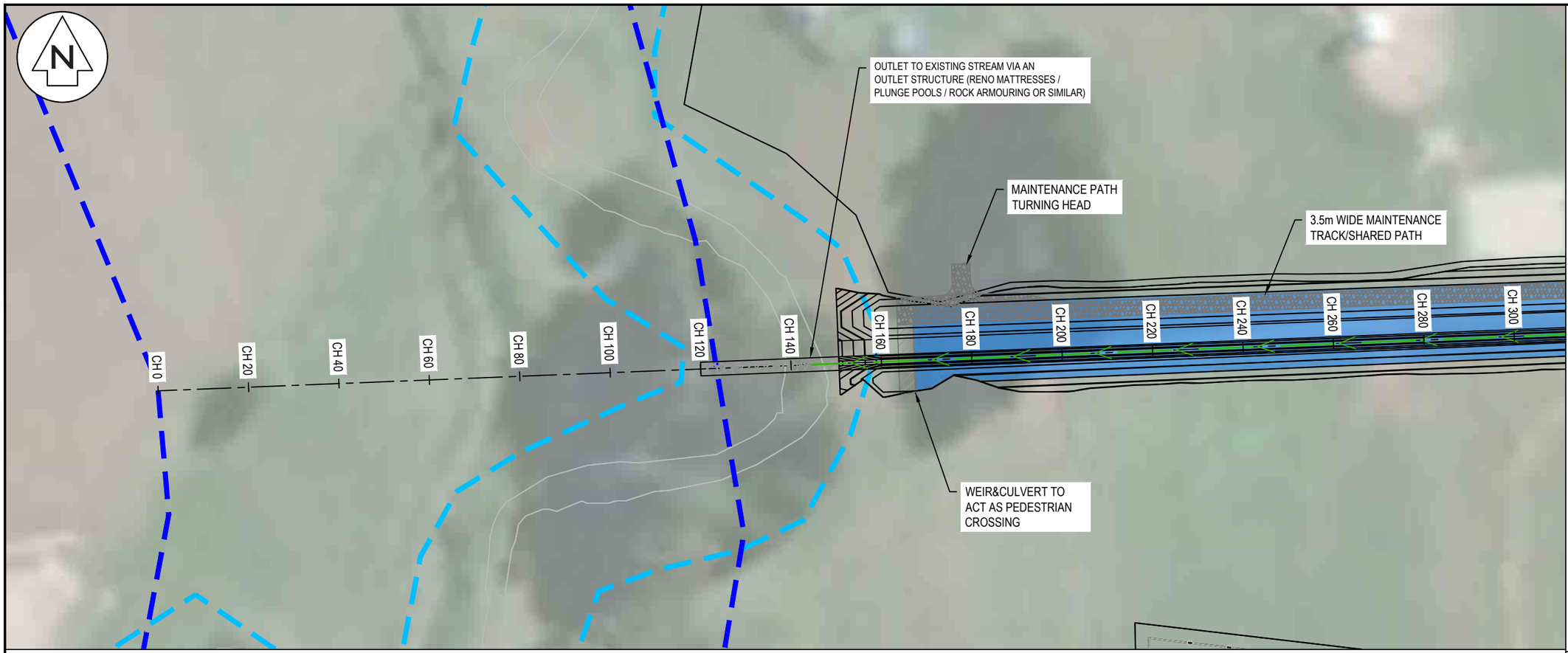
Maven Waikato
07 242 0601
info@maven.co.nz
www.maven.co.nz
Level 1 286 Victoria Street, Hamilton New Zealand

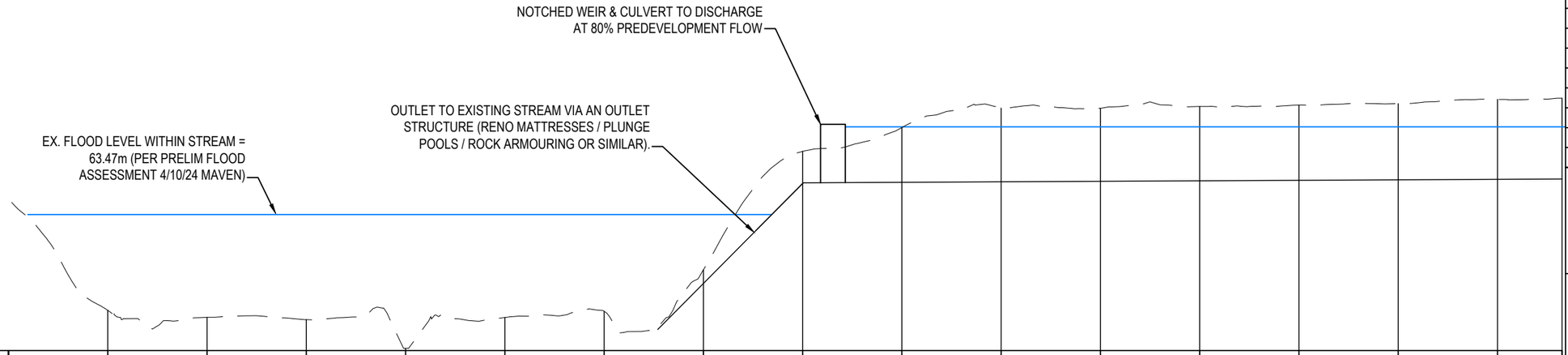
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
PROPOSED STORMWATER GREENWAY OVERVIEW

Project no.	289001
Scale	1:5000 @ A3
Cad file	C490-SW GREENWAY.DWG
Drawing no.	C490 Rev A

DATE 4/25 FILE PATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C490-SW GREENWAY.DWG





ATUM 58.00m

EXISTING LEVELS	59.62	59.34	59.24	58.09	59.33	59.58	61.25	66.01	66.97	67.75	67.75	67.82	67.87	67.93	68.11	68.15
DESIGN LEVELS								64.72	64.77	64.79	64.81	64.83	64.85	64.87	64.89	64.90
CUT/FILL								-1.29	-2.20	-2.96	-2.94	-2.99	-3.03	-3.06	-3.22	-3.25
VERTICAL GEO								9.53 20.1%	1075.68 0.1%							
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	240.00	260.00	280.00	300.00	313.00
HORIZONTAL GEO	372.77m 87°42'07"															

RESOURCE CONSENT

GREENWAY LONGSECTION CH 0-313
SCALE: HORI 1:500 VERT 1:100

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
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- PROP LOT BOUNDARY
- EX STORMWATER
- PROP STORMWATER
- PROP WASTEWATER
- EX/PROP SWMH
- EX/PROP WWMH
- PROP SW LOT CON
- PROP SWCP SINGLE
- PROP LOW FLOW CHANNEL
- PROP FLOOD ZONE

Rev	Description	By	Date
A	FAST TRACK APPLICATION	TCH	04/2025

	By	Date
Survey	LINZ	10/2023
Design	MHS	10/2024
Drawn	RJM	11/2024
Checked	DJM	11/2024

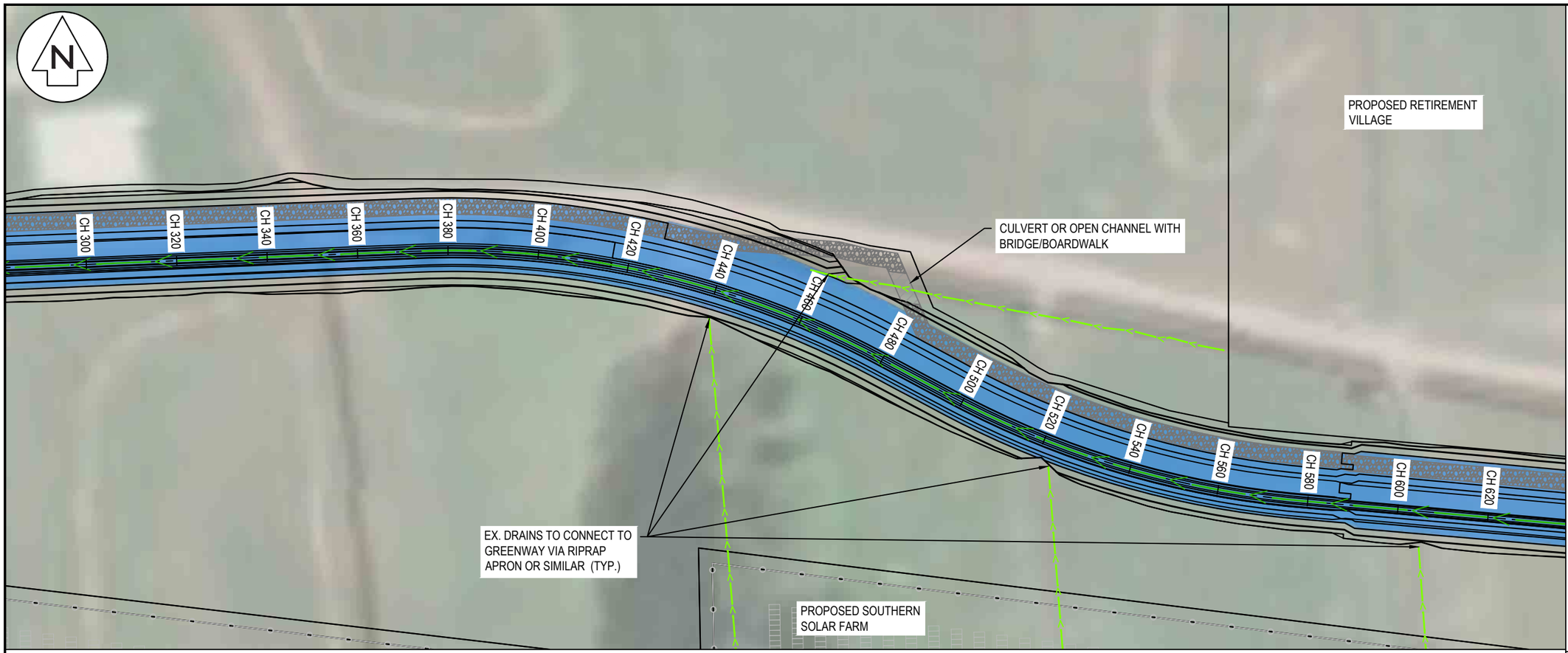
Maven Waikato
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New Zealand

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
PROPOSED STORMWATER GREENWAY PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C490-SW GREENWAY.DWG		
Drawing no.	C490-1	Rev	A

DATE 4/25 FILEPATH F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C490-SW GREENWAY.DWG



DATUM 58.00m

EXISTING LEVELS	68.15	68.06	67.95	67.73	67.68	67.33	67.90	67.86	68.20	68.07	67.95	66.59	67.71	67.77	67.72	67.69	67.90		
DESIGN LEVELS	64.90	64.91	64.93	64.94	64.96	64.98	65.00	65.02	65.04	65.06	65.08	65.10	65.12	65.14	65.16	65.18	65.20		
CUT/FILL	-3.25	-3.16	-3.03	-2.78	-2.71	-2.35	-2.89	-2.83	-3.15	-3.01	-2.87	-1.49	-2.59	-2.63	-2.55	-2.51	-2.70		
VERTICAL GEO		1075.68 0.1%																	
CHAINAGE	313.00	320.00	340.00	360.00	380.00	400.00	420.00	440.00	460.00	480.00	500.00	520.00	540.00	560.00	580.00	600.00	620.00		
HORIZONTAL GEO		372.77m 87°42'07"			R 200.00 A 106.26						18.57m 118°08'33"	R 200.00 A 80.60				71.85m 95°03'06"			

RESOURCE CONSENT

GREENWAY LONGSECTION CH 313-620
SCALE: HORI 1:500 VERT 1:100

Notes

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Legend

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- PROP LOT BOUNDARY
- EX STORMWATER
- PROP STORMWATER
- PROP WASTEWATER
- EX/PROP SWMH
- EX/PROP WWMH
- PROP SW LOT CON
- PROP SWCP SINGLE
- PROP LOW FLOW CHANNEL
- PROP FLOOD ZONE

Rev	Description	By	Date
A	FAST TRACK APPLICATION	TCH	04/2025

	By	Date
Survey	LINZ	10/2023
Design	MHS	10/2024
Drawn	RJM	11/2024
Checked	DJM	11/2024

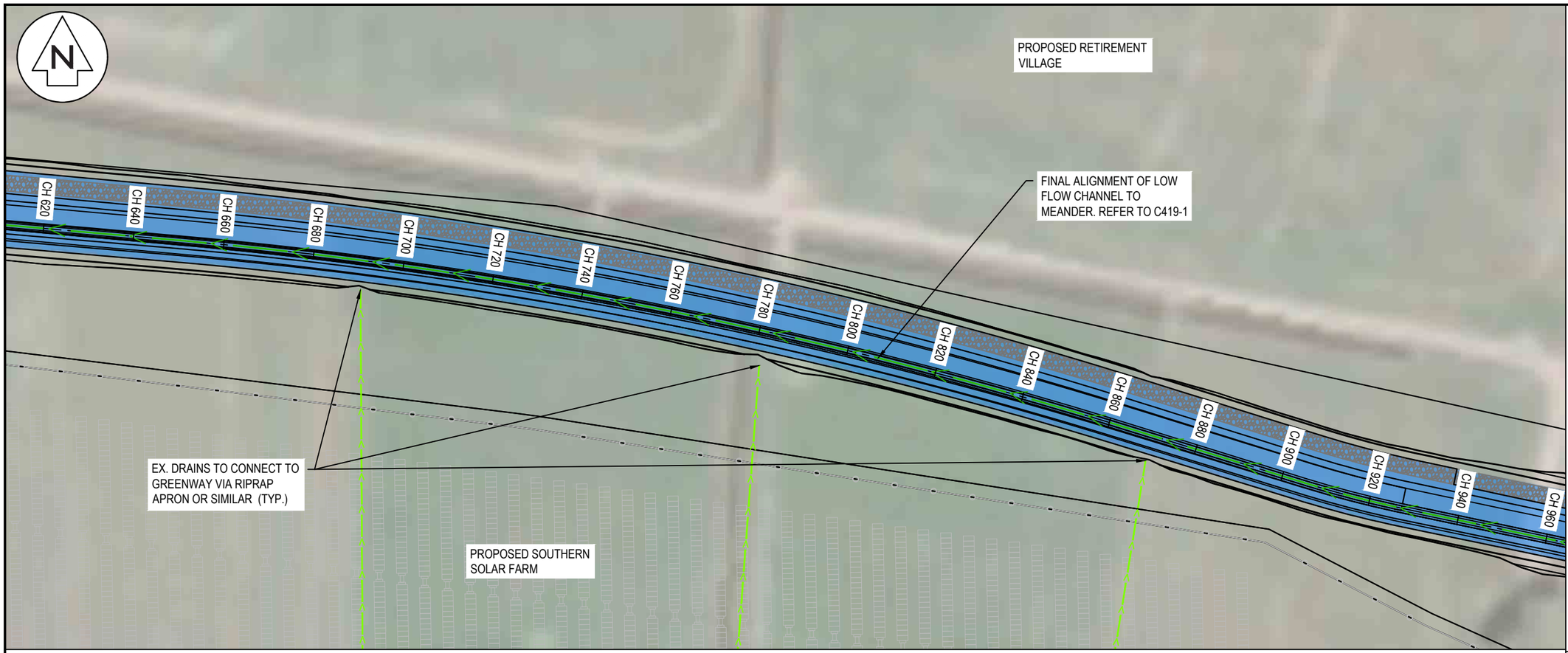
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Level 1 286 Victoria Street, Hamilton
New Zealand

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
PROPOSED STORMWATER GREENWAY PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C490-SW GREENWAY.DWG		
Drawing no.	C490-2	Rev	A

DATE 4/25 FILEPATH P:\MAVEN HAMILTON\PROJECTS\2890\1 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C490-SW GREENWAY.DWG



DATUM 58.00m

	620.00	640.00	660.00	680.00	700.00	720.00	740.00	760.00	780.00	800.00	820.00	840.00	860.00	880.00	900.00	920.00	930.00
EXISTING LEVELS	67.90	67.76	67.69	67.69	67.63	67.69	67.65	67.74	67.30	67.69	67.65	67.65	67.53	67.58	67.63	67.53	67.60
DESIGN LEVELS	65.20	65.22	65.24	65.26	65.28	65.30	65.32	65.34	65.36	65.38	65.40	65.41	65.43	65.45	65.47	65.49	65.50
CUT/FILL	-2.70	-2.54	-2.46	-2.43	-2.36	-2.39	-2.33	-2.40	-1.94	-2.31	-2.25	-2.24	-2.10	-2.12	-2.16	-2.04	-2.10
VERTICAL GEO		1075.68 0.1%															
HORIZONTAL GEO		71.85m 95°03'06"						R 1000.00 A 212.05						42.89m 107°12'05"		R 250.00 A 23.31	78.87 101°51

RESOURCE CONSENT

GREENWAY LONGSECTION CH 620-930
SCALE: HORI 1:500 VERT 1:100

Notes

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- PROP SWCP SINGLE
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- PROP FLOOD ZONE

Rev	Description	By	Date
A	FAST TRACK APPLICATION	TCH	04/2025

	By	Date
Survey	LINZ	10/2023
Design	MHS	10/2024
Drawn	RJM	11/2024
Checked	DJM	11/2024

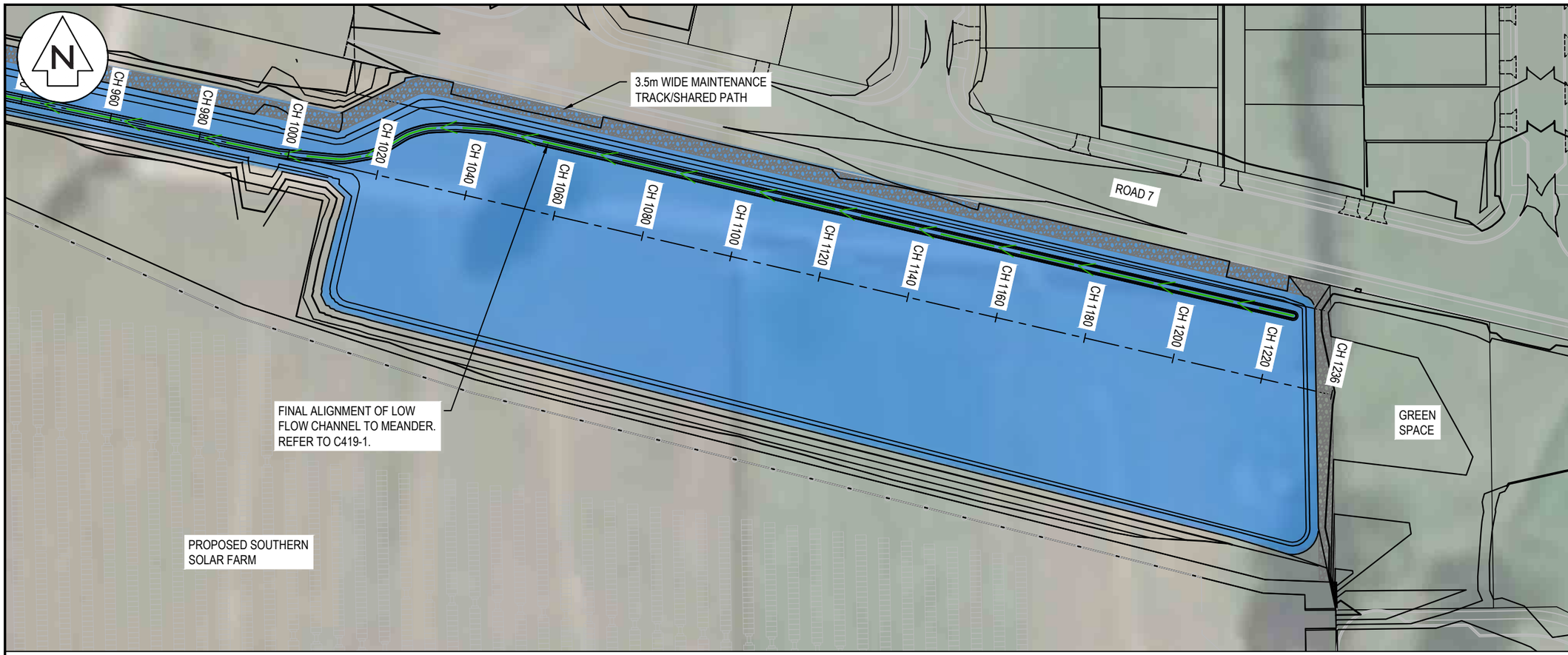
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
PROPOSED STORMWATER GREENWAY PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C490-SW GREENWAY.DWG
Drawing no.	C490-3 Rev A

DATE: 4/25 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\2890\1 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C490-SW GREENWAY.DWG

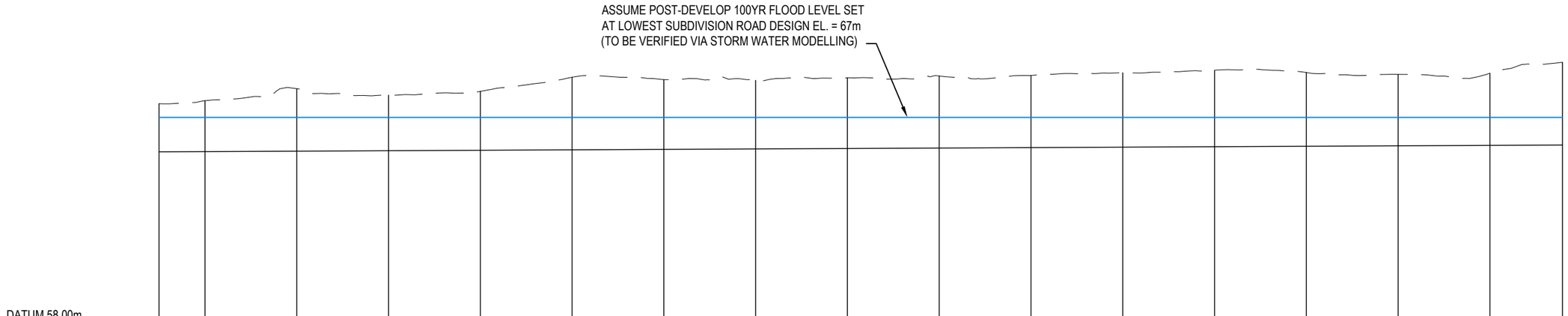


Notes

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- PROP STORMWATER
- PROP WASTEWATER
- EX/PROP SWMH
- EX/PROP WWMH
- PROP SW LOT CON
- PROP SWCP SINGLE
- PROP LOW FLOW CHANNEL
- PROP FLOOD ZONE



DATUM 58.00m

EXISTING LEVELS	67.60	67.73	68.25	67.97	68.13	68.75	68.65	68.62	68.73	68.81	68.83	68.95	69.06	68.96	68.88	68.93	69.40
DESIGN LEVELS	65.50	65.51	65.53	65.55	65.57	65.59	65.61	65.63	65.65	65.67	65.69	65.71	65.73	65.75	65.77	65.79	65.80
CUT/FILL	-2.10	-2.22	-2.72	-2.42	-2.56	-3.16	-3.04	-2.99	-3.08	-3.14	-3.14	-3.24	-3.33	-3.21	-3.11	-3.14	-3.59
VERTICAL GEO		1075.68 0.1%															
CHAINAGE	930.00	940.00	960.00	980.00	1000.00	1020.00	1040.00	1060.00	1080.00	1100.00	1120.00	1140.00	1160.00	1180.00	1200.00	1220.00	1235.82
HORIZONTAL GEO		78.87m 101°51'34"				R 250.00 A 4.85					223.80m 102°58'14"						

RESOURCE CONSENT

GREENWAY LONGSECTION CH 930-1236
SCALE: HORI 1:500 VERT 1:100

Rev	Description	By	Date
A	FAST TRACK APPLICATION	TCH	04/2025

	By	Date
Survey	LINZ	10/2023
Design	MHS	10/2024
Drawn	RJM	11/2024
Checked	DJM	11/2024

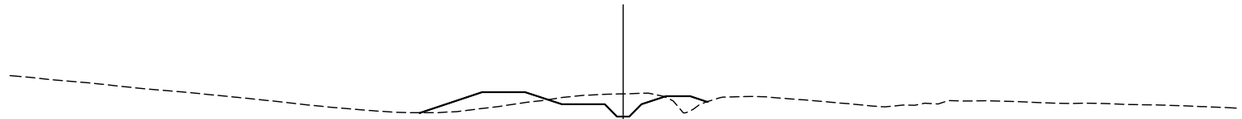
Maven Waikato
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Level 1 286 Victoria Street, Hamilton
New Zealand

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title
PROPOSED STORMWATER GREENWAY PLAN

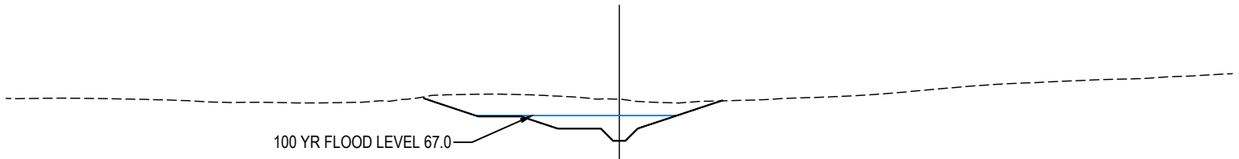
Project no.	289001
Scale	1:1000 @ A3
Cad file	C490-SW GREENWAY.DWG
Drawing no.	C490-4 Rev A

DATE 4/25 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C490-SW GREENWAY.DWG



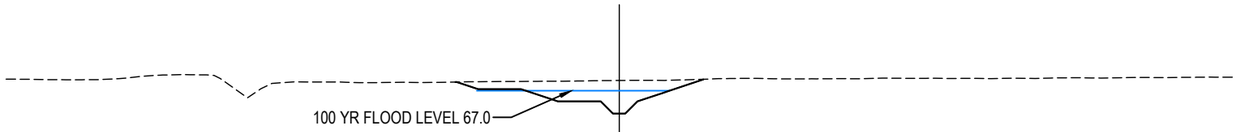
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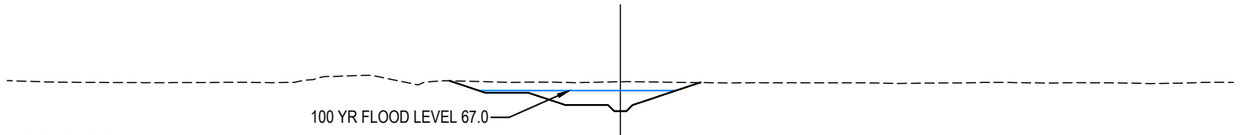
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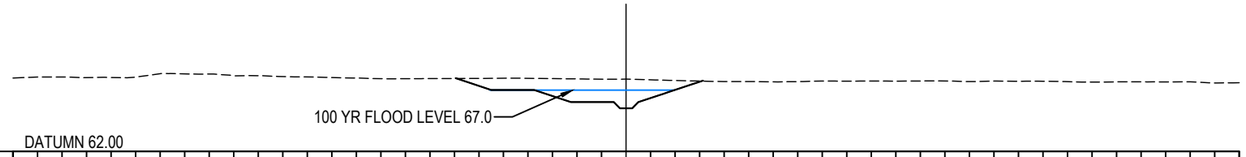
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DATUMN 62.00

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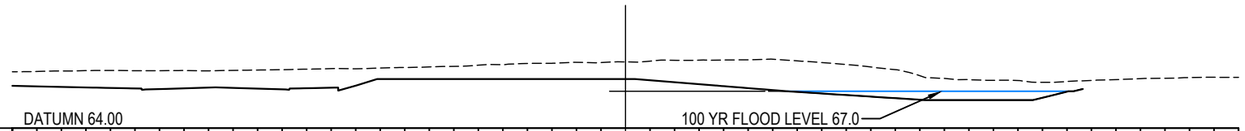
DATUMN 62.00

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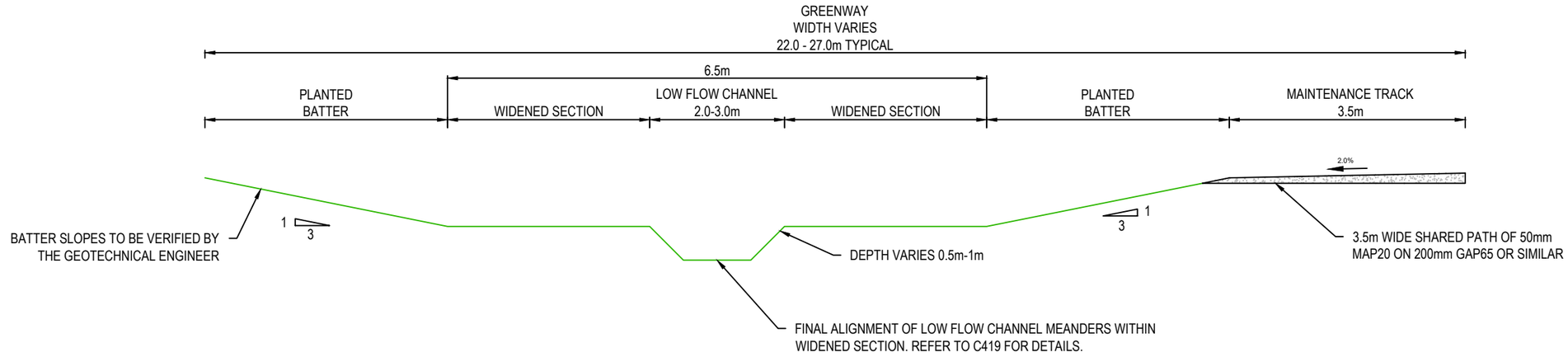


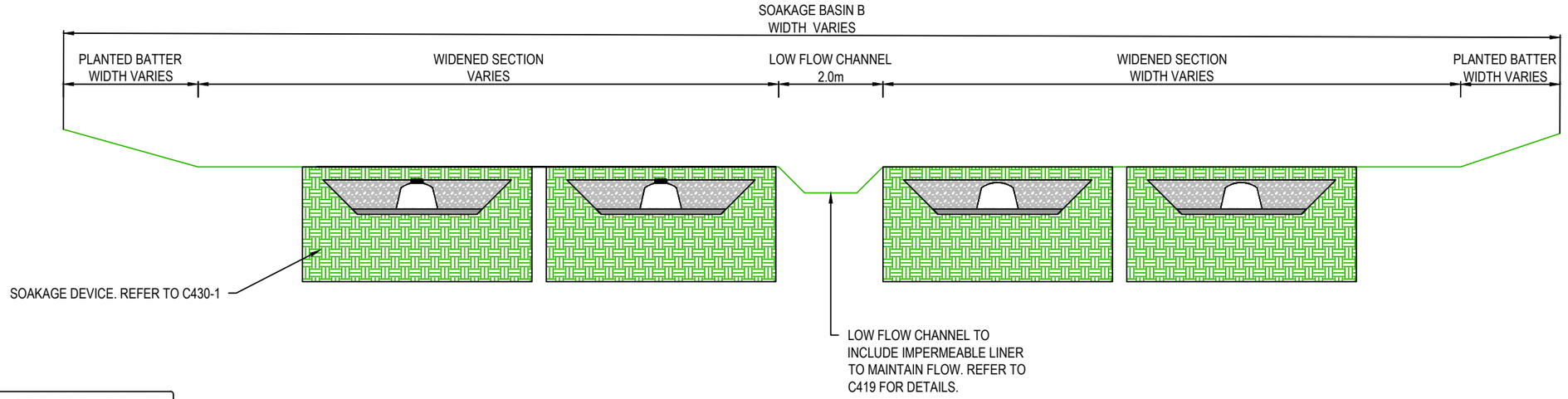
DATUMN 62.00

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DATUMN 64.00
100 YR FLOOD LEVEL 67.0

| | | |





RESOURCE CONSENT

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the contractors responsibility to locate all services that may be affected by his operations.
5. All concrete SW pipe to be installed in accordance with AS/NZS 3725:2007 for buried concrete pipes and AS/NZ 4058:2007 for precast concrete pipes (pressure and non-pressure) as stipulated in the RITS 2018
6. Approved hardfill is to be used in backfilling of all stormwater lines within the road reserve.
7. Heavy duty manhole lids and frames to be used in trafficked areas.
8. All catchpit leads shall be laid at 1% unless otherwise specified.
9. All concrete lines are to be Class 4 RCRRJ unless otherwise specified.
10. All lines to be abandoned shall be sealed at each end. Timing of all sealing to be coordinated with council staff.
11. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.
12. Final Greenway cross section subject to detailed design.

Legend

EX GROUND LEVEL

PR GROUND LEVEL

Rev	Description	By	Date
A	FAST TRACK APPLICATION	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MHS	11/2024
Drawn	RJM	11/2024
Checked	DJM	11/2024

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Level 1 286 Victoria Street, Hamilton
New Zealand

Project

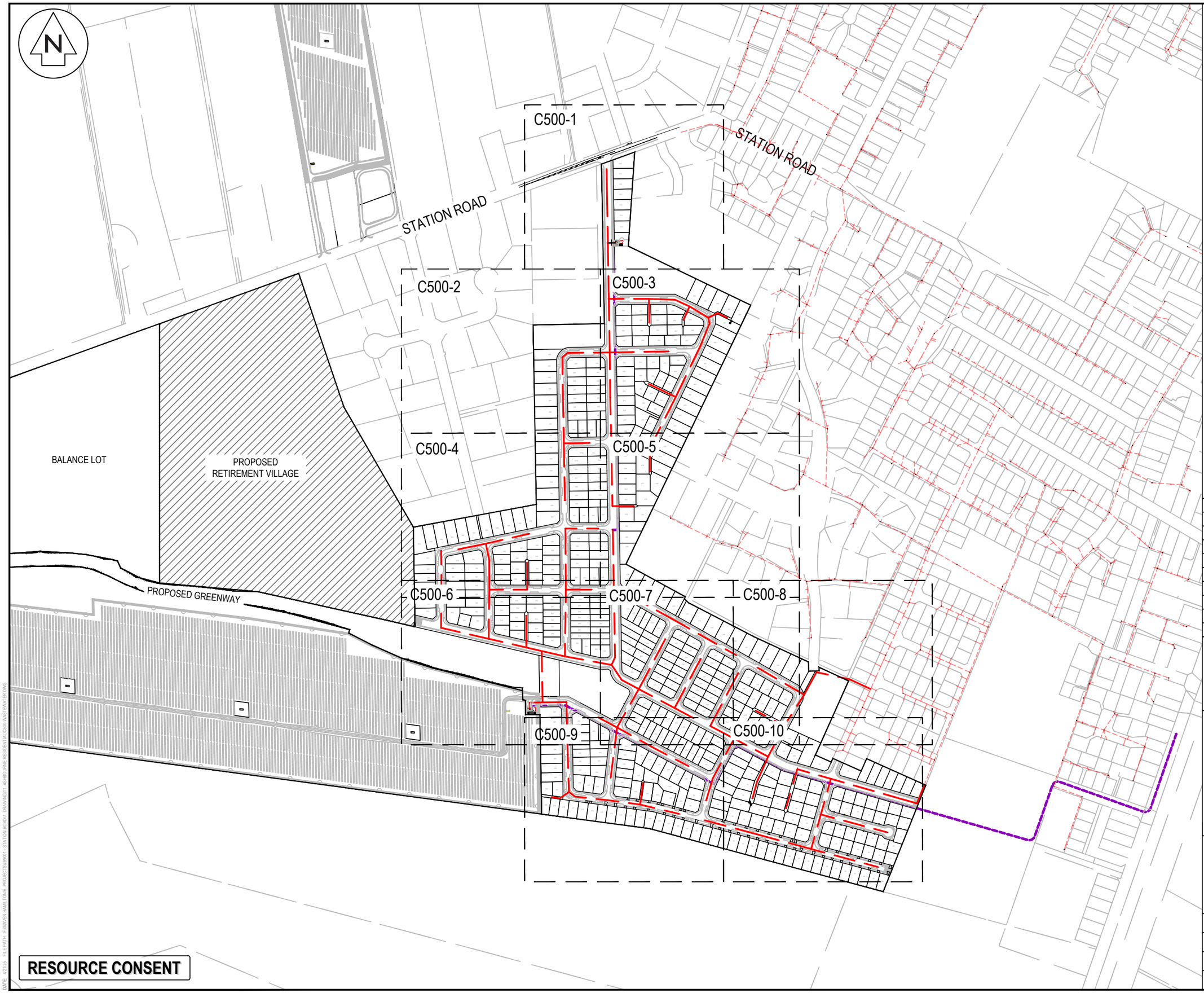
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS

Title

PROPOSED STORMWATER GREENWAY DETAILS

Project no.	289001
Scale	AS SHOWN
Cad file	C490-SW GREENWAY.DWG
Drawing no.	C490-17 Rev A

DATE: 4/25 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C490-SW GREENWAY.DWG



Notes

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12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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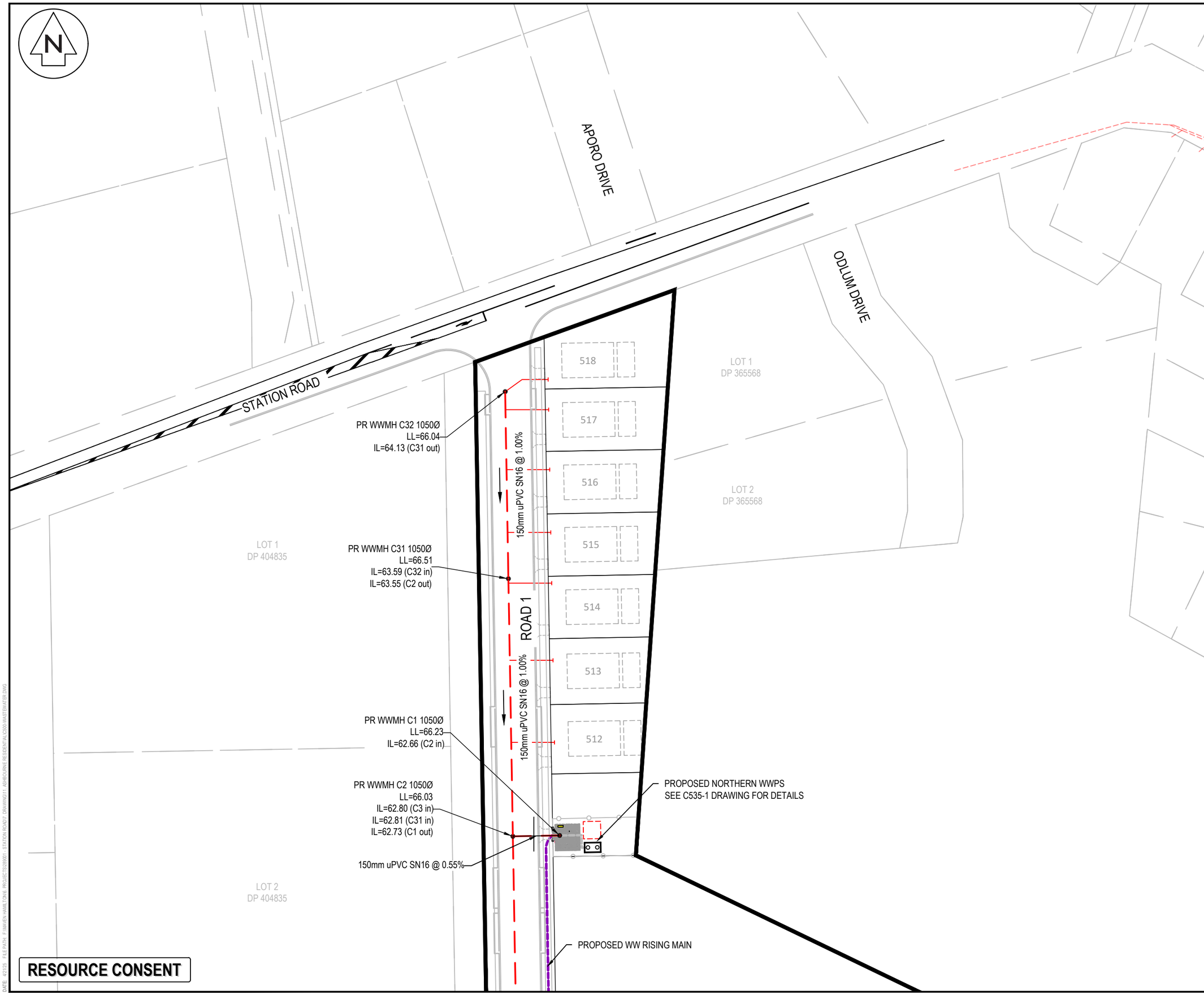
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE OVERVIEW PLAN

Project no.	289001
Scale	1:6000 @ A3
Cad file	C500-WASTEWATER.DWG
Drawing no.	C500 Rev B

RESOURCE CONSENT

DATE 4/2025 FILEPATH: F:\MAVEN\HAMILTON\6 PROJECTS\0001 STATION ROAD\1 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



RESOURCE CONSENT

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Legend

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Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	MKS	11/2024
Drawn	MKS	11/2024
Checked	DJM	04/2025

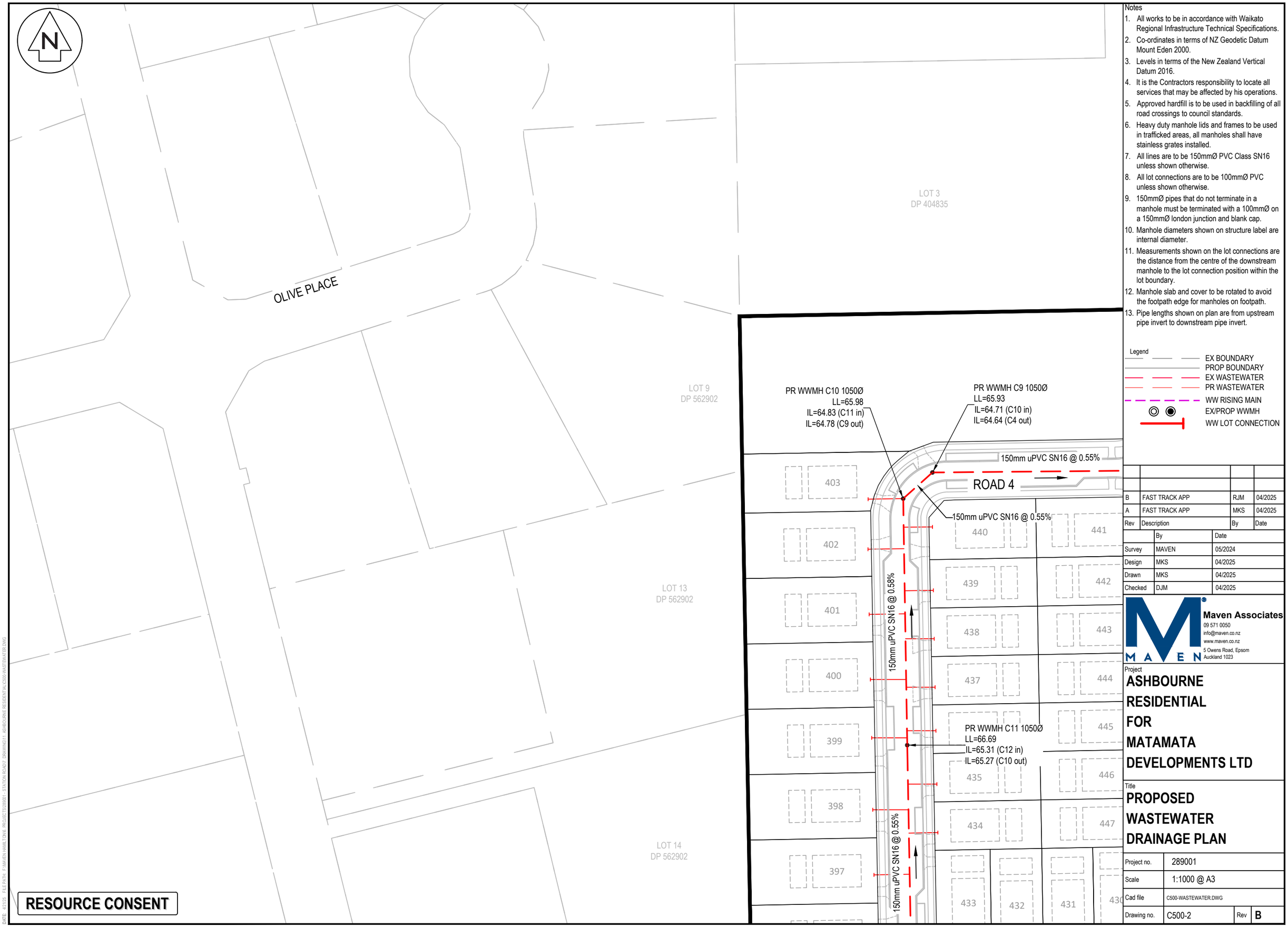
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www.maven.co.nz
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C500-1	Rev	B

DATE 4/21/25 FILEPATH J:\MAVEN HAMILTON_PROJECTS\289001 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



RESOURCE CONSENT

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Legend

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- EX WASTEWATER
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- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Auckland 1023

Project

ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C500-2	Rev	B

DATE: 4/2025 FILEPATH: P:\MAVEN HAMILTON\PROJECTS\289001 - STATON ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG

PROPOSED WW RISING MAIN

PR WWMH C3 1050Ø
LL=66.32
IL=63.37 (C4 in)
IL=63.40 (C17 in)
IL=63.33 (C2 out)

PR WWMH C17 1050Ø
LL=66.02
IL=63.82 (C18 in)
IL=63.85 (C26 in)
IL=63.78 (C3 out)

PR WWMH C18 1050Ø
LL=66.23
IL=64.11 (C19 in)
IL=64.07 (C17 out)

PR WWMH C19 1050Ø
LL=66.37
IL=64.30 (C20 in)
IL=64.42 (C27 in)
IL=64.26 (C18 out)

PR WWMH C28 1050Ø
LL=66.80
IL=65.46 (C29 in)
IL=65.39 (C20 out)

PR WWMH C29 1050Ø
LL=66.80
IL=65.65 (C28 out)

PR WWMH C20 1050Ø
LL=66.54
IL=64.58 (C21 in)
IL=64.75 (C28 in)
IL=64.51 (C19 out)

PR WWMH C21 1050Ø
LL=66.60
IL=64.71 (C22 in)
IL=64.64 (C20 out)

PR WWMH C22 1050Ø
LL=66.79
IL=64.98 (C23 in)
IL=64.94 (C21 out)

PR WWMH C23 1050Ø
LL=67.16
IL=65.56 (C24 in)
IL=65.78 (C30 in)
IL=65.52 (C22 out)

PR WWMH C26 1050Ø
LL=66.75
IL=65.10 (C17 out)

PR WWMH C27 1050Ø
LL=66.90
IL=65.20 (C19 out)

PR WWMH C16 1050Ø
LL=66.51
IL=65.36 (C4 out)

PR WWMH C4 1050Ø
LL=66.79
IL=64.21 (C5 in)
IL=64.24 (C9 in)
IL=64.34 (C16 in)
IL=64.17 (C3 out)

PR WWMH C30 1050Ø
LL=67.45
IL=66.30 (C23 out)

PR WWMH C5 1050Ø
LL=67.45
IL=65.76 (C6 in)
IL=65.72 (C4 out)

150mm uPVC SN16 @ 0.55%
150mm uPVC SN16 @ 0.86%
150mm uPVC SN16 @ 1.96%
150mm uPVC SN16 @ 3.00%
150mm uPVC SN16 @ 3.50%
150mm uPVC SN16 @ 1.00%
150mm uPVC SN16 @ 0.67%

ROAD 1
ROAD 2
ROAD 3

LOT 5 DP 365568
LOT 18 DP 386534
LOT 20 DP 386534
LOT 24 DP 386534
LOT 26 DP 386534
LOT 28 DP 386534

ELDONWOOD DRIVE

RESOURCE CONSENT

Notes
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Legend
- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C500-WASTEWATER.DWG
Drawing no.	C500-3 Rev B

DATE: 4/2025 FILEPATH: F:\MAVEN HOME\TWG PROJECTS\289001 - STATION ROAD\7. DRAWING\1. ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG

N

LOT 14
DP 562902

LOT 16
DP 562902

LOT 17
DP 562902

LOT 18
DP 562902

HIGHGROVE AVENUE

LOT 2
DP 21055

ROAD 2

ROAD 4

ROAD 5

ROAD 9

PR WWMH C12 1050Ø
LL=67.38
IL=65.75 (C13 in)
IL=65.78 (C14 in)
IL=65.71 (C11 out)

150mm uPVC SN16 @ 1.00%

PR WWMH C14 1050Ø
LL=67.38
IL=66.23 (C12 out)

150mm uPVC SN16 @ 1.26%

PR WWMH C13 1050Ø
LL=68.15
IL=67.00 (C12 out)

PR WWMH B37 1050Ø
LL=68.40
IL=67.25 (B36 out)

PR WWMH B44 1050Ø
LL=67.88
IL=66.73 (B43 out)

PR WWMH B43 1050Ø
LL=67.83
IL=66.09 (B44 in)
IL=66.41 (B48 in)
IL=66.02 (B42 out)

PR WWMH B48 1050Ø
LL=68.05
IL=66.90 (B43 out)

PR WWMH B51 1050Ø
LL=68.22
IL=67.07 (B50 out)

150mm uPVC SN16 @ 1.00%

150mm uPVC SN16 @ 0.83%

150mm uPVC SN16 @ 0.67%

150mm uPVC SN16 @ 1.24%

150mm uPVC SN16 @ 0.55%

PR WWMH B42 1050Ø
LL=67.39
IL=65.82 (B43 in)
IL=65.78 (B41 out)

PR WWMH B47 1050Ø
LL=68.20
IL=67.05 (B46 out)

150mm uPVC SN16 @ 1.94%

PR WWMH B46 1050Ø
LL=67.22
IL=66.14 (B47 in)
IL=66.07 (B41 out)

PR WWMH B41 1050Ø
LL=67.19
IL=65.50 (B42 in)
IL=65.63 (B46 in)
IL=65.46 (B40 out)

PR WWMH B50 1050Ø
LL=67.37
IL=66.26 (B51 in)
IL=66.22 (B49 out)

150mm uPVC SN16 @ 0.67%

150mm uPVC SN16 @ 1.00%

PR WWMH B36 1050Ø
LL=68.47
IL=66.68 (B37 in)
IL=66.61 (B35 out)

150mm uPVC SN16 @ 0.67%

PR WWMH B35 1050Ø
LL=68.02
IL=65.90 (B36 in)
IL=65.97 (B38 in)
IL=65.86 (B16 out)

PR WWMH B38 1050
LL=68.01
IL=66.86 (B35 out)

150mm uPVC SN16 @ 2.00%

RESOURCE CONSENT

DATE: 2/2025 FILE PATH: P:\MAVEN HAMILTON_PROJECTS\289001 - STATION ROAD\7_DRAWINGS\1_ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

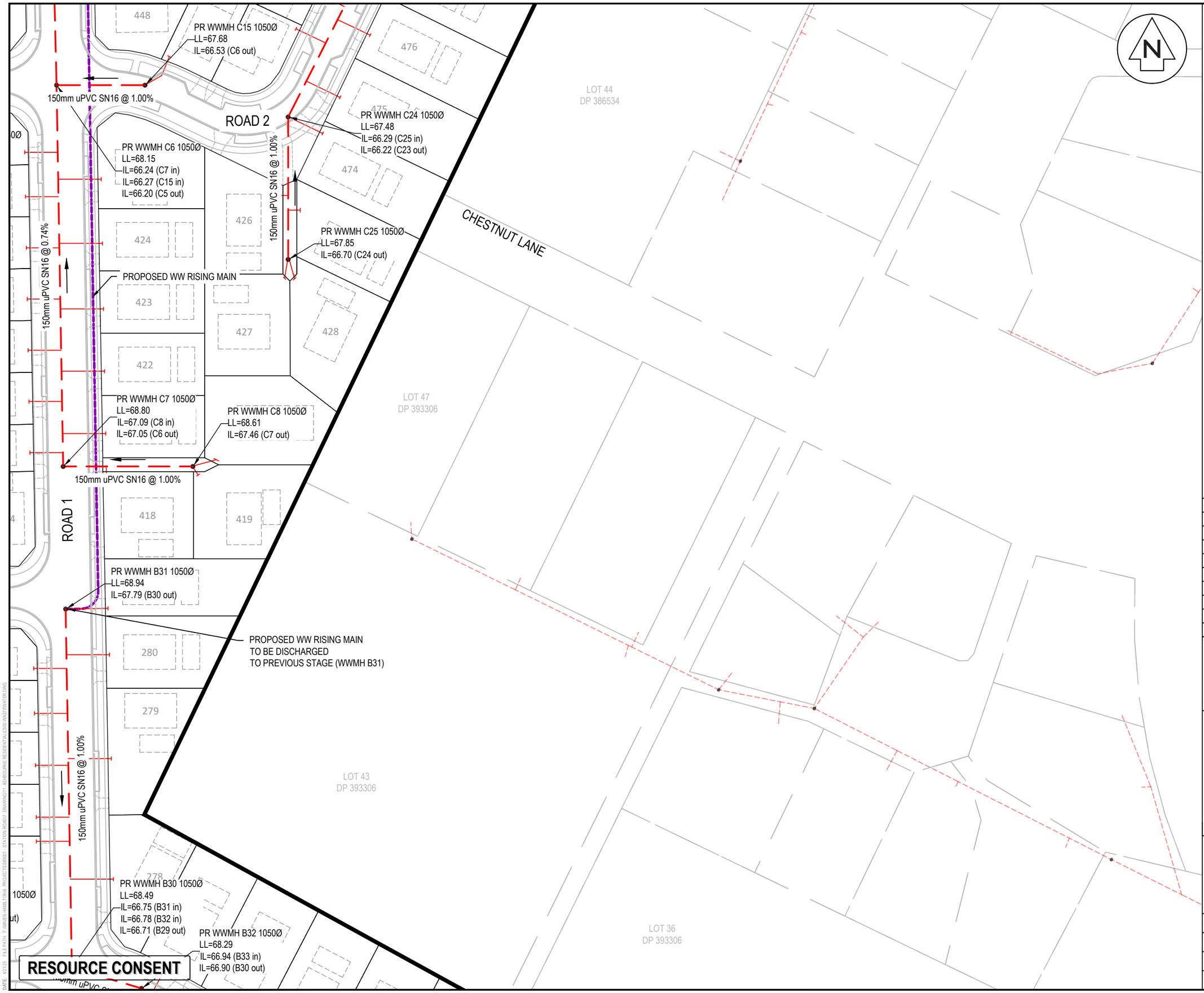
	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C500-WASTEWATER.DWG
Drawing no.	C500-4
Rev	B



Notes

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Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

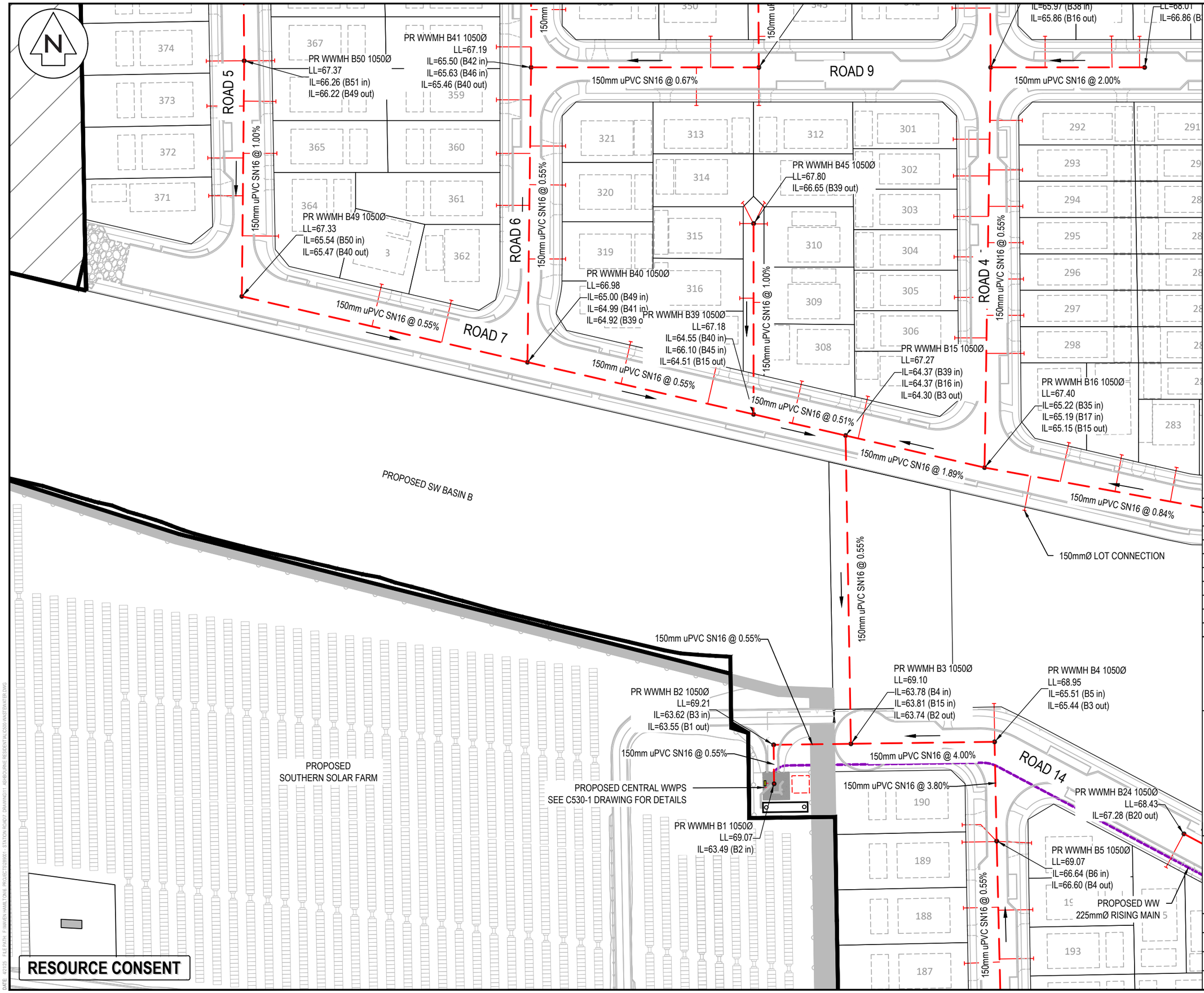
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C500-WASTEWATER.DWG
Drawing no.	C500-5
Rev	B

DATE 4/21/25 FILEPATH: J:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



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- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

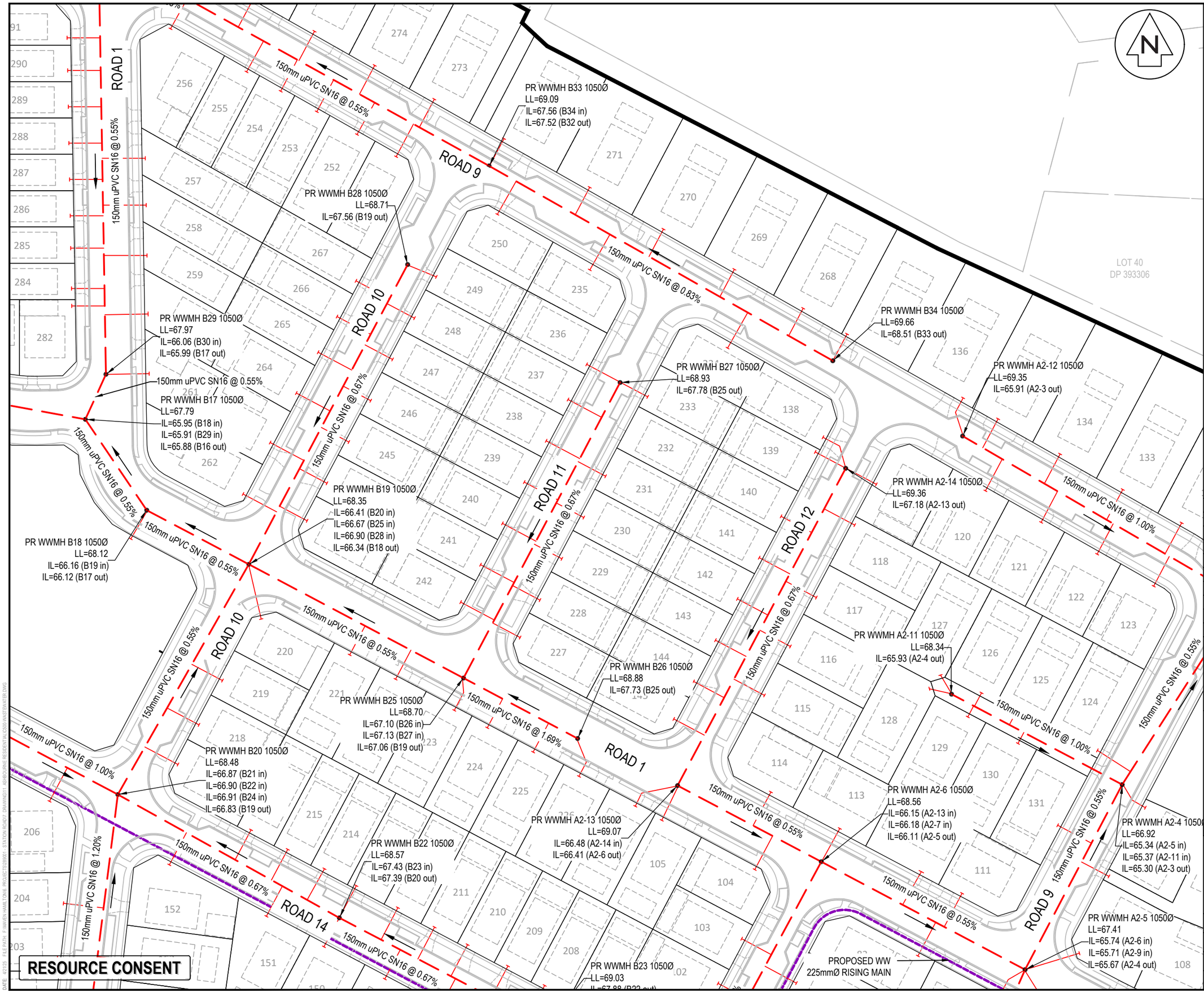
Maven Associates
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5 Owens Road, Epsom
Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C500-WASTEWATER.DWG
Drawing no.	C500-6
Rev	B

DATE: 4/2025 FILEPATH: P:\MAVEN-HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



RESOURCE CONSENT

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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

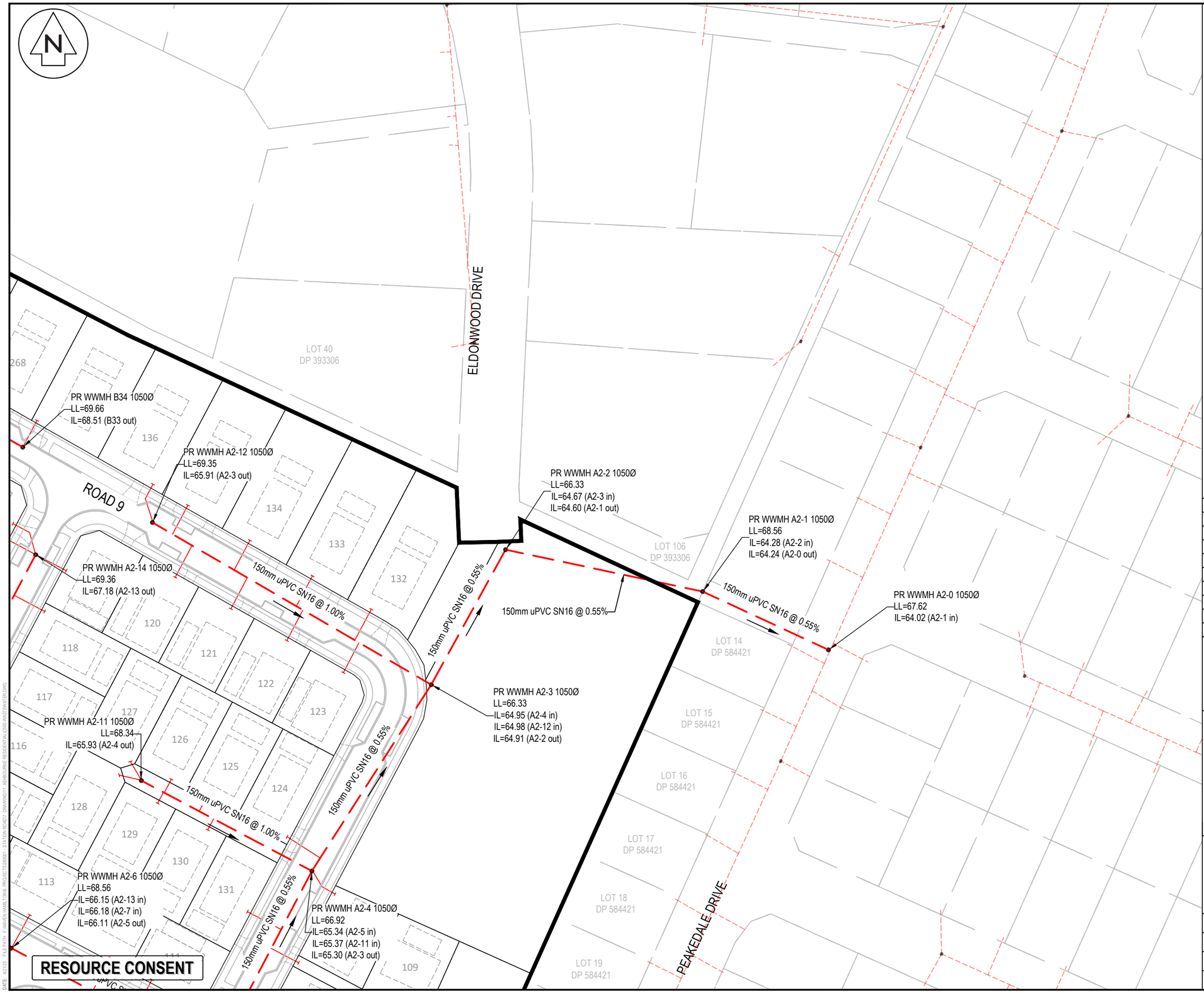
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C500-7	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN-HAMILTON\6 PROJECTS\2891 - STATION ROAD\1 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



RESOURCE CONSENT

DATE 4/2025 FILEPATH F:\MAVEN\HAMILTON\PROJECTS\289001 - STATION ROAD\DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG

Notes

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Legend

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- EX WASTEWATER
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- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001
Scale	1:1000 @ A3
Cad file	C500-WASTEWATER.DWG
Drawing no.	C500-8 Rev B

N

PR WWMH B5 1050Ø
LL=69.07
IL=66.64 (B6 in)
IL=66.60 (B4 out)

150mm uPVC SN16 @ 0.55%

PR WWMH B6 1050Ø
LL=69.59
IL=67.02 (B7 in)
IL=66.98 (B5 out)

150mm uPVC SN16 @ 0.55%

PR WWMH B7 1050Ø
LL=70.03
IL=67.45 (B8 in)
IL=67.45 (B13 in)
IL=67.38 (B6 out)

150mm uPVC SN16 @ 1.00%

150mm uPVC SN16 @ 0.55%

PR WWMH B14 1050Ø
LL=70.40
IL=67.85 (B13 out)

PR WWMH B13 1050Ø
LL=70.30
IL=67.71 (B14 in)
IL=67.64 (B7 out)

150mm uPVC SN16 @ 1.00%

PR WWMH B8 1050Ø
LL=69.99
IL=67.59 (B9 in)
IL=67.52 (B7 out)

150mm uPVC SN16 @ 0.55%

PR WWMH B9 1050Ø
LL=69.57
IL=67.94 (B10 in)
IL=67.90 (B8 out)

150mm uPVC SN16 @ 0.67%

PR WWMH B10 1050Ø
LL=69.80
IL=68.37 (B11 in)
IL=68.40 (B12 in)
IL=68.33 (B9 out)

150mm uPVC SN16 @ 0.83%

PR WWMH B11 1050Ø
LL=70.10
IL=68.95 (B10 out)

PR WWMH A1-8 1050Ø
LL=70.15
IL=66.98 (A1-7 out)

PR WWMH B12 1050Ø
LL=70.06
IL=68.78 (B10 out)

PR WWMH B21 1050Ø
LL=69.08
IL=67.93 (B20 out)

150mm uPVC SN16 @ 1.00%

150mm uPVC SN16 @ 1.20%

PR WWMH B20 1050Ø
LL=68.48
IL=66.87 (B21 in)
IL=66.90 (B22 in)
IL=66.91 (B24 in)
IL=66.83 (B19 out)

IL=67.06 (B19 out)

PR WWMH B22 1050Ø
LL=68.57
IL=67.43 (B23 in)
IL=67.39 (B20 out)

150mm uPVC SN16 @ 0.67%

PROPOSED WW
225mmØ RISING MAIN

PR WWMH B23 1050Ø
LL=69.03
IL=67.88 (B22 out)

PR WWMH A2-13 1050Ø
LL=69.07
IL=66.48 (A2-14 in)
IL=66.41 (A2-6 out)

150mm uPVC SN16 @ 0.67%

PR WWMH A2-7 1050Ø
LL=69.53
IL=66.75 (A2-8 in)
IL=66.71 (A2-6 out)

150mm uPVC SN16 @ 0.83%

PR WWMH A2-8 1050Ø
LL=69.80
IL=67.08 (A2-7 out)

ROAD 14

ROAD 10

ROAD 15

ROAD 16

LOT 3
DP 463448

RESOURCE CONSENT

Notes

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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

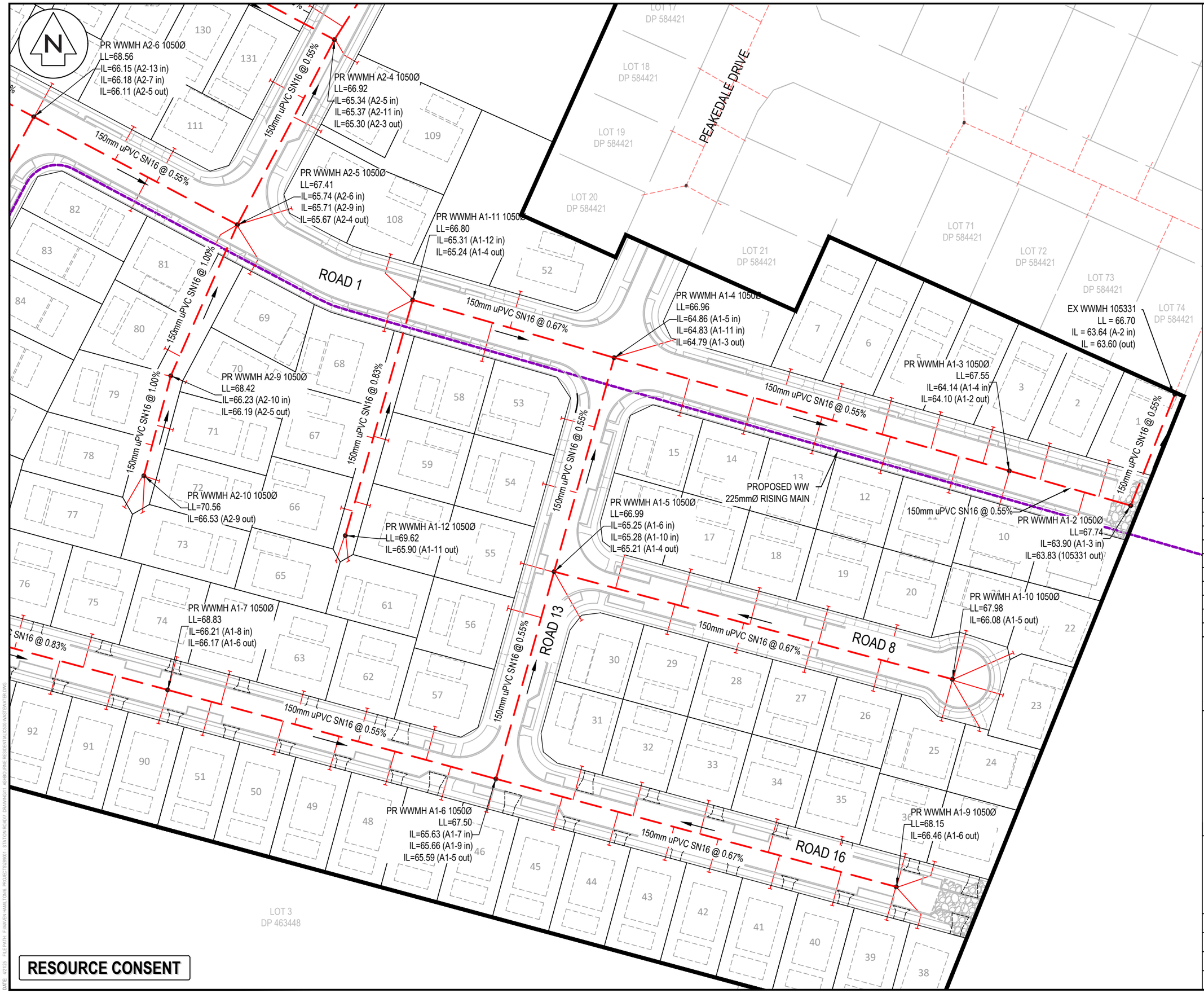
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www.maven.co.nz
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C500-9	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



RESOURCE CONSENT

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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
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- EX/PROP WWMH
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Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

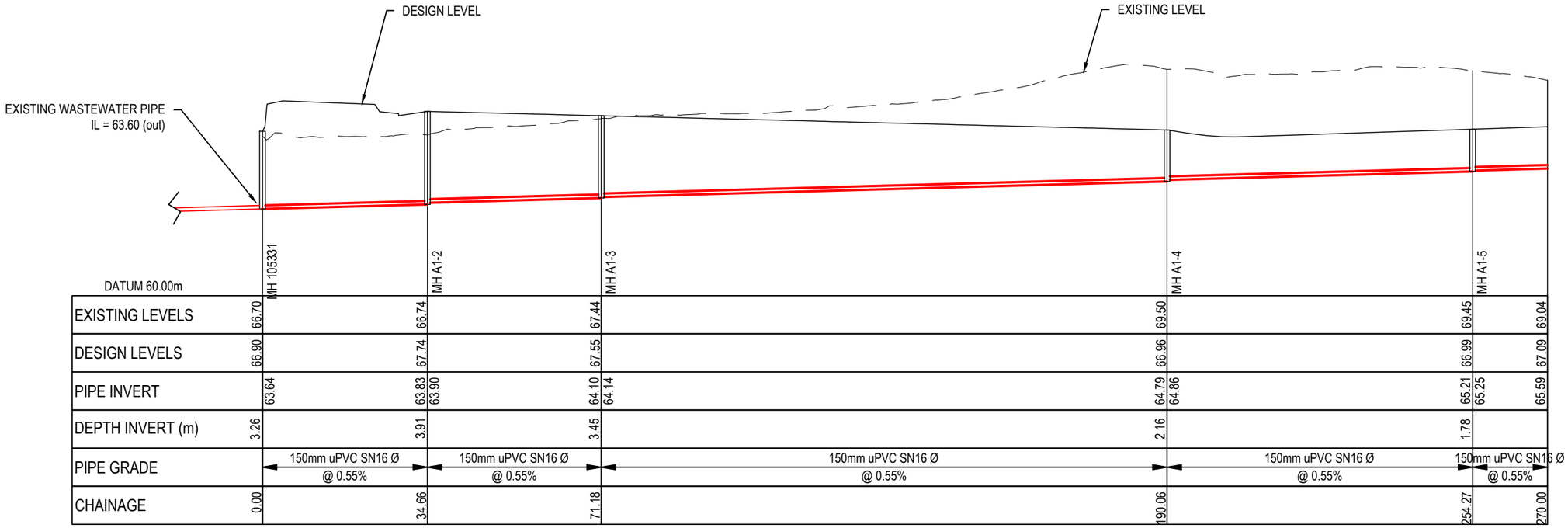
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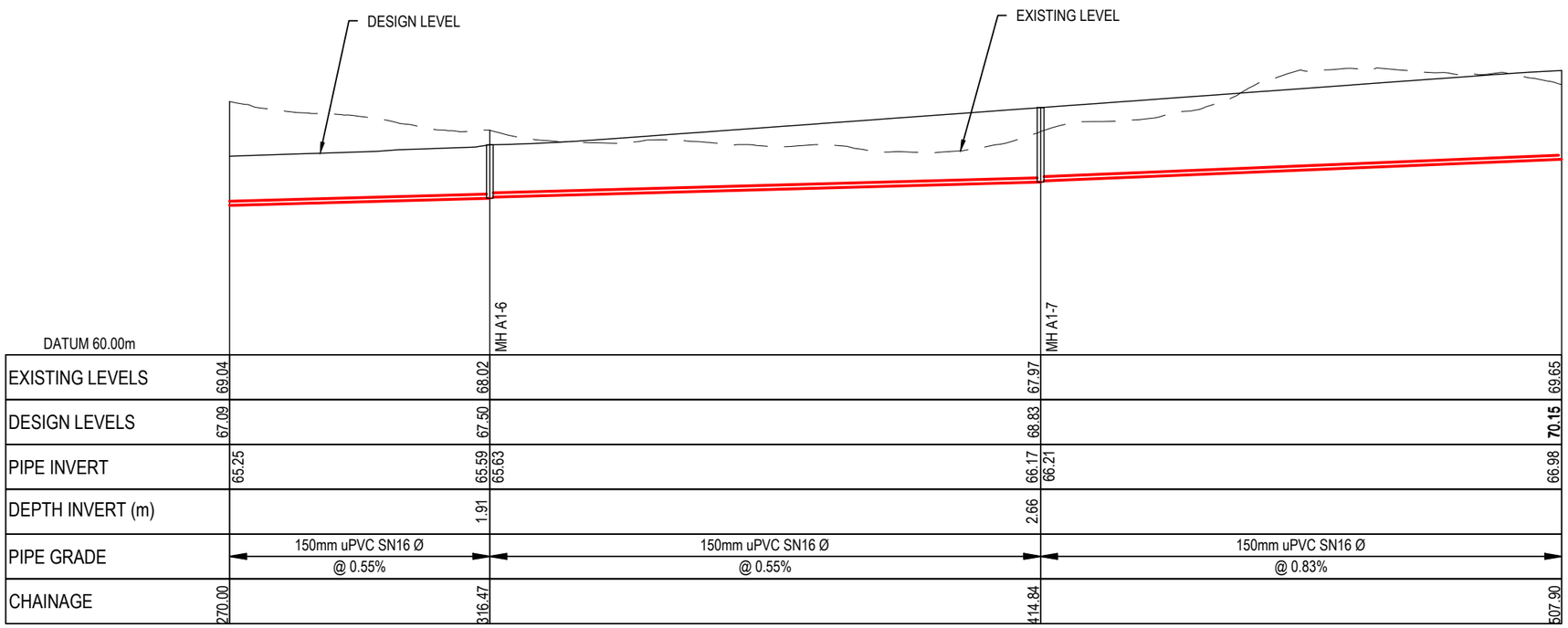
Title
PROPOSED WASTEWATER DRAINAGE PLAN

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C500-10	Rev	B

DATE: 4/2025 FILEPATH: P:\MAVEN WORK\PROJECTS\289001 - STATION ROAD\7 - DRAWINGS\1 - ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



LONGSECTION - CATCHMENT A1 - LINE 1
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT A1 - LINE 1 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

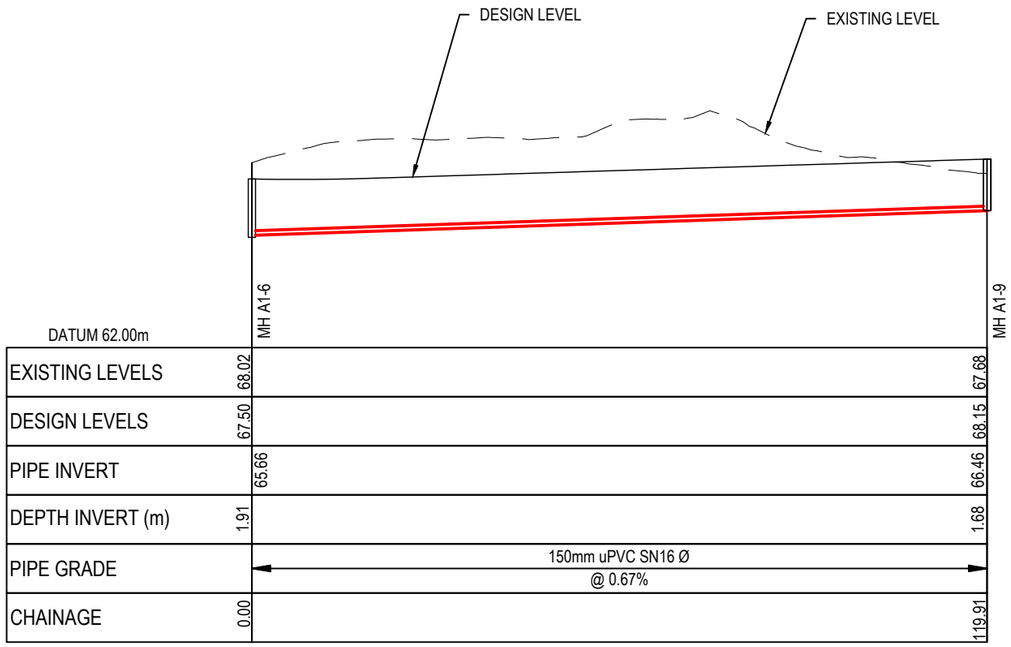
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

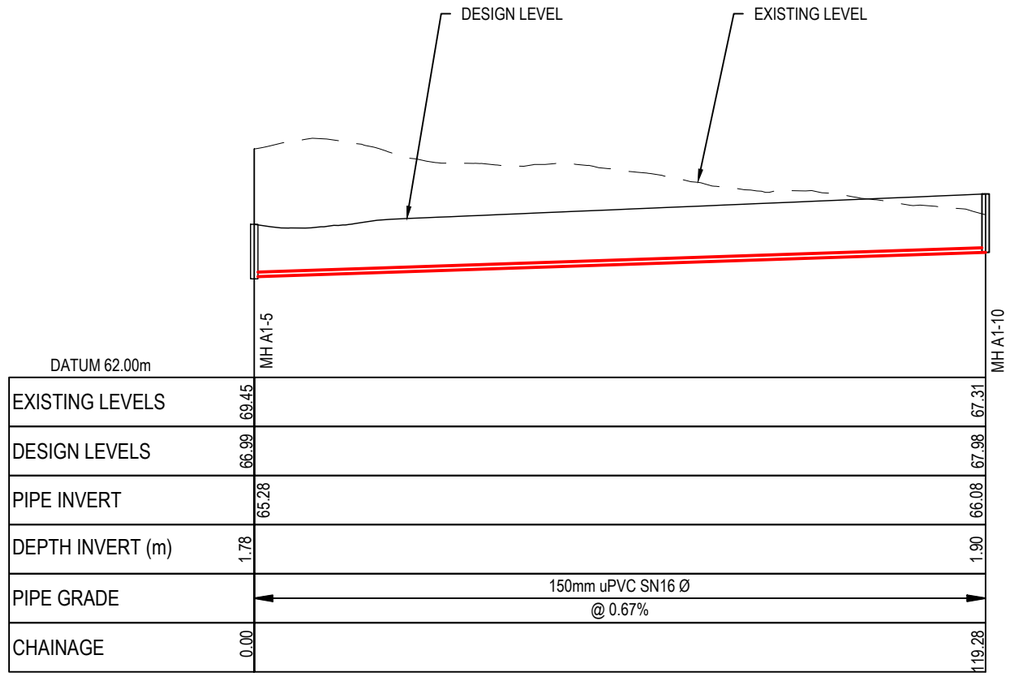
Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-1	Rev	B

DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



LONGSECTION - CATCHMENT A1 - LINE 2
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT A1 - LINE 3
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

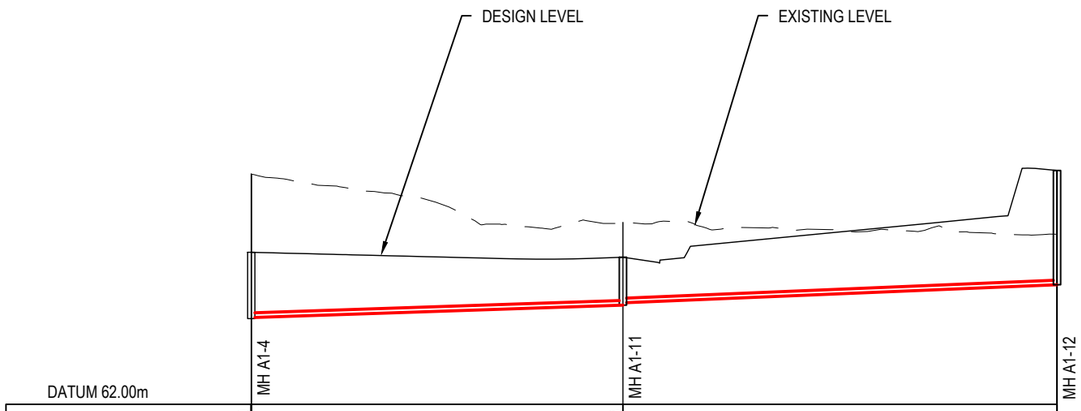
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Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-2	Rev	B

DATE: 4/2/25 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m				
EXISTING LEVELS	69.50	67.93	67.54	
DESIGN LEVELS	69.50	67.93	67.54	
PIPE INVERT	64.83	65.24	65.31	65.90
DEPTH INVERT (m)	2.16	1.56	3.73	
PIPE GRADE		150mm uPVC SN16 Ø @ 0.67%	150mm uPVC SN16 Ø @ 0.83%	
CHAINAGE	0.00	60.61	131.41	

LONGSECTION - CATCHMENT A1 - LINE 4
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

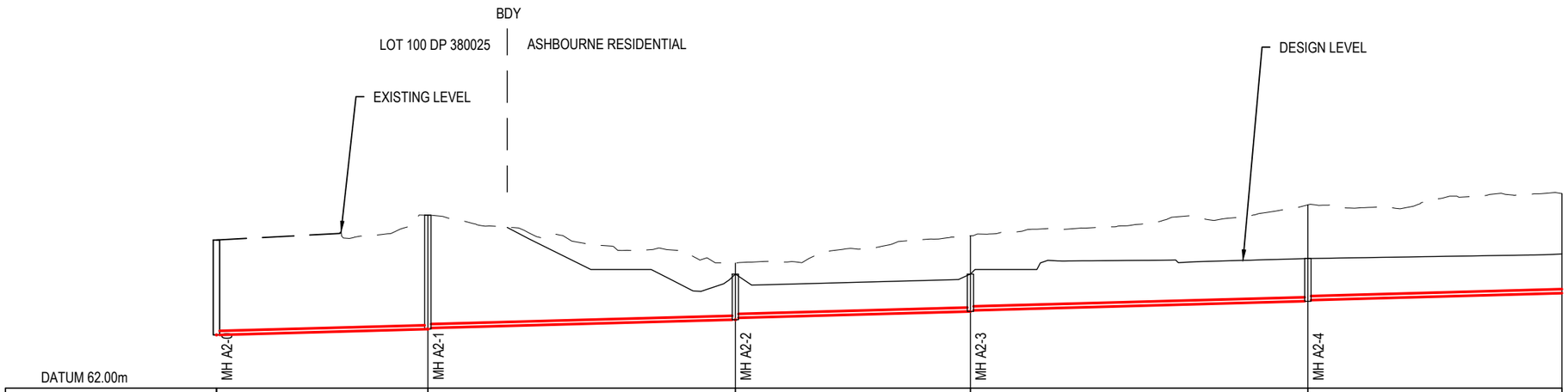
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Project
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Title
PROPOSED WASTEWATER LONGSECTIONS

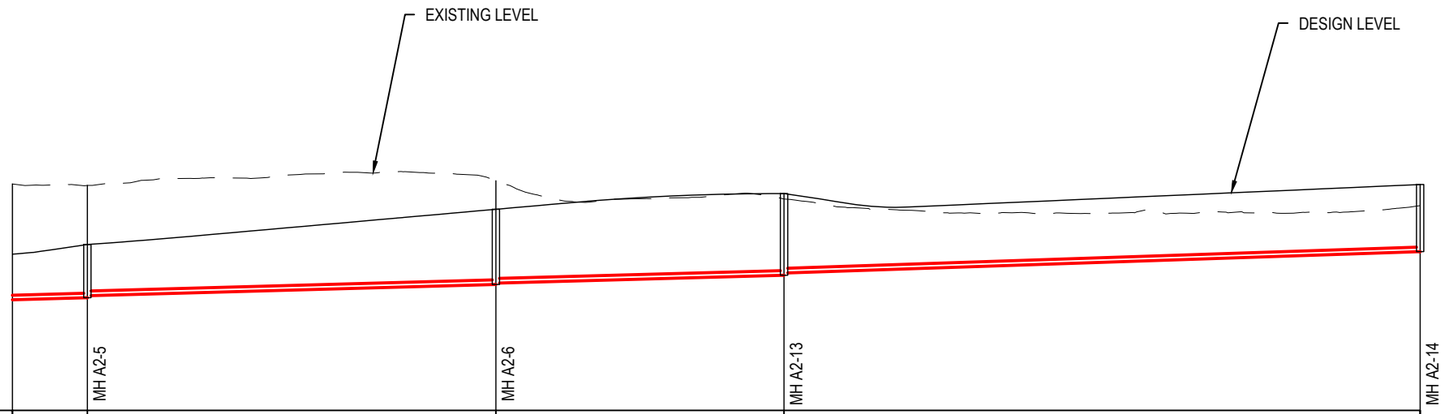
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-3	Rev	B

DATE 4/2/25 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m						
EXISTING LEVELS	67.61	68.56	66.74	67.78	68.95	69.38
DESIGN LEVELS			66.33	66.33	66.92	67.09
PIPE INVERT	64.02	64.24 / 64.28	64.60 / 64.67	64.91 / 64.95	65.30 / 65.34	65.67
DEPTH INVERT (m)	3.60	4.32	1.73	1.42	1.62	
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	
CHAINAGE	0.00	40.06	98.35	142.89	206.85	255.00

LONGSECTION - CATCHMENT A2 - LINE 5
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m					
EXISTING LEVELS	69.38 / 69.33	69.49	68.89	68.67	
DESIGN LEVELS	67.09 / 67.41	68.56	69.07	69.36	
PIPE INVERT	65.34 / 65.67 / 65.74	66.11 / 66.15	66.41 / 66.48	67.18	
DEPTH INVERT (m)	1.74	2.45	2.66	2.19	
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.67%	
CHAINAGE	255.00 / 267.23	333.86	380.86	484.60	

LONGSECTION - CATCHMENT A2 - LINE 5 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

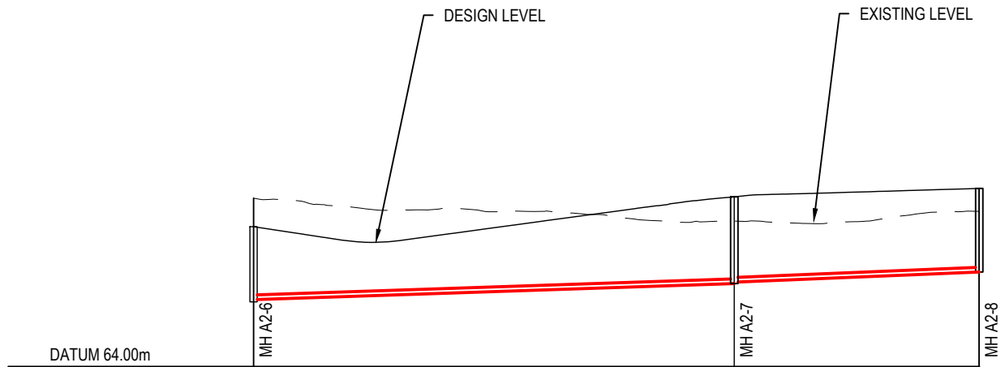
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Project
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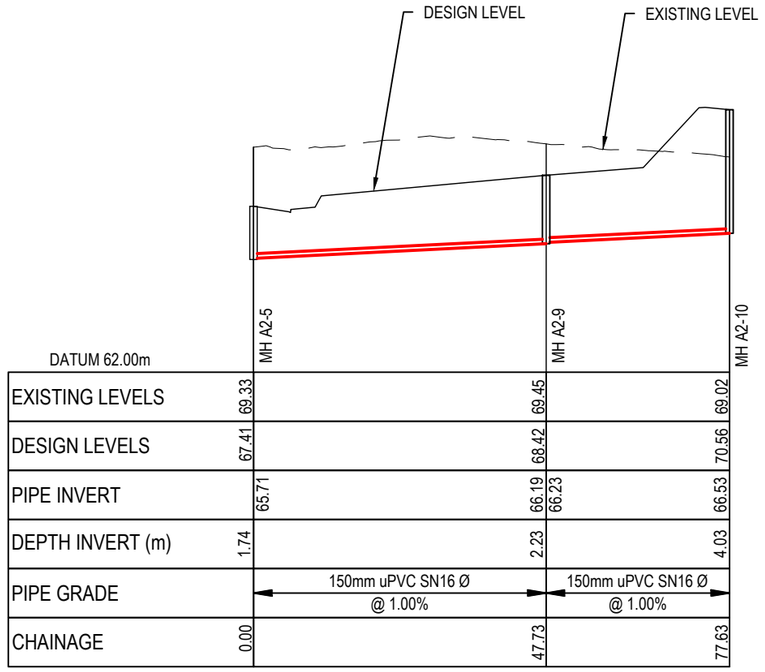
Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-4	Rev	B

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LONGSECTION - CATCHMENT A2 - LINE 6
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT A2 - LINE 7
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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3. Levels in terms of the New Zealand Vertical Datum 2016.
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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

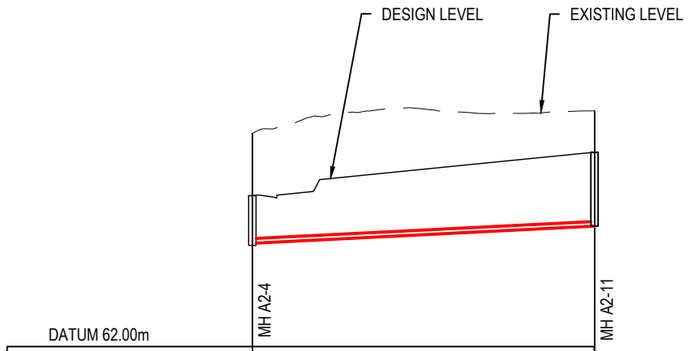
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

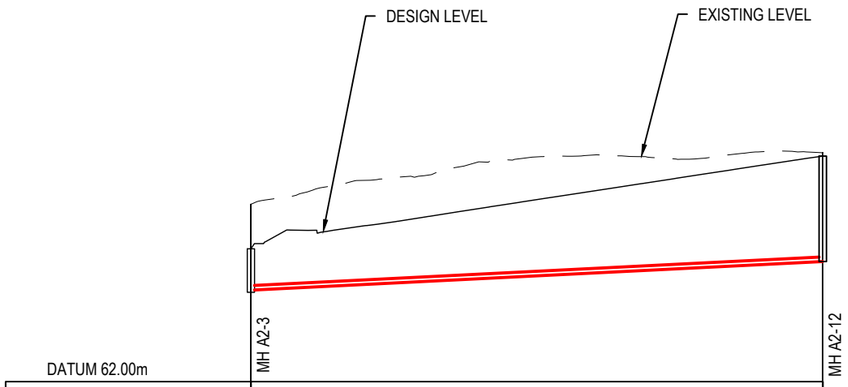
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-5	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m			
EXISTING LEVELS	68.95		69.69
DESIGN LEVELS	66.92		68.34
PIPE INVERT	65.37		65.93
DEPTH INVERT (m)	1.62		2.41
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00		55.80

LONGSECTION - CATCHMENT A2 - LINE 8
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m			
EXISTING LEVELS	67.78		69.46
DESIGN LEVELS	66.33		69.35
PIPE INVERT	64.98		65.91
DEPTH INVERT (m)	1.42		3.44
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00		93.26

LONGSECTION - CATCHMENT A2 - LINE 9
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

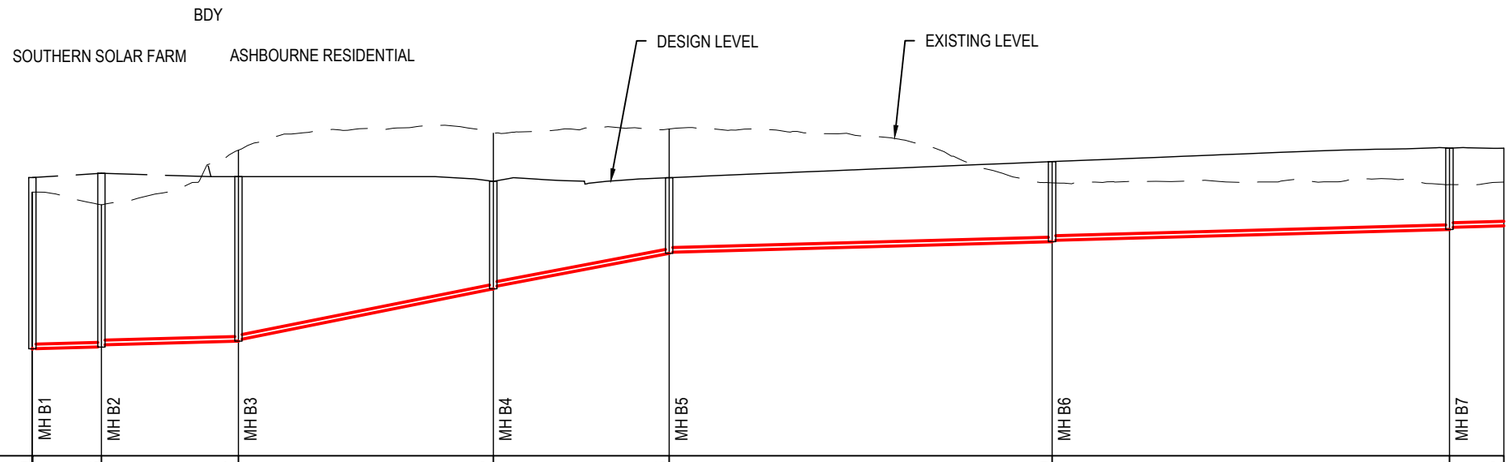
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www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

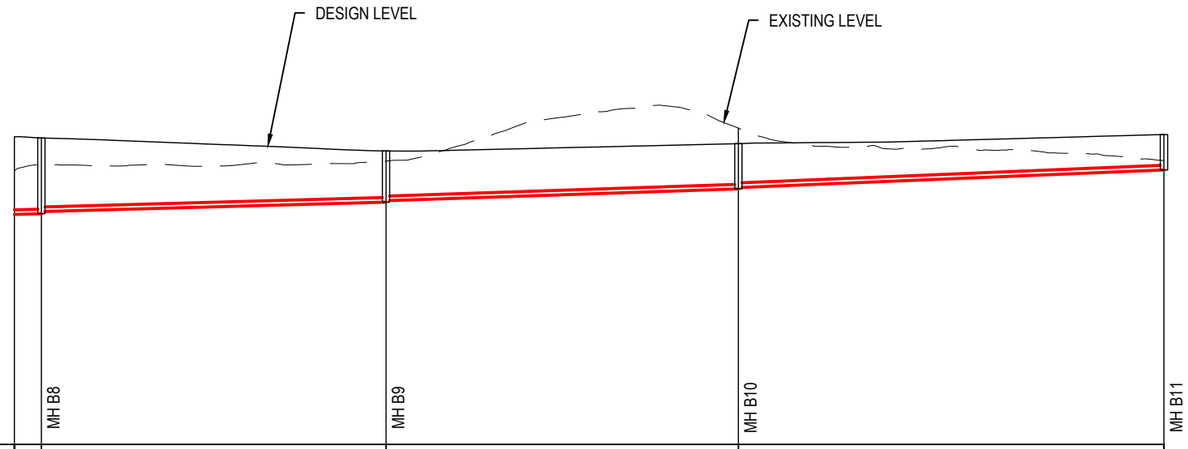
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Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-6	Rev	B

DATE 4/2/25 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 60.00m	MH B1		MH B2		MH B3		MH B4		MH B5		MH B6		MH B7	
EXISTING LEVELS	68.60	68.18		69.97		70.52		70.65		68.90		68.84		68.92
DESIGN LEVELS				69.10		68.95		69.07		69.59		70.03		70.03
PIPE INVERT	63.49	63.55	63.62	63.74	63.78	65.44	65.51	66.60	66.64	66.98	67.02	67.38	67.45	67.52
DEPTH INVERT (m)	5.58	5.67	5.36		3.51		2.47		2.61		2.65			
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 4.00%		150mm uPVC SN16 Ø @ 3.80%		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%	
CHAINAGE	0.00	11.26	33.61		75.17		103.85		166.31		231.12		240.00	

LONGSECTION - CATCHMENT B - LINE 1
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 60.00m	MH B8		MH B9		MH B10		MH B11
EXISTING LEVELS	68.92	69.11	69.24		70.31		69.25
DESIGN LEVELS	70.03	69.99	69.57		69.80		70.10
PIPE INVERT	67.45	67.52	67.59	67.90	67.94	68.33	68.37	68.95
DEPTH INVERT (m)	2.47		1.67		1.47		1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%			150mm uPVC SN16 Ø @ 0.67%		150mm uPVC SN16 Ø @ 0.83%	
CHAINAGE	240.00	244.39	300.60		358.07		427.49

150mm uPVC SN16 Ø
@ 0.55%

LONGSECTION - CATCHMENT B - LINE 1 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

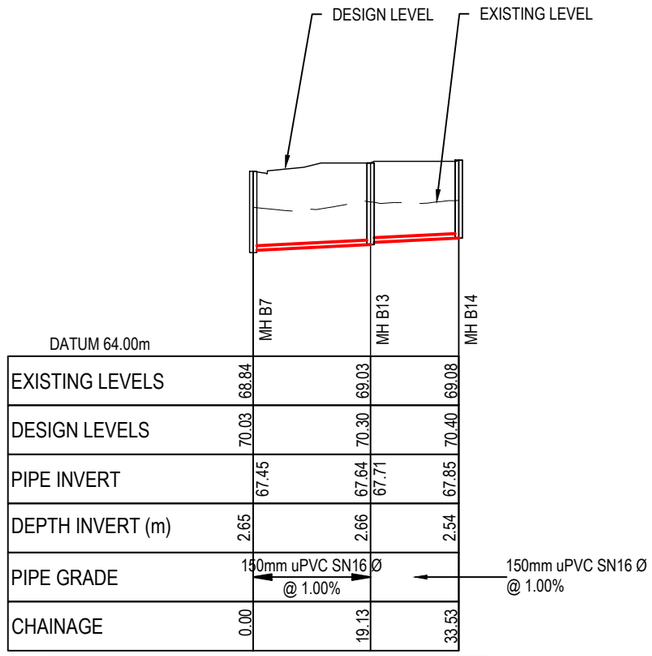
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

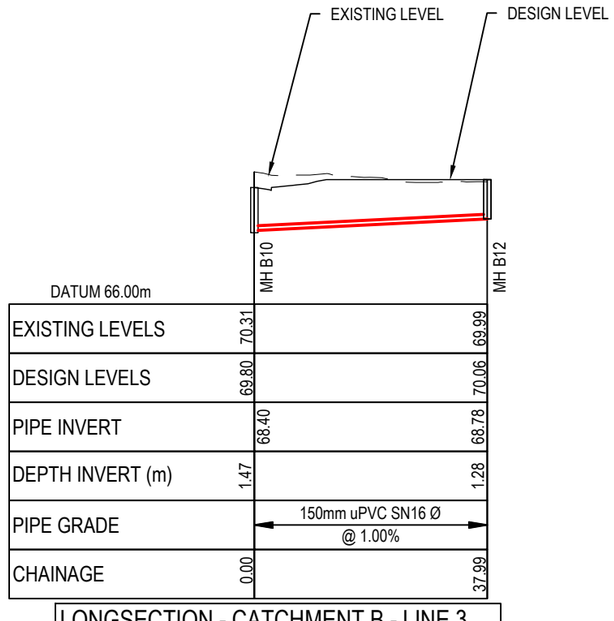
Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001
Scale	AS SHOWN
Cad file	C500-WASTEWATER.DWG
Drawing no.	C520-7
Rev	B

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LONGSECTION - CATCHMENT B - LINE 2
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT B - LINE 3
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes

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Legend

EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

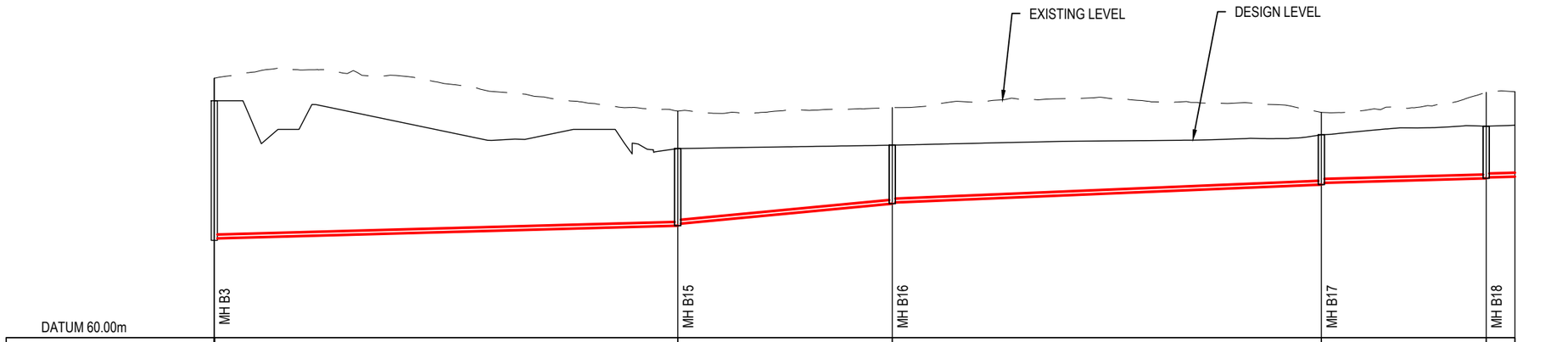
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www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

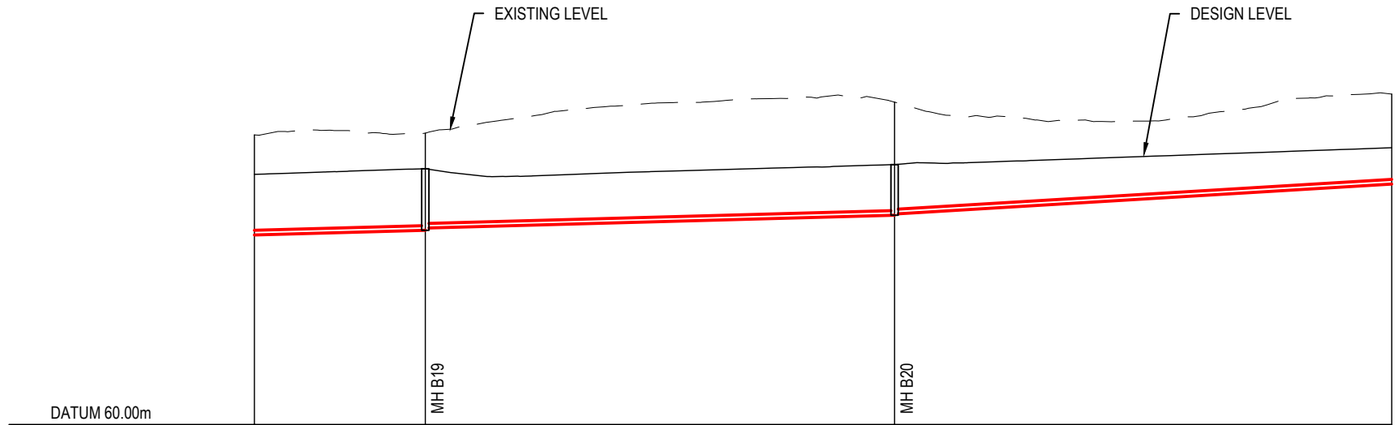
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Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-8	Rev	B

DATE: 4/2/25 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 60.00m										
EXISTING LEVELS	69.97	68.70	68.84	68.66	69.42	69.45				
DESIGN LEVELS	69.10	67.27	67.40	67.79	68.12	68.16				
PIPE INVERT	63.81	64.30	64.37	65.15	65.19	65.88	65.95	66.12	66.16	66.34
DEPTH INVERT (m)	5.36	2.97		2.25		1.91		2.00		
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 1.89%	150mm uPVC SN16 Ø @ 0.84%		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%		
CHAINAGE	0.00	89.08	130.31	212.80	244.48	250.00				

LONGSECTION - CATCHMENT B - LINE 4
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 60.00m						
EXISTING LEVELS	69.45	69.50	70.52	70.78		
DESIGN LEVELS	68.16	68.35	68.48	69.03		
PIPE INVERT	66.16	66.34	66.41	66.83	66.87	67.93
DEPTH INVERT (m)		2.01		1.65		
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 1.20%	
CHAINAGE	250.00	277.86	354.40	435.49		

LONGSECTION - CATCHMENT B - LINE 4 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

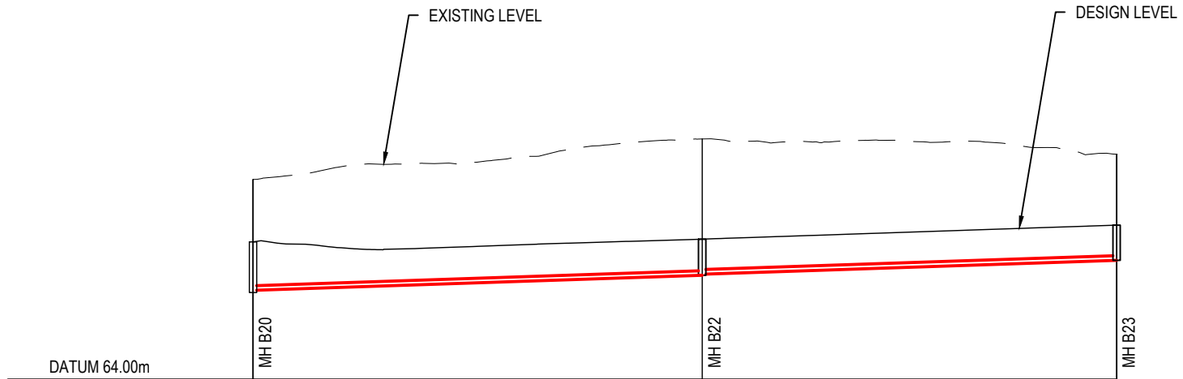
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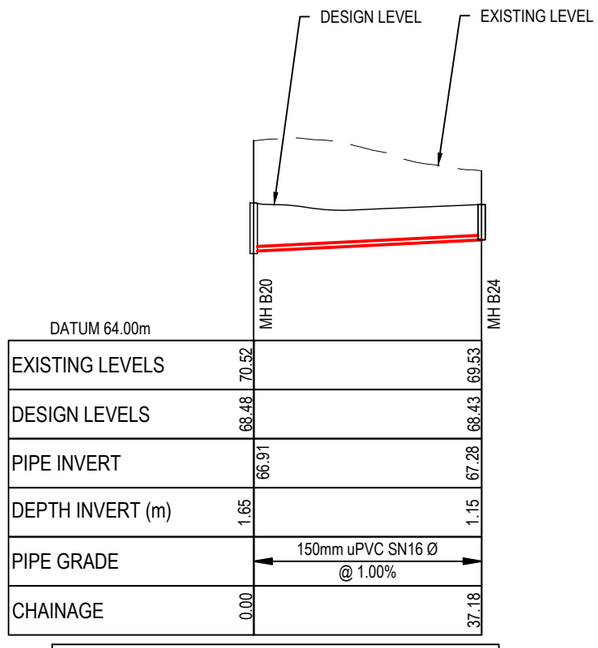
Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-9	Rev	B

DATE 4/2/25 FILEPATH F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



LONGSECTION - CATCHMENT B - LINE 5
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT B - LINE 6
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

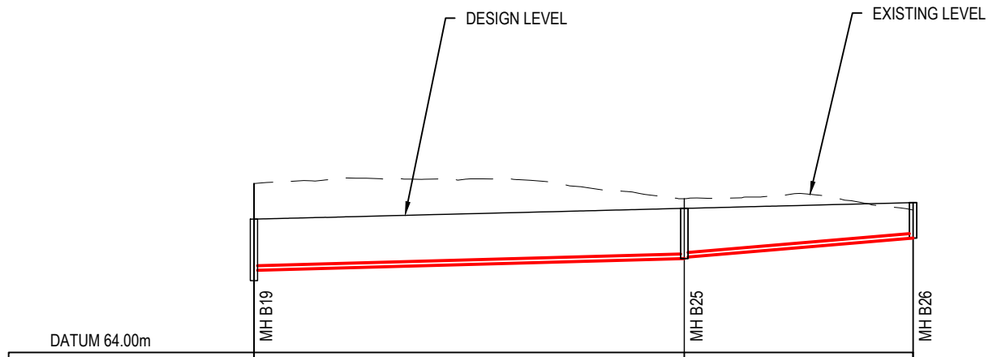
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Project
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Title
PROPOSED WASTEWATER LONGSECTIONS

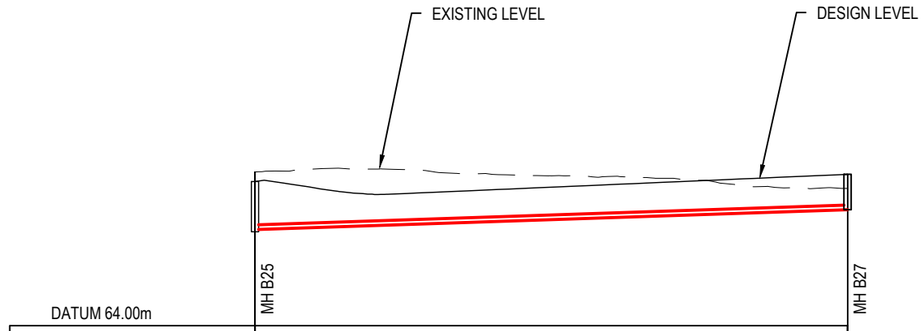
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-10	Rev	B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 64.00m				
EXISTING LEVELS	69.50	69.01	68.65	
DESIGN LEVELS	68.35	68.70	68.88	
PIPE INVERT	66.67	67.06	67.10	67.73
DEPTH INVERT (m)	2.01	1.64	1.15	
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 1.69%	
CHAINAGE	0.00	70.20	107.50	

LONGSECTION - CATCHMENT B - LINE 7
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 64.00m			
EXISTING LEVELS	69.01	68.48	
DESIGN LEVELS	68.70	68.93	
PIPE INVERT	67.13	67.78	
DEPTH INVERT (m)	1.64	1.15	
PIPE GRADE		150mm uPVC SN16 Ø @ 0.67%	
CHAINAGE	0.00	96.64	

LONGSECTION - CATCHMENT B - LINE 8
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
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Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

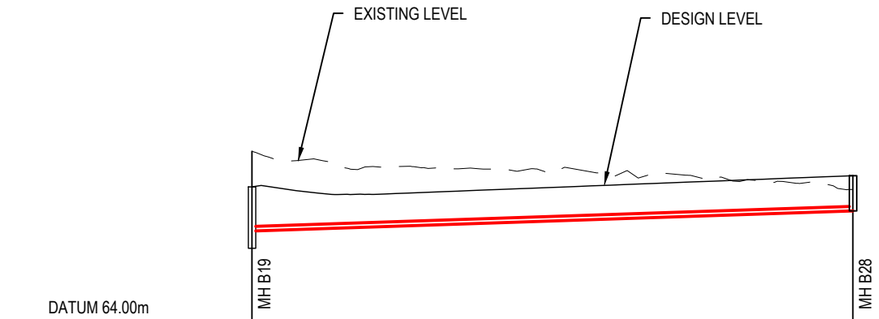
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

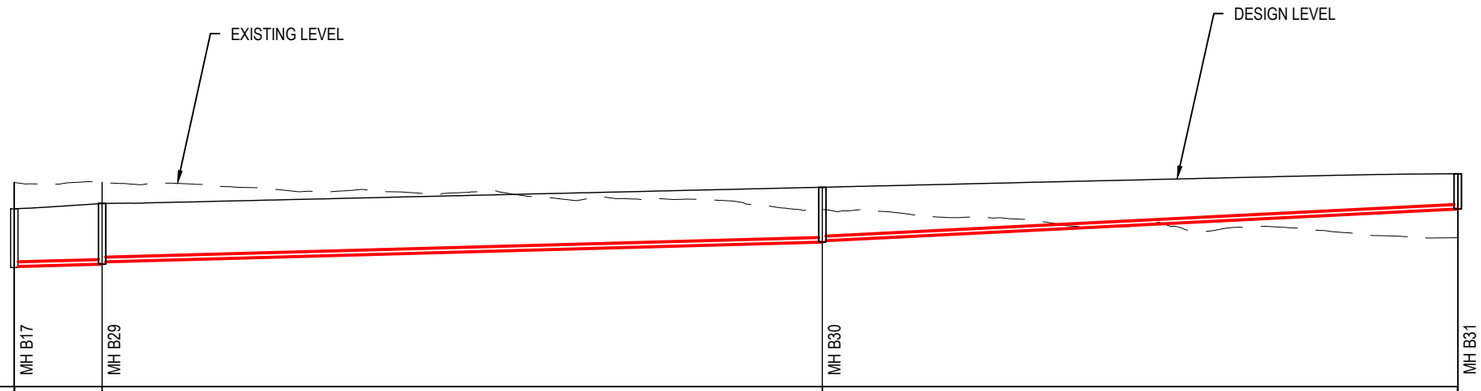
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-11	Rev	B

DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 64.00m			
EXISTING LEVELS	69.50		68.26
DESIGN LEVELS	68.35		68.71
PIPE INVERT	66.90		67.56
DEPTH INVERT (m)	2.01		1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 0.67%	
CHAINAGE	0.00		98.02

LONGSECTION - CATCHMENT B - LINE 9
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m						
EXISTING LEVELS	68.66	68.66		67.77		66.86
DESIGN LEVELS	67.79	67.97		68.49		68.94
PIPE INVERT		65.91	65.99	66.06	66.71	66.75	67.79
DEPTH INVERT (m)	1.91	1.98		1.78		1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00	14.31		131.78		235.42

LONGSECTION - CATCHMENT B - LINE 10
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
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3. Levels in terms of the New Zealand Vertical Datum 2016.
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5. Approved hardfill is to be used in backfilling of all road crossings to council standards.
6. Heavy duty manhole lids and frames to be used in trafficked areas, all manholes shall have stainless grates installed.
7. All lines are to be 150mmØ PVC Class SN16 unless shown otherwise.
8. All lot connections are to be 100mmØ PVC unless shown otherwise.
9. 150mmØ pipes that do not terminate in a manhole must be terminated with a 100mmØ on a 150mmØ london junction and blank cap.
10. Manhole diameters shown on structure label are internal diameter.
11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

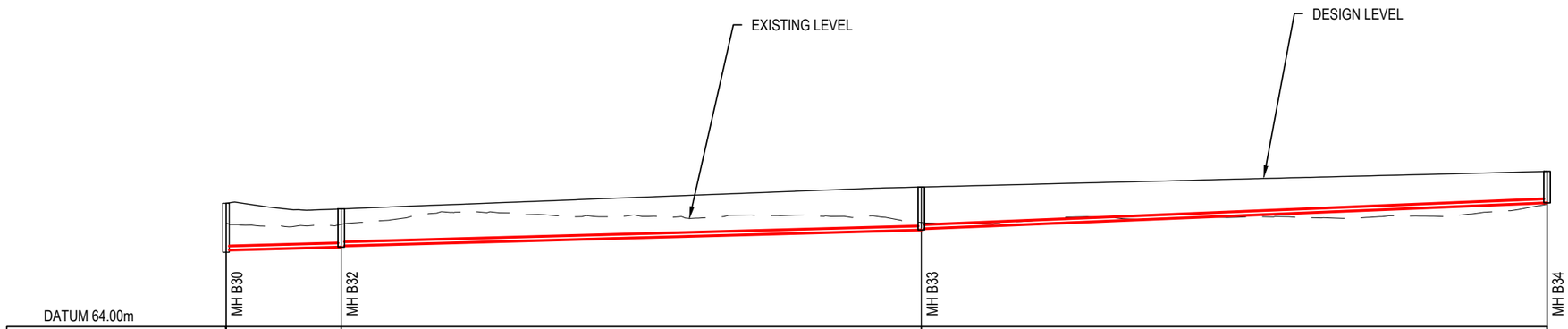
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

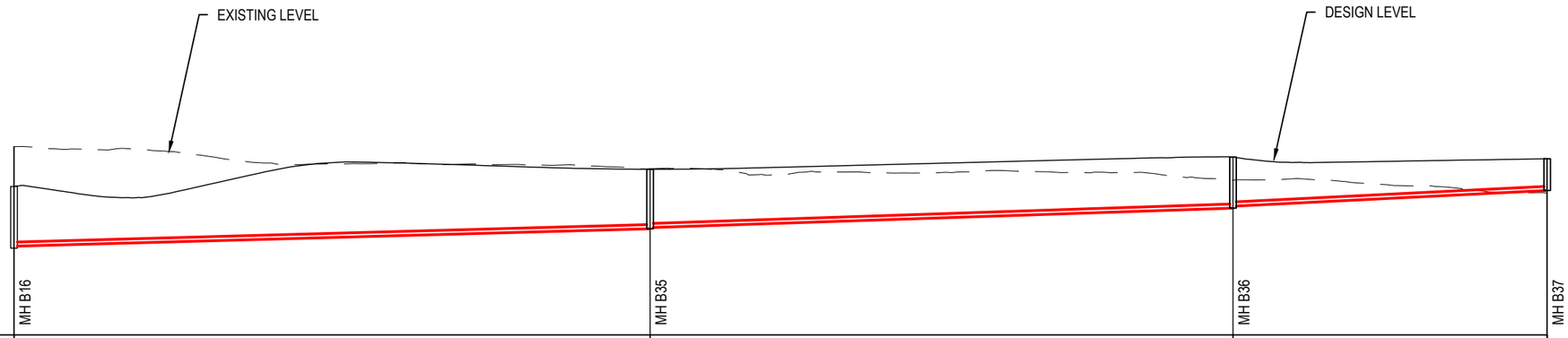
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Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-12	Rev	B

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DATUM 64.00m	MH B30	MH B32	MH B33	MH B34
EXISTING LEVELS	67.77	67.73	67.80	68.46
DESIGN LEVELS	68.49	68.29	69.09	69.66
PIPE INVERT	66.78	66.90 66.94	67.52 67.56	68.51
DEPTH INVERT (m)	1.78	1.39	1.57	1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.83%
CHAINAGE	0.00	21.01	126.85	241.01

LONGSECTION - CATCHMENT B - LINE 11
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m	MH B16	MH B35	MH B36	MH B37
EXISTING LEVELS	68.84	68.04	67.63	67.15
DESIGN LEVELS	67.40	68.02	68.47	68.40
PIPE INVERT	65.22	65.86 65.90	66.61 66.68	67.25
DEPTH INVERT (m)	2.25	2.16	1.86	1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.67%	150mm uPVC SN16 Ø @ 1.00%
CHAINAGE	0.00	115.65	221.63	278.77

LONGSECTION - CATCHMENT B - LINE 12
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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10. Manhole diameters shown on structure label are internal diameter.
11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

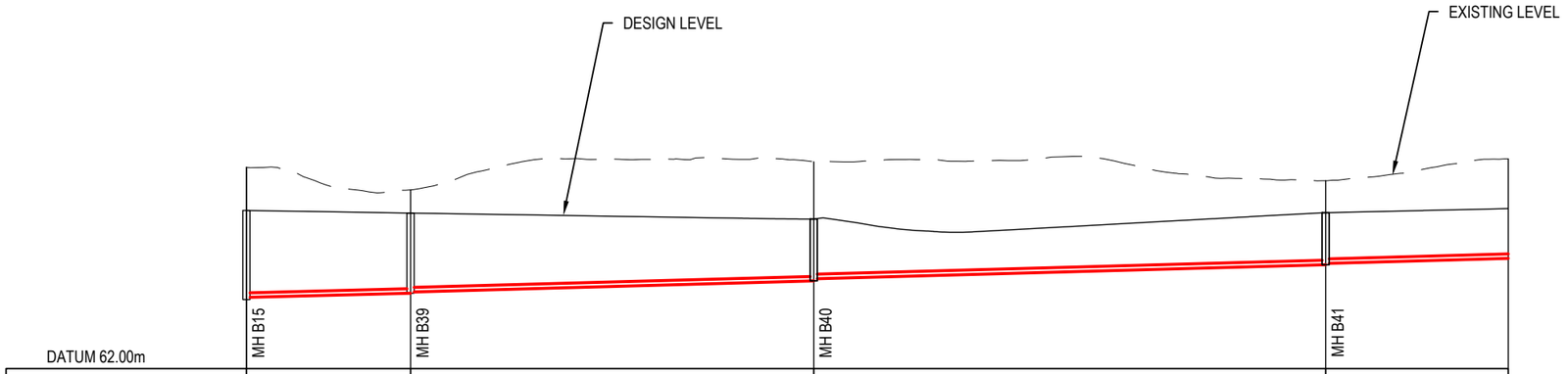
Project no.	289001		
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Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-13	Rev	B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m	MH B35	MH B38
EXISTING LEVELS	68.04	67.99
DESIGN LEVELS	68.02	68.01
PIPE INVERT	65.97	66.86
DEPTH INVERT (m)	2.16	1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 2.00%	
CHAINAGE	0.00	44.52

LONGSECTION - CATCHMENT B - LINE 13
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m	MH B15	MH B39	MH B40	MH B41	
EXISTING LEVELS	68.70	67.95	68.89	68.26	68.98
DESIGN LEVELS	67.27	67.18	66.98	67.19	67.33
PIPE INVERT	64.37	64.51 64.55	64.92 64.99	65.46 65.50	65.78
DEPTH INVERT (m)	2.97	2.67	2.06	1.73	
PIPE GRADE	150mm uPVC SN16 Ø @ 0.51%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	
CHAINAGE	0.00	27.31	94.42	179.61	210.00

LONGSECTION - CATCHMENT B - LINE 14
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

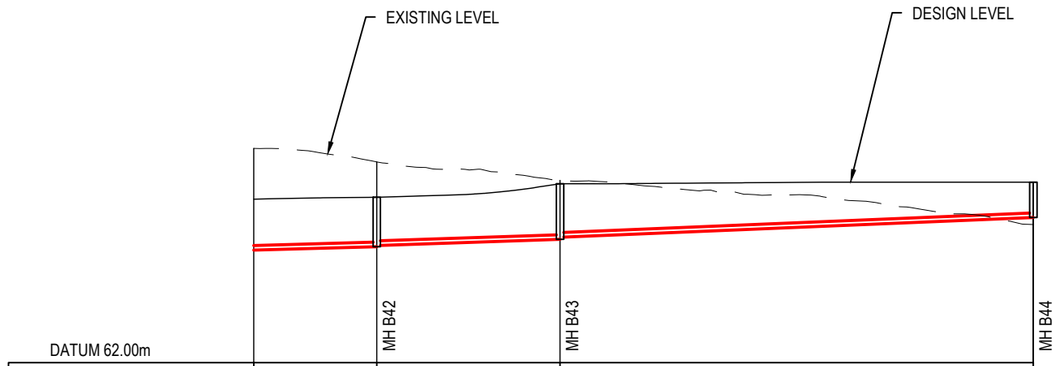
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Title
PROPOSED WASTEWATER LONGSECTIONS

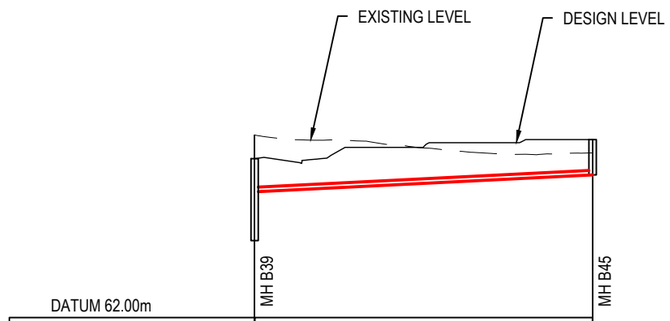
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Drawing no.	C520-14 Rev B

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DATUM 62.00m				
EXISTING LEVELS	68.98	68.54	67.94	66.51
DESIGN LEVELS	67.33	67.39	67.83	67.88
PIPE INVERT	65.50	65.78 / 65.82	66.02 / 66.09	66.73
DEPTH INVERT (m)		1.61	1.81	1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.67%	150mm uPVC SN16 Ø @ 0.83%
CHAINAGE	210.00	230.06	259.95	337.14

LONGSECTION - CATCHMENT B - LINE 14 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m			
EXISTING LEVELS	67.95		67.36
DESIGN LEVELS	67.18		67.80
PIPE INVERT	66.10		66.65
DEPTH INVERT (m)	2.67		1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00		55.13

LONGSECTION - CATCHMENT B - LINE 15
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
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3. Levels in terms of the New Zealand Vertical Datum 2016.
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11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

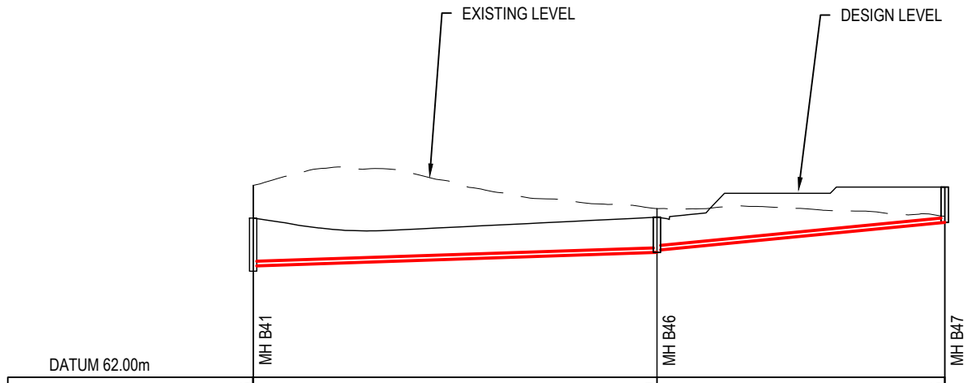
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Title
PROPOSED WASTEWATER LONGSECTIONS

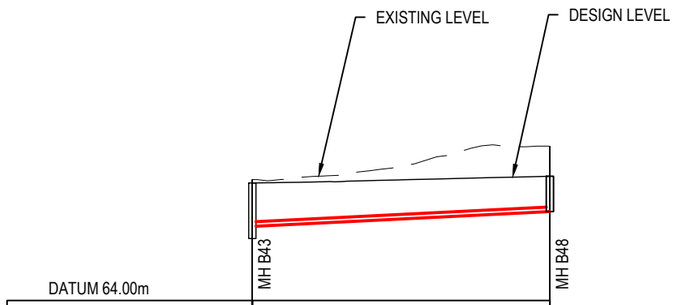
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Scale	AS SHOWN		
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Drawing no.	C520-15	Rev	B

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DATUM 62.00m			
EXISTING LEVELS	68.26	67.50	67.25
DESIGN LEVELS	67.19	67.22	68.20
PIPE INVERT	65.63	66.07 / 66.14	67.05
DEPTH INVERT (m)	1.73	1.15	1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 0.67%	150mm uPVC SN16 Ø @ 1.94%
CHAINAGE	0.00	65.87	112.80

LONGSECTION - CATCHMENT B - LINE 16
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 64.00m			
EXISTING LEVELS	67.94		69.03
DESIGN LEVELS	67.83		68.05
PIPE INVERT		66.41	66.90
DEPTH INVERT (m)	1.81		1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00		48.53

LONGSECTION - CATCHMENT B - LINE 17
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

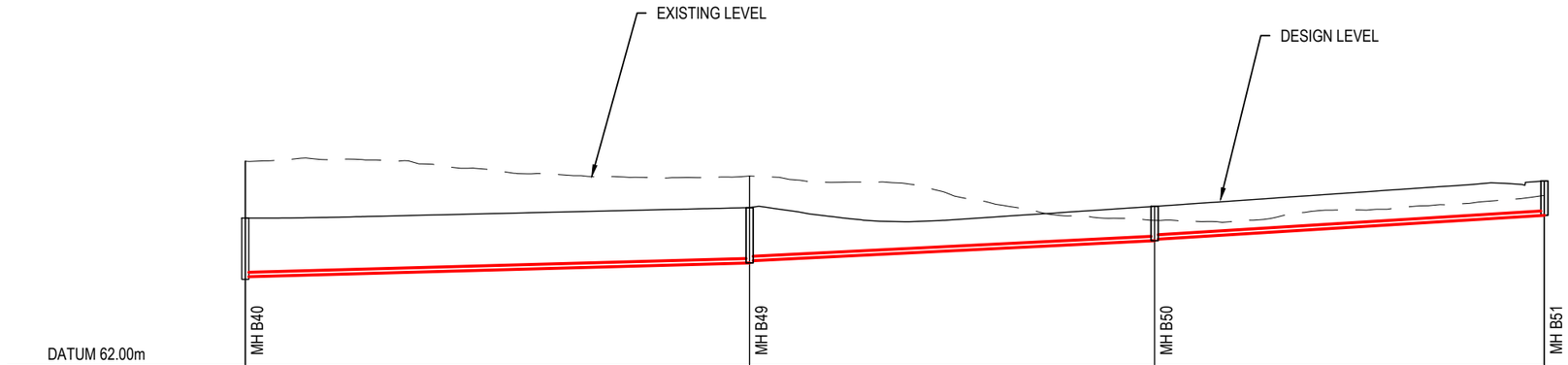
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Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-16	Rev	B

DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m					
EXISTING LEVELS	68.89	68.39	66.90	67.73	
DESIGN LEVELS	66.98	67.33	67.37	68.22	
PIPE INVERT	65.00	65.47 / 65.54	66.22 / 66.26	67.07	
DEPTH INVERT (m)	2.06	1.86	1.15	1.15	
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 1.00%	150mm uPVC SN16 Ø @ 1.24%	
CHAINAGE	0.00	84.77	152.84	218.36	

LONGSECTION - CATCHMENT B - LINE 18

SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes

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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

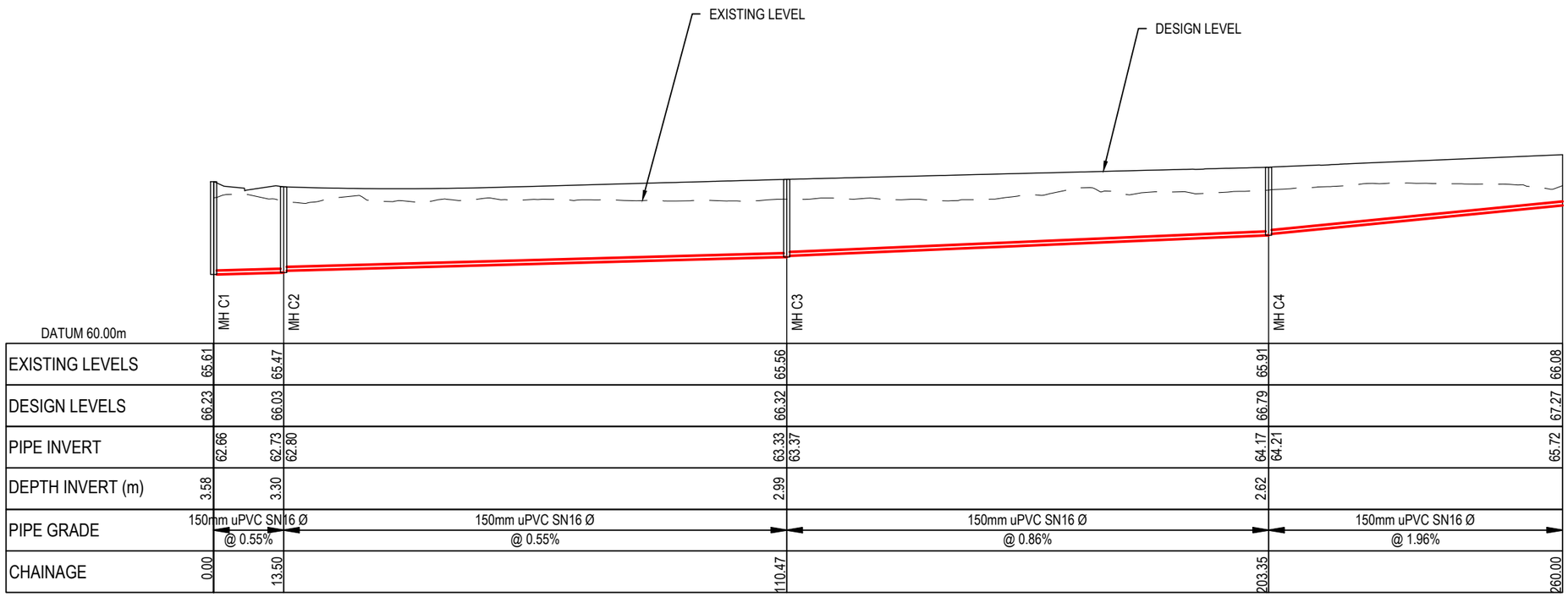
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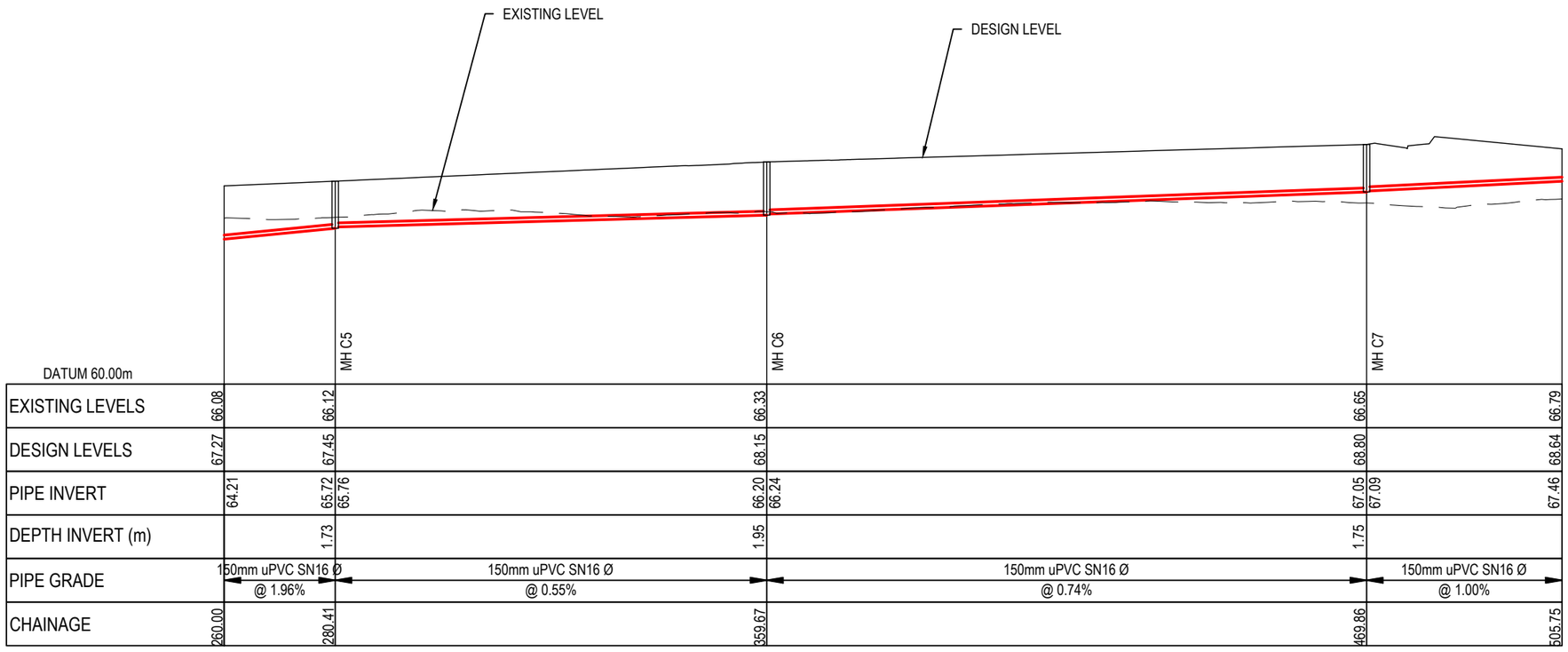
Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-17	Rev	B

DATE 4/2/25 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



LONGSECTION - CATCHMENT C - LINE 1
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT C - LINE 1 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

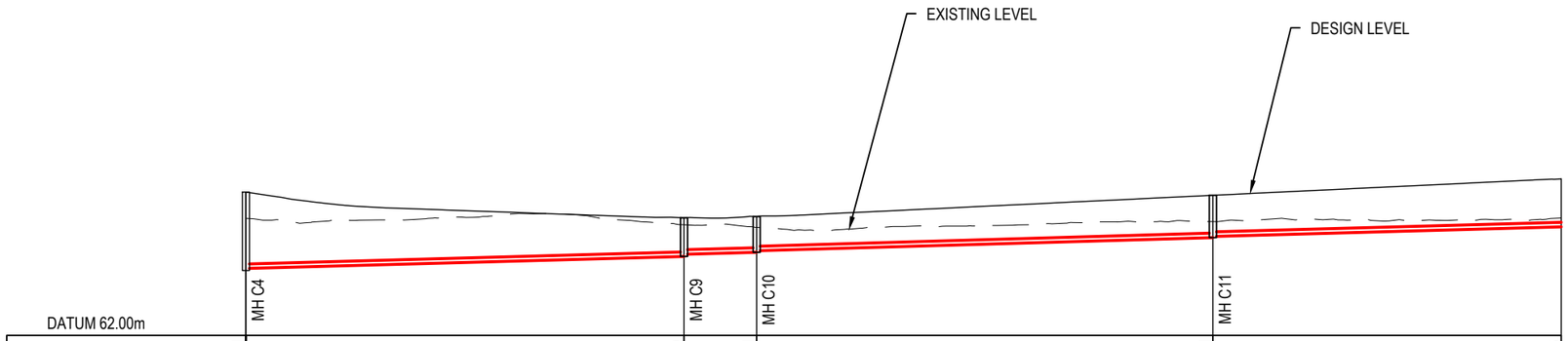
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

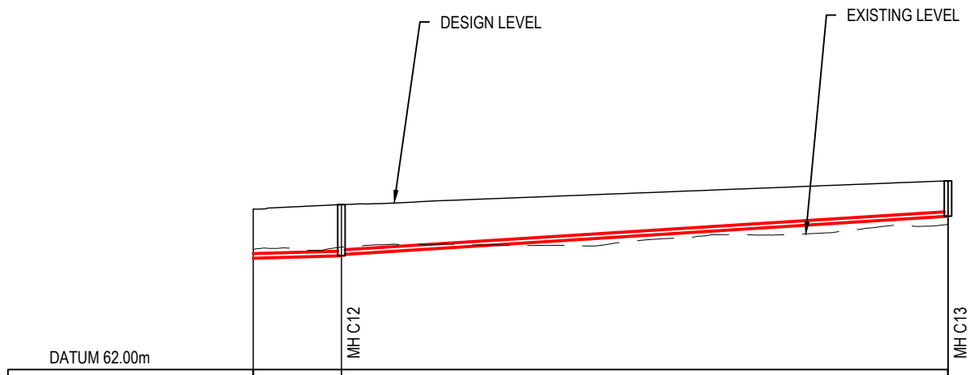
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-18	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m												
EXISTING LEVELS	65.91			65.70	65.61			65.81			65.93	
DESIGN LEVELS	66.79			65.93	65.98			66.69			67.23	
PIPE INVERT	64.24			64.64	64.71	64.78	64.83	65.27	65.31		65.71	
DEPTH INVERT (m)	2.62			1.29	1.20			1.42				
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%			150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.58%			150mm uPVC SN16 Ø @ 0.55%		
CHAINAGE	0.00			73.28	85.42			161.73			220.00	

LONGSECTION - CATCHMENT C - LINE 2
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m												
EXISTING LEVELS	65.93			65.99				66.74				
DESIGN LEVELS	67.23			67.38				68.15				
PIPE INVERT	65.31			65.71	65.75			67.00				
DEPTH INVERT (m)				1.67				1.15				
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%					150mm uPVC SN16 Ø @ 1.26%					
CHAINAGE	220.00			234.39				333.31				

LONGSECTION - CATCHMENT C - LINE 2 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

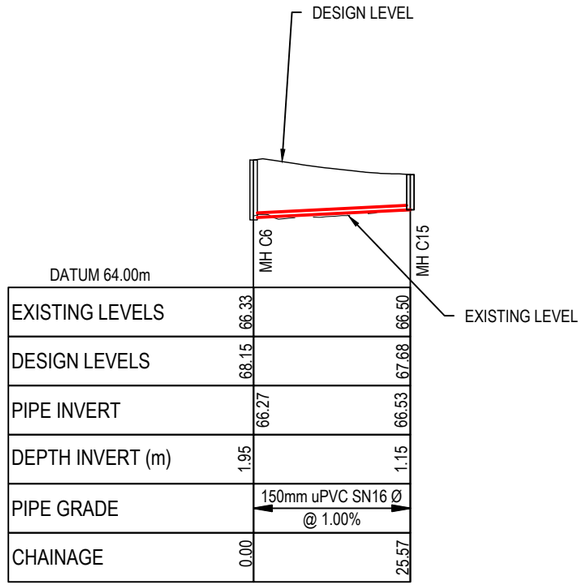
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

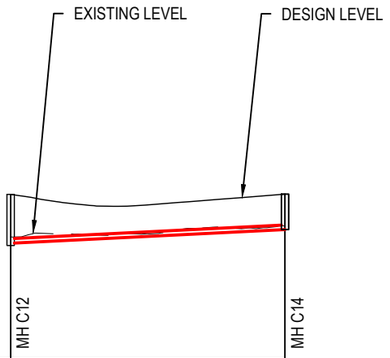
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-19	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 64.00m		
EXISTING LEVELS	66.33	66.50
DESIGN LEVELS	68.15	67.68
PIPE INVERT	66.27	66.53
DEPTH INVERT (m)	1.95	1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00	25.57

LONGSECTION - CATCHMENT C - LINE 3
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m		
EXISTING LEVELS	65.99	66.35
DESIGN LEVELS	67.38	67.38
PIPE INVERT	65.78	66.23
DEPTH INVERT (m)	1.67	1.15
PIPE GRADE	150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00	44.76

LONGSECTION - CATCHMENT C - LINE 4
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

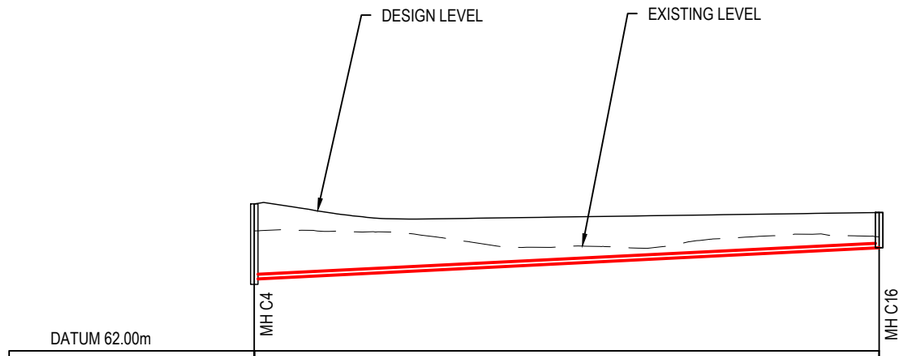
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

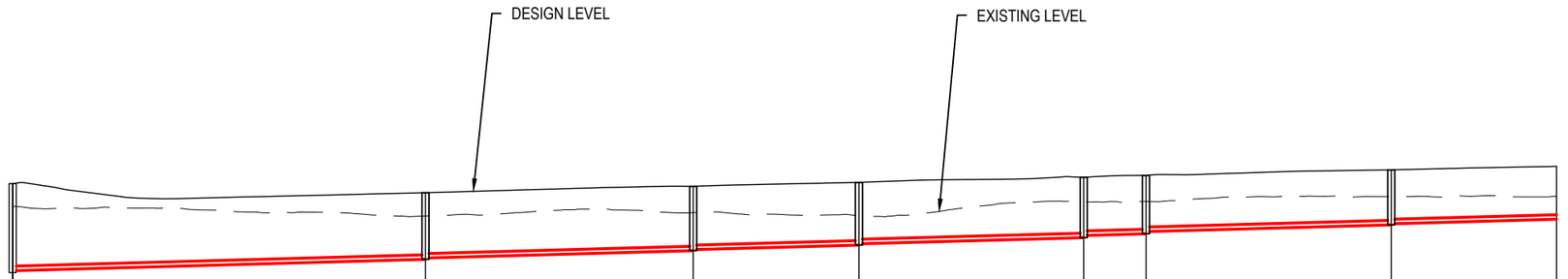
Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-20	Rev	B

DATE: 4/2/25 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 62.00m			
EXISTING LEVELS	65.91		65.72
DESIGN LEVELS	66.79		66.51
PIPE INVERT	64.34		65.36
DEPTH INVERT (m)	2.62		1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00		101.91

LONGSECTION - CATCHMENT C - LINE 5
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 60.00m								
EXISTING LEVELS	65.56	65.24	65.35	65.24	65.69	65.73	65.89	65.90
DESIGN LEVELS	66.32	66.02	66.23	66.37	66.54	66.60	66.79	66.91
PIPE INVERT	63.40	63.78 / 63.82	64.07 / 64.11	64.26 / 64.30	64.51 / 64.58	64.64 / 64.71	64.94 / 64.98	65.52
DEPTH INVERT (m)	2.99	2.24	2.16	2.11	2.03	1.96	1.85	
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%	150mm uPVC SN16 Ø @ 0.55%
CHAINAGE	0.00	69.53	114.60	142.51	180.37	190.86	232.16	260.00

LONGSECTION - CATCHMENT C - LINE 6
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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7. All lines are to be 150mmØ PVC Class SN16 unless shown otherwise.
8. All lot connections are to be 100mmØ PVC unless shown otherwise.
9. 150mmØ pipes that do not terminate in a manhole must be terminated with a 100mmØ on a 150mmØ london junction and blank cap.
10. Manhole diameters shown on structure label are internal diameter.
11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

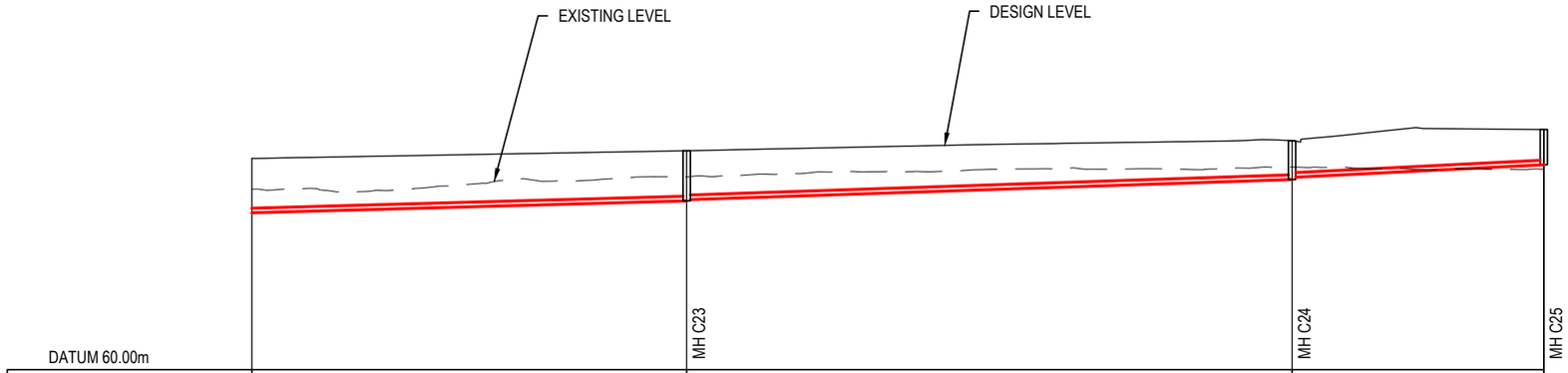
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-21	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 60.00m						
EXISTING LEVELS	65.90	66.30		66.62		66.55
DESIGN LEVELS	66.91	67.16		67.48		67.85
PIPE INVERT	64.98	65.52	65.56	66.22	66.29	66.70
DEPTH INVERT (m)		1.64		1.26		1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 0.55%		150mm uPVC SN16 Ø @ 0.67%		150mm uPVC SN16 Ø @ 1.00%
CHAINAGE	260.00	331.10		430.08		471.24

LONGSECTION - CATCHMENT C - LINE 6 CONT.
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 62.00m			
EXISTING LEVELS	66.30		66.12
DESIGN LEVELS	67.16		67.45
PIPE INVERT	65.78		66.30
DEPTH INVERT (m)	1.64		1.15
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%	
CHAINAGE	0.00		52.16

LONGSECTION - CATCHMENT C - LINE 7
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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7. All lines are to be 150mmØ PVC Class SN16 unless shown otherwise.
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9. 150mmØ pipes that do not terminate in a manhole must be terminated with a 100mmØ on a 150mmØ london junction and blank cap.
10. Manhole diameters shown on structure label are internal diameter.
11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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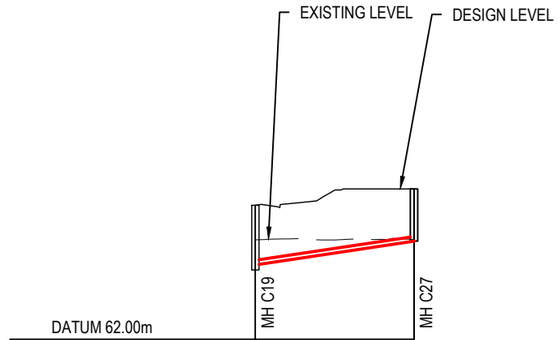
Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-22	Rev	B

DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



LONGSECTION - CATCHMENT C - LINE 8
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



LONGSECTION - CATCHMENT C - LINE 9
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

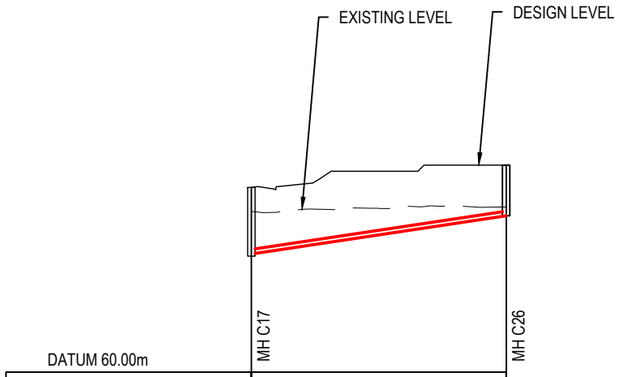
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Title
PROPOSED WASTEWATER LONGSECTIONS

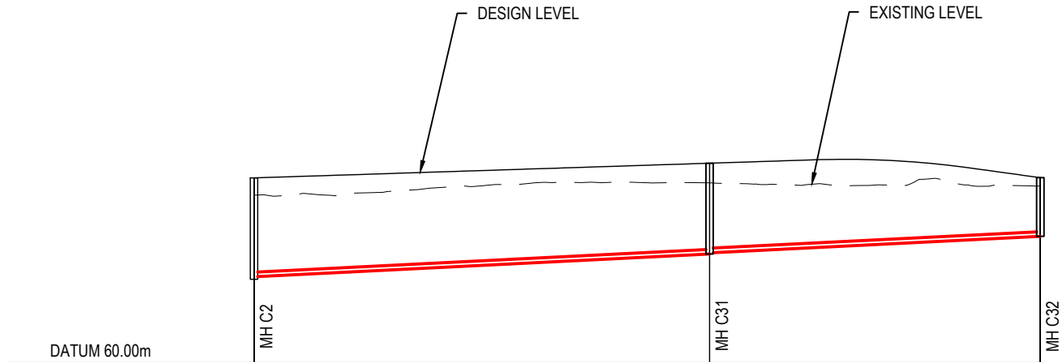
Project no.	289001		
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Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-23	Rev	B

DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



DATUM 60.00m			
EXISTING LEVELS	65.24		65.38
DESIGN LEVELS	66.02		66.75
PIPE INVERT	63.85		65.10
DEPTH INVERT (m)	2.24		1.65
PIPE GRADE		150mm uPVC SN16 Ø @ 3.00%	
CHAINAGE	0.00		41.55

LONGSECTION - CATCHMENT C - LINE 10
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3



DATUM 60.00m				
EXISTING LEVELS	65.47	65.87		65.77
DESIGN LEVELS	66.03	66.51		66.04
PIPE INVERT	62.81	63.55	63.59	64.13
DEPTH INVERT (m)	3.30	2.96		1.91
PIPE GRADE		150mm uPVC SN16 Ø @ 1.00%		150mm uPVC SN16 Ø @ 1.00%
CHAINAGE	0.00	74.30		128.24

LONGSECTION - CATCHMENT C - LINE 11
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
EX GROUND LEVEL
PROP GROUND LEVEL

Rev	Description	By	Date
B	FAST TRACK APP	RJM	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

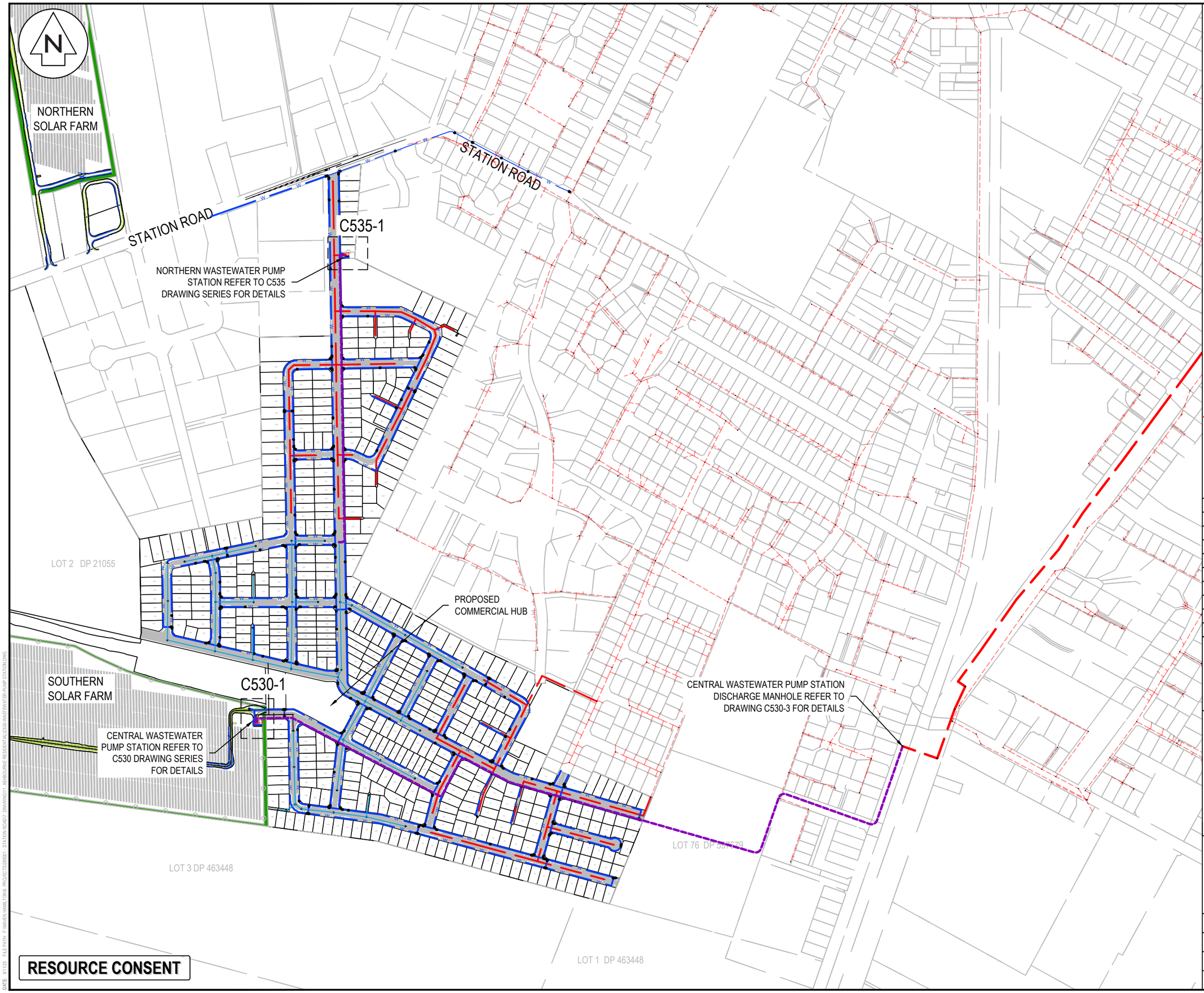
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER LONGSECTIONS

Project no.	289001		
Scale	AS SHOWN		
Cad file	C500-WASTEWATER.DWG		
Drawing no.	C520-24	Rev	B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C500-WASTEWATER.DWG



RESOURCE CONSENT

Notes

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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- WW LOT CONNECTION

Rev	Description	By	Date
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

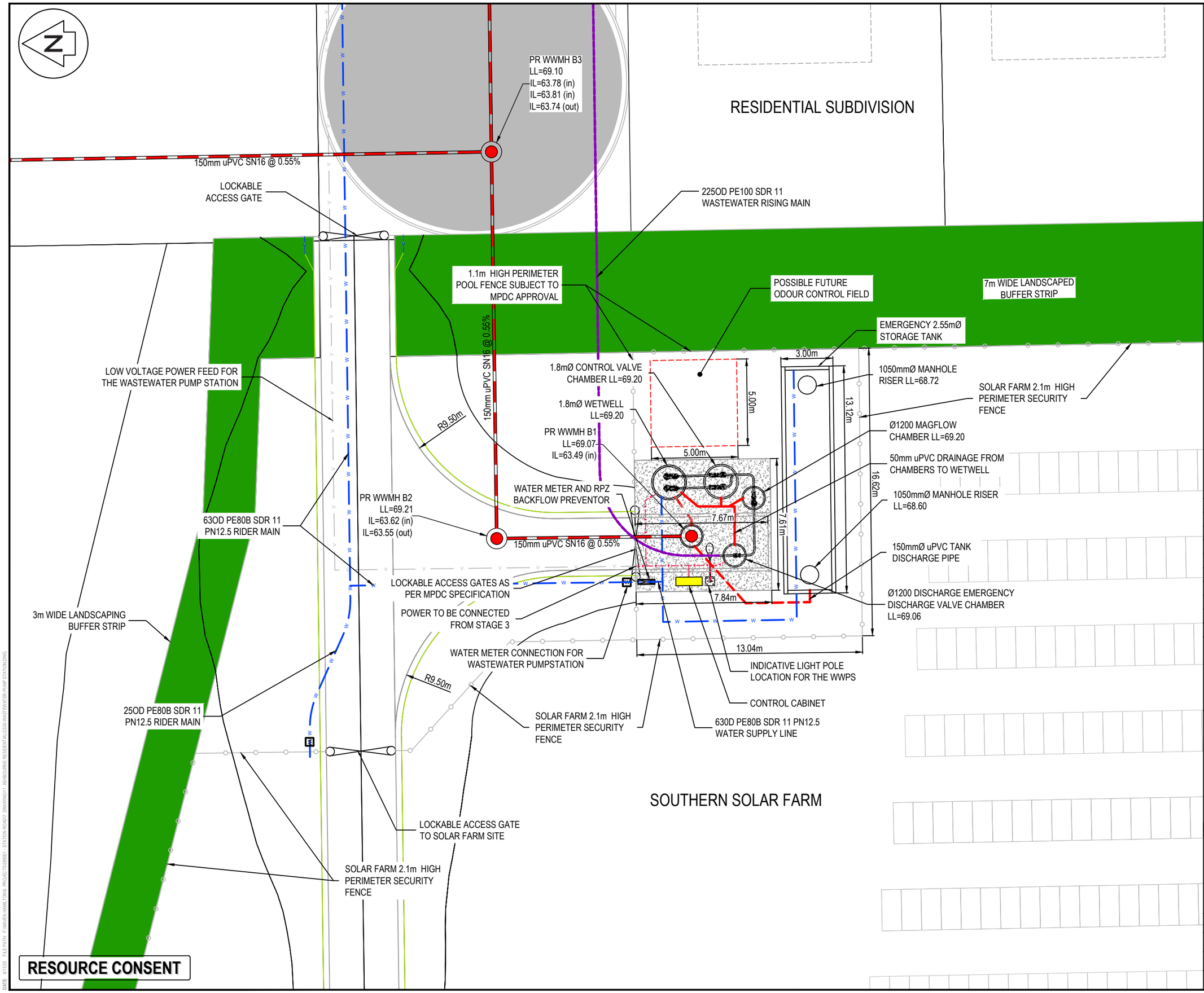
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WASTEWATER PUMP STATIONS OVERVIEW PLAN

Project no.	289001		
Scale	1:6000 @ A3		
Cad file	C530-WASTEWATER-PUMP STATION.DWG		
Drawing no.	C530	Rev	A

DATE 4/10/25 FILEPATH F:\MAVEN HAMILTON\PROJECTS\289001 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C530-WASTEWATER-PUMP STATION.DWG



Notes

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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- PR STORMWATER
- EX/PROP WWMH
- EX/PROP SWMH
- WW LOT CONNECTION

Rev	Description	By	Date
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

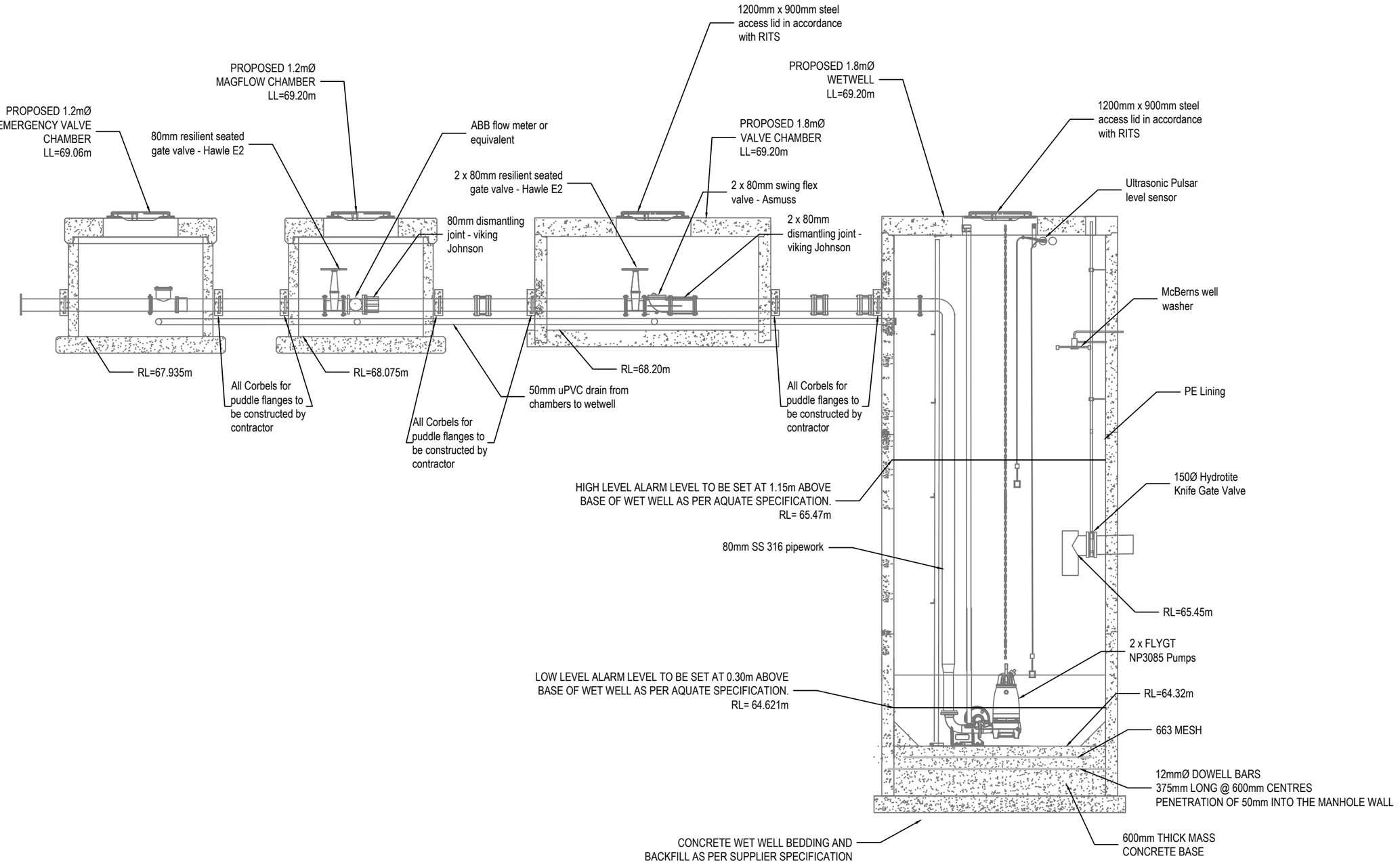
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5 Owens Road, Epsom
Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED CENTRAL WASTEWATER PUMP STATION LAYOUT PLAN

Project no.	289001		
Scale	1:200 @ A3		
Cad file	C530-WASTEWATER-PUMP STATION.DWG		
Drawing no.	C530-1	Rev	A

DATE: 4/11/25 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C530-WASTEWATER PUMP STATION.DWG



WASTEWATER PUMP STATION TYPICAL CROSS SECTION

SCALE: NTS

RESOURCE CONSENT

NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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6. ALL MANHOLES ARE TO BE 1050MMØ PRE CAST CONCRETE UNLESS SHOWN OTHERWISE.
7. REFER TO AQUATE SPECIFICATION FOR RELEVANT WASTEWATER PUMP STATION SPECS AND INSTALLATION PROCESS.
8. ALL PIPELINES SHALL HAVE A FLEXIBLE JOINT ADJACENT TO THE MANHOLE ON ALL INCOMING AND OUTGOING PIPES NOT MORE THAN 600mm AWAY FROM THE MANHOLE WALL.

Rev	Description	By	Date
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

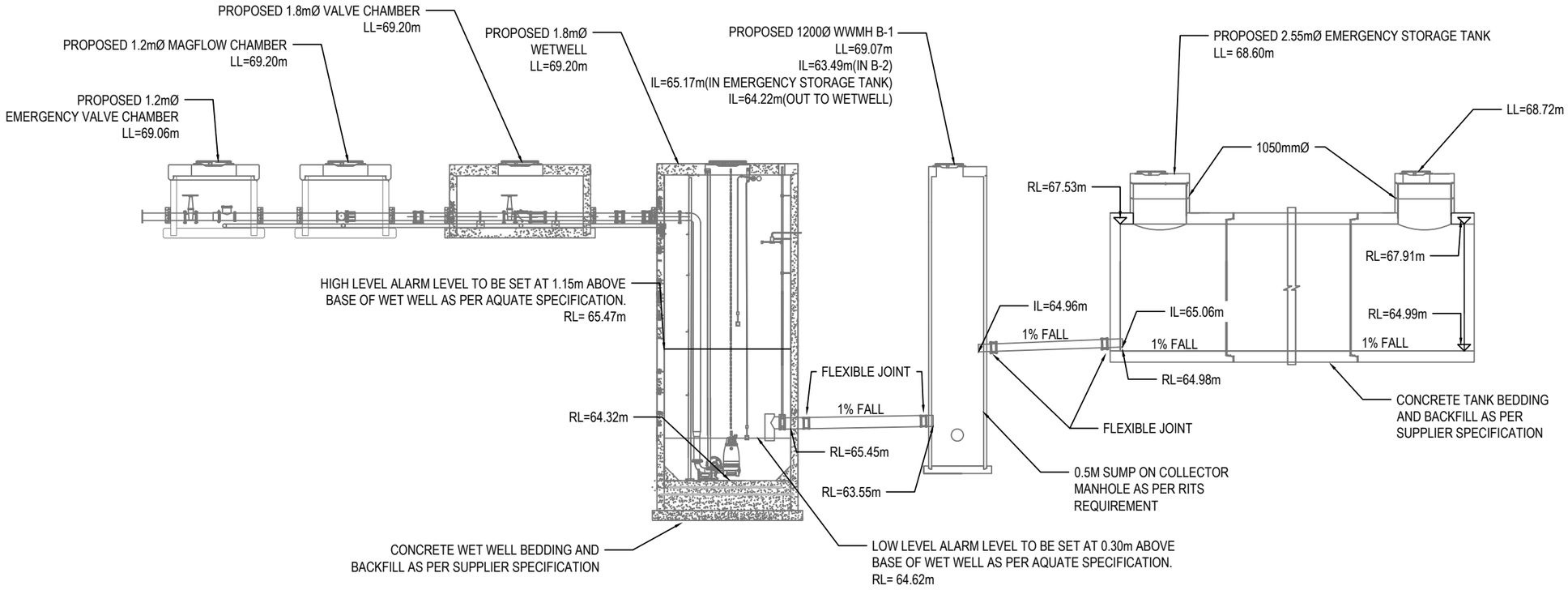
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED CENTRAL WASTEWATER PUMP TYPICAL CROSS SECTION

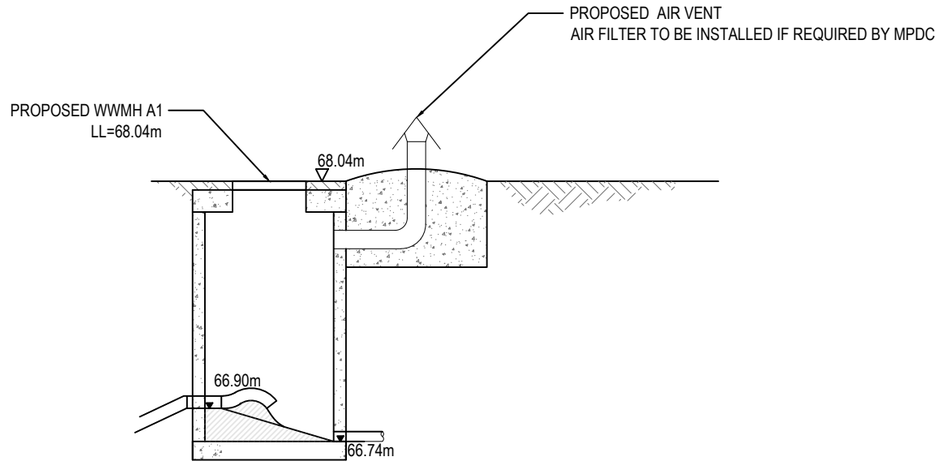
Project no.	289001		
Scale	NTS @ A3		
Cad file	C530-WASTEWATER-PUMP STATION.DWG		
Drawing no.	C530-2	Rev	A

DATE: 4/11/25 FILE PATH: P:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C530-WASTEWATER PUMP STATION.DWG



WASTEWATER PUMP STATION TYPICAL CROSS SECTION

SCALE: NTS



WASTEWATER PUMP STATION DISCHARGE MANHOLE TYPICAL CROSS SECTION

SCALE: NTS

RESOURCE CONSENT

NOTES

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A	FAST TRACK APP	TCH	04/2025

	By	Date
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Design	TCH	04/2025
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Checked	DJM	04/2025

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Project

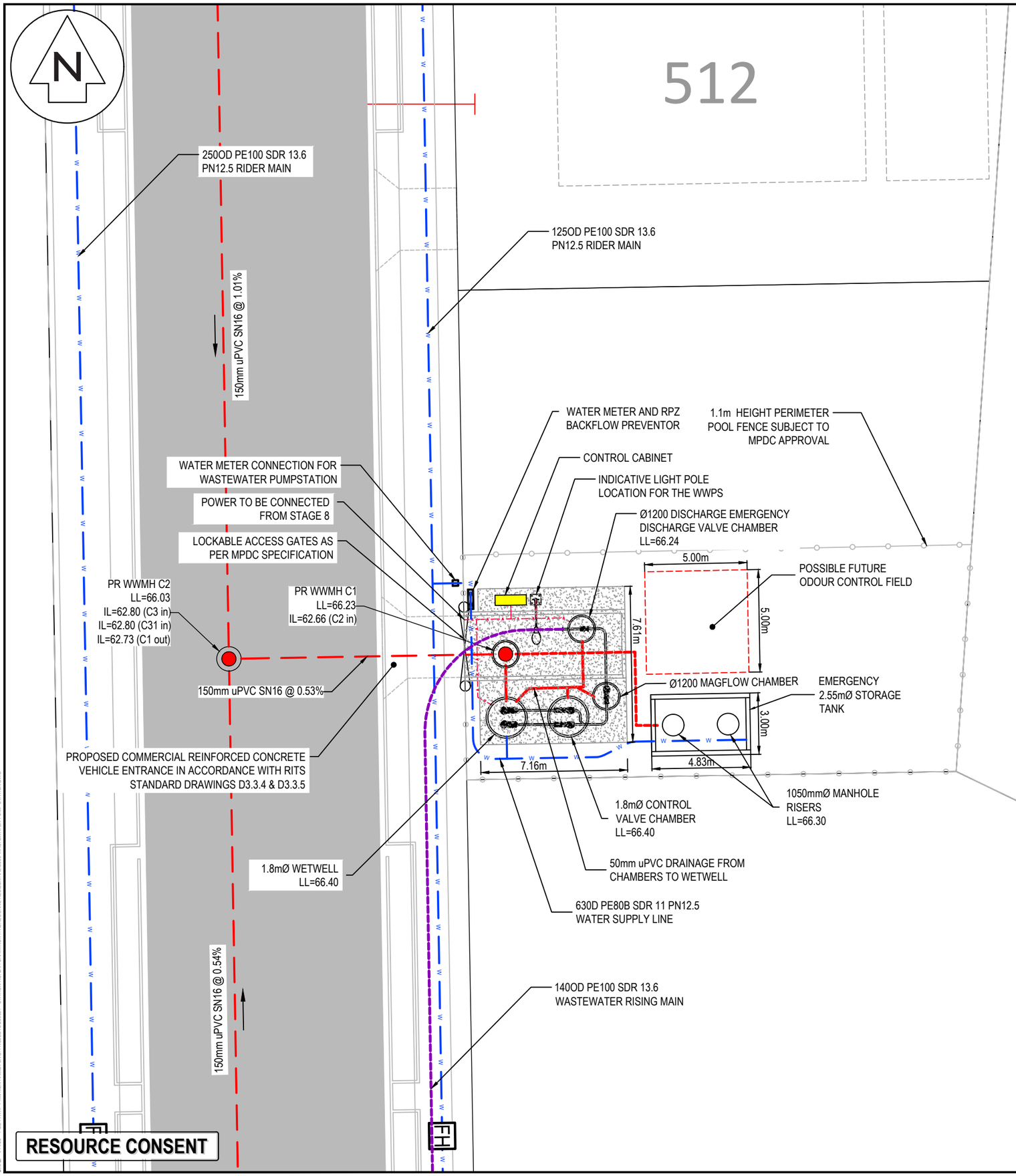
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED CENTRAL WASTEWATER PUMP TYPICAL SECTIONS

Project no.	289001
Scale	NTS @ A3
Cad file	C530-WASTEWATER-PUMP STATION.DWG
Drawing no.	C530-3 Rev A

DATE 4/10/25 FILEPATH: F:\MAVEN-HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C530-WASTEWATER-PUMP STATION.DWG



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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- PR STORMWATER
- EX/PROP WWMH
- EX/PROP SWMH
- WW LOT CONNECTION

Rev	Description	By	Date
A	FAST TRACK APP	TCH	04/2025

	By	Date
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Design	TCH	04/2025
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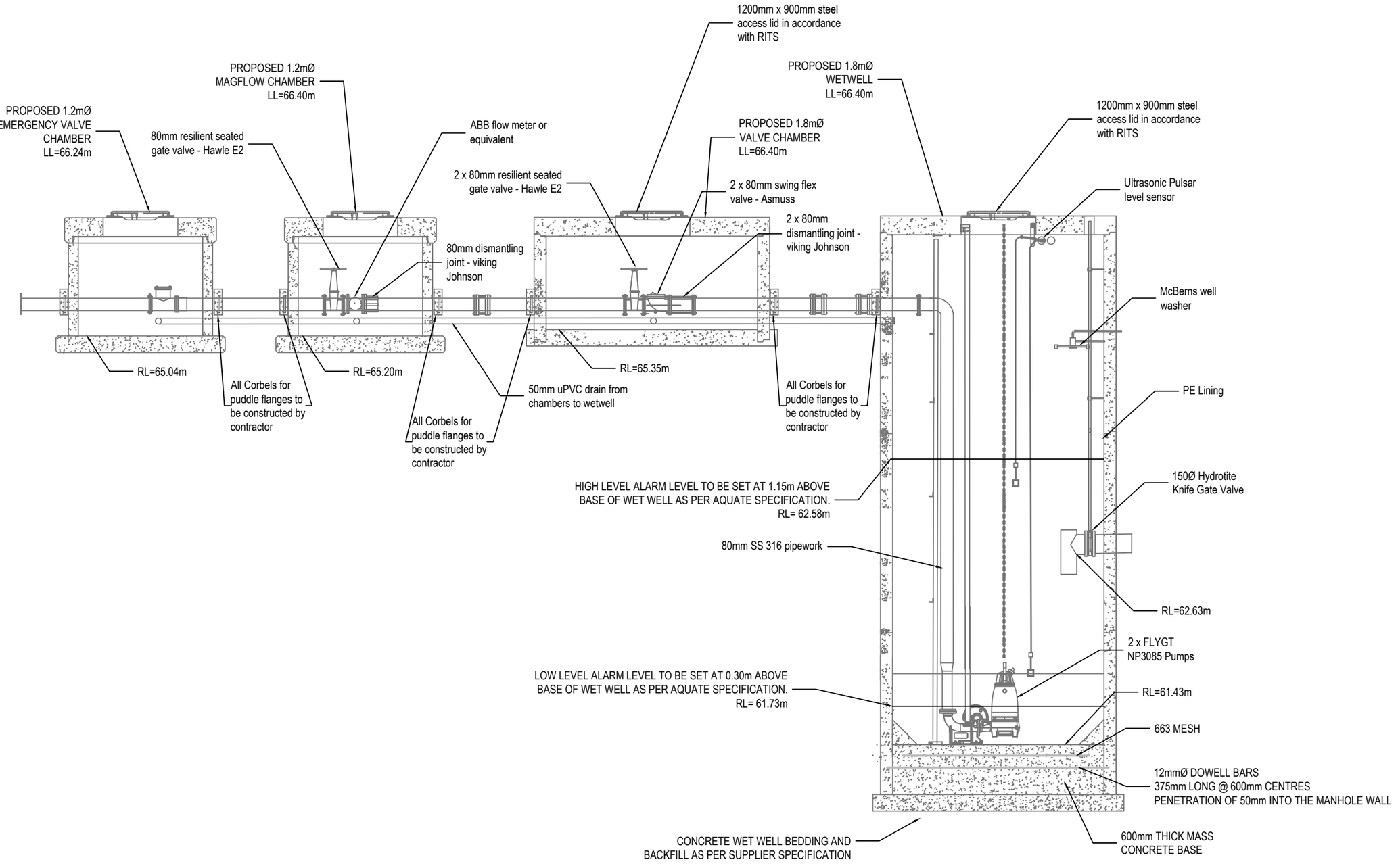
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED NORTHERN WASTEWATER PUMP DRAINAGE PLAN

Project no.	289001
Scale	1:200 @ A3
Cad file	C530-WASTEWATER-PUMP STATION.DWG
Drawing no.	C535-1 Rev A

DATE 4/7/25 FILE PATH F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C530-WASTEWATER PUMP STATION.DWG



WASTEWATER PUMP STATION TYPICAL CROSS SECTION

SCALE: NTS

RESOURCE CONSENT

NOTES

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Rev	Description	By	Date
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

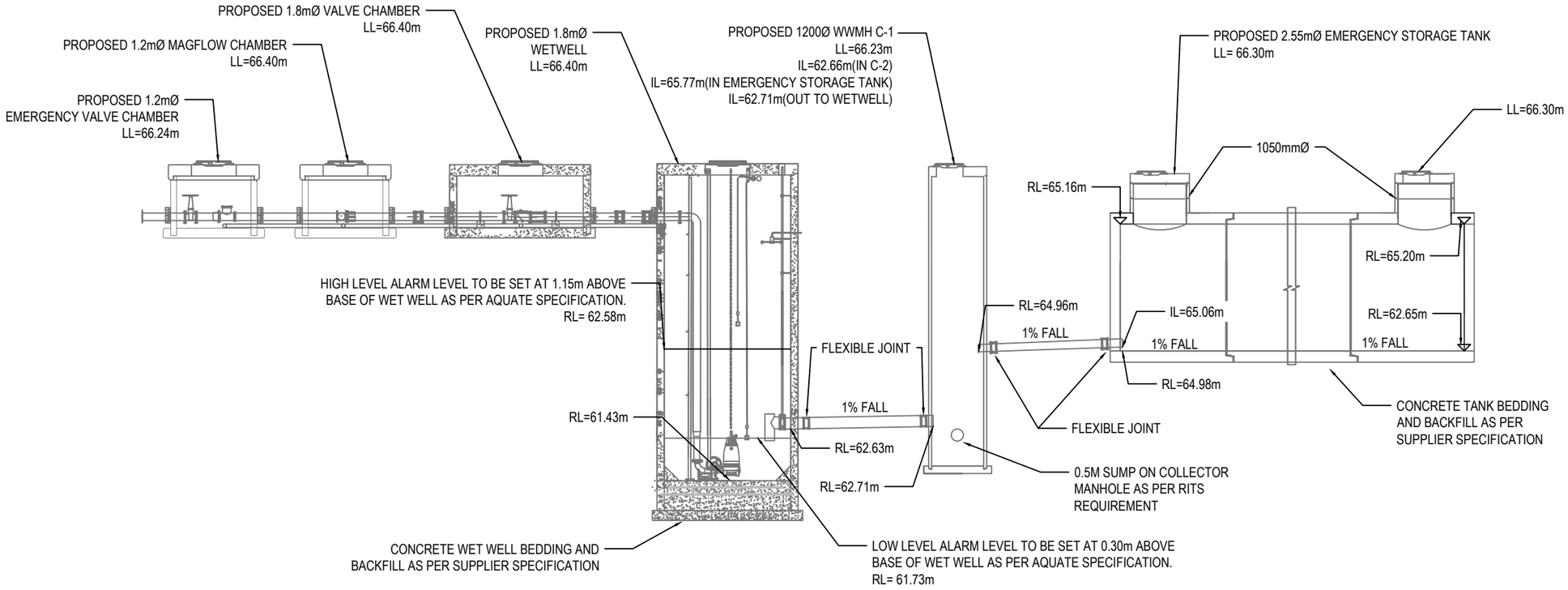
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED NORTHERN WASTEWATER PUMP TYPICAL CROSS SECTION

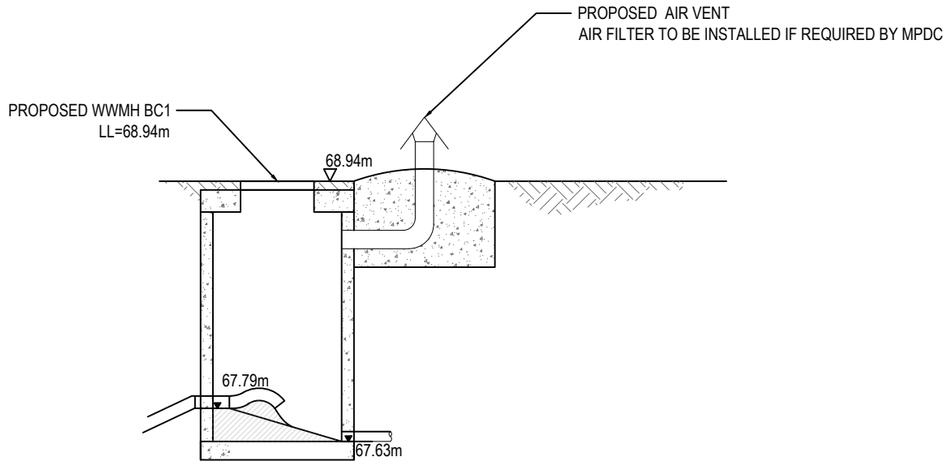
Project no.	289001		
Scale	NTS @ A3		
Cad file	C530-WASTEWATER-PUMP STATION.DWG		
Drawing no.	C535-2	Rev	A

DATE: 4/11/25 FILE PATH: P:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C530-WASTEWATER PUMP STATION.DWG



WASTEWATER PUMP STATION TYPICAL CROSS SECTION

SCALE: NTS



WASTEWATER PUMP STATION DISCHARGE MANHOLE TYPICAL CROSS SECTION

SCALE: NTS

RESOURCE CONSENT

NOTES

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Rev	Description	By	Date
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	TCH	04/2025
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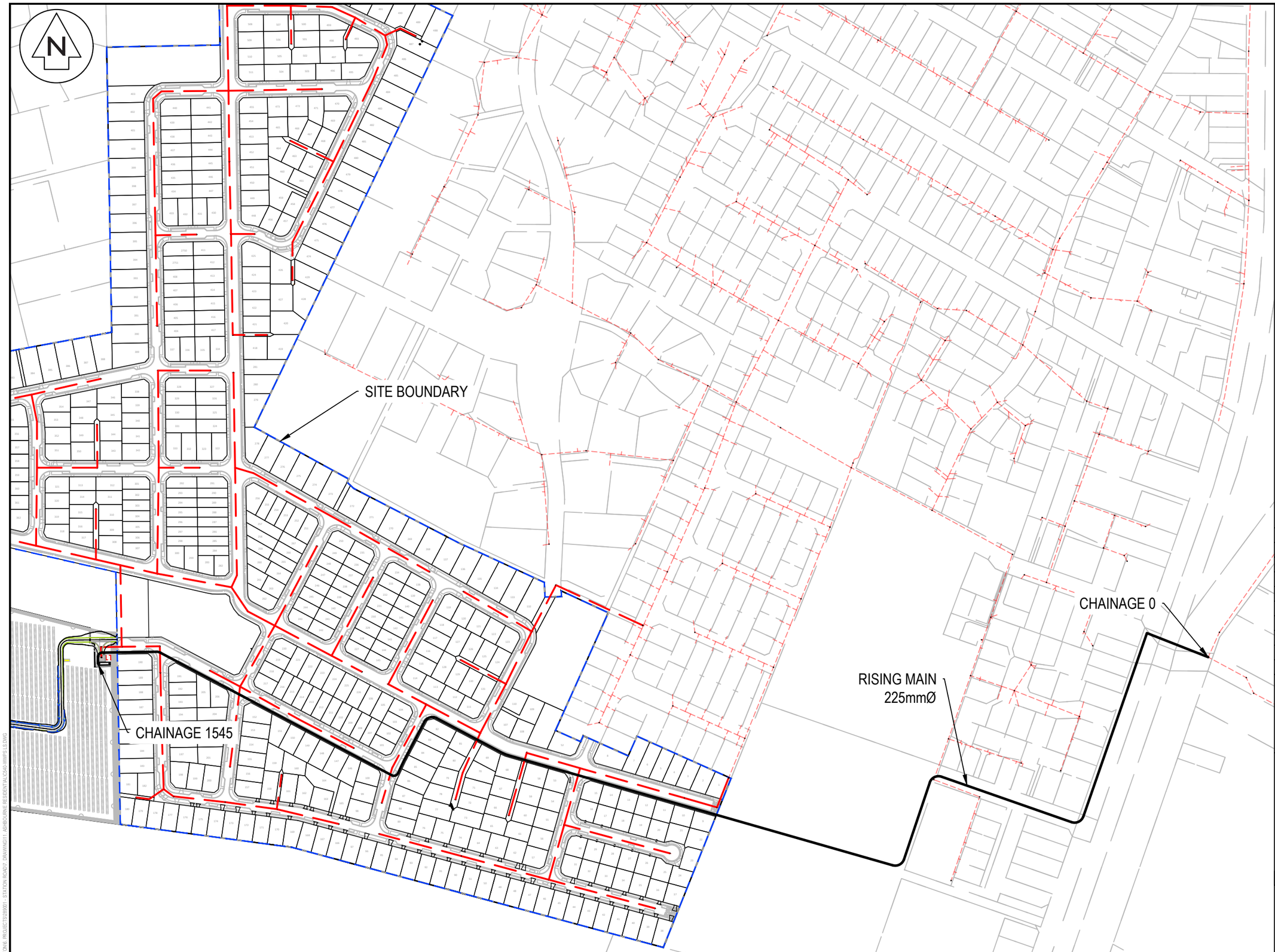
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED NORTHERN WASTEWATER PUMP TYPICAL CROSS SECTION

Project no.	289001
Scale	NTS @ A3
Cad file	C530-WASTEWATER-PUMP STATION.DWG
Drawing no.	C535-3 Rev A

DATE 4/10/25 FILEPATH: F:\MAVEN-HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C530-WASTEWATER-PUMP STATION.DWG



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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

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Project

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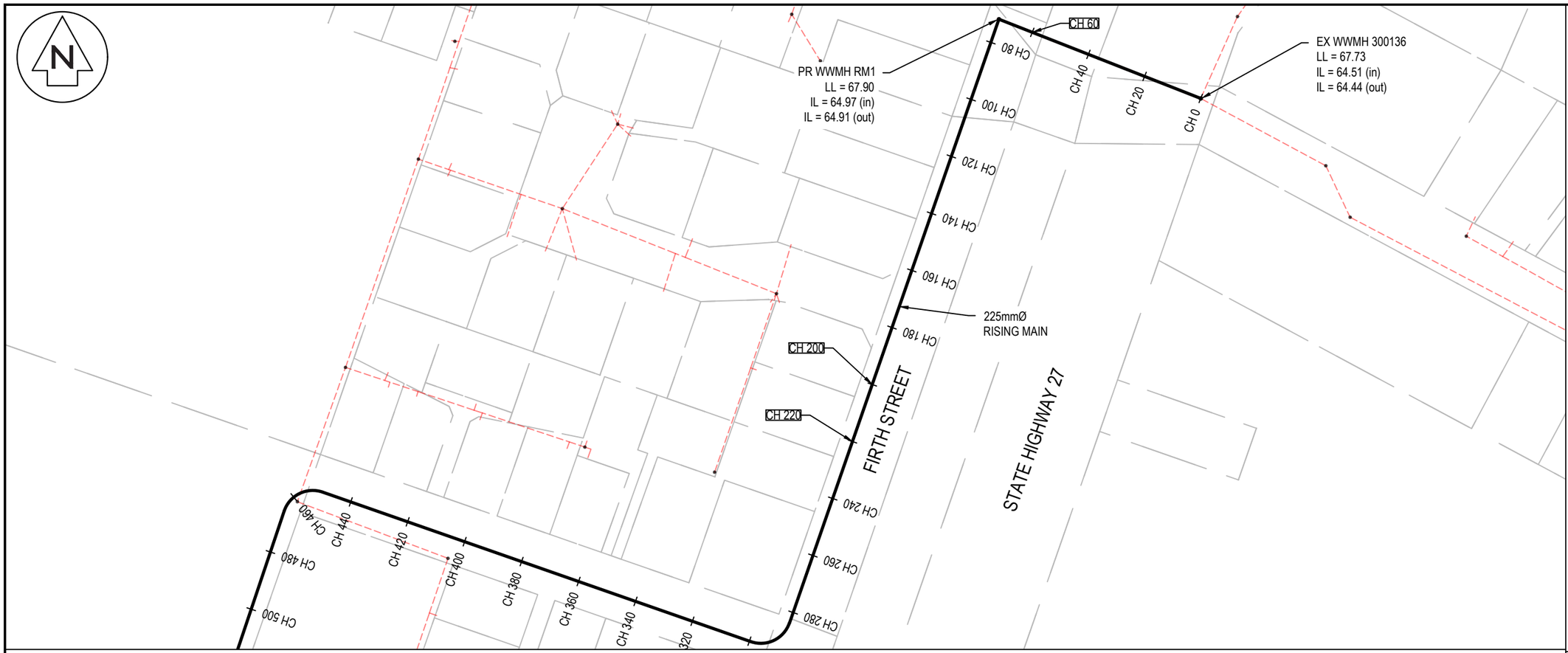
Title

PROPOSED WWPS RISING MAIN OVERVIEW PLAN

Project no.	289001		
Scale	1:4000 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540	Rev	B

RESOURCE CONSENT

DATE: 4/2025 FILE PATH: P:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG

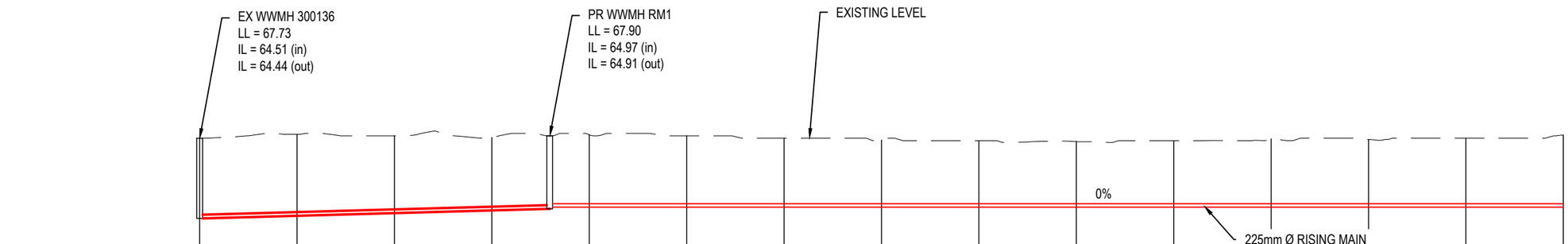


Notes

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Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN



DATUM 62.00m														
EXISTING LEVELS	67.80	67.96	67.90	67.83	67.94	67.90	67.80	67.73	67.70	67.66	67.70	67.78	67.75	67.80	67.93
DESIGN LEVELS															
RISING MAIN INVERT					64.97	64.97	64.97	64.97	64.97	64.97	64.97	64.97	64.97	64.97	64.97
DEPTH INVERT	64.51				2.97	2.93	2.83	2.76	2.73	2.69	2.73	2.80	2.78	2.83	2.95
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	240.00	260.00	280.00

LONGSECTION - CATCHMENT B (RISING MAIN 1)
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

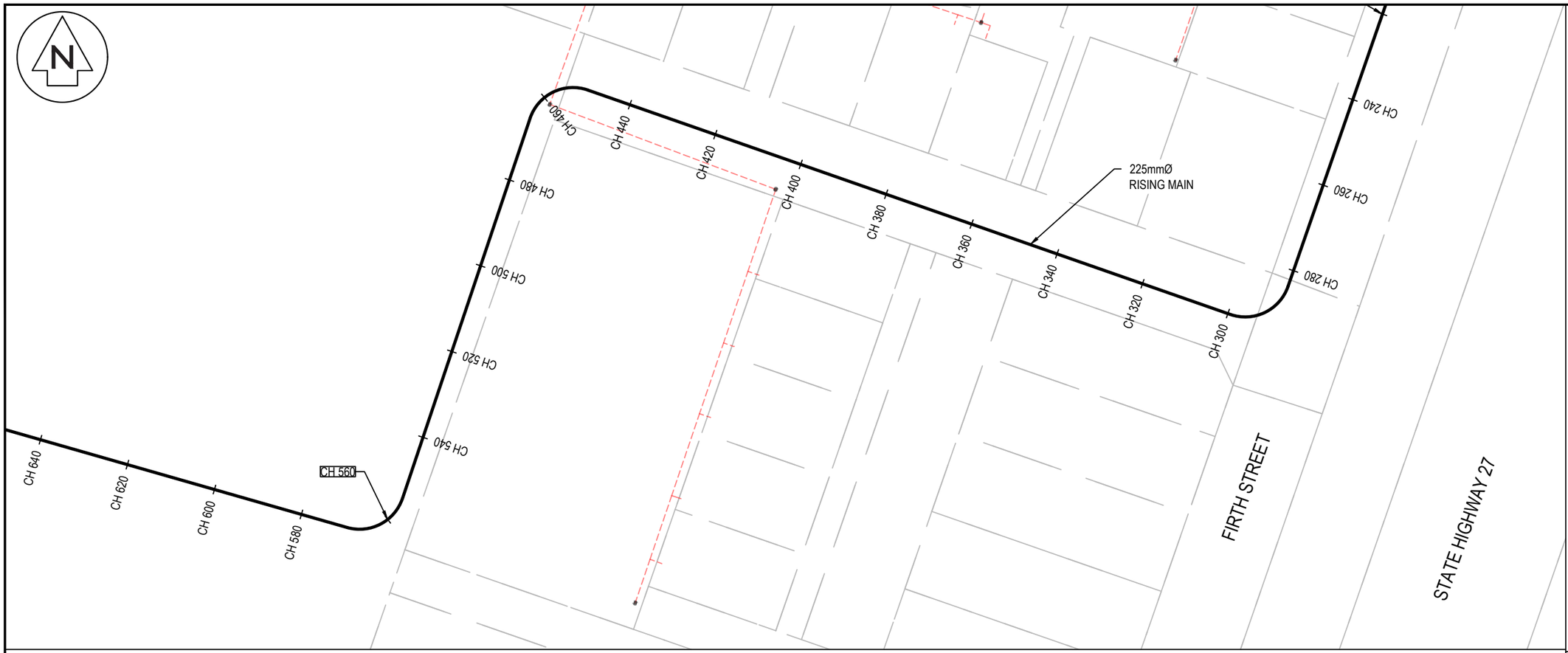
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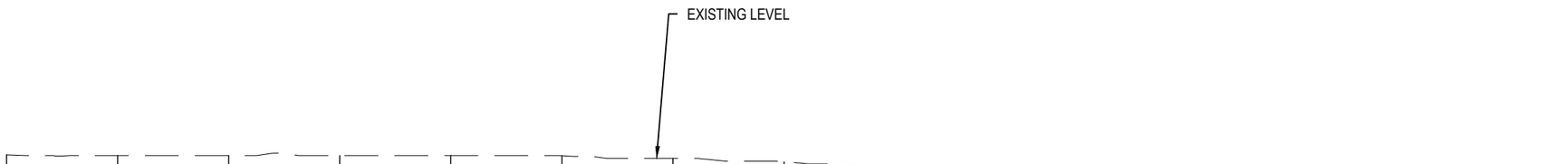
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WWPS RISING MAIN LONGSECTION

Project no.	289001		
Scale	1:1500 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540-1	Rev	B

DATE: 4/2/25 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\2890\1 - STATION ROAD\ DRAWINGS\1 ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG





DATUM 62.00m													
EXISTING LEVELS	67.93	67.90	67.90	67.90	67.90	67.89	67.80	67.68	67.39	66.82	66.90	67.19	67.32	67.39	67.37
DESIGN LEVELS															
RISING MAIN INVERT	64.97	64.97	64.97	64.97	64.97	64.97	64.97	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98
DEPTH INVERT	2.95	2.93	2.93	2.93	2.93	2.92	2.83	2.70	2.41	1.84	1.93	2.22	2.34	2.42	2.40
CHAINAGE	280.00	300.00	320.00	340.00	360.00	380.00	400.00	420.00	440.00	460.00	480.00	500.00	520.00	540.00	560.00

LONGSECTION - CATCHMENT B (RISING MAIN 1 CONT.)
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

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- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

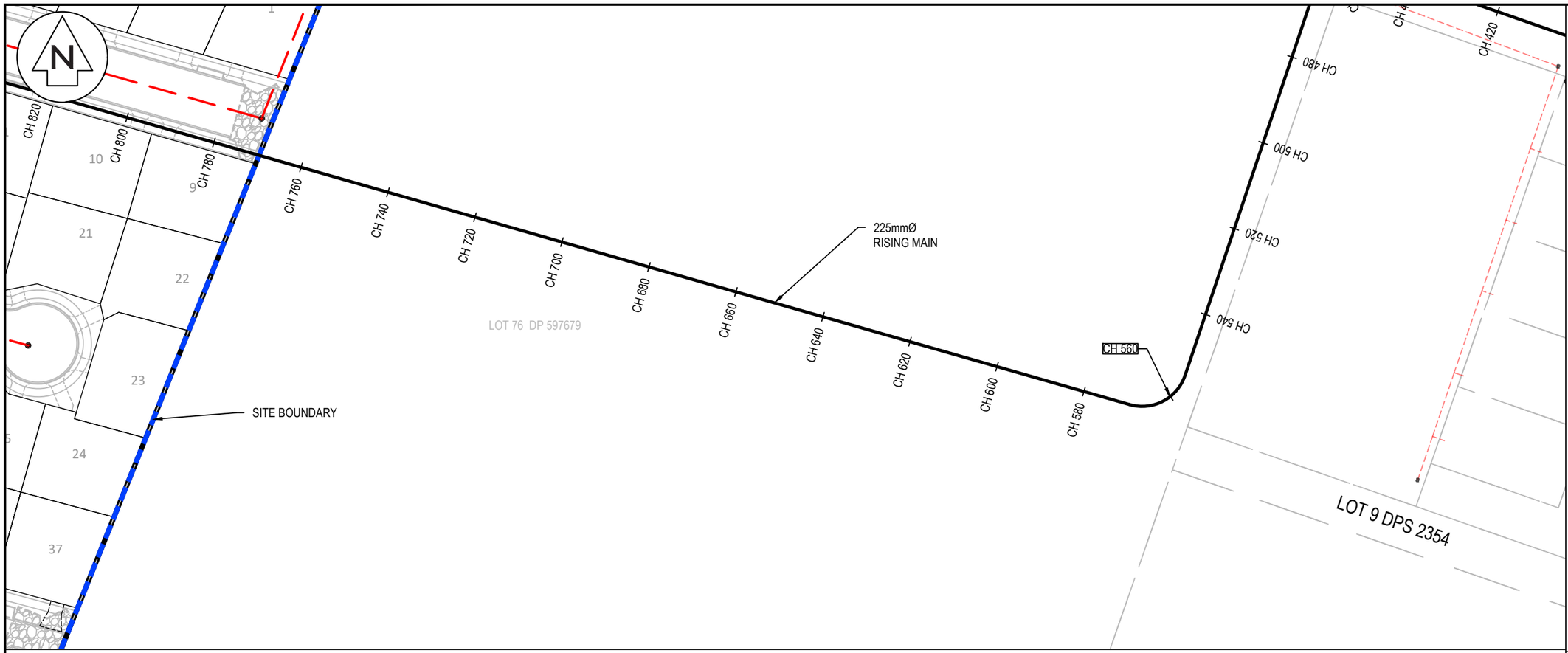
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5 Owens Road, Epsom
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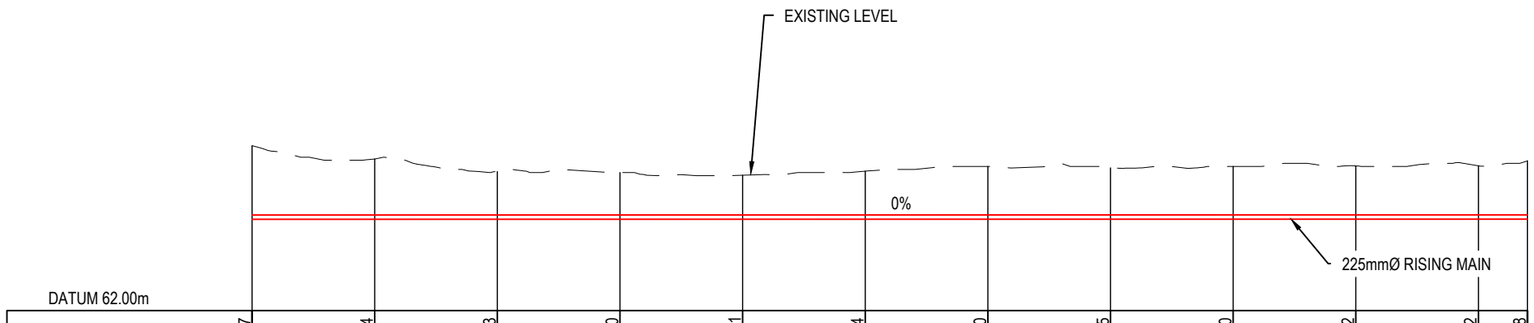
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WWPS RISING MAIN LONGSECTION

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540-2	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\2890\1 STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG





DATUM 62.00m											
EXISTING LEVELS	67.37	66.94	66.53	66.50	66.41	66.54	66.70	66.65	66.70	66.72	66.72	66.88
DESIGN LEVELS												
RISING MAIN INVERT	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98
DEPTH INVERT	2.40	1.97	1.56	1.52	1.44	1.57	1.72	1.68	1.72	1.74	1.74	1.90
CHAINAGE	560.00	580.00	600.00	620.00	640.00	660.00	680.00	700.00	720.00	740.00	760.00	768.00

LONGSECTION - CATCHMENT B (RISING MAIN 1 CONT.)
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the Contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all road crossings to council standards.
6. Heavy duty manhole lids and frames to be used in trafficked areas, all manholes shall have stainless grates installed.
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8. All lot connections are to be 100mmØ PVC unless shown otherwise.
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10. Manhole diameters shown on structure label are internal diameter.
11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

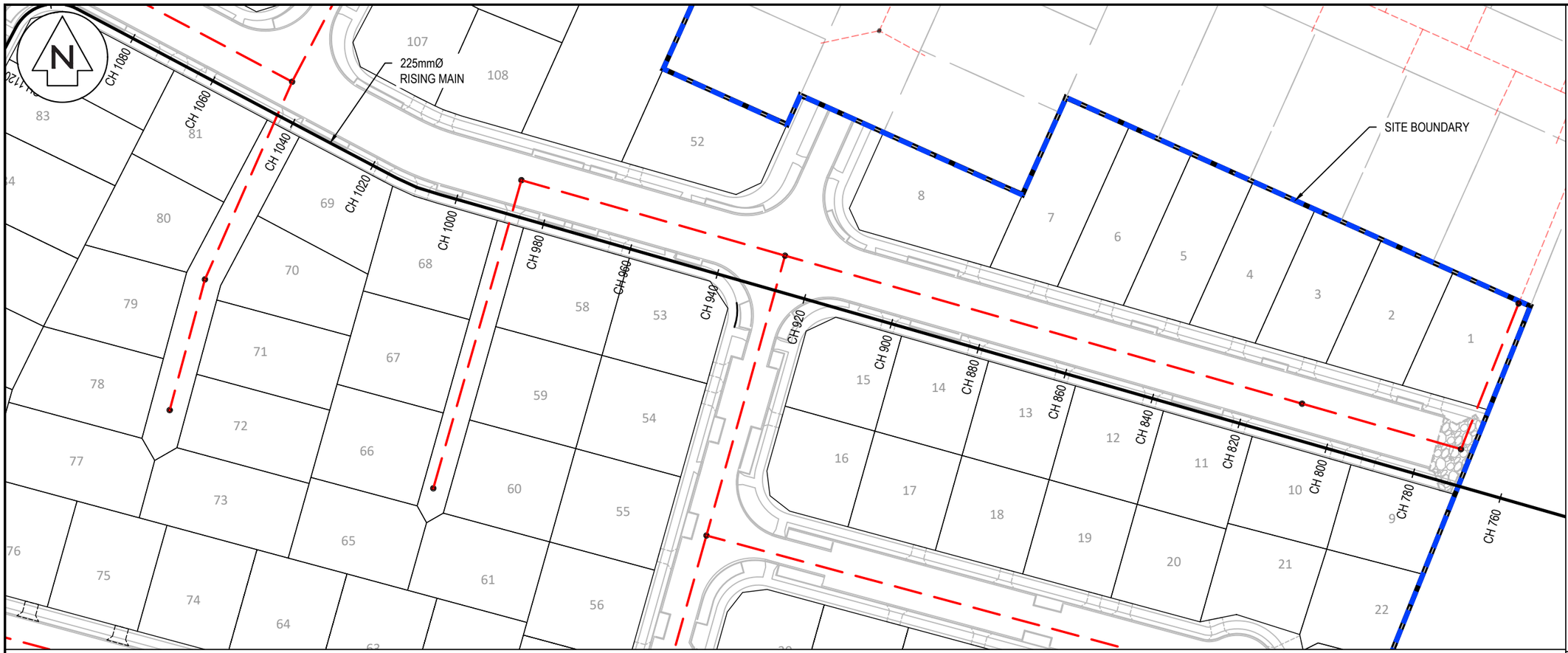
Maven Associates
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WWPS RISING MAIN LONGSECTION

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540-3	Rev	B

DATE 4/2025 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\2800\1 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG

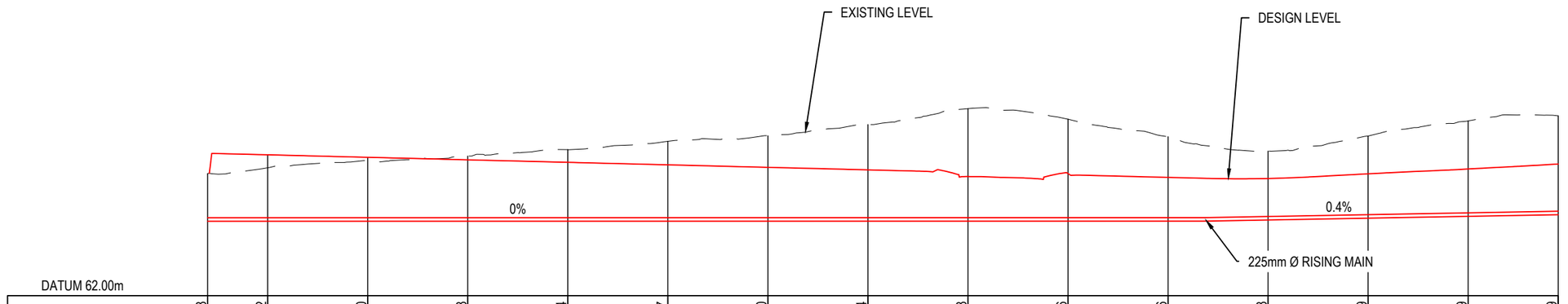


Notes

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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN



DATUM 62.00m

EXISTING LEVELS	66.88	67.12	67.40	67.58	67.84	68.17	68.40	68.84	69.48	69.06	68.36	67.78	68.39	68.99	69.19
DESIGN LEVELS		67.64	67.54	67.43	67.33	67.23	67.13	67.03	66.77	66.89	66.73	66.69	66.87	67.07	67.27
RISING MAIN INVERT	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	64.98	65.03	65.10	65.17	65.24
DEPTH INVERT		2.66	2.56	2.46	2.36	2.25	2.15	2.05	1.79	1.91	1.75	1.66	1.77	1.90	2.03
CHAINAGE	768.00	780.00	800.00	820.00	840.00	860.00	880.00	900.00	920.00	940.00	960.00	980.00	1000.00	1020.00	1038.00

LONGSECTION - CATCHMENT B (RISING MAIN 1 CONT.)
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

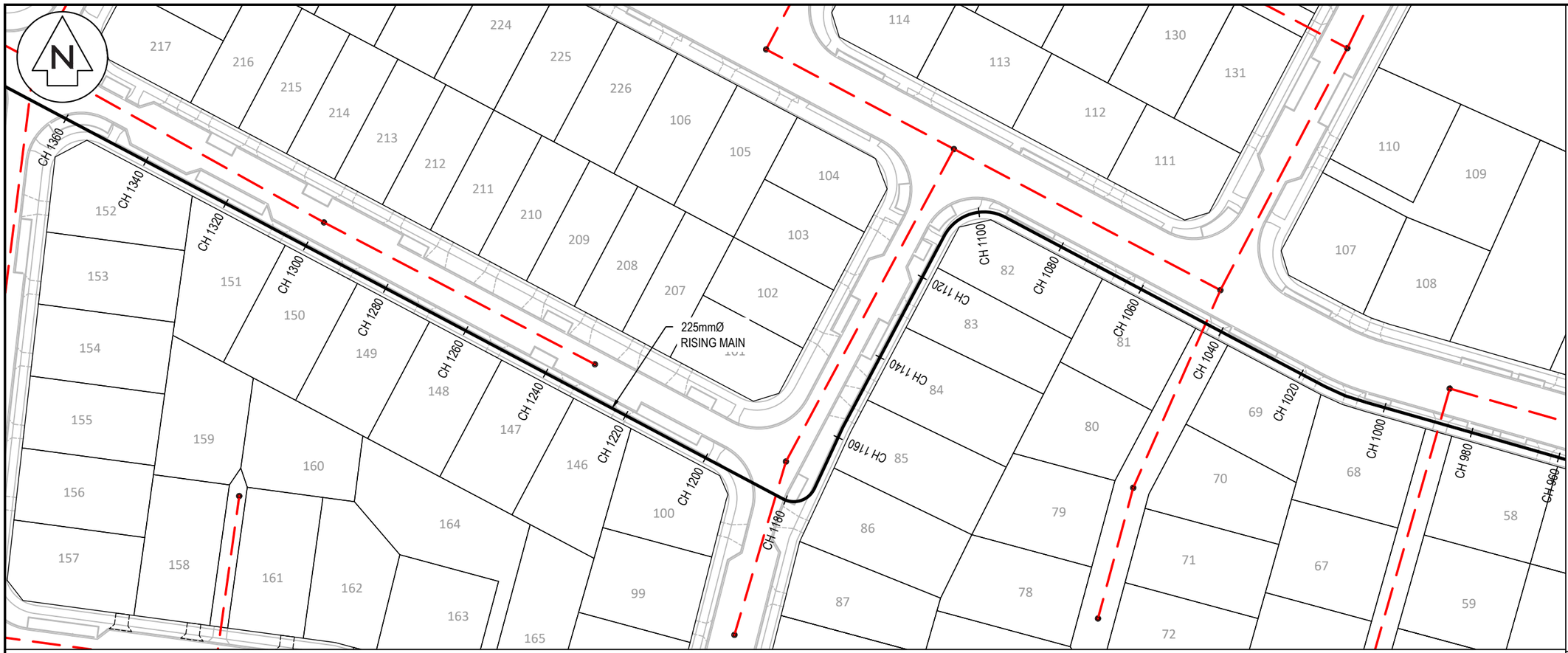
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WWPS RISING MAIN LONGSECTION

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540-4	Rev	B

DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWINGS\1 ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG

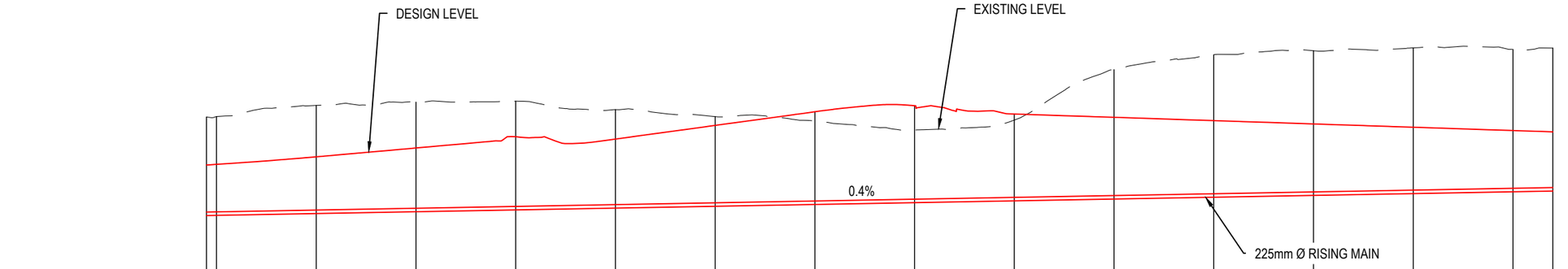


Notes

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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend

- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN



DATUM 62.00m														
EXISTING LEVELS	69.19	69.21	69.66	69.79	69.83	69.49	69.21	69.03	68.67	69.07	71.09	71.69	71.85	71.96	71.91	71.96
DESIGN LEVELS	67.27	67.29	67.59	67.95	68.40	68.31	68.85	69.40	69.64	69.31	69.18	69.05	68.91	68.78	68.65	68.60
RISING MAIN INVERT	65.24	65.25	65.32	65.39	65.46	65.54	65.61	65.68	65.76	65.83	65.90	65.97	66.05	66.12	66.19	66.22
DEPTH INVERT	2.03	2.05	2.28	2.56	2.94	2.77	3.24	3.72	3.89	3.48	3.28	3.07	2.87	2.66	2.46	2.37
CHAINAGE	1038.00	1040.00	1060.00	1080.00	1100.00	1120.00	1140.00	1160.00	1180.00	1200.00	1220.00	1240.00	1260.00	1280.00	1300.00	1308.00

LONGSECTION - CATCHMENT B (RISING MAIN 1 CONT.)
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

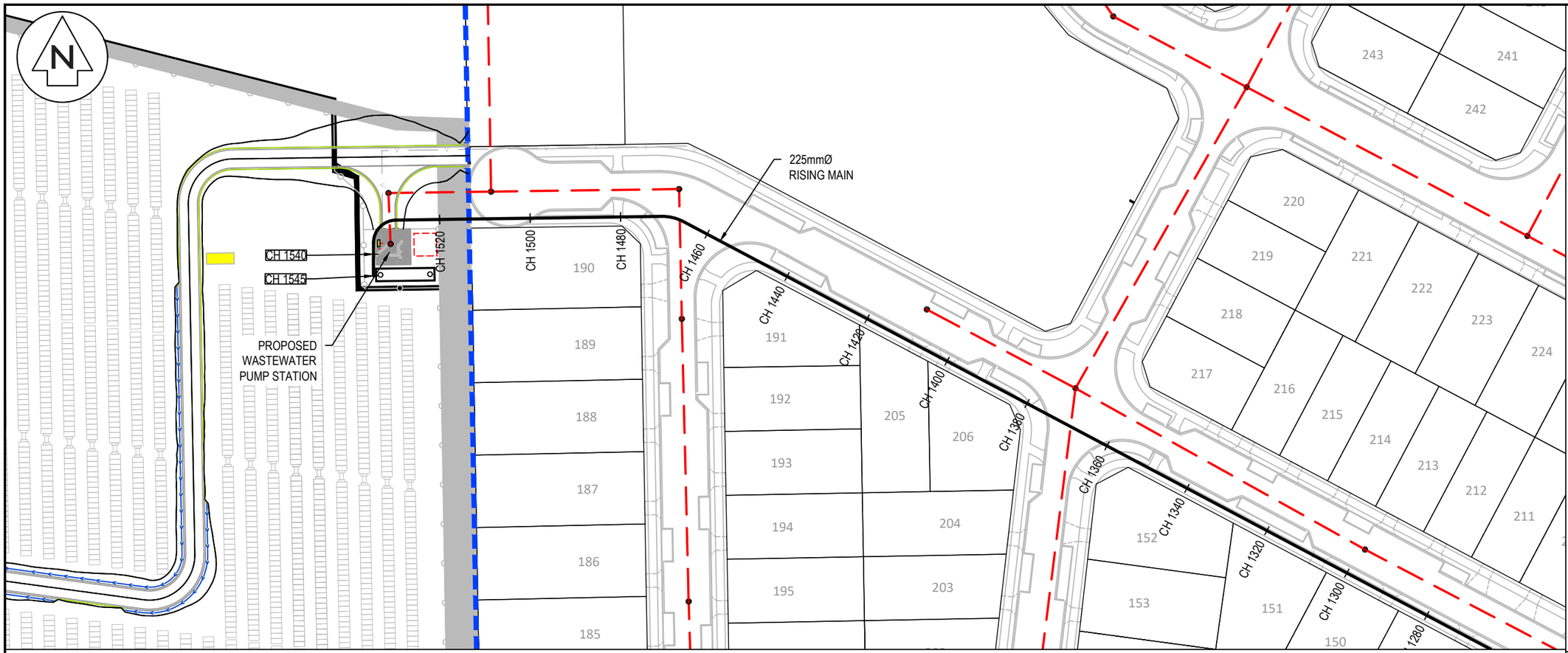
Maven Associates
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Auckland 1023

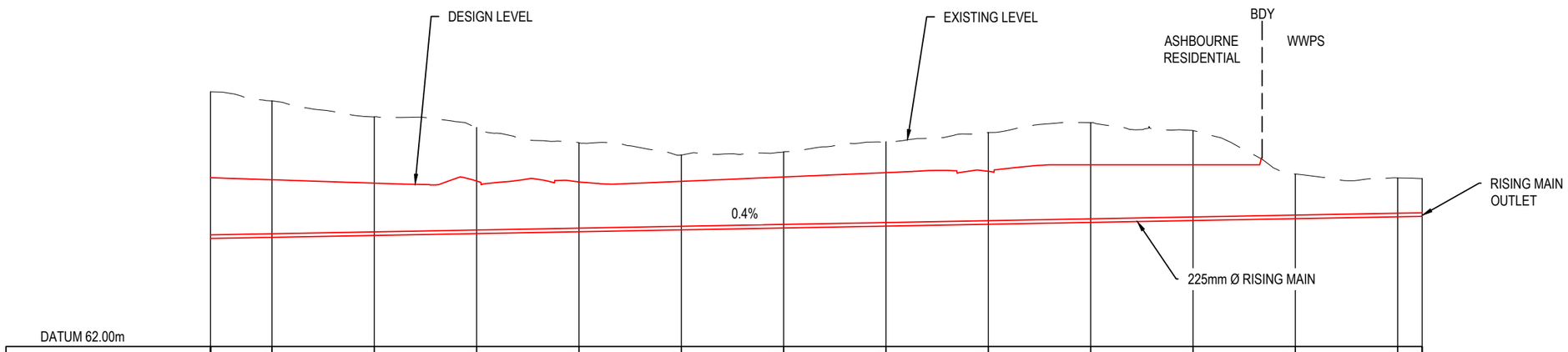
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WWPS RISING MAIN LONGSECTION

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540-5	Rev	B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG





DATUM 62.00m

EXISTING LEVELS	71.96	71.60	70.97	70.56	69.96	69.49	69.60	70.00	70.36	70.75	70.44	68.74	68.59	68.56
DESIGN LEVELS	68.60	68.52	68.38	68.47	68.43	68.45	68.63	68.80	68.85	69.10	69.10			
RISING MAIN INVERT	66.22	66.27	66.34	66.41	66.48	66.56	66.63	66.70	66.78	66.85	66.92	66.99	67.07	67.09
DEPTH INVERT	2.37	2.25	2.04	2.05	1.95	1.90	1.99	2.09	2.07	2.25	2.18			
CHAINAGE	1308.00	1320.00	1340.00	1360.00	1380.00	1400.00	1420.00	1440.00	1460.00	1480.00	1500.00	1520.00	1540.00	1544.79

LONGSECTION - CATCHMENT B (RISING MAIN 1 CONT.)
SCALE 1:1000 HORI & 1:200 VERTICAL @ A3

RESOURCE CONSENT

Notes
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2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
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13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Legend
- EX BOUNDARY
- PROP BOUNDARY
- EX WASTEWATER
- PR WASTEWATER
- EX/PROP WWMH
- PROP RISING MAIN

Rev	Description	By	Date
B	FAST TRACK APP	MKS	04/2025
A	FAST TRACK APP	MKS	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	MKS	04/2025
Drawn	MKS	04/2025
Checked	DJM	04/2025

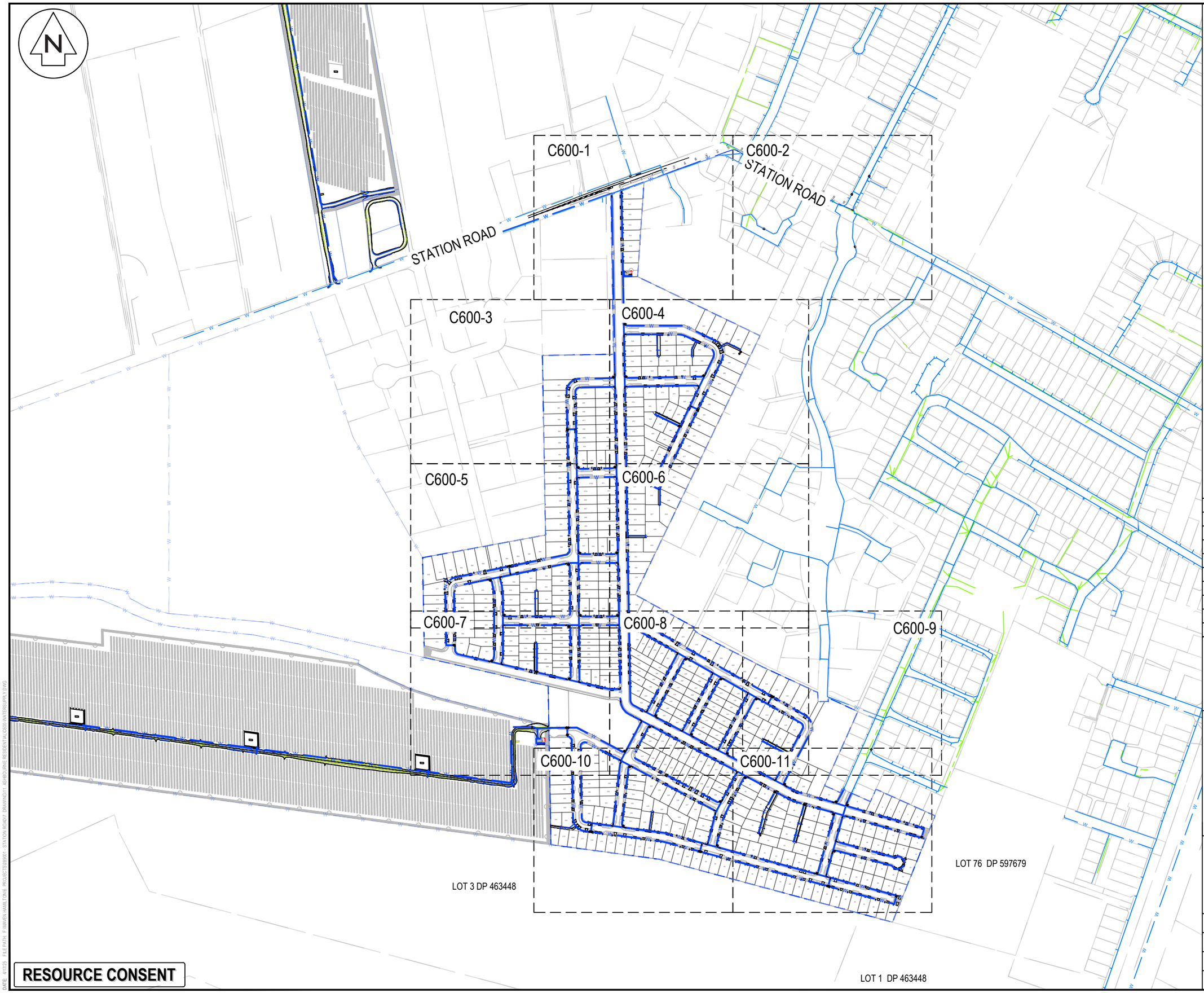
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Auckland 1023

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WWPS RISING MAIN LONGSECTION

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C540-WWPS LS.DWG		
Drawing no.	C540-6	Rev	B

DATE: 4/2025 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\2800\1 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C540-WWPS LS.DWG



NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
4. BENCHMARK: IT I DPS 29877 RL:65.51. SOURCED FROM THE LINZ GEODETIC DATABASE.
5. ALL WATER LINES TO BE BLANK CAPPED BEYOND STAGING BOUNDARY. CONTRACTOR TO MAKE SURE BLANK CAP IS OUTSIDE OF FOOTPATH EXTENTS AND ACCESSIBLE FOR FUTURE EXTENSIONS.
6. ALL TOBIES WITHIN RIGHT OF WAYS (ROW) TO BE PLACED IN HEAVY DUTY TRAFFICABLE MANIFOLD BOX.
7. EXISTING SERVICES SHOWN ARE FROM B4UDIG AND ARE INDICATIVE ONLY. CONTRACTOR TO CONFIRM THEIR LOCATION PRIOR TO CONSTRUCTION.
8. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.

Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project

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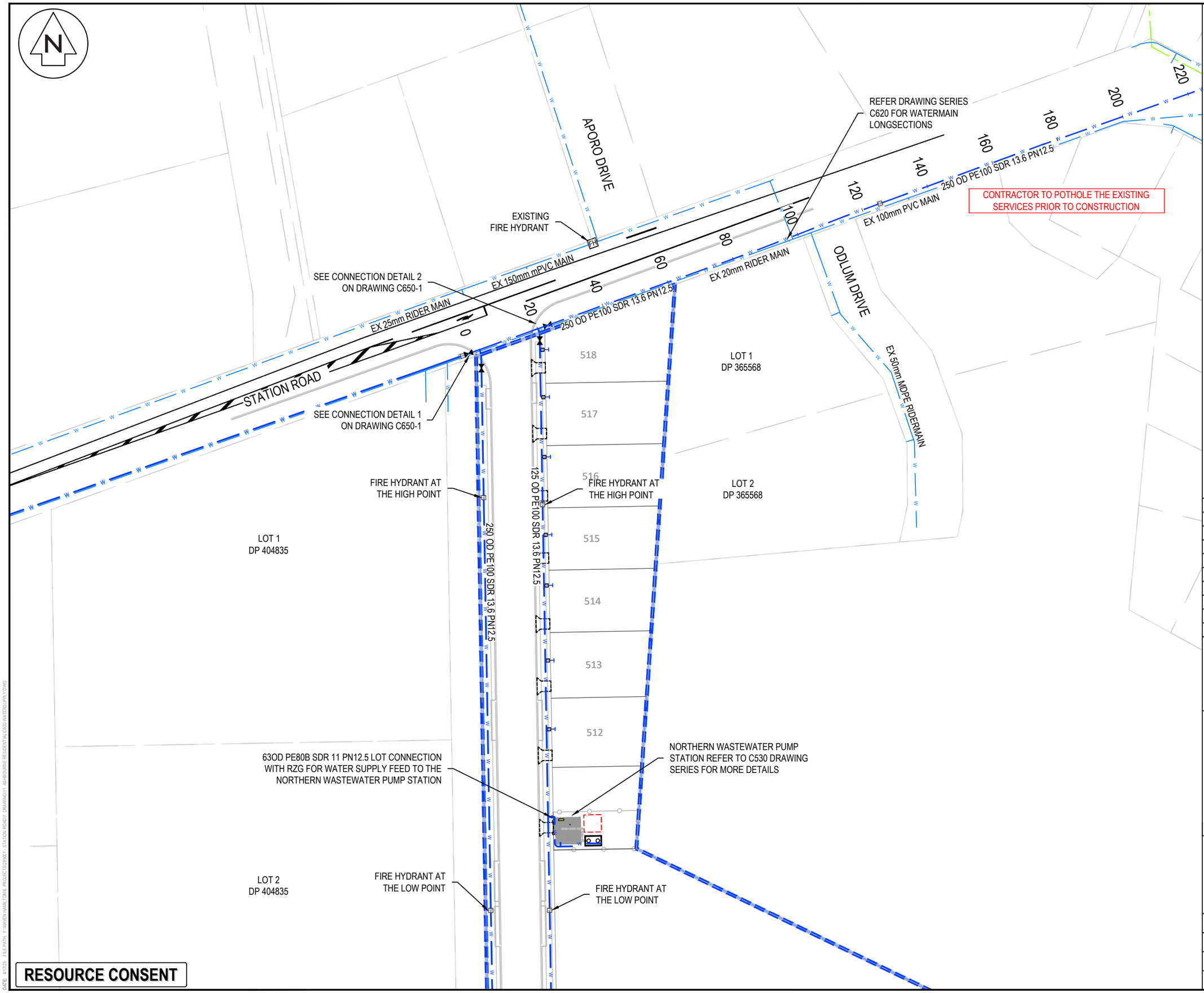
Title

PROPOSED WATER SUPPLY KEY PLAN

Project no.	289001
Scale	1:6000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600 Rev B

RESOURCE CONSENT

DATE: 4/2025 FILEPATH: F:\MAVEN\HAMILTON\PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



RESOURCE CONSENT

NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

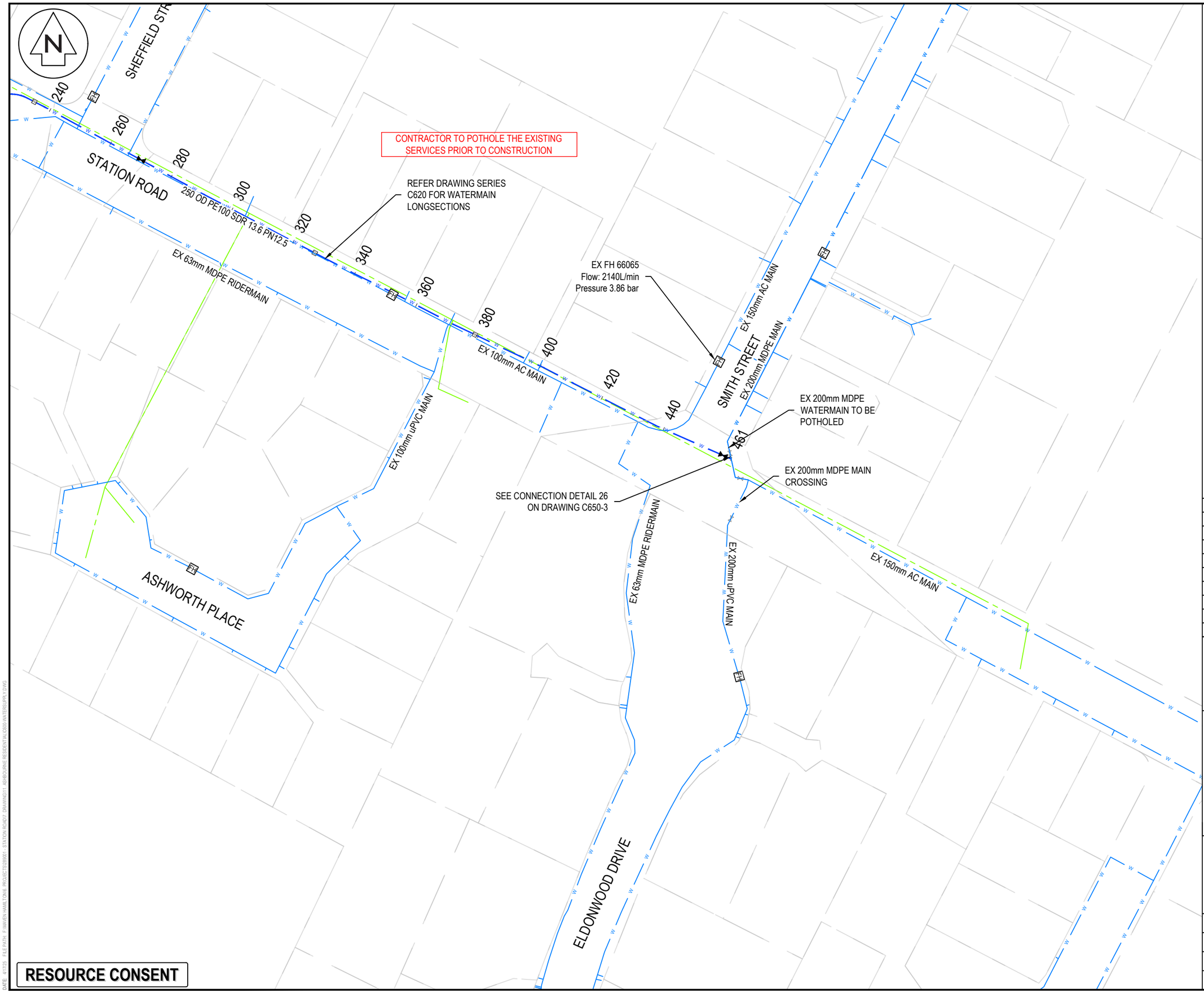
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 1 OF 11

Project no.	289001
Scale	1:1000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600-1 Rev B

DATE: 4/7/25 FILE PATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



NOTES

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2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
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- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
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- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project

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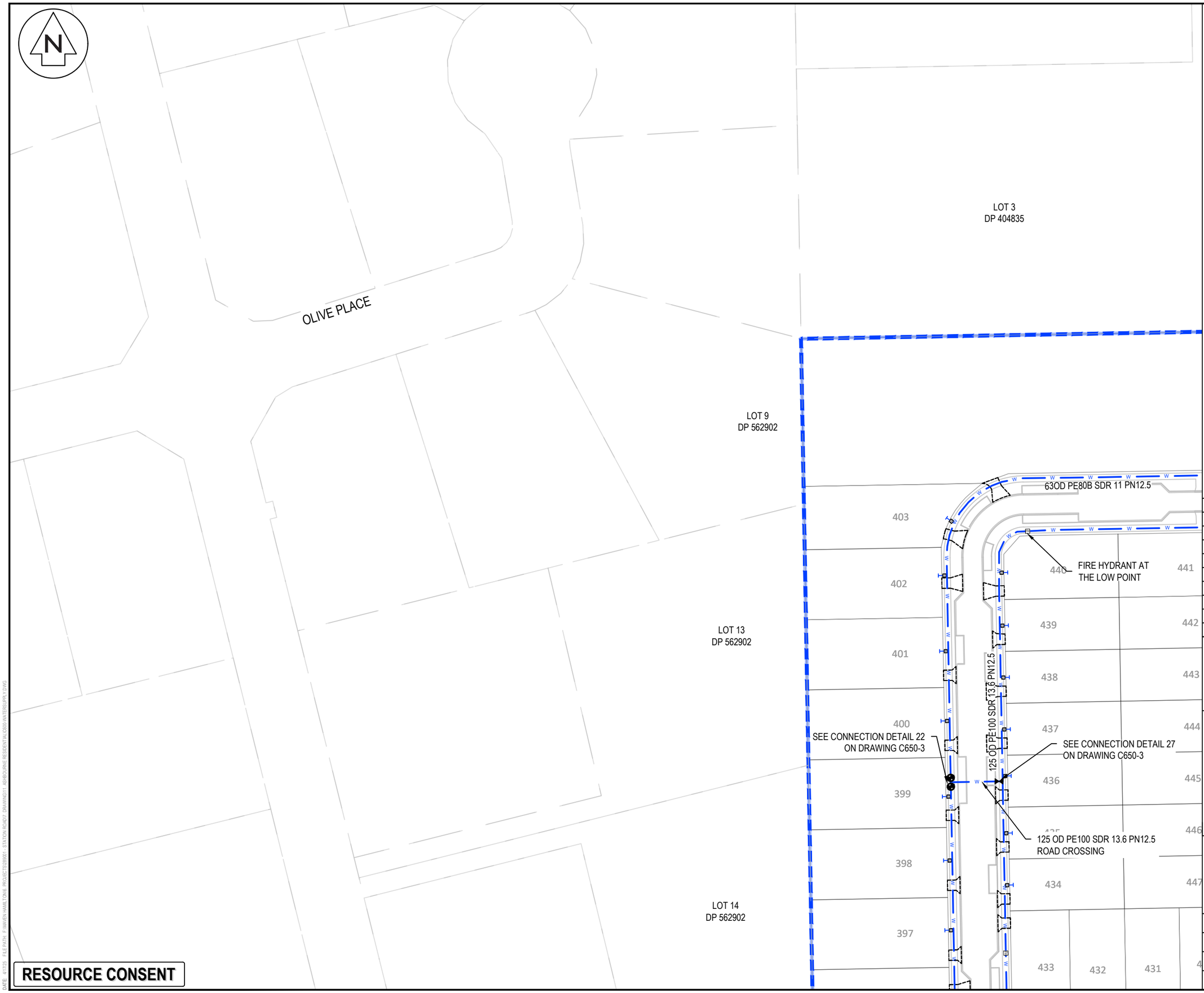
Title

PROPOSED WATER SUPPLY PLAN SHEET 2 OF 11

Project no.	289001
Scale	1:1000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600-2 Rev B

RESOURCE CONSENT

DATE 4/7/25 FILEPATH F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



NOTES

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3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
4. BENCHMARK: IT I DPS 29877 RL:65.51. SOURCED FROM THE LINZ GEODETIC DATABASE.
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6. ALL TOBIES WITHIN RIGHT OF WAYS (ROW) TO BE PLACED IN HEAVY DUTY TRAFFICABLE MANIFOLD BOX.
7. EXISTING SERVICES SHOWN ARE FROM B4UDIG AND ARE INDICATIVE ONLY. CONTRACTOR TO CONFIRM THEIR LOCATION PRIOR TO CONSTRUCTION.
8. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.

Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project

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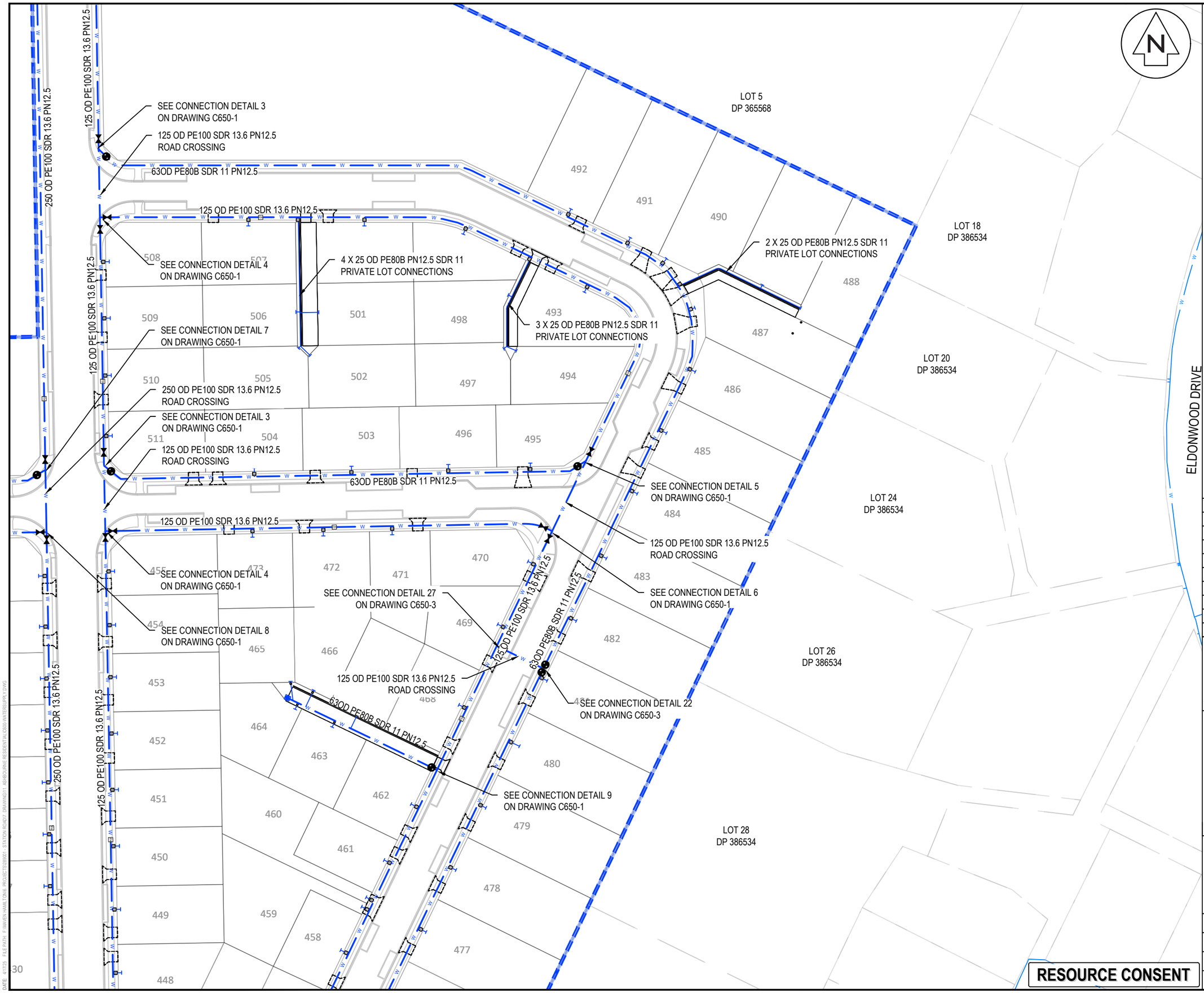
Title

PROPOSED WATER SUPPLY PLAN SHEET 3 OF 11

Project no.	289001
Scale	1:1000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600-3 Rev B

RESOURCE CONSENT

DATE: 4/7/25 FILEPATH: P:\MAVEN HAMILTON_PROJECTS\289001 - STATION ROAD\7. DRAWINGS\1. ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
4. BENCHMARK: IT I DPS 29877 RL:65.51. SOURCED FROM THE LINZ GEODETIC DATABASE.
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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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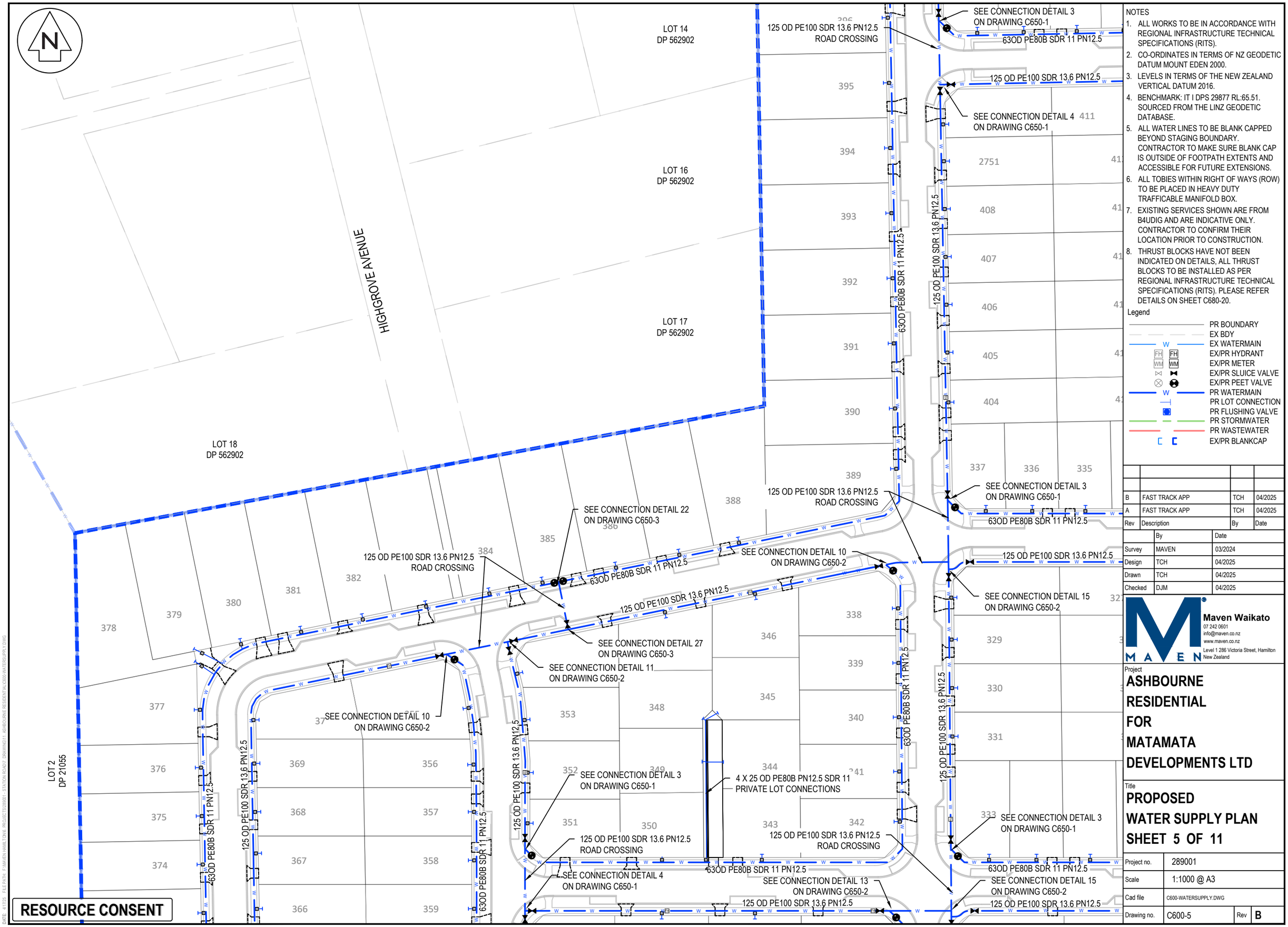
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 4 OF 11

Project no.	289001
Scale	1:1000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600-4 Rev B

RESOURCE CONSENT

DATE: 4/7/25 FILEPATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



NOTES

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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 5 OF 11

Project no.	289001
Scale	1:1000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600-5
Rev	B

DATE 4/7/25 FILEPATH P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD* DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG

SEE CONNECTION DETAIL 11
ON DRAWING C650-2

250 OD PE100 SDR
13.6 PN12.5
ROAD CROSSING

125 OD PE100 SDR 13.6 PN12.5
ROAD CROSSING

125 OD PE100 SDR
13.6 PN12.5

63OD PE80B SDR 11 PN12.5

SEE CONNECTION DETAIL 10
ON DRAWING C650-2

3 X 25 OD PE80B PN12.5 SDR 11
PRIVATE LOT CONNECTIONS

SEE CONNECTION DETAIL 7
ON DRAWING C650-1

SEE CONNECTION DETAIL 8
ON DRAWING C650-1

250 OD PE100 SDR 13.6 PN12.5

125 OD PE100 SDR 13.6 PN12.5

SEE CONNECTION DETAIL 7
ON DRAWING C650-1

250 OD PE100 SDR
13.6 PN12.5
ROAD CROSSING

SEE CONNECTION DETAIL 8
ON DRAWING C650-1

250 OD PE100 SDR 13.6 PN12.5

SEE CONNECTION DETAIL 7
ON DRAWING C650-1

SEE CONNECTION DETAIL 16
ON DRAWING C650-2

SEE CONNECTION DETAIL 3
ON DRAWING C650-1

125 OD PE100 SDR 13.6 PN12.5
ROAD CROSSING

250 OD PE100 SDR
13.6 PN12.5
ROAD CROSSING

SEE CONNECTION DETAIL 17
ON DRAWING C650-2

CHESTNUT LANE

EX 63mm RIDER MAIN

EX 125mm MDPE MAIN

LOT 44
DP 386534

LOT 47
DP 393306

LOT 43
DP 393306

LOT 36
DP 393306

457 476 475 474 426 429 425 424 423 427 428 422 421 420 418 419 281 280 279 278 275 411 412 413 414 415 416 417 335 334 327 326 325 324 323 322

N

NOTES

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Legend

- PR BOUNDARY
- EX BDY
- W EX WATERMAIN
- FH FH EX/PR HYDRANT
- WM WM EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- W PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 6 OF 11

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C600-6	Rev	B

RESOURCE CONSENT

DATE 4:17:25 FILEPATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG

N

63OD PE80B SDR 11 PN12.5

90° FITTED BEND

125 OD PE100 SDR 13.6 PN12.5

SEE CONNECTION DETAIL 18
ON DRAWING C650-2

63OD PE80B SDR 11 PN12.5

125 OD PE100 SDR 13.6 PN12.5

FIRE HYDRANT
LOCATED AT
THE LOW POINT

63OD PE80B
SDR 11 PN12.5

SEE CONNECTION DETAIL 9
ON DRAWING C650-1

125 OD PE100 SDR 13.6 PN12.5

63OD PE80B SDR 11 PN12.5

125 OD PE100 SDR 13.6 PN12.5

SEE CONNECTION DETAIL 3
ON DRAWING C650-1

SEE CONNECTION DETAIL 4
ON DRAWING C650-1

125 OD PE100 SDR 13.6 PN12.5
ROAD CROSSING

SEE CONNECTION DETAIL 4
ON DRAWING C650-1

SEE CONNECTION DETAIL 3
ON DRAWING C650-1

125 OD PE100 SDR 13.6 PN12.5
ROAD CROSSING

GREEN SPACE

COMMERCIAL HUB

63OD PE80B SDR 11 PN12.5

SEE CONNECTION DETAIL 22
ON DRAWING C650-3

25OD PE80B SDR 11 PN12.5

63OD PE80B SDR 11 PN12.5

63OD PE80B SDR 11 PN12.5 LOT CONNECTION
WITH RZG FOR WATER SUPPLY FEED TO THE
CENTRAL WASTEWATER PUMP STATION

90° FITTED BEND

SOUTHERN
SOLAR FARM

CENTRAL WASTEWATER PUMP
STATION REFER TO C530 DRAWING
SERIES FOR MORE DETAILS

125 OD PE PN12.5

63OD PE80B SDR 11 PN12.5

RESOURCE CONSENT

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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

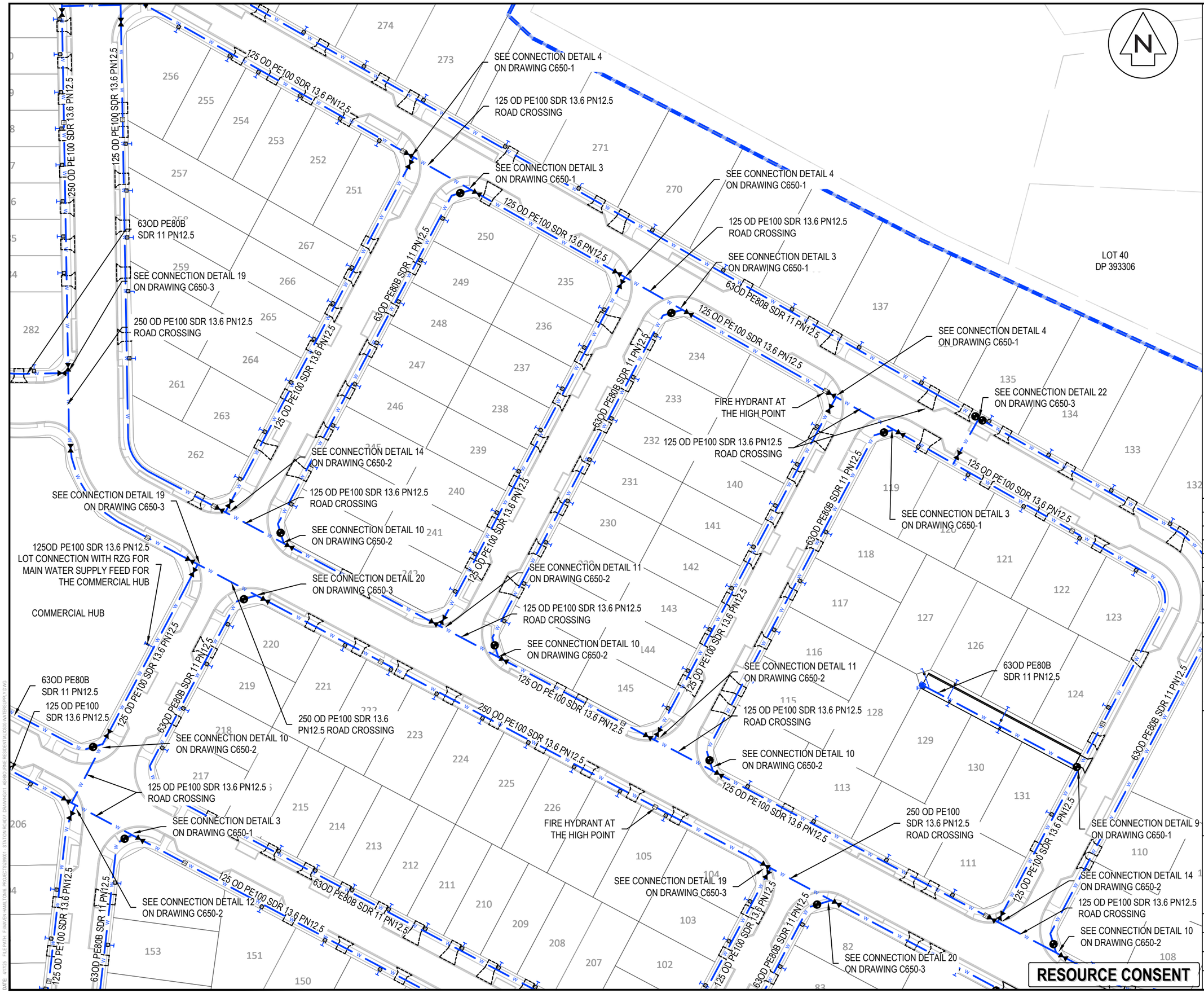
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 7 OF 11

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C600-7	Rev	B

DATE: 4/2025 FILE PATH: P:\MAVEN\HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



NOTES

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Legend

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- EX BDY
- EX WATERMAIN
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- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project

ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title

PROPOSED WATER SUPPLY PLAN SHEET 8 OF 11

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C600-8	Rev	B

RESOURCE CONSENT

DATE: 4/7/25 FILEPATH: F:\MAVEN\HAMILTON\PROJECTS\2800\...\STATION ROAD\...\DRAWING\1 ASHBOURNE RESIDENTIAL\C600 WATERSUPPLY.DWG

N

SEE CONNECTION DETAIL 22
ON DRAWING C650-3

ELDONWOOD DRIVE

EX 63mm RIDER MAIN

EX 200mm uPVC MAIN

LOT 40
DP 393306

268

FIRE HYDRANT AT
THE HIGH POINT

137

SEE CONNECTION DETAIL 4
ON DRAWING C650-1

136

125 OD PE100 SDR 13.6 PN12.5
ROAD CROSSING

135

SEE CONNECTION DETAIL 22
ON DRAWING C650-3

134

SEE CONNECTION DETAIL 27
ON DRAWING C650-3

133

63OD PE80B SDR 11 PN12.5

119

132

125 OD PE100 SDR 13.6 PN12.5

63OD PE80B SDR 11 PN12.5

SEE CONNECTION DETAIL 3
ON DRAWING C650-1

118

121

122

117

127

123

63OD PE80B
SDR 11 PN12.5

116

125

124

128

129

130

113

131

112

63OD PE80B SDR 11 PN12.5

125 OD PE100 SDR 13.6 PN12.5

SEE CONNECTION DETAIL 9
ON DRAWING C650-1

111

110

109

125 OD PE100 SDR 13.6 PN12.5

LOT 106
DP 393306

LOT 14
DP 584421

LOT 15
DP 584421

LOT 16
DP 584421

LOT 17
DP 584421

LOT 18
DP 584421

LOT 19
DP 584421

PEAKEDALE DRIVE

RESOURCE CONSENT

NOTES

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Legend

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- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

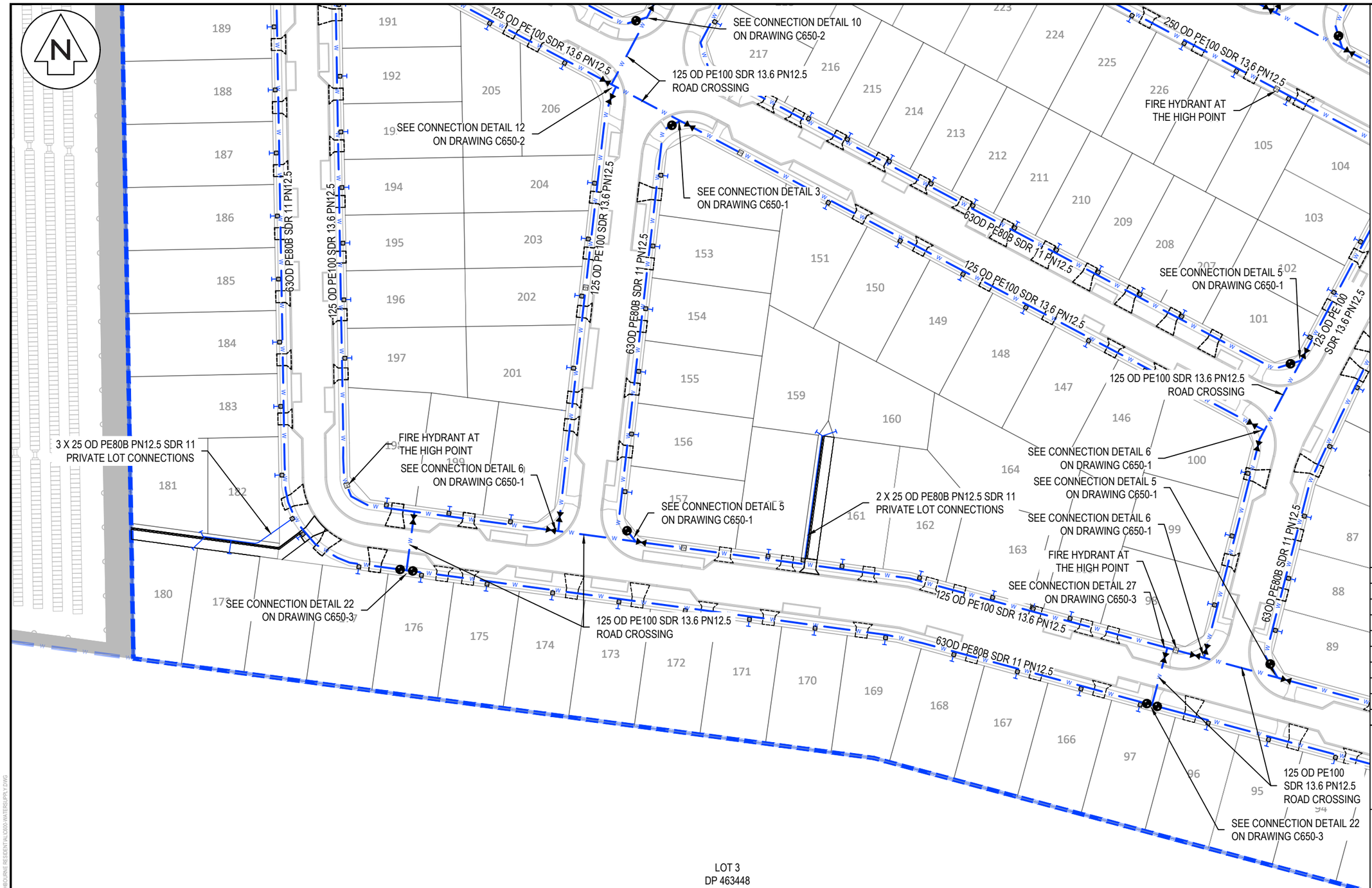
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 9 OF 11

Project no.	289001
Scale	1:1000 @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C600-9 Rev B

DATE 4/7/25 FILEPATH: E:\MAVEN\HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



NOTES

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Legend

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- EX BDY
- EX WATERMAIN
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- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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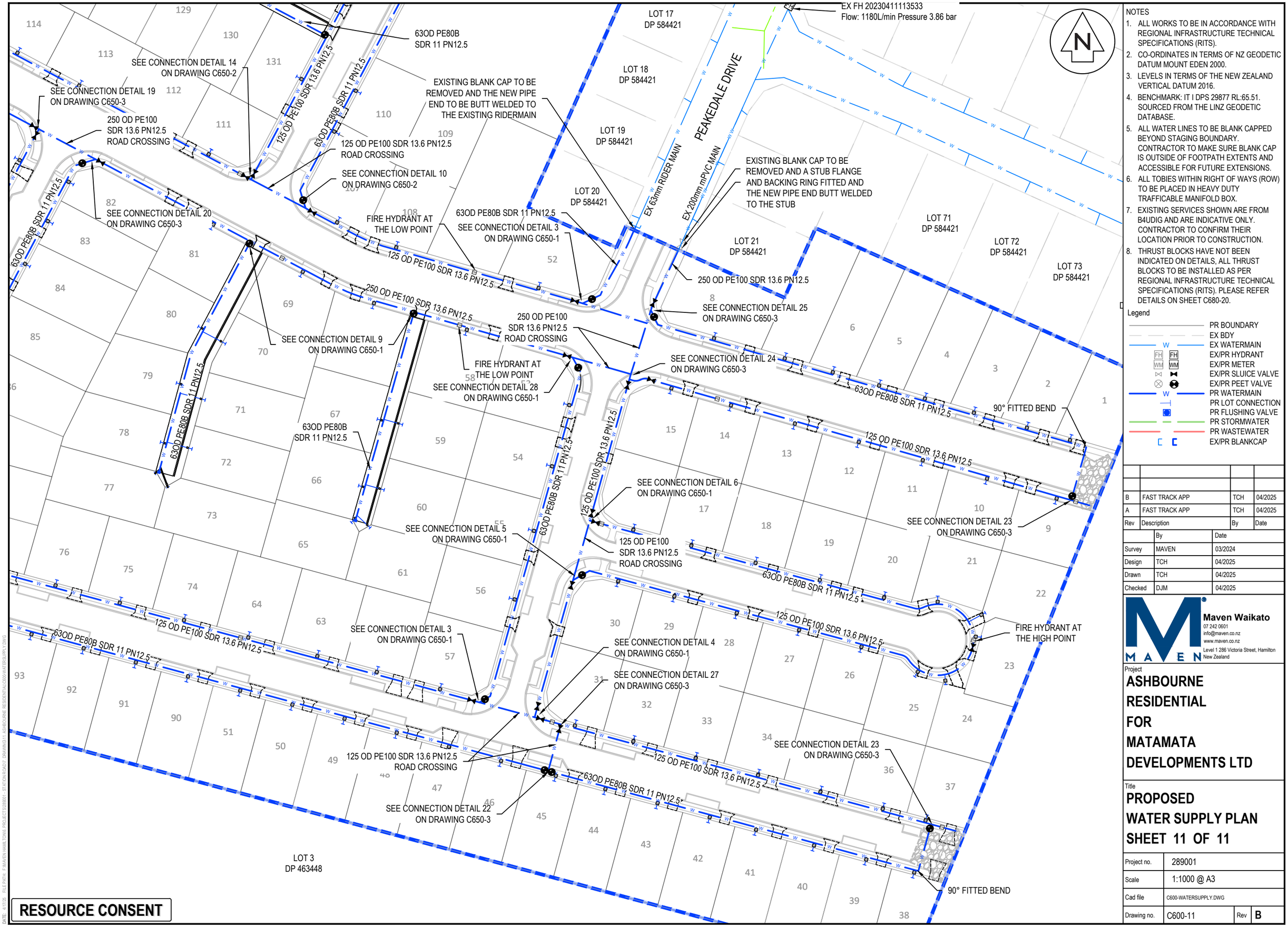
Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 10 OF 11

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C600-10	Rev	B

RESOURCE CONSENT

DATE: 4/7/25 FILE PATH: F:\MAVEN HAMILTON\ PROJECTS\289001 - STATION ROAD\ DRAWINGS\ ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



RESOURCE CONSENT

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3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
4. BENCHMARK: IT I DPS 29877 RL:65.51. SOURCED FROM THE LINZ GEODETIC DATABASE.
5. ALL WATER LINES TO BE BLANK CAPPED BEYOND STAGING BOUNDARY. CONTRACTOR TO MAKE SURE BLANK CAP IS OUTSIDE OF FOOTPATH EXTENTS AND ACCESSIBLE FOR FUTURE EXTENSIONS.
6. ALL TOBIES WITHIN RIGHT OF WAYS (ROW) TO BE PLACED IN HEAVY DUTY TRAFFICABLE MANIFOLD BOX.
7. EXISTING SERVICES SHOWN ARE FROM B4UDIG AND ARE INDICATIVE ONLY. CONTRACTOR TO CONFIRM THEIR LOCATION PRIOR TO CONSTRUCTION.
8. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.

Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY PLAN SHEET 11 OF 11

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C600-11	Rev	B

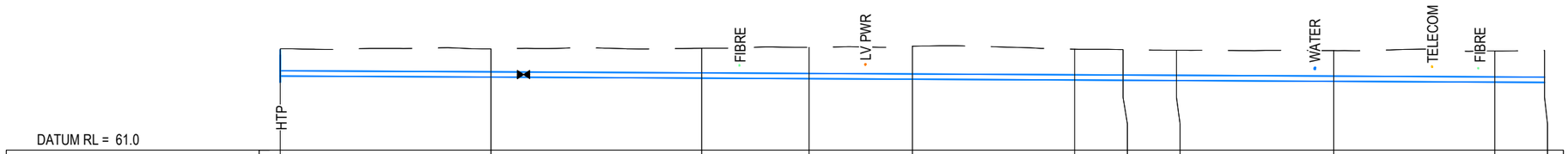
DATE: 4/7/25 FILEPATH: F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7. DRAWING\1 ASHBOURNE RESIDENTIAL\C600\WATERSUPPLY.DWG

NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
4. BENCHMARK: IT I DPS 29877 RL:65.51. SOURCED FROM THE LINZ GEODETIC DATABASE.
5. ALL WATER LINES TO BE BLANK CAPPED BEYOND STAGING BOUNDARY. CONTRACTOR TO MAKE SURE BLANK CAP IS OUTSIDE OF FOOTPATH EXTENTS AND ACCESSIBLE FOR FUTURE EXTENSIONS.
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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP



HORIZONTAL GEOMETRY											
VERTICAL GEOMETRY											
EXISTING LEVELS	65.80	65.79	65.82	65.87	65.92	65.78	65.76	65.73	65.72	65.70	65.72
PIPE INVERT	64.51	64.46	64.41	64.38	64.36	64.32	64.31	64.30	64.26	64.22	64.21
CUT/FILL	-1.29	-1.33	-1.41	-1.49	-1.56	-1.46	-1.45	-1.44	-1.46	-1.48	-1.51
CHAINAGE	0.00	20.00	40.00	50.20	60.00	75.41	80.00	85.06	100.00	115.28	120.00

WATERMAIN 1 250OD PE100 PN12.5 SDR 13.6 LONGITUDINAL SECTION
SCALE HORI 1:500 VERT 1:250

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY LONGITUDINAL SECTIONS SHEET 1 OF 4

Project no.	289001		
Scale	1:500 H 1:250 V @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C620-1	Rev	B

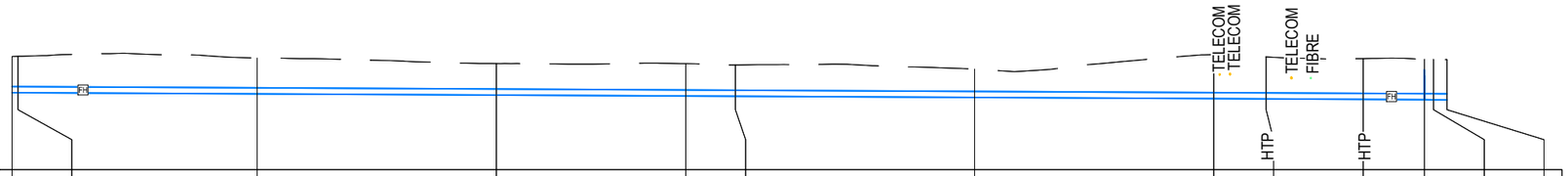
DATE 4/7/25 FILEPATH: F:\MAVEN-HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG

NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP



DATUM RL = 61.0

HORIZONTAL GEOMETRY													
VERTICAL GEOMETRY													
EXISTING LEVELS	65.72	65.72	65.65	65.42	65.42	65.36	65.19	65.79	65.70	65.63	65.60	65.60	65.59
PIPE INVERT	64.21	64.21	64.16	64.11	64.07	64.06	64.01	63.96	63.95	63.93	63.91	63.91	63.91
CUT/FILL	-1.51	-1.51	-1.49	-1.31	-1.35	-1.3	-1.18	-1.83	-1.75	-1.7	-1.69	-1.69	-1.68
CHAINAGE	119.50	120.00	140.00	160.00	175.85	180.00	200.00	220.00	224.38	232.49	237.62	238.38	239.50

WATERMAIN 1 250OD PE100 PN12.5 SDR 13.6 LONGITUDINAL SECTION
SCALE HORI 1:500 VERT 1:250

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

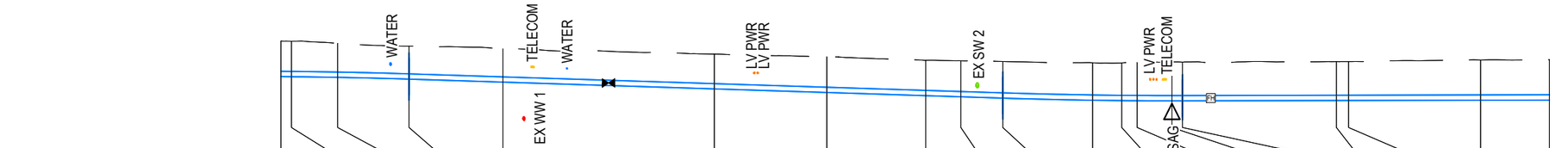
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY LONGITUDINAL SECTIONS SHEET 2 OF 4

Project no.	289001		
Scale	1:500 H 1:250 V @ A3		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C620-2	Rev	B

DATE 4/7/25 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



DATUM RL = 59.0

HORIZONTAL GEOMETRY																				
VERTICAL GEOMETRY		VC=13.5m K=10				-1.6%					VC=17m K=10				0.1%					
EXISTING LEVELS	65.59	65.59	65.49	65.35	65.23	64.97	64.85	64.68	64.66	64.63	64.56	64.56	64.58	64.61	64.60	64.62	64.62	64.70	64.71	
PIPE INVERT	63.91	63.91	63.88	63.79	63.65	63.33	63.16	63.01	62.95	62.89	62.79	62.77	62.77	62.76	62.76	62.78	62.78	62.79	62.80	
CUT/FILL	-1.68	-1.68	-1.61	-1.56	-1.58	-1.65	-1.69	-1.67	-1.7	-1.74	-1.77	-1.79	-1.81	-1.84	-1.83	-1.84	-1.84	-1.91	-1.91	
CHAINAGE	239.00	240.00	244.37	251.12	260.00	280.00	290.64	300.00	303.32	307.29	315.79	318.54	320.00	323.29	324.29	338.85	340.00	352.49	359.00	

WATERMAIN 1 250OD PE100 PN12.5 SDR 13.6 LONGITUDINAL SECTION
SCALE HORI 1:500 VERT 1:250

RESOURCE CONSENT

NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
4. BENCHMARK: IT I DPS 29877 RL:65.51. SOURCED FROM THE LINZ GEODETIC DATABASE.
5. ALL WATER LINES TO BE BLANK CAPPED BEYOND STAGING BOUNDARY. CONTRACTOR TO MAKE SURE BLANK CAP IS OUTSIDE OF FOOTPATH EXTENTS AND ACCESSIBLE FOR FUTURE EXTENSIONS.
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Legend

- PR BOUNDARY
- EX BDY
- W — EX WATERMAIN
- FH FH — EX/PR HYDRANT
- WM WM — EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- W — PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY LONGITUDINAL SECTIONS SHEET 3 OF 4

Project no.	289001
Scale	1:500 H 1:250 V @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C620-3 Rev B

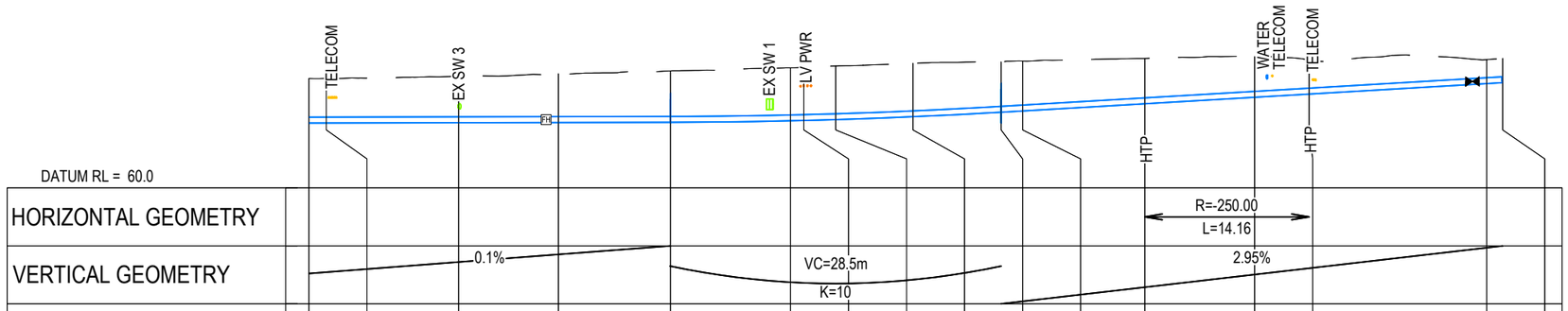
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NOTES

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Legend

- PR BOUNDARY
- EX BDY
- EX WATERMAIN
- EX/PR HYDRANT
- EX/PR METER
- EX/PR SLUICE VALVE
- EX/PR PEET VALVE
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER
- EX/PR BLANKCAP



EXISTING LEVELS	64.72	64.72	64.82	64.92	65.04	65.18	65.22	65.26	65.37	65.43	65.47	65.58	65.66	65.52	65.53	65.58	
PIPE INVERT	62.80	62.80	62.81	62.82	62.83	62.89	62.91	62.95	63.07	63.26	63.32	63.63	63.91	64.05	64.50	64.54	
CUT/FILL	-1.92	-1.92	-2	-2.1	-2.21	-2.28	-2.31	-2.31	-2.3	-2.17	-2.15	-1.95	-1.75	-1.47	-1.03	-1.05	
CHAINAGE	358.50	360.00	371.39	380.00	389.65	400.00	401.14	403.90	410.55	418.15	420.00	430.53	440.00	444.70	460.00	461.37	

WATERMAIN 1 250OD PE100 PN12.5 SDR 13.6 LONGITUDINAL SECTION
SCALE HORI 1:500 VERT 1:250

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

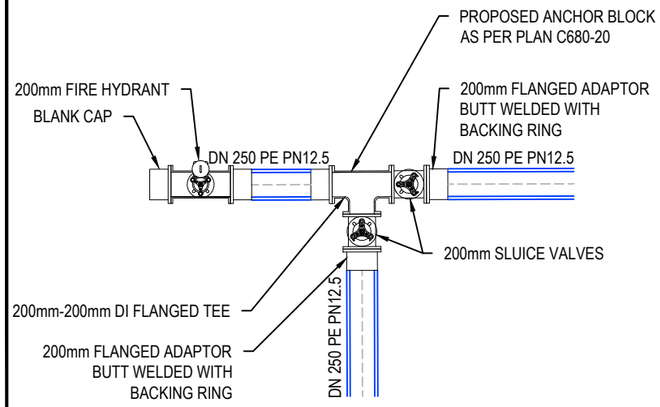
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

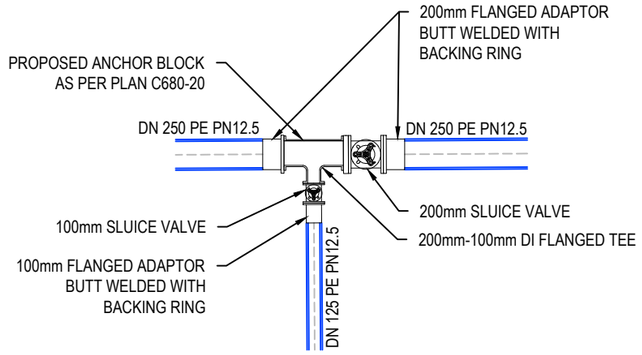
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PROPOSED WATER SUPPLY LONGITUDINAL SECTIONS SHEET 4 OF 4

Project no.	289001
Scale	1:500 H 1:250 V @ A3
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C620-4 Rev B

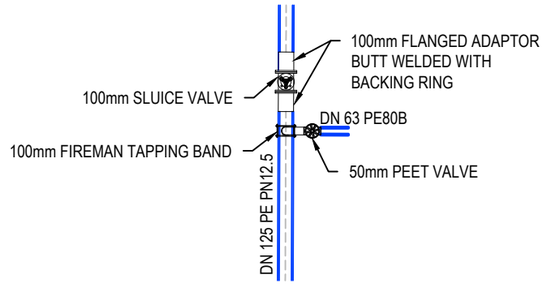
DATE 4/7/25 FILEPATH: F:\MAVEN HAMILTON\6 PROJECTS\289001 STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



CONNECTION DETAIL 1
SCALE 1:50 @ A3



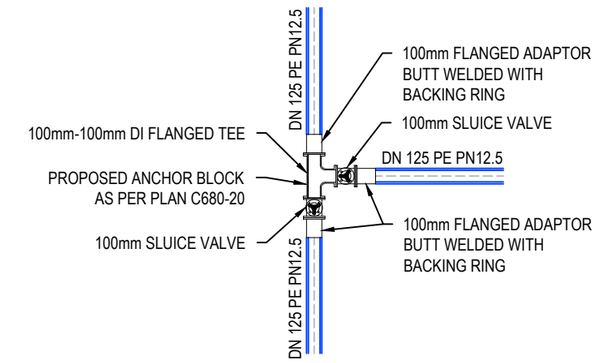
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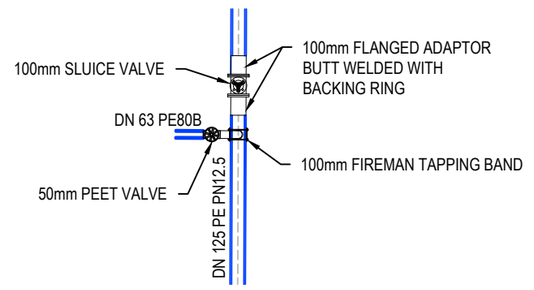
CONNECTION DETAIL 3
SCALE 1:50 @ A3

NOTES

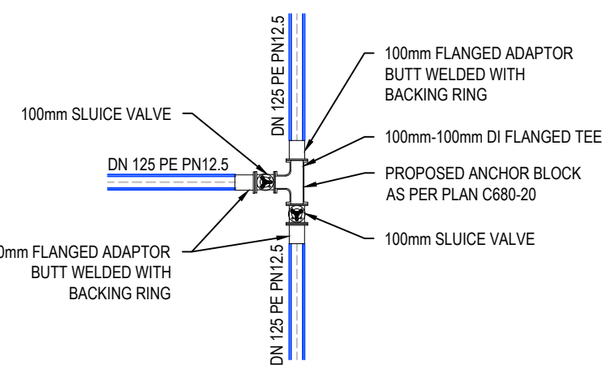
1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
5. STUB FLANGE, BACKING RING AND STUB TO BE WELDED TO PE PIPE.
6. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.
7. REFER TO C600 SERIES DRAWINGS FOR WATER SUPPLY LAYOUT DRAWINGS.



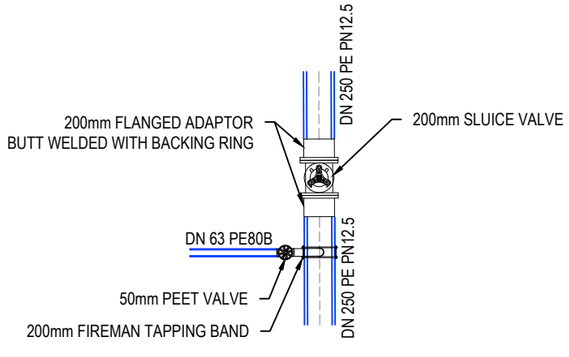
CONNECTION DETAIL 4
SCALE 1:50 @ A3



CONNECTION DETAIL 5
SCALE 1:50 @ A3

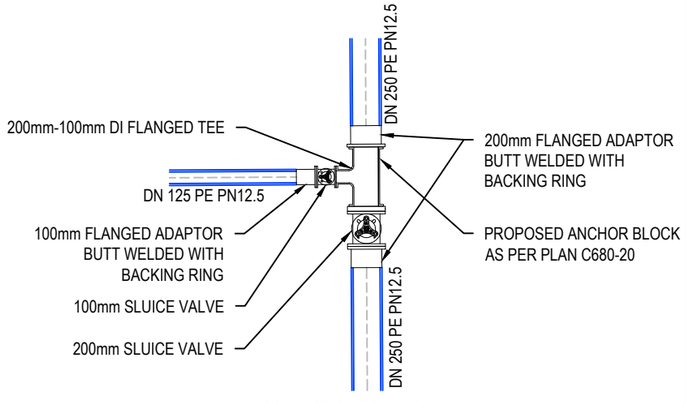


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SCALE 1:50 @ A3

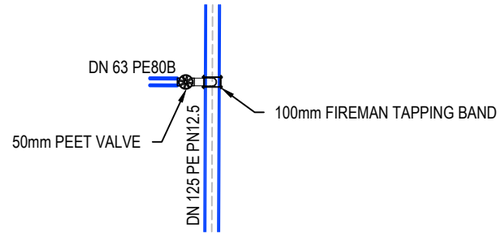


CONNECTION DETAIL 7
SCALE 1:50 @ A3

RESOURCE CONSENT



CONNECTION DETAIL 8
SCALE 1:50 @ A3



CONNECTION DETAIL 9
SCALE 1:50 @ A3

B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025
Rev	Description	By	Date

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

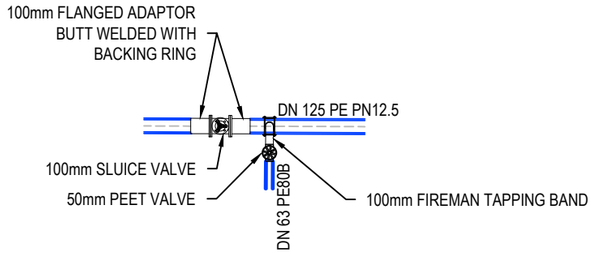
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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

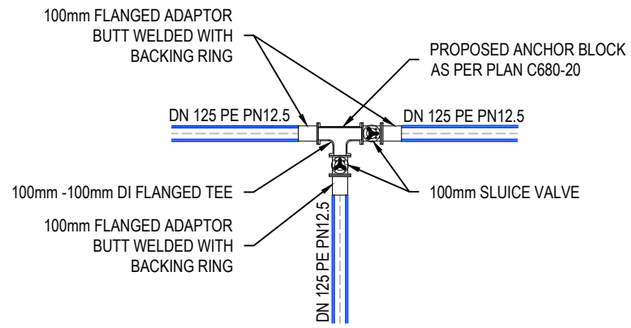
Title
PROPOSED WATER SUPPLY DETAILS SHEET 1 OF 4

Project no.	289001		
Scale	AS SHOWN		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C650-1	Rev	B

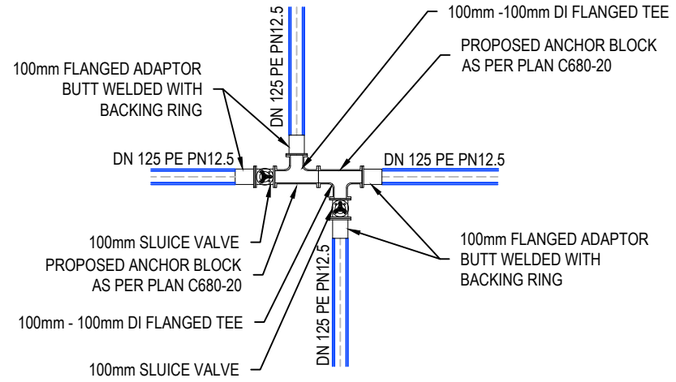
DATE 4/7/25 FILEPATH P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



CONNECTION DETAIL 10
SCALE 1:50 @ A3



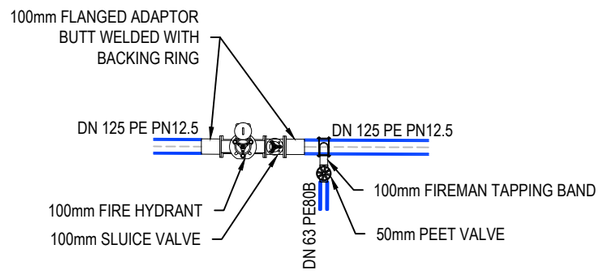
CONNECTION DETAIL 11
SCALE 1:50 @ A3



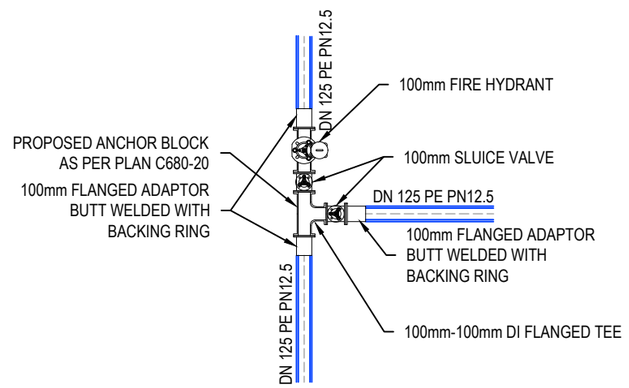
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SCALE 1:50 @ A3

NOTES

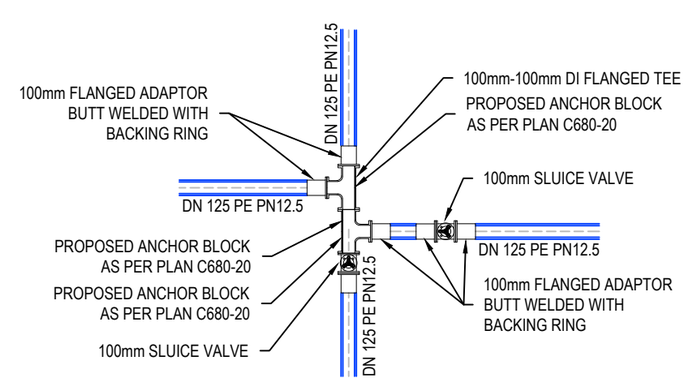
1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
5. STUB FLANGE, BACKING RING AND STUB TO BE WELDED TO PE PIPE.
6. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.
7. REFER TO C600 SERIES DRAWINGS FOR WATER SUPPLY LAYOUT DRAWINGS.



CONNECTION DETAIL 13
SCALE 1:50 @ A3



CONNECTION DETAIL 14
SCALE 1:50 @ A3



CONNECTION DETAIL 15
SCALE 1:50 @ A3

B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025
Rev	Description	By	Date

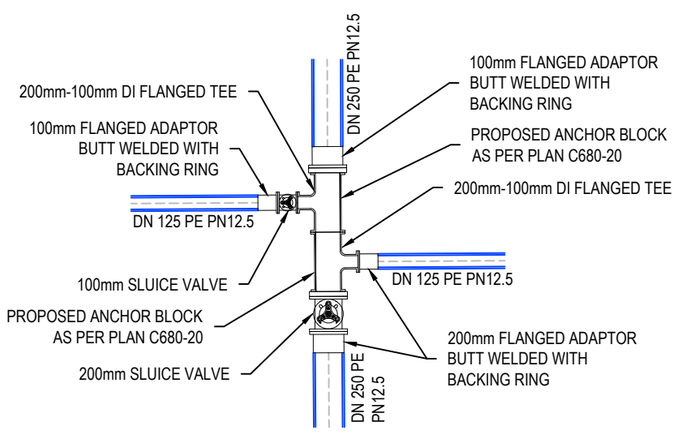
	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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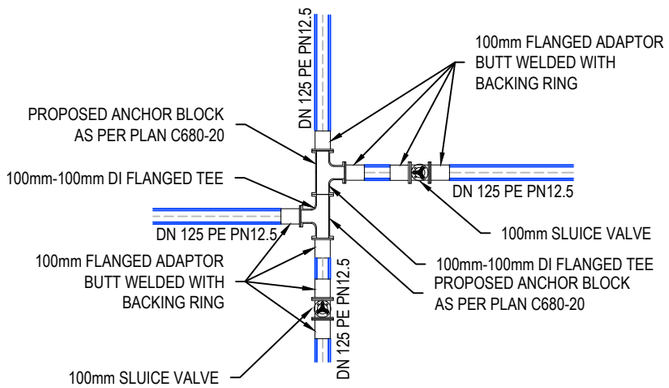
Title
PROPOSED WATER SUPPLY DETAILS SHEET 2 OF 4

Project no.	289001		
Scale	AS SHOWN		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C650-2	Rev	B

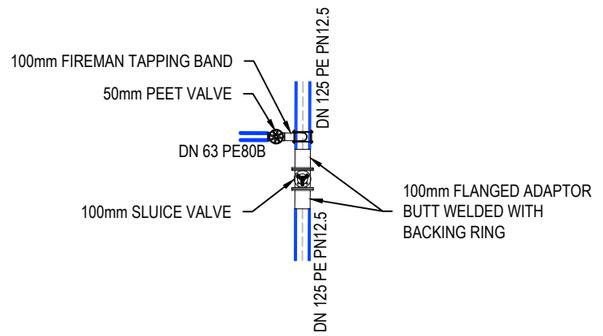


CONNECTION DETAIL 16
SCALE 1:50 @ A3

RESOURCE CONSENT

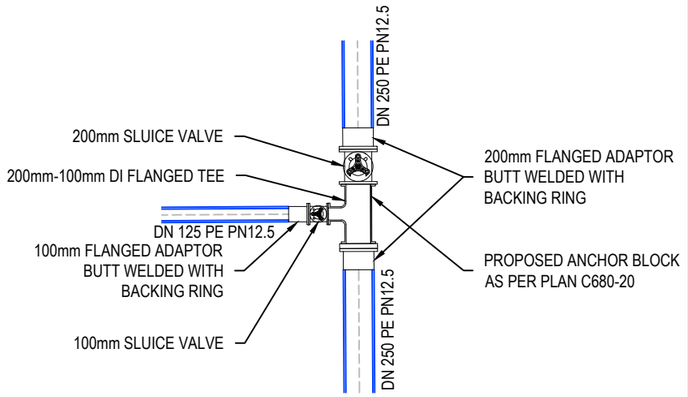


CONNECTION DETAIL 17
SCALE 1:50 @ A3

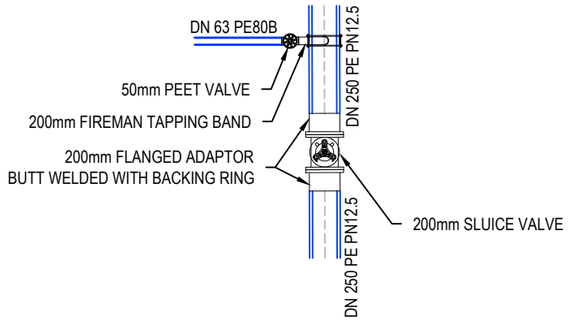


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SCALE 1:50 @ A3

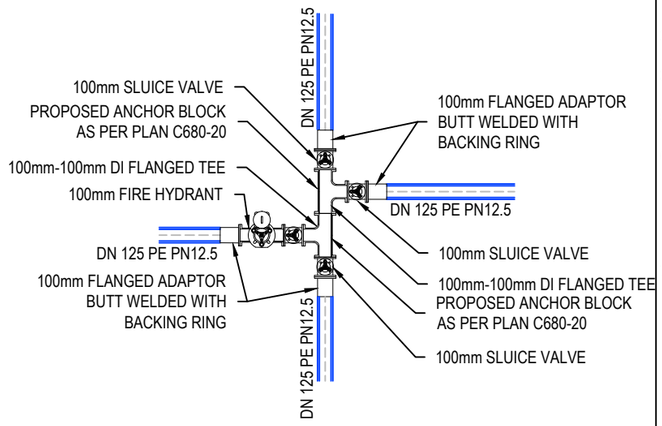
DATE 4/17/25 FILEPATH F:\MAVEN HAMILTON\PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C600 WATERSUPPLY.DWG



CONNECTION DETAIL 19
SCALE 1:50 @ A3



CONNECTION DETAIL 20
SCALE 1:50 @ A3



CONNECTION DETAIL 21
SCALE 1:50 @ A3

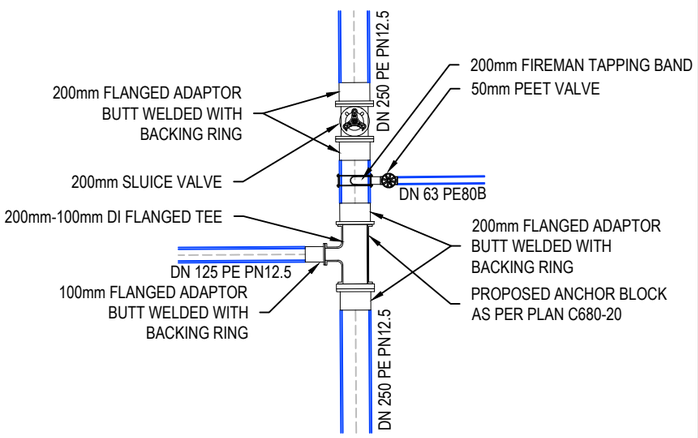
NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
5. STUB FLANGE, BACKING RING AND STUB TO BE WELDED TO PE PIPE.
6. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.
7. REFER TO C600 SERIES DRAWINGS FOR WATER SUPPLY LAYOUT DRAWINGS.

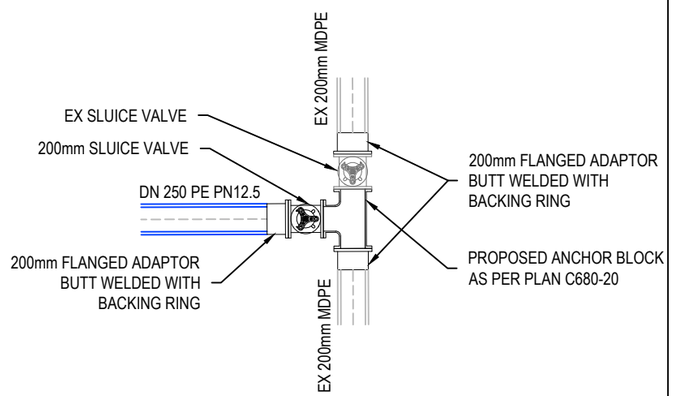
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SCALE 1:50 @ A3

CONNECTION DETAIL 23
SCALE 1:50 @ A3

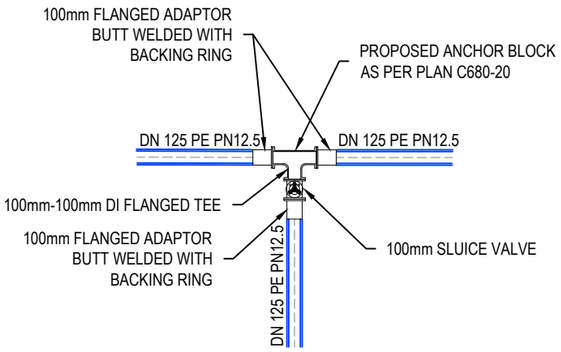
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SCALE 1:50 @ A3



CONNECTION DETAIL 25
SCALE 1:50 @ A3



CONNECTION DETAIL 26
SCALE 1:50 @ A3



CONNECTION DETAIL 27
SCALE 1:50 @ A3

RESOURCE CONSENT

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

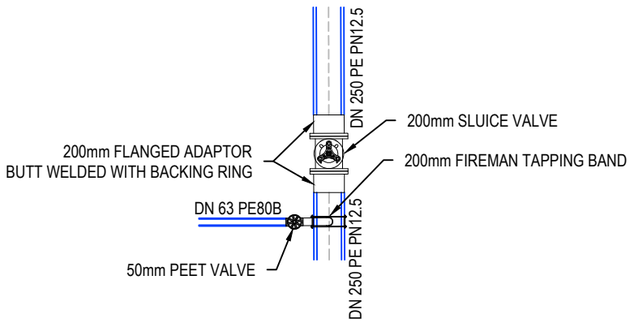
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New Zealand

Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY DETAILS SHEET 3 OF 4

Project no.	289001		
Scale	AS SHOWN		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C650-3	Rev	B

DATE 4/7/25 FILEPATH: P:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG



CONNECTION DETAIL 28
SCALE 1:50 @ A3

NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
5. STUB FLANGE, BACKING RING AND STUB TO BE WELDED TO PE PIPE.
6. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.
7. REFER TO C600 SERIES DRAWINGS FOR WATER SUPPLY LAYOUT DRAWINGS.

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY DETAILS SHEET 4 OF 4

Project no.	289001		
Scale	AS SHOWN		
Cad file	C600-WATERSUPPLY.DWG		
Drawing no.	C650-4	Rev	B

RESOURCE CONSENT

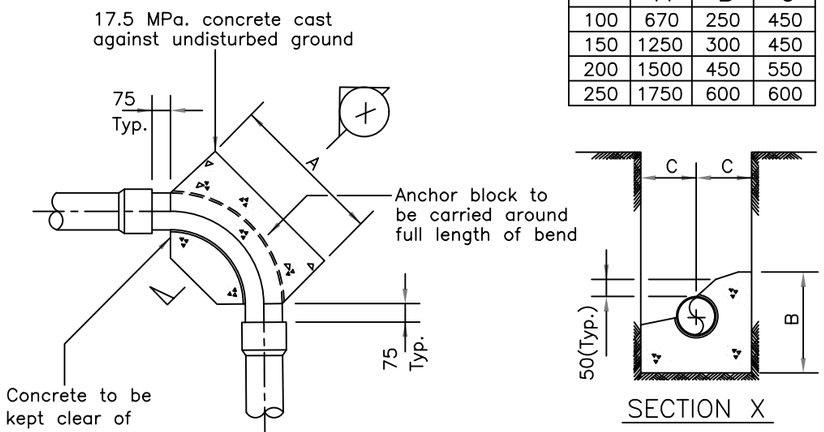
DATE 4/7/25 FILEPATH F:\MAVEN HAMILTON\6 PROJECTS\289001 - STATION ROAD\7 DRAWING\1 ASHBOURNE RESIDENTIAL\C650 WATERSUPPLY.DWG

ANCHOR BLOCK STANDARD DETAILS DERIVED FROM WATERCARE LIMITED - STANDARD DRAWING INDEX - REFERENCE NO WS15 & WS16

Notes :

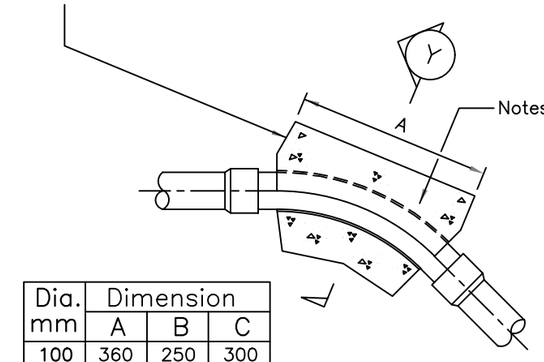
1. Thrust block dimensions for firm soil conditions.
2. The dimensions to be increased or decreased for variation in soil conditions.
3. Allowable bearing stress used – 100KPa.
4. Internal pipe test pressure up to 1400KPa.
5. As built locations to be obtained prior to backfill.
6. Protective membrane (Polythene) between concrete & pipe.
7. 75mm clearance between fittings/flanges and concrete casting.
8. All fittings to be Denso wrapped to the product specification. (Butyl system for Plastic pipes)

Dia. mm	Dimension A	B	C
100	670	250	450
150	1250	300	450
200	1500	450	550
250	1750	600	600

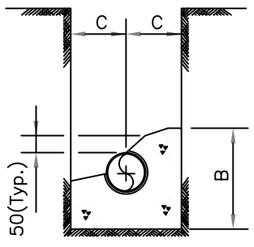


SECTION X

ANCHOR BLOCKS FOR 90° BENDS



Dia. mm	Dimension A	B	C
100	360	250	300
150	680	300	400
200	800	450	500
250	1000	600	600

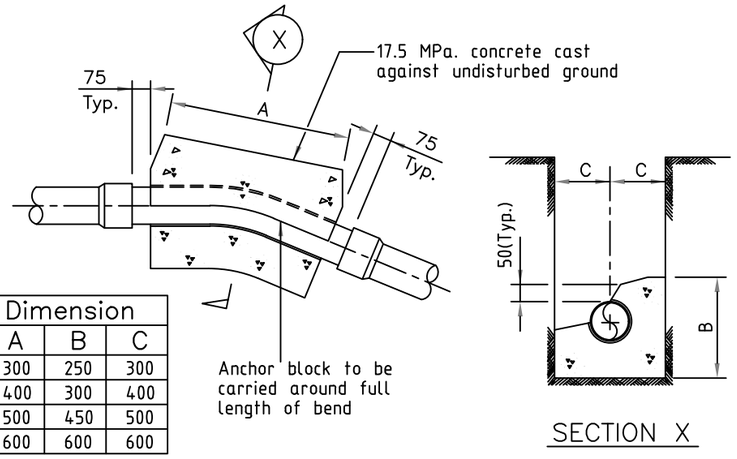


SECTION Y

ANCHOR BLOCKS FOR 45° BENDS

Notes :

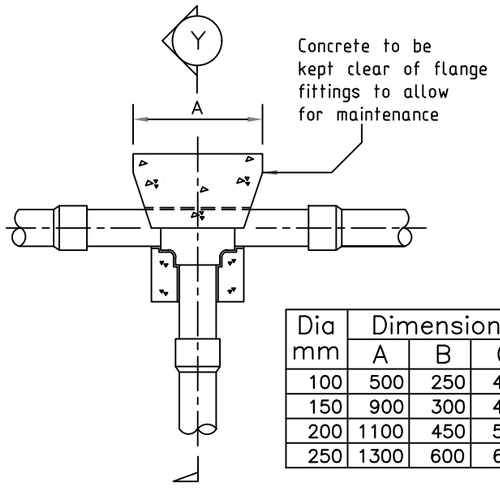
1. Thrust block dimensions for firm soil conditions.
2. The dimensions to be increased or decreased for variation in soil conditions.
3. Allowable bearing stress used - 100KPa.
4. Internal pipe test pressure up to 1400KPa.
5. As built locations to be obtained prior to backfill.
6. Protective membrane (Polythene) between concrete & pipe.
7. 75mm clearance between fittings/flanges and concrete casting.
8. All fittings to be Denso wrapped to the product specification. (Butyl system for Plastic pipes)



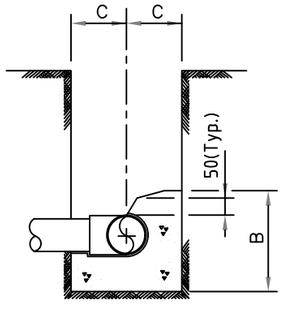
Dia mm	Dimension A	B	C
100	300	250	300
150	400	300	400
200	500	450	500
250	600	600	600

SECTION X

ANCHOR BLOCKS FOR 22½° & 11¼° BENDS



Dia mm	Dimension A	B	C
100	500	250	450
150	900	300	450
200	1100	450	550
250	1300	600	600



SECTION Y

ANCHOR BLOCKS TEE JUNCTION & END CAPS

RESOURCE CONSENT

NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS).
2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
5. STUB FLANGE, BACKING RING AND STUB TO BE WELDED TO PE PIPE.
6. THRUST BLOCKS HAVE NOT BEEN INDICATED ON DETAILS, ALL THRUST BLOCKS TO BE INSTALLED AS PER REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (RITS). PLEASE REFER DETAILS ON SHEET C680-20.
7. REFER TO C600 SERIES DRAWINGS FOR WATER SUPPLY LAYOUT DRAWINGS.

Rev	Description	By	Date
B	FAST TRACK APP	TCH	04/2025
A	FAST TRACK APP	TCH	04/2025

	By	Date
Survey	MAVEN	03/2024
Design	TCH	04/2025
Drawn	TCH	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
PROPOSED WATER SUPPLY ANCHOR BLOCK DETAILS

Project no.	289001
Scale	AS SHOWN
Cad file	C600-WATERSUPPLY.DWG
Drawing no.	C680-20
Rev	B

DATE: 07/05 FILE PATH: P:\MAVEN HAMILTON\PROJECTS\2025\01 STATION ROAD\7 DRAWING\01 ASHBOURNE RESIDENTIAL\C600-WATERSUPPLY.DWG

PROPOSED SW BASIN B

WASTEWATER AND WATER SUPPLY CONNECTIONS FOR COMMERCIAL NODE

OUTLET STRUCTURE AND STORMWATER LINE TO COMMERCIAL NODE

GREEN SPACE

STORMWATER MANHOLE

LOT 1002

WASTEWATER AND WATER SUPPLY CONNECTIONS FOR COMMERCIAL NODE

WASTEWATER AND WATER SUPPLY CONNECTIONS FOR COMMERCIAL NODE

WATER SUPPLY CONNECTION FOR COMMERCIAL NODE

RESOURCE CONSENT

Notes

11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the Contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all road crossings to council standards.
6. Heavy duty manhole lids and frames to be used in trafficked areas, all manholes shall have stainless grates installed.
7. All lines are to be 150mmØ PVC Class SN16 unless shown otherwise.
8. All lot connections are to be 100mmØ PVC unless shown otherwise.
9. 150mmØ pipes that do not terminate in a manhole must be terminated with a 100mmØ on a 150mmØ london junction and blank cap.
10. Manhole diameters shown on structure label are internal diameter.

Legend

- EX BOUNDARY
- PR LOT BOUNDARY
- PR SWMH 1050mmØ
- PR SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER

Rev	Description	By	Date
A	FAST TRACK APP	RJM	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	RJM	04/2025
Drawn	RJM	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
LOT 1002 SERVICES PLAN OPTION 1A

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C710-SERVICES LOT 1002.DWG		
Drawing no.	C710-1	Rev	A

DATE: 4/17/25 FILEPATH: P:\MAVEN HAMILTON\PROJECTS\289001 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C710-SERVICES LOT 1002.DWG

PROPOSED SW BASIN B

GREEN SPACE

RESOURCE CONSENT

11. Measurements shown on the lot connections are the distance from the centre of the downstream manhole to the lot connection position within the lot boundary.
12. Manhole slab and cover to be rotated to avoid the footpath edge for manholes on footpath.
13. Pipe lengths shown on plan are from upstream pipe invert to downstream pipe invert.

Notes

1. All works to be in accordance with Waikato Regional Infrastructure Technical Specifications.
2. Co-ordinates in terms of NZ Geodetic Datum Mount Eden 2000.
3. Levels in terms of the New Zealand Vertical Datum 2016.
4. It is the Contractors responsibility to locate all services that may be affected by his operations.
5. Approved hardfill is to be used in backfilling of all road crossings to council standards.
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7. All lines are to be 150mmØ PVC Class SN16 unless shown otherwise.
8. All lot connections are to be 100mmØ PVC unless shown otherwise.
9. 150mmØ pipes that do not terminate in a manhole must be terminated with a 100mmØ on a 150mmØ london junction and blank cap.
10. Manhole diameters shown on structure label are internal diameter.

Legend

- EX BOUNDARY
- PR LOT BOUNDARY
- PR SWMH 1050mmØ
- PR SCRUFFY DOME
- SOAKAGE TRENCH - 1.2m WIDE
- SOAKAGE TRENCH - 2m WIDE
- RAINGARDEN - 1.2m / 2.3m WIDE
- PR WASTEWATER
- WW RISING MAIN
- EX/PROP WWMH
- WW LOT CONNECTION
- PR WATERMAIN
- PR LOT CONNECTION
- PR FLUSHING VALVE
- PR STORMWATER
- PR WASTEWATER

Rev	Description	By	Date
A	FAST TRACK APP	RJM	04/2025

	By	Date
Survey	MAVEN	05/2024
Design	RJM	04/2025
Drawn	RJM	04/2025
Checked	DJM	04/2025

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Project
ASHBOURNE RESIDENTIAL FOR MATAMATA DEVELOPMENTS LTD

Title
LOT 1002 SERVICES PLAN OPTION 1B

Project no.	289001		
Scale	1:1000 @ A3		
Cad file	C710-SERVICES LOT 1002.DWG		
Drawing no.	C710-2	Rev	A

DATE: 9/7/25 FILEPATH: P:\MAVEN HAMILTON\PROJECTS\289001 STATION ROAD\7 DRAWINGS\1 ASHBOURNE RESIDENTIAL\C710-SERVICES LOT 1002.DWG

APPENDIX C: CMW HAND AUGER LOGS

HAND AUGER BOREHOLE LOG - HA23-01

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 24/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487470.3mE; 695089.2mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1 1 2
	0.4	Peak = 150kPa Residual = 31kPa				ML: SILT: light brown. Low plasticity, moderately sensitive to sensitive. (Hinuera Formation)	M	St to VSt	1 1 1
	0.7	Peak = 162kPa Residual = 38kPa				*... from 0.80m to 1.10m, Becoming brownish grey.*			2 2 2 2
	1.0	Peak = 98kPa Residual = 25kPa		1		SW: Fine to coarse SAND: grey. Well graded, sub rounded. (Hinuera Formation)	M to W	L to MD	4 5 3 3 2 3 3 2 2
24-11-2023				2		SW: Fine to coarse SAND: brown. Well graded, sub rounded. (Hinuera Formation)	W S		3 4
						Borehole terminated at 2.1 m			5 4 3 4 2 3 5 5 7
				3					9 9 8 10 12 9 12 10 9 9
				4					15 20
				5					

Termination Reason: No retrieval
Shear Vane No: 3434 DCP No: 26
Remarks: Groundwater encountered at 2.0m.

HAND AUGER BOREHOLE LOG - HA23-02

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 24/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487585.2mE; 695012.4mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			3
									2
									2
									2
	0.5	Peak = 119kPa Residual = 30kPa				ML: SILT: light brown. Low plasticity, moderately sensitive. (Hinuera Formation)	D to M	St	1
									2
	0.7	Peak = 104kPa Residual = 30kPa							1
									1
									1
	1.0	Peak = 104kPa Residual = 30kPa		1					2
									3
									6
						SW: Fine to Coarse SAND: brown. Well graded, sub rounded. (Hinuera Formation)	M		6
									5
									4
									2
						... from 1.60m to 1.80m, becoming dark brown.	W	MD	3
									5
						... from 1.80m to 2.00m, becoming grey.			6
							W to S		6
				2		SM: Silty Fine to Coarse SAND: brown. Well graded, sub rounded. (Hinuera Formation)			5
									6
24-11-2023						*... at 2.20m, becoming fine, uniformly graded SAND. Becoming grey.*	S		6
						Borehole terminated at 2.3 m			6
									5
									6
									5
									5
									4
									5
				3					9
									7
									8
									8
									9
									11
									10
									10
									10
									1
				4					5
									10
									11
									9
									10
									10
									9
									10
									12
									10
				5					

Termination Reason: No retrieval
Shear Vane No: 2560 DCP No: 26
Remarks: Groundwater encountered at 2.2m.

HAND AUGER BOREHOLE LOG - HA23-03

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487452.9mE; 694855.0mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1 2 1
	0.4	Peak = 60kPa Residual = 12kPa				ML: SILT: light brown. Low plasticity, moderately sensitive. (Hinuera Formation)	M	St	2 1 2 1 3
				1		SP: Silty fine to medium SAND: brownish grey. Well graded, sub rounded. (Hinuera Formation)		L to MD	3 3 5 2 2 2 3
						SW: Fine to coarse SAND: greyish brown. Well Graded, sub rounded. (Hinuera Formation)	M to W	MD to D	4 4 4
						... at 1.80m, Becoming grey.	W		4 3 4 5 8 4 5
23-11-2023	2.6	Peak = UTP		2		ML: SILT: grey. Low plasticity. (Hinuera Formation)	S	H	9 9
						SM: Sandy SILT: grey. Low plasticity. (Hinuera Formation)			10 6 7
						Borehole terminated at 2.7 m			
				3					9 10 8 8 7 9 8 8 8 8
				4					9 9 9 8 7 10 9 8 8
				5					

Termination Reason: No retrieval
Shear Vane No: 3434 DCP No: 26
Remarks: Groundwater encountered at 2.5m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA23-04

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487677.3mE; 694633.7mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1
									3
									3
	0.4	Peak = 138kPa Residual = 25kPa				ML: SILT: light brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)			2
									1
								VSt	2
	0.7	Peak = 50kPa Residual = 19kPa							1
									2
									1
	1.0	Peak = 119kPa Residual = 25kPa		1					2
							M		2
									3
						SM: Silty Fine SAND: light brown. Uniformly graded. (Hinuera Formation)			3
									4
									3
						SW: Fine to coarse SAND: brown. Well graded, sub rounded. (Hinuera Formation)			2
									2
									3
						... at 1.80m, Becoming grey mottled orange.		L to MD	2
									2
				2					2
									3
						SM: Silty fine to medium SAND: light brown. Poorly graded, sub rounded. (Hinuera Formation)	W		3
									4
						ML: SILT: grey mottled orange. Low plasticity. Sensitive. (Hinuera Formation)			3
	2.5	Peak = 81kPa Residual = 12kPa							4
									4
									4
									4
									3
				3		*... from 3.00m to 3.80m, Becoming brownish grey.*			6
	3.1	Peak = UTP							6
									5
									5
	3.5	Peak = UTP							7
									10
							M	VSt to H	1
									5
						... from 3.80m to 4.00m, Becoming brownish orange.			11
									11
									11
	4.0	Peak = 175kPa		4		SM: Sandy SILT: brown. Low plasticity. (Hinuera Formation)			13
									1
									5
									12
									14
	4.5	Peak = UTP							18
									5
									12
									13
									13
									13
	5.0	Peak = UTP		5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 3434 DCP No: 26
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA23-05

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487596.8mE; 694539.0mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2
	0.4	Peak = 112kPa Residual = 25kPa				MH: Clayey SILT: brown. Moderate plasticity. Sensitive. (Hinuera Formation)			2
	0.7	Peak = 138kPa Residual = 31kPa							2
	1.0	Peak = 150kPa Residual = 25kPa		1			M	St to VSt	2
	1.5	Peak = 138kPa Residual = 25kPa							1
	2.1	Peak = 88kPa Residual = 12kPa		2		*... from 2.00m to 2.50m, with trace coarse sand.*			2
	2.6	Peak = UTP					D to M		2
	3.0	Peak = UTP		3		SM: Gravelly SILT: with minor sand; brown. Low plasticity. (Hinuera Formation)			2
	3.5	Peak = UTP						VSt to H	2
	4.0	Peak = UTP		4			M		2
	4.5	Peak = UTP							2
	5.0	Peak = UTP		5		Borehole terminated at 5.0 m			2
									2
									3
									3
									2
									3
									2
									3
									5
									4
									8
									8
									8
									8
									8
									7
									7
									8
									8
									11
									9
									11
									12
									10
									9
									8
									10
									10
									10
									1
									5
									1
									6

Termination Reason: Target Depth Reached
Shear Vane No: DCP No: 26
Remarks: Groundwater not encountered.

HAND AUGER BOREHOLE LOG - HA23-06

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: WD Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487461.0mE; 694509.9mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)	D to M		1
	0.3	Peak = 110kPa Residual = 24kPa				ML: SILT: dark orange brown. Low plasticity. Sensitive. (Hinuera Formation)			2 2 1
						... at 0.40m, becoming orange brown with some clay.		VSt to H	2 2 1 2 3
	0.6	Peak = 122kPa Residual = 27kPa							
	0.9	Peak = UTP							
				1		ML: Fine to coarse Sandy SILT: with minor fine to medium gravel; dark orange brown. Low plasticity. Gravel; pumiceous and rhyolitic. (Hinuera Formation)		St	4
						SW: Fine to coarse SAND: with some fine to medium gravel; dark grey with orange brown. Well graded. Subangular. Gravel; pumiceous and rhyolitic. (Hinuera Formation)	M		5 5 5 4
						SP: Fine to medium SAND: with minor fine gravel; dark grey. Poorly graded. Subangular. Gravel; pumiceous and rhyolitic. (Hinuera Formation)			4 4 4 3
						... at 1.40m, becoming fine to medium sand with minor fine gravel, dark grey.			1
						... at 1.75m, small light orange band.			1
						... at 1.80m, becoming brownish grey.			3
				2				L to MD	6 5 4 4 4 4 4 4 4 4
						... at 2.90m, becoming light brownish grey with trace fine gravel.			9
				3			M to W		6 7 6 7 8 8 8 7 7 7
				4				MD to D	8 8 9 9 6 9 5 7
						SW: Fine to coarse SAND: with trace fine gravel and trace silt; light brownish grey. Well graded. Subangular. Gravel; pumiceous and rhyolitic. (Hinuera Formation)	W		
						... at 4.30m, becoming fine to coarse sand with trace silt.	S		
						Borehole terminated at 4.8 m			5
				5					

23-11-2023

Termination Reason: Hole collapse
Shear Vane No: 2560 DCP No: 17
Remarks: Groundwater encountered at 4.5m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA23-07

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 488002.9mE; 694367.9mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2 1 3
	0.4	Peak = 62kPa Residual = 19kPa				ML: SILT: brownish orange. Low plasticity. Insensitive. (Hinuera Formation)			2 1 1
	0.7	Peak = 50kPa Residual = 12kPa		1				F to St	1 2 2 5
						SP: Fine to medium SAND: with some silt; brown. Poorly graded, sub rounded. (Hinuera Formation)		MD	4 4 4 4 4
						SP: Fine SAND: brown. Uniformly, sub rounded. (Hinuera Formation)			3 4 3 3 4
				2					4 4 4
						... at 2.20m, Becoming grey.	M	L to MD	4 3 3 2
						SM: Silty fine to medium SAND: brown. Poorly graded. (Hinuera Formation)			6 6 6 6
						... from 2.60m to 3.00m, Becoming grey mottled orange.			
				3		SW: Fine to coarse SAND: brown. Well graded. (Hinuera Formation)			8 10 13 8 10 9 13 8 14 9
				4				D to VD	8 10 18 16 16 15 12 12 12 10
						... at 4.50m, Becoming orange.	M to W		
				5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 3434 DCP No: 26
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA23-08

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: PM Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487819.4mE; 694333.1mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1
	0.4	Peak = 88kPa Residual = 38kPa				ML: SILT: brownish orange. Low plasticity. Moderately sensitive. (Hinuera Formation)	M	F to St	2 2 1
	0.6	Peak = 50kPa Residual = 19kPa							2 2 4
				1		SM: Silty fine SAND: light brown. Uniformly graded, sub rounded. (Hinuera Formation)	M to W	L to MD	2 2 2 4 3 4 2 3 3
	1.9	Peak = 138kPa Residual = 22kPa		2		ML: SILT: grey mottled orange. Low plasticity. Sensitive to highly sensitive. (Hinuera Formation)		VSt	4 4 4
	2.2	Peak = 162kPa Residual = 12kPa				SM: Silty fine to medium SAND: grey. Poorly graded, sub rounded (Hinuera Formation)	W	MD to D	6 6 8 7 7 8 8 11 8 8 9 10 9 8 8 8 7 8 9
				4		SW: Fine to coarse SAND: grey. Well graded, sub rounded. (Hinuera Formation)	S	D to VD	12 13 13
				5		Borehole terminated at 4.2 m			17 16 17 16 10 9 17 17 18

Termination Reason: No retrieval
Shear Vane No: 3434 DCP No: 26
Remarks: Groundwater encountered at 3.5m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA23-01

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 24/11/2023
Borehole Location: Refer to site plan Logged by: NK Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487486.9mE; 695150.0mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
24-11-2023				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2
									1
									2
						ML: Sandy SILT: light brown. Low plasticity. (Hinuera Formation)	M	F	2
									2
									2
									2
									3
						SM: Silty fine to coarse SAND: light grey. Well graded, sub rounded. (Hinuera Formation)	W	L	1
									2
				1		Borehole terminated at 1.0 m			3
									5
									6
									5
									3
									1
									2
									2
									2
									6
				2					4
									6
									8
									5
									3
									5
									6
									6
									4
				3					
				4					
				5					

Dynamic Cone Penetrometer (Blows/100mm): 5 10 15

Termination Reason: Target Depth Reached
Shear Vane No: DCP No: 26
Remarks: Groundwater encountered at 1.0m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA23-02

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: WD Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487610.7mE; 694677.3mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)	D to M		1
						ML: SILT: dark orange brown. Low plasticity. Sensitive. (Hinuera Formation)			3
	0.3	Peak = 92kPa Residual = 21kPa							1
									2
						... at 0.40m, becoming orange brown with minor clay.		St to VSt	1
						... at 0.50m, becoming light orange brown.			2
	0.6	Peak = 155kPa Residual = 30kPa							2
						... at 0.70m, with trace fine sand.	M		1
						SP: Fine to medium SAND: with trace silt; orange brown. Poorly graded. Subangular. (Hinuera Formation)			2
									5
				1				L to MD	6
									7
									4
						SM: Silty Fine SAND: light brownish grey. Poorly graded. Subangular. (Hinuera Formation)	W	F	3
						ML: Fine Sandy SILT: light grey. Low plasticity. (Hinuera Formation)			2
						ML: SILT: with minor clay; light grey streaked light orange. Low plasticity. Moderately sensitive. (Hinuera Formation)		St	3
	1.6	Peak = 74kPa Residual = 22kPa							3
						SM: Silty Fine SAND: grey. Poorly graded. Subangular. (Hinuera Formation)			4
						SP: Fine SAND: light brownish grey. Poorly graded. Subangular. (Hinuera Formation)	M to W		4
									6
				2				MD	6
						... at 2.20m, thin orange brown band.			8
									7
						Borehole terminated at 2.3 m			6
									5
									5
									4
				3					3
									3
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2560 DCP No: 26
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA23-03

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 23/11/2023
Borehole Location: Refer to site plan Logged by: WD Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487474.6mE; 694589.9mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)	D to M		2
	0.3	Peak = 104kPa Residual = 18kPa				ML: SILT: dark orange brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)			2 1
						... at 0.40m, becoming light orange brown with some clay and minor rootlets.	M	St to VSt	1 1
	0.6	Peak = 80kPa Residual = 30kPa				... at 0.60m, becoming light brownish grey.			1 0
						SM: Silty Fine SAND: light brownish grey. Poorly graded. Subangular. (Hinuera Formation)	M to W		1 1
				1		... at 1.00m, becoming light grey streaked light orange brown.	W	L	2 3 3 3 3
	1.5	Peak = 98kPa Residual = 39kPa				ML: SILT: with some clay; light grey streaked light orange. Low plasticity. Moderately sensitive. (Hinuera Formation)	M	St to VSt	2 3 3
	1.8	Peak = 134kPa Residual = 36kPa				... at 1.70m, small band of fine sand. ... from 1.80m to 1.85m, with some medium pumiceous gravel.			4 6
				2		ML: Fine Sandy SILT: light grey. Low plasticity. (Hinuera Formation)	M to W		5 8
						SP: Fine to medium SAND: grey. Poorly graded. Subangular. (Hinuera Formation) ... at 2.15m, becoming orange brown.	W to S	MD	6 5
						Borehole terminated at 2.3 m			6 4 5 5 5 4
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2560 DCP No: 17
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA23-04

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 35-39 Peakedale Drive, Matamata, 3400
Project No.: HAM2023-0124
Date: 24/11/2023
Borehole Location: Refer to site plan Logged by: NK Checked by: AS Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487801.3mE; 694404.5mN Projection: Mt Eden 2000
Datum: Moturiki Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2 2 2
	0.4	Peak = 77kPa Residual = 24kPa				ML: Sandy SILT: light brown. Low plasticity, moderately sensitive. (Hinuera Formation)		St	1 2 2
	0.8	Peak = 179kPa Residual = 33kPa				ML: SILT: light brown. Low plasticity, sensitive. (Hinuera Formation)		VSt	3 2 2 3
	1.2	Peak = 208kPa Residual = 42kPa		1		ML: SILT: white. Low plasticity, sensitive. (Hinuera Formation)	M	H	3 4 4 4 6 6
	1.6	Peak = UTP				*... from 1.60m to 1.80m, No plasticity.*			7 10 11 12
				2		SM: Silty fine SAND: light grey. Poorly graded, sub rounded. (Hinuera Formation)		D to VD	11 12 12 14 18
						SP: Fine to coarse SAND: brownish orange. Poorly graded, sub rounded. Iron staining. (Hinuera Formation)			
						Borehole terminated at 2.5 m			12 14 14 11
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2560 DCP No: 26
Remarks: Groundwater not encountered..

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-09

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 05/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M		2, 2, 2, 3, 4
	0.6	Peak = UTP				ML: SILT: grey mottled orange. Low plasticity. (Hinuera Formation)		H	5, 4, 5, 6
				1		SM: Silty fine to medium SAND: light brownish grey. Poorly graded, sub rounded. (Hinuera Formation)	M to W	D	10, 9, 13
						SP: Fine SAND: light grey streaked orange. Poorly graded, sub rounded. (Hinuera Formation)		MD to D	5, 9, 13, 13
05-06-2024							W		12
						ML: SILT: grey. Low plasticity. (Hinuera Formation)		St	9
						SW: Fine to coarse SAND: grey. Well graded, sub rounded. (Hinuera Formation)	S	D	8, 8
				2		Borehole terminated at 1.9 m			7, 9, 8, 5, 8, 6, 7, 8, 7, 6
				3					6, 5, 4, 4, 7, 12, 10, 10, 13, 5
				4					4, 4, 10, 12, 10, 10, 14, 10, 12
				5					

Termination Reason: No retrieval.
Shear Vane No: 2087 DCP No: 25
Remarks: Groundwater encountered at 1.8m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-10

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 05/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1, 2, 2, 3
	0.6	Peak = 178kPa Residual = 39kPa				ML: Fine to medium Sandy SILT: light grey streaked orange brown. Low plasticity. Sensitive. (Hinuera Formation)			3, 3, 2
	0.9	Peak = 192kPa Residual = 36kPa				CH: Silty CLAY: with trace fine sand; light grey streaked dark orange brown. High plasticity. Moderately sensitive. (Hinuera Formation)	M	St to VSt	1, 1
				1		... at 1.00m, becoming light grey.			2, 5, 5, 4
	1.3	Peak = 92kPa Residual = 44kPa				SW: Fine to coarse SAND: with minor silt; light grey. Well graded. (Hinuera Formation)		MD	4, 4, 5
05-06-2024	1.8	Peak = 111kPa Residual = 42kPa				ML: SILT: with some fine to coarse sand; light grey. Low plasticity. Moderately sensitive. Dilatant. (Hinuera Formation)	W	VSt	4, 3, 4
				2		SW: Fine to coarse SAND: with some silt; grey. Well graded. (Hinuera Formation)	S	MD to D	5, 10, 8, 7, 5
						... at 2.20m, becoming greyish brown, poor retention.			
						... at 2.40m, becoming brown fine to medium sand.			
						Borehole terminated at 2.5 m			5, 3, 4, 4, 4
				3					5, 7, 5, 4, 4
				4					10, 8, 11, 10, 10
									12, 12, 13, 9, 8, 10, 9, 10, 12
				5					

Termination Reason: Hole collapse/no retrieval
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater encountered at 2.0m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-11

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 05/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: brown. No plasticity. (Topsoil)			2
	0.3	Peak = 120kPa Residual = 25kPa				ML: SILT: orange brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)			3
									1
									3
									2
	0.6	Peak = 78kPa Residual = 17kPa					M	St to VSt	1
									2
									1
	0.9	Peak = 58kPa Residual = 19kPa							1
				1					2
									3
									3
						SM: Silty Fine to medium SAND: orange brown. Well graded. (Hinuera Formation)	M to W		4
						SW: Fine to coarse SAND: with trace fine gravel; greyish brown. Well graded. Gravel; subangular. (Hinuera Formation)			3
						... at 1.40m, thin lens of silty fine sand.			5
									6
									4
									3
									2
				2					6
									6
						... at 2.20m, becoming brownish grey.			5
									6
									8
									7
						... from 2.50m to 2.60m, mottled black.	M		8
									7
									7
						... at 2.80m, becoming dark orange brown.		MD to D	5
									5
				3					8
						... at 3.10m, becoming greyish brown with grey.			8
									8
									9
									9
									9
									13
									15
						... at 3.80m, with trace silt.			14
						... at 3.90m, becoming dark brown with brownish grey.			15
05-06-2024				4			W		20
						... at 4.40m, becoming dark reddish brown, with some silt.	S		
						Borehole terminated at 4.6 m			
				5					

Termination Reason: Hole collapse
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater encountered at 4.2m.

HAND AUGER BOREHOLE LOG - HA24-12

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 05/06/2024
Borehole Location: Refer site plan. Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: with some medium gravel; dark brown. No plasticity. (Topsoil)			4
						SW: Fine to coarse SAND: light brown. Well graded, sub angular. (Possible Fill)		MD	7, 7
	0.4	Peak = 129kPa Residual = 26kPa				ML: SILT: with minor fine sand; brownish orange. Low plasticity. Sensitive. (Hinuera Formation)			6, 2, 2
	0.7	Peak = 167kPa Residual = 29kPa					M	VSt to H	2, 2, 2, 2
	1.0	Peak = UTP		1					4
						SM: Silty fine to coarse SAND: light yellowish brown. Well graded, sub rounded. (Hinuera Formation)		MD	5, 7, 5, 5
									3, 3
	1.8	Peak = 205kPa				ML: SILT: grey mottled orange. Low plasticity. (Hinuera Formation)		H	3
						SW: Fine to coarse SAND: light brown mottled grey and streaked dark red. Well graded, sub rounded. (Hinuera Formation)			2, 3
				2		... at 2.10m, Becomes grey.	W	L to MD	2, 5, 5, 5, 4, 3
05-06-2024							S		3
						Borehole terminated at 2.7 m			4, 3, 4
				3					5, 5, 5, 6, 6, 8, 9, 9, 10, 12
				4					13, 13, 13, 10, 13, 10, 10, 9, 10
				5					

Termination Reason: Hole Collapse
Shear Vane No: 2087 DCP No: 25
Remarks: Groundwater encountered at 2.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-13

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 05/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: brown. No plasticity. (Topsoil)			2
	0.3	Peak = 167kPa Residual = 28kPa				ML: SILT: orange brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)			2
									2
									2
							D to M		1
	0.6	Peak = 133kPa Residual = 22kPa				... at 0.60m, becoming light orange brown.		VSt	2
									2
									2
	0.9	Peak = 111kPa Residual = 39kPa							3
						SM: Silty Fine to medium SAND: with trace fine pumiceous gravel; light orange brown. Well graded. (Hinuera Formation)			5
				1					7
						... at 1.20m, becoming fine sand.		MD	7
									4
									4
	1.4	Peak = 108kPa Residual = 53kPa				CH: Silty CLAY: light grey. High plasticity. Moderately sensitive. (Hinuera Formation)		VSt	4
						SM: Silty Fine SAND: grey. Poorly graded. (Hinuera Formation)	M		4
									4
						SW: Fine to medium SAND: with some silt and minor fine gravel; brownish grey with grey. Well graded. Gravel; subangular. (Hinuera Formation)			4
									3
				2					4
									6
						SW: Fine to coarse SAND: with some silt and trace fine gravel; grey. Well graded. Gravel; subangular. (Hinuera Formation)			4
								MD	3
05-06-2024							W		3
									4
									4
						... at 2.60m, poor retention.			4
							S		3
									3
				3					4
						Borehole terminated at 3.0 m			4
									5
									4
									4
									6
									7
									4
									6
									5
									5
				4					6
									6
									7
									5
									7
									8
									7
									5
				5					9

Termination Reason: Hole collapse/no retrieval
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater encountered at 2.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-14

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
06-06-2024 ▼				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1
						SM: Silty fine to medium SAND: light grey mottled dark orange. Poorly graded, rub rounded. (Hinuera Formation)	M	L to MD	3, 2, 4, 7
						SM: Silty fine SAND: brownish orange mottled dark brown. Poorly graded, sub rounded. (Hinuera Formation)		MD	5, 3, 3, 3
				1		SW: Fine to medium SAND: grey. Well graded, sub rounded. (Hinuera Formation)	W	MD to D	4, 4, 5, 10, 11, 11, 8
						... at 1.50m, Becomes blueish grey.	S		3
						Borehole terminated at 1.7 m			3, 3, 4
				2					9, 8, 8, 9, 8, 6, 5, 2, 2, 5
				3					8, 8, 7, 7, 10, 11, 10, 9, 10, 10
				4					12, 11, 9, 12, 10, 10, 11, 9, 13
				5					

Termination Reason: Hole Collapse
Shear Vane No: DCP No: 34
Remarks: Groundwater encountered at 1.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-15

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 05/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2 2 1
	0.4	Peak = 59kPa Residual = 15kPa				ML: SILT: light brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)			1 2 2
	0.7	Peak = 59kPa Residual = 15kPa					M	St to VSt	1 1 2
	1.0	Peak = 105kPa Residual = 15kPa		1		*... at 0.90m, Becoming a light greyish brown.*			1 2
						SM: Silty fine SAND: light brown. Poorly graded, sub rounded. Dilatant. (Hinuera Formation)			4 4 3
						... at 1.40m, Becoming a light grey streaked yellow.	W	MD	4 4 5 4 4 4
				2					4 5 6 10
	2.5	Peak = 167kPa Residual = 59kPa				ML: SILT: grey streaked yellow. Low plasticity. Moderately sensitive. (Hinuera Formation)	M to W	VSt	4
	2.7	Peak = UTP				ML: Clayey SILT: brown. Low plasticity. (Walton Subgroup)		H	9 10 12 17
	3.0	Peak = UTP		3		Borehole terminated at 3.0 m	M		20
				4					
				5					

Termination Reason: Refusal on hard material.
Shear Vane No: 2087 DCP No: 25
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-16

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			
	0.3	Peak = 100kPa Residual = 23kPa				ML: SILT: orange brown. Low plasticity. Sensitive. (Walton Subgroup)			
						... at 0.40m, becoming light orange brown, with some clay.			
	0.6	Peak = 160kPa Residual = 30kPa				CH: Silty CLAY: light orange brown. High plasticity. Sensitive. (Walton Subgroup)	M	VSt to H	
	0.9	Peak = 123kPa Residual = 28kPa		1		... at 1.00m, becoming light orange grey.			
	1.3	Peak = UTP				ML: SILT: light orange grey. Low plasticity. (Walton Subgroup)			
						SM: Silty Fine SAND: light brownish grey. Poorly graded. (Walton Subgroup)			
	1.6	Peak = 150kPa Residual = 28kPa				CH: Silty CLAY: light brownish grey. High plasticity. Sensitive. (Walton Subgroup)	W	St to VSt	
	1.9	Peak = 85kPa Residual = 20kPa		2		... at 2.00m, becoming light grey, with trace fine sand.			
						... at 2.10m, becoming light brown grey.			
						... at 2.20m, becoming light greyish brown.			
	2.3	Peak = UTP				ML: SILT: with some clay; greyish brown. Low plasticity. (Walton Subgroup)	D to M	VSt to H	
	2.6	Peak = 175+				CH: Silty CLAY: greyish brown. High plasticity. Moderately sensitive. (Walton Subgroup)	M		
	2.9	Peak = 160kPa Residual = 43kPa		3					
	3.3	Peak = 158kPa Residual = 45kPa							
	3.6	Peak = 125kPa Residual = 33kPa							
						... at 3.80m, becoming light orange brown.			
	3.9	Peak = 125kPa Residual = 35kPa		4			M to W		
	4.3	Peak = 175+				ML: Clayey SILT: orange brown mottled black. Low plasticity. (Walton Subgroup)			
	4.6	Peak = 50kPa Residual = 25kPa				CH: Silty CLAY: light greyish brown. High plasticity. Insensitive to moderately sensitive. (Walton Subgroup)		St	
	4.9	Peak = 60kPa Residual = 50kPa		5		Borehole terminated at 5.0 m			

Termination Reason: Target Depth Reached
Shear Vane No: 3434 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-17

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2, 2
	0.3	Peak = 63kPa Residual = 20kPa				ML: SILT: orange brown. Low plasticity. (Hinuera Formation)			1
	0.6	Peak = 108kPa Residual = 25kPa						St to VSt	2, 2, 2, 2
						... at 0.70m, with some clay.			1, 1
	0.9	Peak = 160kPa Residual = 35kPa							3
				1		... at 1.00m, with trace fine sand.			6
						SW: Fine to coarse SAND: minor fine gravel. orange brown. Well graded. Gravel; black, subangular. (Hinuera Formation)	M		8
						... at 1.30m, becoming dark orange brown.		D to VD	13
						... at 1.40m, becoming orange brown with yellow grey.			17
						... at 1.60m, becoming dark reddish brown, with some fine gravel; highly iron stained.			24, 22
				2		... at 2.00m, becoming brownish grey with grey.			
						... at 2.10m, becoming dark reddish brown.			
06-06-2024						... at 2.30m, becoming dark reddish dark brown, with trace medium gravel.	W		
						... at 2.70m, with some silt.			
	3.1	Peak = 158kPa Residual = 60kPa		3		ML: SILT: light grey. Low plasticity. Moderately sensitive. (Hinuera Formation)	S	VSt to H	
	3.7	Peak = UTP							
						Borehole terminated at 3.8 m			
				4					
				5					

Termination Reason: No retrieval
Shear Vane No: 3434 DCP No: 34
Remarks: Groundwater encountered at 2.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-18

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan. Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M		2, 2
	0.3	Peak = 83kPa Residual = 19kPa				ML: Sandy SILT: greyish brown. Low plasticity. Moderately sensitive. (Hinuera Formation)			2, 2, 2, 2, 2
	0.6	Peak = 97kPa Residual = 28kPa				ML: SILT: light grey streaked orange. Low plasticity. Moderately sensitive. (Hinuera Formation)		St	2, 3
				1		SM: Silty fine SAND: light grey streaked yellow. Poorly graded, sub rounded. (Hinuera Formation)	M to W	MD to D	5, 5, 7, 9, 7, 9
06-06-2024						SW: Fine to medium SAND: grey. Well graded, sub rounded. (Hinuera Formation)	W	D	7, 10
							S		7
						Borehole terminated at 1.7 m			7
				2					8, 7, 7, 8, 9, 8, 5, 7, 5, 4, 5, 7
				3					10, 10, 12, 12, 6, 5, 10, 9, 11, 10
				4					12, 12, 13, 15, 16, 12, 10, 11, 12
				5					

Termination Reason: Hole Collapse
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater encountered at 1.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-19

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
06-06-2024 ▼				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M to W		1
						ML: SILT: with some clay; light brown. (Hinuera Formation)			2
						SM: Silty Fine SAND: light grey streaked light orange brown. Poorly graded. (Hinuera Formation)		MD	3
						ML: Fine SAndy SILT: light grey streaked light orange brown. Low plasticity. (Hinuera Formation)		St	3
						SM: Silty Fine SAND: light grey streaked light orange brown. Poorly graded. (Hinuera Formation)			4
							M to W		4
						... at 0.90m, light yellowish grey with brown grey.		MD	3
				1					3
									5
						... at 1.20m, becoming light grey.	W		4
									6
									5
									4
									5
									6
						ML: SILT: light grey. Low plasticity. Dilatant. (Hinuera Formation)		VSt	6
						SM: Silty Fine to medium SAND: light grey. Well graded. Pumiceous. (Hinuera Formation)			5
									6
								MD to D	5
				2		*... at 2.00m, poor retention.*	S		5
									8
									7
						ML: SILT: with some fine sand; light grey. Low plasticity. (Hinuera Formation)		H	14
						SM: Silty Fine SAND: light grey. Poorly graded. (Hinuera Formation)		D	9
						Borehole terminated at 2.4 m			13
									12
									6
									4
									5
				3					5
									6
									8
									8
									14
									17
									14
									13
									12
									14
									17
				4					14
									13
									17
									16
									20
									17
									17
									16
				5					15

Termination Reason: No retrieval
Shear Vane No: DCP No: 34
Remarks: Groundwater encountered at 1.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-20

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2, 2, 2
	0.4	Peak = 97kPa Residual = 19kPa				ML: SILT: light brown. Low plasticity. Sensitive. (Hinuera Formation)			1, 1, 1
	0.7	Peak = 89kPa Residual = 19kPa					M		2, 2, 2
	1.0	Peak = 181kPa Residual = 28kPa		1				St to VSt	3, 4, 4, 2
						... at 1.30m, Becomes light greyish brown.			3, 3, 3, 3, 3
	1.5	Peak = 97kPa Residual = 36kPa					M to W		
						SM: Silty fine to coarse SAND: light greyish yellow. Well graded, sub rounded to sub angular. (Hinuera Formation)			3
				2				MD	4, 4, 5
	2.3	Peak = UTP				CH: Sandy CLAY: brown. High plasticity. (Walton Subgroup)		H	6, 7, 7
						SW: Fiine to coarse SAND: with minor clay and trace fine gravel; Brownish orange mottled black and speckled grey. Well graded sub angular. (Walton Subgroup)	M	D	10, 13, 12, 12, 13, 14, 12, 16, 15
				3		Borehole terminated at 3.4 m			18, 13, 17, 20
				4					
				5					

Termination Reason: Hard Material.
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-21

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M		2, 2, 1, 1, 2, 1, 1
	0.8	Peak = 97kPa Residual = 14kPa				ML: Sandy SILT: light brownish grey. Low plasticity. Sensitive. (Hinuera Formation)	W	St	1, 2, 2, 2, 2, 3, 3, 4
06-06-2024				1			S		
						SM: Silty fine SAND: light grey. Poorly graded, sub rounded. (Hinuera Formation)		MD	3, 4, 4
						Borehole terminated at 1.8 m			3, 4, 4, 4, 6, 6, 4, 3, 3, 2, 2, 3, 3, 4, 4, 6, 8, 7, 8, 3, 3, 3, 3, 5, 5, 5, 4, 3, 3, 3, 3
				2					
				3					
				4					
				5					

Termination Reason: Hole collapse
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater encountered at 1.3m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-22

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M		1, 3
	0.3	Peak = 108kPa Residual = 20kPa				CH: Silty CLAY: brown. High plasticity. Sensitive. (Hinuera Formation)	M to W	St to VSt	1, 2
	0.6	Peak = 55kPa Residual = 13kPa							1, 2
									1, 1
	0.9	Peak = 110kPa Residual = 20kPa				ML: Clayey SILT: light brown. Low plasticity. Sensitive. (Hinuera Formation)			2, 2
06-06-2024				1		... at 1.00m, becoming light grey streaked orange brown.	W		6, 5, 8, 8, 9
						SM: Silty Fine SAND: light grey. Poorly graded. (Hinuera Formation)			6, 12, 16, 15, 6
				2		... at 1.60m, poor retention.		MD to D	4, 5, 7
						ML: SILT: with some organic silt; light grey with greyish brown. Low plasticity. Insensitive. Dilatant. (Hinuera Formation)		St	8, 16, 11
	2.5	Peak = 65kPa Residual = 38kPa				SM: Silty Fine SAND: light grey. Poorly graded. (Hinuera Formation)			8
						... at 2.60m, poor retention.		MD to D	9, 8
						... at 2.70m, with trace fine sand.	S		5
				3		OL: Organic SILT: with some silt; dark greyish brown with light grey. Low plasticity. Insensitive. (Hinuera Formation)			8, 6, 7, 7
	3.3	Peak = 50kPa Residual = 40kPa						F to St	10, 10, 8, 11, 12, 11
	4.0	Peak = 60kPa Residual = 33kPa		4		SM: Silty Fine to medium SAND: dark grey. Well graded. (Hinuera Formation)		D	10, 11, 10
						Borehole terminated at 4.3 m			13, 17, 20
				5					

Termination Reason: No retrieval
Shear Vane No: 3434 DCP No: 34
Remarks: Groundwater encountered at 1.3m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-23

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 06/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2 2 2
	0.4	Peak = 153kPa Residual = 33kPa				ML: SILT: light greyish brown. Low plasticity. Sensitive. (Hinuera Formation)		St to VSt	2 1 1 1 1
	0.7	Peak = 89kPa Residual = 19kPa					M		2
	1.0	Peak = 181kPa Residual = 28kPa		1		ML: Sandy SILT: light grey mottled black and streaked yellow. Low plasticity. Sensitive. (Hinuera Formation)		VSt	2 2 6 4
						SW: Fine to coarse SAND: brown. Well graded, sub rounded. (Hinuera Formation)		L to MD	4 2 3 2
						SM: Silty fine SAND: light brownish grey. Poorly graded, sub rounded. (Hinuera Formation)			3 2 3
				2		... from 2.00m to 2.05m, Silt.	W	MD	4 4 4 5 4 5 5 5 5 4
						... from 2.80m to 2.90m, Silt			5 4 5 5 6
				3		SW: Fine to coarse SAND : light brown. Well graded, sub rounded. (Hinuera Formation)	S		6
						Borehole terminated at 3.6 m			5 6 6 5
				4					6 6 7 6 6 5 7 6 6
				5					

06-06-2024

Termination Reason: No Retrieval.
Shear Vane No: 2560 DCP No: 34
Remarks: Groundwater encountered at 3.5m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-24

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 04/06/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2, 1, 1
	0.4	Peak = 74kPa Residual = 18kPa				ML: SILT: brown. Low plasticity. Moderately sensitive. (Hinuera Formation)	M	St	1, 2
	0.6	Peak = UTP				ML: SILT: light brown streaked orange. Low plasticity. Sensitive. (Hinuera Formation)			2, 1, 1
	1.0	Peak = 133kPa Residual = 18kPa		1				VSt to H	2, 2, 2
	1.2	Peak = 166kPa Residual = 33kPa				*... at 1.10m, Becoming grey mottled orange.*	M to W		3, 3, 2, 4
						SP: Fine SAND: with some silt; grey mottled orange. Poorly graded, sub rounded. (Hinuera Formation)		L	2, 2
	1.8	Peak = 178kPa Residual = 33kPa				ML: SILT: light grey. Low plasticity. Sensitive. (Hinuera Formation)		VSt	3
				2		SM: Silty fine to medium SAND: grey. Poorly graded, sub rounded. (Hinuera Formation)	W	L to MD	2, 2, 4, 3, 2, 2, 4, 4, 4, 3
04-06-2024				3		SW: Fine to medium SAND: with minor silt; grey. Well graded, sub rounded. (Hinuera Formation)	W to S	MD	4, 5, 5, 5, 5
							S		5, 6
						Borehole terminated at 3.6 m			6, 6, 6, 3
				4					7, 6, 8, 7, 8, 7, 7, 8, 8
				5					

Termination Reason: Hole Collapse.
Shear Vane No: 2955 DCP No: 34
Remarks: Groundwater encountered at 3.3m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-25

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 04/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)			2, 3
	0.3	Peak = 109kPa Residual = 25kPa				ML: Clayey SILT: orange brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)			1, 1
						... at 0.50m, becoming light orange brown.		VSt	2, 1, 1
	0.6	Peak = 109kPa Residual = 31kPa				... at 0.70m, with some fine to coarse sand.			2
				1		SW: Fine to coarse SAND: with minor fine gravel; brownish grey. Well graded. Gravel; subangular, pumiceous and rhyolitic. (Hinuera Formation)			3, 6, 6, 6, 6, 5, 5, 6, 5, 4, 5, 5
						... at 1.80m, becoming light greyish brown.	M		
				2		... at 2.20m, becoming orange brown with trace silt.			7, 7, 5, 5
						... from 2.40m to 2.45m, thin band of grey silty fine sand.		MD to D	6, 7, 8, 5, 4, 5
						... at 2.50m, becoming greyish brown.			
				3		... from 3.20m to 3.40m, becoming grey with greyish brown.	M to W		6, 7, 6, 6, 5
04-06-2024							W		7, 5, 5
						... at 3.80m, becoming medium to coarse; grey with brownish grey.	S		5, 4, 4
				4		Borehole terminated at 4.0 m			7, 5, 7, 5, 5, 5, 6, 5, 7
				5					

Termination Reason: Hole collapse/no retrieval
Shear Vane No: 2993 DCP No: 34
Remarks: Groundwater encountered at 3.8m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-05

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 31/05/2024
Borehole Location: Refer to site plan Logged by: NK Checked by: DM Scale: 1:25 Sheet 1 of 1

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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. Low plasticity. (Topsoil)	M		6
						SM: Silty fine SAND: light grey. Poorly graded. (Hinuera Formation)		MD	7
									5
									5
									5
						SM: Silty fine to coarse SAND: with minor fine gravel; brownish grey. Well graded, subrounded. (Hinuera Formation)			4
									3
						... at 0.90m, thin band of iron staining fine sand.			5
				1		ML: SILT: light grey. Low plasticity. Dilatant. (Hinuera Formation)		F	3
									3
						SM: Silty fine SAND: light grey. Poorly graded. Dilatant. (Hinuera Formation)	M to W	MD	3
									3
						Borehole terminated at 1.4 m			4
									5
									4
									5
									3
				2					3
									6
									6
									3
									4
									4
									3
									5
									5
									5
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: DCP No: 34
Remarks: Groundwater encountered at 1.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-06

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 31/05/2024
Borehole Location: Refer to site plan Logged by: NK Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. Low plasticity. (Topsoil)			2, 2
	0.3	Peak = 121kPa Residual = 41kPa				ML: SILT: brown. Low plasticity. Moderately sensitive to sensitive. (Hinuera Formation)		VSt	1, 1, 1, 1, 1, 1
	0.6	Peak = 148kPa Residual = 36kPa					M		
				1		SM: Silty fine to coarse SAND: with minor fine gravel; brown. Well graded, subrounded. (Hinuera Formation)		MD	3, 3, 3, 3, 4
						SM: Silty fine SAND: light grey. Poorly graded. Dilatant. (Hinuera Formation)	M to W	L to MD	3, 3, 4, 2
	1.8	Peak = UTP				ML: SILT: light grey. Low plasticity. (Hinuera Formation)		H	4, 4
				2		SW: Fine to coarse SAND: brown. Well graded, subrounded. (Hinuera Formation)	M	MD	6, 6, 5
							S		4
						Borehole terminated at 2.3 m			6, 4, 3, 2, 4, 4
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2955 DCP No: 34
Remarks: Groundwater encountered at 2.2m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-07

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 31/05/2024
Borehole Location: Refer to site plan Logged by: NK Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. Low plasticity. (Topsoil)	M		1, 1
	0.3	Peak = 193kPa Residual = 44kPa				ML: SILT: light brown mottled orange. Low plasticity. (Hinuera Formation)		VSt	1, 2, 2, 2, 2
						SM: Silty fine to medium SAND: light grey mottled orange. Well graded, subrounded. (Hinuera Formation)		L to MD	2, 3
				1		SW: Fine to coarse SAND: with minor fine pumice gravel; light grey. Well graded, subrounded. (Hinuera Formation)		MD	3, 4, 3, 3, 3, 3, 4
						Borehole terminated at 1.5 m	W to S		3, 4, 4, 5, 3, 3, 4, 13, 8, 7, 9, 6, 8, 9
				2					
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2955 DCP No: 34
Remarks: Groundwater encountered at 1.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-08

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 31/05/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/ geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M		
	0.4	Peak = 89kPa Residual = 30kPa				ML: SILT: with some clay; light brown. Low plasticity. Moderately sensitive. (Walton Subgroup)		St	
	0.6	Peak = 44kPa Residual = 21kPa				ML: SILT: with some fine to medium sand; greyish brown. Low plasticity. Moderately sensitive. (Walton Subgroup)	M to W	F	
	1.0	Peak = 133kPa Residual = 44kPa		1				VSt	
	1.5	Peak = 119kPa Residual = 44kPa							
	2.0	Peak = UTP		2		CH: Silty CLAY: dark brown. High plasticity. (Walton Subgroup) *... from 1.90m to 2.00m, Becomes mottled black.*	M	H	
	2.5	Peak = UTP							
	3.0	Peak = 208kPa		3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2993 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-09

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 31/05/2024
Borehole Location: Refer to site plan Logged by: NK Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. Low plasticity. (Topsoil)			2, 1
	0.3	Peak = 89kPa Residual = 21kPa				ML: SILT: brown. Low plasticity. (Walton Subgroup)			1
	0.6	Peak = 160kPa Residual = 30kPa						VSt to St	1, 1, 1, 1, 1
	0.9	Peak = 121kPa Residual = 24kPa		1		ML: Sandy SILT: with trace fine pumice gravel. Low plasticity. (Walton Subgroup)			1, 1
	1.2	Peak = UTP				SM: Silty fine to coarse SAND: with trace fine gravel; reddish brown. Well graded, subrounded. (Walton Subgroup)		VSt to H	3, 6, 13, 18, 20
	1.6	Peak = 148kPa Residual = 33kPa				ML: Sandy SILT: light yellow mottled orange. Low plasticity. (Walton Subgroup)	M		
	2.0	Peak = 136kPa Residual = 24kPa		2		ML: SILT: light grey. Low plasticity. (Walton Subgroup)			
	2.3	Peak = 178kPa Residual = 24kPa							
	2.6	Peak = UTP				CH: Silty CLAY: brown. High plasticity. (Walton Subgroup)			
	3.0	Peak = 207kPa		3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2955 DCP No: 34
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-10

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 04/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown with dark orange brown. No plasticity. (Topsoil)			2, 2, 2
	0.3	Peak = 101kPa Residual = 15kPa				OH: Organic CLAY: dark brown. High plasticity. Sensitive. (Hinuera Formation)			1, 1
	0.6	Peak = 89kPa Residual = 21kPa				CH: Silty CLAY: dark brown. High plasticity. Sensitive. (Hinuera Formation)			1, 1
						... at 0.80m, becoming yellowish grey.	M	St to VSt	1, 1, 3
	1.0	Peak = 127kPa Residual = 30kPa		1					5, 4, 4
						... from 1.20m to 1.25m, lens of silty fine sand.			4
						... from 1.25m to 1.30m, thin lens of silt.			4, 5
						SM: Silty Fine to medium SAND: light grey streaked orange brown. Well graded. (Hinuera Formation)		MD to D	8
04-06-2024						SW: Fine to coarse SAND: with some silt and minor fine pumiceous gravel; light grey. Well graded. (Hinuera Formation)	W		4, 6
						... at 1.70m, becoming grey.			
						Borehole terminated at 1.8 m			5, 6
				2					3, 5, 3, 3, 3, 5, 5, 4, 5
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2993 DCP No: 34
Remarks: Groundwater encountered at 1.8m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-11

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 04/06/2024
Borehole Location: Refer to site plan Logged by: WD Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
04-06-2024 ▼				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)			1, 3, 2, 1
						CH: Silty CLAY: brown. High plasticity. (Hinuera Formation)	M	St	2, 1, 3, 2, 2, 2
						... at 0.60m, becoming light brownish grey.			
						... at 0.70m, becoming light grey streaked light orange brown.			
				1		SM: Silty Fine SAND: light grey. Poorly graded. Pumiceous. (Hinuera Formation)	W	MD to D	5, 7, 7, 5, 6, 8
						... from 1.20m to 1.30m, becoming fine to coarse with trace fine pumiceous gravel.	S		
						Borehole terminated at 1.6 m			6, 8, 9, 5
				2					3, 4, 5, 5, 7, 6, 5, 6, 7
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: DCP No: 34
Remarks: Groundwater encountered at 1.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-12

Client: Maven Associates Ltd
Project: Station Road, Matamata
Site Location: 127-247A Station Road, Matamata, 3400
Project No.: HAM2023-0124
Date: 31/05/2024
Borehole Location: Refer to site plan Logged by: PM Checked by: DM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: Projection:
Datum: Survey Source: Site Plan

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: dark brown. No plasticity. (Topsoil)	M		2
									2
	0.3	Peak = 104kPa Residual = 30kPa				ML: SILT: brown. Low plasticity. Moderately sensitive. (Hinuera Formation)		St to VSt	2
									2
									2
	0.6	Peak = 74kPa Residual = 44kPa							2
									2
						SW: Fine to coarse SAND: light brown. Well graded, sub rounded. (Hinuera Formation)		VL	1
									3
				1				MD to D	6
									8
									8
									10
									8
									8
									8
									8
									6
				2					6
									8
									10
									8
									11
									8
						... at 2.50m, Becoming light grey.	W		6
									6
									8
									7
				3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2993 DCP No: 34
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - HA24-26

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 28/11/2024
Borehole Location: Refer to Site Plan Logged by: WD Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487000.0mE; 695269.4mN Projection: Mt Eden 2000
Elevation: m Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: brown. No plasticity (Topsoil)	D	VSt	1
						ML: SILT: with minor fine sand. Light grey streaked orange brown. Low plasticity. Moderately sensitive (Hinuera Formation)			4
	0.3	Peak = 128kPa Residual = 41kPa				CH: Silty CLAY: light grey streaked orange brown. High plasticity. Moderately sensitive. (Hinuera Formation)			2
						SW: Fine to coarse SAND: trace silt. Light grey. Well graded. Subangular. (Hinuera Formation)			2
						... at 0.50m, becoming light brown		MD	3
							M		5
						SP: Silty Fine to medium SAND: light grey. Poorly graded. Subangular. (Hinuera Formation)			4
									5
				1			W		6
						... at 1.00m, becoming streaked yellowish brown.			6
28-11-2024									6
	1.2	Peak = 56kPa Residual = 25kPa							7
						ML: SILT: with trace fine sand. Grey. Low plasticity. Moderately sensitive. (Hinuera Formation)		St	4
									4
						OL: Organic SILT: with minor clay. Greyish brown. Low plasticity. (Hinuera Formation)	S		4
						SW: Fine to coarse SAND: dark grey. Well graded. Subangular. (Hinuera Formation)		MD to D	6
									8
									8
						Borehole terminated at 1.8 m			10
				2					10
									9
									13
									11
									8
									4
									6
									6
									10
									17
				3					13
									12
									12
									17
									16
									7
									9
									6
									6
									14
				4					17
									15
									14
									13
									9
									6
									6
									7
									7
				5					14

Termination Reason: Hole collapse/No retrieval.
Shear Vane No: 2993 DCP No: 17B
Remarks: Groundwater encountered at 1.3m. Piezometer installed.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 5 - August 2024.

HAND AUGER BOREHOLE LOG - HA24-28

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 28/11/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487308.9mE; 694656.1mN Projection: Mt Eden 2000
Elevation: m Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: brown. Low plasticity. (Topsoil)			3
	0.3	Peak = 113kPa Residual = 15kPa				ML: SILT: with minor clay and trace fine sand. Orange brown. Low plasticity. Sensitive to extra sensitive. (Hinuera Formation)		VSt	2, 2, 2, 2, 2
	0.6	Peak = 113kPa Residual = 10kPa							1
				1		SW: Gravelly fine to coarse SAND: orange brown. Well graded. Gravel; fine, subrounded. (Hinuera Formation)			4, 4, 4
						... at 1.00m, sand becoming medium to coarse.			7, 6, 5, 5
						... at 1.40m, becoming light yellowish brown and black.	M		6, 5, 4
						... at 1.70m, becoming fine to coarse sand with some fine gravels.			5, 6, 6
				2				MD to D	7, 6, 5, 5, 6, 7, 4, 6, 7, 8
						... at 2.20m, becoming brown.			9, 8, 6, 5, 6, 7, 5, 5, 8, 9, 8, 8, 6, 6, 6, 6, 7, 6, 8
						... at 2.70m, containing trace silt.			
28-11-2024				3			W		
							S		
						Borehole terminated at 3.5 m			
				4					
				5					

Termination Reason: Hole collapse/No retrievel.
Shear Vane No: 2560 DCP No: 17B
Remarks: Ground water encountered at 3.3m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 5 - August 2024.

HAND AUGER BOREHOLE LOG - HA24-31

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 28/11/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487889.0mE; 694518.8mN Projection: Mt Eden 2000
Elevation: m Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: dark brown. Low plasticity. (Topsoil)			4, 4
	0.3	Peak = 133kPa Residual = 22kPa				ML: SILT: with minor clay. Brown. Low plasticity. Sensitive. (Hinuera Formation)		VSt	5, 4
	0.6	Peak = 43kPa Residual = 15kPa				... at 0.50m, becoming light brown.		F	2, 1, 2, 3
				1		SP: Silty fine SAND: light brown. Poorly graded. (Hinuera Formation)		MD	4, 4, 3, 5
	1.2	Peak = 113kPa Residual = 22kPa				ML: SILT: with some clay. Light grey. Low plasticity. Sensitive. (Hinuera Formation)		VSt	4, 6, 4, 5, 5, 8, 7
	1.5	Peak = 126kPa Residual = 24kPa							
	1.8	Peak = 154kPa Residual = 43kPa							
				2		SP: Fine to medium SAND: with some silt. Light yellowish grey. Poor graded. (Hinuera Formation)		MD	7, 5
	2.2	Peak = 143kPa Residual = 51kPa				ML: Fine sandy SILT : light grey. Low plasticity. Moderately sensitive. (Hinuera Formation)		VSt	7, 8, 8, 7, 8, 10
	2.5	Peak = UTP					M		
				3		SP: Fine SAND: with some silt. Light grey. Poorly graded. (Hinuera Formation)		D	8, 11, 11, 10, 10, 12, 14, 11, 11, 10, 11, 10, 10
				4		SP: Fine to medium SAND: with trace silt. Light yellowish grey and orange. Poorly graded. (Hinuera Formation)			11, 10, 8, 8, 10, 7, 8, 10, 12
						... at 4.15m, becoming light grey.			
						... at 4.30m, becoming with some silt			
	4.7	Peak = UTP				... from 4.60m to 4.80m, becoming fine sandy SILT.			
				5		Borehole terminated at 5.0 m			

Termination Reason: Target depth reached.
Shear Vane No: 2560 DCP No: 17B
Remarks: Groundwater not encountered. Nested piezometer installed.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 5 - August 2024.

HAND AUGER BOREHOLE LOG - HA24-32A

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: WD Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487437.7mE; 695222.6mN Projection: Mt Eden 2000
Elevation: m Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: brown. No plasticity. (Topsoil)	D		1, 3, 2
	0.3	Peak = 153kPa Residual = 32kPa				ML: SILT: light brownish grey. Low plasticity. Sensitive. (Hinuera Formation)			1, 2
	0.6	Peak = UTP				... at 0.60m, streaked orange brown, with some fine gravel, moderately iron stained	M	VSt to H	1, 3, 3
				1		SW: Fine to coarse SAND: with some silt. Light brownish grey. Well graded. Subangular. (Hinuera Formation)			2, 3
						... at 1.10m, containing minor fine gravel, becoming light grey.		L to MD	4, 4, 4, 4
						SP: Silty Fine to medium SAND: light grey. Poorly graded. Subangular. Dilatant. (Hinuera Formation)	W		2, 3, 4
▼ 03-12-2024	1.8	Peak = 80kPa Residual = 18kPa				ML: SILT: light grey. Low plasticity. Sensitive. Dilatant. (Hinuera Formation)		St	4, 2
				2		... at 1.90m, becoming dark orange brown. Highly iron stained.	S	H	14
						Borehole terminated at 2.0 m			9, 9, 11, 10, 9, 8, 11, 9, 11, 15, 13, 9, 11, 13, 12, 13, 11, 12, 11, 13, 14, 14, 14, 10, 16, 20
				3					
				4					
				5					

Termination Reason: Refusal on hard ground.
Shear Vane No: 2955 DCP No: 27
Remarks: Groundwater encountered at 1.8m

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 5 - August 2024.

HAND AUGER BOREHOLE LOG - HA24-32B

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: WD Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487418.9mE; 695204.1mN Projection: Mt Eden 2000
Elevation: m Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: brown. No plasticity. (Topsoil)	D		
						SP: Silty Fine to medium SAND: light grey. Poorly graded. Subangular. (Hinuera Formation)	M		
						SP: Silty Fine SAND: light grey. Poorly graded. (Hinuera Formation)			
						... from 0.60m to 0.80m, becoming streaked orange brown, slightly iron stained.			
				1		SW: Fine to coarse SAND: with some silt. Well graded. Subangular. (Hinuera Formation)	W		
						... at 1.30m, becoming orange brown. Slightly iron stained			
03-12-2024						SP: Silty Fine SAND: light grey. Poorly graded. Dilatant. (Hinuera Formation)	S		
				2		Borehole terminated at 2.0 m			
				3					
				4					
				5					

Termination Reason: Refusal on hard ground.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 1.8m.

HAND AUGER BOREHOLE LOG - HA24-33

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: WD Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487567.1mE; 695357.5mN Projection: Mt Eden 2000
Elevation: m Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
						OL: Organic SILT: brown. No plasticity. (Topsoil)	D		1, 2, 3
	0.3	Peak = 80kPa Residual = 35kPa				ML: SILT: light brownish grey. Low plasticity. Moderately sensitive. (Hinuera Formation)		St	2, 2, 2
	0.6	Peak = UTP				CH: CLAY: light grey streaked orange brown. High plasticity. (Hinuera Formation)	M	H	3
						... from 0.60m to 0.65m, containing fine black angular gravel and becoming orange brown. Highly iron stained.			3
						SW: Fine to coarse SAND: brownish grey. Well graded. Subangular. (Hinuera Formation)			4, 2
				1		*... at 0.90m, becoming grey.*			3
						... at 1.00m, containing some silt.	W	L to MD	4, 4, 4, 4, 4
						SP: Silty Fine to medium SAND: light grey. Poorly graded. Subangular. (Hinuera Formation)			4
						... at 1.60m, becoming silty fine sand.			3, 5
						... at 1.80m, becoming thinly streaked orange brown.			6, 6
				2		ML: SILT: light grey streaked orange brown. Low plasticity. Insensitive. (Hinuera Formation)			5
	2.1	Peak = 44kPa Residual = 24kPa				OL: Organic SILT: black with dark brown. Low plasticity. (Hinuera Formation)		F	3, 3
						SP: Silty Fine to medium SAND: with some fine pumiceous gravel. Grey. Poorly graded. Subangular. (Hinuera Formation)	S		6
						... at 2.70m, becoming grey mottled yellowish brown.		D	8, 9, 12, 11, 11
				3		*... at 3.00m, becoming grey mottled brown.*			13, 11, 13, 15
						Borehole terminated at 3.3 m			13
				4					10, 10, 11, 14, 11, 9, 10, 12, 11, 10, 6, 11, 13, 15, 11
				5					

03-12-2024

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: 2955 DCP No: 27
Remarks: Groundwater encountered at 1.6m

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 5 - August 2024.

HAND AUGER BOREHOLE LOG - SOA24-13

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

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Position: 487407.5mE; 695226.2mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
03-12-2024				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: Fine sandy SILT: light yellowish grey. No plasticity. (Hinuera Formation)	M		
				1		SW: Fine to coarse SAND: with some silt. Light yellowish grey. Well graded. (Hinuera Formation)	W		
							S		
						Borehole terminated at 1.5 m			
				2					
				3					
				4					
				5					

Dynamic Cone Penetrometer (Blows/100mm): 5, 10, 15

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 1.2m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-14

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487403.8mE; 695187.8mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
03-12-2024 ▼				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						SP: Fine to medium SAND: with some silt. Light grey. Poorly graded. (Hinuera Formation)	M		
				1		*... at 1.00m, becoming light grey streaked orange.*			
						SW: Fine to coarse SAND : with some silt. Grey. Well graded. (Hinuera Formation)	S		
				2		Borehole terminated at 2.1 m			
				3					
				4					
				5					

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 1.7m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-15

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487607.7mE; 695328.9mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
03-12-2024				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			1, 2, 2
						SP: Silty fine SAND: light grey. Poorly graded. (Hinuera Formation)	M		6, 6, 3, 4, 5
						SP: Fine to medium SAND: with minor silt. Yellowish grey. Poorly graded. (Hinuera Formation)			6, 6
				1		SW: Fine to coarse SAND: with minor silt. Light grey. Well graded. (Hinuera Formation)			6
							W	MD	5, 6, 4, 4, 4
							S		3, 3, 3, 5
				2		Borehole terminated at 2.0 m			5, 4, 4, 4, 4, 5, 8, 8, 8, 11, 10, 6, 6, 8, 8, 8, 8, 9, 9, 8, 6, 6, 7, 10, 10, 7, 7, 9, 15
				3					
				4					
				5					

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: DCP No: 34
Remarks: Groundwater encountered at 1.5m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-16

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 03/12/2024
Borehole Location: Refer to Site Plan Logged by: WD Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
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Position: 487636.0mE; 695287.7mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
				0		OL: Organic SILT: brown. No plasticity. (Topsoil)	D		
						ML: SILT: with minor fine sand. Light grey. Low plasticity. (Hinuera Formation)	M		
						SP: Fine to medium SAND: with some silt. Light grey streaked orange brown. Poorly graded. Subangular. (Hinuera Formation)			
				1		*... at 0.90m, becoming orange brown. Thin band of fine to coarse sand*			
03-12-2024						SW: Fine to coarse SAND: with some silt. Grey with brownish grey. Well graded. Subangular. (Hinuera Formation)	W		
						... at 1.50m, becoming light grey, with small silt pockets.			
				2		SW: Silty Fine to coarse SAND: light grey. Well graded. Subangular. Dilatant. (Hinuera Formation)			
						... at 1.90m, containing pickets of silt: grey.	S		
	2.4	Peak = 44kPa Residual = 29kPa				OL: Organic SILT: with minor clay. Dark brown streaked light grey. Low plasticity. Insensitive. Amorphous. (Hinuera Formation)		F	
						... from 2.45m to 2.50m, band of light grey silt.			
						SP: Silty Fine to medium SAND: with minor fine pumiceous gravel. Grey. Poorly graded. Subangular. (Hinuera Formation)			
				3		*... from 2.50m to 2.80m, containing interbedded layers of silt: grey.*			
						... at 2.80m, becoming grey with yellowish brown, containing some pumiceous fine gravel.			
						Borehole terminated at 3.1 m			
				4					
				5					

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: 2955 DCP No:
Remarks: Groundwater encountered at 1.5m

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-17

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487339.2mE; 694655.7mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: SILT: with some clay. Orange. Low plasticity. (Hinuera Formation)			
				1		SW: Fine to coarse SAND : with minor fine gravels. Grey mottled black. Well graded. (Hinuera Formation)	M		
				2					
				3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-18

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487256.1mE; 694625.7mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: Clayey SILT: orange brown. Low plasticity. (Hinuera Formation)			
				1		SW: Fine to coarse SAND: with minor fine gravels. Orange grey and black. Well graded. (Hinuera Formation)	M		
				2		*... from 2.10m to 2.20m, becoming fine to medium sand.* *... from 2.20m to 2.30m, becoming dark orange.* *... at 2.60m, becoming grey.*	W		
				3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-19

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487216.6mE; 694671.3mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
05-12-2024				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: Clayey SILT: orange brown. Low plasticity. (Hinuera Formation)			
				1		SW: Fine to coarse SAND : with minor fine gravel. Orange brown. Well graded. (Hinuera Formation)			
						... at 1.30m, becoming light yellowish grey and black.	M		
				2		*... from 2.80m to 3.00m, becoming grey.*	W		
				3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 3.0m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-20

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487008.8mE; 695148.7mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
05-12-2024				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: SILT: with some clay. Light brown. Low plasticity. (Hinuera Formation)			
						... at 0.60m, becoming light grey streaked orange.	M		
				1		SP: Silty fine to medium SAND: orange grey. Poorly graded. (Hinuera Formation)			
						SP: Fine to medium SAND: with some silt. Light yellowish grey. Poorly graded. (Hinuera Formation)	W		
						ML: Fine sandy SILT: light grey. Low plasticity. (Hinuera Formation)	S		
						Borehole terminated at 1.8 m			
				2					
				3					
				4					
				5					

Dynamic Cone Penetrometer (Blows/100mm): 5, 10, 15

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 1.5m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-21

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 486972.7mE; 695214.8mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
05-12-2024				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: SILT: with some clay. Light brown. Low plasticity. (Hinuera Formation)			
						... at 0.60m, becoming light grey streaked orange.			
						SP: Silty fine to medium SAND: light yellowish grey mottled orange. Poorly graded. (Hinuera Formation)	M		
				1		ML: Silty fine SAND: light grey. Poorly graded. (Hinuera Formation)			
						ML: SILT: with minor clay and trace fine sand. Light bluish grey. Low plasticity (Hinuera Formation)			
						... at 1.80m, containing tree root 1cm diameter.			
						... from 1.90m to 2.20m, becoming grey streaked brown with some black rootlets.	S		
				2		SW: Fine to coarse SAND: with some silt. Grey mottled brown. Well graded. (Hinuera Formation)			
						Borehole terminated at 2.3 m			
				3					
				4					
				5					

Termination Reason: Hope collapse due to groundwater.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 1.6m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-22

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 486954.6mE; 695278.2mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
05-12-2024				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: SILT: with some clay. Light brown streaked orange. Low plasticity. (Hinuera Formation)			
						... at 0.50m, with some fine sand.	M		
				1		SP: Silty fine to medium SAND: light grey mottled orange. Poorly graded. (Hinuera Formation)			
						SP: Fine SAND: with minor silt. Light bluish grey. Poorly graded. (Hinuera Formation)			
						ML: SILT: with minor fine sand. Light bluish grey. Low plasticity. (Hinuera Formation)	S		
						... at 1.80m, becoming light grey and with trace rootlets.			
				2		SW: Fine to coarse SAND: with trace silt. Brownish grey. Well graded. (Hinuera Formation)			
						Borehole terminated at 2.1 m			
				3					
				4					
				5					

Termination Reason: Hole collapse due to groundwater.
Shear Vane No: DCP No:
Remarks: Groundwater encountered at 1.4m.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-23

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: DB Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487897.7mE; 694612.8mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
				0		OL: Organic SILT: brown. Low plasticity. (Topsoil)			
						ML: SILT: with trace clay and fine sand. light brown. Low plasticity. (Hinuera Formation)			
				1		CL: Silty CLAY: with trace sand. Brown. Low plasticity. (Hinuera Formation)			
						ML: Clayey SILT: with minor fine sand. Light brownish grey. Low plasticity. (Hinuera Formation)	M		
				2		ML: Fine sandy SILT: light yellowish grey. Low plasticity. (Hinuera Formation) *... from 2.20m to 2.70m, becoming clayey silt.*			
				3		SP: Fine SAND: with minor silt. Light grey. Poorly graded. (Hinuera Formation) *... at 3.20m, sand becoming fine to medium.*			
						Borehole terminated at 3.6 m			
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

HAND AUGER BOREHOLE LOG - SOA24-24

Client: Maven Associates Ltd
Project: Station Road
Site Location: Station Road, Matamata
Project No.: HAM2023-0124
Date: 05/12/2024
Borehole Location: Refer to Site Plan Logged by: LA Checked by: MM Scale: 1:25 Sheet 1 of 1

CMW Geosciences
Great People | Practical Solutions

Position: 487944.3mE; 694488.3mN Projection: Mt Eden 2000
Datum: Moturiki 1953 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
				0		OL: Organic SILT: black. No plasticity. (Topsoil)			
						ML: SILT: orange brown. Low plasticity. (Hinuera Formation)			
				1		ML: fine sandy SILT.: light orange brown. Low plasticity (Hinuera Formation)			
						... at 1.40m, becoming light brownish grey			
				2		SP: Silty fine SAND: light brownish grey mottled light orange brown. Poorly graded, subrounded. (Hinuera Formation)	M		
				3		Borehole terminated at 3.5 m			
				4					
				5					

Termination Reason: Target depth
Shear Vane No: DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 4 - April 2023.

APPENDIX D: IN-SITU PERMEABILITY TESTING RESULTS

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	NK
	PROJECT: **Station Road, Matamata**	CHECKED:	AS
		REVISION:	1
	TITLE: **SOA23-01 Falling Head Permeability Test**	DATE:	24/11/2023
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	0.8	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

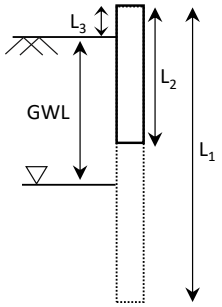
Ground Conditions

GWL: 1 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 0.80 m BGL



Hydraulic Conductivity (k)

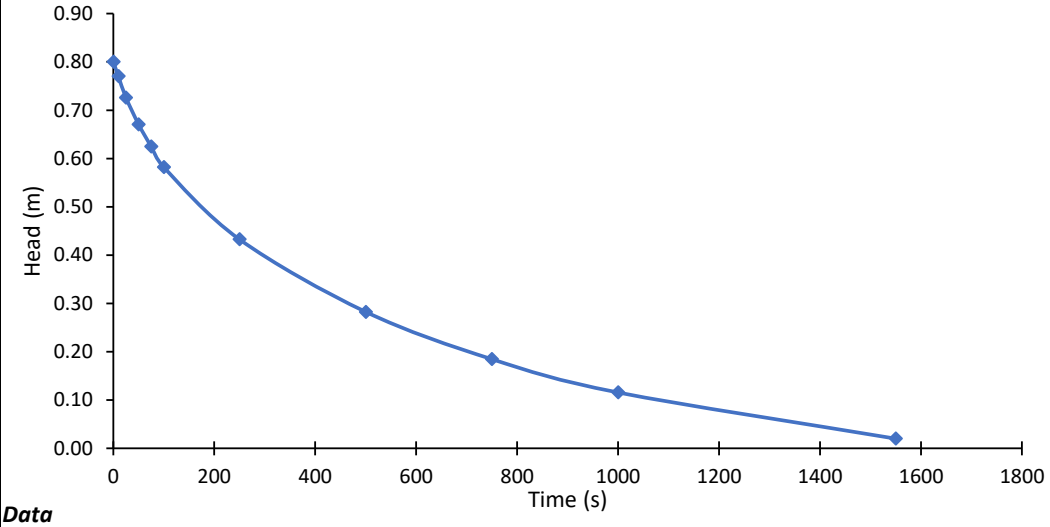
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d}\right).\frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 4.74E-05 ms^{-1} = 4.10 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2\, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1}\right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 1.47E-05 ms^{-1} = 1.27 m/day



STRATIGRAPHIC LOG

Silt

Sand

EOH @ 1m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	0.800				
10	0.030	0.770	0.785		1.41E-05	7.04E-05
25	0.074	0.726	0.748		1.49E-05	7.23E-05
50	0.129	0.671	0.698		1.26E-05	5.83E-05
75	0.175	0.625	0.648		1.19E-05	5.20E-05
100	0.218	0.582	0.603		1.24E-05	5.18E-05
250	0.368	0.433	0.507		9.59E-06	3.59E-05
500	0.518	0.283	0.358		1.01E-05	3.03E-05
750	0.616	0.184	0.234		1.24E-05	2.86E-05
1000	0.684	0.116	0.150		1.62E-05	2.88E-05
1550	0.780	0.020	0.068		3.31E-05	4.55E-05

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	NK
	PROJECT: **Station Road, Matamata**	CHECKED:	AS
		REVISION:	1
	TITLE: **SOA23-02 Falling Head Permeability Test**	DATE:	24/11/2023
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

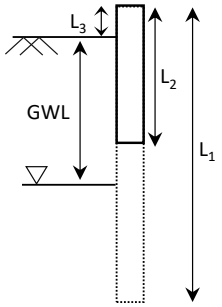
Ground Conditions

GWL: 2 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.00 m BGL



Hydraulic Conductivity (k)

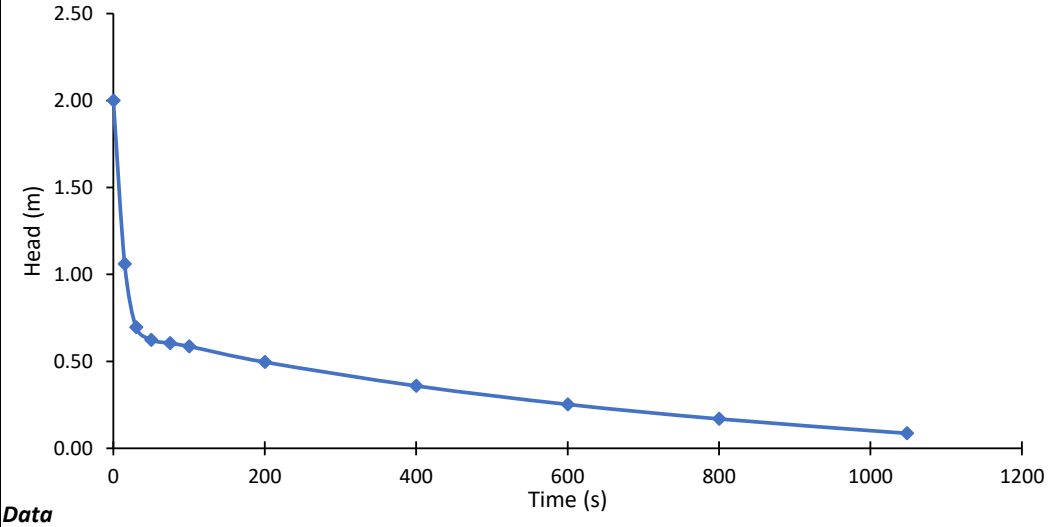
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

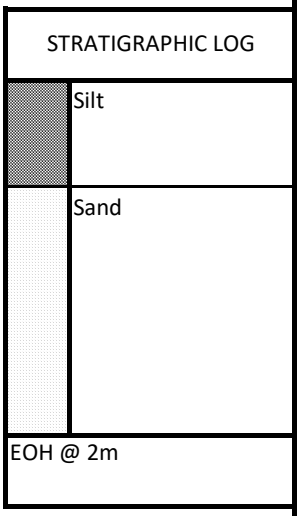
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d}\right).\frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.70E-04 ms^{-1} = 14.70 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2\, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1}\right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 2.96E-05 ms^{-1} = 2.56 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	2.000				
15	0.941	1.060	1.530		9.89E-05	8.57E-04
30	1.305	0.695	0.878		9.63E-05	5.36E-04
50	1.376	0.624	0.660		2.25E-05	1.00E-04
75	1.396	0.604	0.614		5.52E-06	2.33E-05
100	1.414	0.586	0.595		5.24E-06	2.16E-05
200	1.504	0.496	0.541		7.82E-06	3.04E-05
400	1.641	0.359	0.427		8.67E-06	2.90E-05
600	1.747	0.253	0.306		1.13E-05	3.04E-05
800	1.831	0.169	0.211		1.53E-05	3.30E-05
1048	1.914	0.086	0.128		2.47E-05	4.10E-05

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	NK
	PROJECT: **Station Road, Matamata**	CHECKED:	AS
		REVISION:	1
	TITLE: **SOA23-03 Falling Head Permeability Test**	DATE:	24/11/2023
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

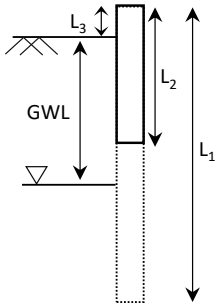
Length L_1:	2	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

Ground Conditions

GWL: 2 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$



Bottom of Test Hole: 2.00 m BGL

Hydraulic Conductivity (k)

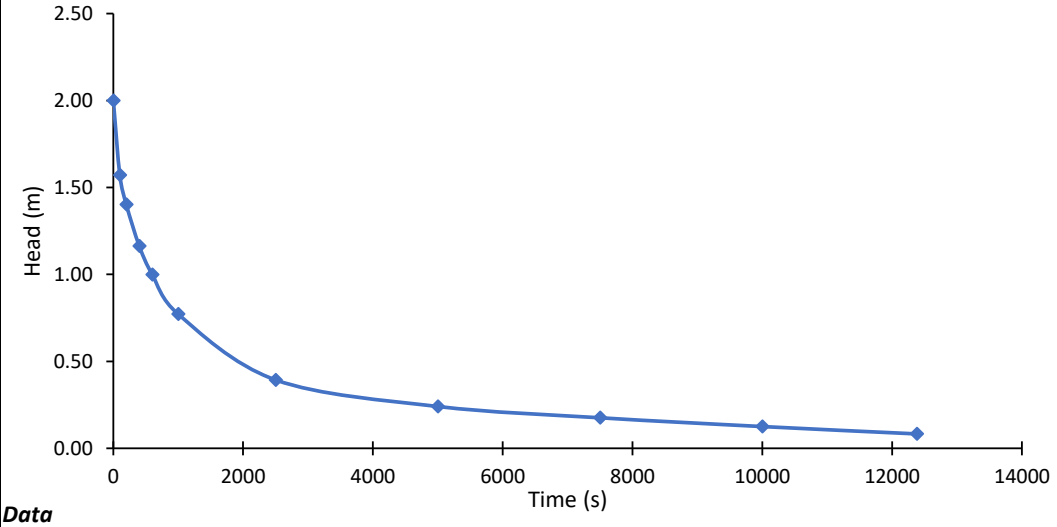
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

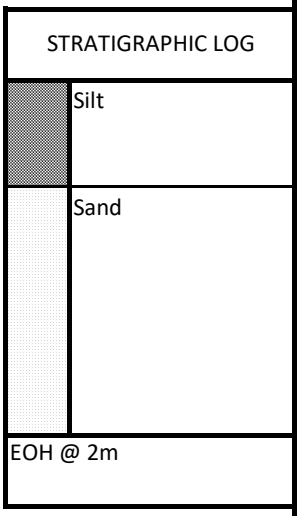
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.31E-05 ms^{-1} = 1.13 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 2.17E-06 ms^{-1} = 0.19 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	2.000				
100	0.429	1.571	1.785		5.04E-06	4.65E-05
200	0.599	1.401	1.486		2.72E-06	2.17E-05
400	0.837	1.163	1.282		2.47E-06	1.77E-05
600	1.001	0.999	1.081		2.26E-06	1.43E-05
1000	1.229	0.771	0.885		2.21E-06	1.22E-05
2500	1.607	0.393	0.582		2.00E-06	8.70E-06
5000	1.759	0.241	0.317		1.24E-06	3.48E-06
7500	1.824	0.176	0.208		9.65E-07	2.05E-06
10000	1.875	0.125	0.150		1.17E-06	2.06E-06
12380	1.917	0.083	0.104		1.67E-06	2.41E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	NK
	PROJECT: **Station Road, Matamata**	CHECKED:	AS
		REVISION:	1
	TITLE: **SOA23-04 Falling Head Permeability Test**	DATE:	24/11/2023
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	0.8	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

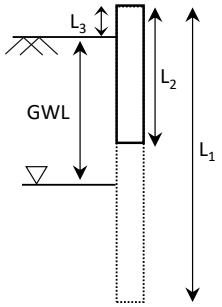
Ground Conditions

GWL: 1 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.00 m BGL



Hydraulic Conductivity (k)

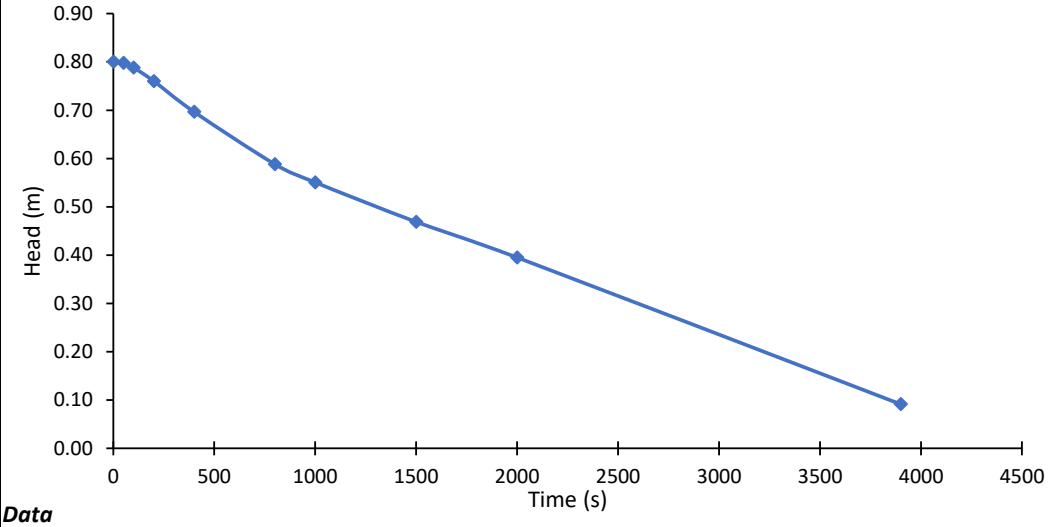
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d}\right).\frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 5.73E-06 ms^{-1} = 0.50 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2\, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1}\right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 1.35E-06 ms^{-1} = 0.12 m/day



STRATIGRAPHIC LOG

Silt

Sand

EOH @ 3m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	0.800				
50	0.002	0.798	0.799		1.83E-07	9.26E-07
100	0.012	0.788	0.793		9.06E-07	4.57E-06
200	0.040	0.760	0.774		1.35E-06	6.68E-06
400	0.104	0.697	0.728		1.70E-06	8.06E-06
800	0.212	0.588	0.642		1.77E-06	7.75E-06
1000	0.250	0.550	0.569		1.50E-06	6.00E-06
1500	0.331	0.469	0.510		1.56E-06	5.80E-06
2000	0.405	0.395	0.432		1.82E-06	6.08E-06
3000						
3900	0.709	0.091				

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-05 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.4	m
Diameter:	90	mm
Non-Perm L_2:	0.5	m
Above Gnd L_3:	0	m

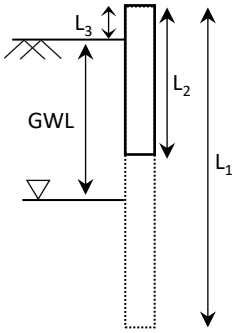
Ground Conditions

GWL: 1.4 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.40 m BGL



Hydraulic Conductivity (k)

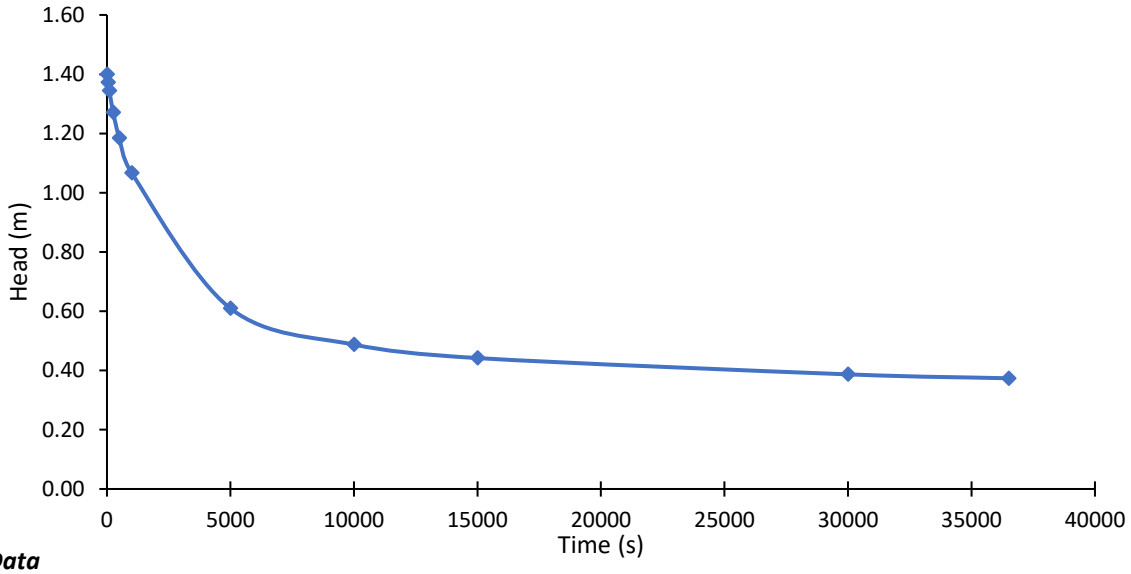
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 3.58E-06 ms^{-1} = 0.31 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 6.54E-07 ms^{-1} = 0.06 m/day



STRATIGRAPHIC LOG

- Silt
- Sand
- Silt
- Sand

EOH @ 1.4m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.400				
50	0.027	1.373	0.900		1.32E-06	7.40E-06
100	0.056	1.344	0.900		1.42E-06	7.97E-06
250	0.129	1.271	0.900		1.26E-06	7.04E-06
500	0.216	1.184	0.900		9.56E-07	5.35E-06
1000	0.333	1.067	0.900		7.05E-07	3.93E-06
5000	0.791	0.609	0.838		4.95E-07	2.72E-06
10000	0.913	0.487	0.548		2.07E-07	8.13E-07
15000	0.958	0.442	0.465		9.99E-08	3.49E-07
30000	1.013	0.387	0.414		4.83E-08	1.57E-07
36510	1.026	0.374	0.380		3.07E-08	9.39E-08

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-06 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2.3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

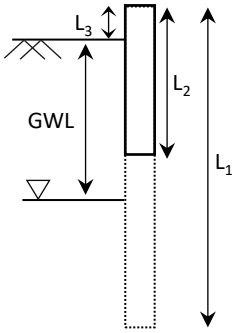
Ground Conditions

GWL: 2.2 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.30 m BGL



Hydraulic Conductivity (k)

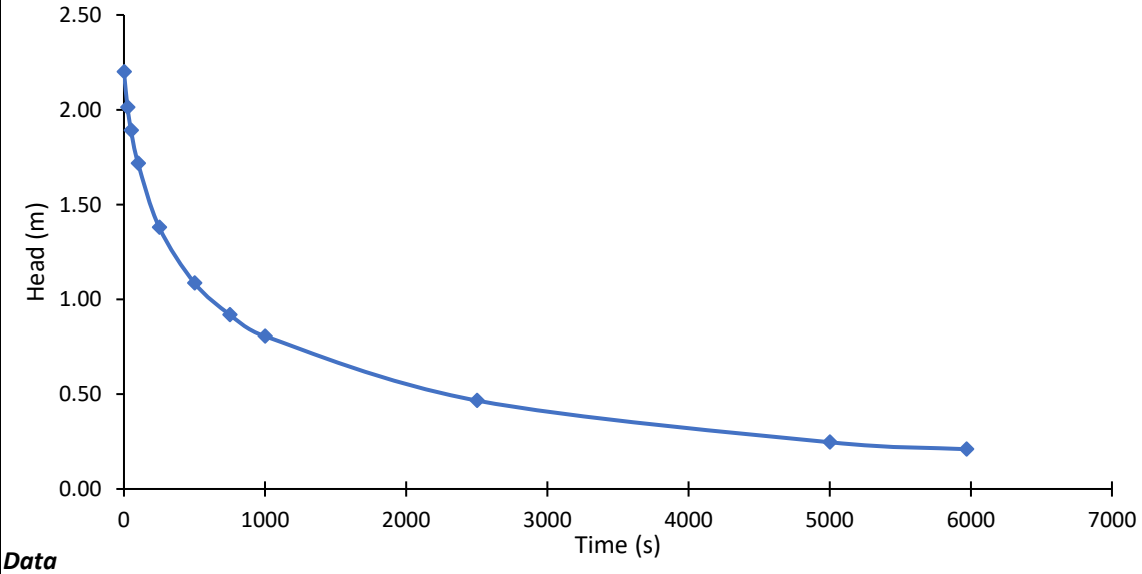
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

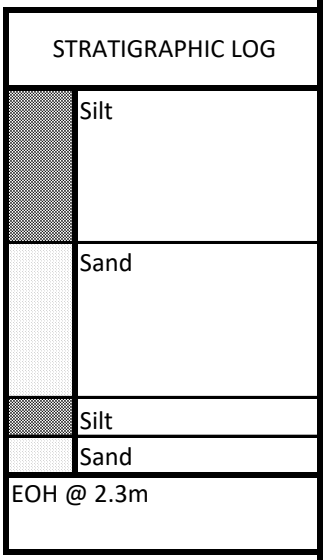
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 2.35E-05 ms^{-1} = 2.03 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 2.80E-06 ms^{-1} = 0.24 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	2.200				
25	0.186	2.014	2.207		6.32E-06	6.78E-05
50	0.308	1.892	2.053		4.71E-06	4.77E-05
100	0.483	1.718	1.905		3.85E-06	3.69E-05
250	0.820	1.380	1.649		3.23E-06	2.80E-05
500	1.114	1.086	1.333		2.46E-06	1.82E-05
750	1.280	0.920	1.103		1.96E-06	1.25E-05
1000	1.395	0.805	0.963		1.71E-06	9.90E-06
2500	1.734	0.466	0.736		1.40E-06	6.95E-06
5000	1.954	0.246	0.456		1.32E-06	4.68E-06
5970	1.990	0.210	0.328		1.03E-06	2.72E-06

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-07 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.5	m
Diameter:	90	mm
Non-Perm L_2:	0.5	m
Above Gnd L_3:	0	m

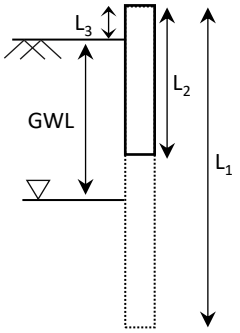
Ground Conditions

GWL: 1.4 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.50 m BGL



Hydraulic Conductivity (k)

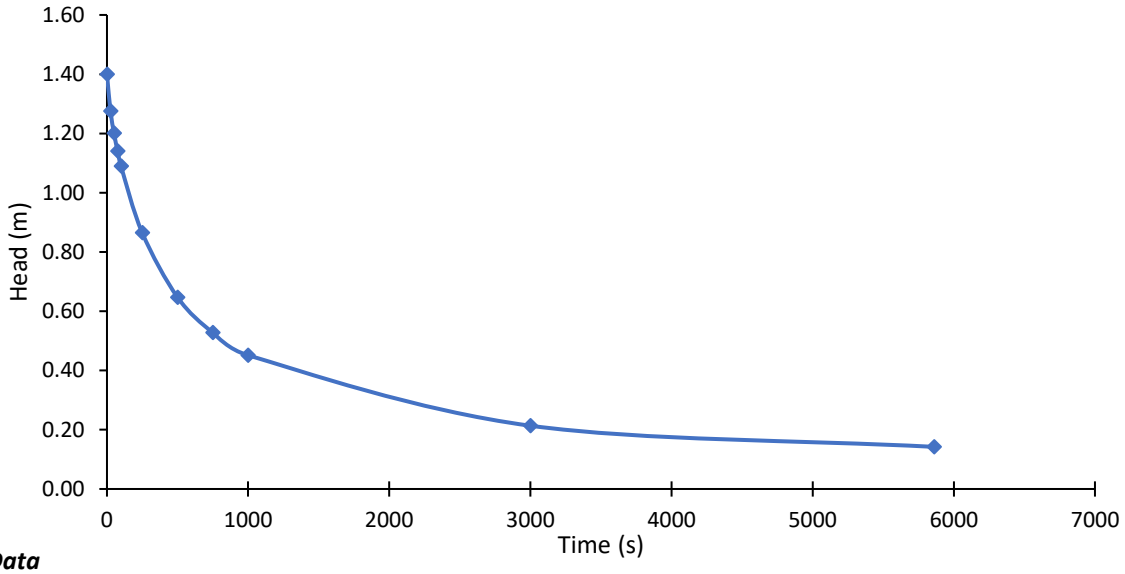
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 2.76E-05 ms^{-1} = 2.38 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 4.94E-06 ms^{-1} = 0.43 m/day



STRATIGRAPHIC LOG

Silt

Sand

EOH @ 1.5m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.400				
25	0.125	1.275	1.000		1.17E-05	7.07E-05
50	0.199	1.201	1.000		7.58E-06	4.55E-05
75	0.260	1.140	1.000		6.49E-06	3.89E-05
100	0.311	1.089	1.000		5.79E-06	3.46E-05
250	0.535	0.865	1.000		4.83E-06	2.90E-05
500	0.753	0.647	0.856		4.04E-06	2.17E-05
750	0.873	0.527	0.687		3.29E-06	1.49E-05
1000	0.949	0.451	0.589		2.76E-06	1.12E-05
3000	1.187	0.213	0.432		1.99E-06	6.94E-06
5860	1.258	0.142	0.278		9.56E-07	2.26E-06

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-08 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

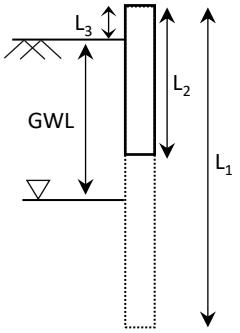
Ground Conditions

GWL: 3 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.00 m BGL



Hydraulic Conductivity (k)

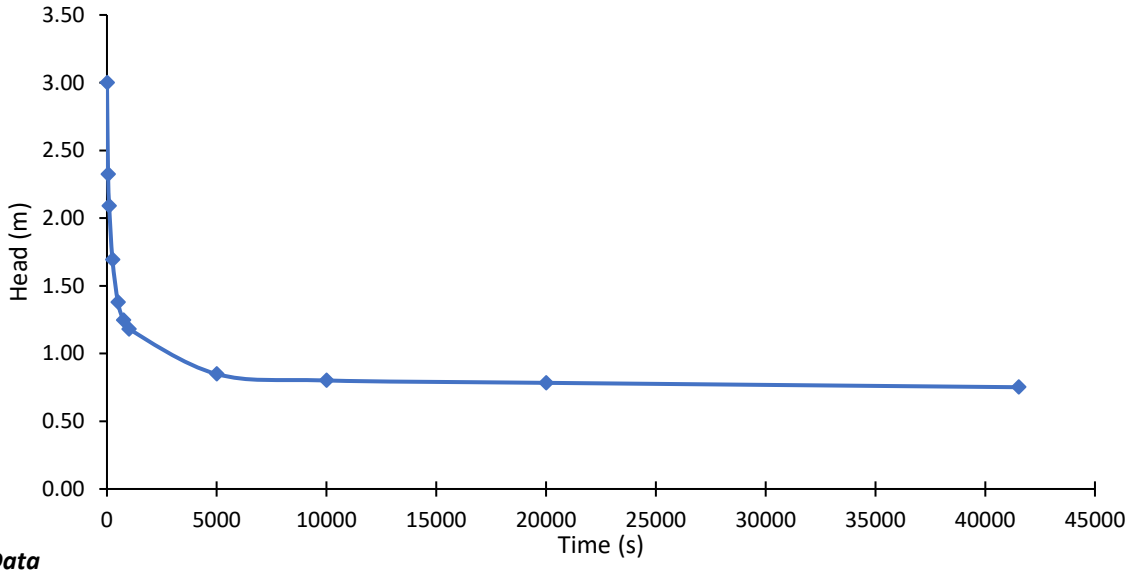
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

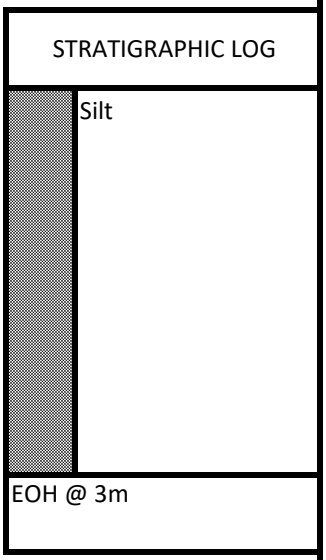
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.96E-05 ms^{-1} = 1.69 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 1.84E-06 ms^{-1} = 0.16 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	3.000				
50	0.676	2.325	2.662		7.92E-06	9.91E-05
100	0.909	2.091	2.208		3.78E-06	4.06E-05
250	1.307	1.693	1.892		2.82E-06	2.71E-05
500	1.621	1.379	1.536		1.91E-06	1.57E-05
750	1.754	1.246	1.312		1.06E-06	7.70E-06
1000	1.819	1.181	1.213		5.84E-07	4.00E-06
5000	2.151	0.849	1.015		2.57E-07	1.57E-06
10000	2.199	0.801	0.825		4.12E-08	2.14E-07
20000	2.216	0.784	0.792		8.10E-09	4.08E-08
41530	2.249	0.751	0.768		7.32E-09	3.61E-08

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-09 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

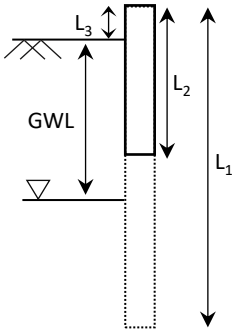
Ground Conditions

GWL: 3 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.00 m BGL



Hydraulic Conductivity (k)

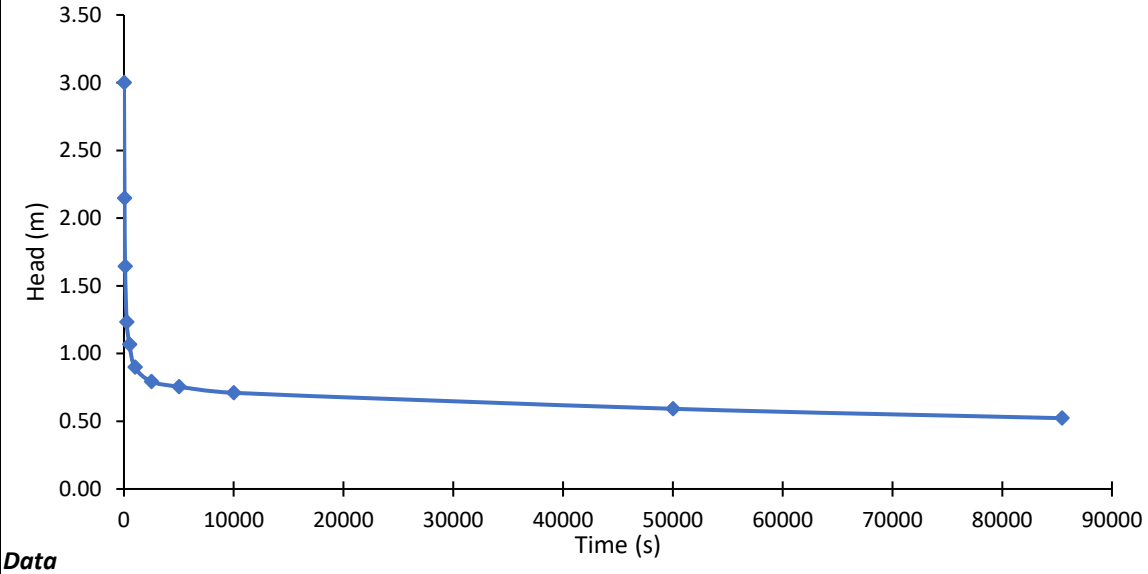
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

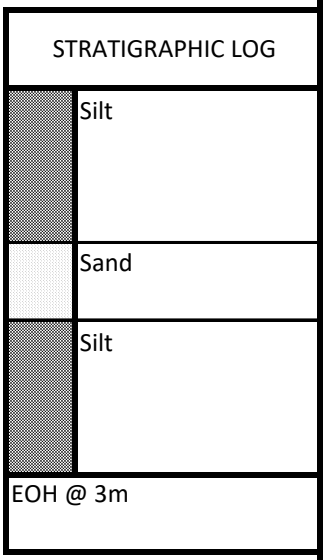
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 2.91E-05 ms^{-1} = 2.51 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 2.92E-06 ms^{-1} = 0.25 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	3.000				
50	0.853	2.147	2.573		1.07E-05	1.31E-04
100	1.357	1.644	1.895		1.07E-05	1.03E-04
250	1.767	1.233	1.438		4.68E-06	3.68E-05
500	1.934	1.066	1.149		1.66E-06	1.10E-05
1000	2.102	0.898	0.982		1.09E-06	6.43E-06
2500	2.207	0.793	0.846		2.91E-07	1.54E-06
5000	2.245	0.756	0.774		7.29E-08	3.62E-07
10000	2.290	0.710	0.733		4.80E-08	2.29E-07
50000	2.408	0.592	0.651		1.89E-08	8.35E-08
85440	2.477	0.523	0.557		1.61E-08	6.38E-08

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-10 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.8	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

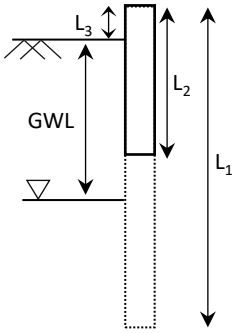
Ground Conditions

GWL: 1.8 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.80 m BGL



Hydraulic Conductivity (k)

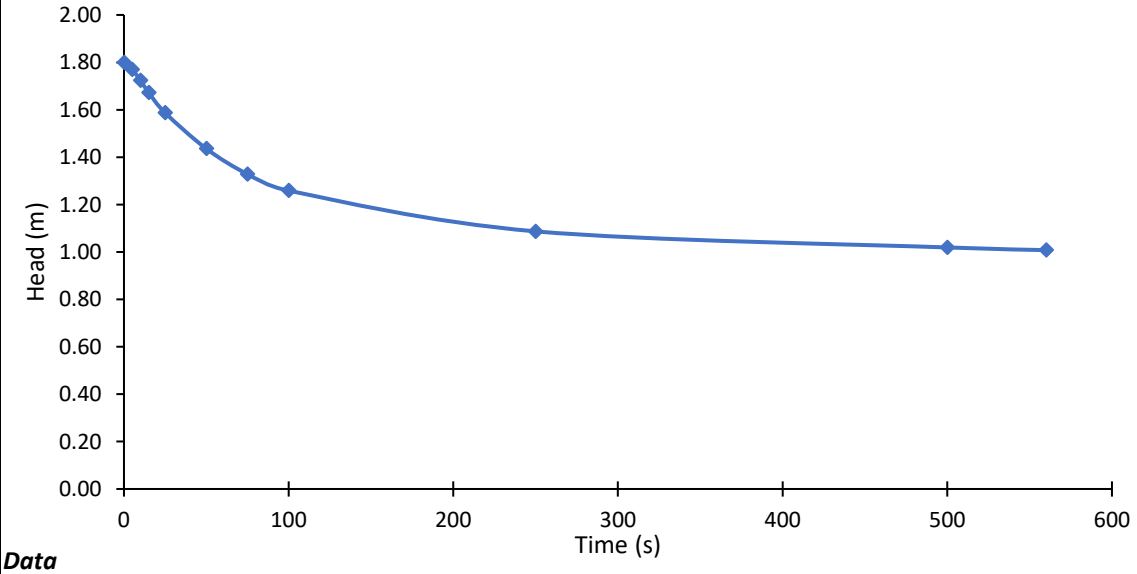
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 5.82E-05 ms^{-1} = 5.03 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 7.00E-06 ms^{-1} = 0.60 m/day



STRATIGRAPHIC LOG

Silt

Sand

EOH @ 1.8m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.800				
5	0.031	1.769	1.785		7.19E-06	6.56E-05
10	0.077	1.723	1.746		1.12E-05	1.00E-04
15	0.127	1.673	1.698		1.30E-05	1.14E-04
25	0.213	1.587	1.630		1.17E-05	9.97E-05
50	0.364	1.436	1.511		9.45E-06	7.63E-05
75	0.472	1.328	1.382		7.81E-06	5.89E-05
100	0.541	1.259	1.293		5.67E-06	4.07E-05
250	0.713	1.087	1.173		2.75E-06	1.85E-05
500	0.781	1.019	1.053		7.83E-07	4.84E-06
560	0.792	1.008	1.013		5.74E-07	3.45E-06

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-11 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.6	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

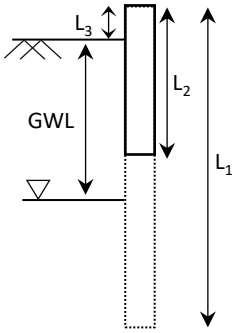
Ground Conditions

GWL: 1.4 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.60 m BGL



Hydraulic Conductivity (k)

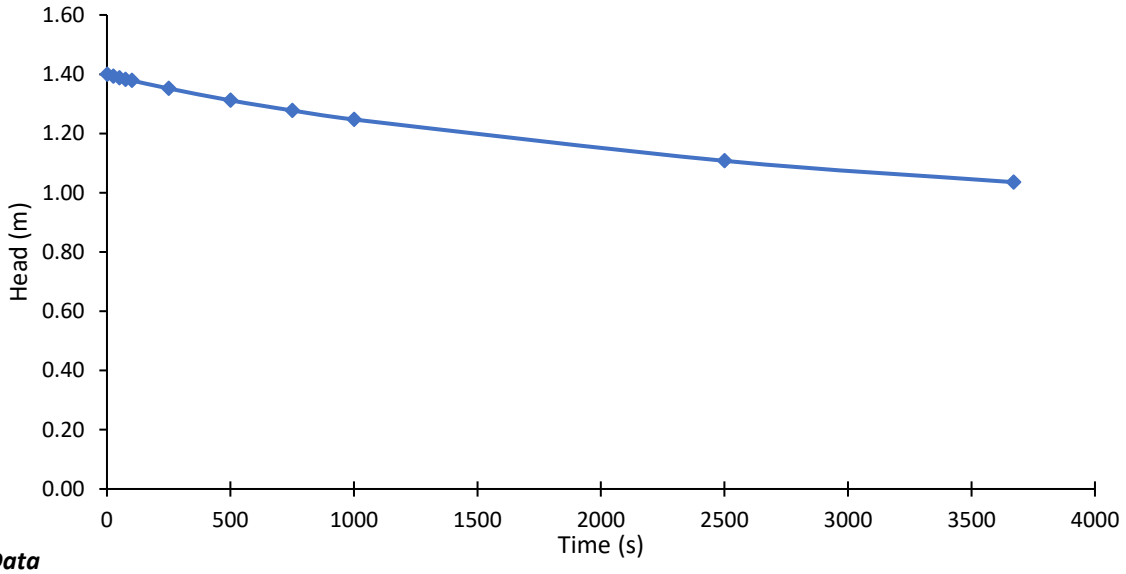
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 2.27E-06 ms^{-1} = 0.20 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 2.80E-07 ms^{-1} = 0.02 m/day



STRATIGRAPHIC LOG

Sand

EOH @ 1.6m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.400				
25	0.007	1.393	1.597		4.41E-07	3.69E-06
50	0.013	1.387	1.590		3.99E-07	3.32E-06
75	0.018	1.383	1.585		3.02E-07	2.52E-06
100	0.021	1.379	1.581		2.44E-07	2.03E-06
250	0.048	1.352	1.565		3.03E-07	2.49E-06
500	0.088	1.312	1.532		2.82E-07	2.28E-06
750	0.122	1.278	1.495		2.49E-07	1.98E-06
1000	0.153	1.247	1.462		2.32E-07	1.82E-06
2500	0.292	1.108	1.377		1.99E-07	1.49E-06
3670	0.364	1.036	1.272		1.53E-07	1.08E-06

CMW Geosciences	CLIENT:	DESIGNER:	NK
	PROJECT: **124 Station Road, Matamata**	CHECKED:	DM
		REVISION:	0
	TITLE: **HAS24-12 Falling Head Permeability Test**	DATE:	10/06/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

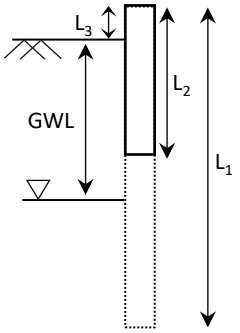
Ground Conditions

GWL: 3 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.00 m BGL



Hydraulic Conductivity (k)

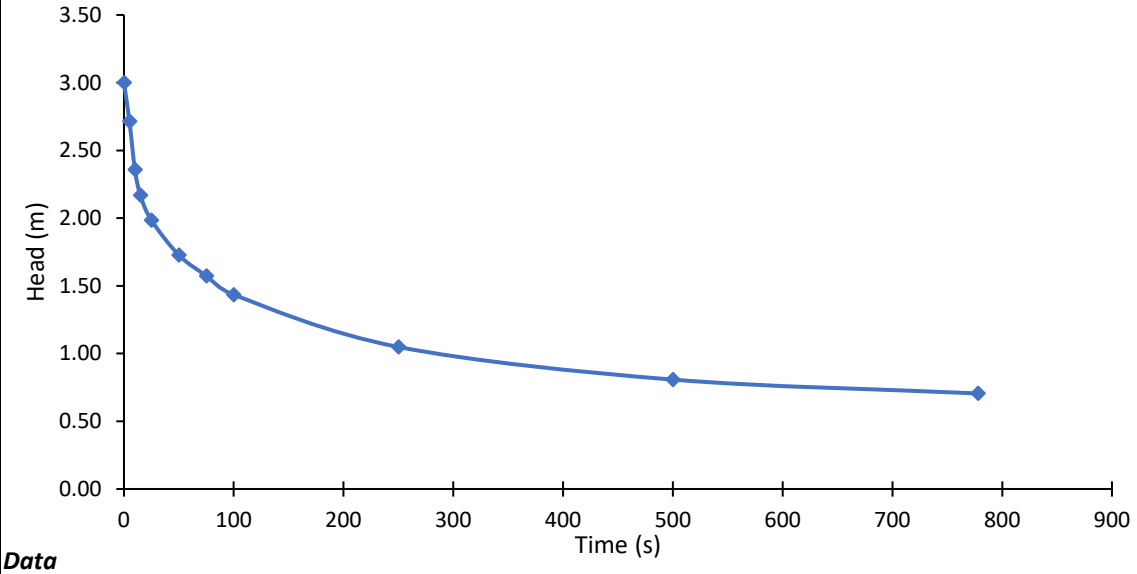
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d} \right) . \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.74E-04 ms^{-1} = 15.00 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} =$$ 1.60E-05 ms^{-1} = 1.38 m/day



STRATIGRAPHIC LOG

Silt

Sand

EOH @ 3m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	3.000				
5	0.287	2.713	2.857		2.96E-05	3.87E-04
10	0.643	2.357	2.535		4.53E-05	5.42E-04
15	0.832	2.168	2.262		2.93E-05	3.21E-04
25	1.016	1.984	2.076		1.65E-05	1.70E-04
50	1.273	1.727	1.855		1.13E-05	1.06E-04
75	1.427	1.574	1.650		8.22E-06	7.08E-05
100	1.566	1.434	1.504		8.78E-06	7.06E-05
250	1.951	1.049	1.241		5.65E-06	4.00E-05
500	2.193	0.807	0.928		3.45E-06	1.97E-05
778	2.295	0.705	0.756		1.84E-06	9.01E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO13 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.5	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

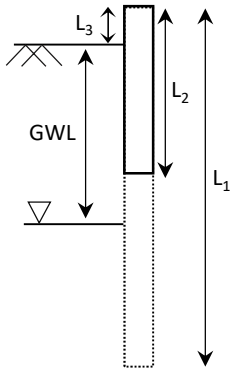
Ground Conditions

GWL: 1.2 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.50 m BGL



Hydraulic Conductivity (k)

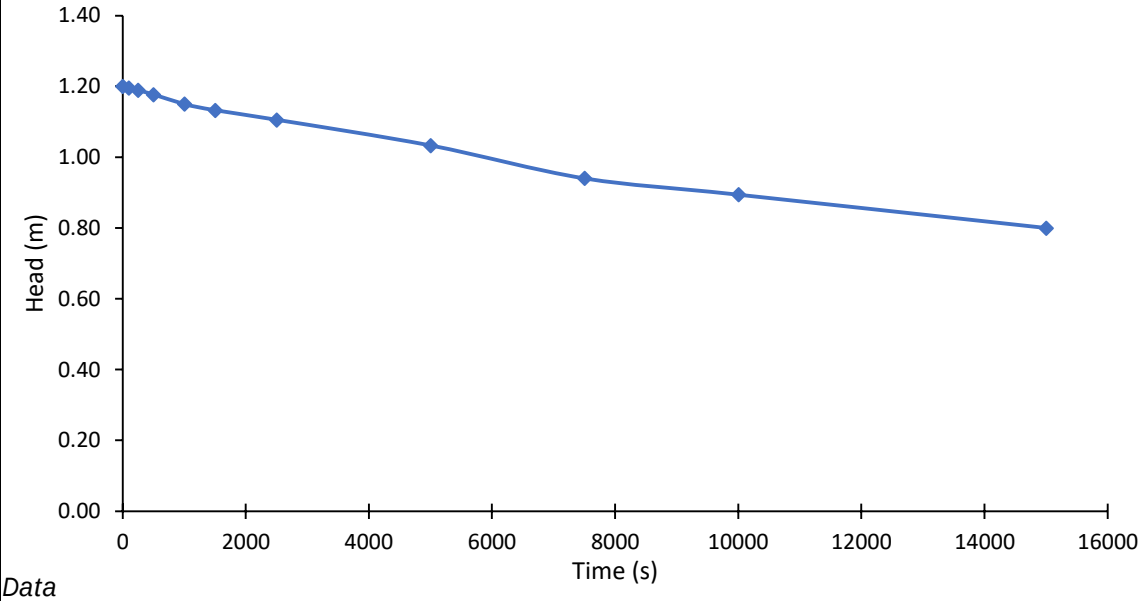
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 6.00E-07 ms^{-1} = 0.05 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{2L} ln \frac{H_1}{\quad} =$$ 7.97E-08 ms^{-1} = 0.01 m/day



STRATIGRAPHIC LOG

Sandy Silt

Sand

EOH @ 1.5m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.200				
100	0.004	1.196	1.498		7.52E-08	5.97E-07
250	0.011	1.189	1.493		9.03E-08	7.16E-07
500	0.023	1.177	1.483		1.00E-07	7.89E-07
1000	0.050	1.151	1.464		1.10E-07	8.57E-07
1500	0.067	1.133	1.442		7.51E-08	5.80E-07
2500	0.094	1.106	1.419		5.99E-08	4.57E-07
5000	0.167	1.033	1.369		6.85E-08	5.09E-07
7500	0.259	0.941	1.287		9.90E-08	7.02E-07
10000	0.306	0.894	1.218		5.55E-08	3.77E-07
15000	0.400	0.800	1.147		6.37E-08	4.14E-07

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO14 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2.1	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

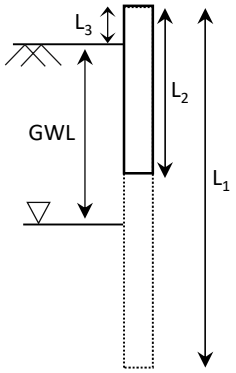
Ground Conditions

GWL: 1.7 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.10 m BGL



Hydraulic Conductivity (k)

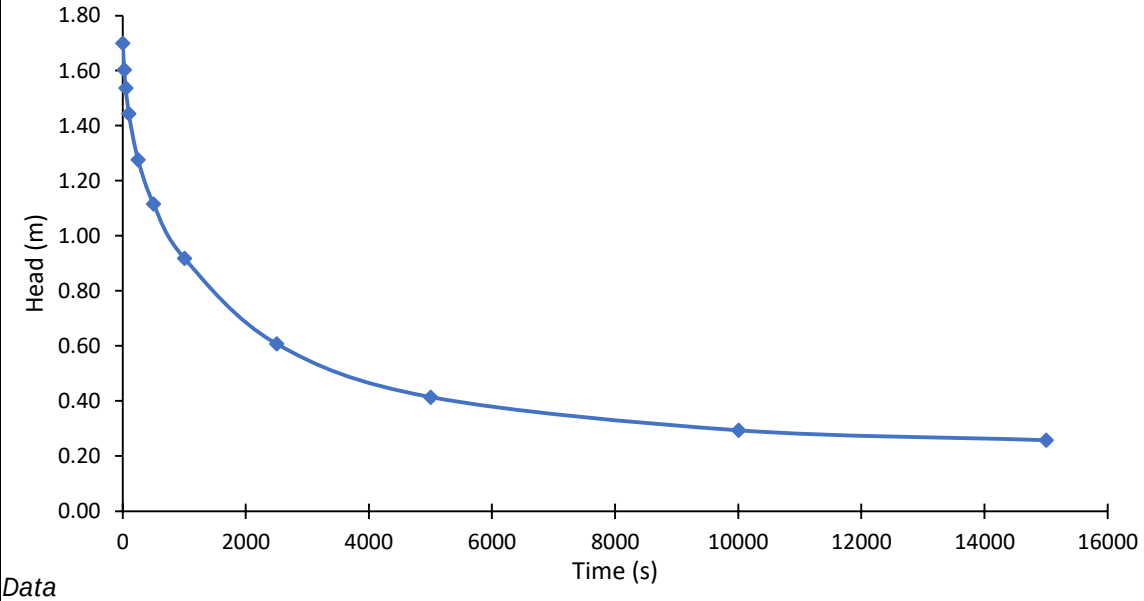
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

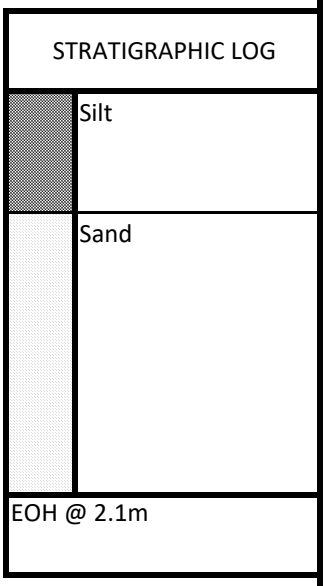
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d}\right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.43E-05 ms^{-1} = 1.23 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1}\right)}{\ln\frac{H_1}{\quad}} =$$ 1.57E-06 ms^{-1} = 0.14 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.700				
25	0.097	1.603	2.052		4.41E-06	4.45E-05
50	0.162	1.538	1.971		3.25E-06	3.18E-05
100	0.256	1.444	1.891		2.51E-06	2.38E-05
250	0.423	1.277	1.761		1.73E-06	1.56E-05
500	0.583	1.117	1.597		1.21E-06	1.01E-05
1000	0.781	0.919	1.418		9.58E-07	7.32E-06
2500	1.092	0.608	1.164		7.80E-07	5.22E-06
5000	1.285	0.415	0.911		5.12E-07	2.81E-06
10000	1.406	0.295	0.755		2.59E-07	1.21E-06
15000	1.442	0.259	0.677		1.06E-07	4.39E-07

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO15 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	3.1	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

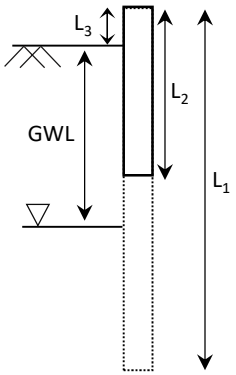
Ground Conditions

GWL: 1.5 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.10 m BGL



Hydraulic Conductivity (k)

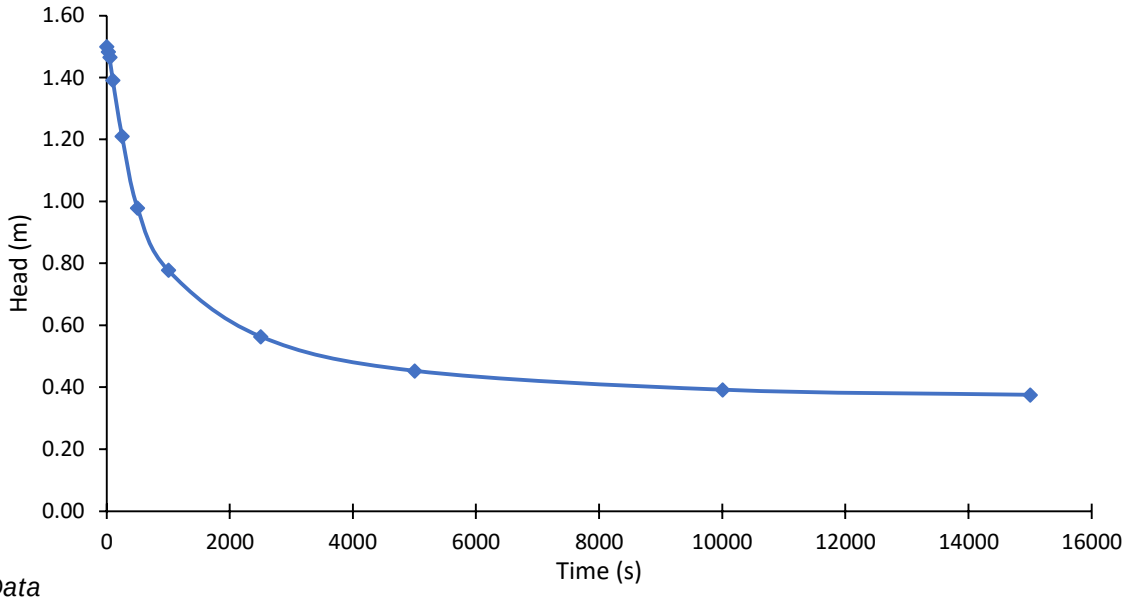
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 8.57E-06 ms^{-1} = 0.74 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{2L} ln \frac{H_1}{\quad} =$$ 6.76E-07 ms^{-1} = 0.06 m/day



STRATIGRAPHIC LOG

- Silt
- Sand
- Silt
- Sand

EOH @ 3.1m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.500				
25	0.016	1.484	3.092		6.05E-07	8.29E-06
50	0.034	1.466	3.075		6.79E-07	9.26E-06
100	0.108	1.392	3.029		1.46E-06	1.96E-05
250	0.290	1.210	2.901		1.35E-06	1.76E-05
500	0.521	0.979	2.695		1.30E-06	1.60E-05
1000	0.722	0.778	2.479		7.52E-07	8.61E-06
2500	0.936	0.564	2.271		3.76E-07	4.00E-06
5000	1.046	0.454	2.109		1.61E-07	1.57E-06
10000	1.108	0.393	2.023		5.51E-08	5.13E-07
15000	1.124	0.376	1.984		1.69E-08	1.53E-07

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO16 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	3.3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

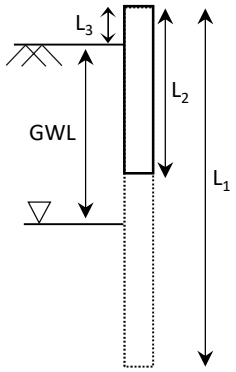
Ground Conditions

GWL: 1 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.30 m BGL



Hydraulic Conductivity (k)

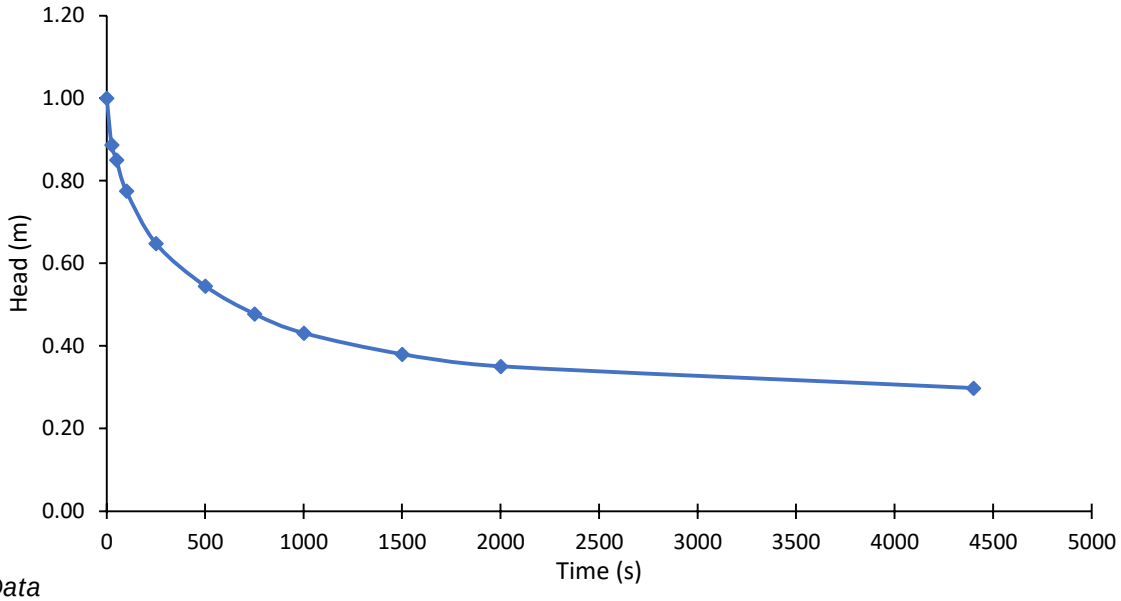
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

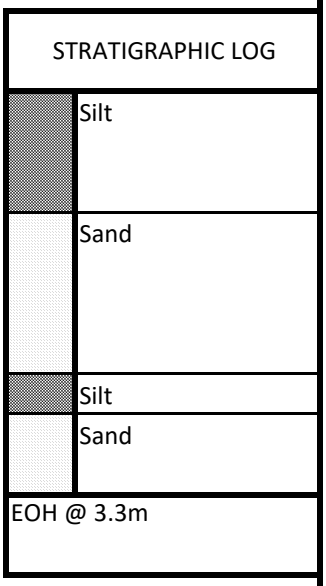
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 2.15E-05 ms^{-1} = 1.86 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{\quad} ln \frac{H_1}{\quad} =$$ 1.61E-06 ms^{-1} = 0.14 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.000				
25	0.113	0.887	3.244		6.41E-06	8.97E-05
50	0.149	0.851	3.169		2.26E-06	3.09E-05
100	0.225	0.775	3.113		2.57E-06	3.46E-05
250	0.352	0.648	3.012		1.69E-06	2.21E-05
500	0.455	0.545	2.897		1.01E-06	1.26E-05
750	0.522	0.478	2.812		7.83E-07	9.47E-06
1000	0.569	0.431	2.755		6.22E-07	7.32E-06
1500	0.620	0.380	2.706		3.87E-07	4.45E-06
2000	0.649	0.351	2.666		2.48E-07	2.78E-06
4400	0.702	0.298	2.625		1.07E-07	1.17E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd'**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO17 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.5	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	-1.5	m

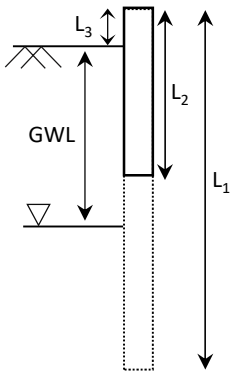
Ground Conditions

GWL: m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.00 m BGL



Hydraulic Conductivity (k)

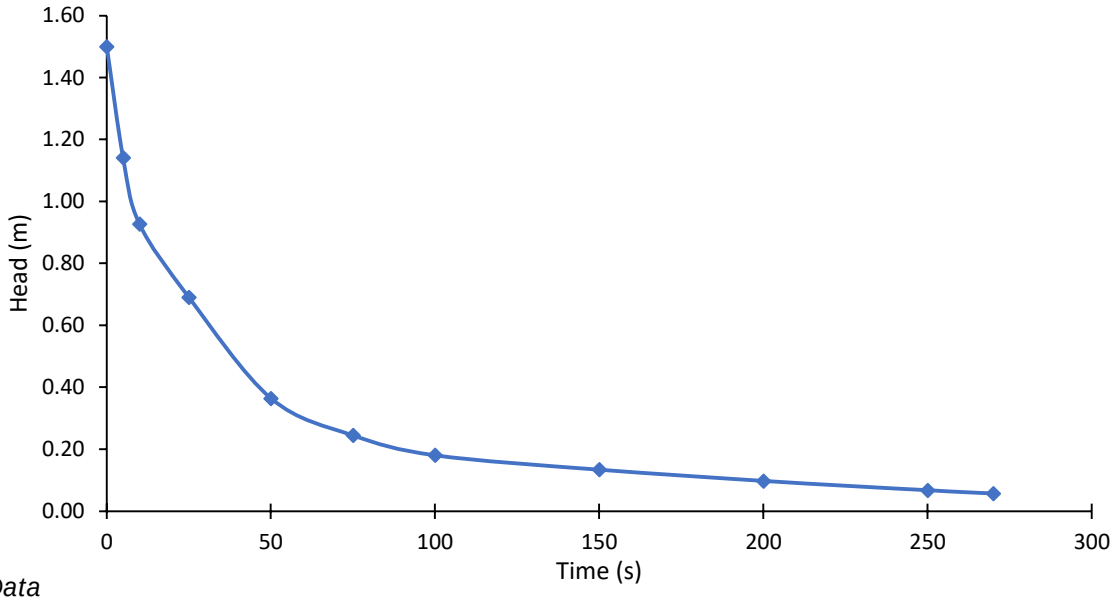
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

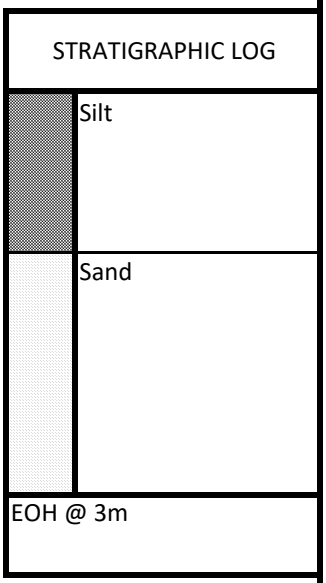
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 3.53E-04 ms^{-1} = 30.49 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{\quad} \ln \frac{H_1}{\quad} =$$ 9.26E-05 ms^{-1} = 8.00 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.500				
5	0.359	1.142	1.321		1.42E-04	1.04E-03
10	0.573	0.928	1.035		1.27E-04	7.83E-04
25	0.809	0.691	0.809		7.10E-05	3.68E-04
50	1.136	0.364	0.528		1.21E-04	4.89E-04
75	1.255	0.245	0.305		1.02E-04	2.76E-04
100	1.319	0.181	0.213		9.19E-05	1.98E-04
150	1.366	0.134	0.158		5.07E-05	9.14E-05
200	1.402	0.098	0.116		5.89E-05	8.96E-05
250	1.432	0.068	0.083		7.47E-05	9.51E-05
270	1.443	0.057	0.063		8.66E-05	9.40E-05

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO18 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.5	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	-1.5	m

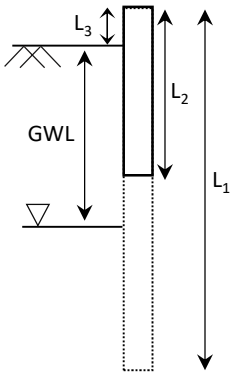
Ground Conditions

GWL: m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.00 m BGL



Hydraulic Conductivity (k)

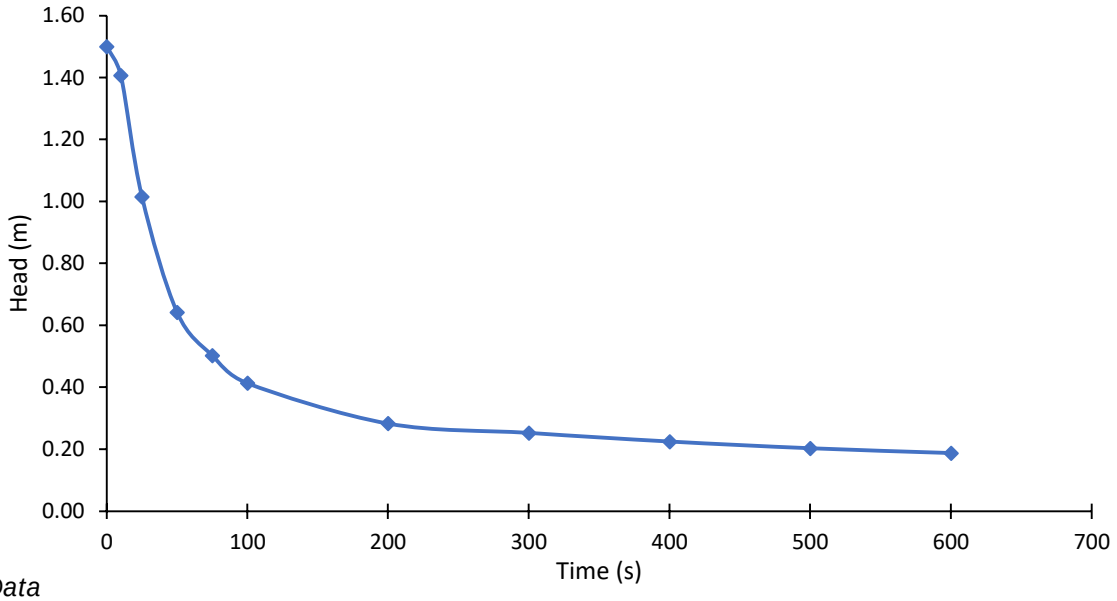
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

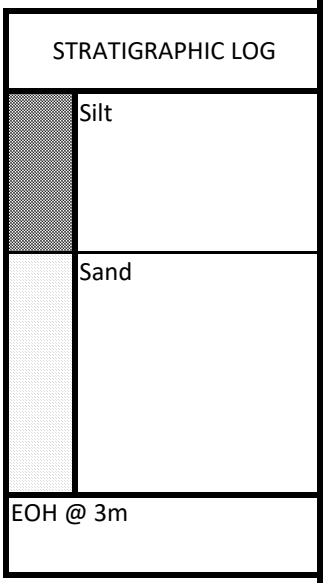
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.34E-04 ms^{-1} = 11.59 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{2L} \ln \frac{H_1}{\quad} =$$ 2.78E-05 ms^{-1} = 2.40 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.500				
10	0.093	1.407	1.454		1.55E-05	1.21E-04
25	0.485	1.015	1.211		5.99E-05	4.17E-04
50	0.858	0.642	0.829		6.53E-05	3.51E-04
75	0.997	0.503	0.573		4.40E-05	1.78E-04
100	1.086	0.414	0.458		4.03E-05	1.40E-04
200	1.217	0.283	0.349		2.27E-05	6.67E-05
300	1.247	0.253	0.268		7.82E-06	1.92E-05
400	1.275	0.225	0.239		8.34E-06	1.90E-05
500	1.297	0.203	0.214		7.74E-06	1.65E-05
600	1.312	0.188	0.196		6.23E-06	1.26E-05

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO19 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	-1	m

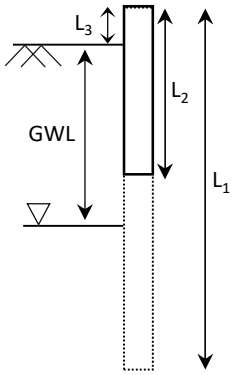
Ground Conditions

GWL: 3 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.00 m BGL



Hydraulic Conductivity (k)

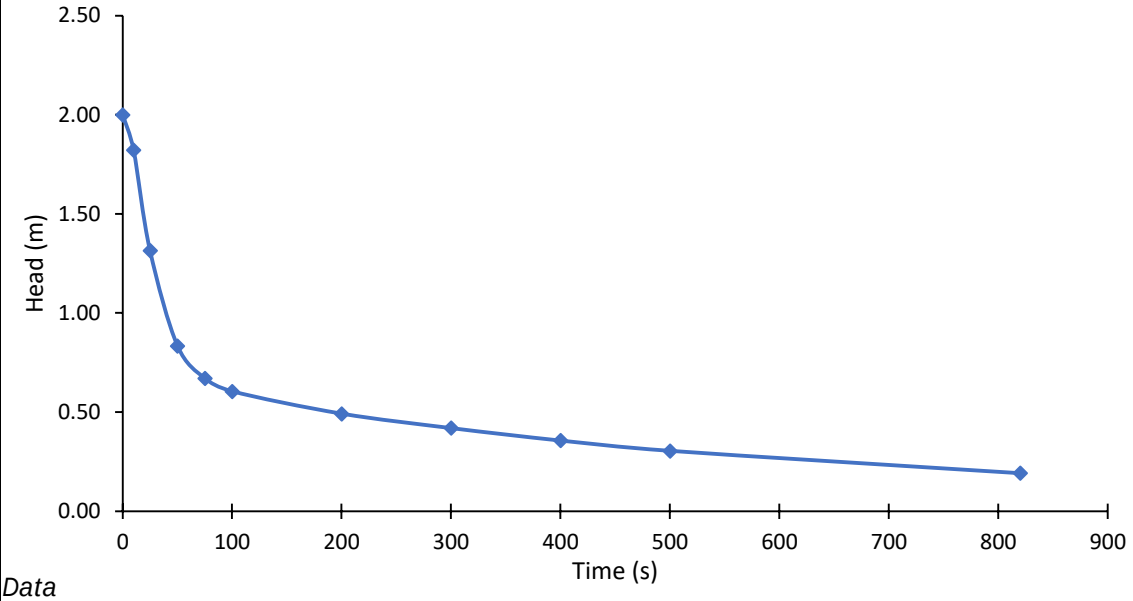
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

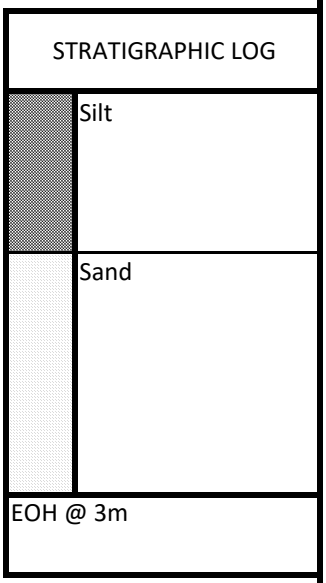
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.33E-04 ms^{-1} = 11.53 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{\quad} \ln \frac{H_1}{\quad} =$$ 2.20E-05 ms^{-1} = 1.90 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	2.000				
10	0.178	1.822	1.911		1.85E-05	1.78E-04
25	0.685	1.315	1.568		4.98E-05	4.20E-04
50	1.166	0.834	1.075		5.45E-05	3.53E-04
75	1.329	0.671	0.753		3.30E-05	1.62E-04
100	1.395	0.605	0.638		1.74E-05	7.56E-05
200	1.508	0.492	0.549		9.58E-06	3.76E-05
300	1.580	0.420	0.456		8.15E-06	2.82E-05
400	1.643	0.357	0.389		9.21E-06	2.87E-05
500	1.695	0.305	0.331		9.78E-06	2.74E-05
820	1.808	0.192	0.248		1.02E-05	2.44E-05

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO20 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.8	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

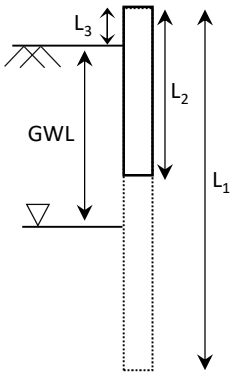
Ground Conditions

GWL: 1.5 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.80 m BGL



Hydraulic Conductivity (k)

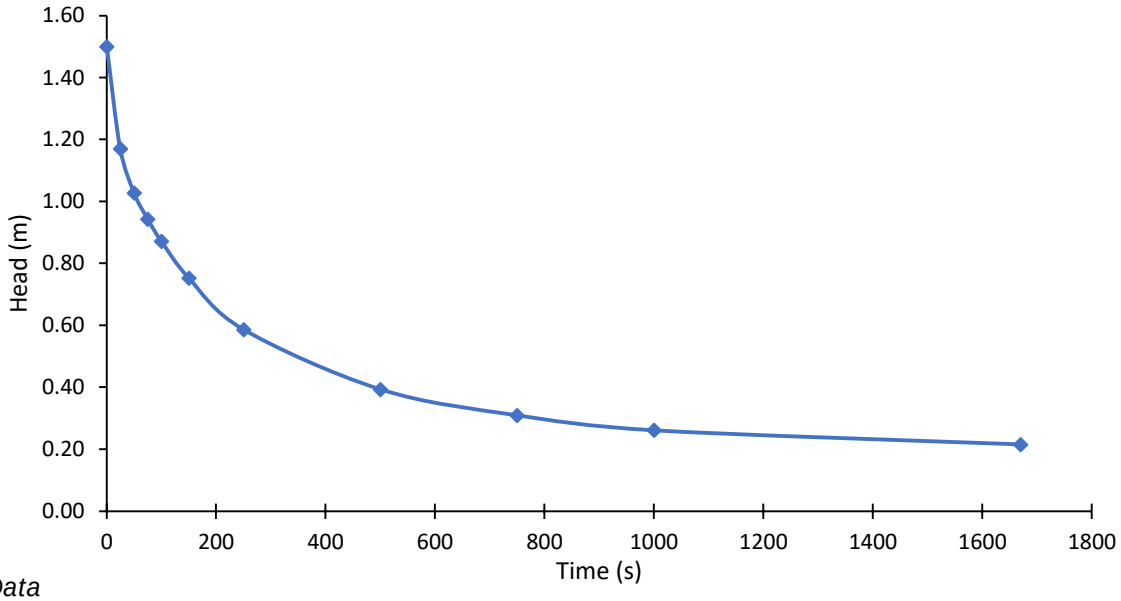
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

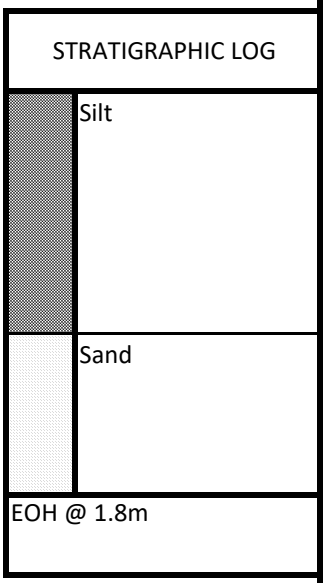
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 5.73E-05 ms^{-1} = 4.95 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{\quad} ln \frac{H_1}{\quad} =$$ 8.36E-06 ms^{-1} = 0.72 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.500				
25	0.330	1.170	1.635		2.21E-05	1.90E-04
50	0.472	1.028	1.399		1.29E-05	9.76E-05
75	0.557	0.943	1.286		9.10E-06	6.44E-05
100	0.629	0.871	1.207		8.72E-06	5.89E-05
150	0.747	0.753	1.112		8.51E-06	5.42E-05
250	0.913	0.587	0.970		8.02E-06	4.62E-05
500	1.106	0.394	0.790		5.87E-06	2.92E-05
750	1.190	0.310	0.652		3.98E-06	1.67E-05
1000	1.238	0.262	0.586		3.01E-06	1.15E-05
1670	1.284	0.216	0.539		1.35E-06	4.77E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd'**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO21 Presoak Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2.3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

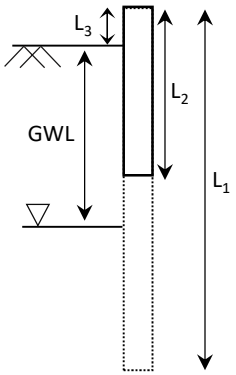
Ground Conditions

GWL: 1.6 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.30 m BGL



Hydraulic Conductivity (k)

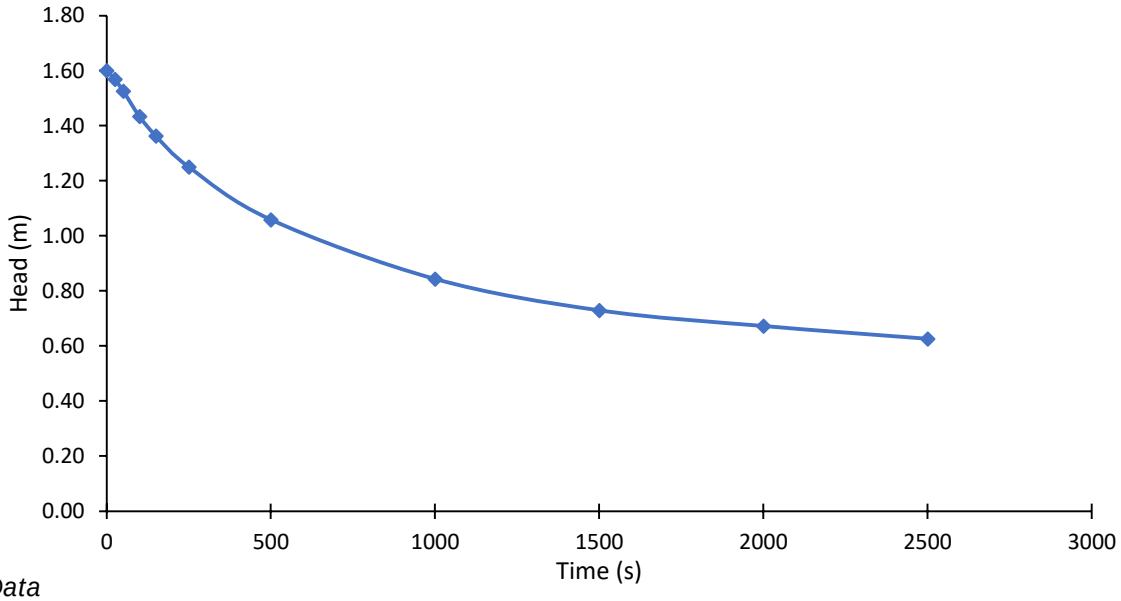
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

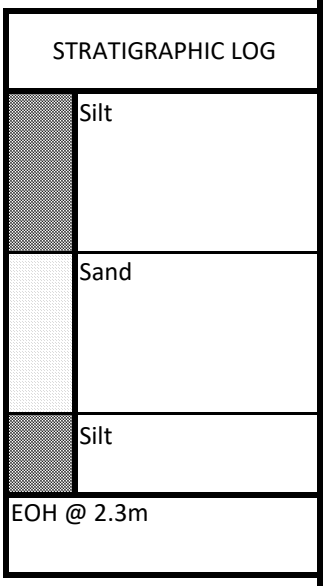
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 1.27E-05 ms^{-1} = 1.10 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{2L} ln \frac{H_1}{\quad} =$$ 1.29E-06 ms^{-1} = 0.11 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.600				
25	0.032	1.568	2.284		1.39E-06	1.52E-05
50	0.074	1.526	2.247		1.91E-06	2.06E-05
100	0.166	1.434	2.180		2.24E-06	2.36E-05
150	0.237	1.363	2.099		1.90E-06	1.94E-05
250	0.350	1.250	2.007		1.65E-06	1.63E-05
500	0.541	1.059	1.854		1.35E-06	1.26E-05
1000	0.756	0.844	1.651		1.00E-06	8.53E-06
1500	0.870	0.730	1.487		6.92E-07	5.38E-06
2000	0.927	0.673	1.401		4.06E-07	3.00E-06
2500	0.974	0.626	1.350		3.63E-07	2.60E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd'**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO21 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2.3	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

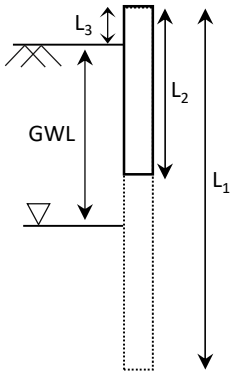
Ground Conditions

GWL: 1.6 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.30 m BGL



Hydraulic Conductivity (k)

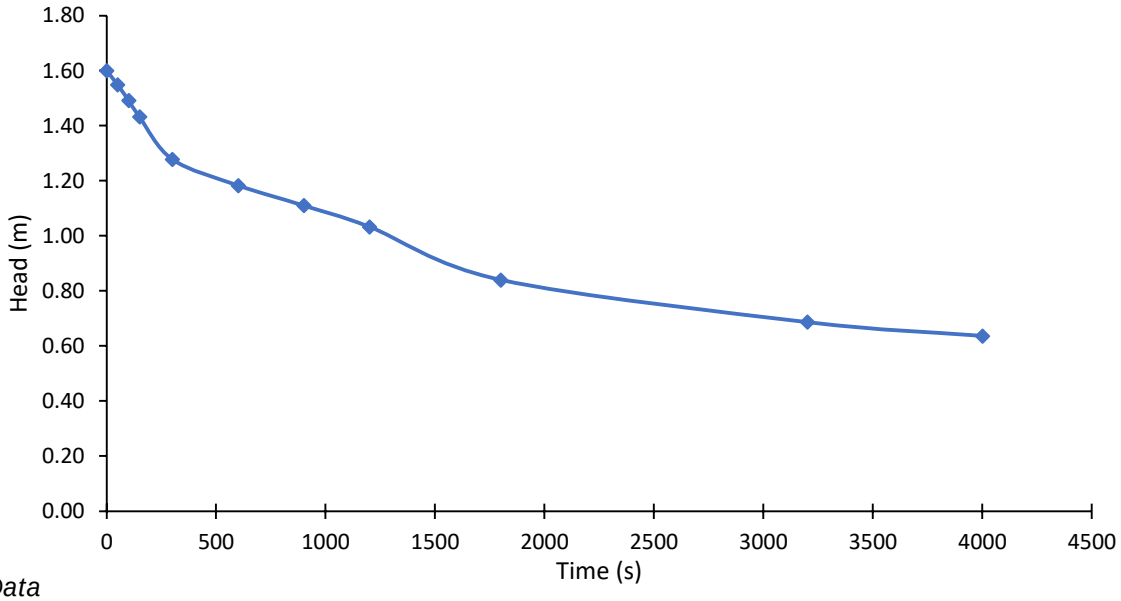
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

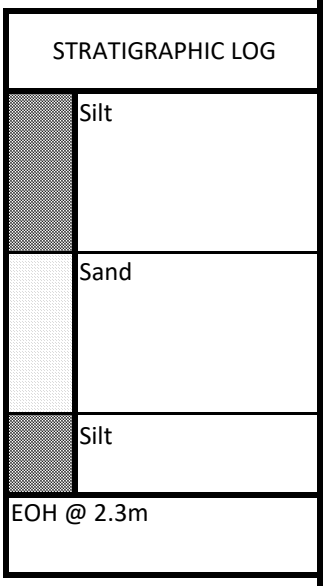
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 8.06E-06 ms^{-1} = 0.70 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{2L} ln \frac{H_1}{\quad} =$$ 8.17E-07 ms^{-1} = 0.07 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.600				
50	0.051	1.549	2.274		1.14E-06	1.24E-05
100	0.108	1.493	2.221		1.31E-06	1.40E-05
150	0.167	1.433	2.163		1.49E-06	1.55E-05
300	0.322	1.278	2.055		1.43E-06	1.44E-05
600	0.417	1.183	1.931		5.06E-07	4.84E-06
900	0.490	1.110	1.847		4.32E-07	3.99E-06
1200	0.567	1.034	1.772		5.02E-07	4.48E-06
1800	0.760	0.840	1.637		7.66E-07	6.47E-06
3200	0.913	0.688	1.464		3.46E-07	2.66E-06
4000	0.963	0.637	1.362		2.43E-07	1.76E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO22 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	2.1	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

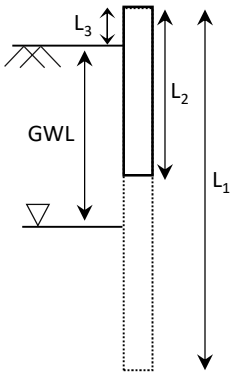
Ground Conditions

GWL: 1.4 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 2.10 m BGL



Hydraulic Conductivity (k)

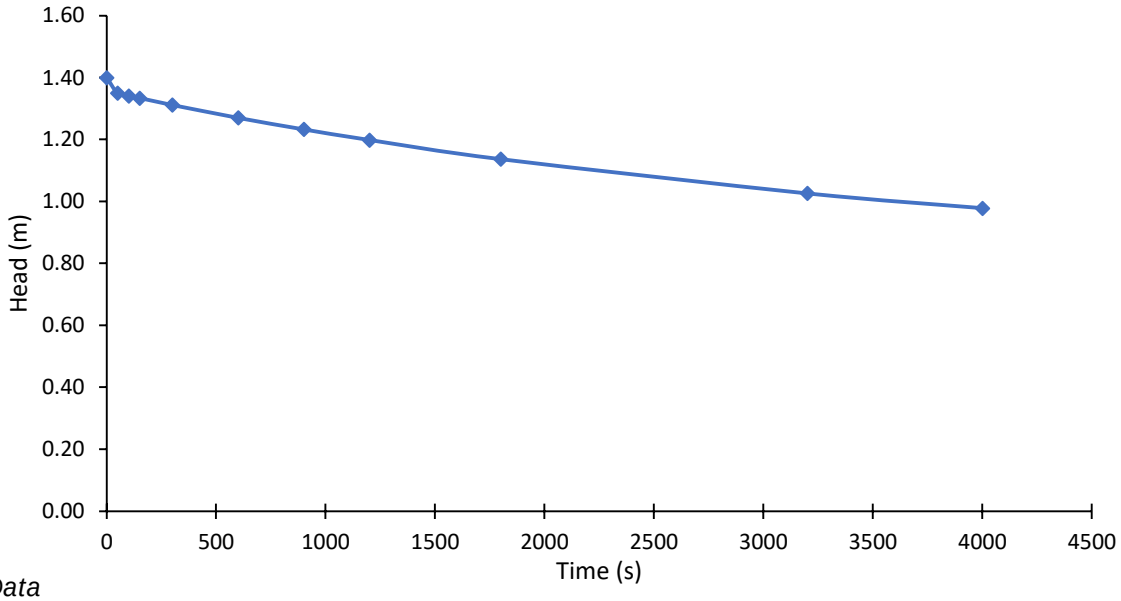
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

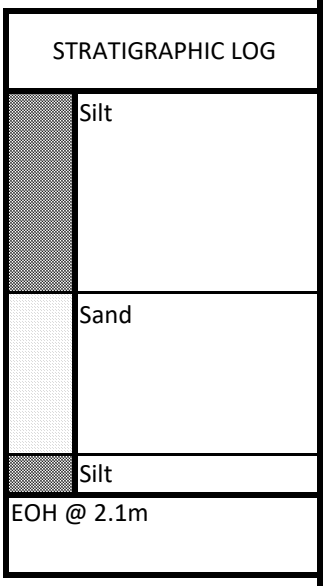
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log\frac{h_1}{h_2} - log\frac{2h_1 + d}{2h_2 + d}\right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 3.03E-06 ms^{-1} = 0.26 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1}\right)}{\ldots} \ln\frac{H_1}{\ldots} =$$ 3.08E-07 ms^{-1} = 0.03 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.400				
50	0.050	1.350	2.075		1.35E-06	1.37E-05
100	0.059	1.341	2.046		2.53E-07	2.53E-06
150	0.066	1.334	2.038		2.13E-07	2.12E-06
300	0.088	1.312	2.023		2.13E-07	2.11E-06
600	0.130	1.270	1.991		2.07E-07	2.02E-06
900	0.167	1.233	1.952		1.93E-07	1.86E-06
1200	0.202	1.198	1.916		1.89E-07	1.80E-06
1800	0.263	1.137	1.868		1.77E-07	1.65E-06
3200	0.374	1.027	1.782		1.52E-07	1.37E-06
4000	0.422	0.979	1.703		1.29E-07	1.12E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO23 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	3.5	m
Diameter:	90	mm
Non-Perm L_2:	3	m
Above Gnd L_3:	0	m

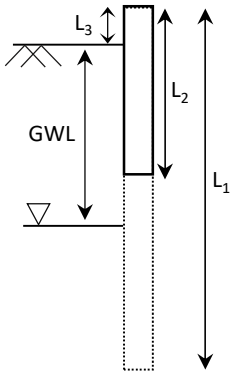
Ground Conditions

GWL: m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 3.50 m BGL



Hydraulic Conductivity (k)

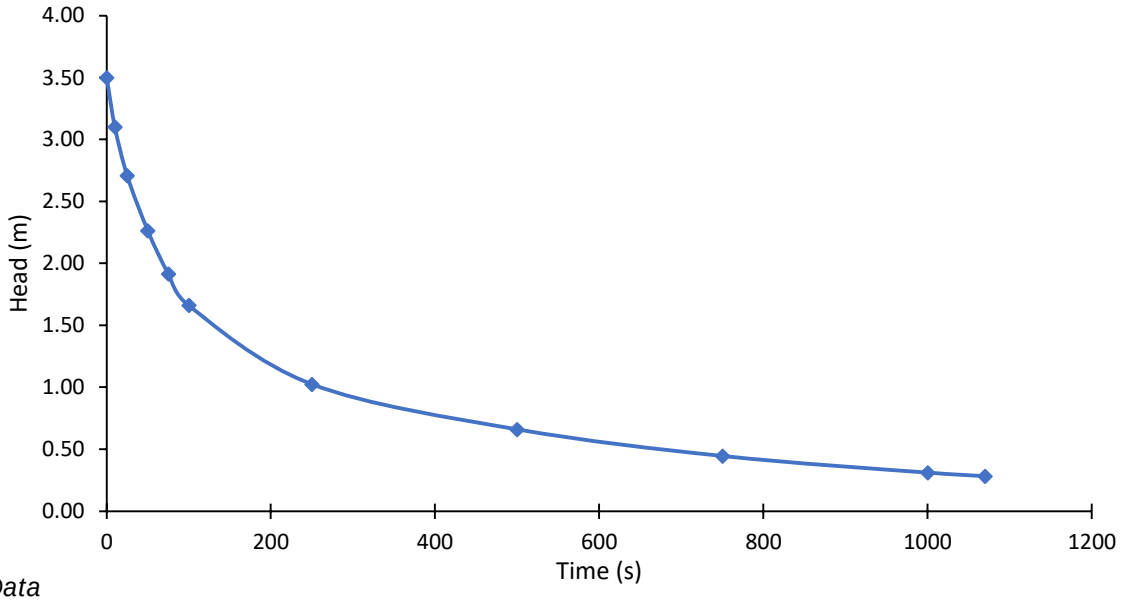
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 9.58E-05 ms^{-1} = 8.28 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{2L} ln \frac{H_1}{\ldots} =$$ 2.48E-05 ms^{-1} = 2.14 m/day



STRATIGRAPHIC LOG

- Silt
- Sandy Silt
- Sand

EOH @ 3.5m

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	3.500				
10	0.398	3.102	0.500		5.91E-05	2.33E-04
25	0.792	2.708	0.500		4.43E-05	1.75E-04
50	1.236	2.264	0.500		3.50E-05	1.38E-04
75	1.583	1.917	0.500		3.26E-05	1.28E-04
100	1.839	1.661	0.500		2.80E-05	1.10E-04
250	2.475	1.025	0.500		1.58E-05	6.32E-05
500	2.839	0.661	0.500		8.57E-06	3.35E-05
750	3.053	0.447	0.500		7.68E-06	2.90E-05
1000	3.188	0.312	0.379		8.24E-06	2.56E-05
1070	3.216	0.284	0.298		8.71E-06	2.28E-05

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO24 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

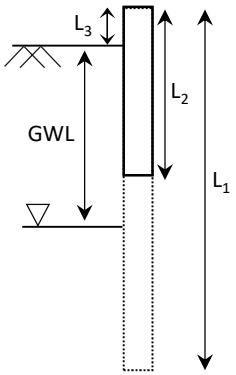
Length L_1:	3.5	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

Ground Conditions

GWL: m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$



Bottom of Test Hole: 3.50 m BGL

Hydraulic Conductivity (k)

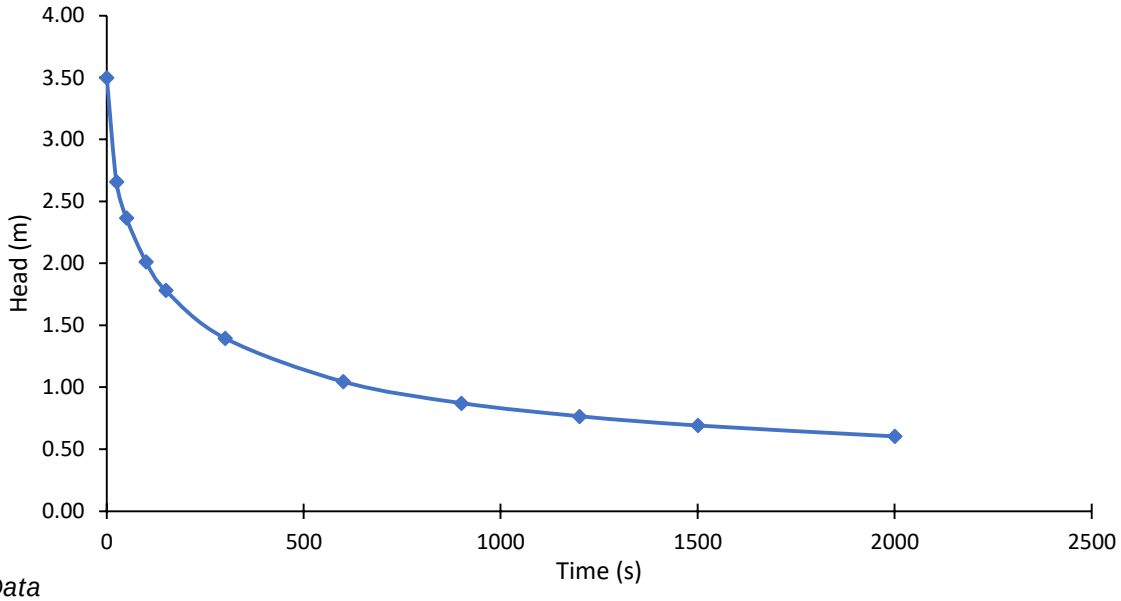
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 4.93E-05 ms^{-1} = 4.26 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{\quad} ln \frac{H_1}{\quad} =$$ 4.58E-06 ms^{-1} = 0.40 m/day



STRATIGRAPHIC LOG	
	Silt
	Sandy Silt
	Sand
EOH @ 3.5m	

Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	3.500				
25	0.839	2.661	3.080		1.52E-05	2.14E-04
50	1.133	2.367	2.514		7.58E-06	9.00E-05
100	1.487	2.013	2.190		5.82E-06	6.23E-05
150	1.717	1.783	1.898		4.86E-06	4.65E-05
300	2.103	1.397	1.590		3.69E-06	3.12E-05
600	2.453	1.047	1.222		2.63E-06	1.84E-05
900	2.627	0.873	0.960		1.95E-06	1.14E-05
1200	2.733	0.767	0.820		1.55E-06	8.03E-06
1500	2.807	0.693	0.730		1.32E-06	6.27E-06
2000	2.895	0.605	0.649		1.13E-06	4.97E-06

CMW Geosciences	CLIENT: **Maven Associates Ltd**	DESIGNER:	LA
	PROJECT: **Station Road**	CHECKED:	NK
		REVISION:	0
	TITLE: **SO20 Falling Head Permeability Test**	DATE:	9/12/2024
		PROJECT:	HAM2023-0124

Specifications - Open-Ended Tube

Length L_1:	1.8	m
Diameter:	90	mm
Non-Perm L_2:	0	m
Above Gnd L_3:	0	m

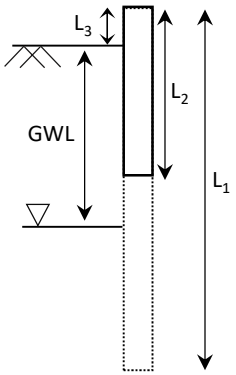
Ground Conditions

GWL: 1.5 m BGL (Blank = Bottom of hole)

Permeability Anisotropy

m: 1 $m = \sqrt{k_h / k_v}$

Bottom of Test Hole: 1.80 m BGL



Hydraulic Conductivity (k)

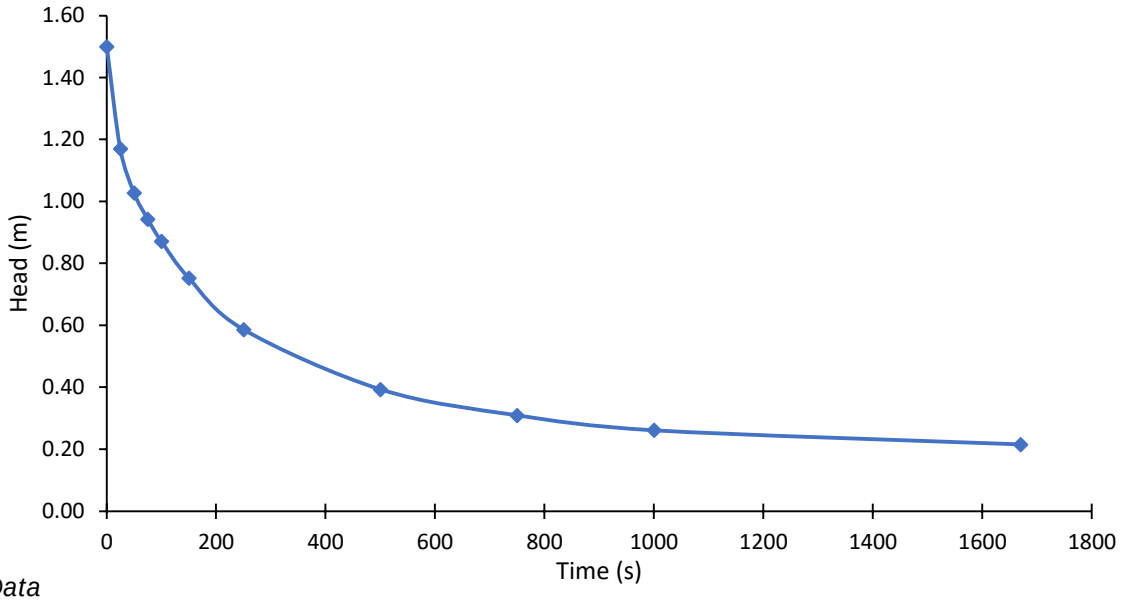
Note: CMW considers the CIRIA 113 value the most appropriate method for most purposes, but also provides the analysis method as outlined by Hvorslev if desired.

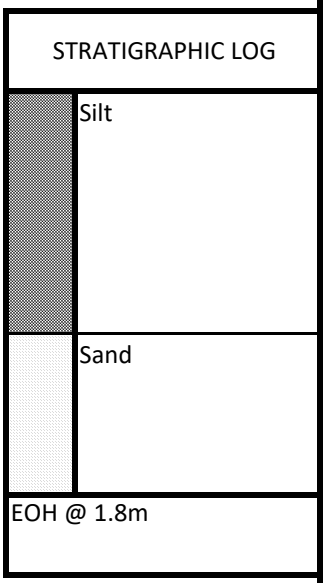
CIRIA 113: Somerville (1986), *Control of groundwater for temporary works,* CIRIA Report 113, Appendix 4

$$k = \left(log \frac{h_1}{h_2} - log \frac{2h_1 + d}{2h_2 + d} \right) \cdot \frac{(h_1 + h_2)}{2(t_2 - t_1)} =$$ 5.73E-05 ms^{-1} = 4.95 m/day

Hvorslev: Hvorslev (1951) *Time Lag and Soil Permeability in Ground-Water Observations* , Fig 18, p49

$$k = \frac{d^2 \, ln\left(\frac{mL}{d} + \sqrt{\left(\frac{mL}{d}\right)^2 + 1} \right)}{\quad} ln \frac{H_1}{\quad} =$$ 8.36E-06 ms^{-1} = 0.72 m/day





Data

Time (s)	Tape Avg (m)	Head (m)	Perm. Length (m)		Hvorslev 'k' Case G (ms^{-1})	CIRIA 113 'k' (ms^{-1})
0	0.000	1.500				
25	0.330	1.170	1.635		2.21E-05	1.90E-04
50	0.472	1.028	1.399		1.29E-05	9.76E-05
75	0.557	0.943	1.286		9.10E-06	6.44E-05
100	0.629	0.871	1.207		8.72E-06	5.89E-05
150	0.747	0.753	1.112		8.51E-06	5.42E-05
250	0.913	0.587	0.970		8.02E-06	4.62E-05
500	1.106	0.394	0.790		5.87E-06	2.92E-05
750	1.190	0.310	0.652		3.98E-06	1.67E-05
1000	1.238	0.262	0.586		3.01E-06	1.15E-05
1670	1.284	0.216	0.539		1.35E-06	4.77E-06

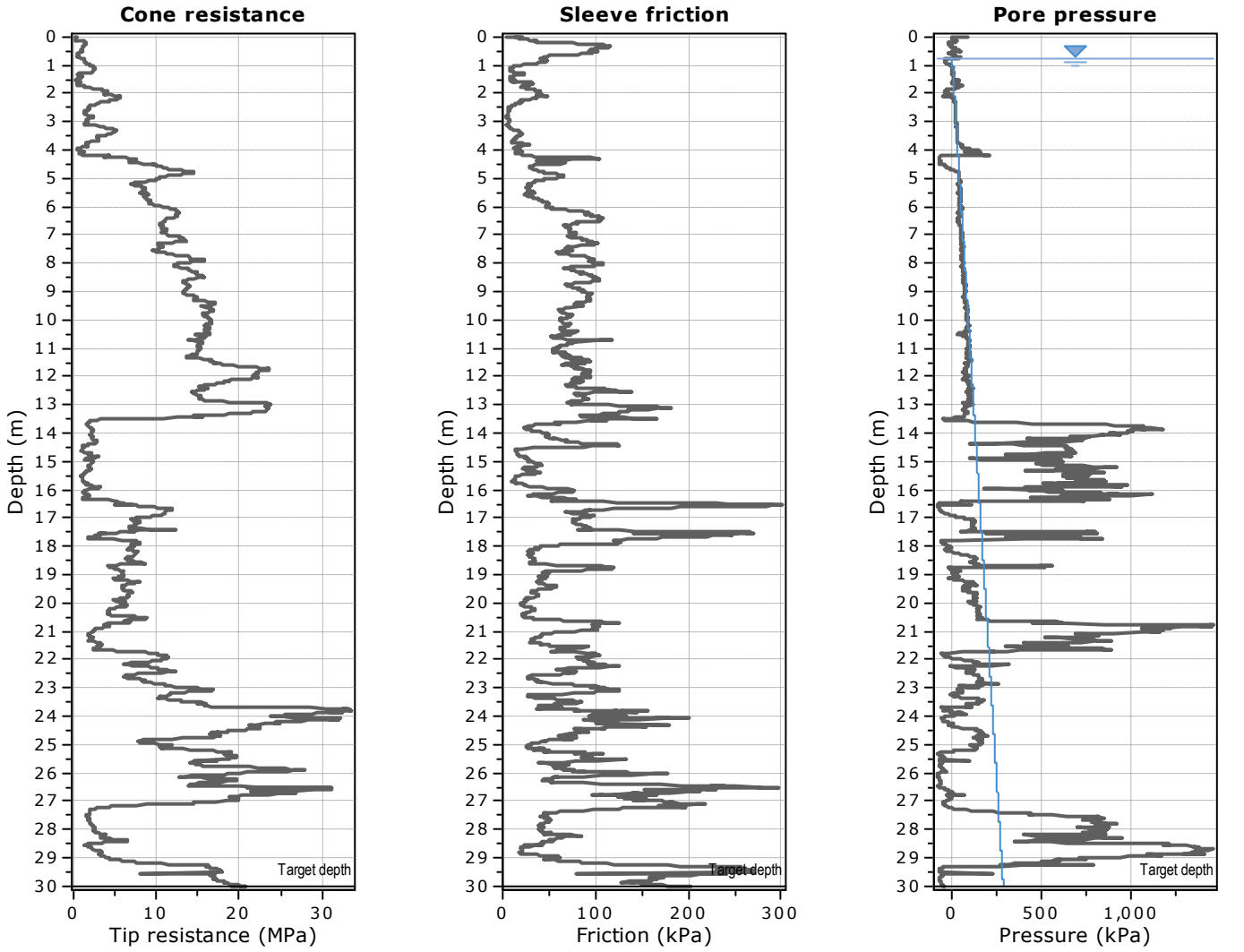
APPENDIX E: CPT INVESTIGATION RESULTS

Geo Data Solutions (GDS) NZ Ltd.
Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

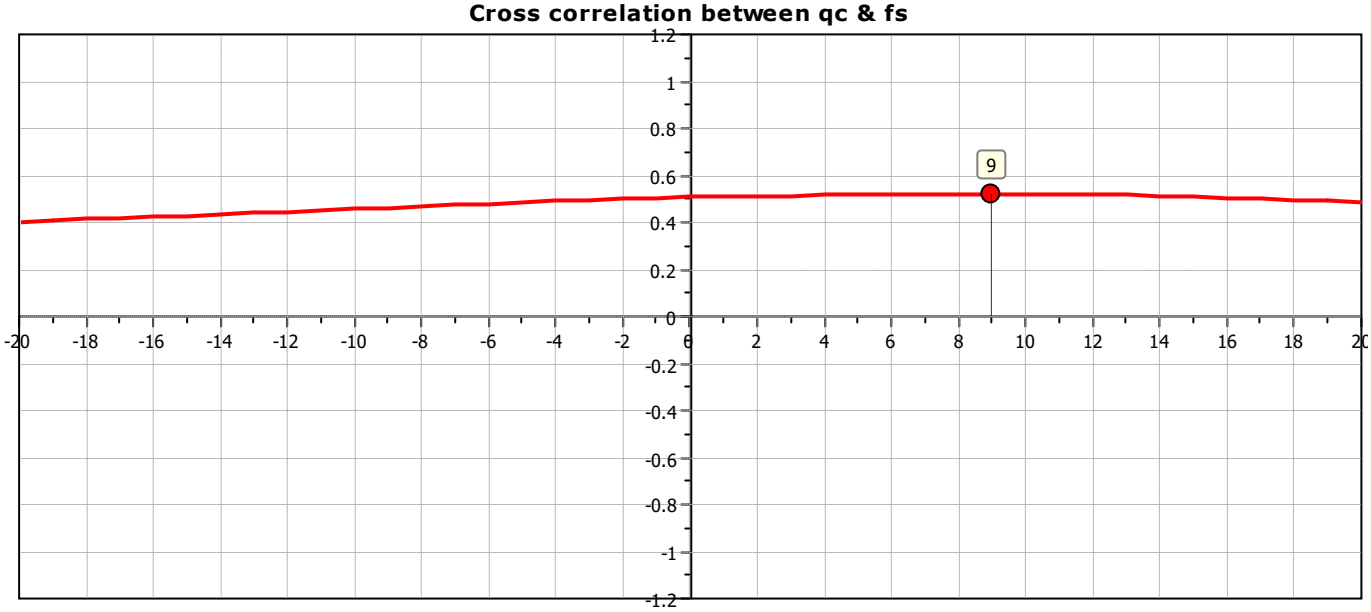
CPT: 23-01

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

Total depth: 30.01 m, Date: 24/11/2023
Coords: lat -37.820381° lon 175.759032°



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).

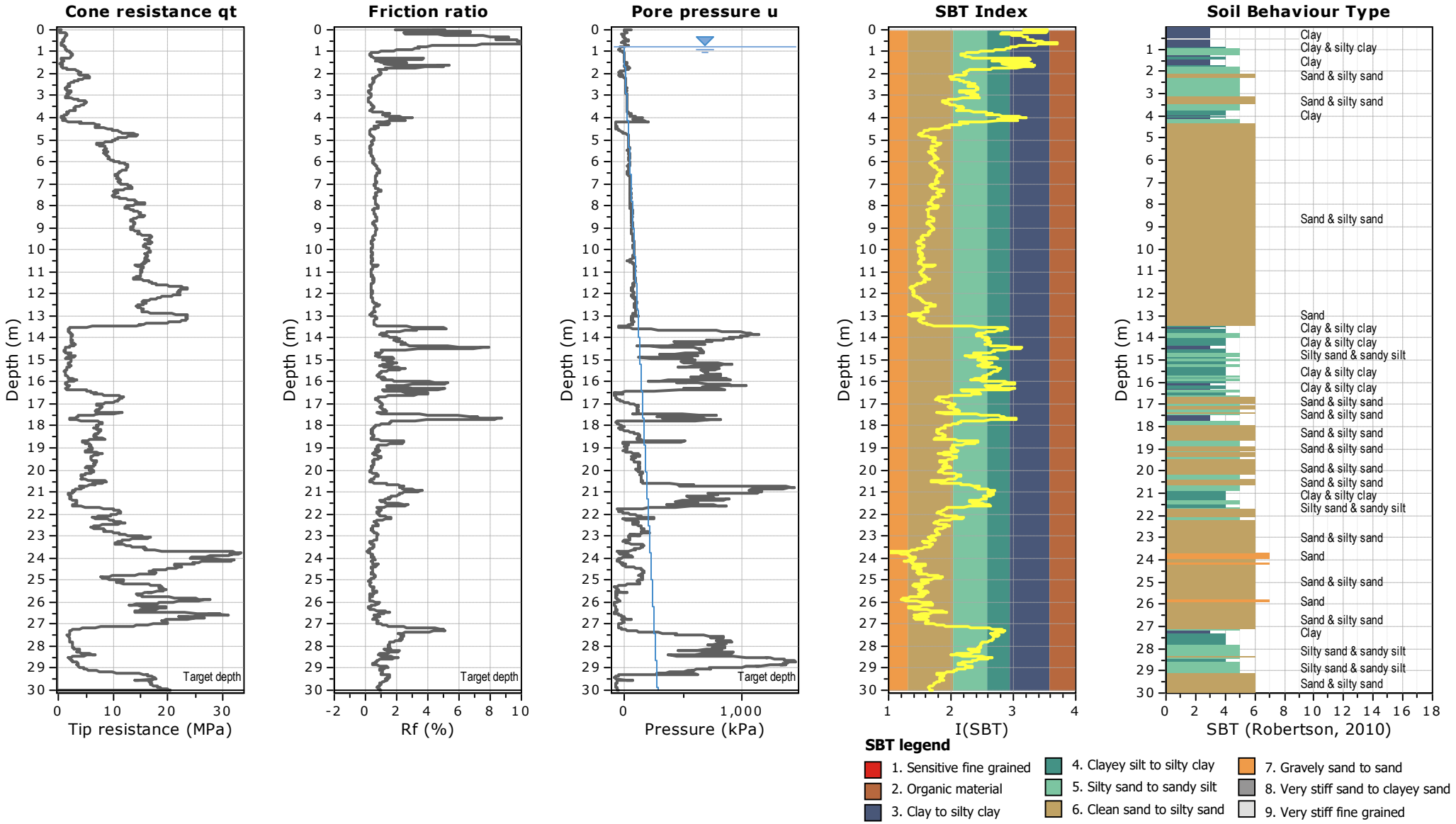


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Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

CPT: 23-01

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

Total depth: 30.01 m, Date: 24/11/2023
Coords: lat -37.820381° lon 175.759032°

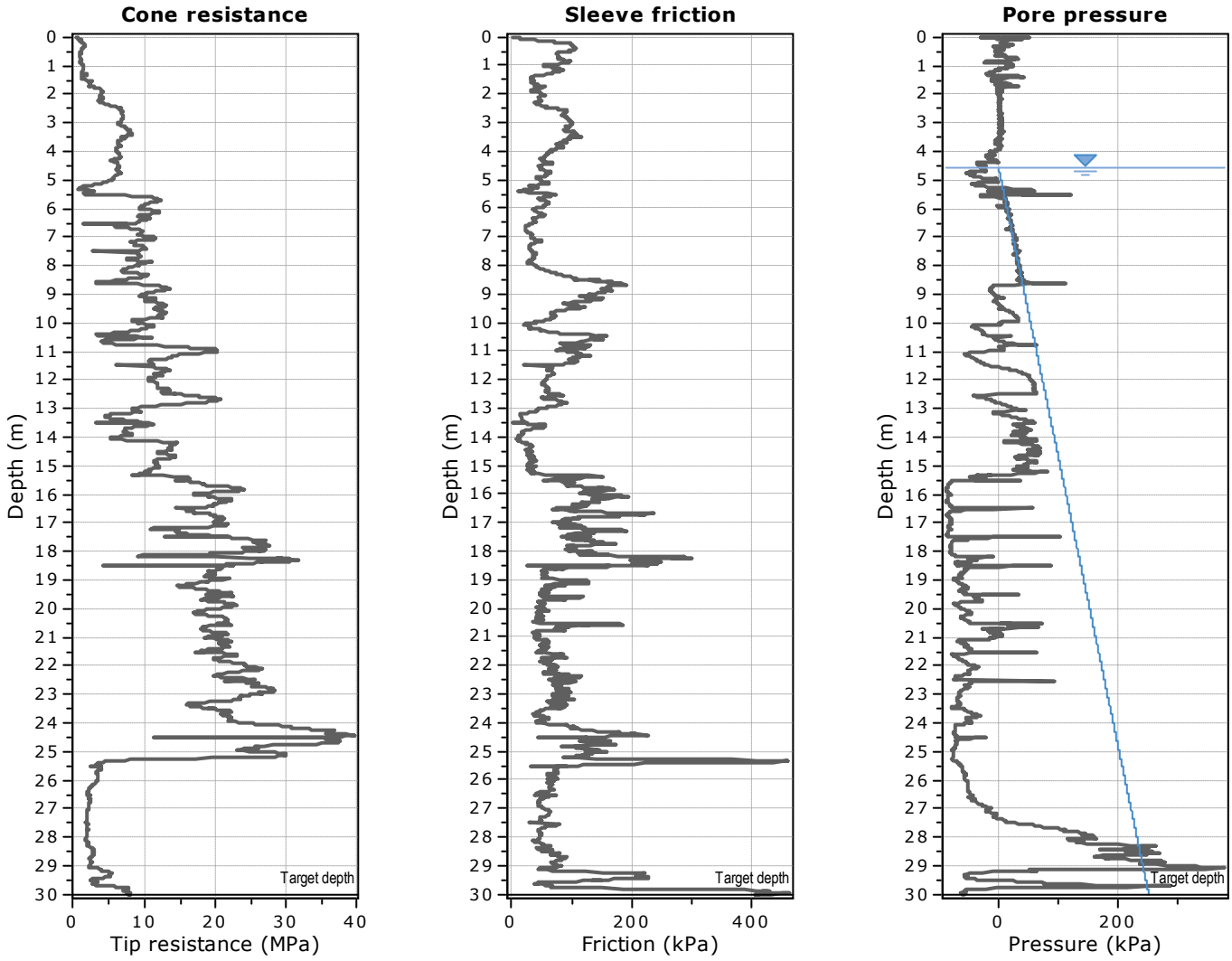


Geo Data Solutions (GDS) NZ Ltd.
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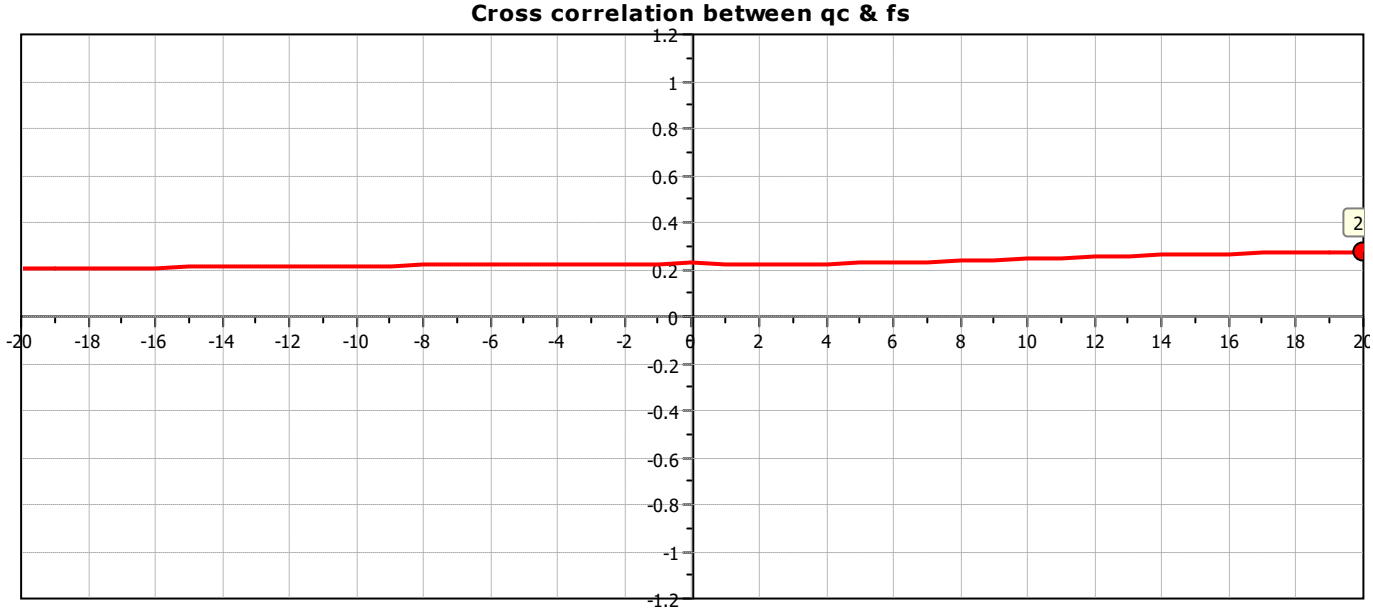
CPT: 23-02

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

Total depth: 30.02 m, Date: 24/11/2023
Coords: lat -37.825563° lon 175.762228°



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).

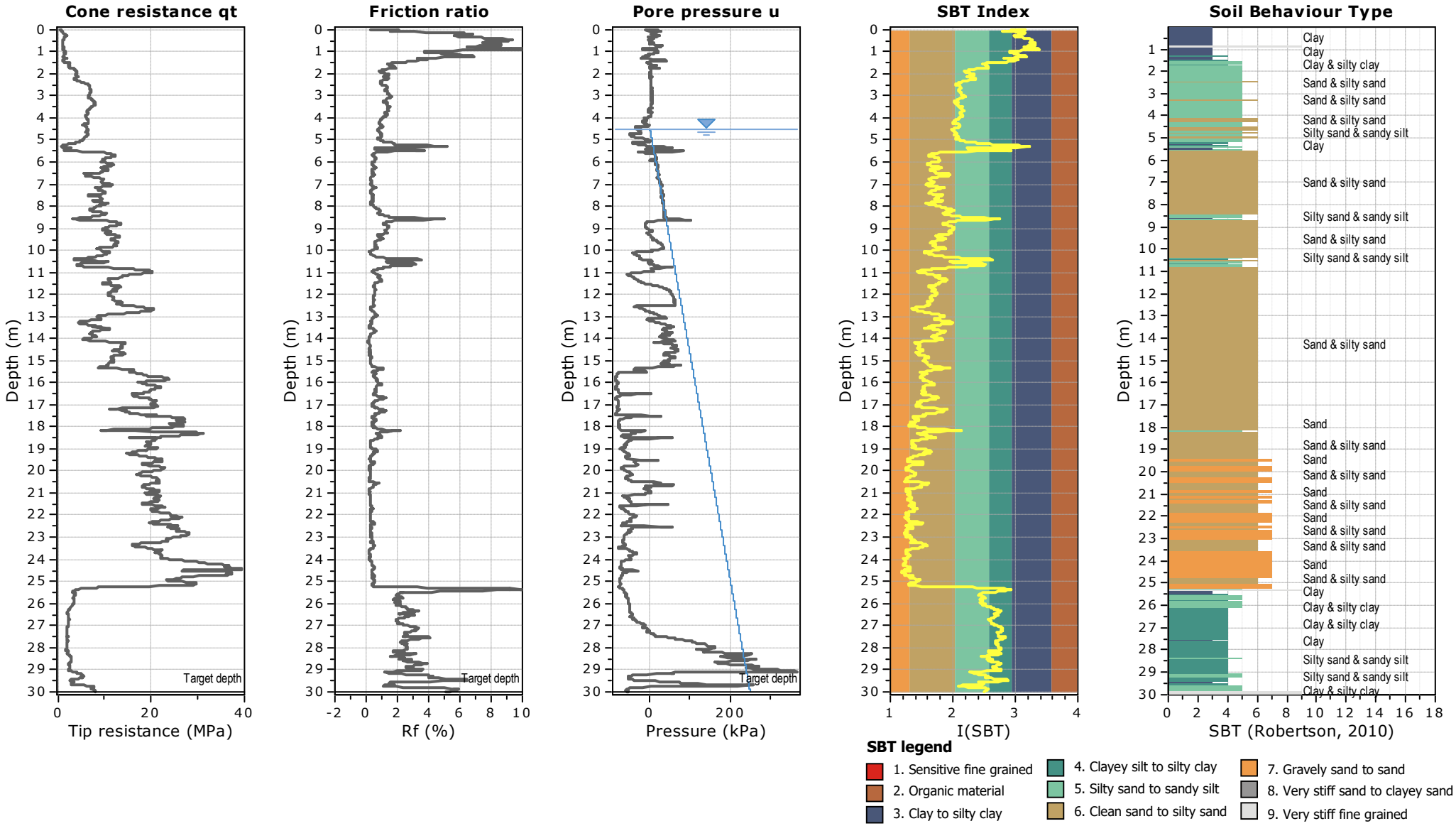


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CPT: 23-02

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

Total depth: 30.02 m, Date: 24/11/2023
Coords: lat -37.825563° lon 175.762228°

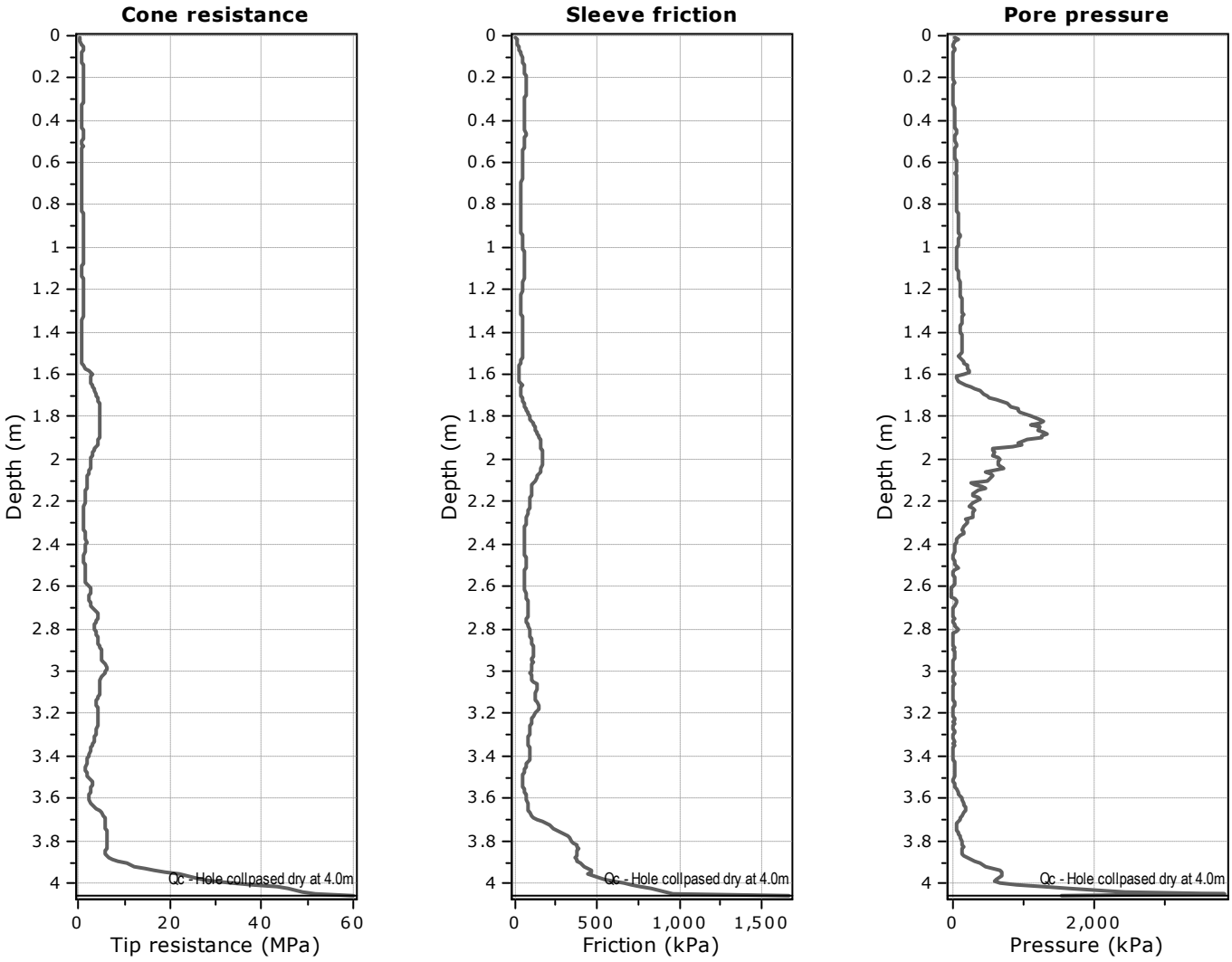


Geo Data Solutions (GDS) NZ Ltd.
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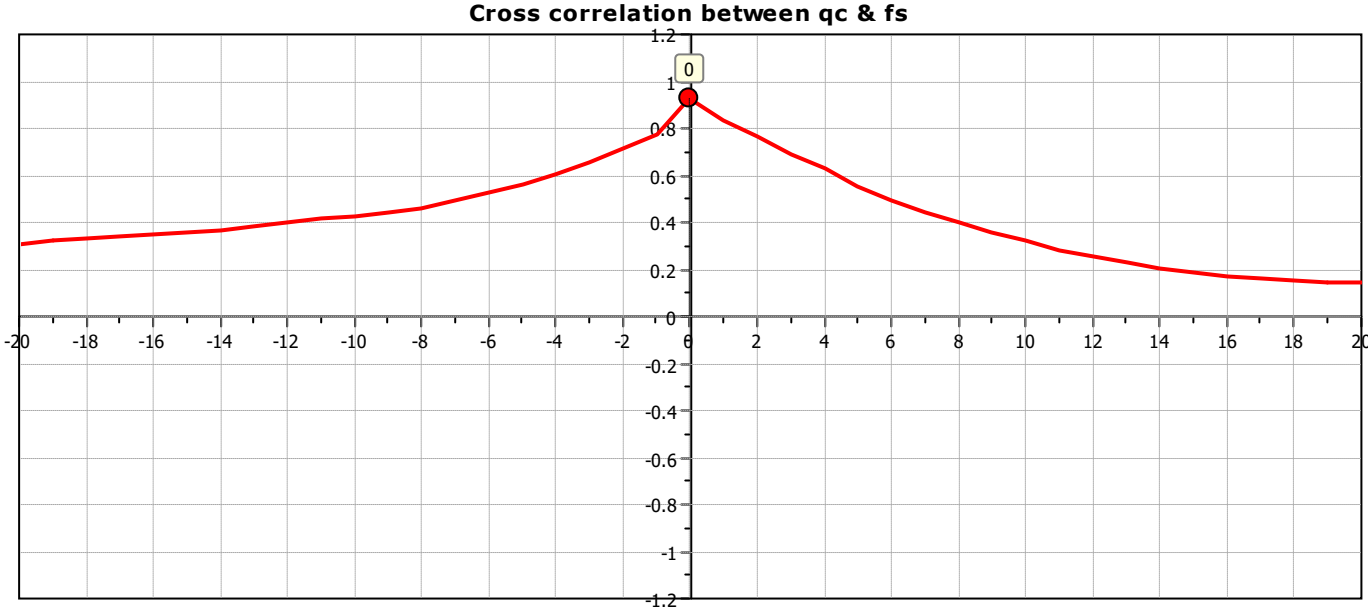
CPT: 23-03

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

Total depth: 4.06 m, Date: 24/11/2023
Coords: lat -37.826393° lon 175.75937°



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).

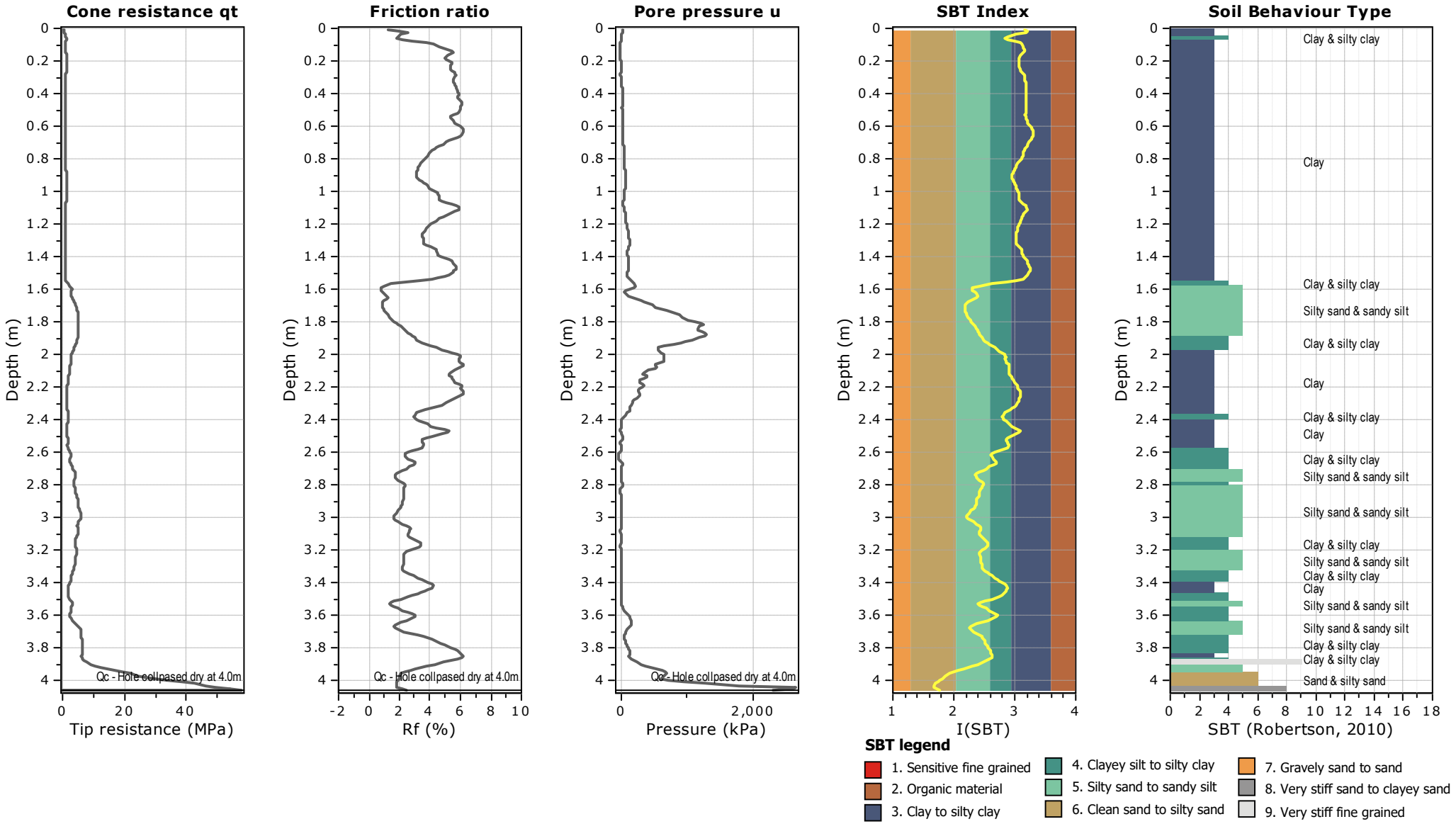


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Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

CPT: 23-03

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Total depth: 4.06 m, Date: 24/11/2023

Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**
Coords: lat -37.826393° lon 175.75937°

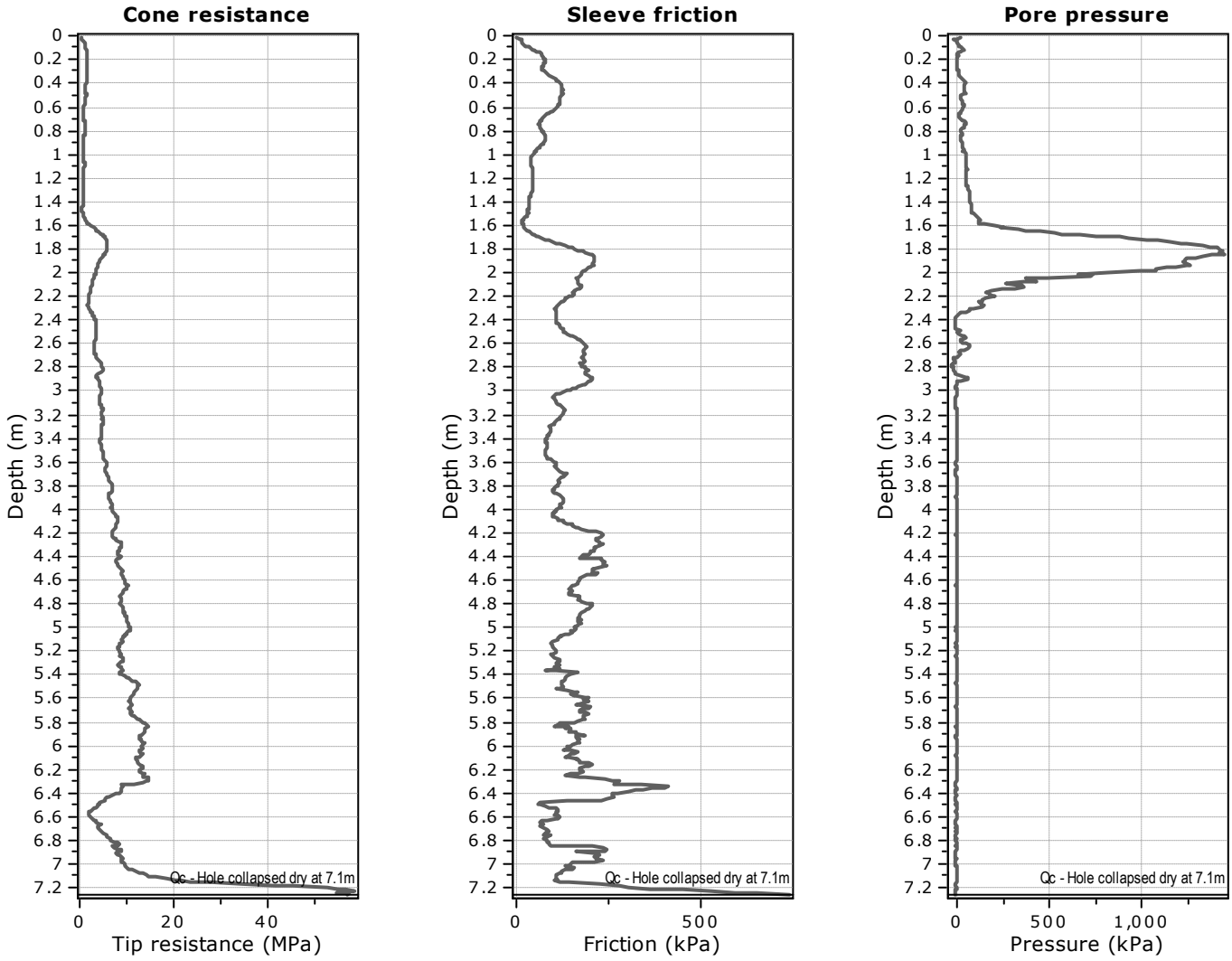


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www.gdsnz.co.nz

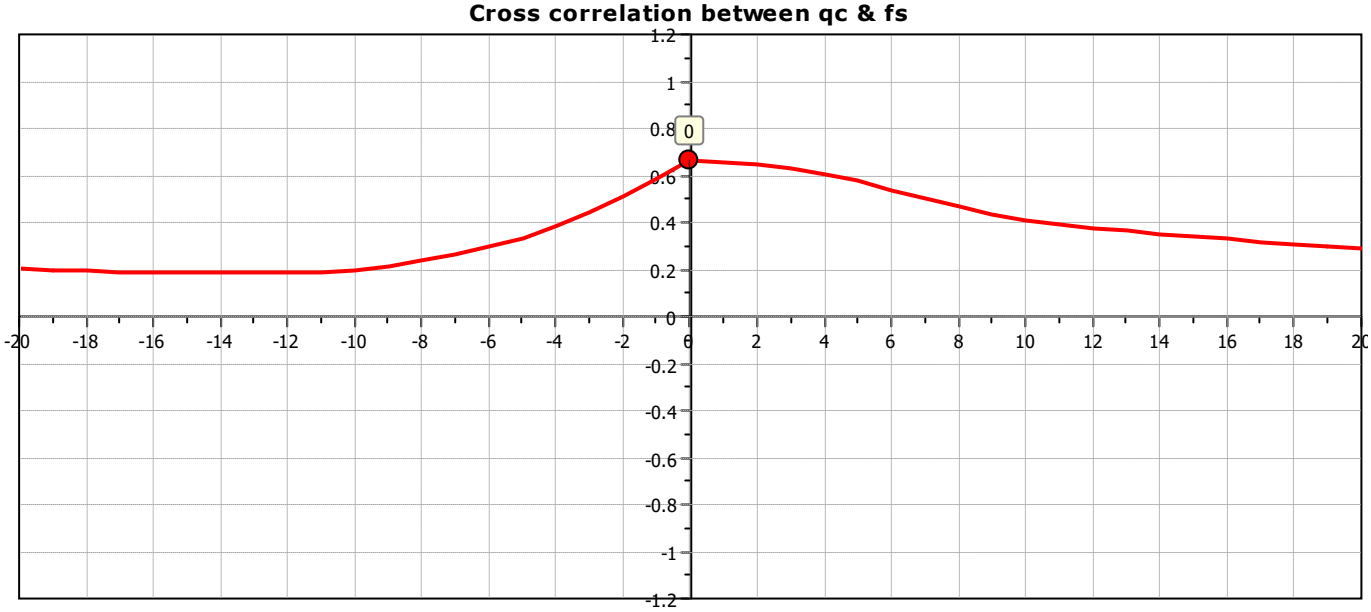
CPT: 23-03a

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Total depth: 7.26 m, Date: 24/11/2023

Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**
Coords: lat -37.826395° lon 175.759397°



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).

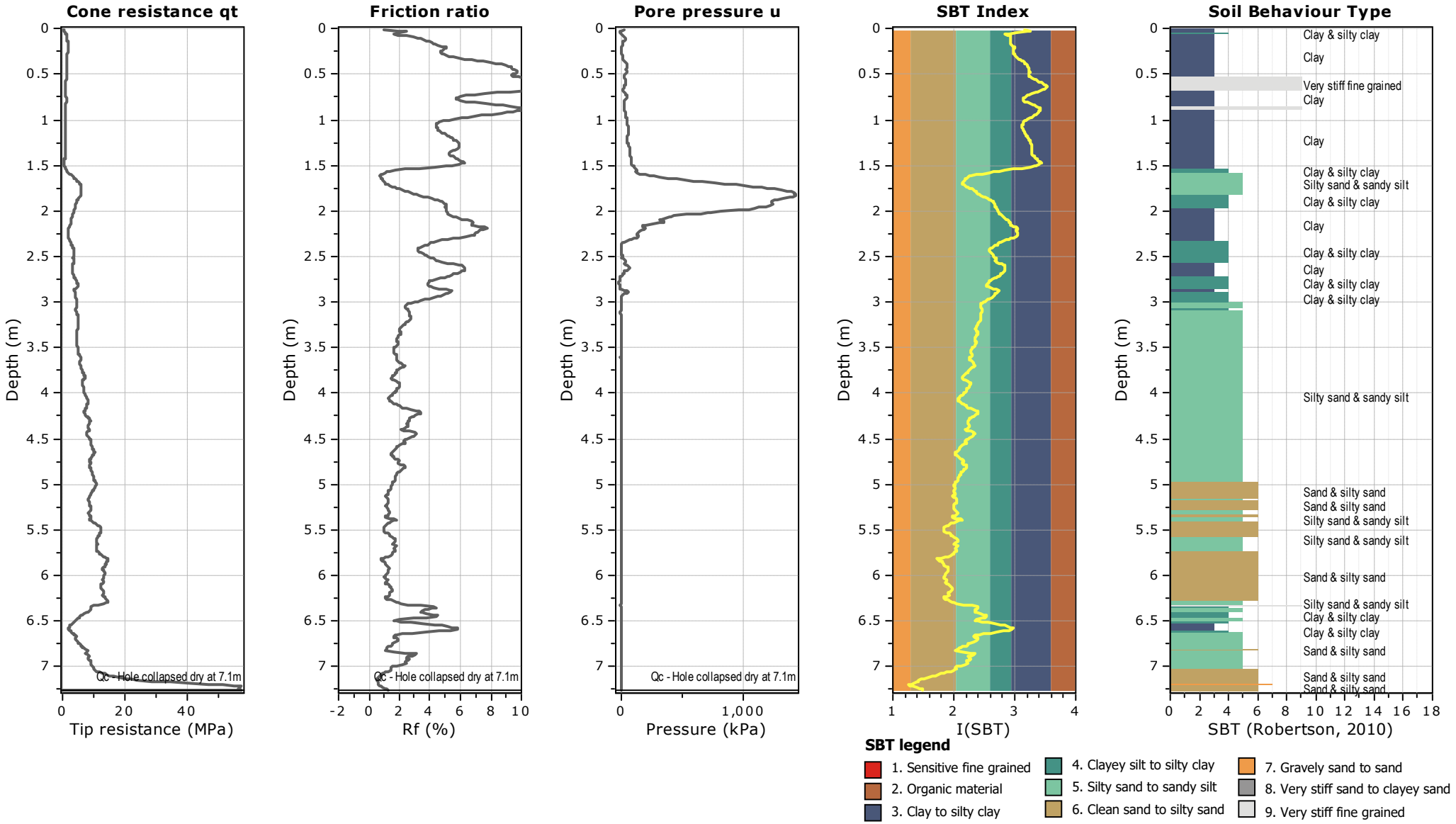


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CPT: 23-03a

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

Total depth: 7.26 m, Date: 24/11/2023
Coords: lat -37.826395° lon 175.759397°

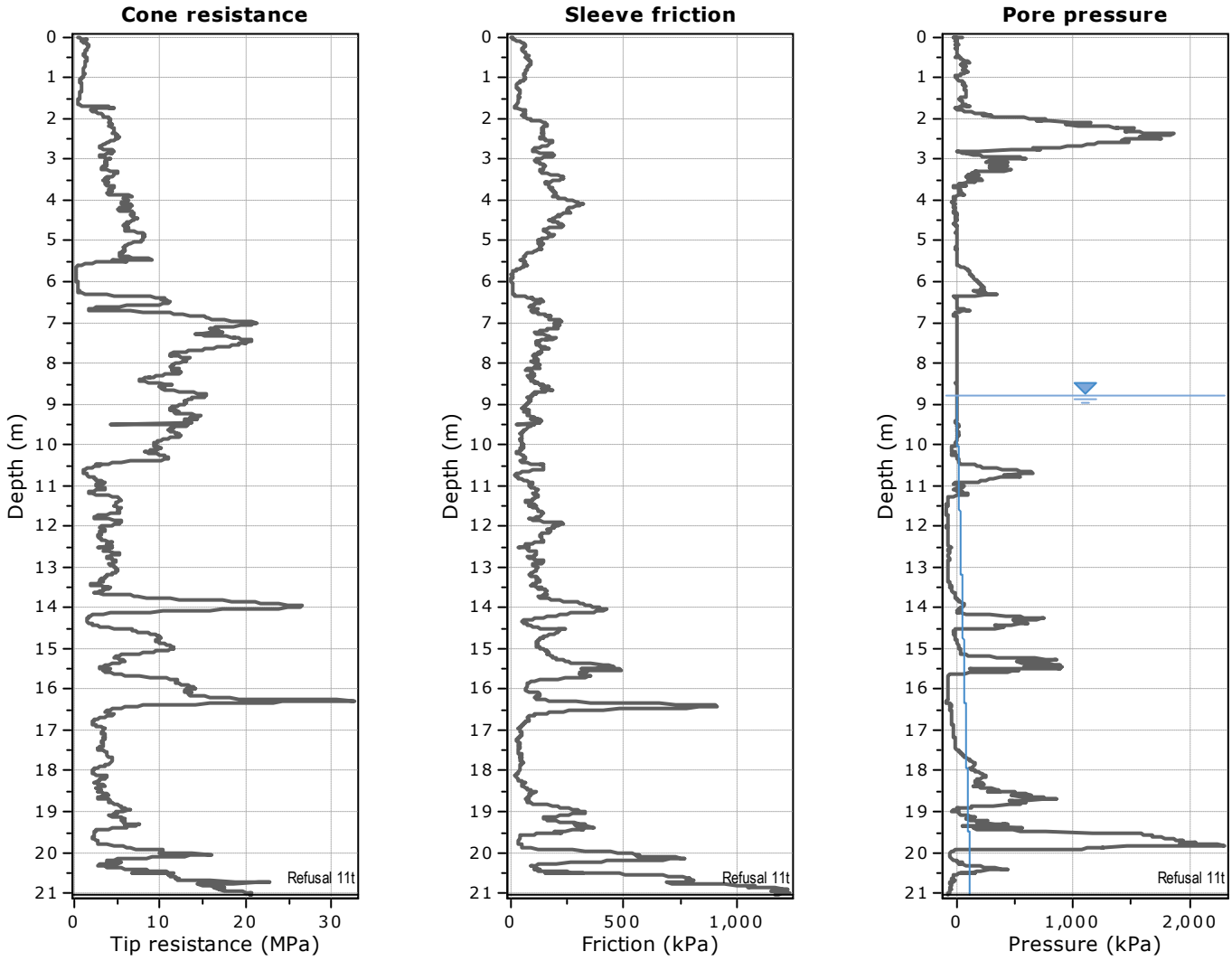


Geo Data Solutions (GDS) NZ Ltd.
Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

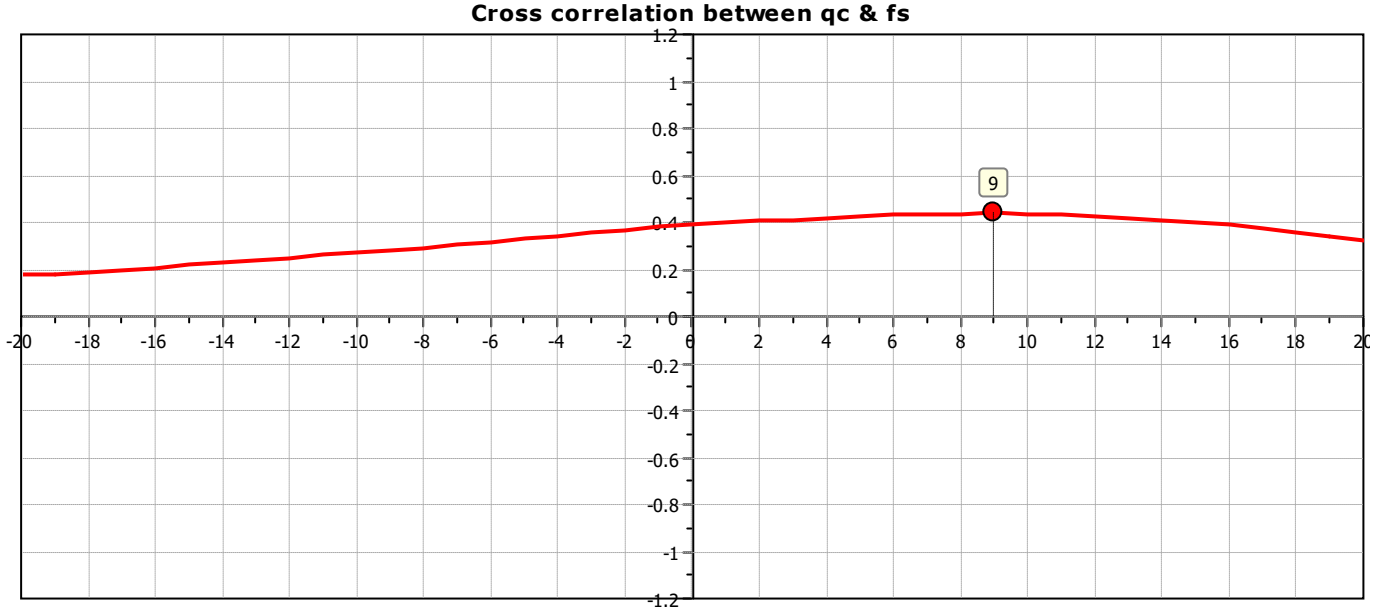
CPT: 23-03b

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Total depth: 21.04 m, Date: 24/11/2023

Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**
Coords: lat -37.825805° lon 175.759309°



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).

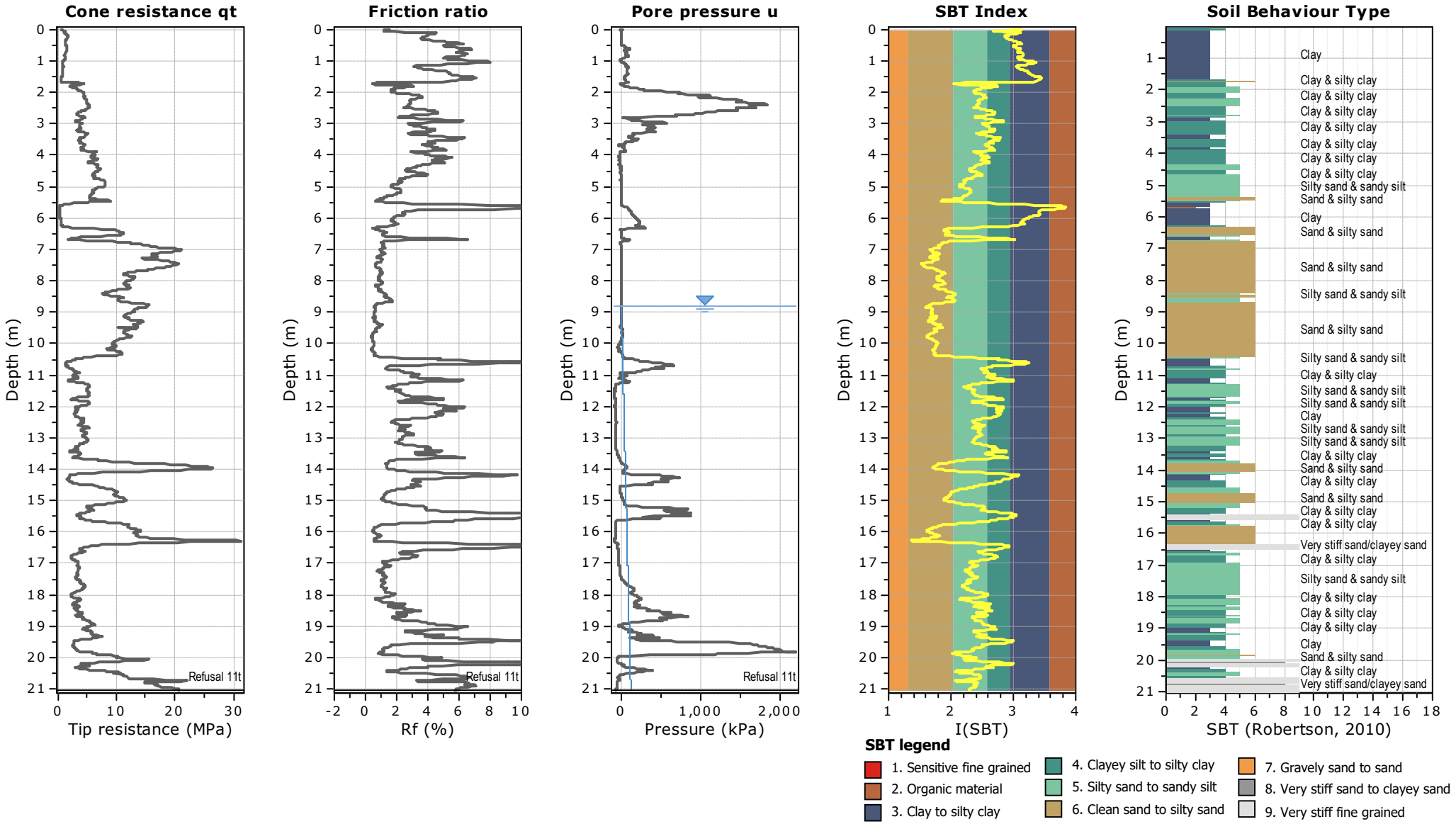


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CPT: 23-03b

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **Peakdale Dr - Matamata | Holes dipped onsite using Dipmeter**

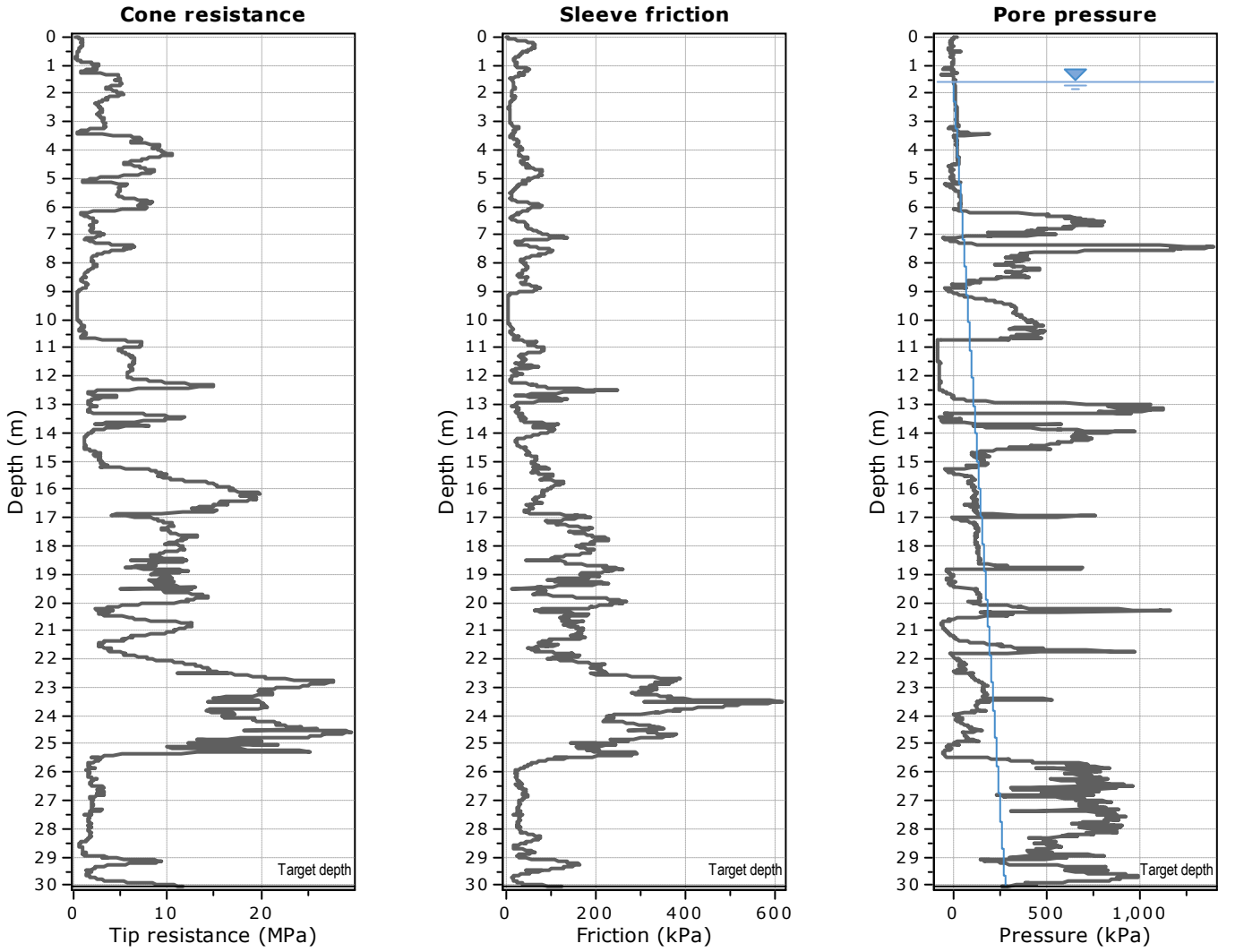
Total depth: 21.04 m, Date: 24/11/2023
Coords: lat -37.825805° lon 175.759309°



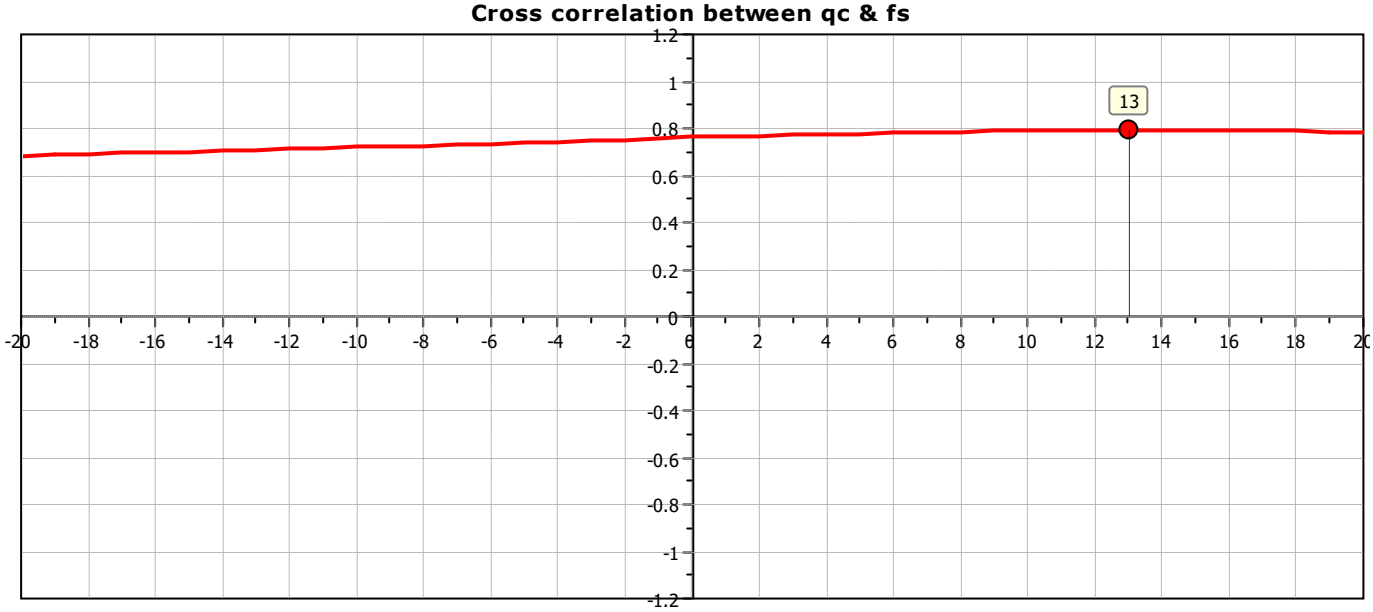
Geo Data Solutions (GDS) NZ Ltd.
Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

CPT: 24-04
Total depth: 30.04 m, Date: 4/06/2024
Coords: lat -37.812787° lon 175.751857°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



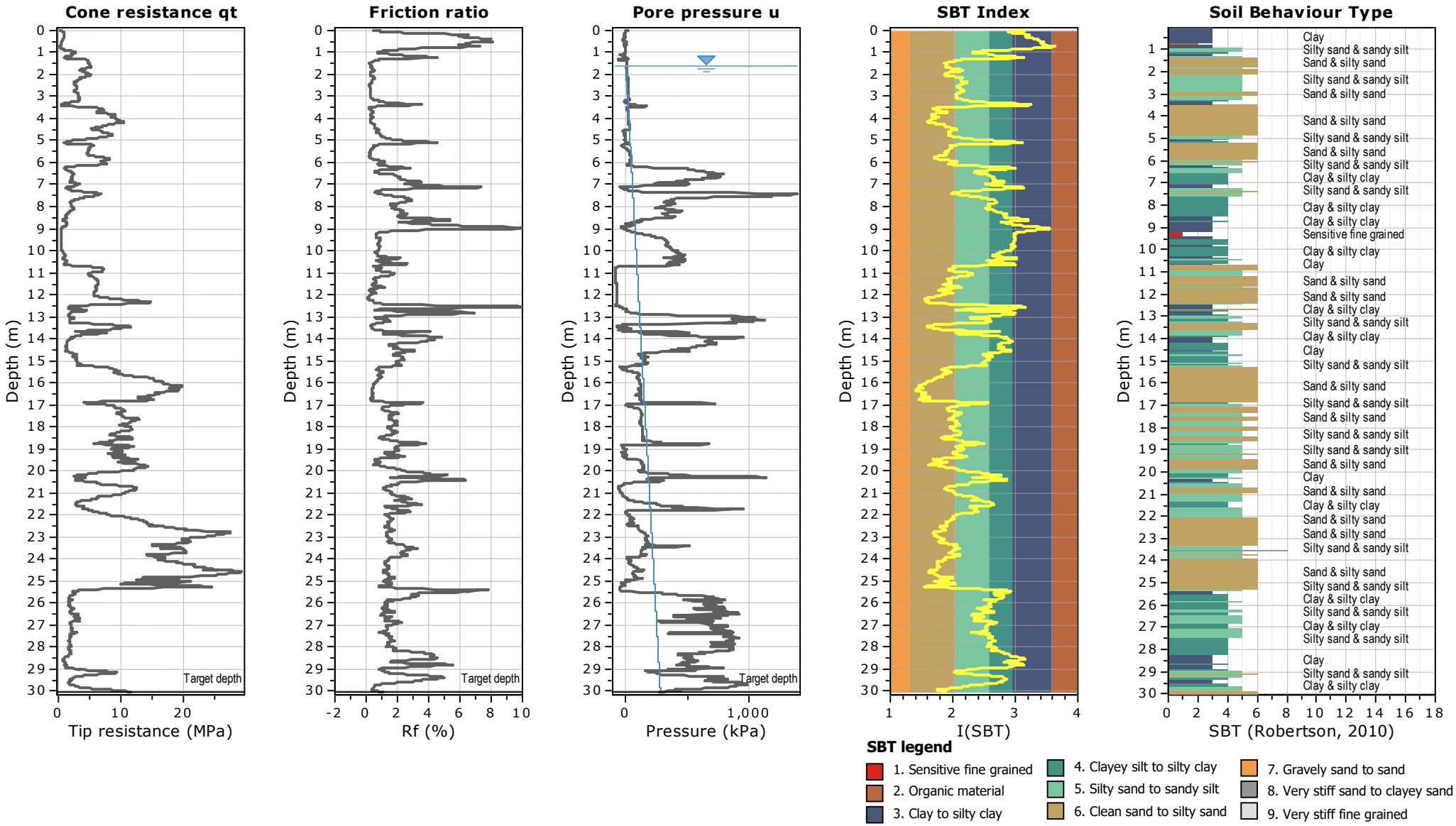
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CPT: 24-04
Total depth: 30.04 m, Date: 4/06/2024
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Cone Type: DC10

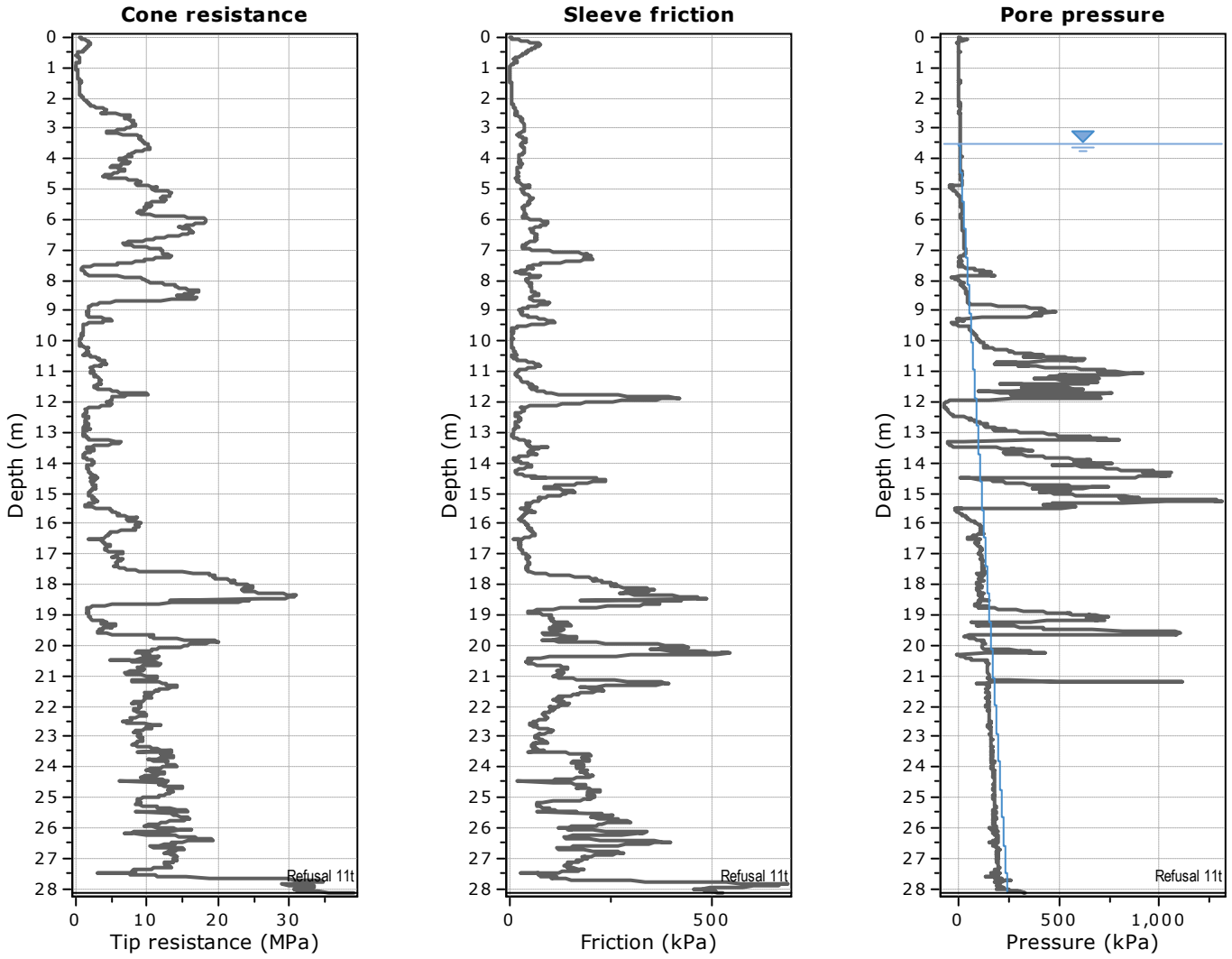
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Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



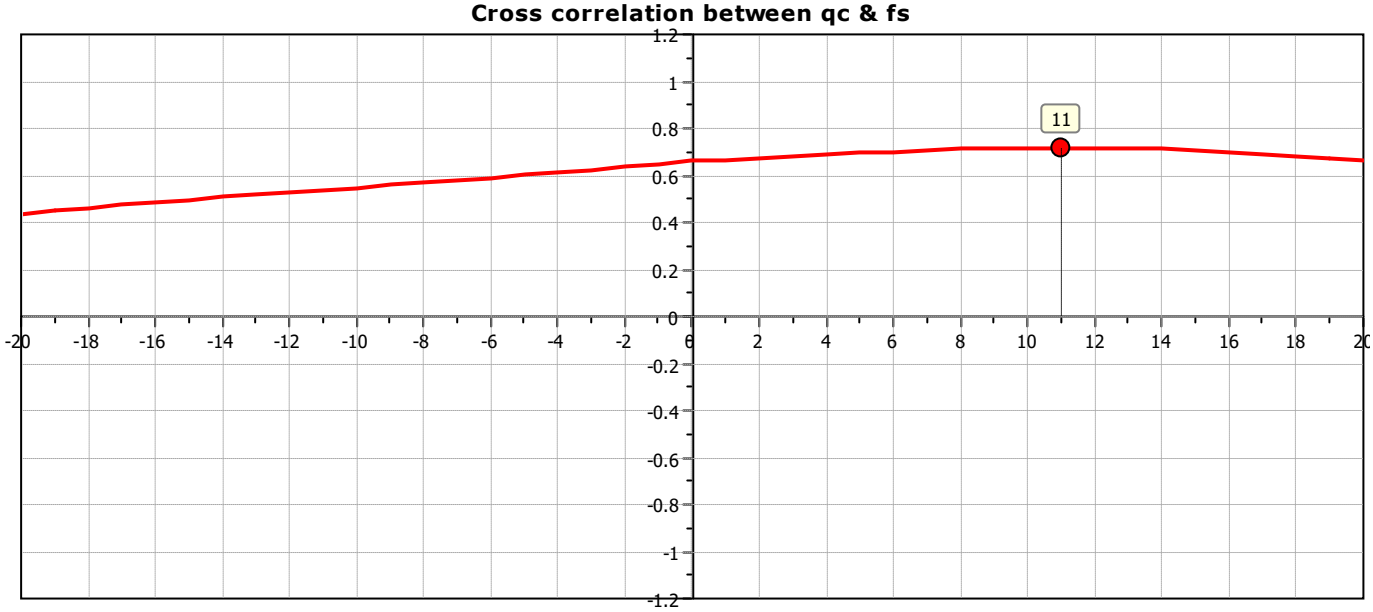
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CPT: 24-05
Total depth: 28.14 m, Date: 4/06/2024
Coords: lat -37.815987° lon 175.753168°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



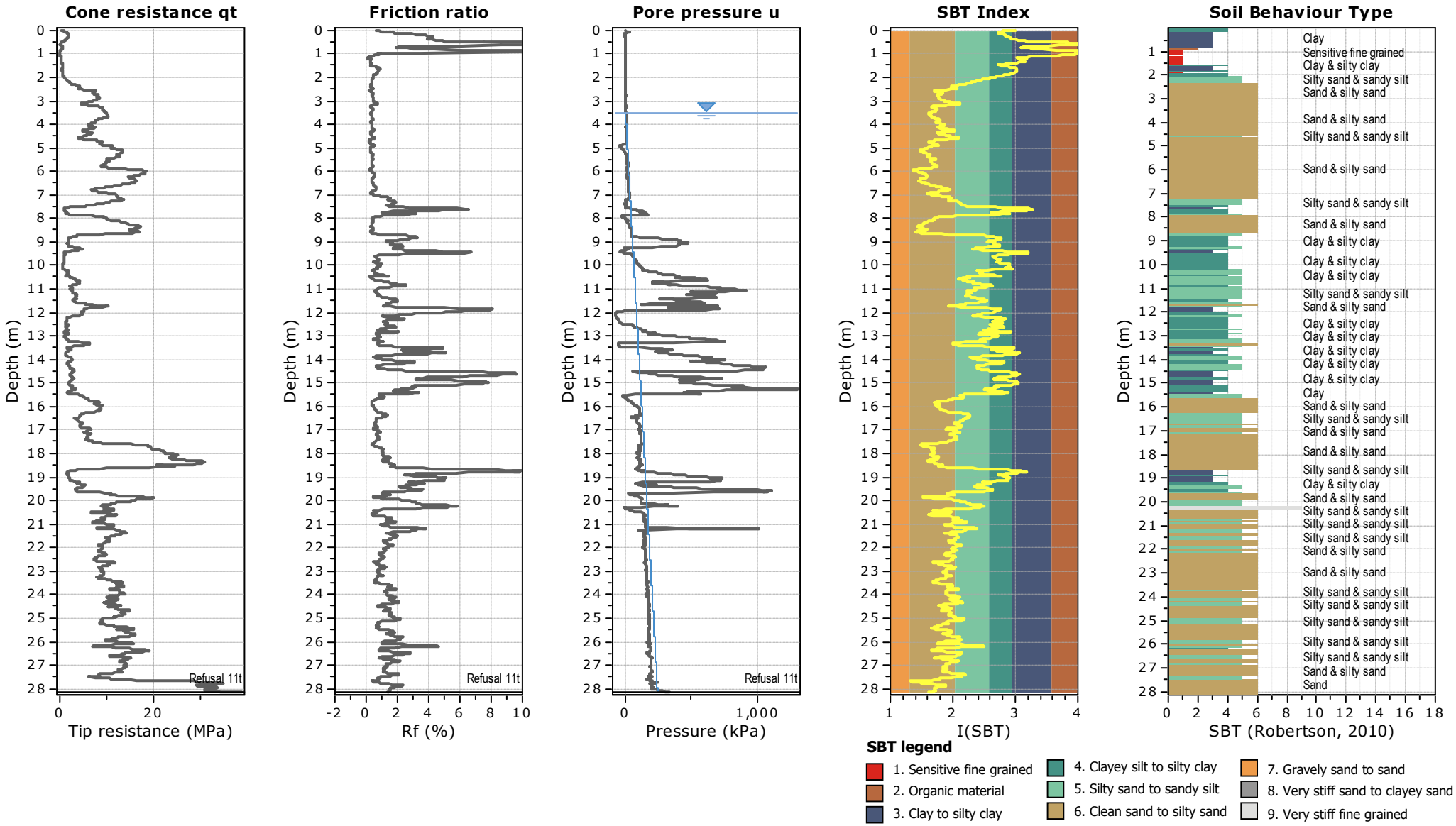
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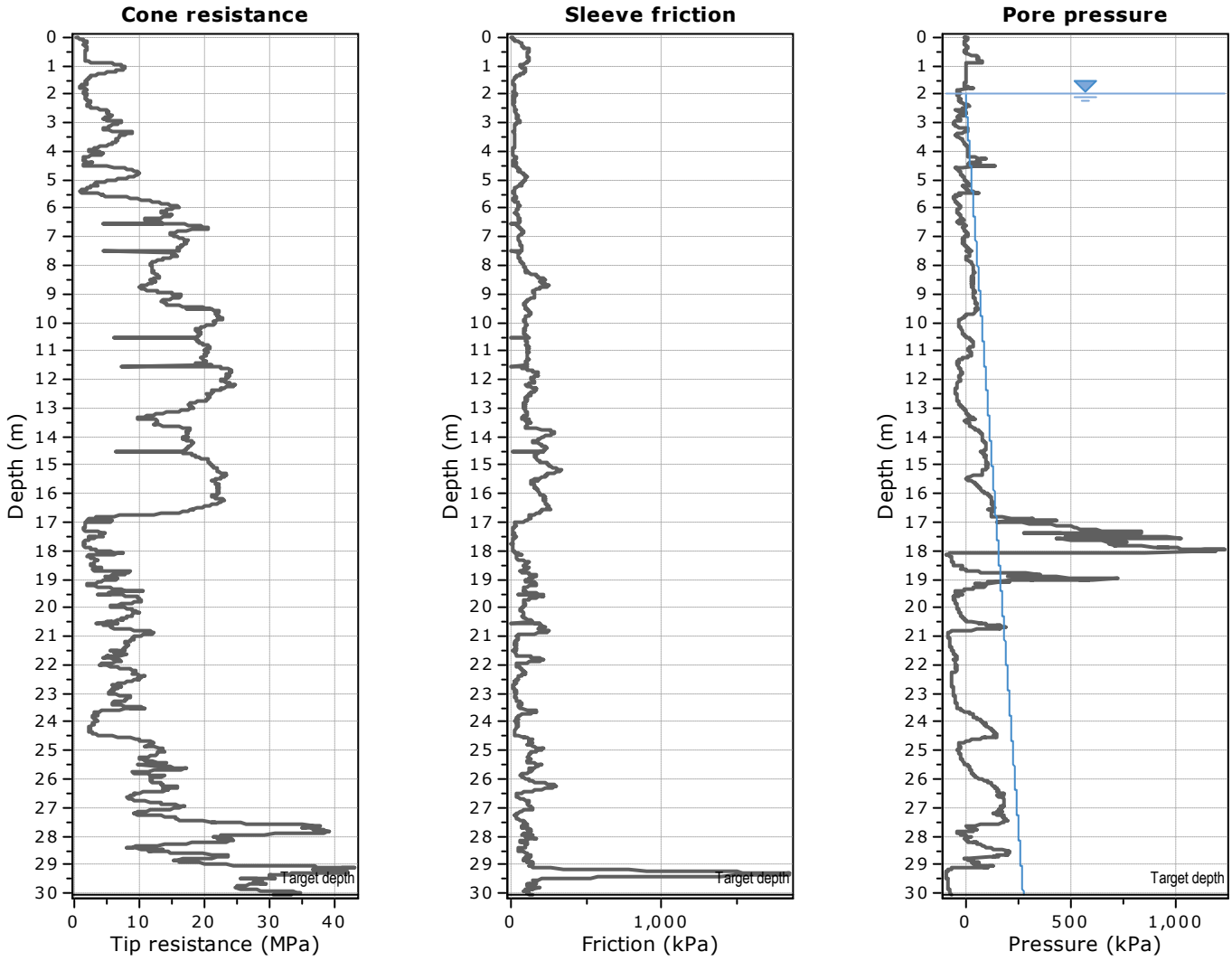
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Location: 127 Station Road, Matamata | Holes dipped onsite using Dipmeter



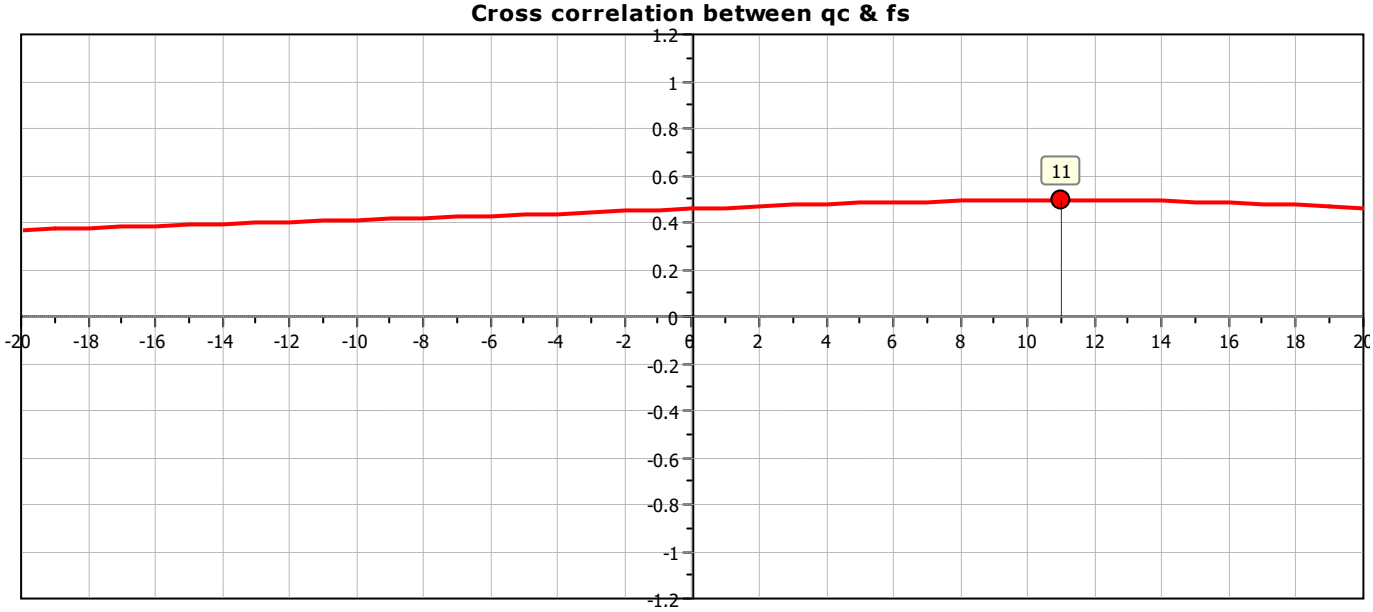
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CPT: 24-06
Total depth: 30.06 m, Date: 4/06/2024
Coords: lat -37.820042° lon 175.759802°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



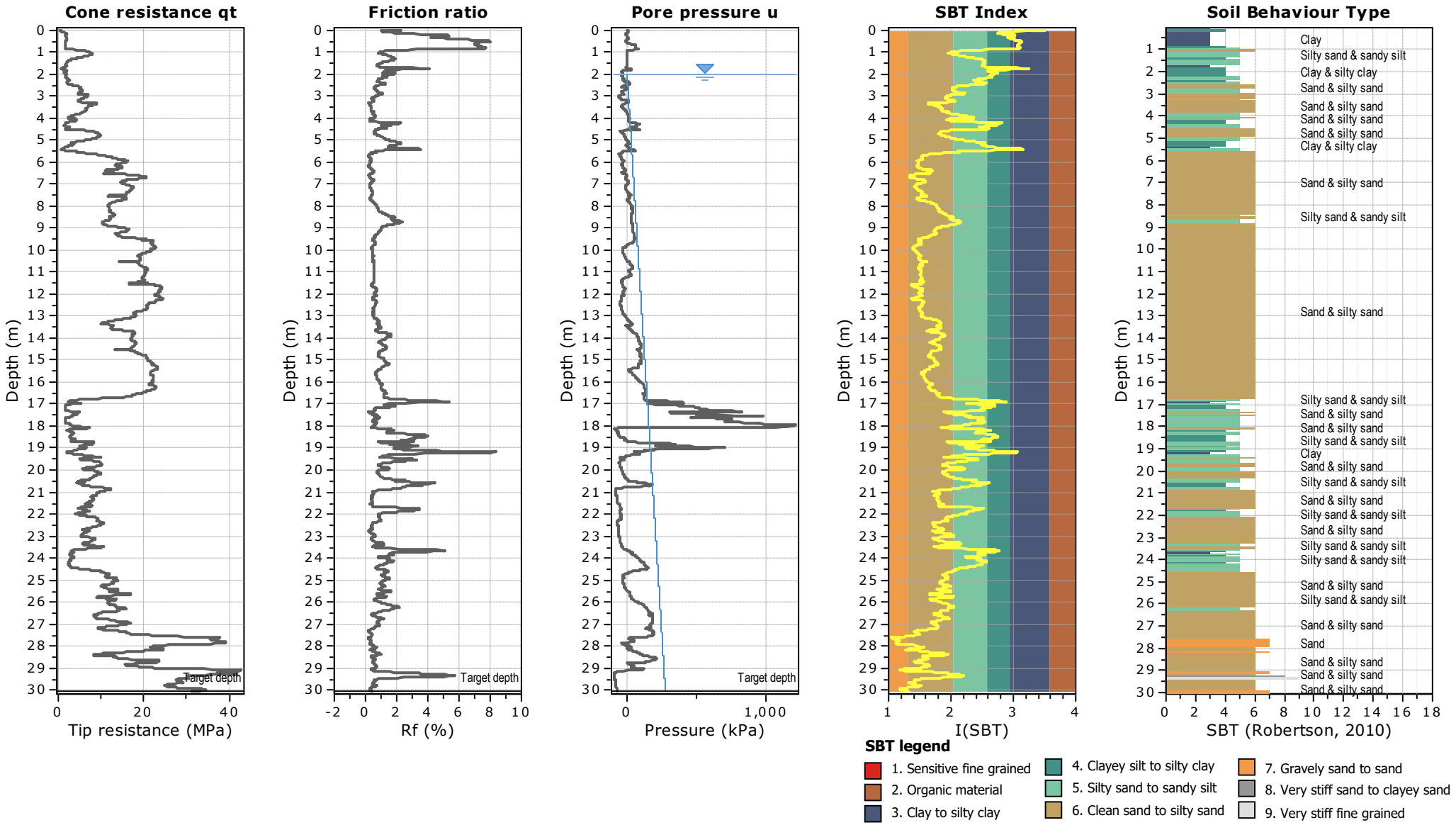
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CPT: 24-06
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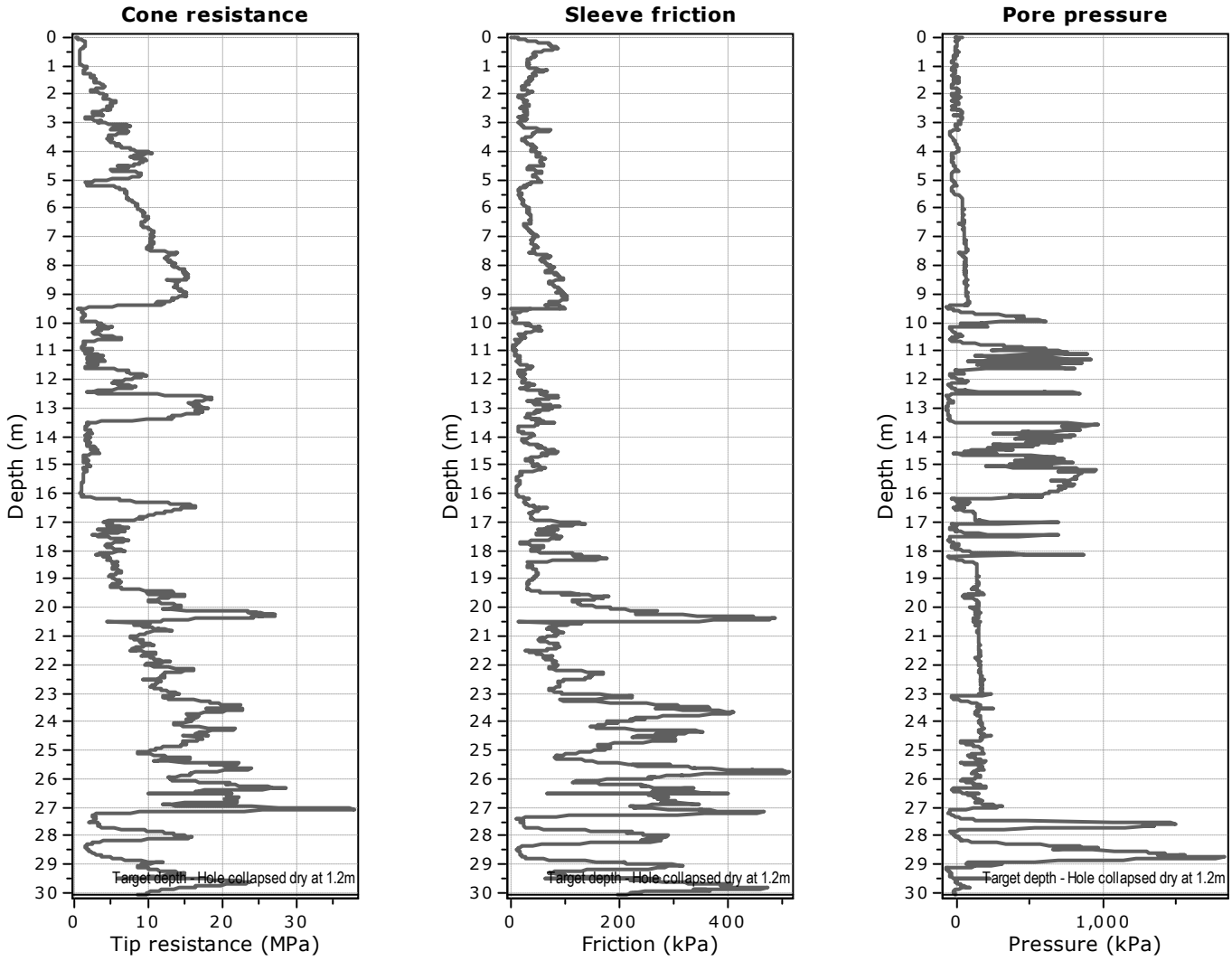
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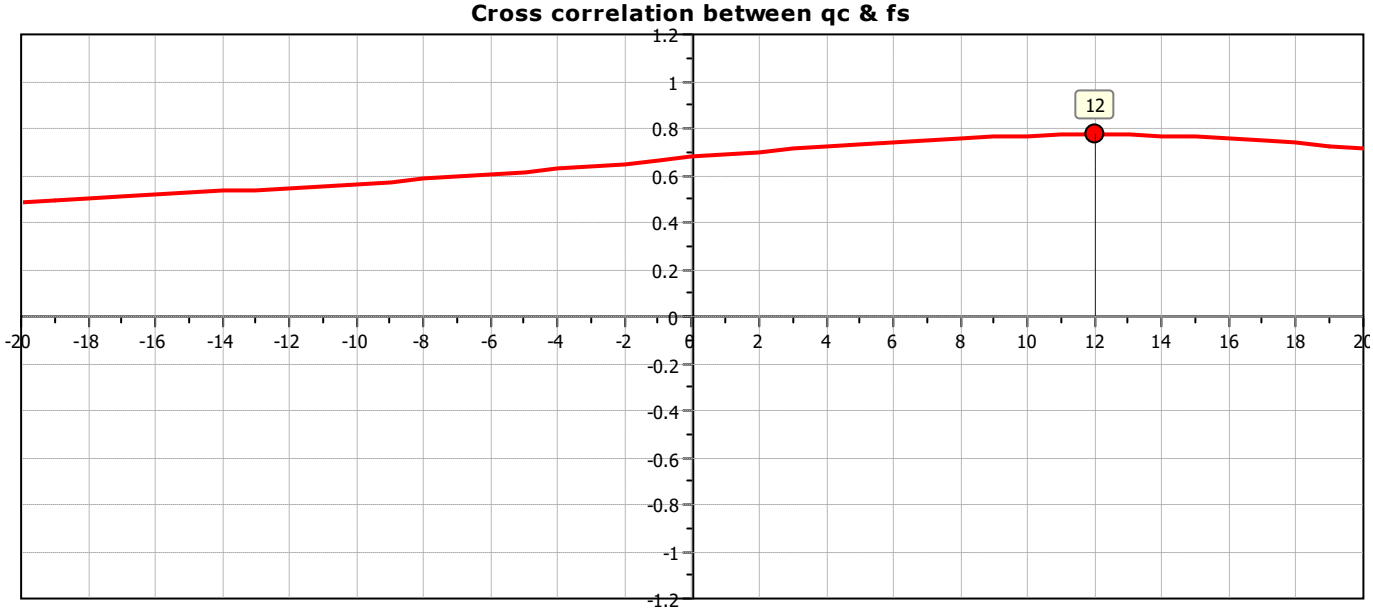
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CPT: 24-07
Total depth: 30.07 m, Date: 4/06/2024
Coords: lat -37.82305° lon 175.750916°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



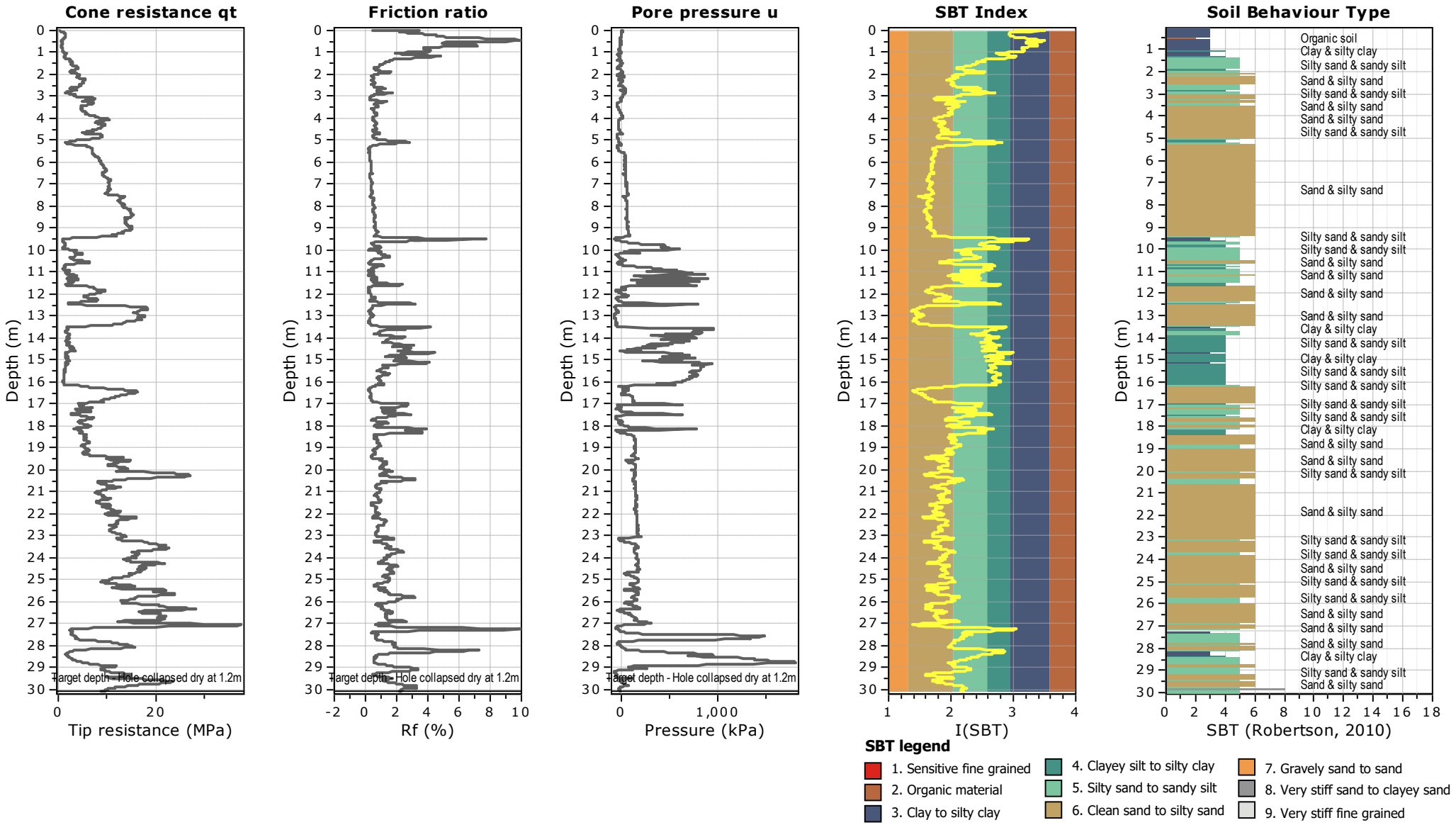
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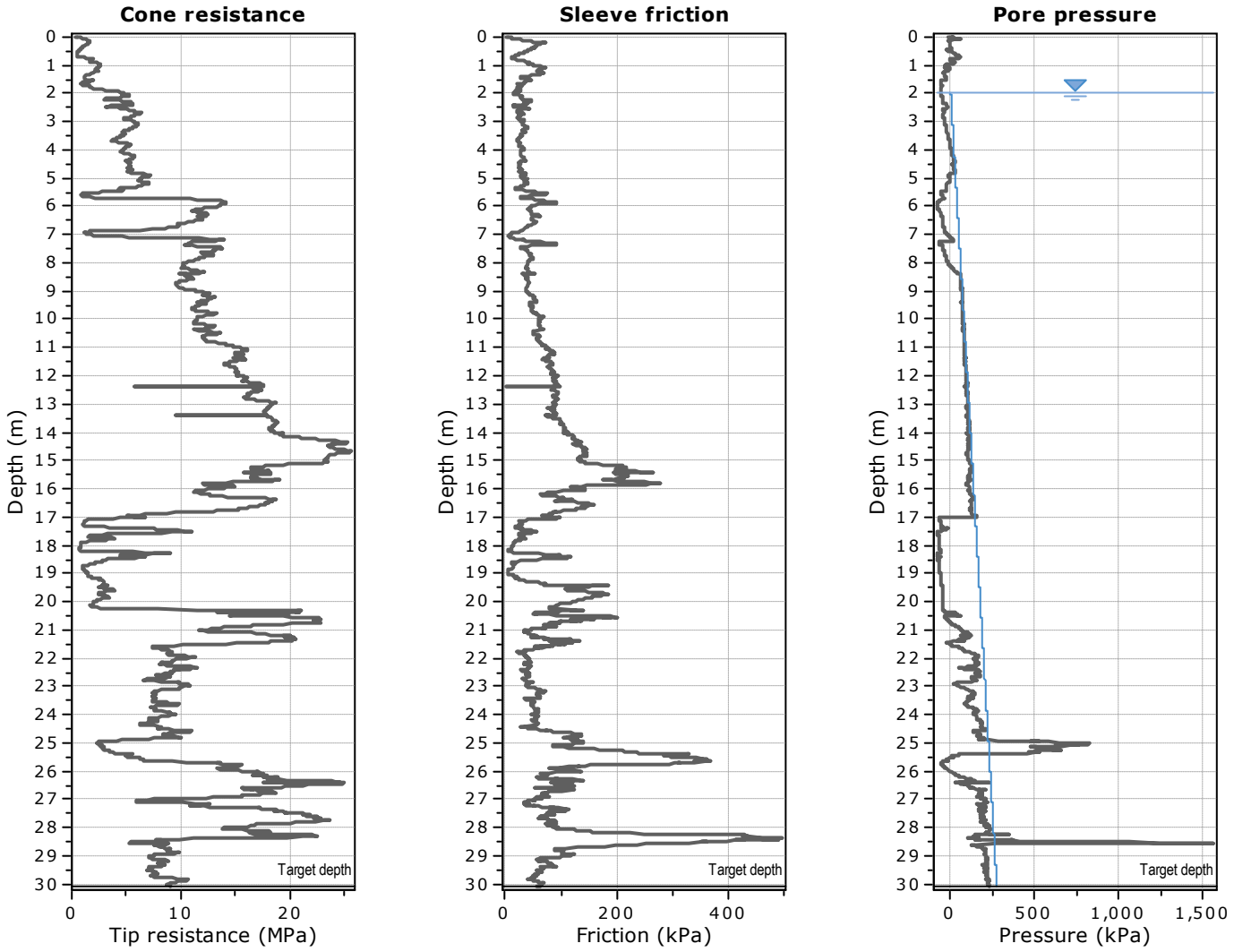
Project: CMW Geosciences | HAM2023-0124 | GDS NZ Ltd
Location: 127 Station Road, Matamata | Holes dipped onsite using Dipmeter



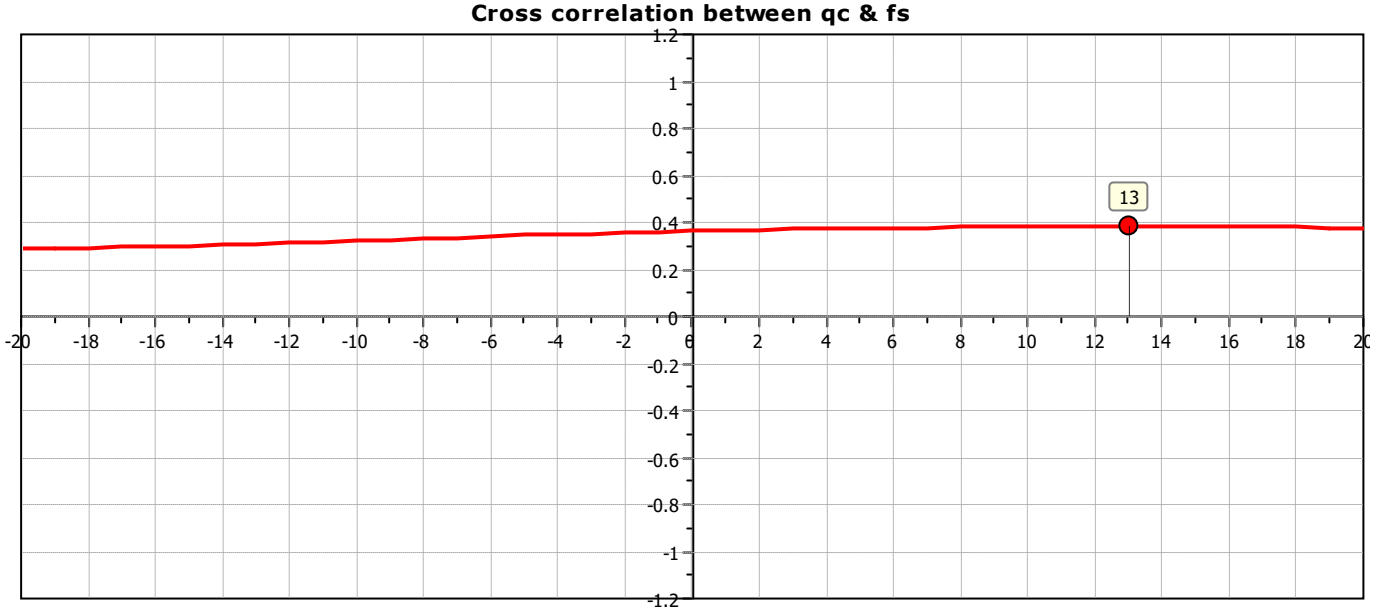
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Email: Josh@gdsnz.co. nz
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CPT: 24-08
Total depth: 30.08 m, Date: 4/06/2024
Coords: lat -37.82359° lon 175.754635°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



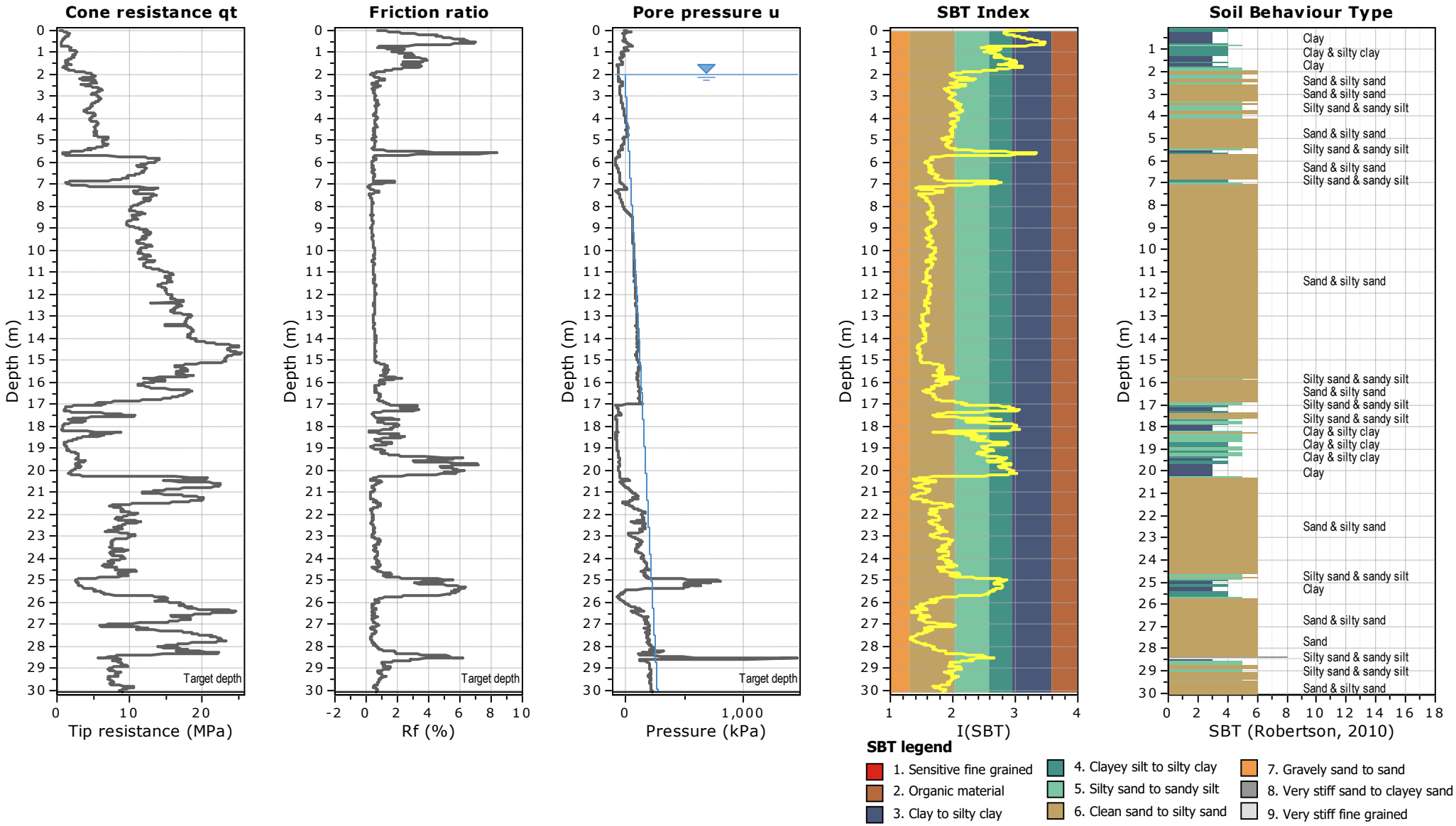
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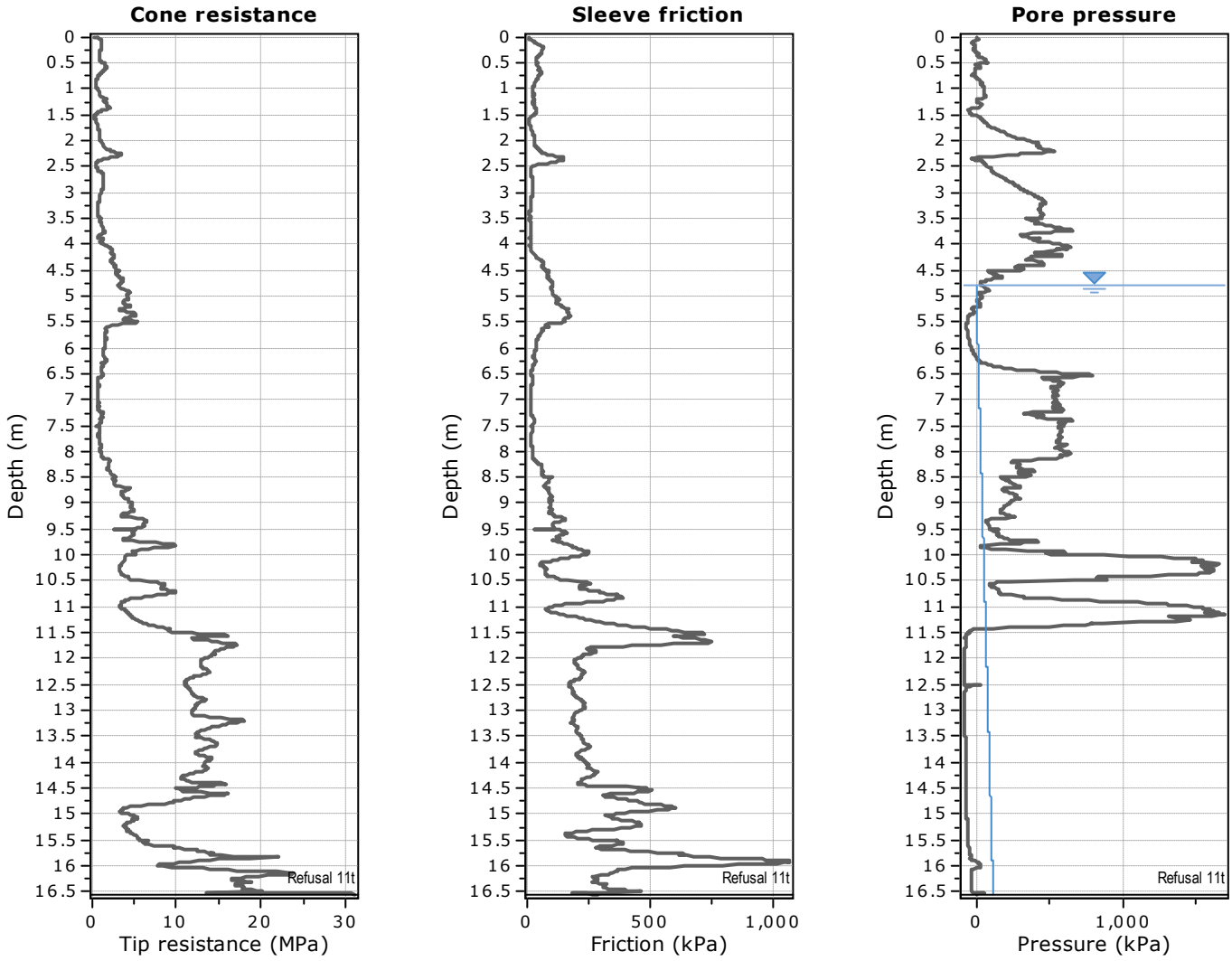
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Location: 127 Station Road, Matamata | Holes dipped onsite using Dipmeter



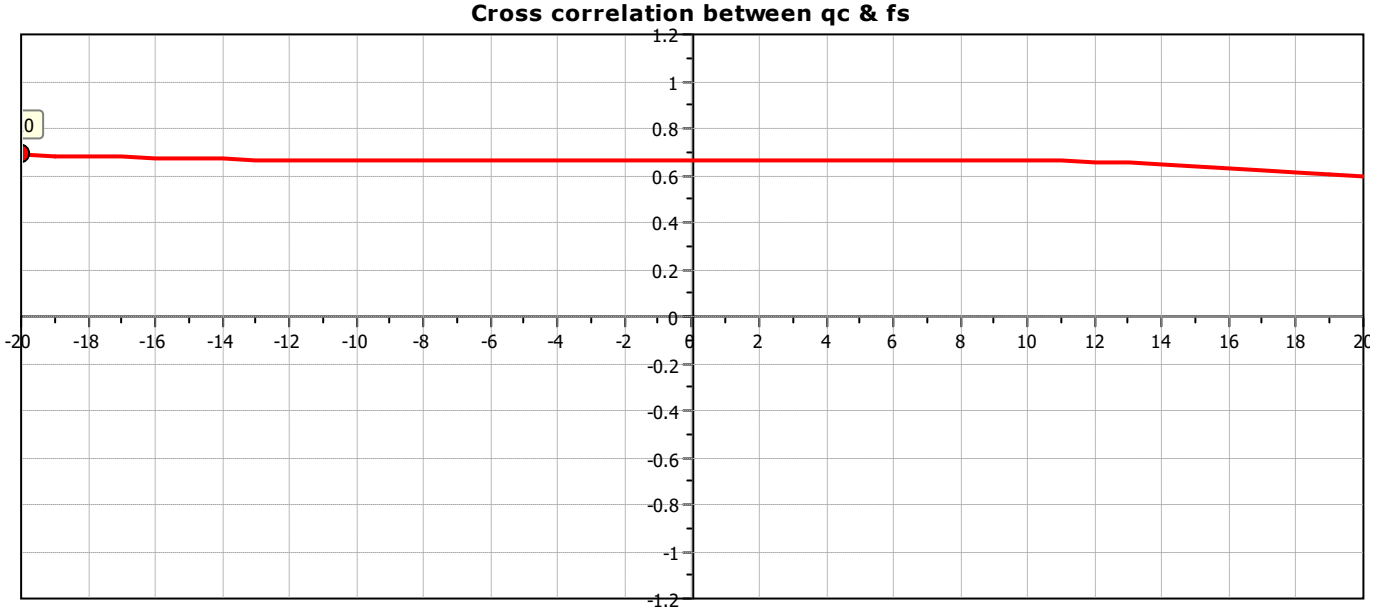
Geo Data Solutions (GDS) NZ Ltd.
Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

CPT: 24-09
Total depth: 16.56 m, Date: 4/06/2024
Coords: lat -37.824685° lon 175.748286°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



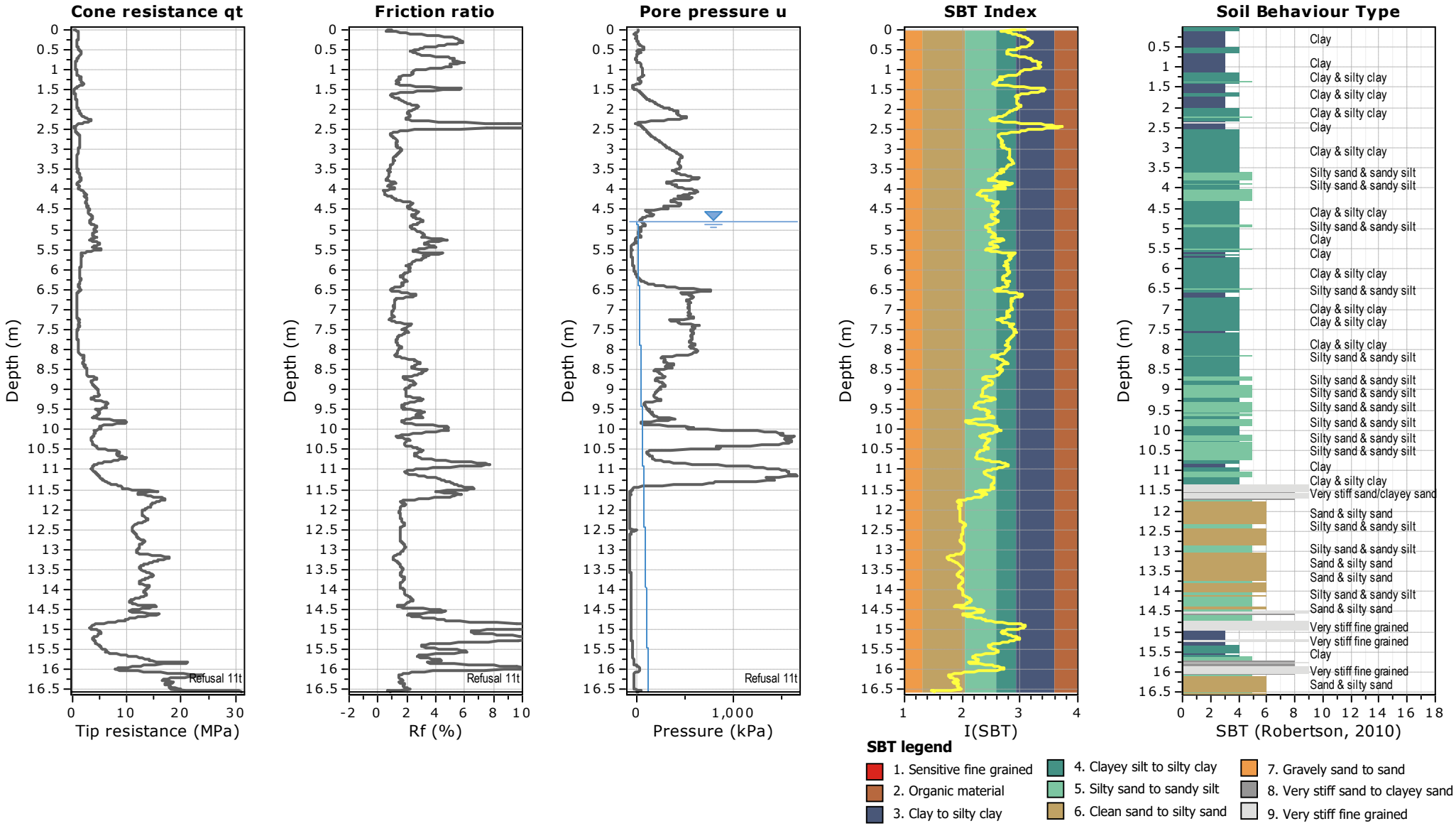
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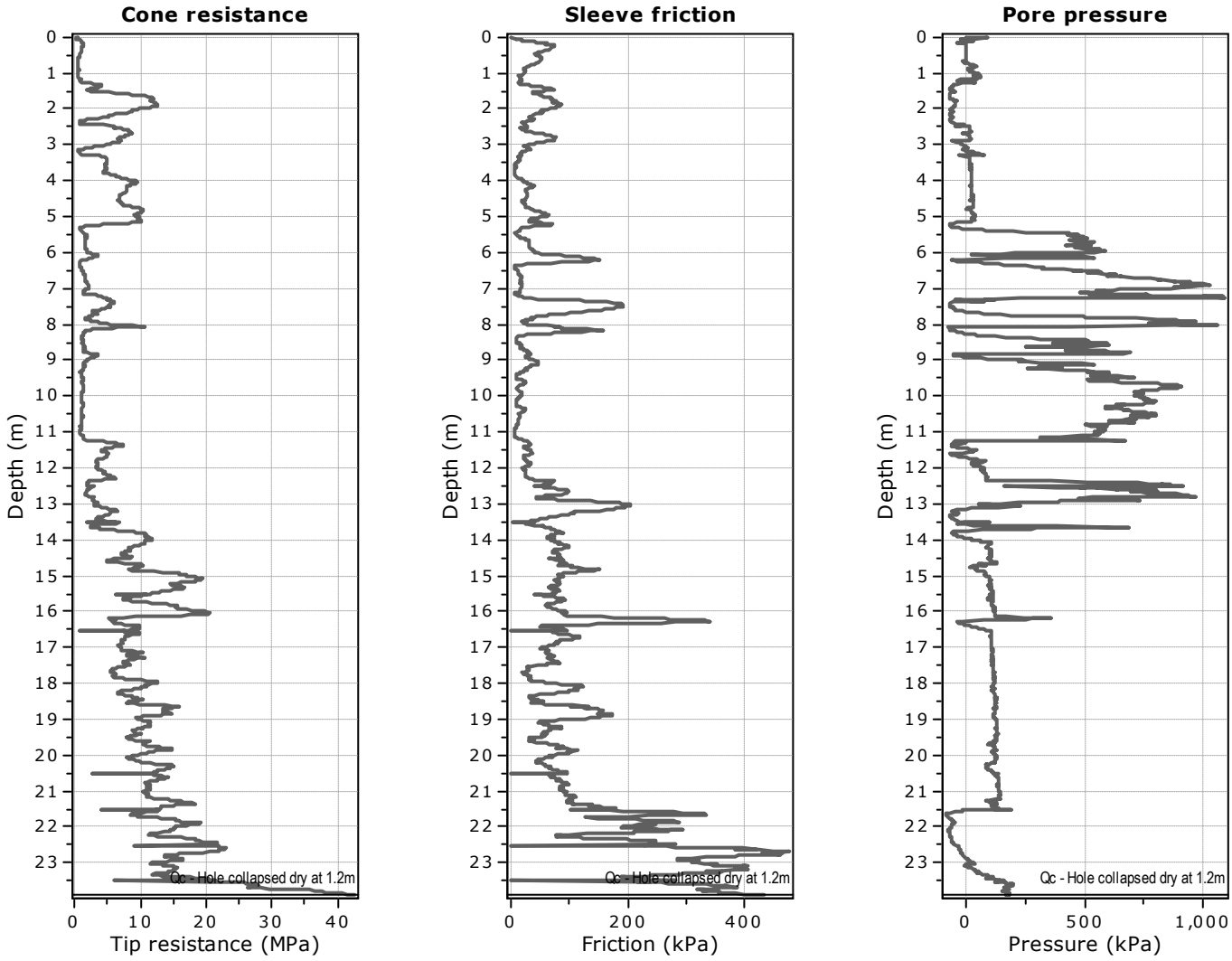
Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



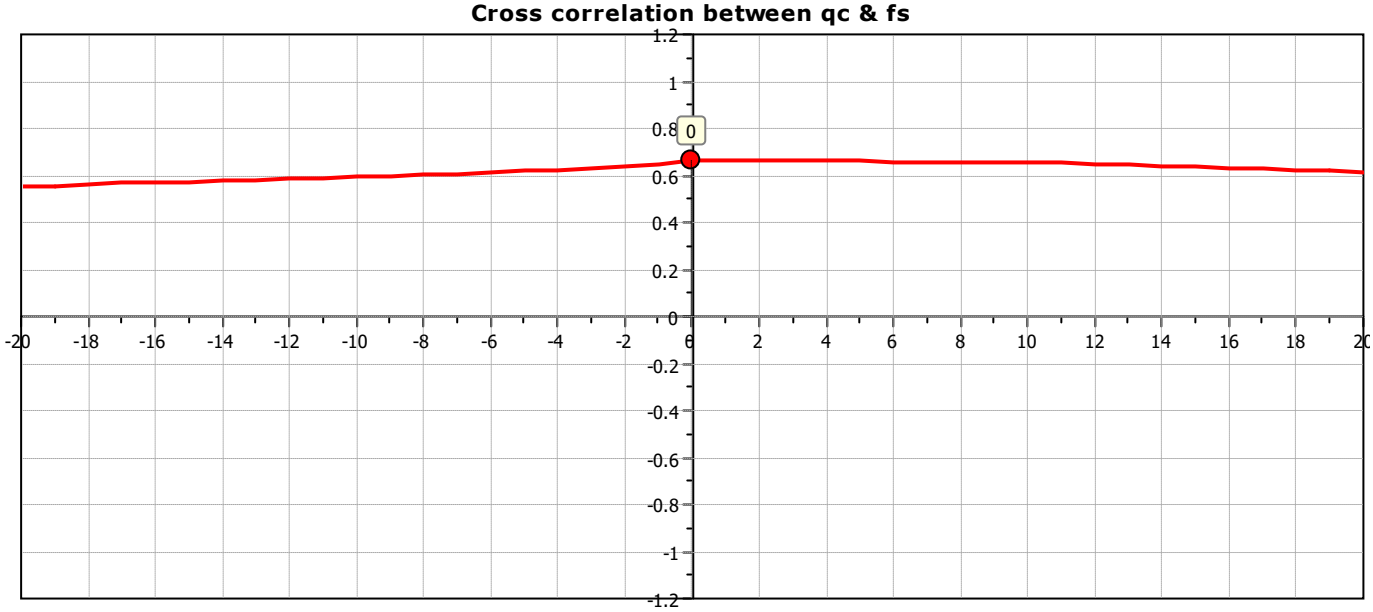
Geo Data Solutions (GDS) NZ Ltd.
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CPT: 24-10
Total depth: 23.89 m, Date: 4/06/2024
Coords: lat -37.82614° lon 175.752408°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



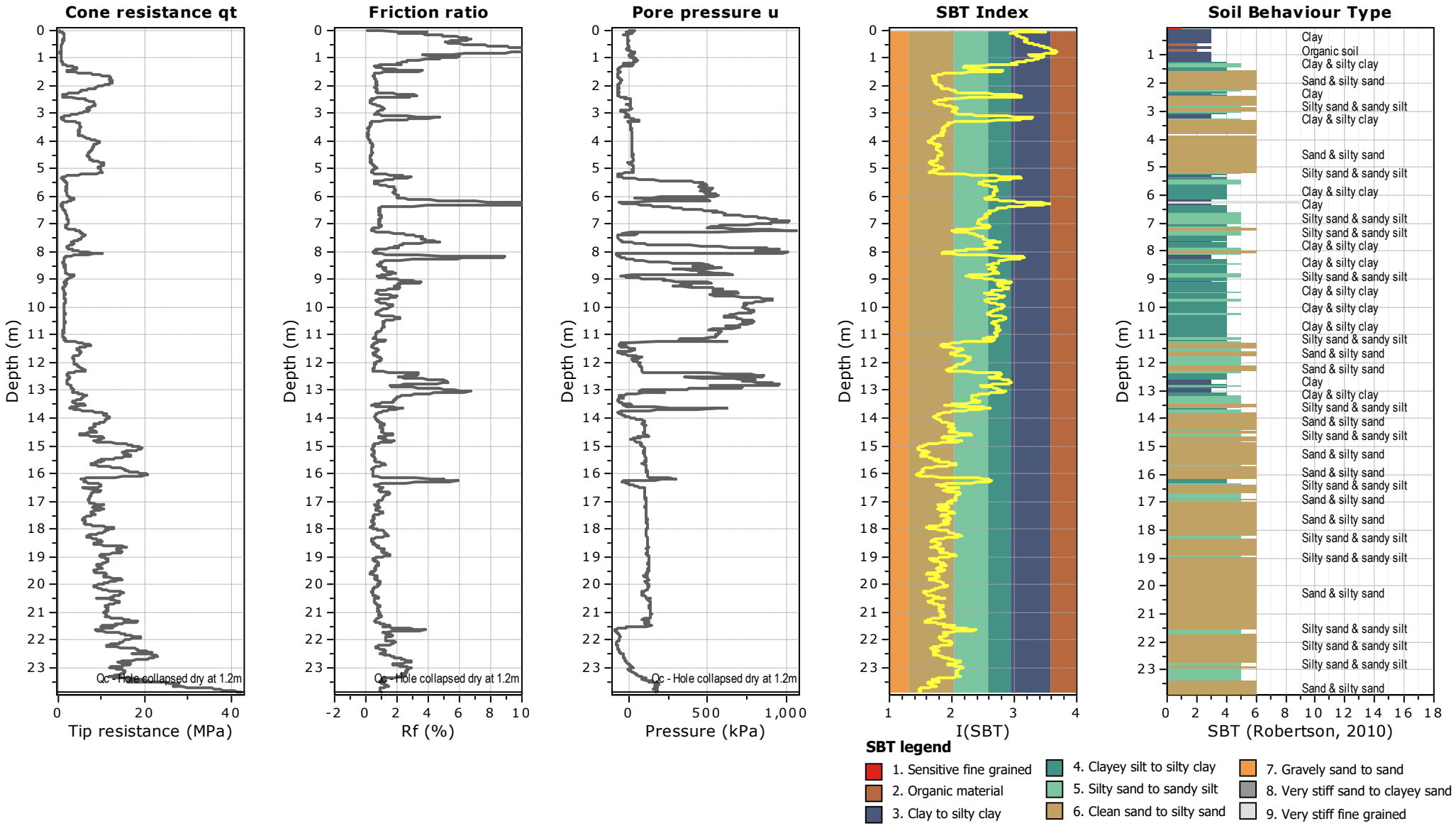
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CPT: 24-10
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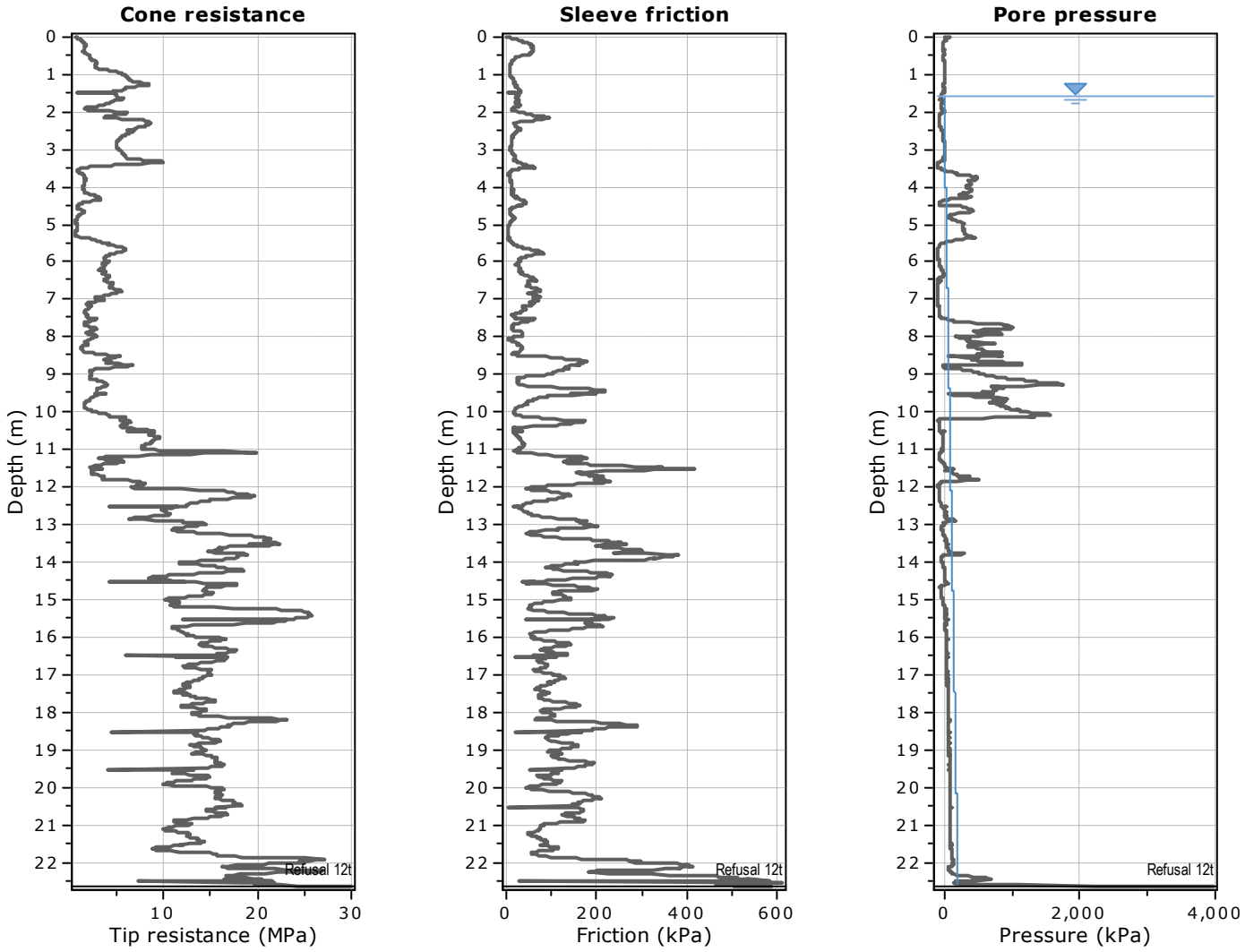
Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



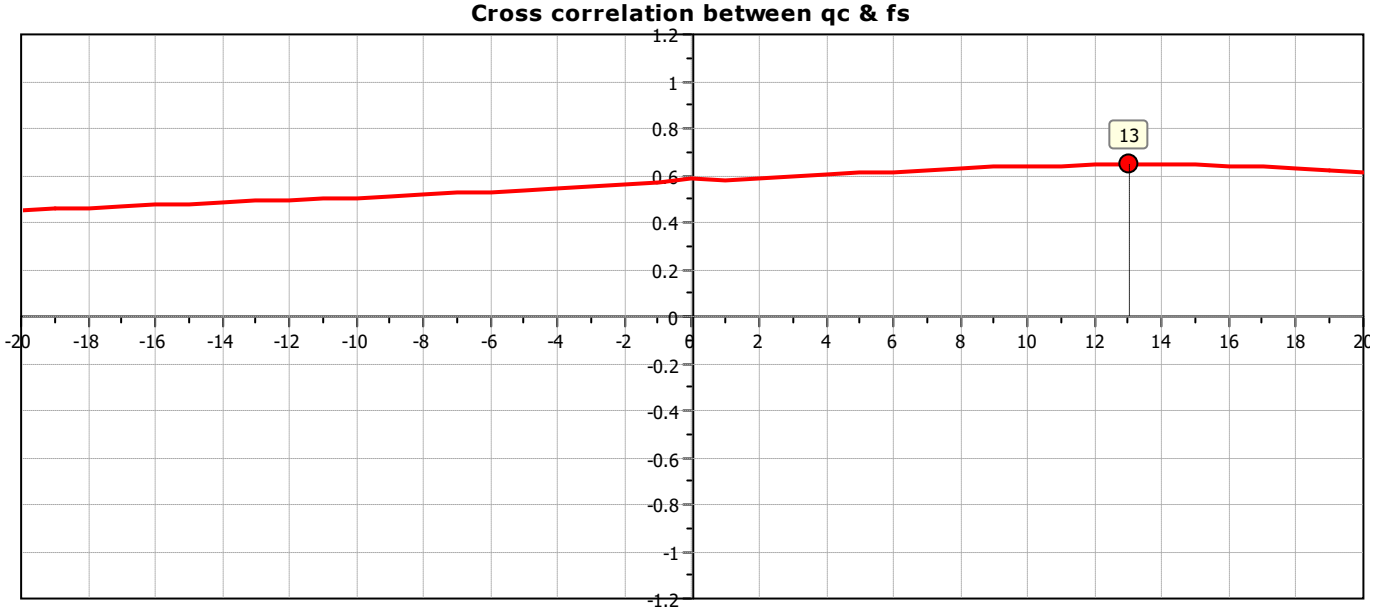
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CPT: SCPT24-01
Total depth: 22.64 m, Date: 4/06/2024
Coords: lat -37.820766° lon 175.747979°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



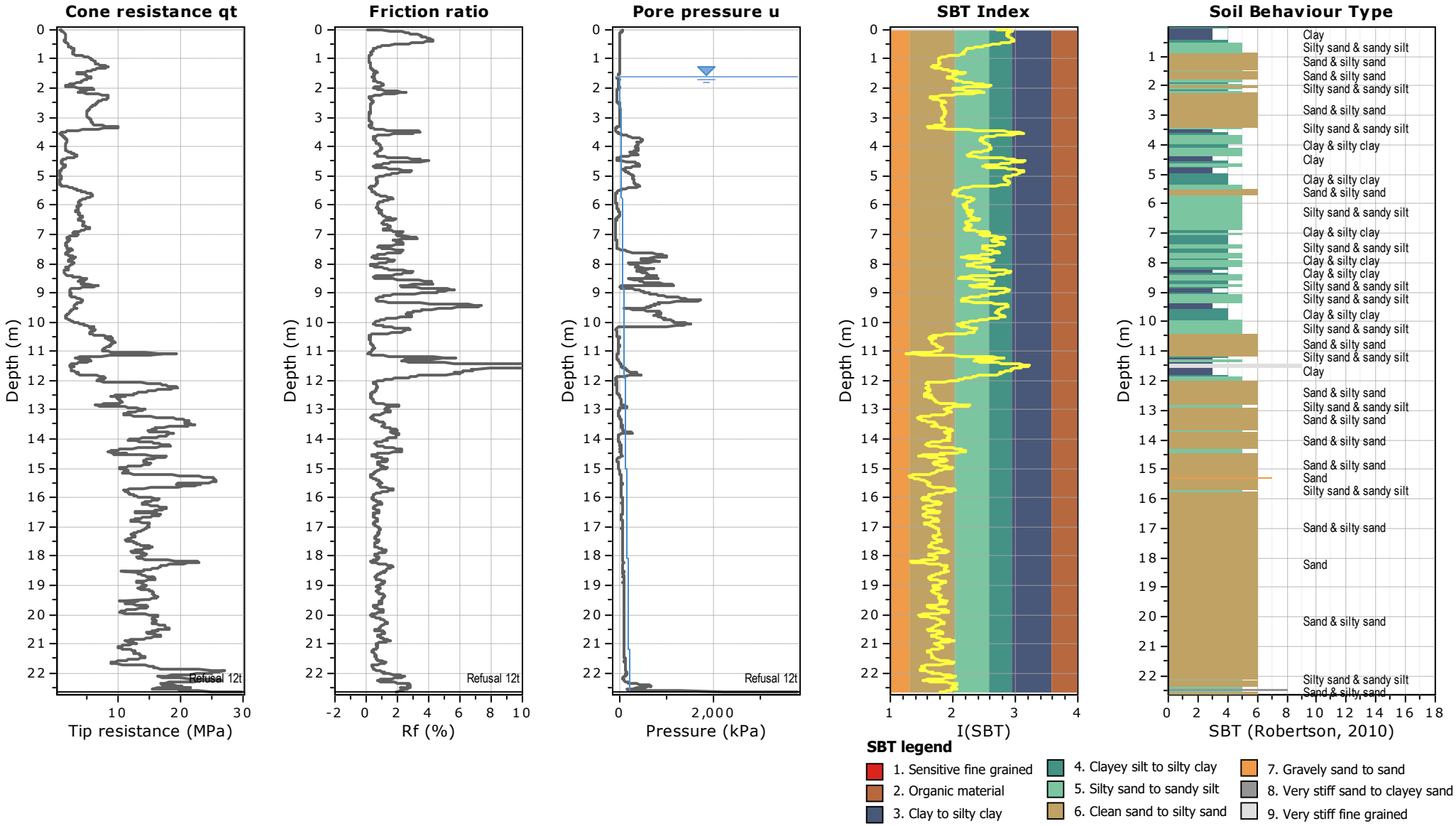
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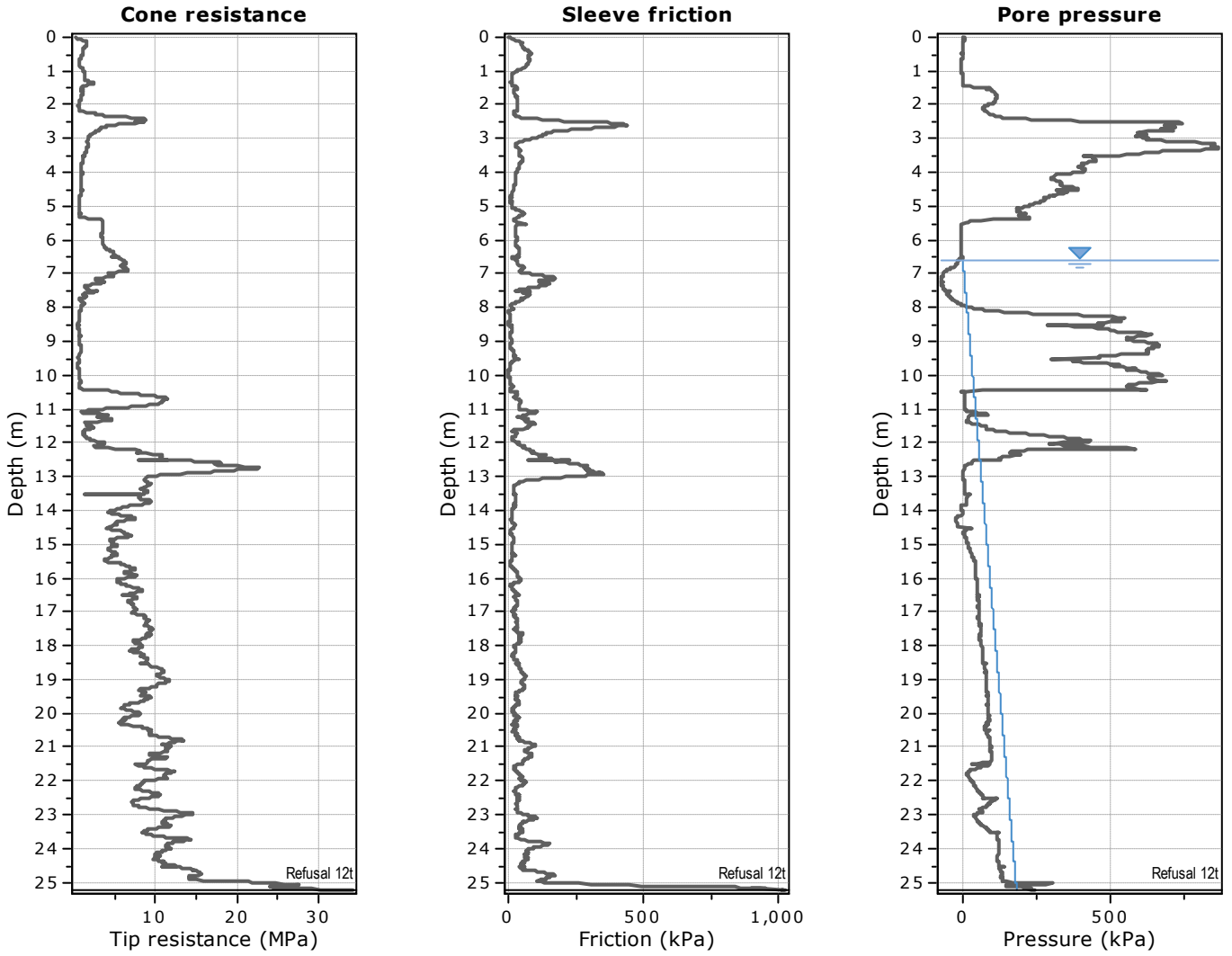
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Location: 127 Station Road, Matamata | Holes dipped onsite using Dipmeter



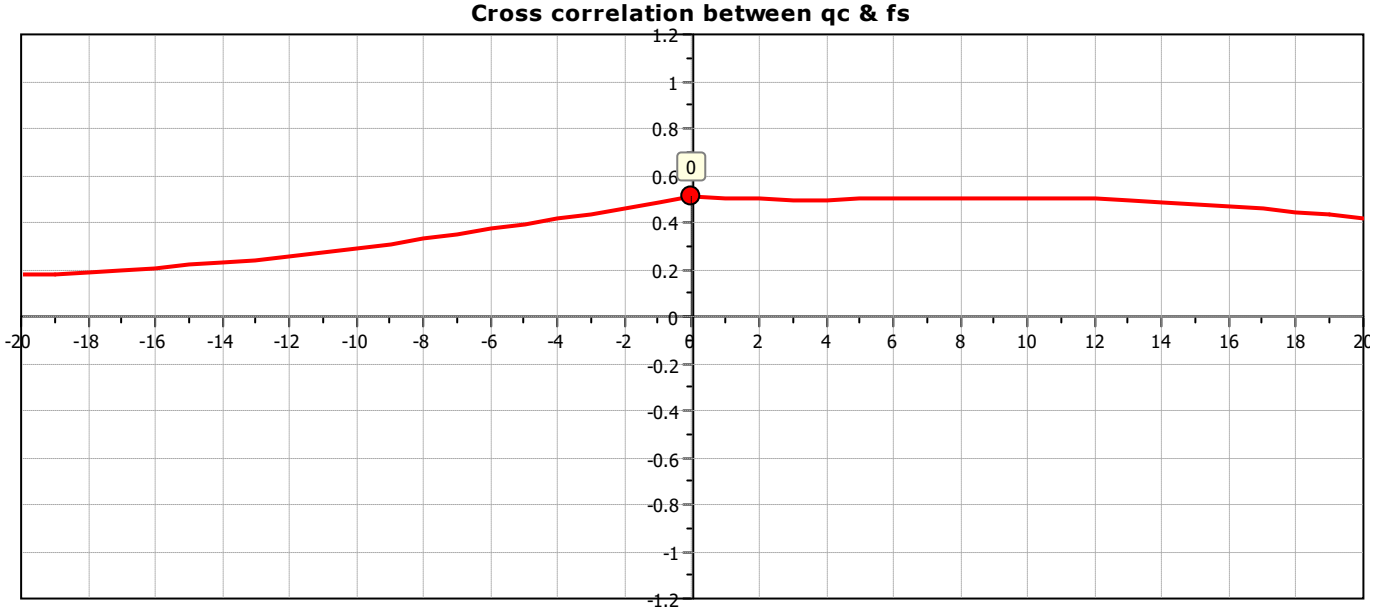
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CPT: SCPT24-02
Total depth: 25.23 m, Date: 4/06/2024
Coords: lat -37.822827° lon 175.745404°
Cone Type: DC10

Project: CMW Geosciences | HAM2023-0124 | GDS NZ Ltd
Location: 127 Station Road, Matamata | Holes dipped onsite using Dipmeter



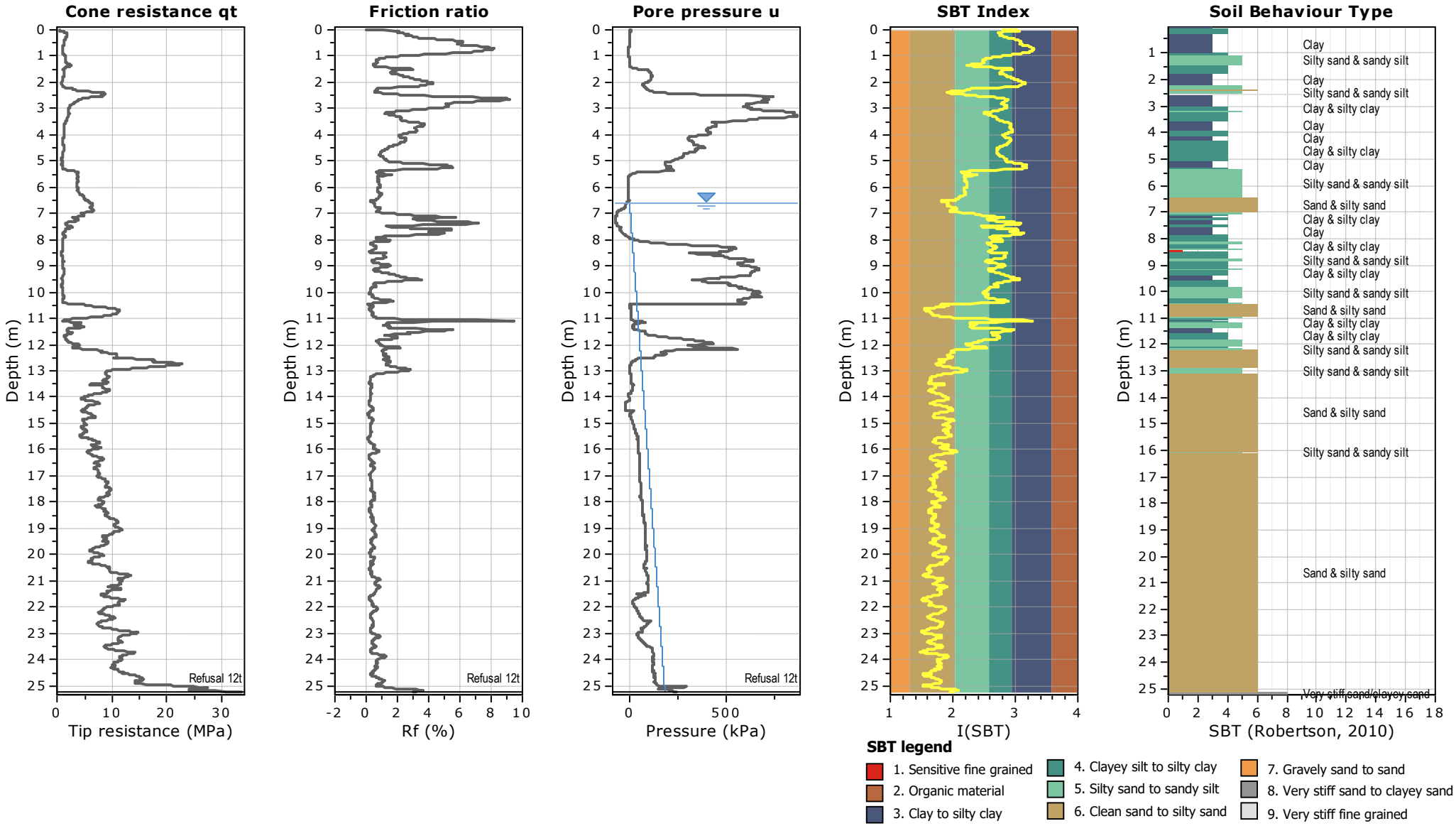
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Coords: lat -37.822827° lon 175.745404°
Cone Type: DC10

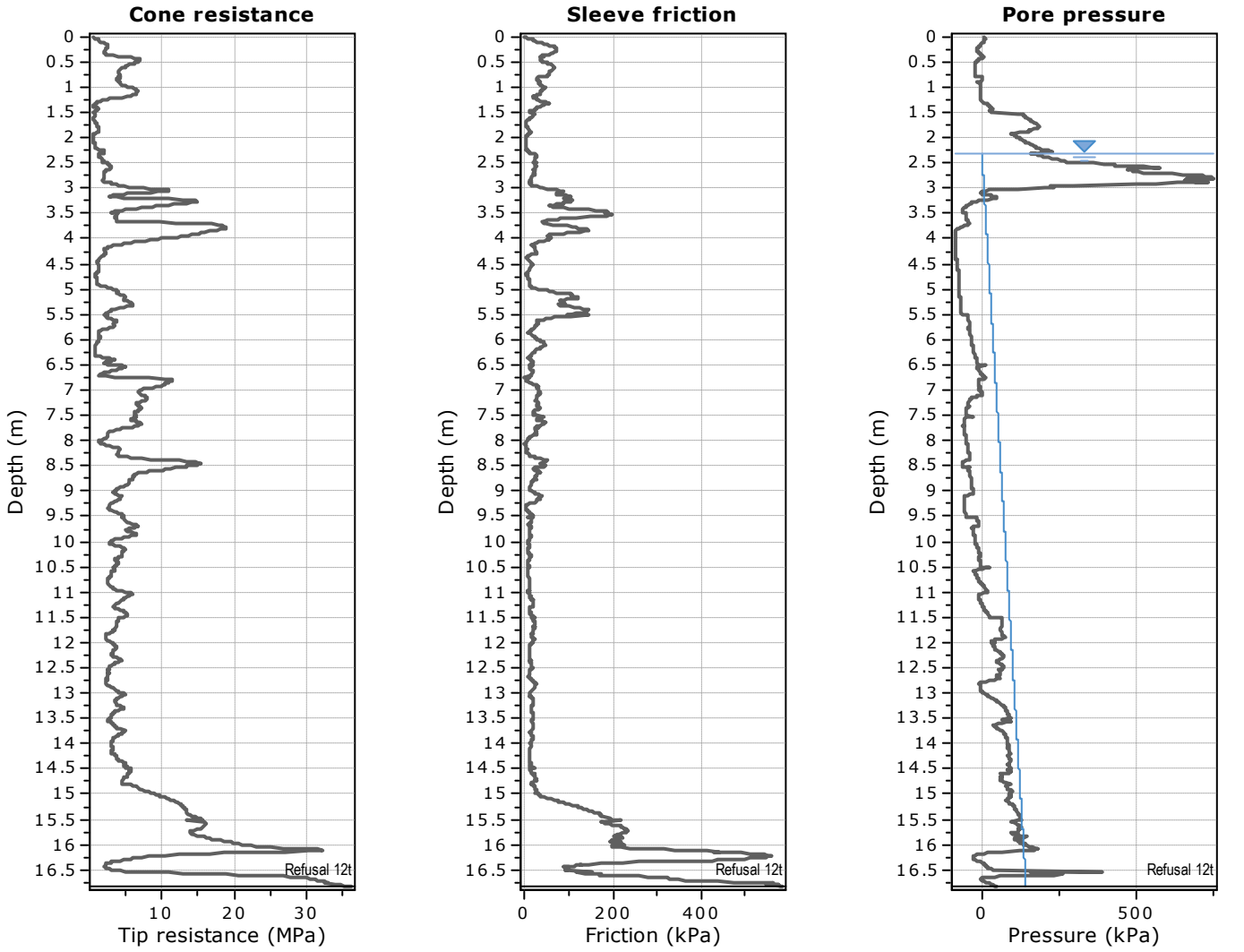
Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



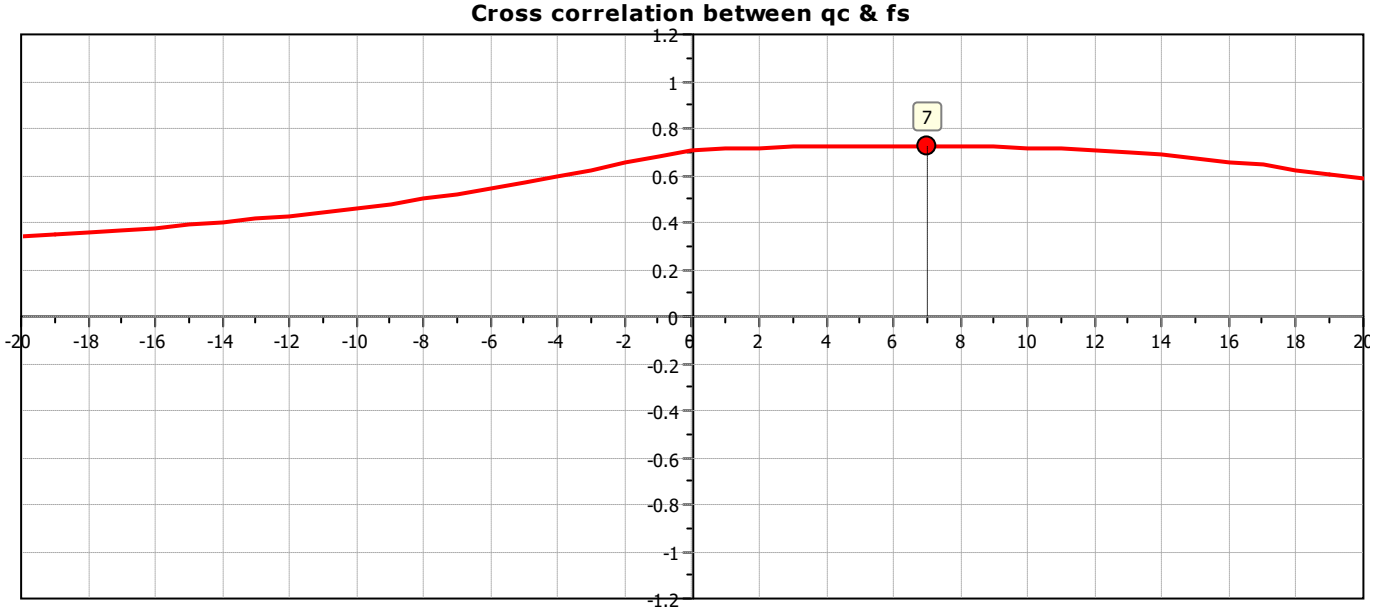
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CPT: SCPT24-03
Total depth: 16.83 m, Date: 4/06/2024
Coords: lat -37.825528° lon 175.745502°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



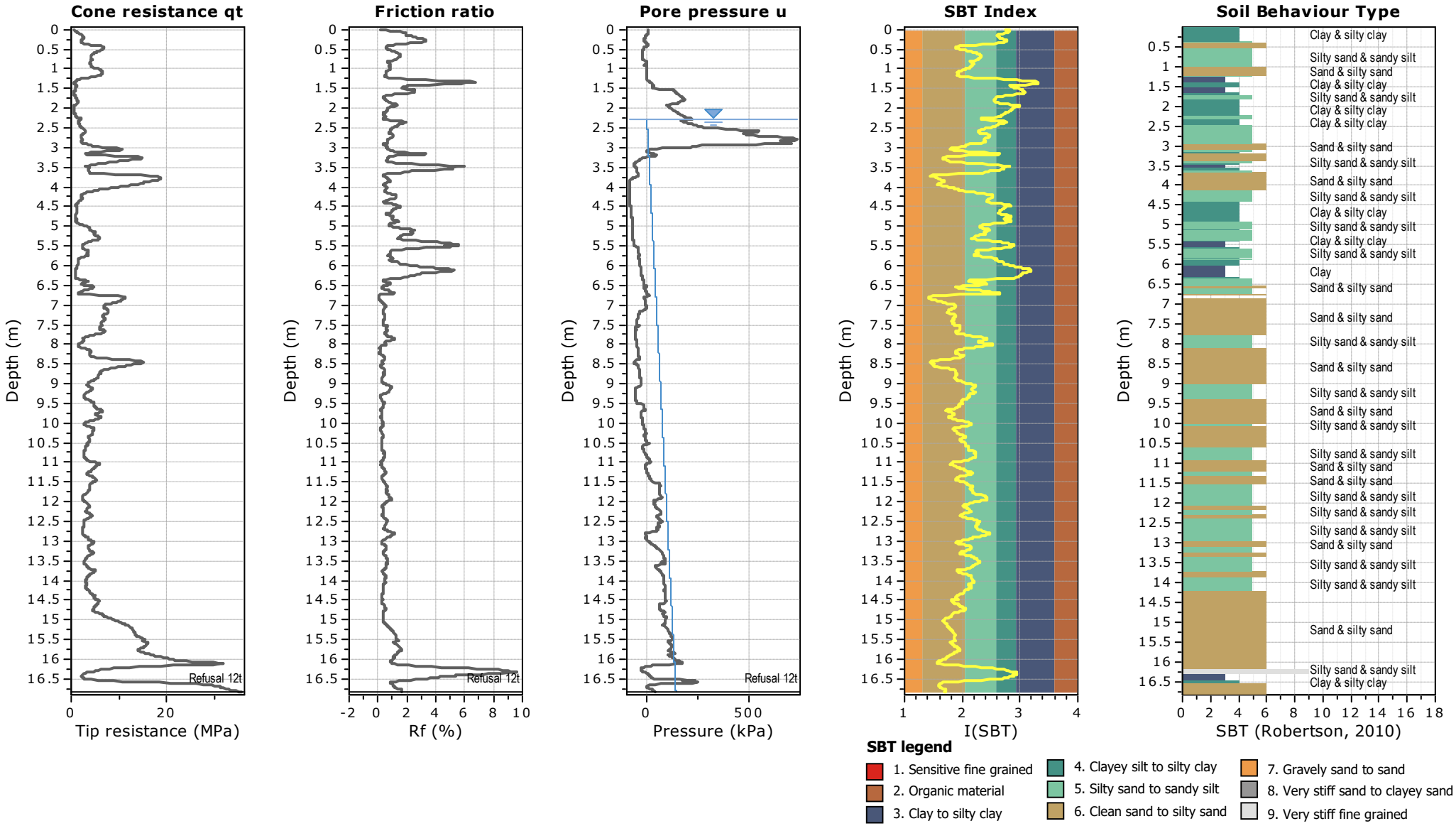
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CPT: SCPT24-03
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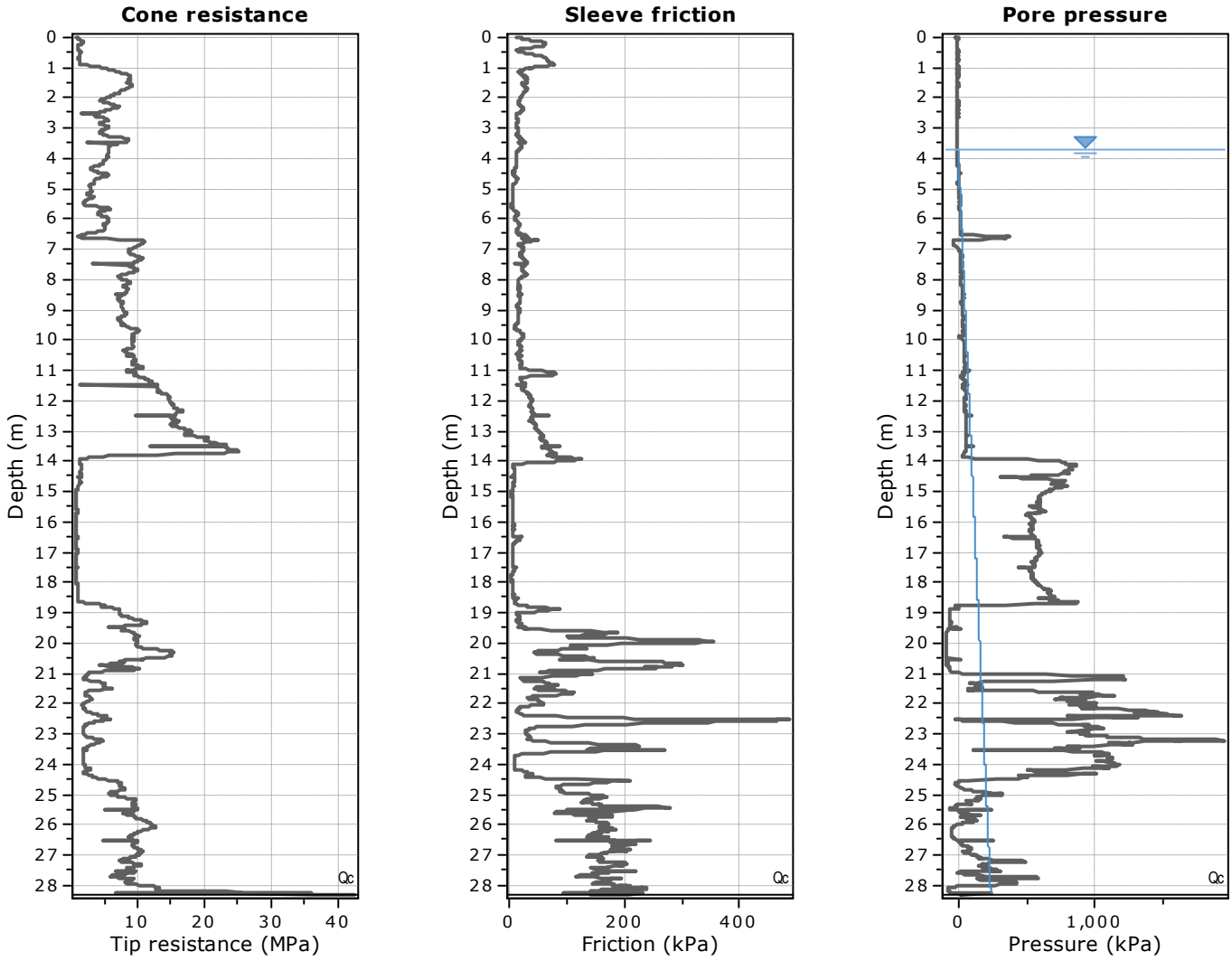
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Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



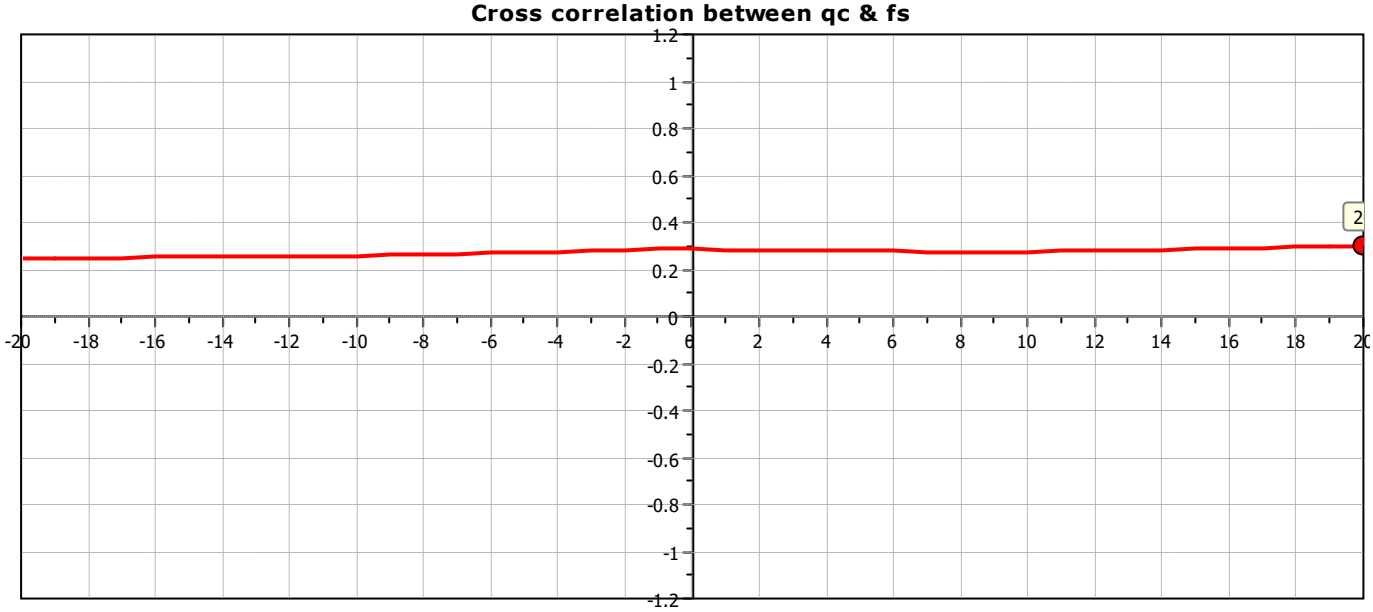
Geo Data Solutions (GDS) NZ Ltd.
Email: Josh@gdsnz.co. nz
www.gdsnz.co.nz

CPT: SCPT24-04
Total depth: 28.31 m, Date: 4/06/2024
Coords: lat -37.825977° lon 175.756443°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



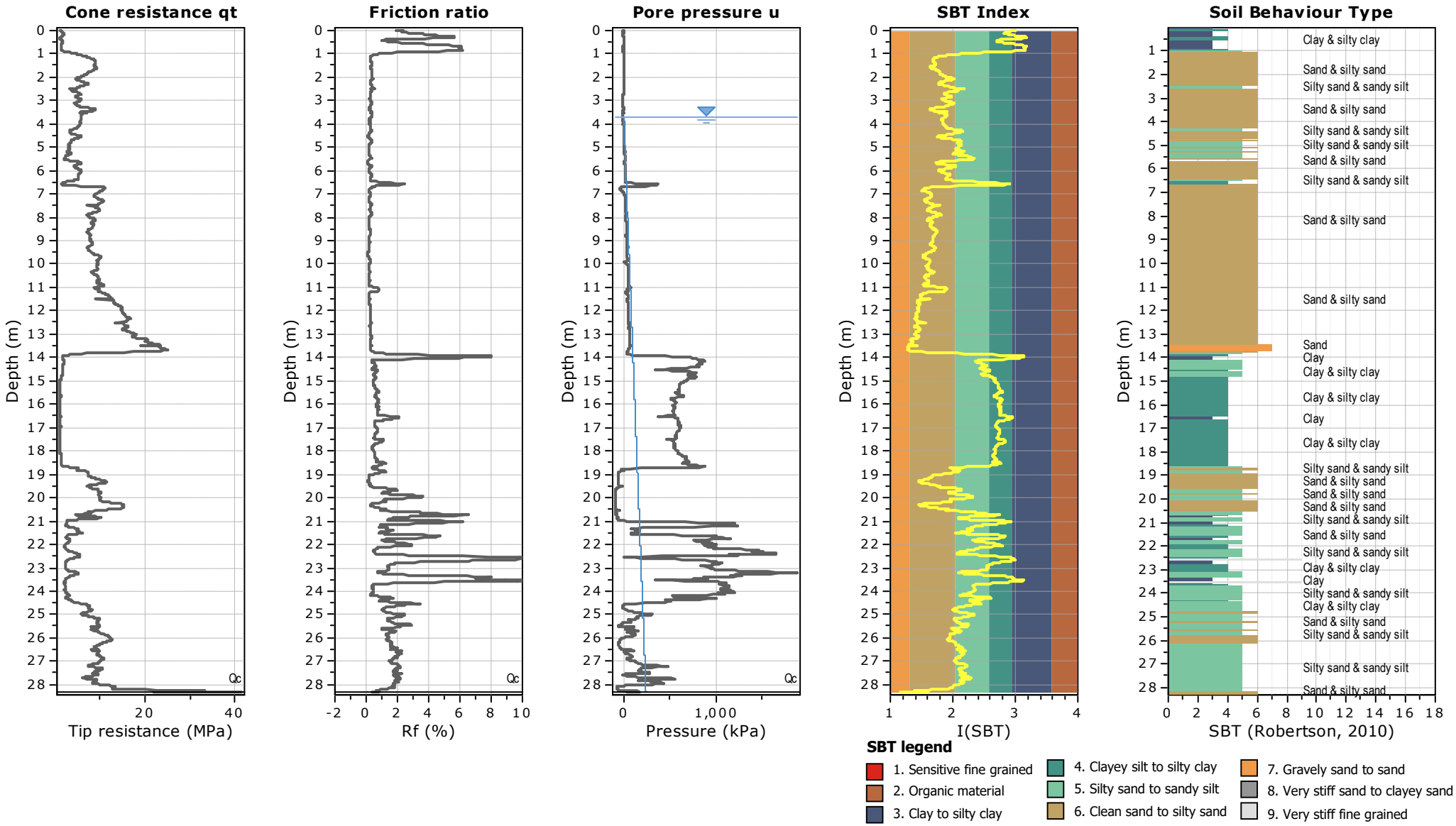
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CPT: SCPT24-04
Total depth: 28.31 m, Date: 4/06/2024
Coords: lat -37.825977° lon 175.756443°
Cone Type: DC10

Project: **CMW Geosciences | HAM2023-0124 | GDS NZ Ltd**
Location: **127 Station Road, Matamata | Holes dipped onsite using Dipmeter**



APPENDIX F: GEOHAZARDS ASSESSMENT TABLE

GEOHAZARD ASSESSMENT FOR LAND SUBDIVISION

Station Road, Matamata

The occurrence of natural hazards and their potential impacts on the proposed subdivision development is assessed in terms of risk significance, which is based on likelihood and consequence factors. A risk table is used to help assess the likelihood and consequence factors, the form of which used by CMW for this project is presented in Table B1.

Table B1: Natural Hazard Risk Classification

Risk Matrix		Consequence				
		Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Likelihood	Almost Certain 5	Medium 5	High 10	Very high 15	Extreme 20	Extreme 25
	Likely 4	Low 4	Medium 8	High 12	Very high 16	Extreme 20
	Moderate 3	Low 3	Medium 6	Medium 9	High 12	Very high 15
	Unlikely 2	Very low 2	Low 4	Medium 6	Medium 8	High 10
	Rare 1	Very low 1	Very low 2	Low 3	Low 4	Medium 5

1.1 Likelihood

With respect to assessing the likelihood or chance of the risk occurring, the qualitative definitions used by CMW for this project are provided in Table B2 for each likelihood classification.

Table B2: Qualitative Natural Hazard Likelihood Definitions

1	Rare	The natural hazard is not expected to occur during the design life of the project
2	Unlikely	The natural hazard is unlikely, but may occur during the design life
3	Moderate	The natural hazard will probably occur at some time during the life of the project
4	Likely	The natural hazard is expected to occur during the design life of the project
5	Almost Certain	The natural hazard will almost definitely occur during the design life of the project

1.2 Consequence

In terms of determining the consequence or severity of the natural hazard occurring, the qualitative definitions used by CMW for this project are provided in Table B3 for each consequence classification.

Table B3: Qualitative Natural Hazard Consequence Definitions		
1	Insignificant	Very minor to no damage, not requiring any repair, no people at risk, no economic effect to landowners.
2	Minor	Minor damage to land only, any repairs can be considered normal property maintenance no people at risk, very minor economic effect.
3	Moderate	Some damage to land requiring repair to reinstate within few months, minor cosmetic damage to buildings being within relevant code tolerances, does not require immediate repair, no people at risk, minor economic effect.
4	Major	Significant damage to land requiring immediate repair, damage to buildings beyond serviceable limits requiring repair, no collapse of structures, perceptible effect to people, no risk to life, considerable economic effect.
5	Catastrophic	Major damage to land and buildings, possible structure collapse requiring replacement, risk to life, major economic effect, or possible site abandonment.

1.3 Risk Acceptance

It is recognised that the natural hazard risk assessment provided herein is qualitative and, due to the wide range of possible geohazards that could occur, is somewhat subjective. Other methods are available to quantitatively assess an acceptable level of geotechnical related natural hazard risk, such as defining an acceptable factor of safety with respect to slope stability or acceptable differential ground settlements with respect to recommended building code limits.

Therefore, to give this qualitative natural hazard risk assessment some relevance to more commonly adopted numerical or quantitative geotechnical assessment techniques, a residual risk rating of very low to medium (risk value = 1 to 9 inclusive) is considered an acceptable result for the proposed subdivision development.

A risk rating of high to extreme (risk value ≥ 10) is considered an unacceptable result for the proposed subdivision development.

1.4 Geohazards Assessment Summary

The table below is a summary of critical geohazards to this project and is based on information available to date.

Appendix F - Geohazard Assessment Summary											
Item	Geotechnical Hazard	Description	Area Affected	Assessment Outcome	Existing Risk of Damage to Land / Structures			Mitigation Measure	Residual Risk of Damage to Land / Structures		
					Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
1	Earthquake	Seismicity	Entire Site	Site subsoil class = Class D due to less than dense/ stiff soil profile Importance Level = 2 (Residential Subdivision and Retirement Village) Importance Level = 3 (Solar Farm)	1	5	5	None	1	5	5
		Fault Rupture	Entire Site	Nearest active fault (Kerpehi fault) is approximately 5km from the site. (Refer to section 6.3)	1	5	5	Mitigation not required	1	5	5
		Liquefaction	Whole site	Refer to section 6.4	3	4	12	TC2 foundations required.	3	2	6
		Cyclic Softening	Entire Site	Not anticipated.	1	4	4	Mitigation not required.	1	4	4
		Lateral Spread	riverbanks	Refer to Section 6.5	3	4	12	Lateral spreading risk should be considered in the design, further investigation and analysis will be required.	3	4	12

Appendix F - Geohazard Assessment Summary											
Item	Geotechnical Hazard	Description	Area Affected	Assessment Outcome	Existing Risk of Damage to Land / Structures			Mitigation Measure	Residual Risk of Damage to Land / Structures		
					Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
2	Volcanic Activity	Ash and Pyroclastic Falls	Entire Site	Nearest active volcano is the Rotorua Caldera. Currently at alert level 0.	1	5	5	Mitigation not required.	1	5	5
3	Slope Instability / Landslide	Global Instability	Entire site	Due to the landform being generally near level to gently sloping, slope instability is not anticipated.	1	4	4	Mitigation not required.	1	4	4
4	Problematic Soils	Expansive Soils	Entire Site	Experience in similar soils indicate that the soils on site are non-expansive.	2	3	6	Mitigation not required.	2	3	6
5	Settlement	Compressible Soils	Entire Site	No compressible soils were encountered on site.	1	4	4	Mitigation not required.	1	4	4
		Fill Induced Settlement	Entire Site	No earthwork plans are available at the time of writing report. Site is primarily underlain with dense to very dense sand and stiff to very stiff silt. It is anticipated any fill induced settlement would occur immediately and be built out during construction.	2	4	8	Trial embankment / preloading has been recommended.	1	4	4

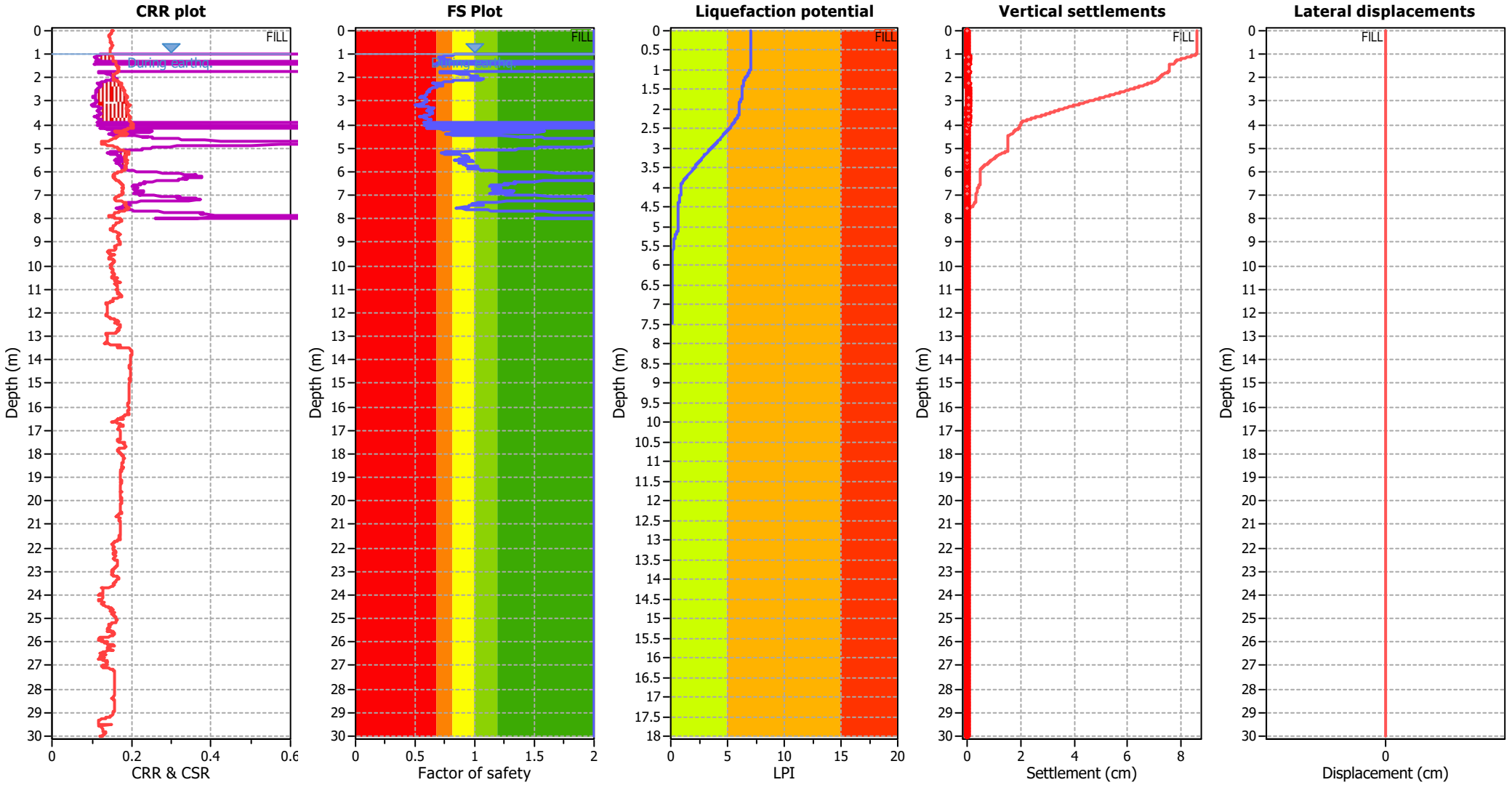
Appendix F - Geohazard Assessment Summary											
Item	Geotechnical Hazard	Description	Area Affected	Assessment Outcome	Existing Risk of Damage to Land / Structures			Mitigation Measure	Residual Risk of Damage to Land / Structures		
					Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
6	Bearing Capacity	Bearing Capacity Failure	Building Platform	Refer to Section 7.6 of the report	2	4	8	A preliminary geotechnical ultimate bearing capacity (GUBC) of 300kPa should be available in the static case. Low ultimate bearing capacity is anticipated in the seismic case. Should be accounted for during Building Consent stage.	2	2	4
7	Construction Risks	Excitability	Building Platform	Given the density of the soil units that will be encountered, excavation is expected to be readily achieved with normal earthworks plant. However, excavations may require temporary support due to high expected groundwater and granular soils leading to 'running sands'.	3	3	9	Consideration to be given to sensitive silts and shallow groundwater table.	3	2	6
		Sediment Retention Ponds	Building Platform	Sediment retention ponds will require geotechnical input at design stage to ensure batter stability is achievable.	2	3	6	Consideration to be given to batter stability of proposed ponds at design and construction phase.	2	2	4

Appendix F - Geohazard Assessment Summary											
Item	Geotechnical Hazard	Description	Area Affected	Assessment Outcome	Existing Risk of Damage to Land / Structures			Mitigation Measure	Residual Risk of Damage to Land / Structures		
					Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
		Stockpile locations	Building Platform	Stockpiles to be away from the river bank.	1	2	2	Stockpiles to be away from the river bank.	1	2	2
		Subgrade Preparation	Building Platforms and Road Alignment	Topsoil and existing vegetation within the building footprints and road alignments will be cleared as part of the proposed development earthworks.	1	2	2	Mitigation not required.	1	2	2
		Service Trenches (trench collapse / long term settlement)	Building Platform and Road Alignment	Trench collapse may occur in surficial soils / if proposed service trenches extend below GW level.	3	3	9	Mitigation should be considered in the form of: - trench support - temporary dewatering, in the form of regularly spaced pumps	3	1	3

APPENDIX G: LIQUEFACTION RESULTS

IL2 INDEX LIQUFACTION RESULTS

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Fill weight:	18.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	2.00 m	Limit depth:	10.00 m

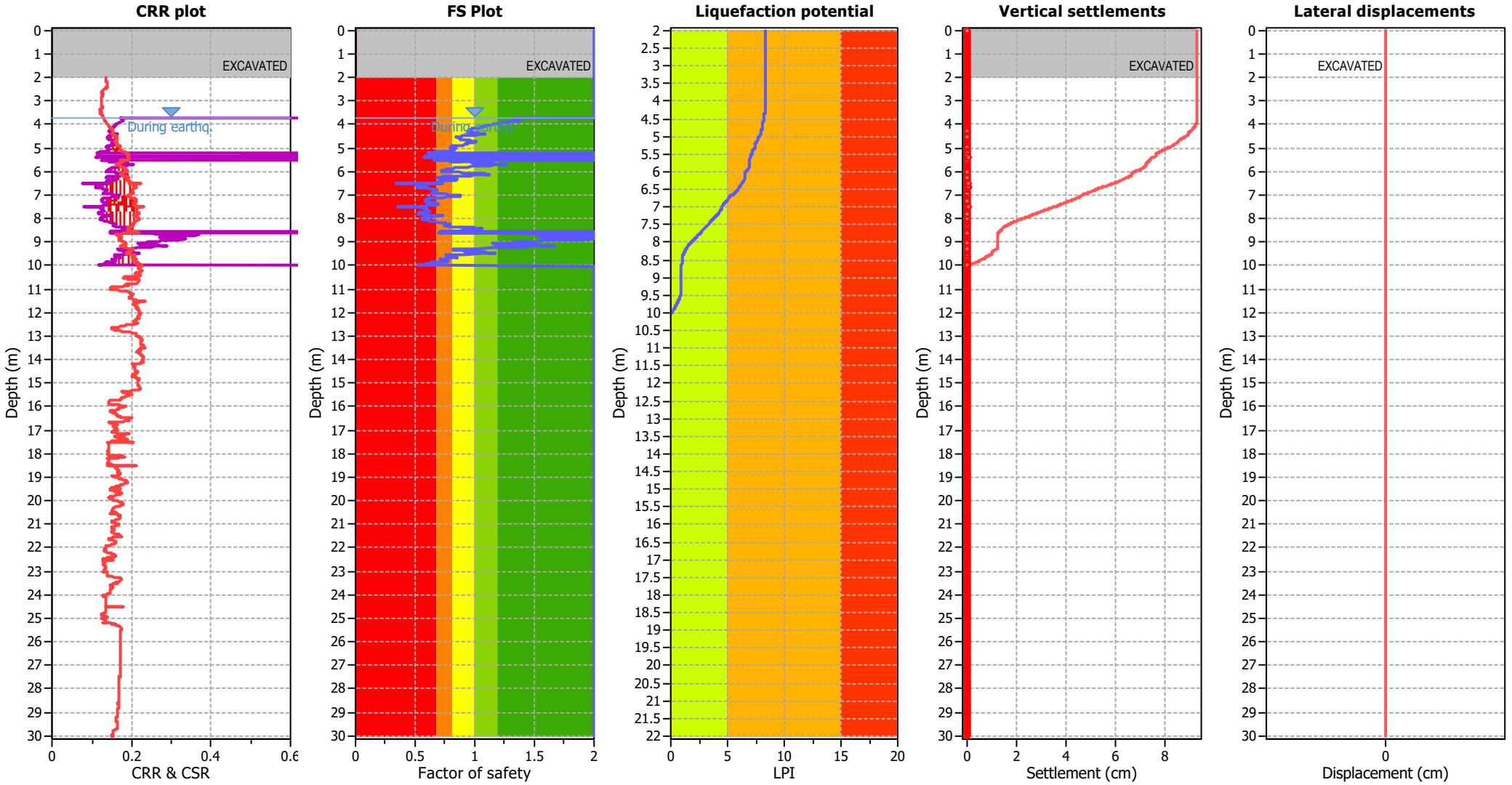
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.70 m	Footing load:	10.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	3.70 m	Excavation depth:	2.00 m	Limit depth:	10.00 m

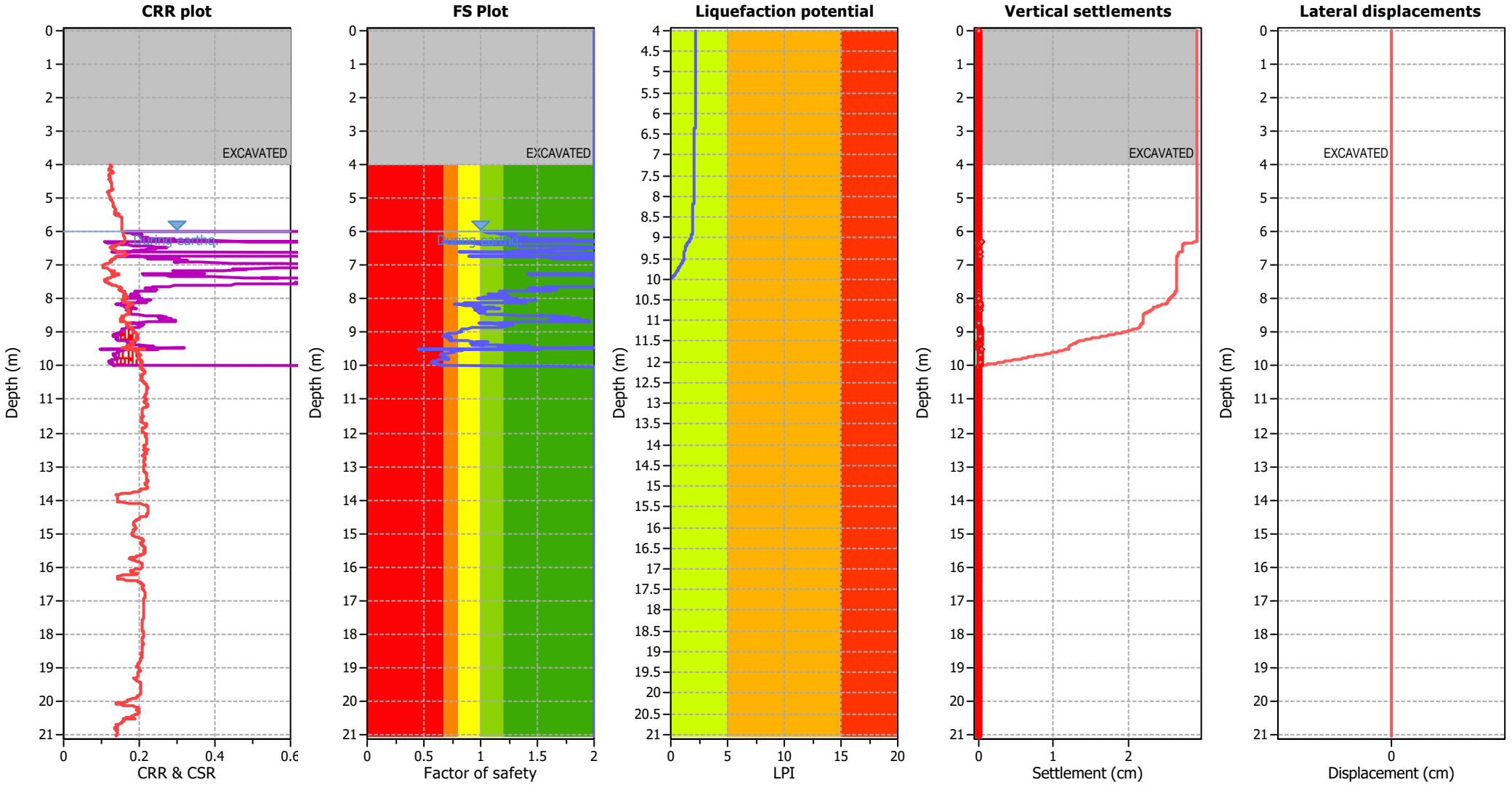
F.S. color scheme

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LPI color scheme

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- High risk
- Low risk

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	6.00 m	Footing load:	10.00 kPa
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Excavation:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	6.00 m	Excavation depth:	4.00 m	Limit depth:	10.00 m

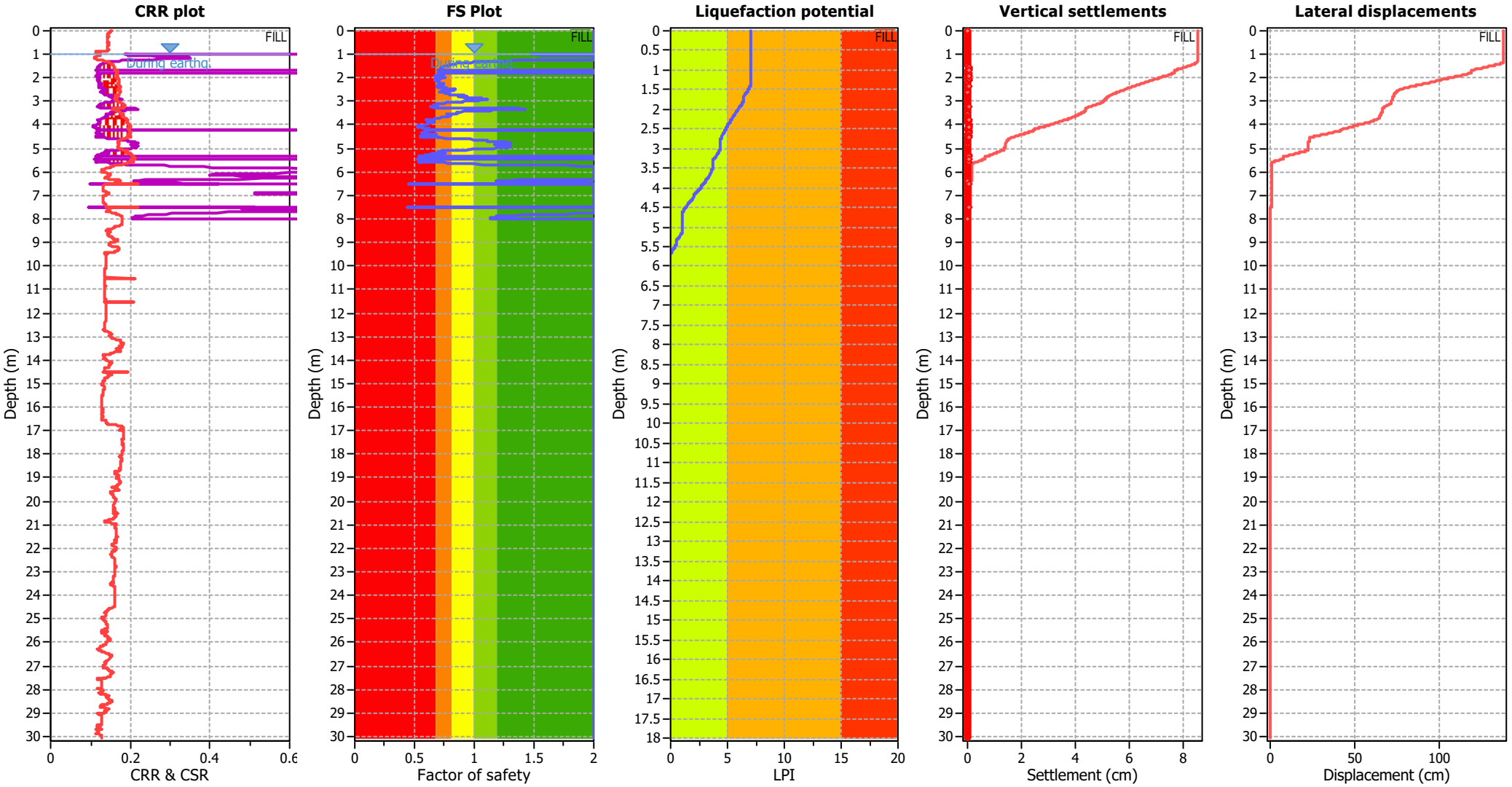
F.S. color scheme

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LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	3.00 m	Fill weight:	18.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	2.00 m	Limit depth:	10.00 m

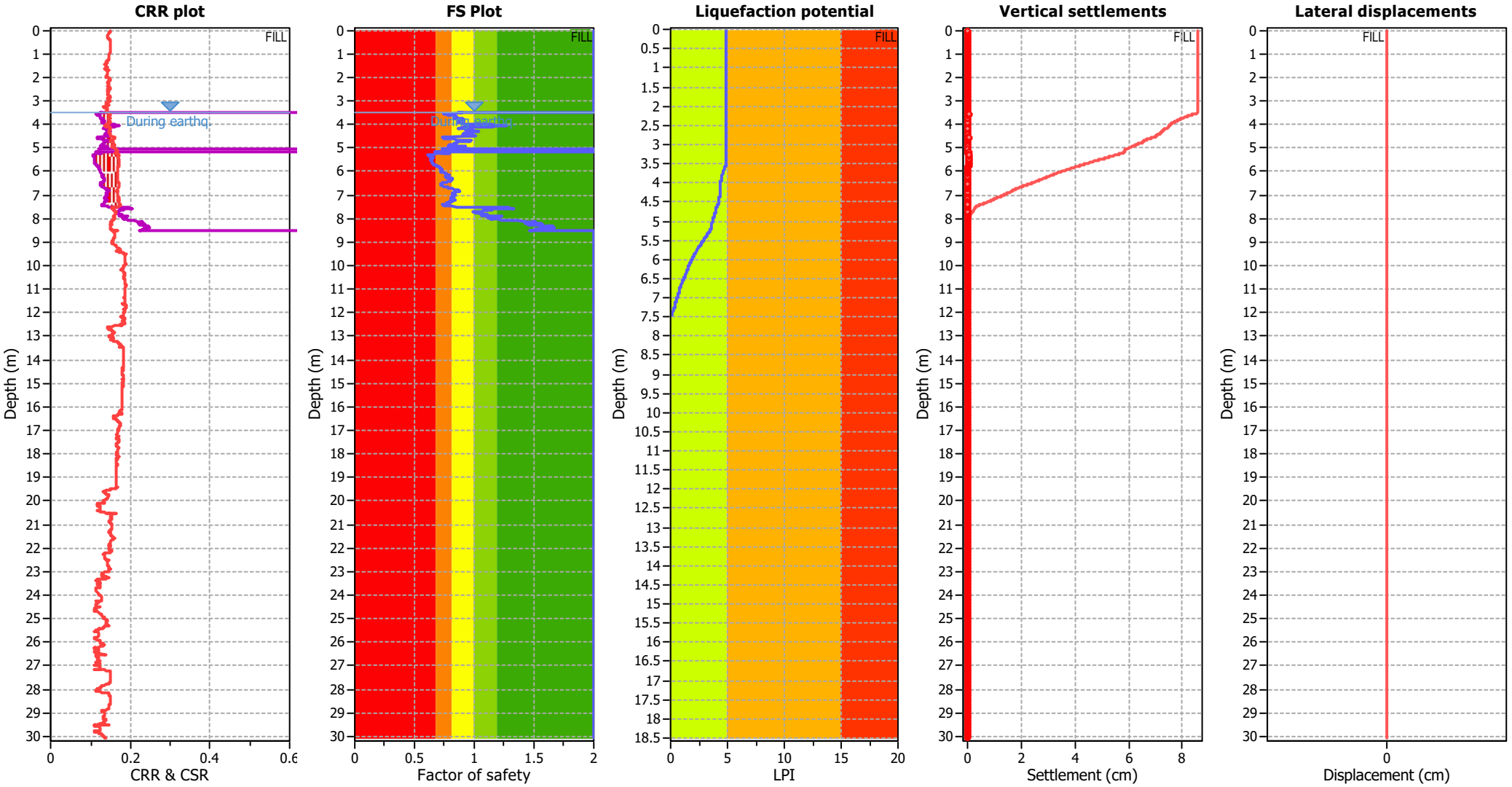
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Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	5.00 m	Fill weight:	18.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	5.00 m	Fill height:	1.50 m	Limit depth:	10.00 m

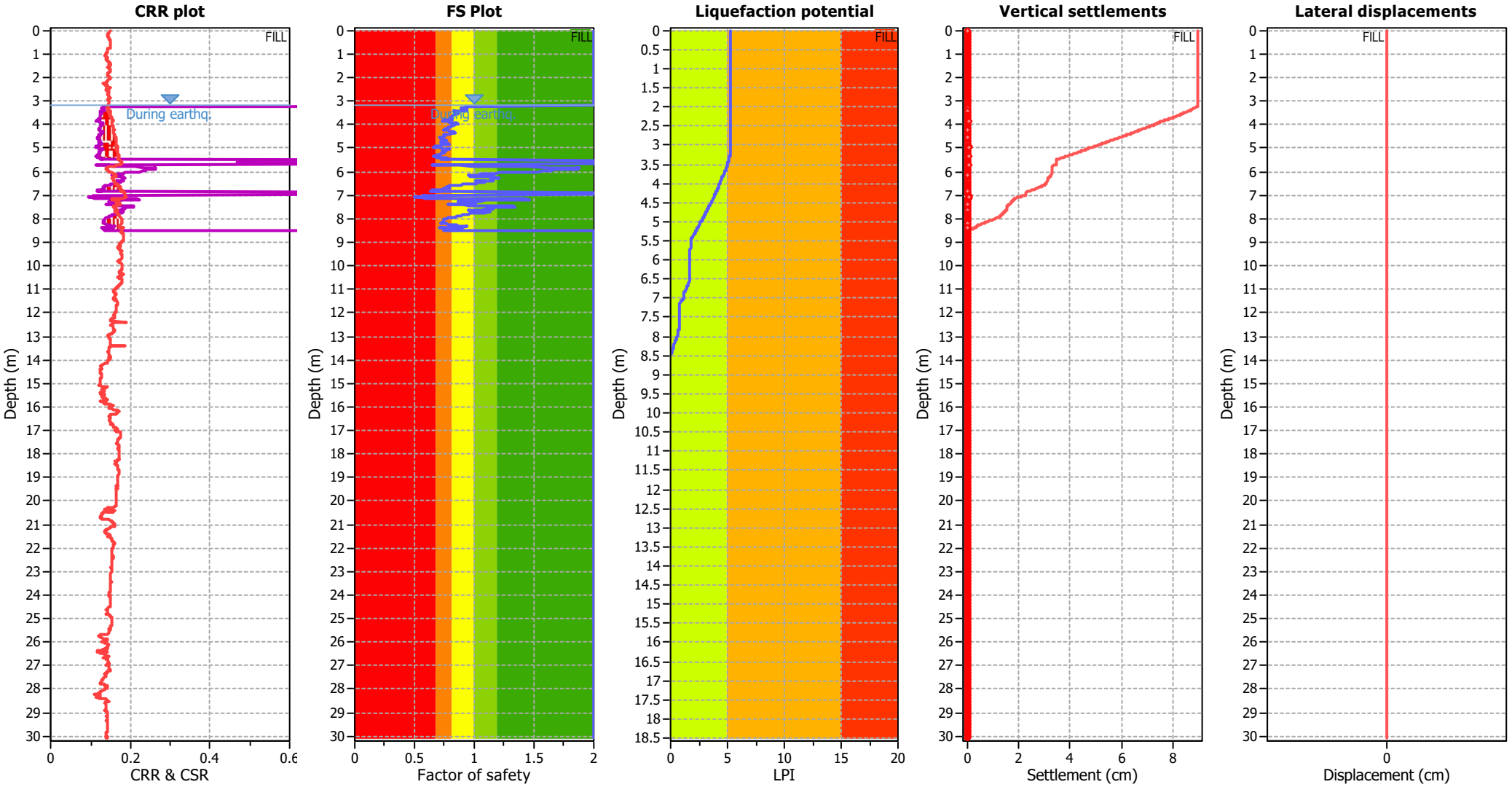
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Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.70 m	Fill weight:	18.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.70 m	Fill height:	1.50 m	Limit depth:	10.00 m

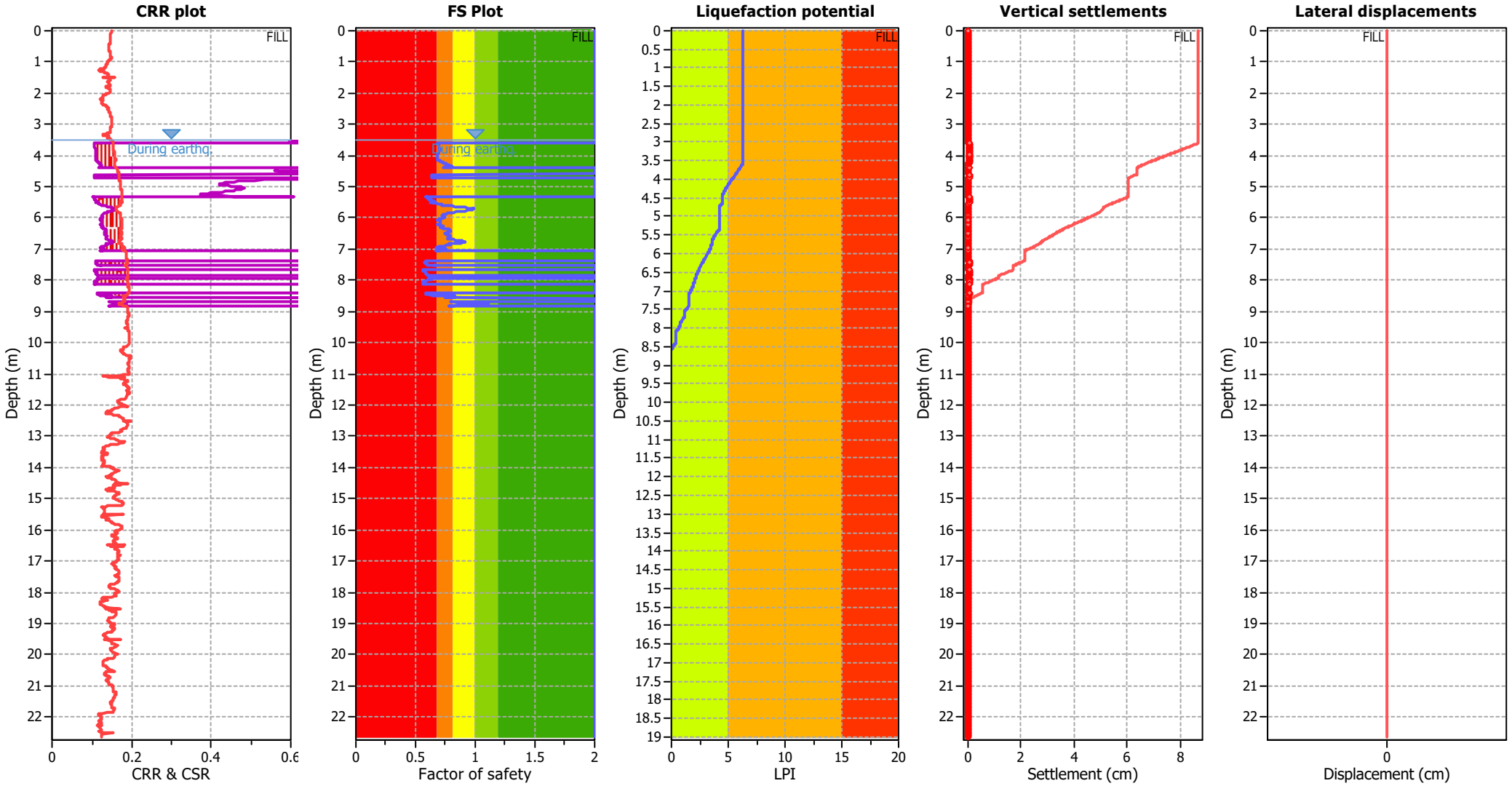
F.S. color scheme

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LPI color scheme

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- High risk
- Low risk

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	4.50 m	Fill weight:	18.00 kN/m³
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	5.90	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.28	Use fill:	Yes	Limit depth applied:	Yes
Depth to water table (insitu):	4.50 m	Fill height:	1.00 m	Limit depth:	10.00 m

F.S. color scheme

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- Liquefaction and no liq. are equally likely
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LPI color scheme

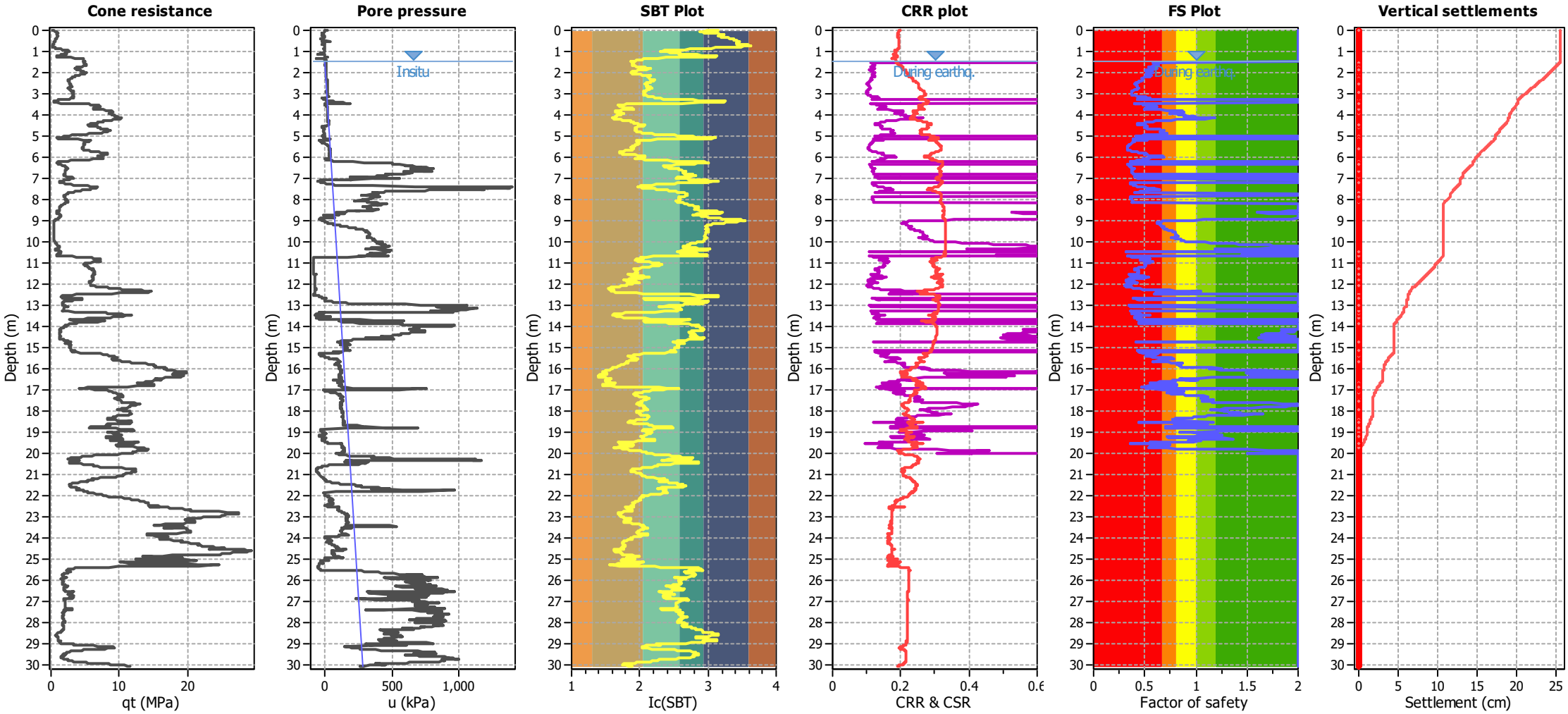
- Very high risk
- High risk
- Low risk

IL3 LIQUFACTION RESULTS

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: CPT24-04
Total depth: 30.04 m

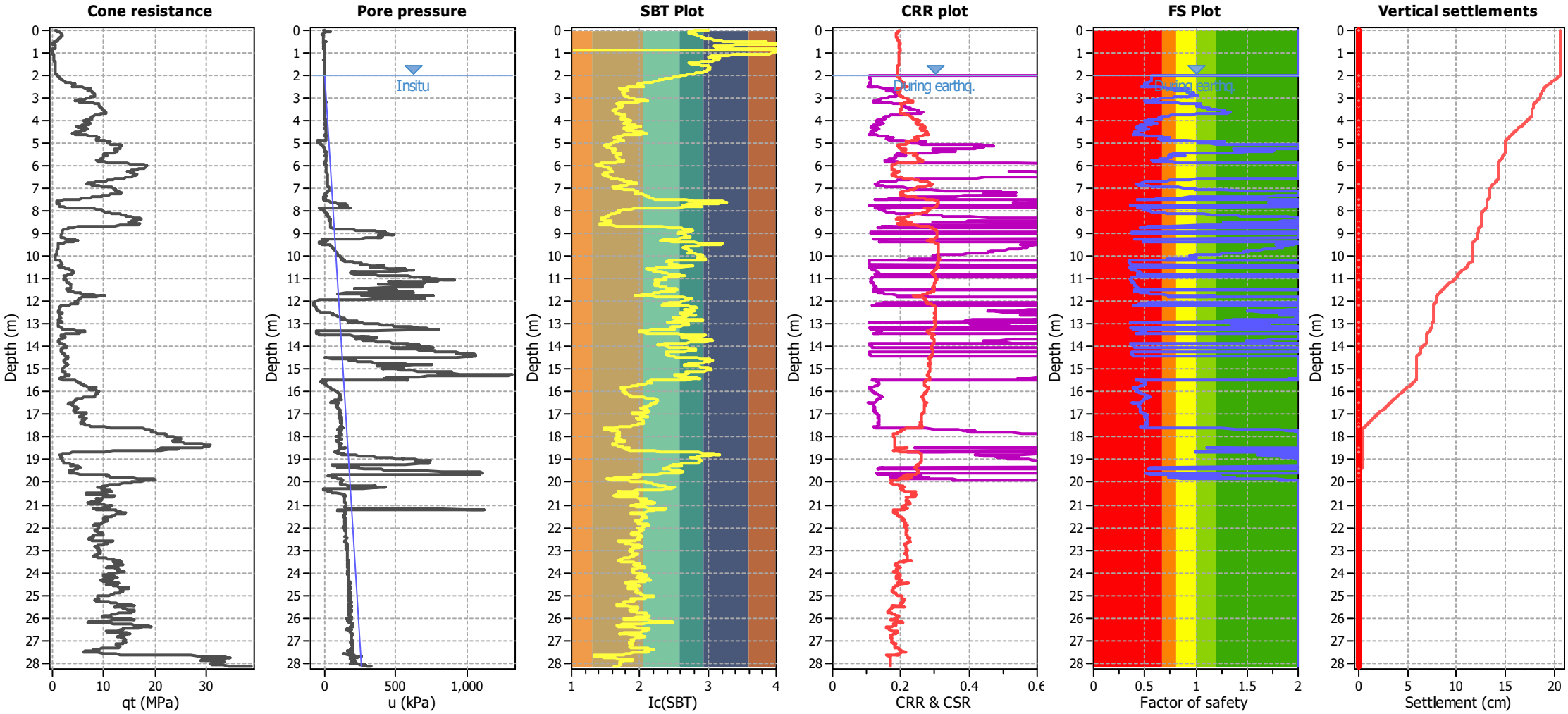


Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.50 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.50 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: CPT24-05
Total depth: 28.14 m

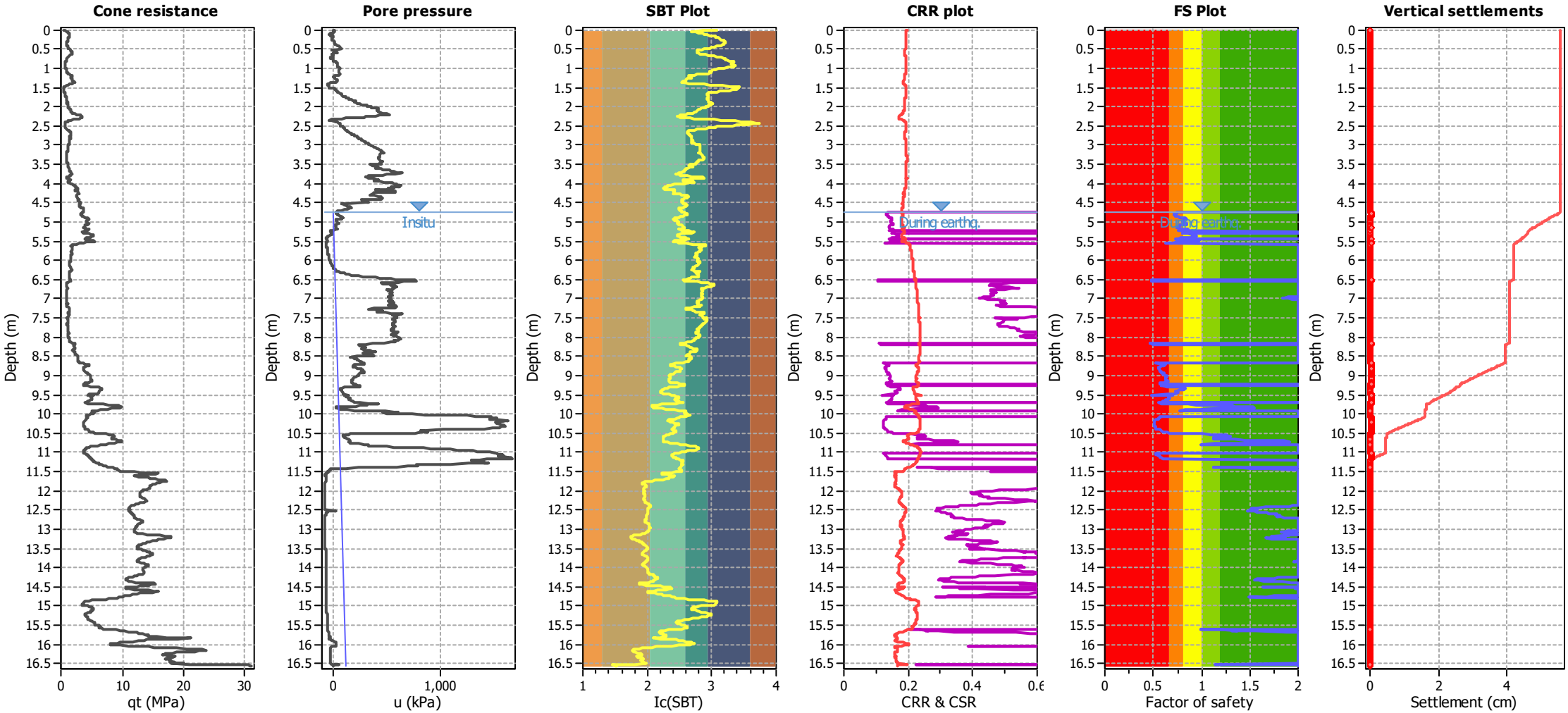


Analysis method:	B&I (2014)	G.W.T. (in-situ):	2.00 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.00 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: CPT24-09
Total depth: 16.56 m

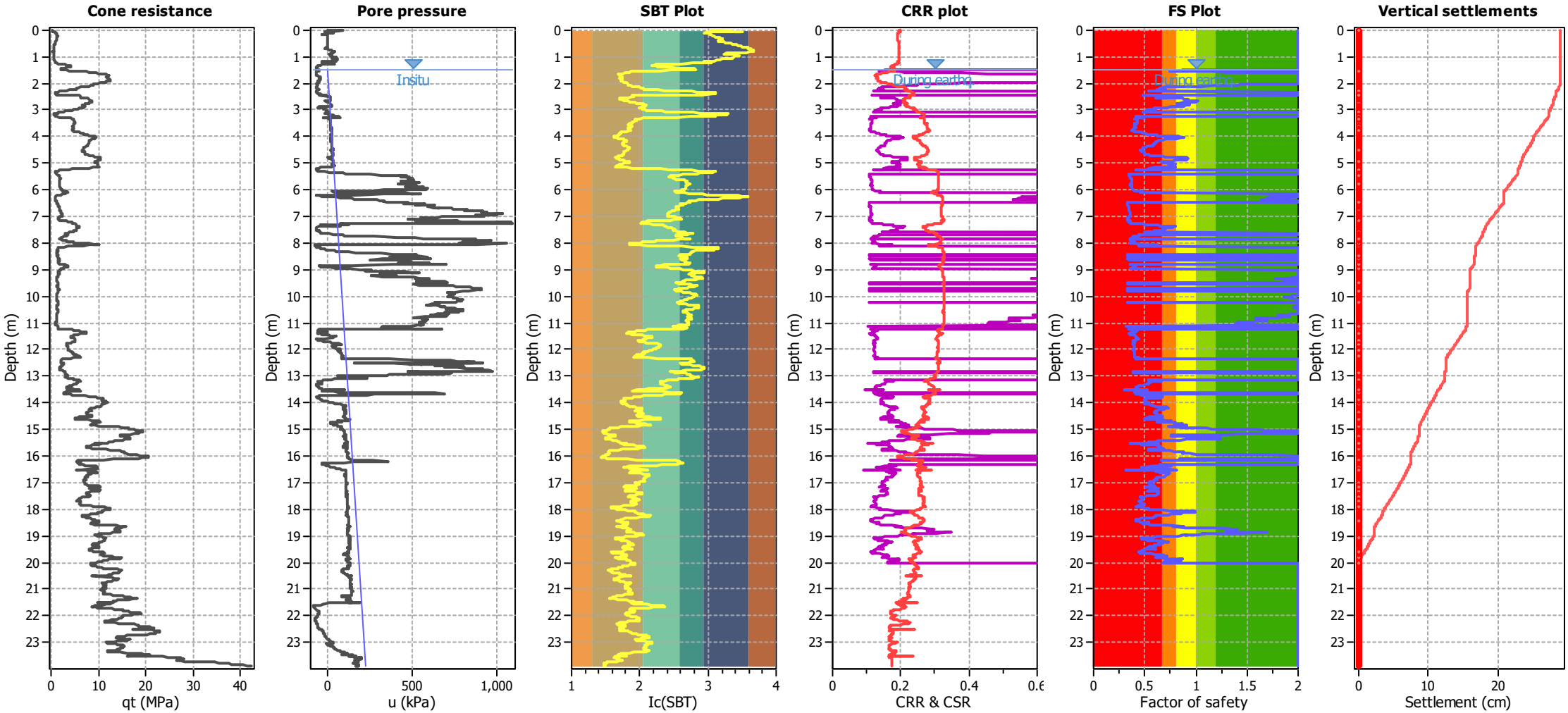


Analysis method:	B&I (2014)	G.W.T. (in-situ):	4.75 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	4.75 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: CPT24-10
Total depth: 23.89 m

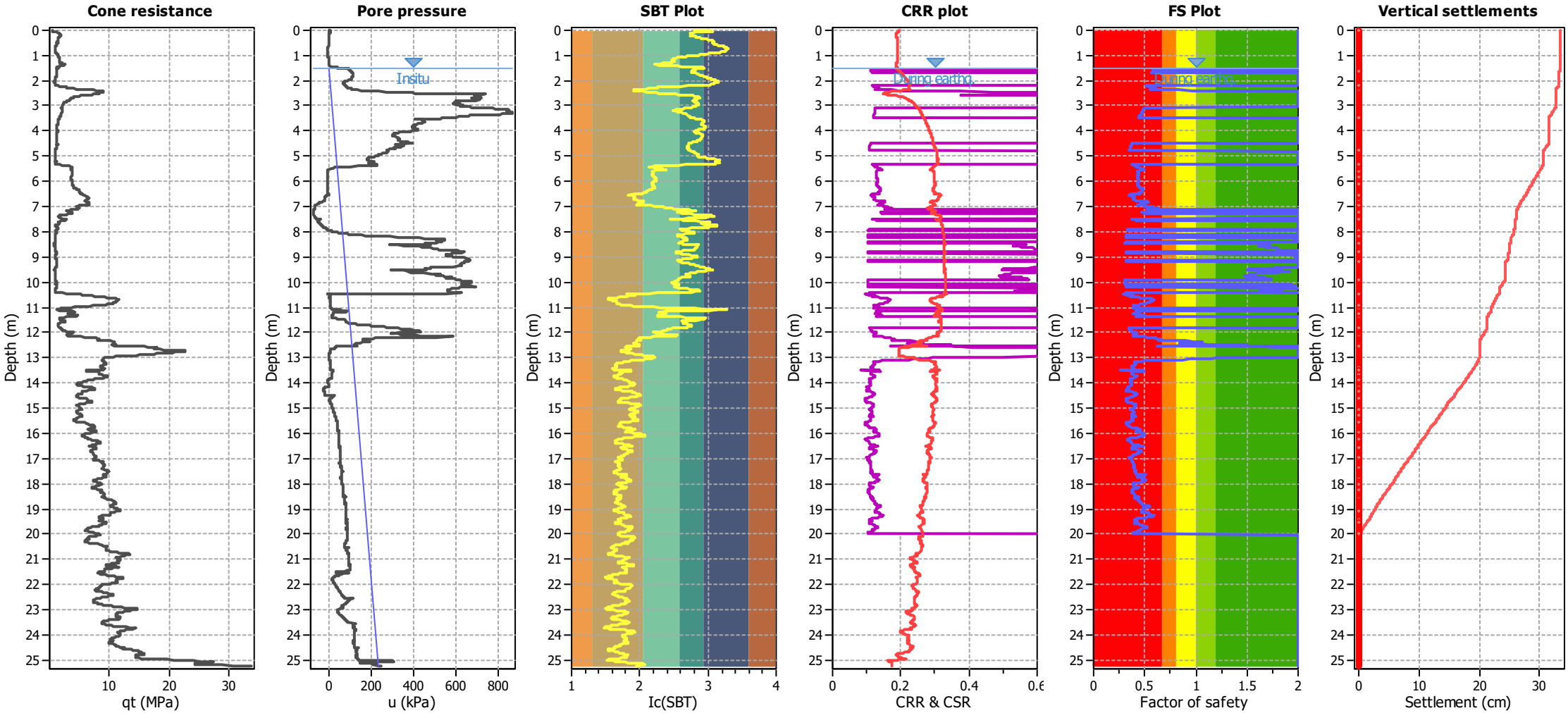


Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.50 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.50 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: SCPT24-02
Total depth: 25.23 m

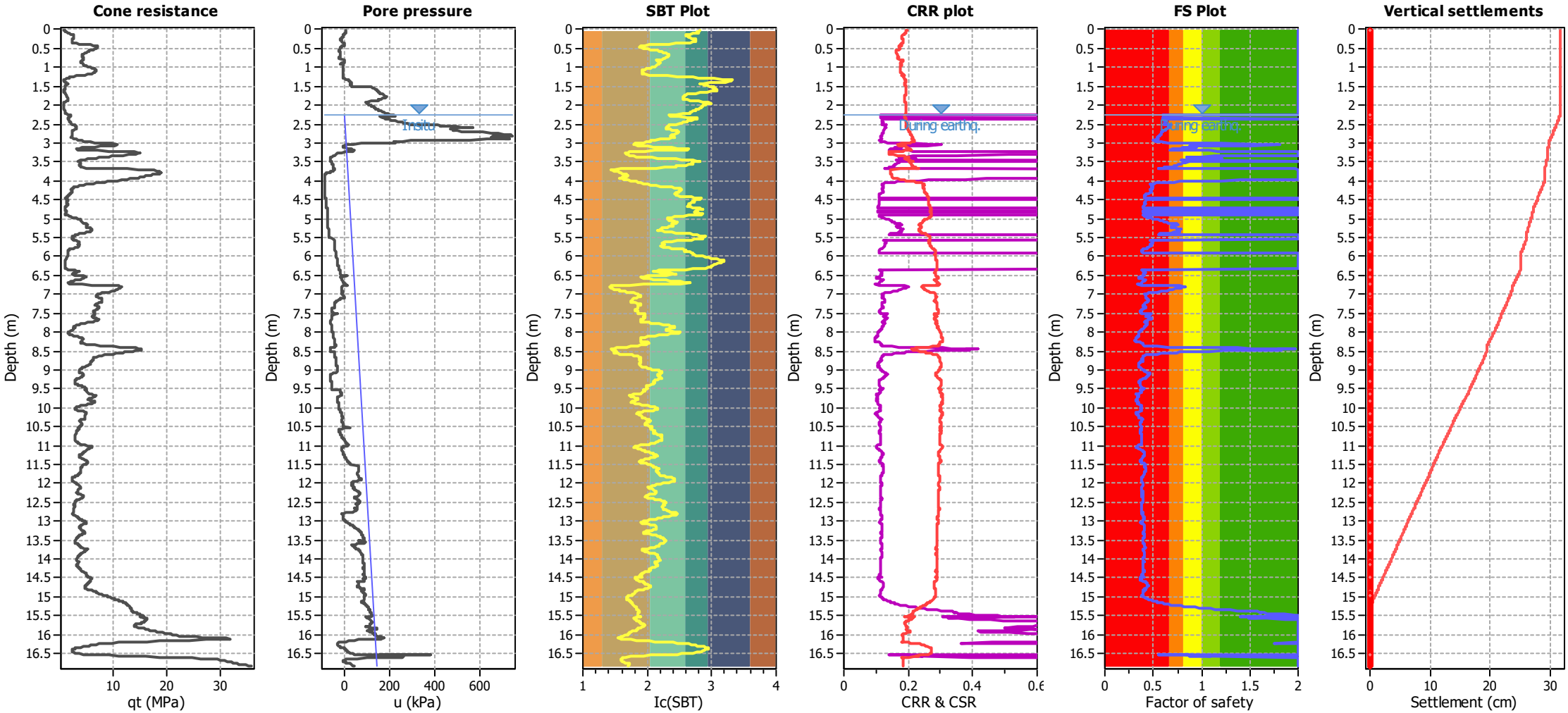


Analysis method:	B&I (2014)	G.W.T. (in-situ):	1.50 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	1.50 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: SCPT24-03
Total depth: 16.83 m

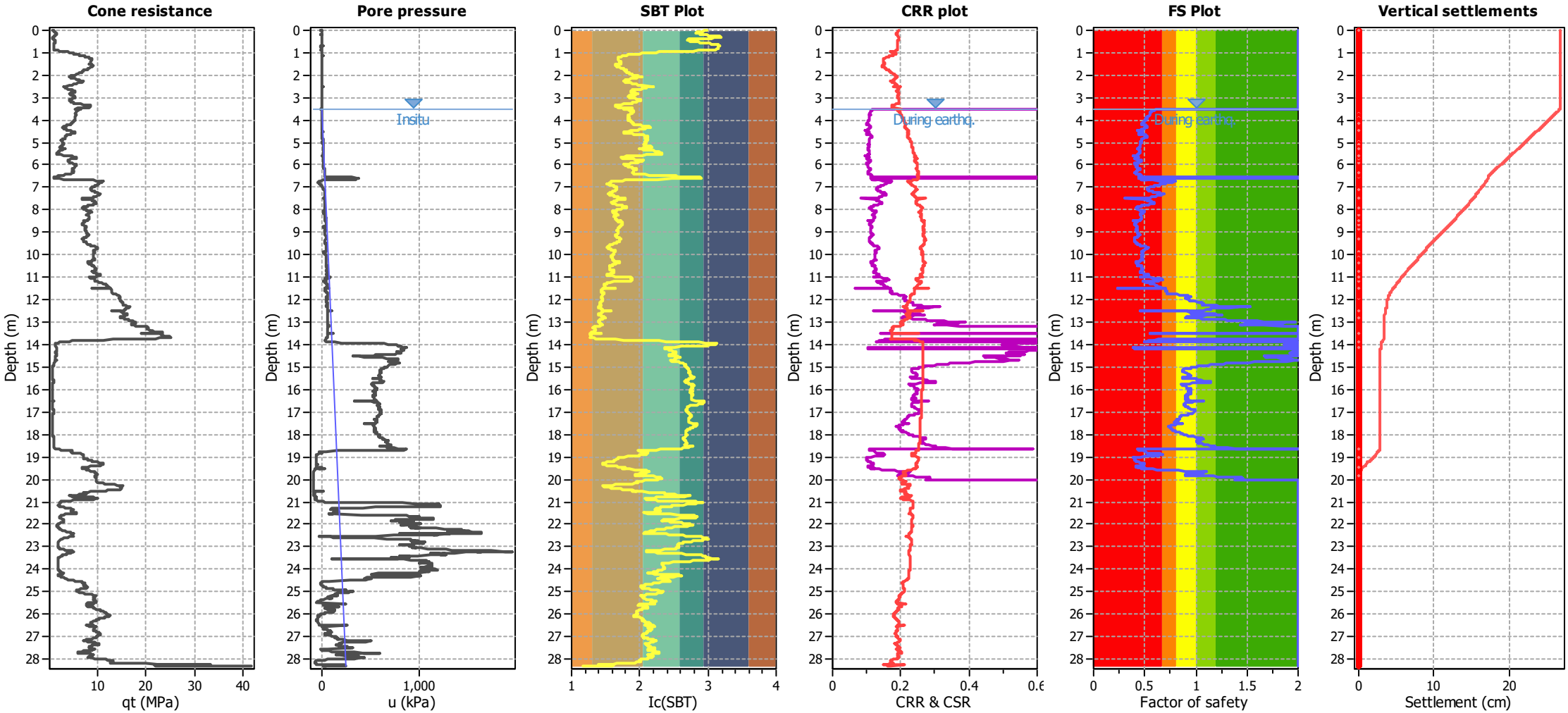


Analysis method:	B&I (2014)	G.W.T. (in-situ):	2.25 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	2.25 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

Project: Station Road Proposed Subdivision
Location: Station Road, Matamata

CPT: SCPT24-04
Total depth: 28.31 m



Analysis method:	B&I (2014)	G.W.T. (in-situ):	3.50 m	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	3.50 m	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	20.00 m
Earthquake magnitude M_w:	5.90	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.36	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

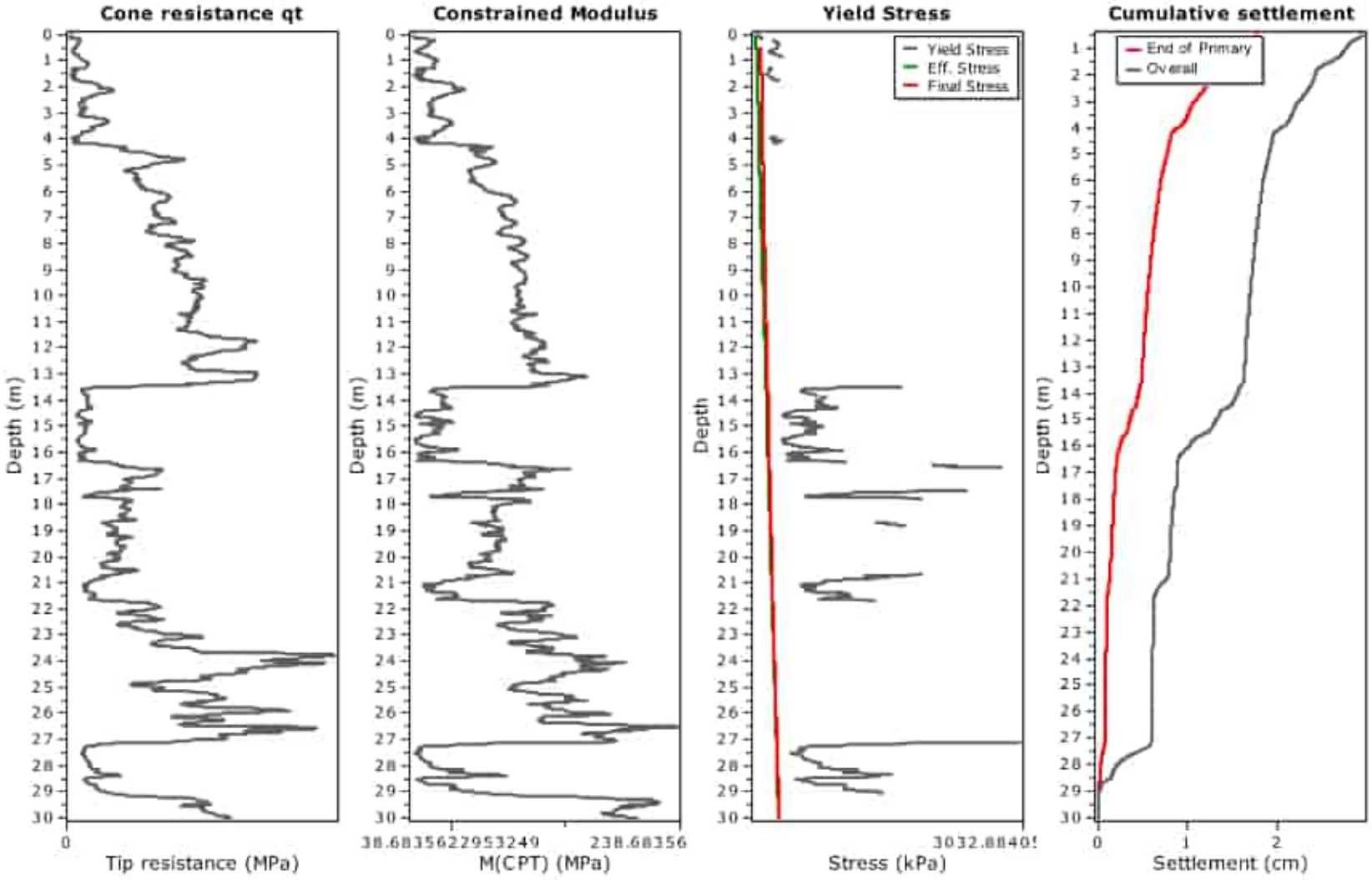
APPENDIX H: STATIC SETTLEMENTS RESULTS

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT23-01
Total depth: 30.01 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 15.00 (m)
L/B: 1.0
Footing pressure: 46.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

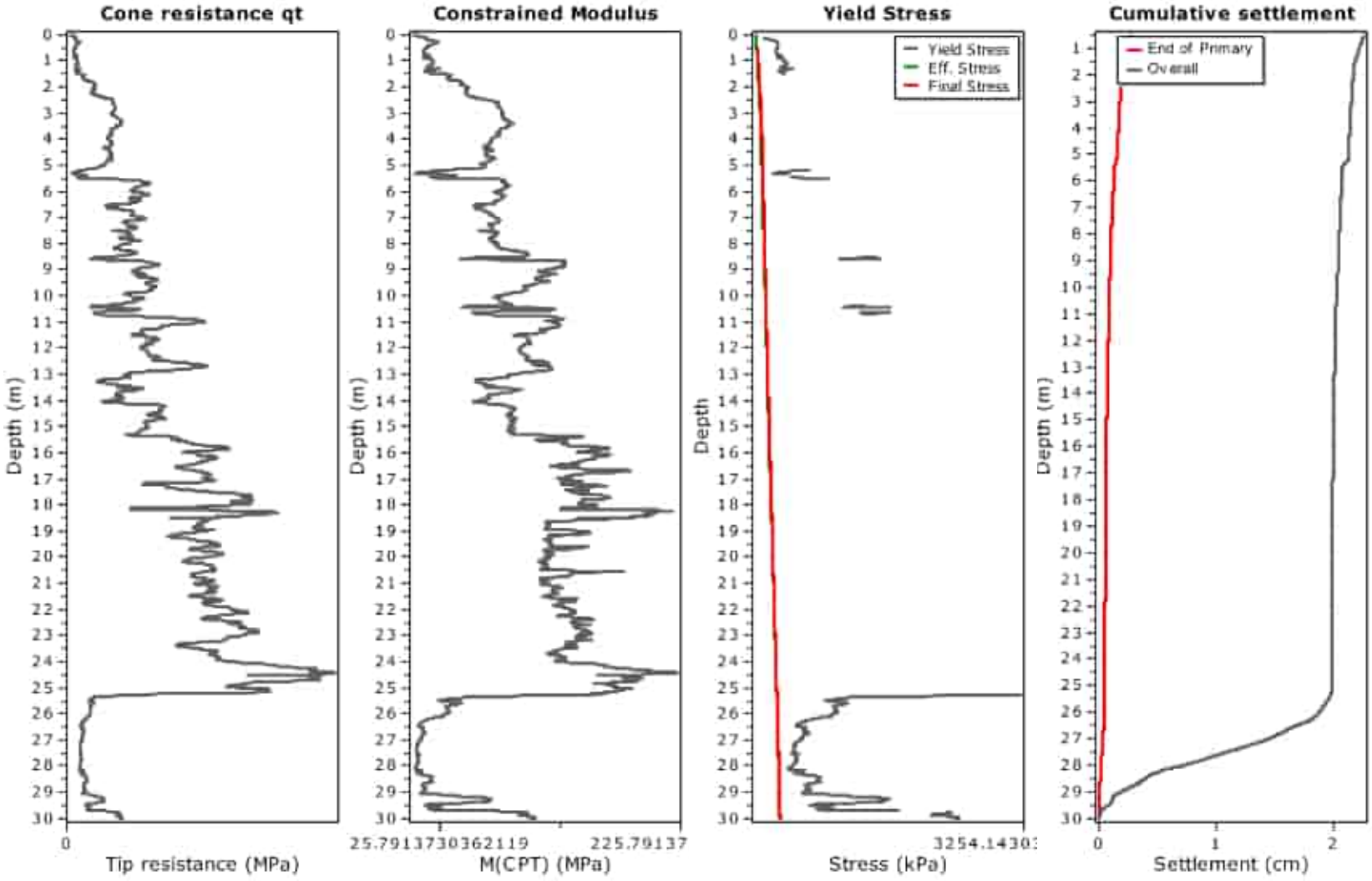
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT23-02
Total depth: 30.02 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 15.00 (m)
L/B: 1.0
Footing pressure: 10.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = C_\alpha \log\left(\frac{t}{t_p}\right) \Delta z$$

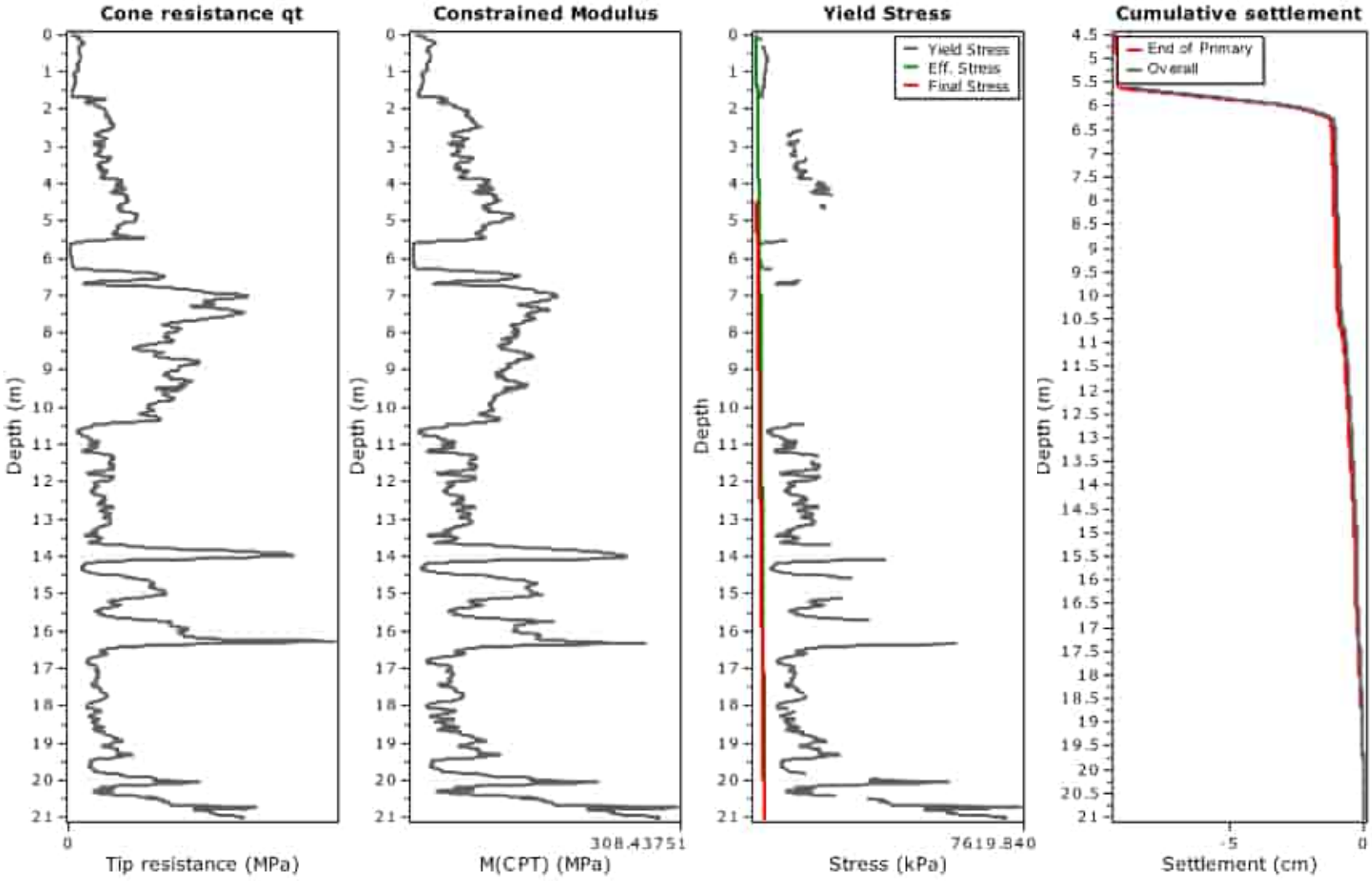
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT23-03b
Total depth: 21.04 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 15.00 (m)
L/B: 1.0
Footing pressure: 10.00 (kPa)
Embedment depth: 4.50 (m)
Footing is rigid: No
Remove excavation load: Yes
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 12 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

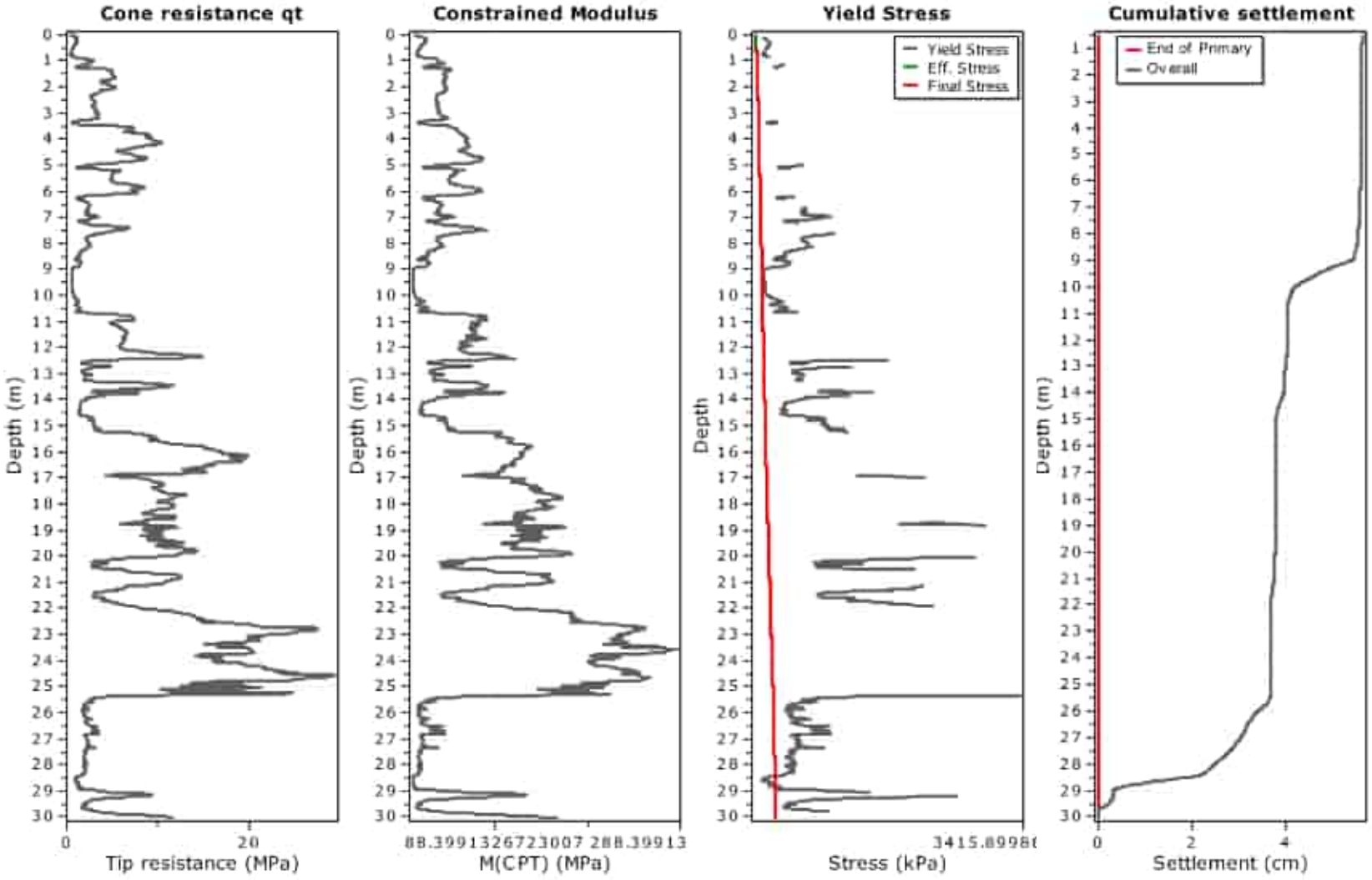
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-04
Total depth: 30.04 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

[illegible]

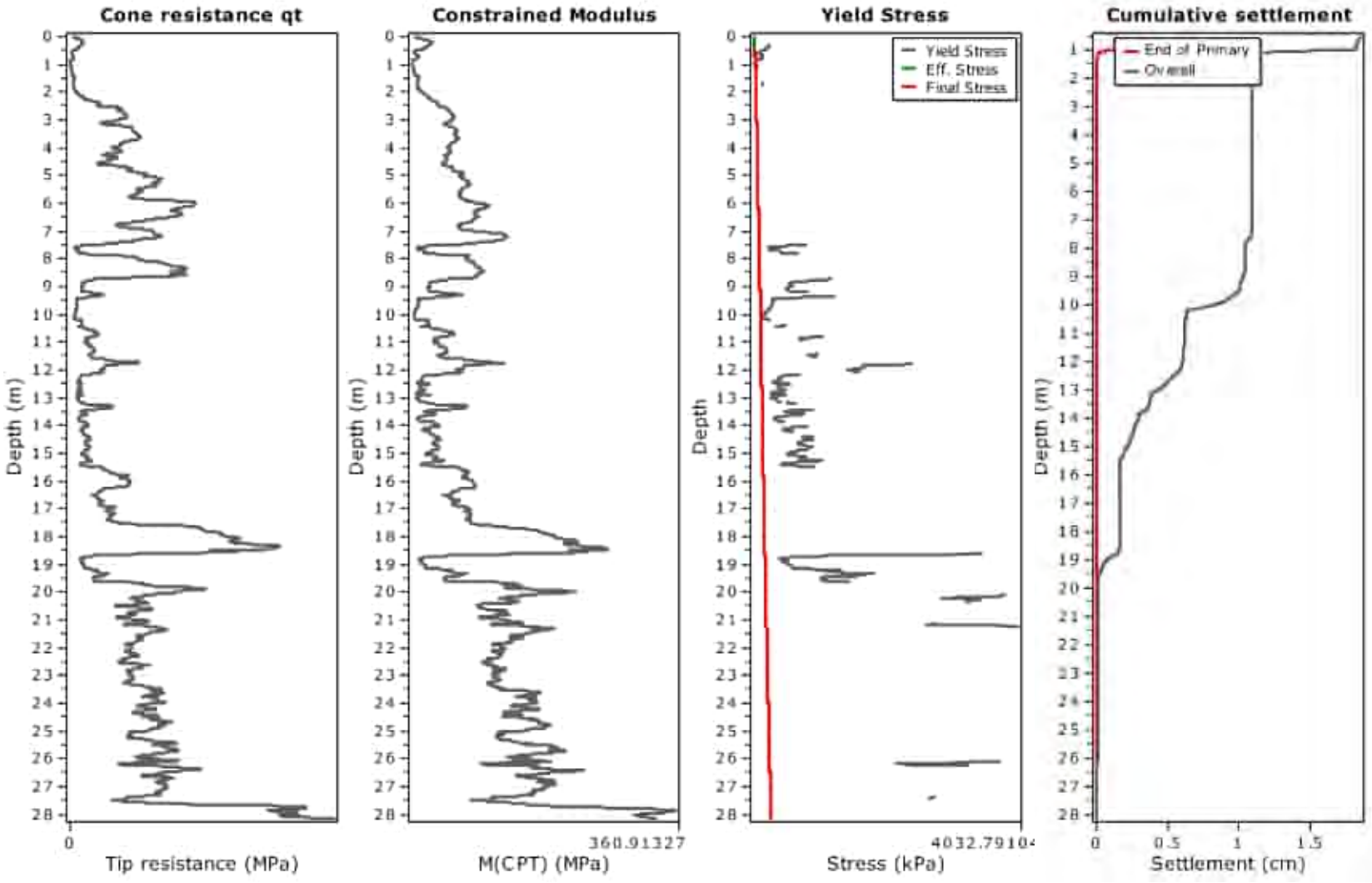
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-05
Total depth: 28.14 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

[illegible]

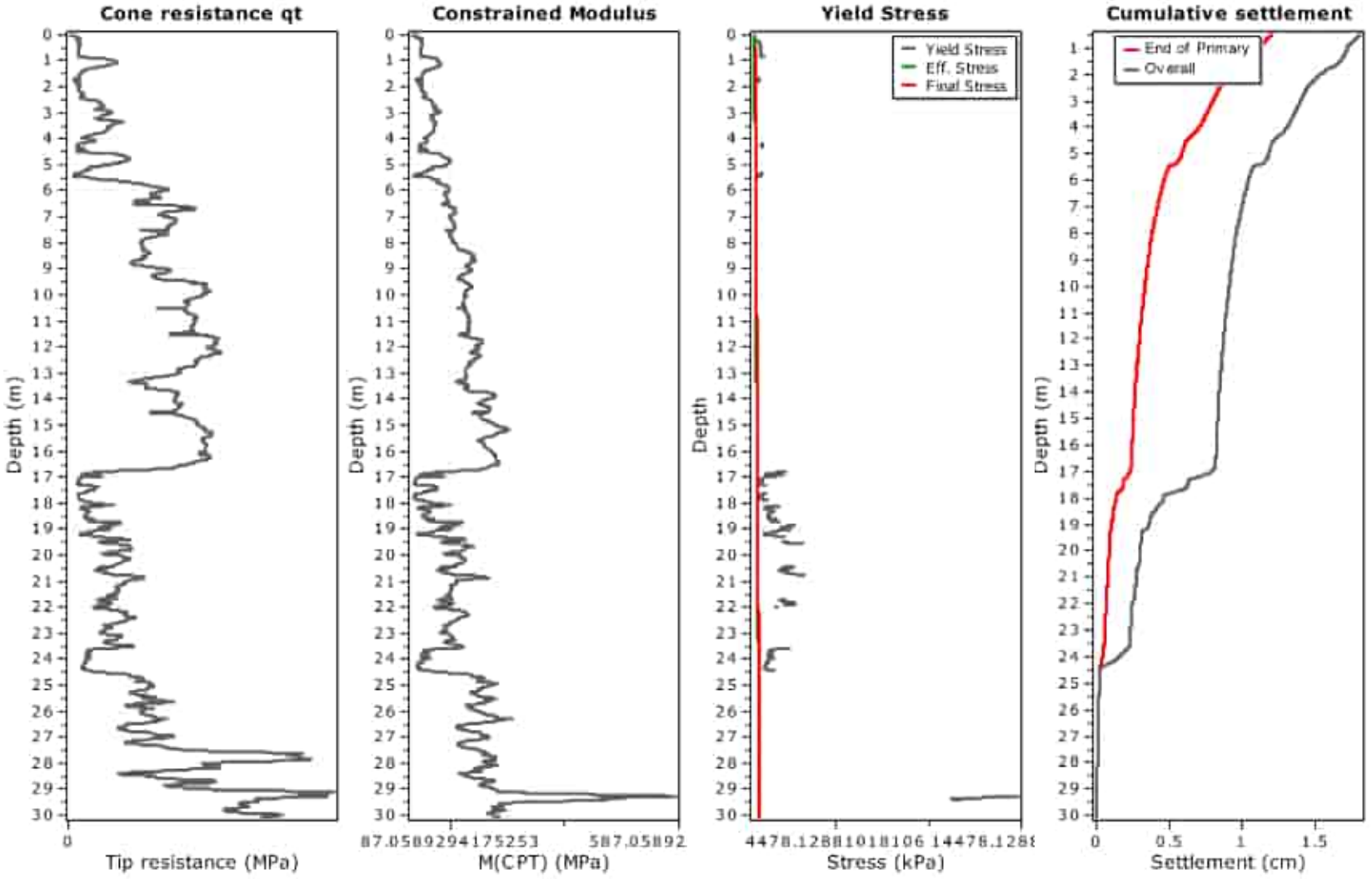
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-06
Total depth: 30.06 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 15.00 (m)
L/B: 1.0
Footing pressure: 46.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = C_\alpha \log\left(\frac{t}{t_p}\right)$$

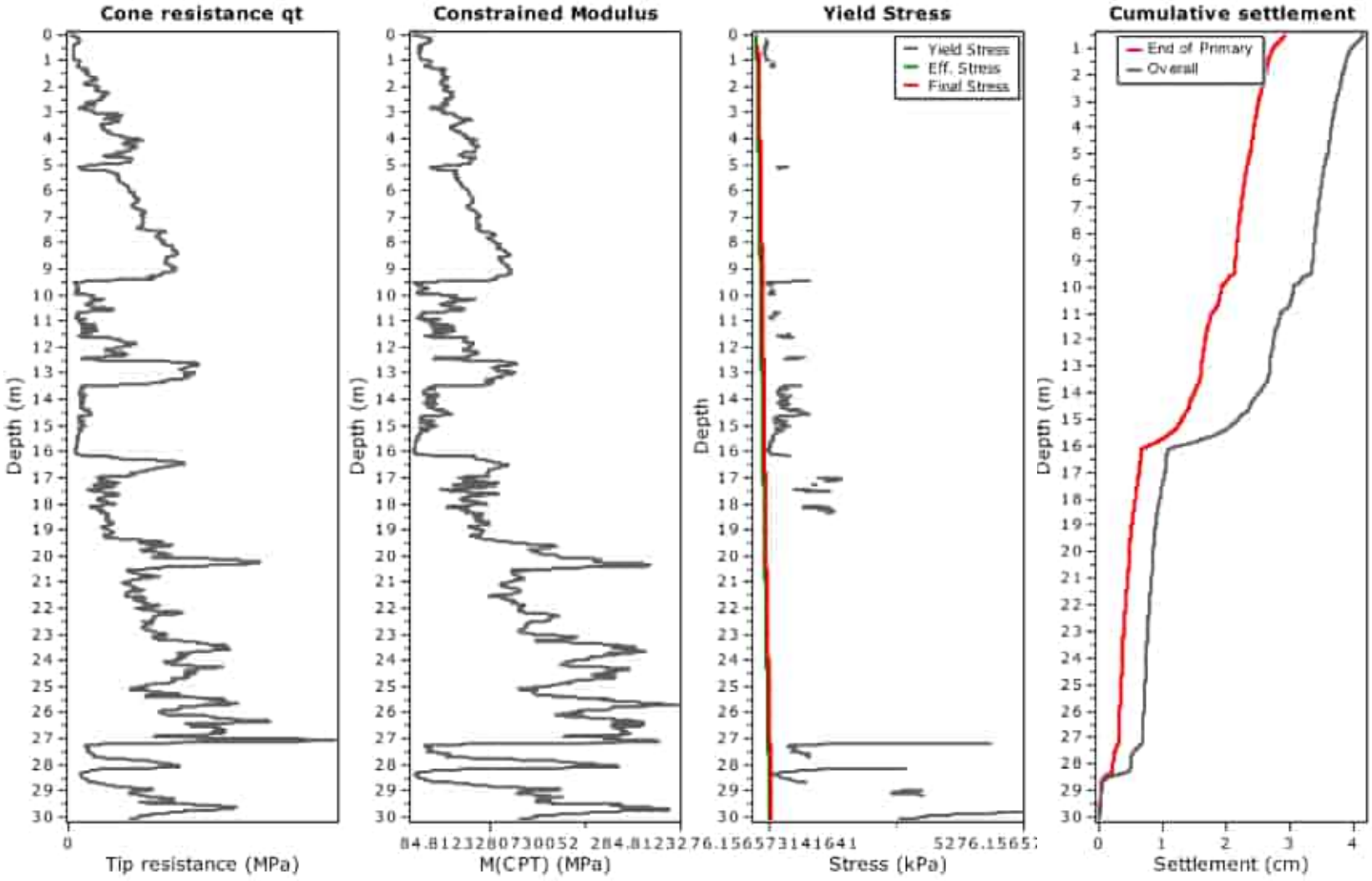
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-07
Total depth: 30.07 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 150.00 (m)
L/B: 1.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

[illegible]

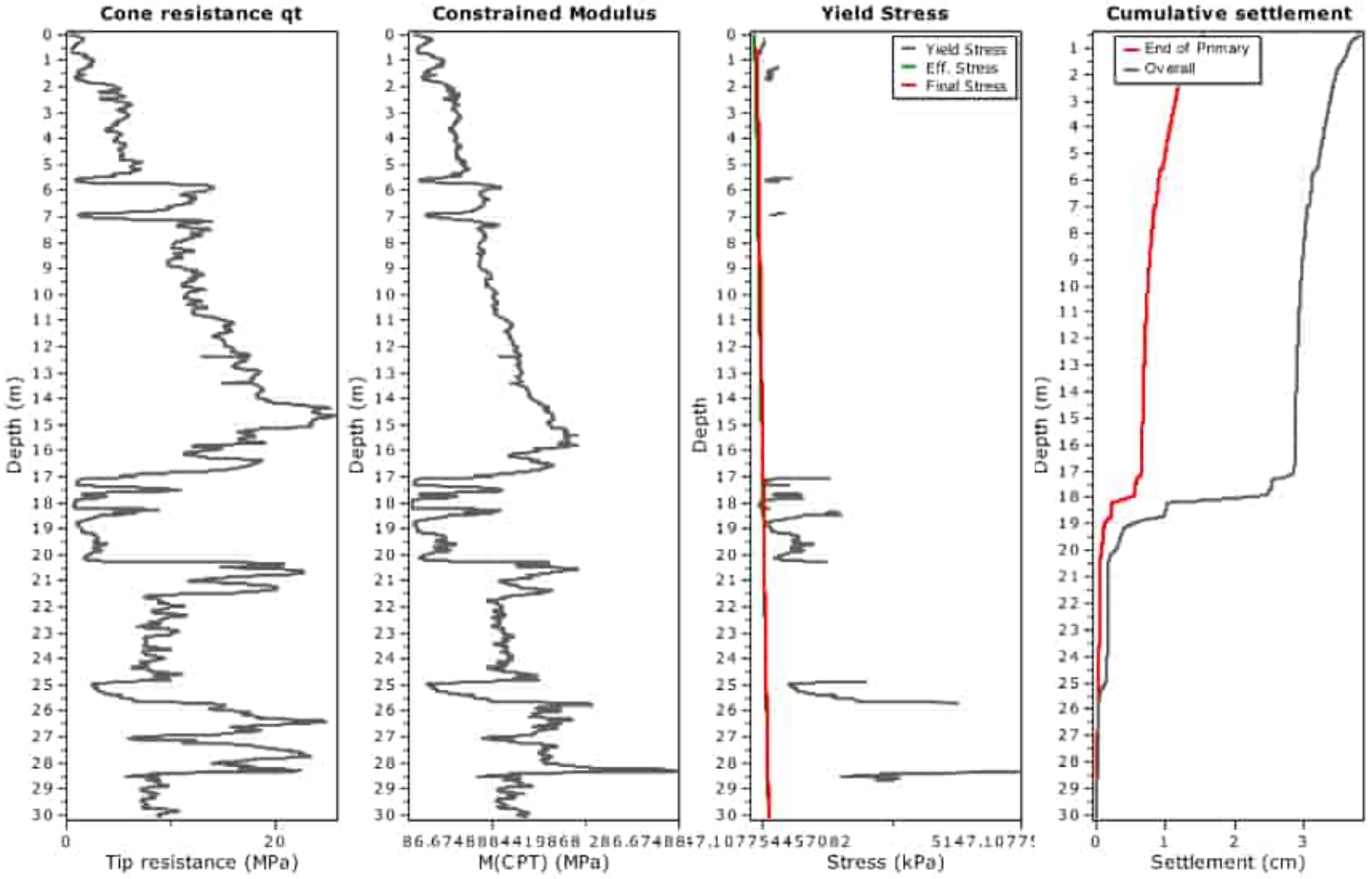
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-08
Total depth: 30.08 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 15.00 (m)
L/B: 1.0
Footing pressure: 37.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = C_\alpha \log\left(\frac{t}{t_p}\right)$$

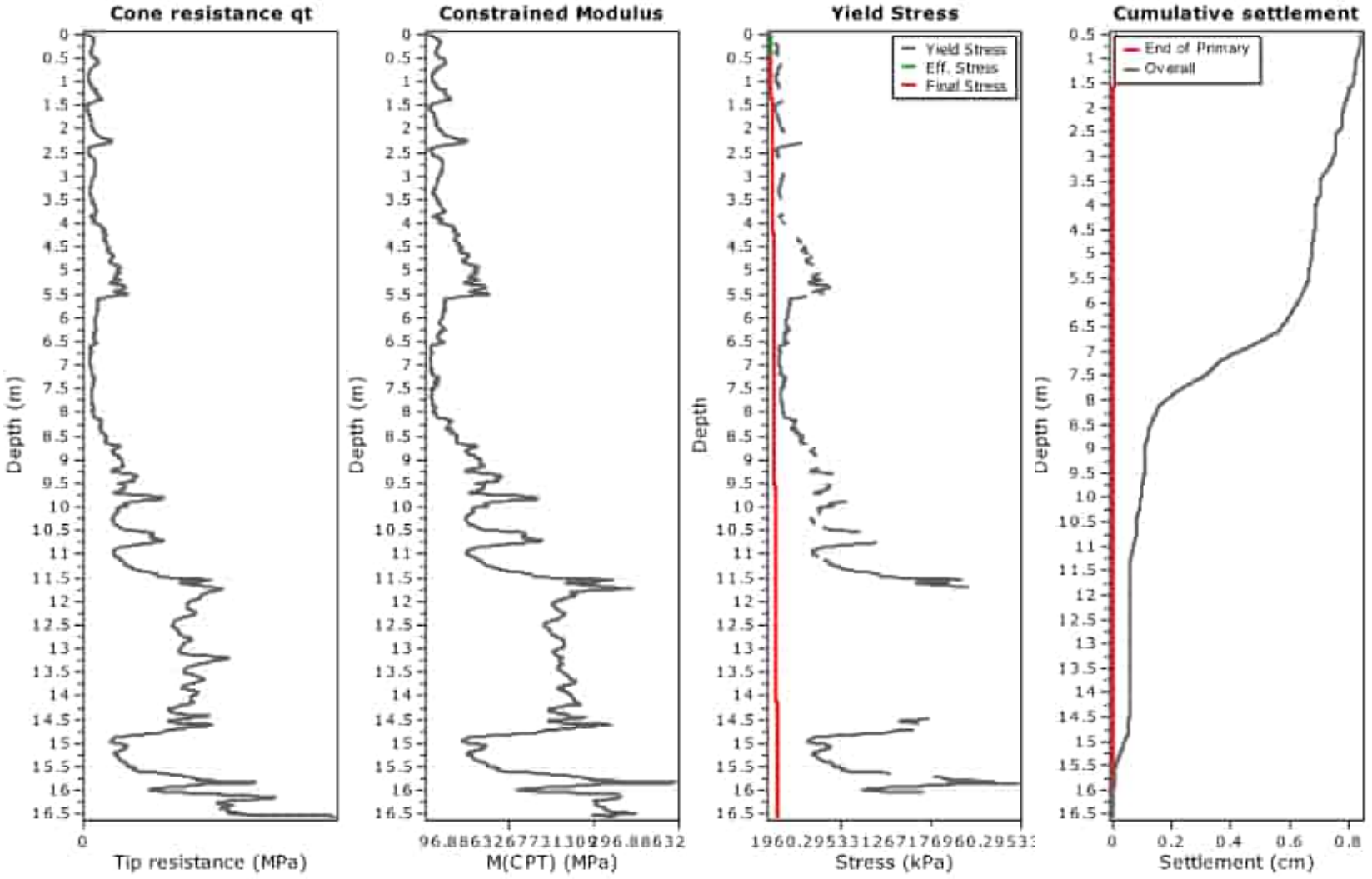
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-09
Total depth: 16.56 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = C_\alpha \log\left(\frac{t}{t_p}\right)$$

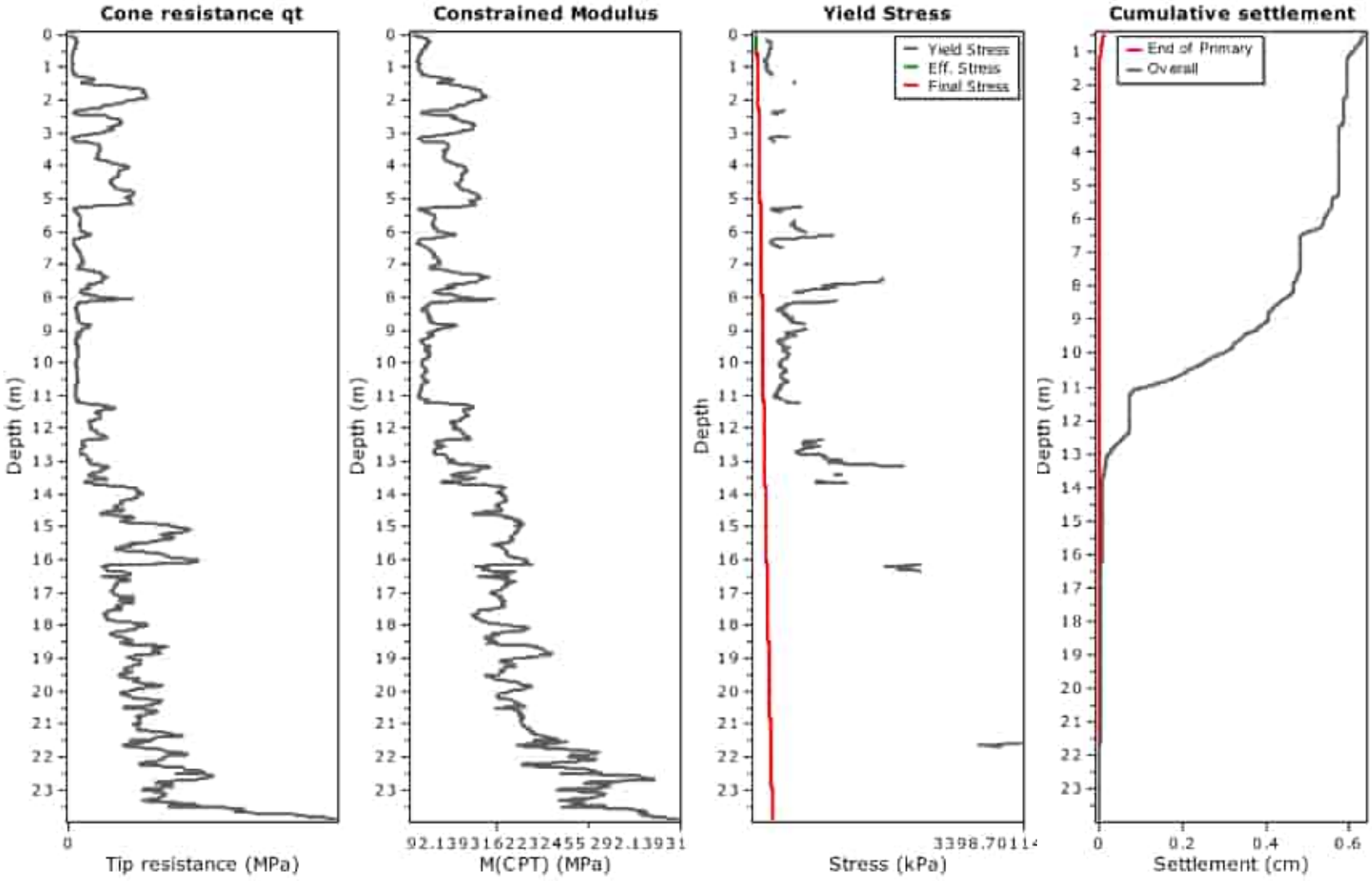
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: CPT24-10
Total depth: 23.89 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = C_\alpha \log\left(\frac{t}{t_p}\right)$$

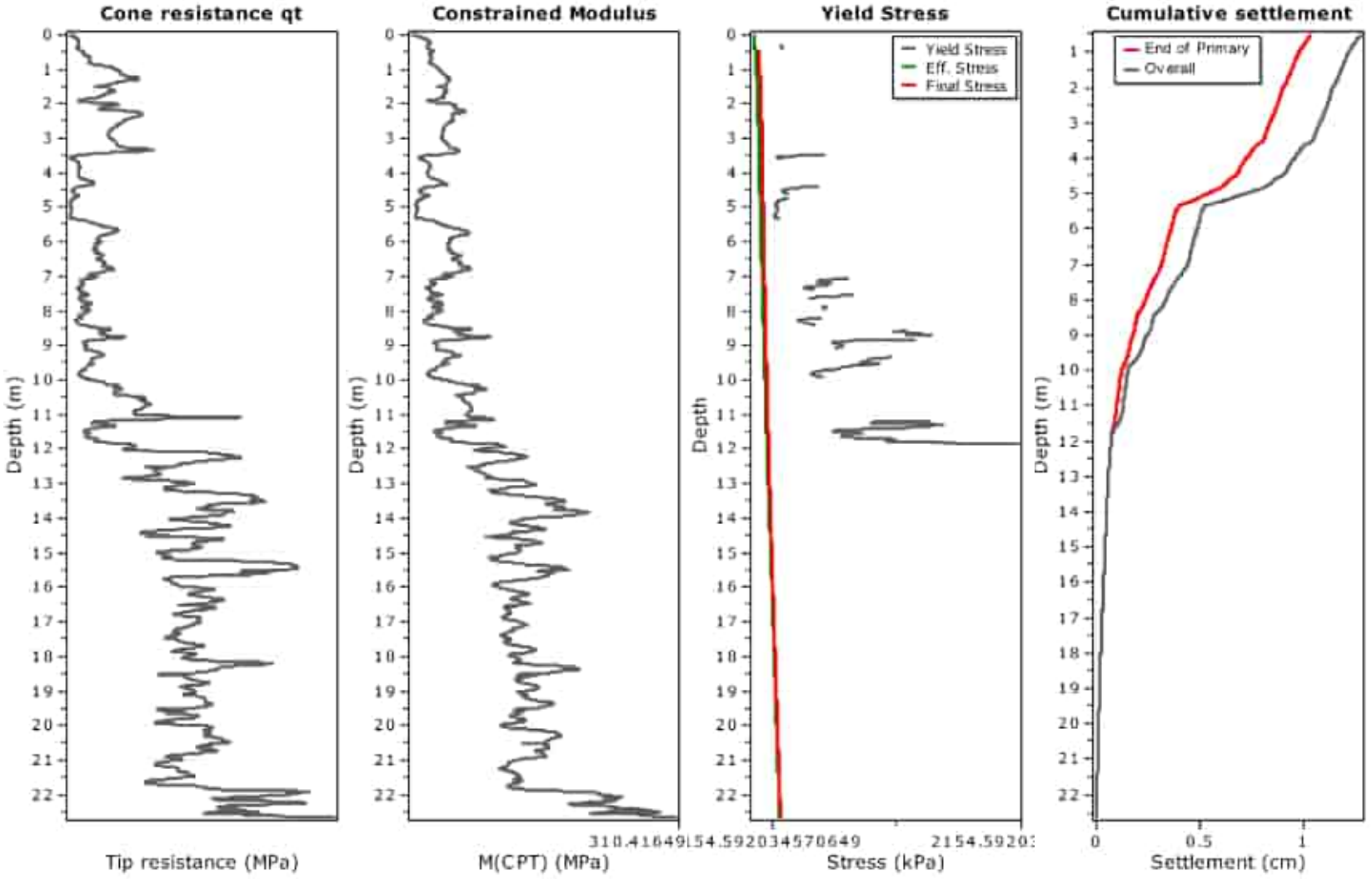
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: SCPT24-01
Total depth: 22.64 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 15.00 (m)
L/B: 1.0
Footing pressure: 28.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = \alpha \log\left(\frac{t}{t_p}\right) H$$

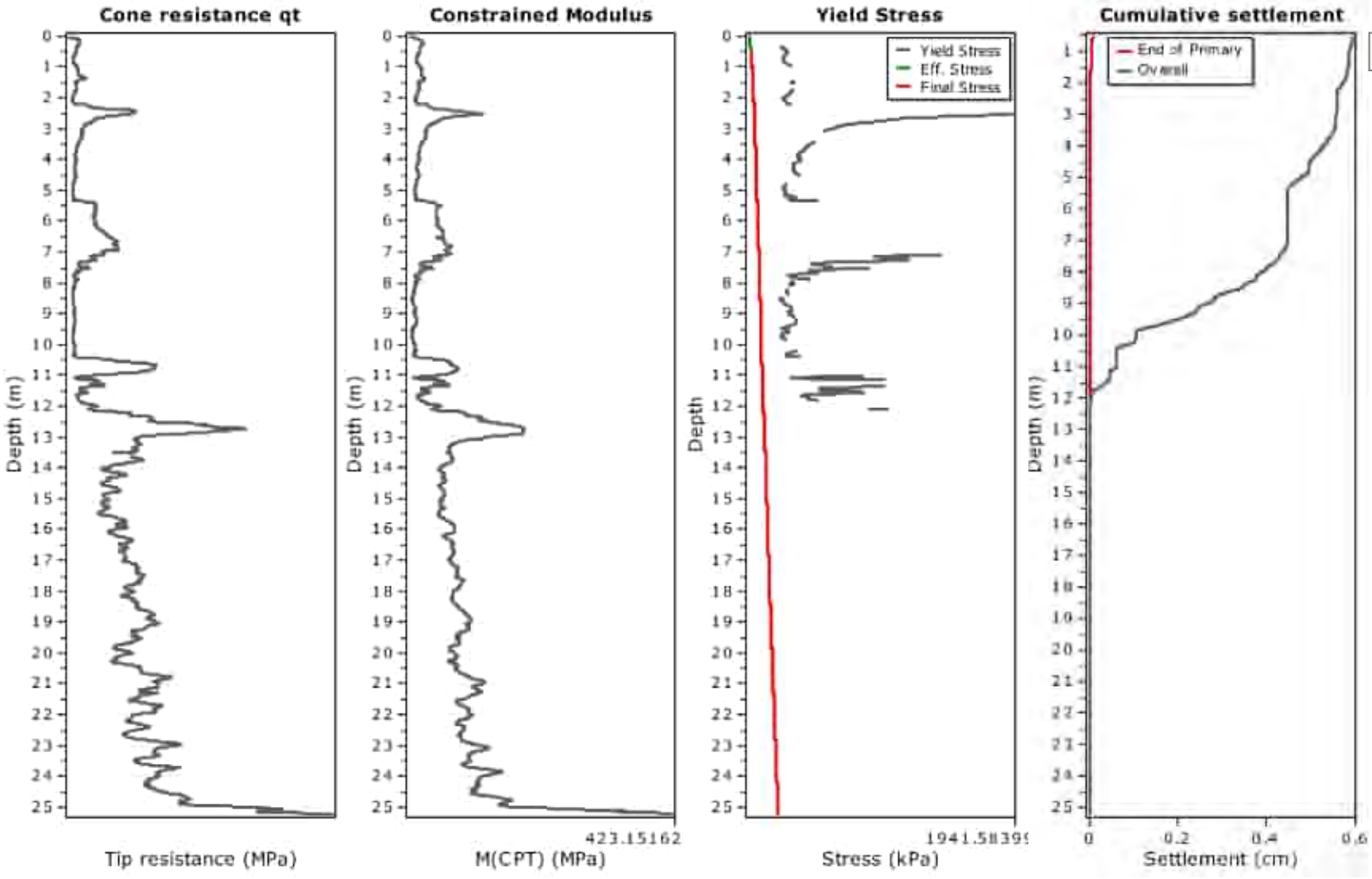
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: SCPT24-02
Total depth: 25.23 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

[illegible]

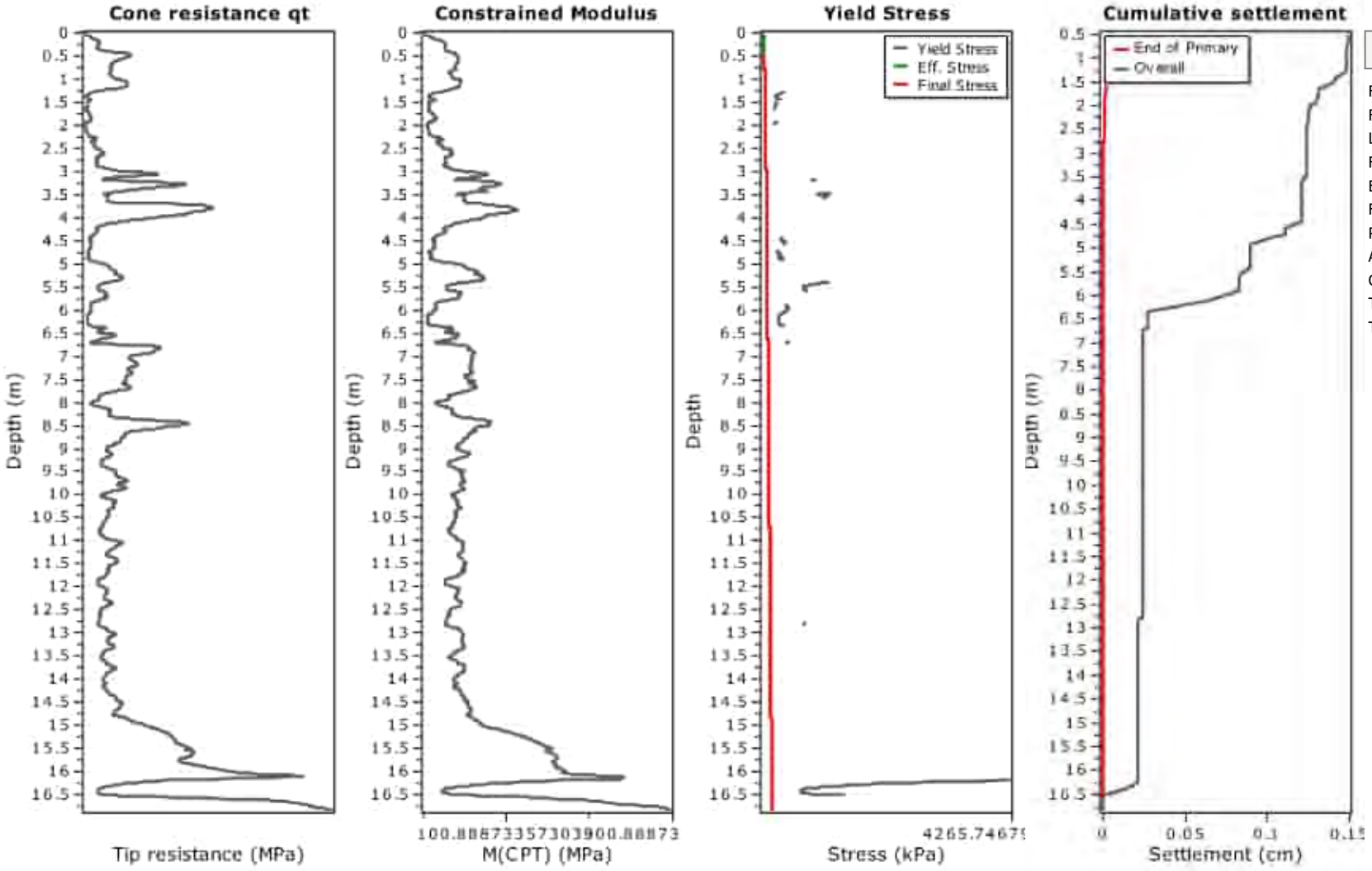
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: SCPT24-03
Total depth: 16.83 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

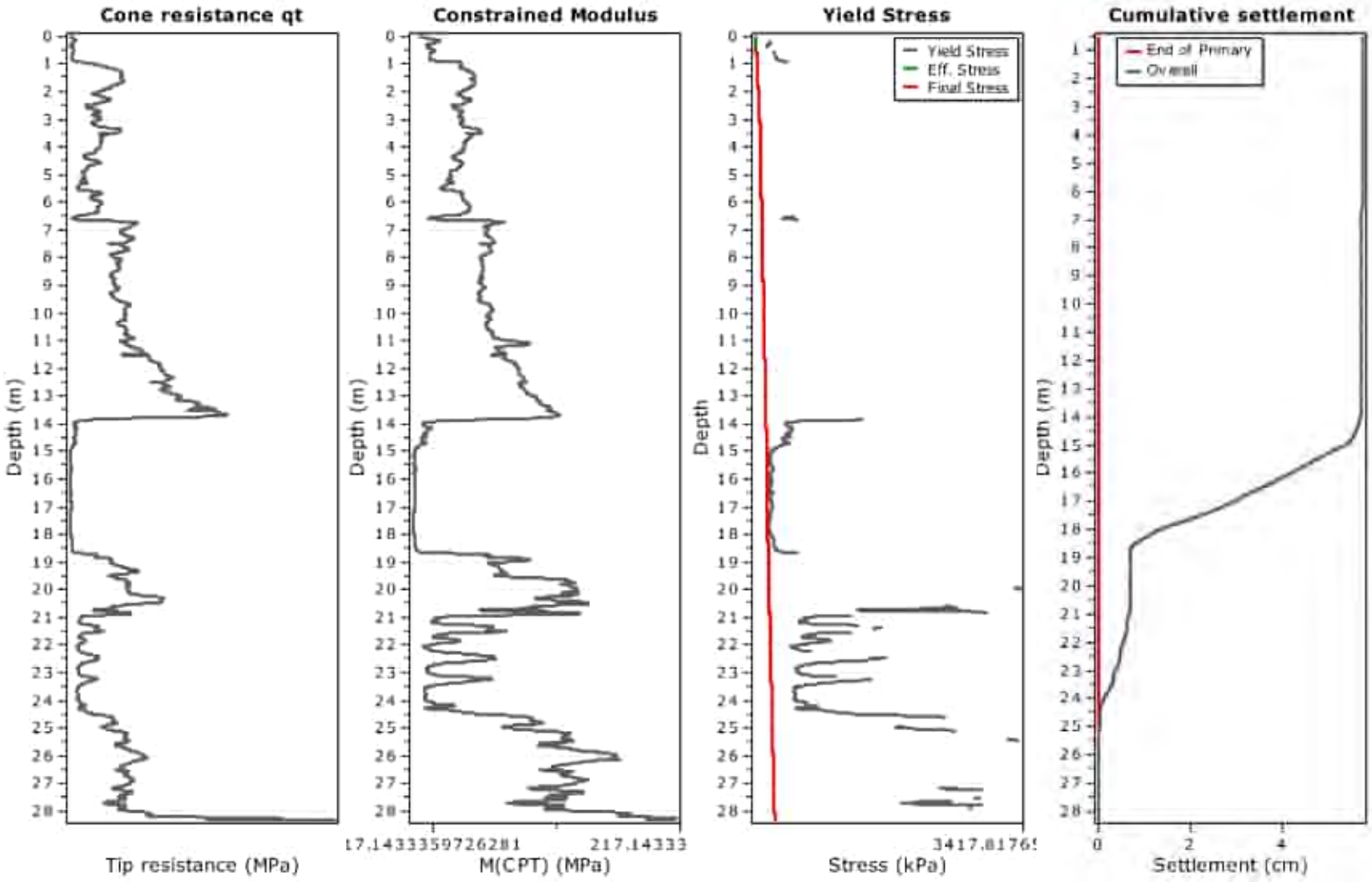
where t_p is the duration of primary consolidation

CMW Geosciences
Level 1, Block C, 401 Grey Street
Hamilton 3216
www.cmwgeosciences.com

CPT: SCPT24-04
Total depth: 28.31 m, Date: 29/04/2025
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

Project: **Station Road Proposed Subdivision**
Location: **Station Road, Matamata**

Settlements calculation according to theory of elasticity *



Calculation properties

Footing type: Rectangular
Footing width: 1.00 (m)
L/B: 1.0
Footing pressure: 1.00 (kPa)
Embedment depth: 0.50 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: No
Calculate secondary settlements: Yes
Time period for primary consolidation: 6 months
Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlement calculation is performed according to the following formula:

$$\Delta s = C_\alpha \log\left(\frac{t}{t_p}\right)$$

where t_p is the duration of primary consolidation

APPENDIX I: SAFETY IN DESIGN RISK ASSESSMENT

CMW Safety in Design Risk Assessment									
HAM2023-0124 - Station Road Proposed Subdivison and Solar Farm									
Design Element	**Hazard**	**Description**	**Assessed Risk**			**Controls Incorporated in Design**	**Residual Risk**		
			Consequence	**Likelihood**	**Risk Rating**		**Consequence**	**Likelihood**	**Risk Rating**
Retaining Walls (If required)	Falling from height	Injury to construction staff while constructing or public once wall is constructed.	4	3	12	Temporary barrier fence to avoid public climbing, permanent fencing to be considered to prevent falls access.	1	3	3
	Striking underground services	Injury to construction staff if live services are struck.	4	2	8	All sites cleared for services prior to construction requiring digging or boring into the ground.	1	2	2
	Moving Machinery	Lifting and swing area of machinery may cause injury to construction staff.	4	3	12	Separate moving machinery from light vehicles and person movements with fencing and/or safe distances from exposed construction staff operations.	1	3	3
	Working at edges of excavations	Injury to construction staff or public by falling into excavations.	4	3	12	Site to be made safe if excavations are to be left open and public can access, excavations to be filled or securely covered on same day of excavation, safe distances from excavations to be maintained and demarked with boundary fence.	1	3	3
	Excavation collapse	Injury to construction staff or persons able to access the excavation after hours.	4	3	12	Staged excavation to be undertaken where able, boundary fence where excavations are under construction or other means of separation for staff or public from potential collapse.	1	3	3
	Retaining wall failure	Exceed specified loading conditions, wall drainage blockage.	4	2	8	Appropriate construction and permanent loading conditions allowed for, design adequate drainage measures, assess impact of blocked drainage on design.	1	2	2
	Falling objects from above	Injury to construction staff or persons under the proposed wall.	4	3	12	Hard hats to be worn at all times as the wall is constructed and where lifting is undertaken, safe distance from any lifting or movements above when being undertaken.	1	3	3
Earthworks	Falling from height	Injury to construction staff while constructing steep temporary or permanent earthworks cut or fill faces.	4	3	12	Temporary barrier fence or other means to be used to ensure persons cannot access to the edge of steep excavations	1	3	3
	Striking underground services	Injury to construction staff if live services are struck.	4	2	8	All sites cleared for services prior to site investigations and earthworks construction	1	2	2
	Moving Machinery	Injury to construction staff.	4	3	12	Separate moving machinery from light vehicles and person movements with fencing and/or safe distances from exposed construction staff operations.	1	3	3
	Working at edges of excavations	Injury to construction staff.	4	3	12	Install safety barriers, exclusion zones, signage as necessary to warn of hazard.	1	3	3
	Trench excavation collapse	Injury to construction staff or persons due to crushing/impact injury.	4	3	12	Follow Worksafe requirements, trench shields or benching of excavations to be used. No staff to enter the trench without appropriate and approved measures already in place.	1	3	3
	Cut / fill batter collapse	Injury to construction staff during construction.	3	2	6	Safe distances and appropriate temporary slope gradients and heights to be assessed prior to construction and monitored during to confirm as appropriate, safe distances and barrier fencing to be used on site where deemed necessary.	1	3	3
	Excessive noise during construction	Damage to hearing of construction staff or persons adjacent to the site.	3	2	6	Comply with appropriate allowances for noise on site, ear protection to be worn where appropriate, setback distances from adjacent sites or notified working hours to avoid conflict with adjacent property inhabitants.	1	2	2
	Machinery rollover	Machinery trafficability over soft, wet or uneven ground.	4	2	8	Appropriate construction of temporary haul roads, implement drainage and geofabrics, appropriate driver training.	1	2	2
	Contaminated Soils	Airborne or in-ground contaminants affecting construction staff.	4	1	4	Perform an environmental assessment of the site prior to construction.	1	1	1
Plant Platform	Moving Machinery	Injury to construction staff.	4	3	12	Separate moving machinery from light vehicles and person movements with fencing and/or safe distances from exposed construction staff operations.	1	3	3
	Plant platform instability	Injury to construction staff or persons due to crushing/impact injury.	4	3	12	Design to incorporate adequate factor of safety, prepare lift management plans to ensure adequate separation between plant and persons.	1	3	3
	Excessive plant settlement	Plant / equipment damage, injury to construction staff or persons due to sudden plant / load movements.	4	3	12	Undertake trial lift with adequate separation of plant and load from persons, monitor settlements during lift.	1	3	3
NOTE: It is the Contractors responsibility to cover construction related risks in a more comprehensive manner (being the competent party in that respect).									

Safety in Design Assessment Framework						
Risk Matrix		**Consequence**				
		Insignificant 1	**Minor 2**	**Moderate 3**	**Major 4**	**Catastrophic 5**
Likelihood	**Event Will Occur 5**	**Medium 5**	**High 10**	**High 15**	**Extreme 20**	**Extreme 25**
	Event Almost Certain to Occur 4	**Low 4**	**Medium 8**	**High 12**	**Extreme 16**	**Extreme 20**
	Event May Occur 3	**Low 3**	**Medium 6**	**High 9**	**High 12**	**High 15**
	Event Not Likely to Occur 2	**Low 2**	**Low 4**	**Medium 6**	**Medium 8**	**High 10**
	Event Rarely Occurs 1	**Low 1**	**Low 2**	**Low 3**	**Low 4**	**Medium 5**

APPENIDIX J: STATMENT OF PROFESSIONAL OPINION

22 May 2025 Document Ref: HAM2023-0124AI | Rev 1

RE: STATEMENT OF PROFESSIONAL OPINION AS TO THE GEOTECHNICAL SUITABILITY OF LAND FOR DEVELOPMENT
STATION ROAD, MATAMATA

Development: Station Road Residential Subdivision, Retirement Village and Solar Farms.

Owner: Matamata Developments Limited

Location: Station Road, Matamata

I, Sam Gibb, of CMW Geotechnical NZ Limited (Level 1, Block C/401 Grey Street, Hamilton)

Hereby confirm that:

1. I am a geo-professional as defined in Clause 1.5.1 of Part 1 General Information of the Matamata-Piako District Council Development Manual 2010 and was retained by the developer as the geo-professional on the above development.
2. The extent of my preliminary investigations is described in report HAM2023-0124AI Rev1 dated 22 May 2025.
3. In my professional opinion, not to be construed as a guarantee, I considered that the proposed works give due regards to land slope, liquefaction and foundation stability and settlement considerations and that the land is suitable for the proposed development provided the geotechnical constraints outlined within my geotechnical investigation report have been considered.
4. The professional opinion is furnished to the Council and the owner for the purpose along, on the express condition that it will not be relied upon by any other person and does not remove the necessity for further inspection during the course of the works.

For and on behalf of CMW Geosciences

Prepared by:



Sam Gibb
Principal Geotechnical Engineer
CMEngNZ, CPEng