

99 TAMUMU ROAD, WAIPAWA

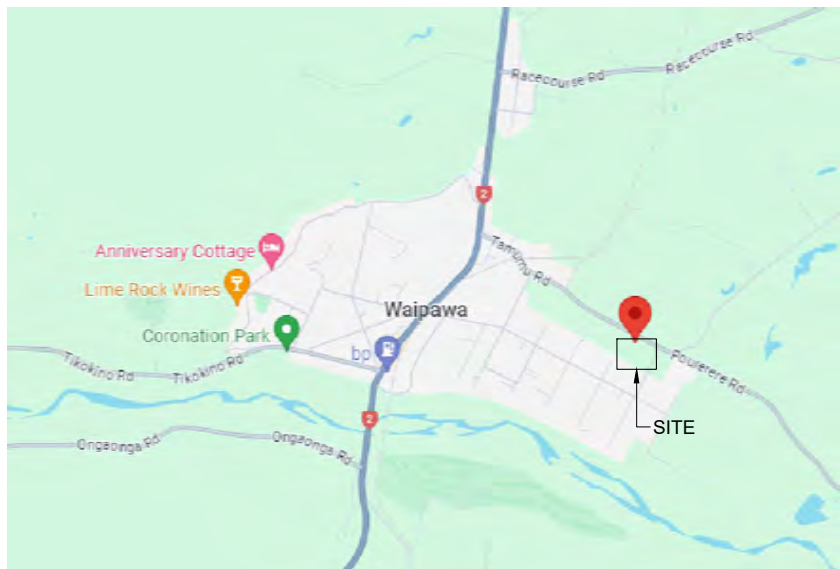
DUNCAN LEIGHTON

HB00059

EPA

ISSUE SET 2

26/03/2024



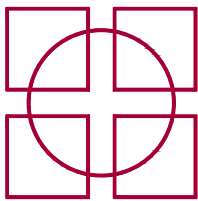
LOCALITY

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

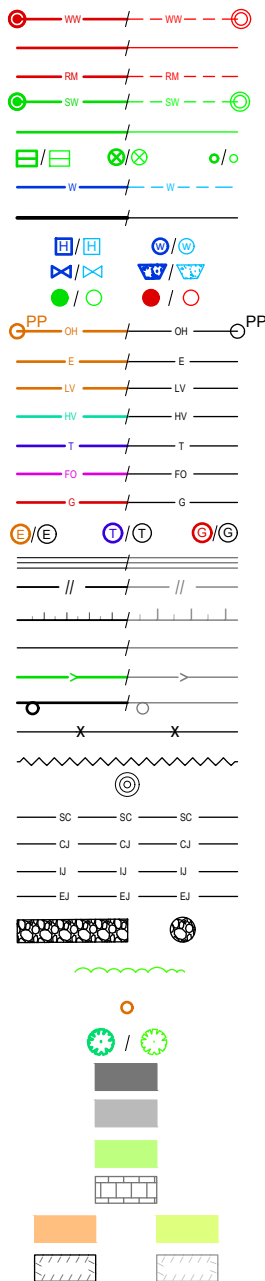
		22/08/20	26/03/24
	ISSUE SET 1		
DRAWING	DRAWING TITLE		
HB00059-C-001	LEGEND AND NOTES	-	-
HB00059-C-002	EXISTING SITE PLAN	-	-
HB00059-C-003	PRE-DEVELOPMENT 100 YEAR FLOOD LEVELS	-	-
HB00059-C-101	EARTHWORKS - PROPOSED GROUND LEVELS	-	-
HB00059-C-102	EARTHWORKS - PROPOSED CUT AND FILL	-	A
HB00059-C-103	EROSION AND SEDIMENT CONTROL PLAN	-	-
HB00059-C-104	EROSION AND SEDIMENT CONTROL DETAILS	-	-
HB00059-C-201	PROPOSED RIGHT OF WAY	-	A
HB00059-C-202	PROPOSED RIGHT OF WAY & SWALE LONGSECTIONS	-	-
HB00059-C-203	PROPOSED RWO, SWALE & BASIN CROSS-SECTIONS	-	-
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HB00059-C-303	PROPOSED SW & WW LONGSECTION SHEET 1 OF 3	-	-
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HB00059-C-401	STANDARD DETAILS SHEET 1 OF 10	-	-
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HB00059-C-409	STANDARD DETAILS SHEET 9 OF 10	-	-
HB00059-C-410	STANDARD DETAILS SHEET 10 OF 10	-	-



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LEGEND - GENERAL

WW Gravity Line (Pr/Ex)
WW Lateral Connection (Pr/Ex)
WW Rising main (Pr/Ex)
SW Line (Pr/Ex)
SW Lateral Connection (Pr/Ex)
Sump, Scruffy Dome, Down Pipe (Pr/Ex)
Watermain (Pr/Ex)
Boundary of Site (Pr/Ex)
Hydrant, Water Meter (Pr/Ex)
Valve, Thrust Block/Water Stop (Pr/Ex)
Rodding Point SW/WW (Pr/Ex)
Power Pole and Overhead Line (Pr/Ex)
Power Underground (Pr/Ex)
LV Power (Pr/Ex)
HV Power (Pr/Ex)
Telecom(Pr/Ex)
Fibre Optic Cable (Pr/Ex)
Gas Line (Pr/Ex)
Electricity, Telecom, Gas (Pr/Ex)
Kerb and Channel (Pr/Ex)
Fence (Pr/Ex)
Top of Bank (Pr/Ex)
Bottom of Bank (Pr/Ex)
Drain Invert (Pr/Ex)
Retaining Wall (Pr/Ex)
Services to Abandon
Services to Remove
Bench Mark (EX)
Saw Cut
Construction Joint
Isolation Joint
Expansion Joint
Soakpit
Vegetation/Dripline
Tree Trunk
Tree (Pr/Ex)
Asphalt
Concrete
Landscape
Paving
Cut/Fill
Building Footprint (Pr/Ex)



LEGEND - EARTHWORKS

Ex Contours
Pr Contours (Major/Minor)
WW Gravity Line (Pr/Ex)
WW Lateral Connection (Pr/Ex)
SW Line (Pr/Ex)
SW Lateral Connection (Pr/Ex)
Sump, Down Pipe (Pr/Ex)
Watermain (Pr/Ex)
Boundary of Site (Pr/Ex)
Ex Power Pole and Overhead Line
Ex Electric
Ex LV Power
Ex HV Power
Ex Telecom
Ex Fibre Optic Cable
Ex Gas Line
Top of Bank (Pr/Ex)
Bottom of Bank (Pr/Ex)
Drain Invert (Pr/Ex)
Retaining Wall (Pr/Ex)
Clean Water Diversion Channel
Dirty Water Diversion Channel
Silt Fence
Super Silt Fence
Fence
Silt Sock/Earth Bund
Extent of Earthworks
Surface Water Flow Direction

Stabilised Vehicle Entrance

Topsoil Stockpile Area

Soil Stockpile Area

Borrow Area

Rock Protection

Temporary Seeding

Permanent Seeding

Hydro Seeding

Mulching

Turfing

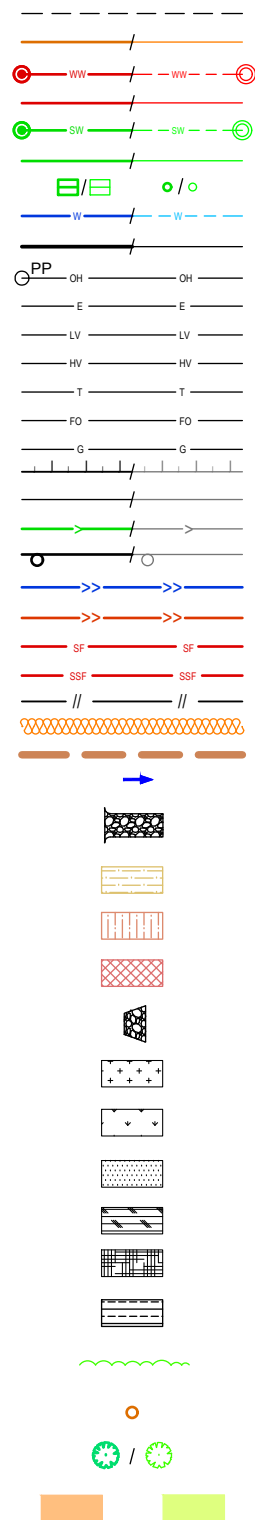
Geosynthetic Fabric / Geotextile

Vegetation/Dripline

Tree Trunk

Tree

Cut/Fill



NOTES:

1. All work and materials are to be in accordance with the CHBDC Engineering Standards, HBRC Waterway Guidelines - Erosion & Sediment Control and NZS4404:2010.
2. The Contractor is to locate and protect all existing services including Power, telecom and Gas before commencing works. See the respective services authorities for assistance.
3. Works are to comply with the Health and Safety plan submitted to the Engineer by the Contractor. For any excavation greater than 1.5m deep, the Contractor shall notify WorkSafe NZ. The Contractor has full responsibility and liability for Health and Safety on the site.
4. All work on the existing public water main and vehicle crossing is to be performed by an approved contractor.
5. Inspections are required of all pipe connections and bedding when placed prior to backfilling & all manholes when finished. The Contractor shall give 24 hours notice prior to requiring an inspection.
6. Any discrepancy between the details shown on this drawing and conditions on site are to be notified to the Engineer immediately.
7. Level datum is NZVD2016, and coordinate datum is Hawkes Bay 2000.
8. The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

FOR CONSENT

[illegible]

NOTES

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

LEGEND AND NOTES



ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND	09 278 7078
HAWKE'S BAY	06 211 2766
CHRISTCHURCH	03 358 5936
BLenheim	03 428 3292
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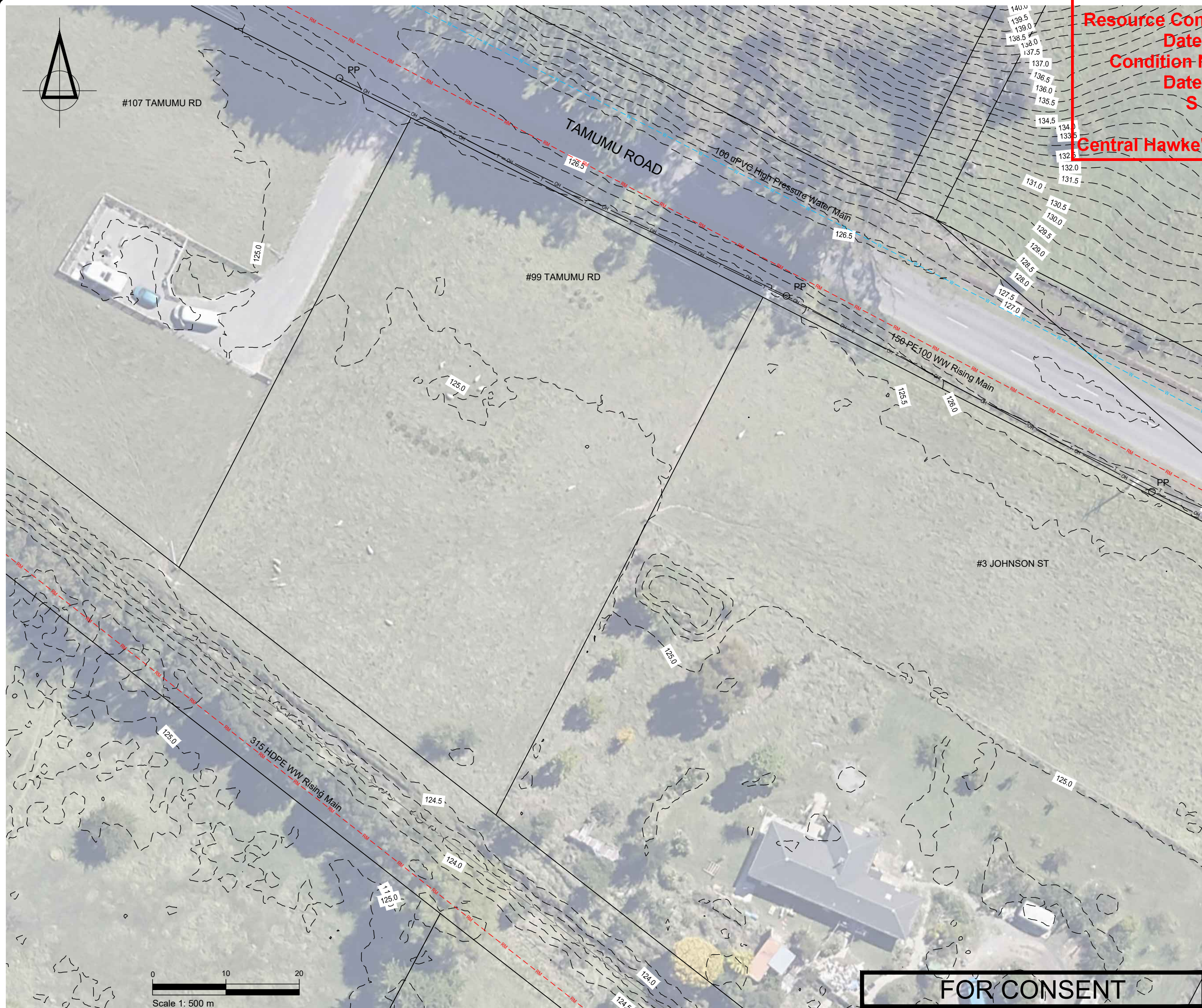
EPA

Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.

SCALE NTS (A3)

DRAWING No	REVISION
HB00059-C-001	-

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Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
19/12/2024	19/12/2024	19/12/2024	19/12/2024
REVISION	CHANGES	CHECKED	DATE

NOTES
The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

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PROJECT
99 TAMUMU ROAD
WAIPAWA

TITLE
EXISTING SITE PLAN



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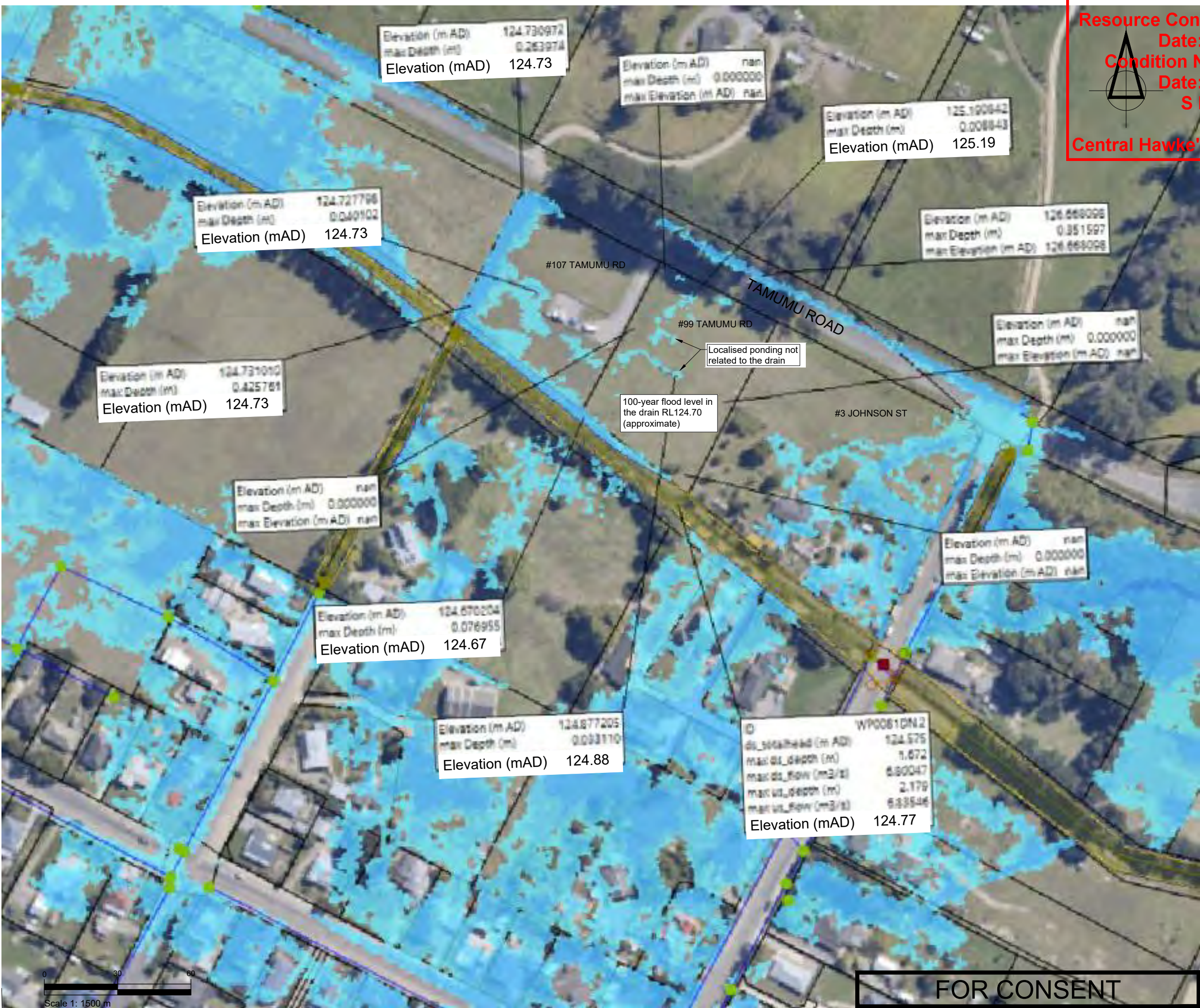
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SCALE 1:500 (A3)

DRAWING No. HB00059-C-002 REVISION -

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Condition No: Condition 4 - 5
Date: 19/12/2024
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Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
19/12/2024	19/12/2024		
REVISION	CHANGES	CHECKED	DATE

NOTES

Flood levels were based on CHBDC flood model dated November 2023.

Vertical datum is NZVD2016.

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PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

PRE-DEVELOPMENT
100 YEAR FLOOD LEVELS

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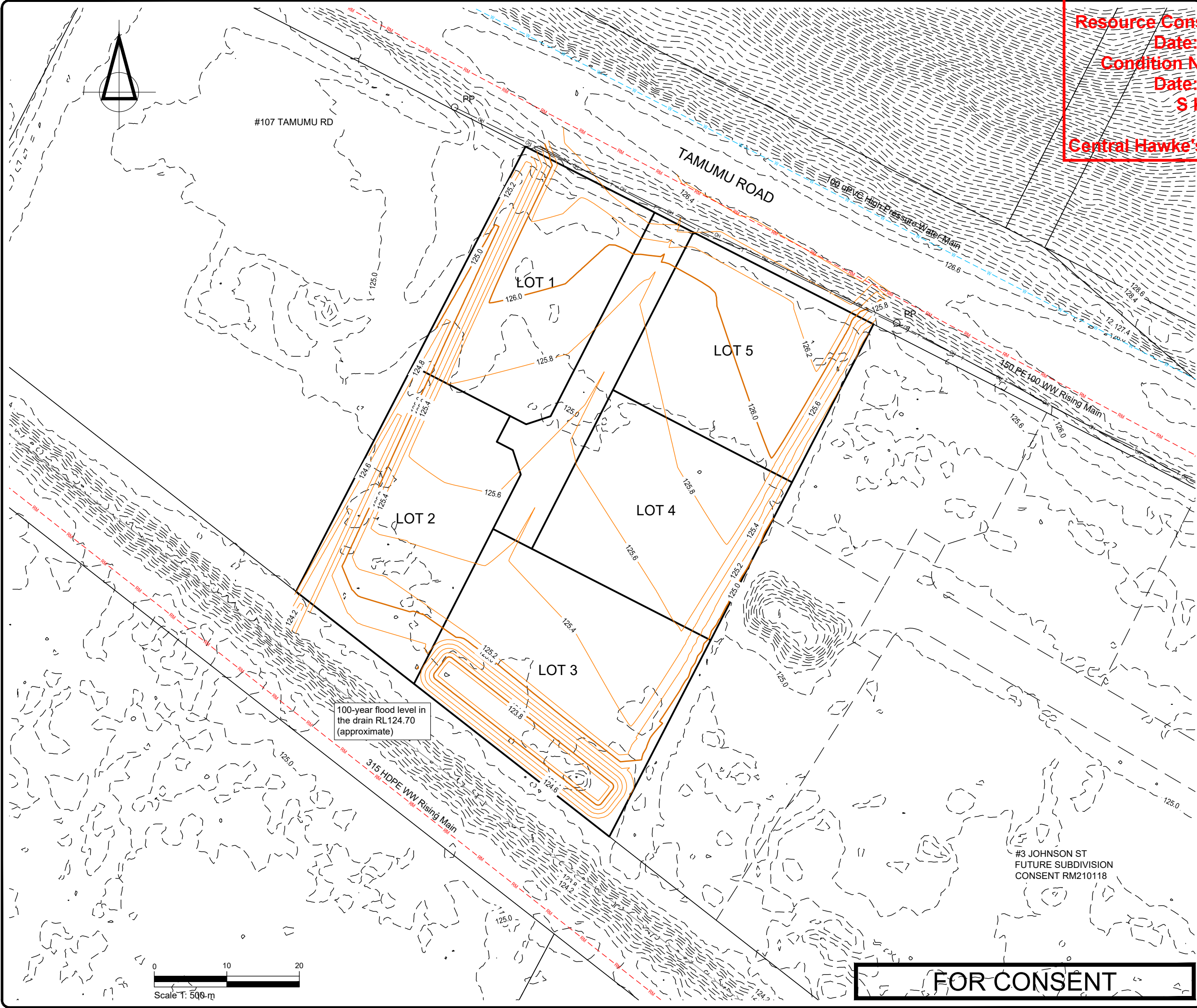
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SCALE 1:1500 (A3)

DRAWING No HB00059-C-003 REVISION -

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APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston
Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
	RM210082A		
REVISION	CHANGES	CHECKED	DATE

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

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PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

EARTHWORKS
PROPOSED GROUND LEVELS



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SCALE 1:500 (A3)

DRAWING No HB00059-C-101 REVISION -

FOR CONSENT

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Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
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Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
26/03/24	26/03/24		
REVISION	CHANGES	CHECKED	DATE
1	SHORTEN WW LINE A	SN	26/03/24

NOTES

QUANTITIES:

CUT = 200m3 (to spread in landscaping area)
FILL = 2,500m3 (Imported engineered fill)

Based on finished ground level and existing ground level, including 200mm of topsoil

The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

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PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

EARTHWORKS
PROPOSED CUT AND FILL

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SCALE 1:500 (A3)

DRAWING No HB00059-C-102 REVISION A

Resource Consent No: RM210082A
Date: 19/12/2024

Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

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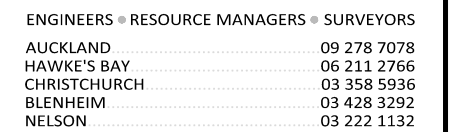
CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE
EROSION AND SEDIMENT CONTROL PLAN

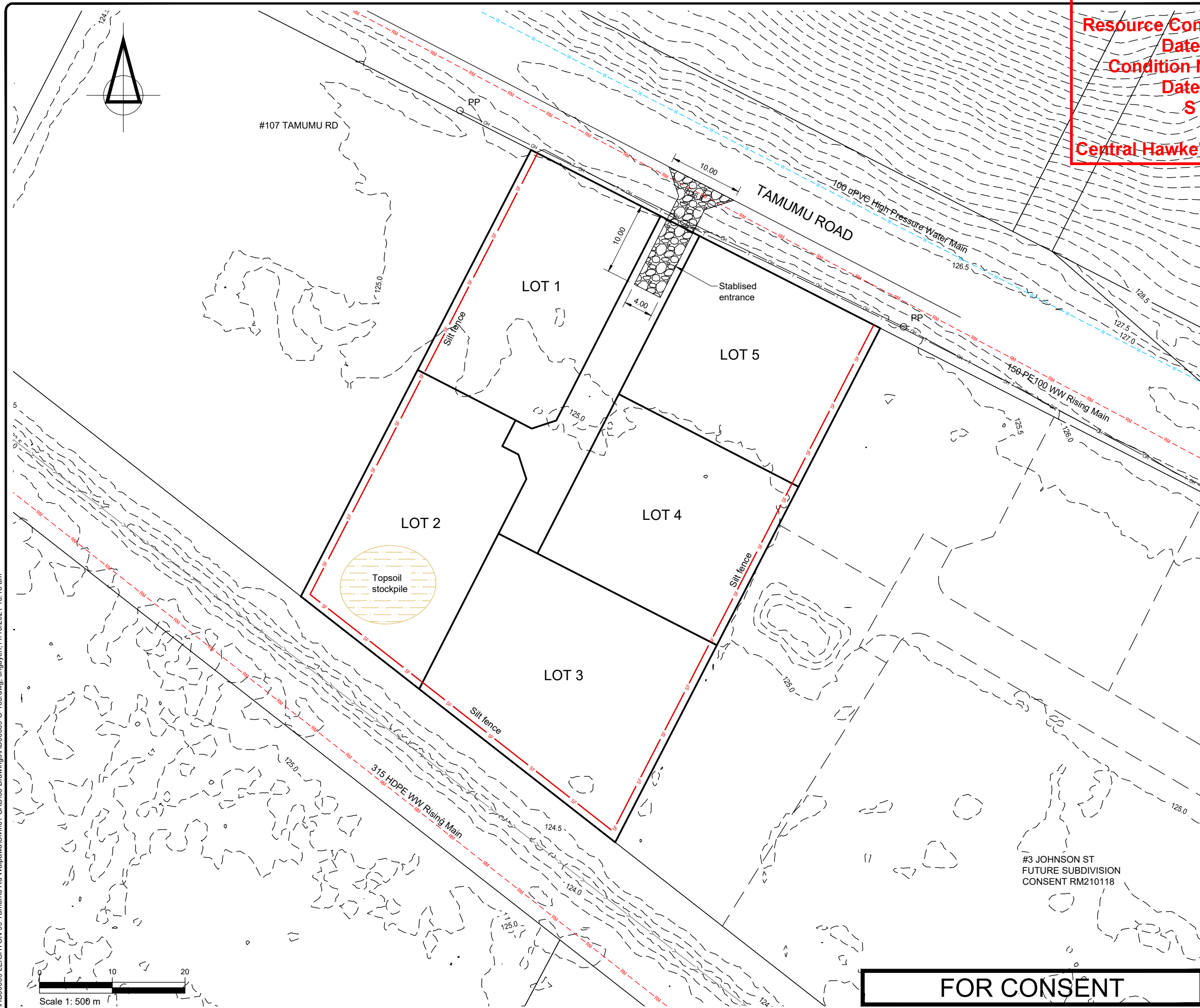


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SCALE 1:500 (A3)

DRAWING No	REVISION
HB00059-C-103	-



FOR CONSENT

A cross-sectional diagram of a road structure. At the bottom is a hatched layer labeled 'Geotextile'. Above it is a layer of aggregate material, represented by circles of varying sizes. An arrow points to this aggregate layer with the text '150mm minimum thickness or 1.5x aggregate size'. To the right of the aggregate layer is a sloped surface labeled 'Carriageway'.

The diagram illustrates a T-junction pavement layout with the following dimensions and materials:

- 10m minimum:** The length of the rectangular section of the junction.
- 3m minimum:** The width of the rectangular section and the width of the triangular section.
- 4m minimum:** The width of the rectangular section of the main road.
- Aggregate (100-150mm washed):** The material used for the rectangular section of the junction.
- Carriageway:** The main road surface.

Figure 1 illustrates the details of trench geotextile installation. The diagram shows a cross-section of a trench with a geotextile layer. Key components and dimensions are labeled:

- Geotextile fixed firmly to post/waratah:** The geotextile is secured to a vertical post or waratah.
- Flow:** Indicated by an arrow, showing the direction of water flow.
- Compacted backfill:** The material filling the trench above the geotextile.
- Trench geotextile 200 mm minimum into ground:** The geotextile is embedded into the ground by at least 200 mm.
- 400 mm minimum height of geotextile:** The geotextile extends at least 400 mm above the backfill.
- 400 mm minimum post depth:** The post or waratah is driven at least 400 mm into the ground.
- Overlap wooden battens:** The geotextile is overlapped with wooden battens.
- Staple:** Used to secure the geotextile to the wooden battens.
- Staple Section:** A detailed view of the staple securing the geotextile.
- Section A:** A cross-section of the installation.

Standard Fabric Joint

required returns a... of 2 metres in... to reduce velocity... the silt fence and... intermediate... ment

Ends of returned... wired back to stake or waratah

Provide leakproof joint at the junction of the return and main silt fence alignment

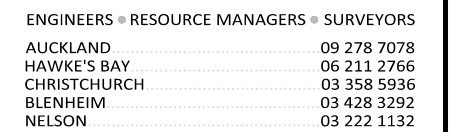
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CLIENT	DUNCAN LEIGHTON
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PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE
EROSION AND SEDIMENT CONTROL DETAILS



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SCALE NTS (A3)

DRAWING No	REVISION
HB00059-C-104	-

FOR CONSENT

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S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
19/12/2024	19/12/2024	19/12/2024	19/12/2024
REVISION	CHANGES	CHECKED	DATE
1	SHORTENED WW LINE A	SN	26/03/24

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

PROPOSED
RIGHT OF WAY



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AUCKLAND 09 278 7078
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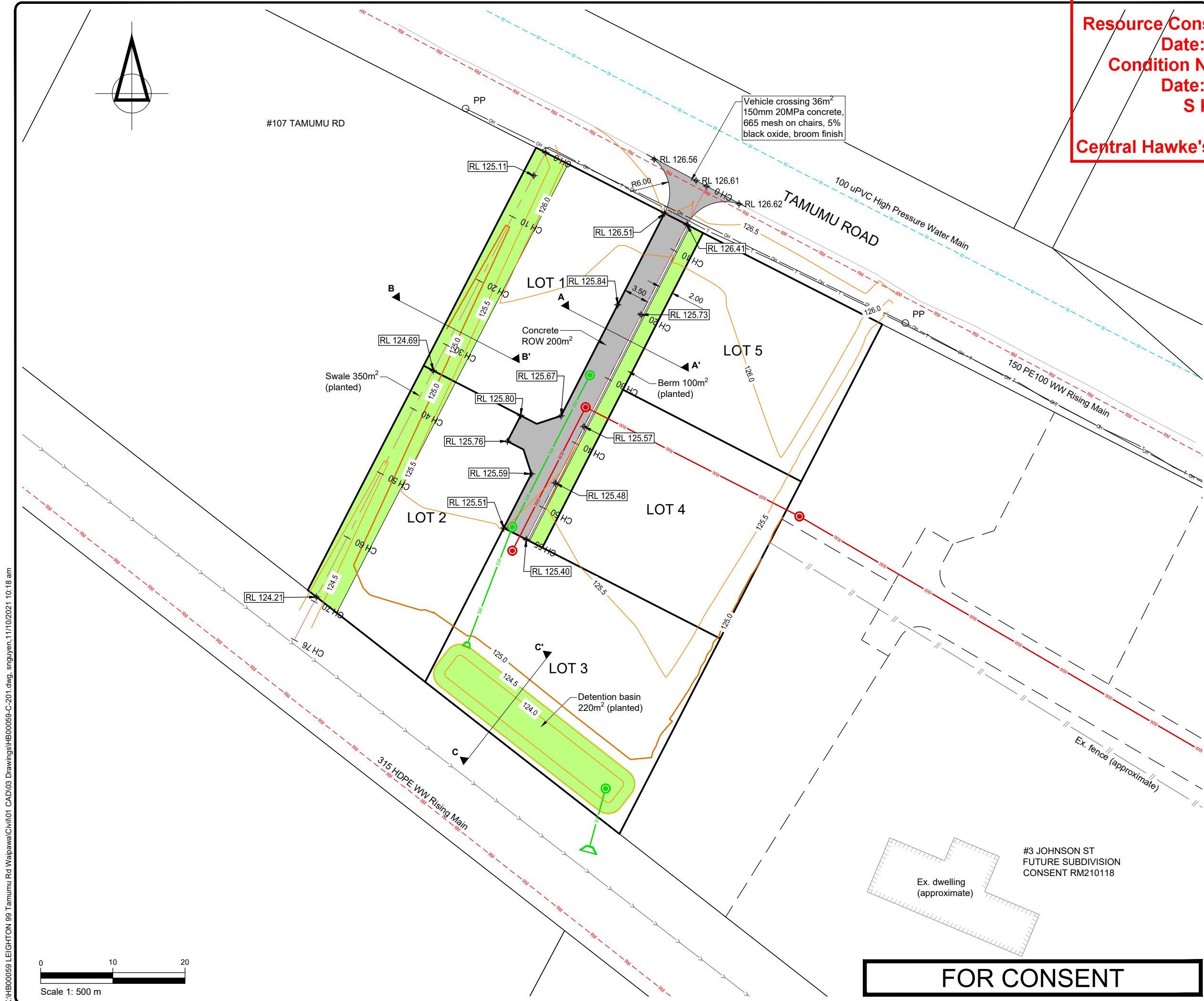
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SCALE 1:500 (A3)

DRAWING No HB00059-C-201 REVISION A



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Scale 1: 500 m

FOR CONSENT

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	DATE	APPROVED	DATE
	RM	19/12/2024		
REVISION	CHANGES	CHECKED	DATE	

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

PROPOSED
RIGHT OF WAY AND SWALE
LONGSECTIONS

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ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND 09 278 7078

HAWKE'S BAY 06 211 2766

CHRISTCHURCH 03 358 5936

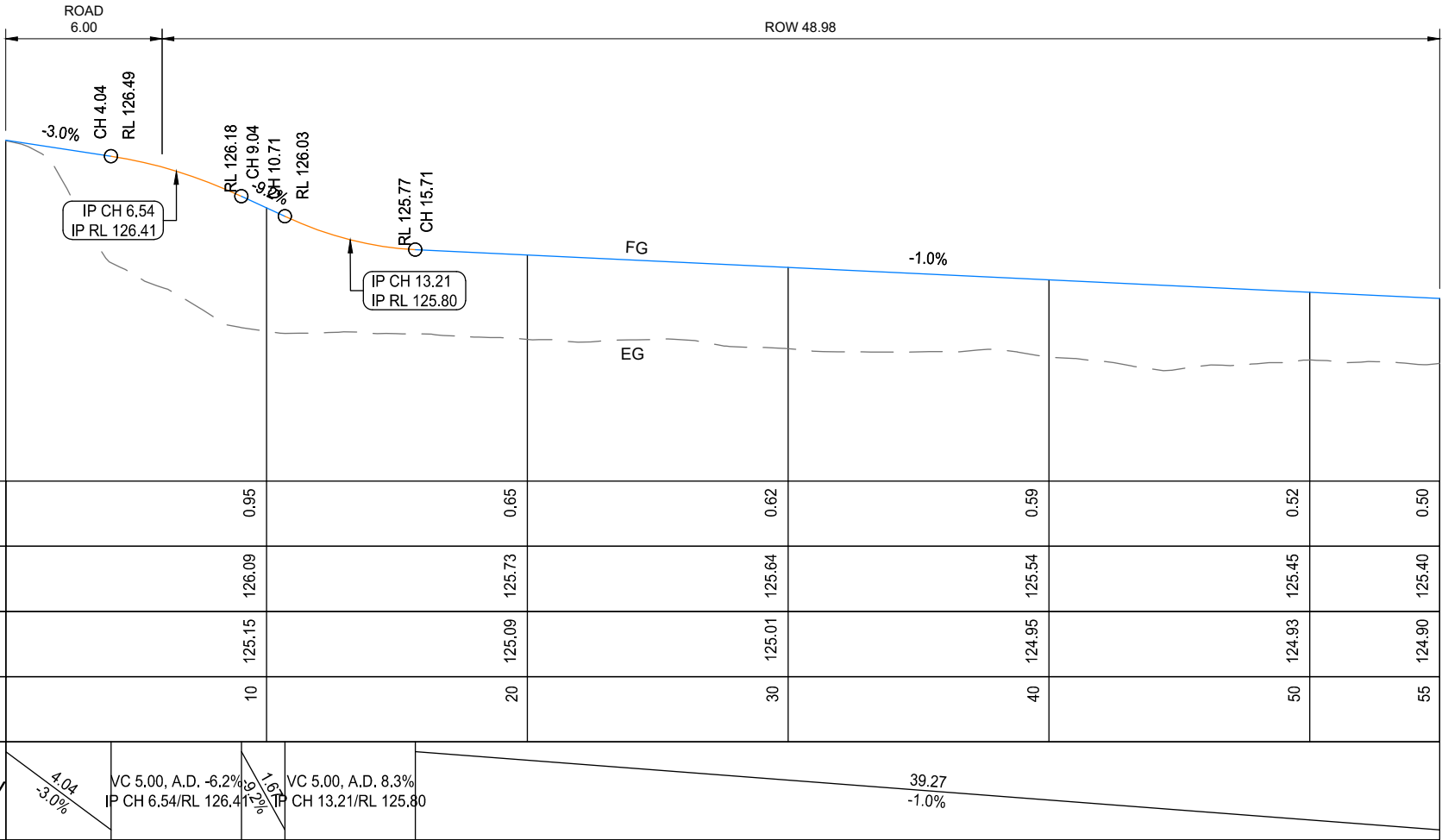
BLenheim 03 428 3292

NELSON 03 222 1132

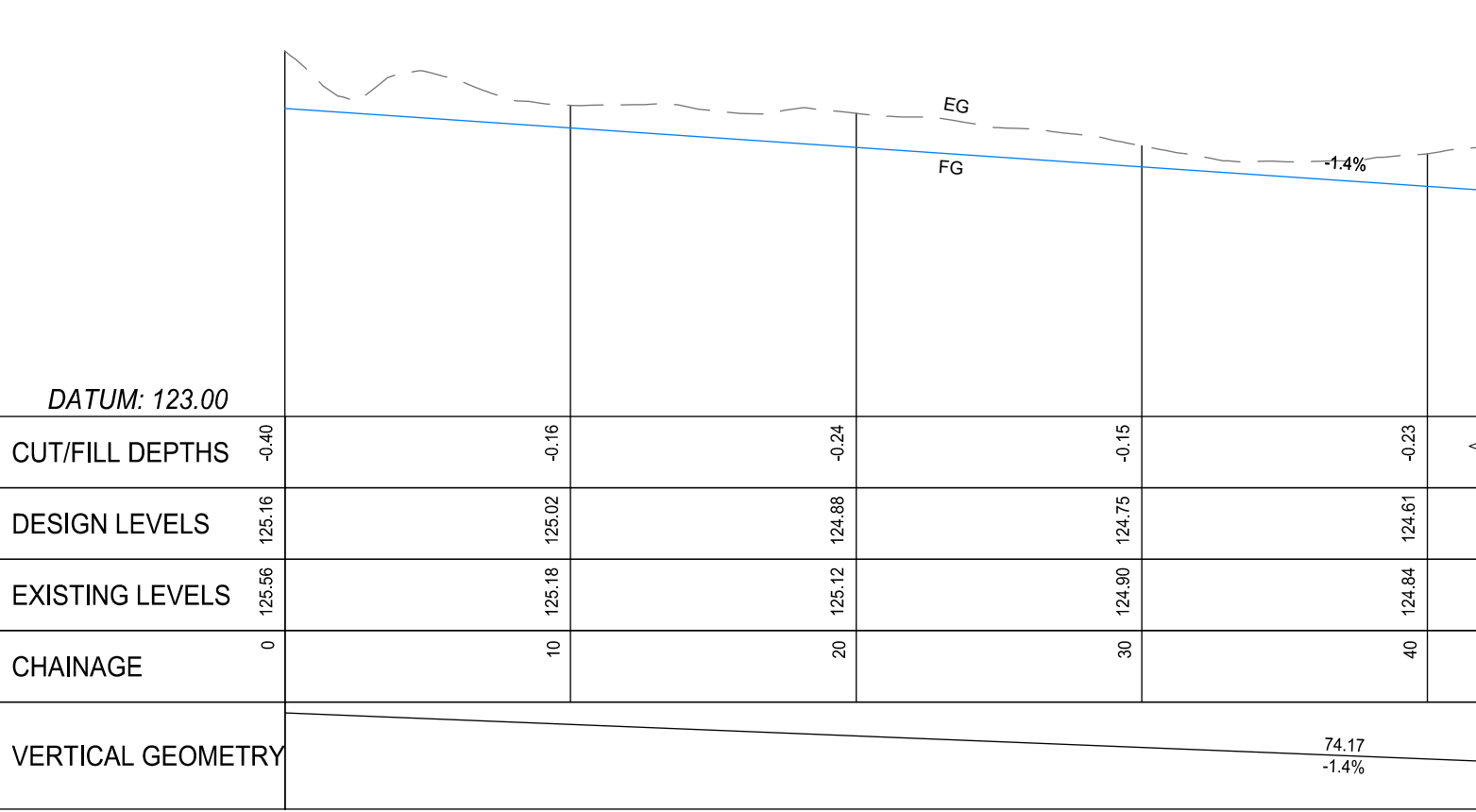
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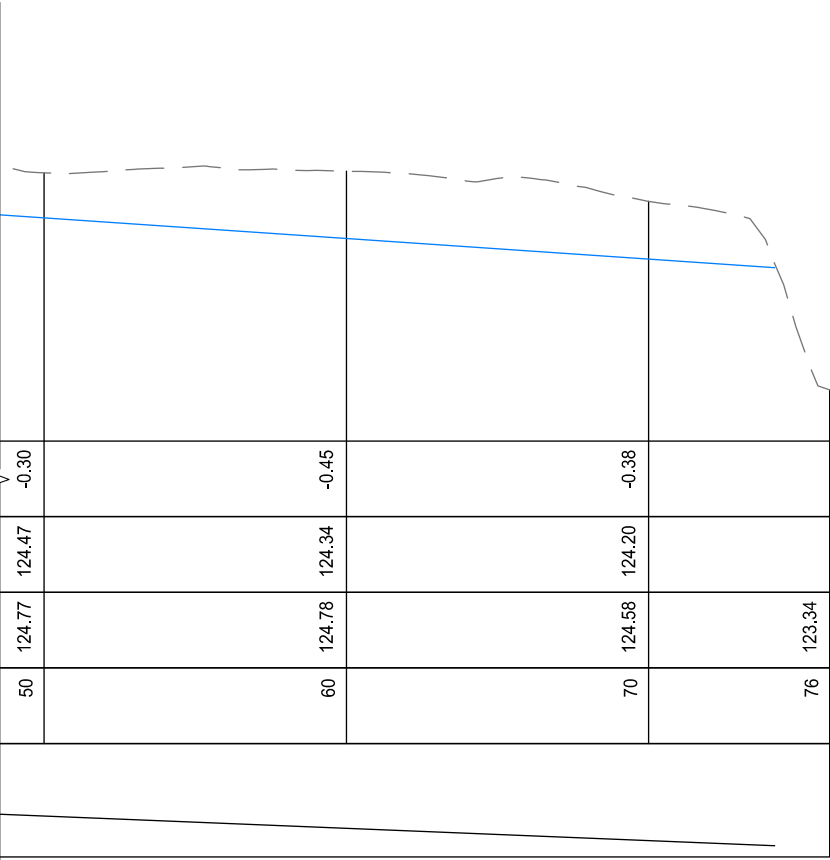
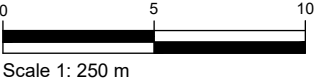
STATUS	EPA
Construction shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.	
SCALE	AS SHOWN (A3)
DRAWING No	REVISION
HB00059-C-202	-



PROPOSED ROW LONSECTION
1:250H, 1:50V



PROPOSED SWALE LONSECTION
1:250H, 1:50V



FOR CONSENT

DESIGNED BY: SN		30/07/2024	
Resource Consent No: RM240082A Date: 19/12/2024			
CHECKED BY:			
REVISION		CHANGES	
		CHE	
Condition No: Condition 4 - 5 Date: 19/12/2024 S Kingston			

NOTES

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PROJECT

99 TAMUMU ROAD
WAIPAWA

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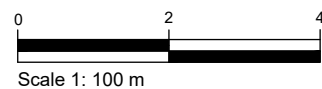
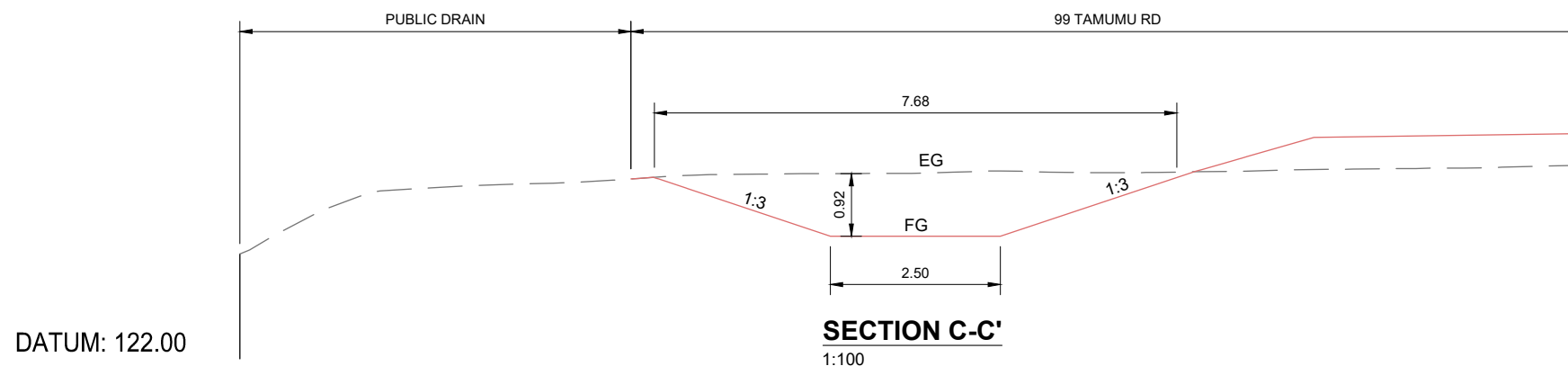
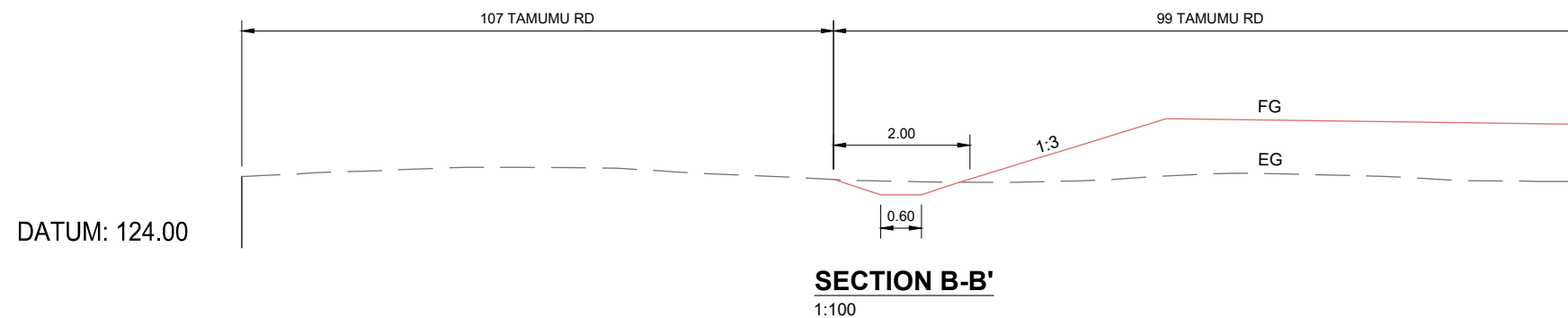
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STATUS	EPA Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.
SCALE	AS SHOWN (A3)
DRAWING No	REVISION
HB00059-C-203	-



FOR CONSENT

APPROVED FOR CONDITION

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S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
19/12/2024	19/12/2024	19/12/2024	19/12/2024
REVISION	CHANGES	CHECKED	DATE
1	SHORING WW LINE A FLAP VALVE ON WINGWALL 1-1	SN	26/03/24

- NOTES
- All work and materials are to be in accordance with the CHBDC Engineering Standards and NZS4404:2010.
 - The Contractor is to locate and protect all existing services including Power, telecom and Gas before commencing works. See the respective services authorities for assistance.
 - Works are to comply with the Health and Safety plan submitted to the Engineer by the Contractor. For any excavation greater than 1.5m deep, the Contractor shall notify WorkSafe NZ. The Contractor has full responsibility and liability for Health and Safety on the site.
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 - Any discrepancy between the details shown on this drawing and conditions on site are to be notified to the Engineer immediately.
 - Level datum is NZVD2016, and coordinate datum is Hawkes Bay 2000.

CLIENT
DUNCAN LEIGHTON

PROJECT
99 TAMUMU ROAD
WAIPAWA

TITLE
PROPOSED SERVICES
SHEET 1 OF 2



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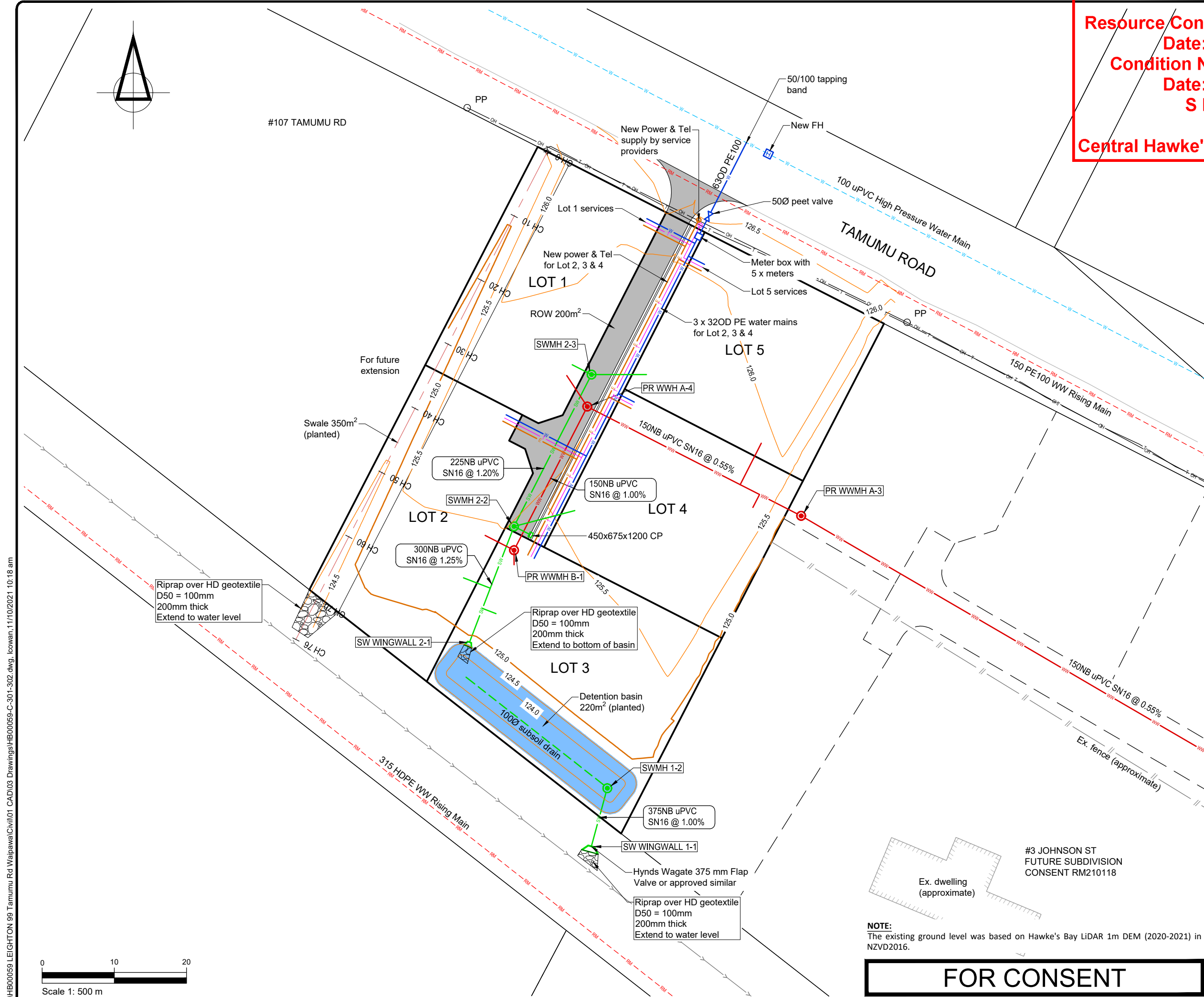
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SCALE 1:500 (A3)

DRAWING No HB00059-C-301 REVISION

A

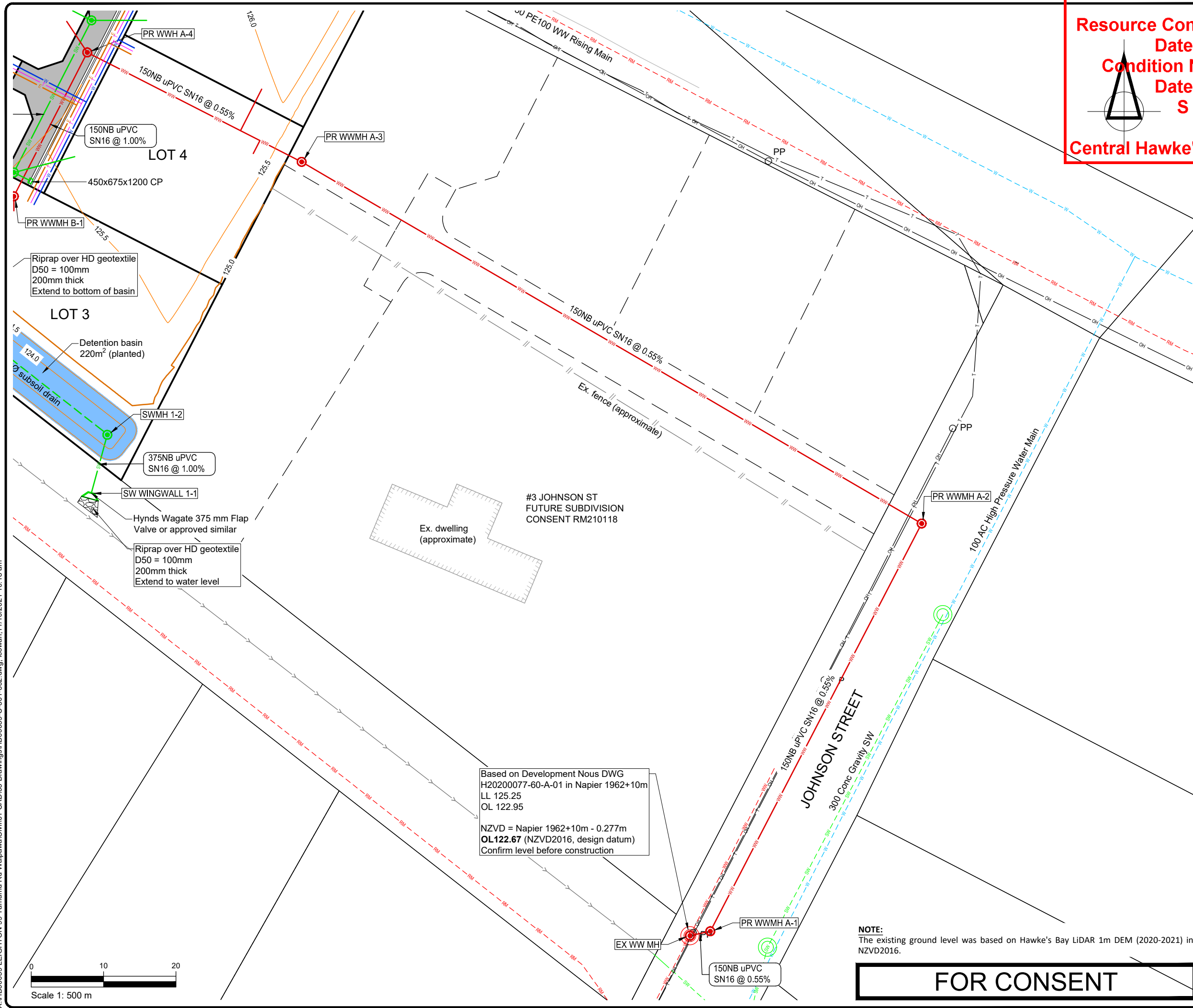


NOTE:
The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

FOR CONSENT

X:\HB00059 LEIGHTON 99 Tamumu Rd Waipawa\Civil\01 CAD\03 Drawings\HB00059-C-301-302.dwg, I:\01\10\2021 10:18 am

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APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
11/10/2021	11/10/2021	11/10/2021	11/10/2021
REVISION	CHANGES	CHECKED	DATE
1	150NB uPVC SN16 @ 0.55%	SN	26/03/24
2	150NB uPVC SN16 @ 1.00%	SN	26/03/24
3	375NB uPVC SN16 @ 1.00%	SN	26/03/24
4	SW WINGWALL 1-1	SN	26/03/24
5	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
6	Riprap over HD geotextile	SN	26/03/24
7	Detention basin	SN	26/03/24
8	subsoil drain	SN	26/03/24
9	SWMH 1-2	SN	26/03/24
10	375NB uPVC SN16 @ 1.00%	SN	26/03/24
11	SW WINGWALL 1-1	SN	26/03/24
12	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
13	Riprap over HD geotextile	SN	26/03/24
14	Detention basin	SN	26/03/24
15	subsoil drain	SN	26/03/24
16	SWMH 1-2	SN	26/03/24
17	375NB uPVC SN16 @ 1.00%	SN	26/03/24
18	SW WINGWALL 1-1	SN	26/03/24
19	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
20	Riprap over HD geotextile	SN	26/03/24
21	Detention basin	SN	26/03/24
22	subsoil drain	SN	26/03/24
23	SWMH 1-2	SN	26/03/24
24	375NB uPVC SN16 @ 1.00%	SN	26/03/24
25	SW WINGWALL 1-1	SN	26/03/24
26	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
27	Riprap over HD geotextile	SN	26/03/24
28	Detention basin	SN	26/03/24
29	subsoil drain	SN	26/03/24
30	SWMH 1-2	SN	26/03/24
31	375NB uPVC SN16 @ 1.00%	SN	26/03/24
32	SW WINGWALL 1-1	SN	26/03/24
33	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
34	Riprap over HD geotextile	SN	26/03/24
35	Detention basin	SN	26/03/24
36	subsoil drain	SN	26/03/24
37	SWMH 1-2	SN	26/03/24
38	375NB uPVC SN16 @ 1.00%	SN	26/03/24
39	SW WINGWALL 1-1	SN	26/03/24
40	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
41	Riprap over HD geotextile	SN	26/03/24
42	Detention basin	SN	26/03/24
43	subsoil drain	SN	26/03/24
44	SWMH 1-2	SN	26/03/24
45	375NB uPVC SN16 @ 1.00%	SN	26/03/24
46	SW WINGWALL 1-1	SN	26/03/24
47	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
48	Riprap over HD geotextile	SN	26/03/24
49	Detention basin	SN	26/03/24
50	subsoil drain	SN	26/03/24
51	SWMH 1-2	SN	26/03/24
52	375NB uPVC SN16 @ 1.00%	SN	26/03/24
53	SW WINGWALL 1-1	SN	26/03/24
54	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
55	Riprap over HD geotextile	SN	26/03/24
56	Detention basin	SN	26/03/24
57	subsoil drain	SN	26/03/24
58	SWMH 1-2	SN	26/03/24
59	375NB uPVC SN16 @ 1.00%	SN	26/03/24
60	SW WINGWALL 1-1	SN	26/03/24
61	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
62	Riprap over HD geotextile	SN	26/03/24
63	Detention basin	SN	26/03/24
64	subsoil drain	SN	26/03/24
65	SWMH 1-2	SN	26/03/24
66	375NB uPVC SN16 @ 1.00%	SN	26/03/24
67	SW WINGWALL 1-1	SN	26/03/24
68	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
69	Riprap over HD geotextile	SN	26/03/24
70	Detention basin	SN	26/03/24
71	subsoil drain	SN	26/03/24
72	SWMH 1-2	SN	26/03/24
73	375NB uPVC SN16 @ 1.00%	SN	26/03/24
74	SW WINGWALL 1-1	SN	26/03/24
75	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
76	Riprap over HD geotextile	SN	26/03/24
77	Detention basin	SN	26/03/24
78	subsoil drain	SN	26/03/24
79	SWMH 1-2	SN	26/03/24
80	375NB uPVC SN16 @ 1.00%	SN	26/03/24
81	SW WINGWALL 1-1	SN	26/03/24
82	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
83	Riprap over HD geotextile	SN	26/03/24
84	Detention basin	SN	26/03/24
85	subsoil drain	SN	26/03/24
86	SWMH 1-2	SN	26/03/24
87	375NB uPVC SN16 @ 1.00%	SN	26/03/24
88	SW WINGWALL 1-1	SN	26/03/24
89	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
90	Riprap over HD geotextile	SN	26/03/24
91	Detention basin	SN	26/03/24
92	subsoil drain	SN	26/03/24
93	SWMH 1-2	SN	26/03/24
94	375NB uPVC SN16 @ 1.00%	SN	26/03/24
95	SW WINGWALL 1-1	SN	26/03/24
96	Hynds Wagate 375 mm Flap Valve	SN	26/03/24
97	Riprap over HD geotextile	SN	26/03/24
98	Detention basin	SN	26/03/24
99	subsoil drain	SN	26/03/24
100	SWMH 1-2	SN	26/03/24

- NOTES
- All work and materials are to be in accordance with the CHBDC Engineering Standards and NZS4404:2010.
 - The Contractor is to locate and protect all existing services including Power, telecom and Gas before commencing works. See the respective services authorities for assistance.
 - Works are to comply with the Health and Safety plan submitted to the Engineer by the Contractor. For any excavation greater than 1.5m deep, the Contractor shall notify WorkSafe NZ. The Contractor has full responsibility and liability for Health and Safety on the site.
 - All work on the existing public water main and vehicle crossing is to be performed by an approved contractor.
 - Inspections are required of all pipe connections and bedding when placed prior to backfilling & all manholes when finished. The Contractor shall give 24 hours notice prior to requiring an inspection.
 - Any discrepancy between the details shown on this drawing and conditions on site are to be notified to the Engineer immediately.
 - Level datum is NZVD2016, and coordinate datum is Hawkes Bay 2000.

CLIENT
DUNCAN LEIGHTON

PROJECT
99 TAMUMU ROAD
WAIPAWA

TITLE
PROPOSED SERVICES
SHEET 2 OF 2



Fraser Thomas

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND	09 278 7078
HAWKE'S BAY	06 211 2766
CHRISTCHURCH	03 358 5936
BLenheim	03 428 3292
NELSON	03 222 1132

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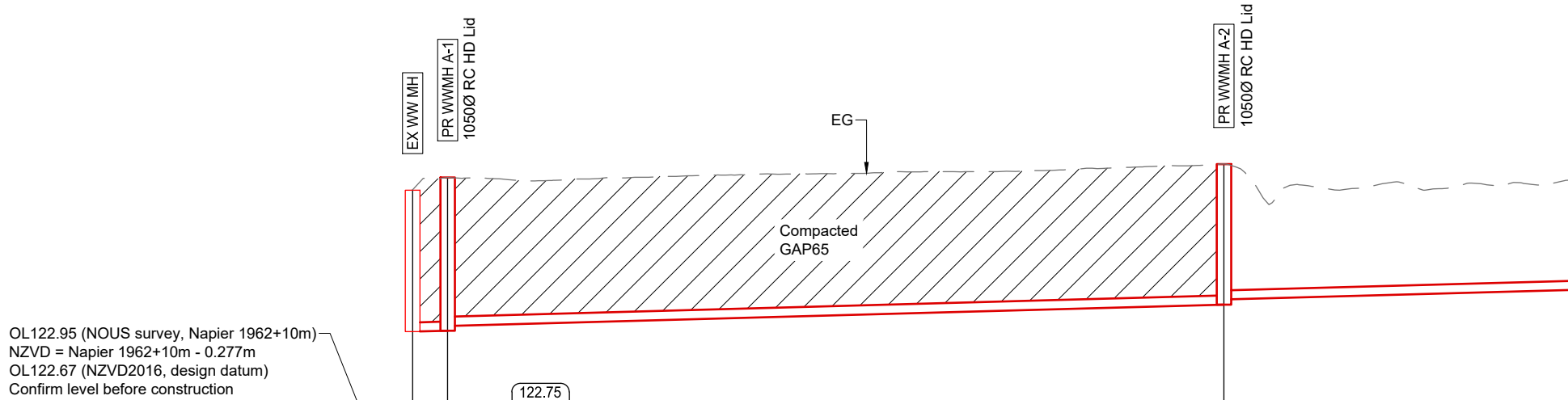
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STATUS	EPA
Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.	
SCALE	1:500 (A3)
DRAWING No	HB00059-C-302
REVISION	A

NOTE:
The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

FOR CONSENT

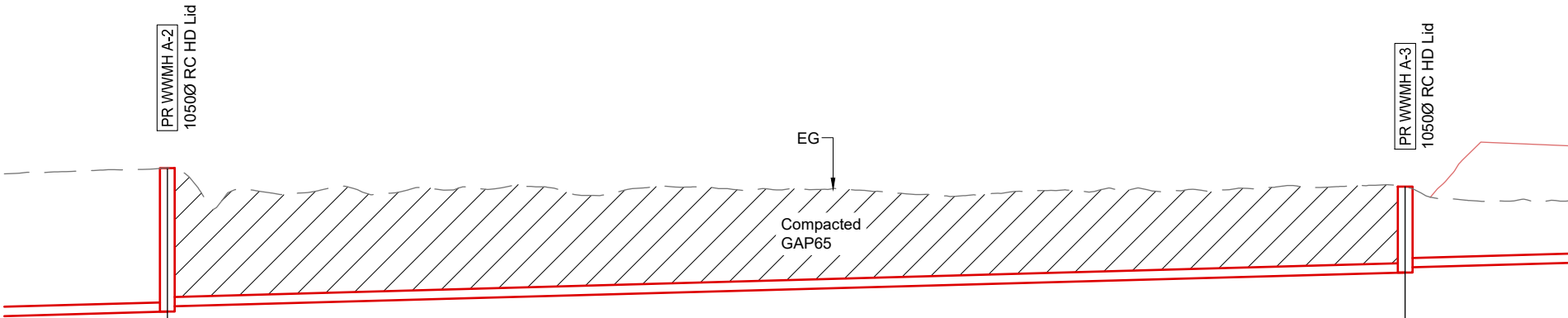
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OL122.95 (NOUS survey, Napier 1962+10m)
NZVD = Napier 1962+10m - 0.277m
OL122.67 (NZVD2016, design datum)
Confirm level before construction

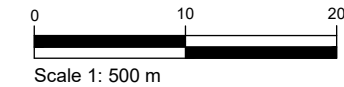
LID LEVEL	125.07	125.27	125.49	
INVERT LEVEL		122.84	123.27	123.82
DEPTH TO INVERT	2.32	2.51		
PIPE SIZE & GRADIENT	150NB uPVC SN16 @ 0.55%		150NB uPVC SN16 @ 0.55%	
LENGTH	2.87 m		63.49 m	

PROPOSED WASTEWATER LINE A
1:500H, 1:100V



LID LEVEL		125.49		
INVERT LEVEL	122.84	123.27	123.82	124.08
DEPTH TO INVERT		2.30	1.37	
PIPE SIZE & GRADIENT	150NB uPVC SN16 @ 0.55%		150NB uPVC SN16 @ 0.55%	
LENGTH	63.49 m		99.20 m	

PROPOSED WASTEWATER LINE A CONTINUE
1:500H, 1:100V



NOTE:
The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

FOR CONSENT

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
19/12/2024	19/12/2024		
REVISION	CHANGES	CHECKED	DATE

- NOTES
- All work and materials are to be in accordance with the CHBDC Engineering Standards and NZS4404:2010.
 - The Contractor is to locate and protect all existing services including Power, telecom and Gas before commencing works. See the respective services authorities for assistance.
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 - Any discrepancy between the details shown on this drawing and conditions on site are to be notified to the Engineer immediately.
 - Level datum is NZVD2016, and coordinate datum is Hawkes Bay 2000.

CLIENT
DUNCAN LEIGHTON

PROJECT
99 TAMUMU ROAD
WAIPAWA

TITLE
PROPOSED STORMWATER AND
WASTEWATER LONGSECTIONS
SHEET 1 OF 3



Fraser

Thomas

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND.....09 278 7078

HAWKE'S BAY.....06 211 2766

CHRISTCHURCH.....03 358 5936

BLenheim.....03 428 3292

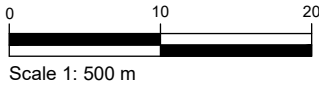
NELSON.....03 222 1132

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STATUS EPA Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.	
SCALE AS SHOWN	(A3)
DRAWING No HB00059-C-303	REVISION -

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DATUM: 121.00			
LID LEVEL		125.19	125.62
INVERT LEVEL	123.27	123.82	123.90
DEPTH TO INVERT		1.37	1.54
PIPE SIZE & GRADIENT	150NB uPVC SN16		150NB uPVC SN16
	@ 0.55%		@ 0.55%
LENGTH	99.20 m	33.27 m	

PROPOSED WASTEWATER LINE A CONTINUE
1:500H, 1:100V

DATUM: 122.00			
LID LEVEL	125.62		125.40
INVERT LEVEL	124.16		124.38
DEPTH TO INVERT	1.54		1.02
PIPE SIZE & GRADIENT	150NB uPVC SN16		
	@ 1.00%		
LENGTH	22.33 m		

PROPOSED WASTEWATER LINE B
1:500H, 1:100V

NOTE:
The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

FOR CONSENT

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
26/03/24	26/03/24		
REVISION	CHANGES	CHECKED	DATE
1	SHORTEN WW LINE A	SN	26/03/24

- NOTES
- All work and materials are to be in accordance with the CHBDC Engineering Standards and NZS4404:2010.
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 - Any discrepancy between the details shown on this drawing and conditions on site are to be notified to the Engineer immediately.
 - Level datum is NZVD2016, and coordinate datum is Hawkes Bay 2000.

CLIENT
DUNCAN LEIGHTON

PROJECT
99 TAMUMU ROAD
WAIPAWA

TITLE
PROPOSED STORMWATER AND
WASTEWATER LONGSECTIONS
SHEET 2 OF 3



Fraser

Thomas

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND.....09 278 7078

HAWKE'S BAY.....06 211 2766

CHRISTCHURCH.....03 358 5936

BLenheim.....03 428 3292

NELSON.....03 222 1132

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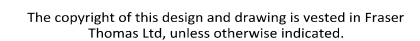
STATUS EPA	
Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.	
SCALE AS SHOWN	(A3)
DRAWING No HB00059-C-304	REVISION A

- CLIENT

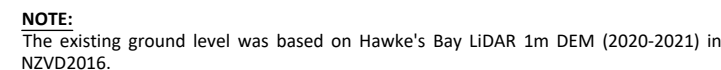
DUNCAN LEIGHTON

- PROJECT
- 99 TAMUMU ROAD
WAIPAWA

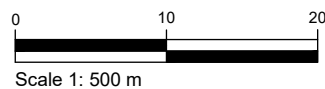
- TITLE
- PROPOSED STORMWATER AND
WASTEWATER LONGSECTIONS
SHEET 3 OF 3



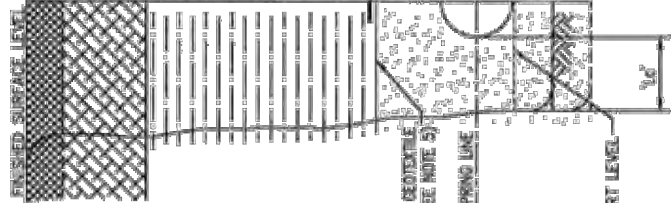
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|--|----------|
| STATUS | |
| EPA | |
| Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated. | |
| SCALE | (A3) |
| AS SHOWN | |
| DRAWING No | REVISION |
| HB00059-C-305 | A |



FOR CONSENT

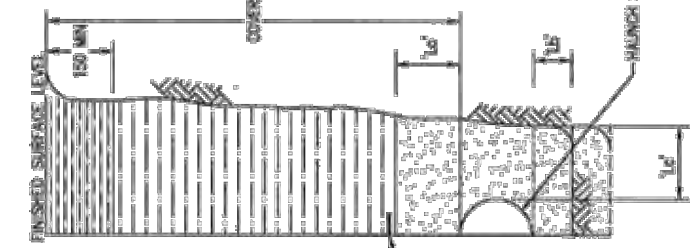


MATERIAL		ZONE
ROAD SURFACE	NON ROAD SURFACES	
ROAD SURFACE LAYER	TO MATCH EXISTING ROAD BASE OR TO TERRITORIAL AUTHORITY REQUIREMENTS	SURFACE COURSE
TRENCH FILL MATERIALS TO BE SIMILAR WITH SPECIFIED APPROPRIATE OR TERRITORIAL AUTHORITY REQUIREMENTS	OR INORGANIC FILL MATERIAL WITH 75 MAXIMUM STONE SIZE	ROAD BASE
TRENCH FILL (AS SPECIFIED IN DESIGN DRAWINGS)		
EMBEDMENT MATERIALS IN ACCORDANCE WITH DESIGN DRAWINGS AND TERRITORIAL AUTHORITY (SEE NOTE 4)		OVERLAY
BEDDING MAY BE OMITTED IF TRENCH BASE IS GRANULAR SAND OR GRAVEL OF SUITABLE GRADING.		SIDE SUPPORT
		BEDDING
		OVER-EXCAVATION



VEHICULAR LOADING

- NOTE -
1. ALL DIMENSIONS IN MILLIMETRES.
 2. SPECIFY SPECIAL BEDDING TO SUIT THE CONDITIONS IF THE TRENCH FLOOR HAS - IRREGULAR OUTCROPS OF ROCK OR - BEEN DISTURBED BY UNCONTROLLED GROUND WATER.
 3. COMPACT AND EVENLY GRADE FINISHED TRENCH FLOOR.
 4. EMBEDMENT, TRENCH FILL AND COMPACTED TO MEET THE REQUIREMENT OF DESIGN DRAWINGS OR SPECIFICATIONS.
 5. USE GEOTEXTILE FILTER FABRIC WHERE SPECIFIED.
 6. SIDES OF EXCAVATION TO BE KEPT VERTICAL TO AT LEAST 150 ABOVE THE PIPE.



SPRING LINE TRENCH CLEARANCE

NOMINAL DIAMETER DN	MINIMUM CLEARANCE 'Ld'
<150	100
>150-≤300	150
>300-≤450	200
>450-≤600	300
>600-≤1500	350

TRENCH WIDTH TO BE SUFFICIENT TO SAFELY LAY PIPE AND COMPACT THE SIDE SUPPORT ZONE.

ZONE	MATERIAL
TRENCH FILL	INORGANIC FILL MATERIAL WITH 75 MAXIMUM STONE SIZE
OVERLAY	EMBEDMENT MATERIAL IN ACCORDANCE WITH DESIGN DRAWINGS AND TERRITORIAL AUTHORITY (SEE NOTE 4)
SIDE SUPPORT	BEDDING MAY BE OMITTED IF TRENCH BASE IS GRANULAR SAND OR GRAVEL OF SUITABLE GRADING.
BEDDING	
OVER-EXCAVATION	

NO VEHICULAR LOADING

INCLUDES LOCATIONS WHERE OCCASIONAL VEHICLE LOADING OCCURS SUCH AS RESERVES AND FOOTPATHS



PROVIDE POCKETS IN BEDDING, AT JOINTS PRIOR TO LAYING PIPES. FILL VOID DURING COMPLETION OF EMBEDMENT.

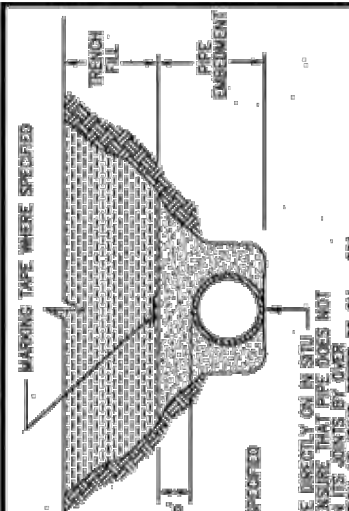
PIPE JOINT BEDDING POCKETS

FOR JOINT PROJECTIONS (SOCKETS, FLANGES AND SO ON)



STANDARDS
NEW ZEALAND
ORIGINAL SOURCE DRAWINGS:
WATER SERVICES ASSOCIATION OF AUSTRALIA

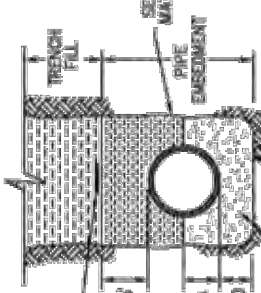
NZS 4404:2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE	NOT TO SCALE
EMBEDMENT & TRENCH FILL TYPICAL ARRANGEMENT	CM - 001



TRENCH IN SAND STRATA

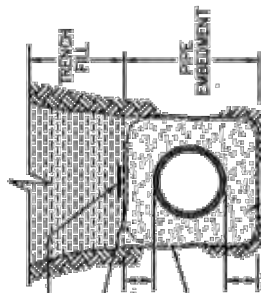
NOTE -

1. ALL DIMENSIONS IN MILLIMETRES.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH CM - 001.
3. PIPE CLASSIFICATION:
(a) RIGID PIPES: VC, RC, STEEL AND DI
(b) FLEXIBLE PIPES: PVC, URP, AND PE
4. PLACEMENT OF EMBEDMENT, TRENCH FILL & COMPACTED TO MEET THE REQUIREMENTS OF DRAWINGS AND SPECIFICATIONS.
5. EXCAVATE OR COMPACT TRENCH FLOOR TO SUPPORT BEDDING MATERIAL AND PROVIDE FIRM, EVEN SETTLEMENT.
6. WHEN EXCAVATED, REPLACE WITH GRANULAR MATERIAL AS SPECIFIED FOR BEDDING OR ADAPT TYPE 1, 2, 3 OR 4 SUPPORT AS REQUIRED.
7. ENSURE BEDDING IS DEEP ENOUGH THAT PIPE JOINT PROJECTIONS (SOCKETS, FLANGES) DO NOT TOUCH TRENCH FLOOR - SEE CM - 001.
8. GEOTEXTILE OVERLAY IS REQUIRED FOR COARSE AGGREGATE (SANDS & CLAYS) ARE ENLIGHTENED ADJACENT TO THE EMBEDMENT ZONE AND SINGLE SIZE AGGREGATE IS USED.
9. IN SOME AREAS LOCAL PRACTICE MAY ALLOW USE OF EXCAVATED MATERIAL AS PIPE EMBEDMENT.
10. IN UNSUITABLE GROUND CONDITIONS SPECIFIC DESIGN IS REQUIRED REFER TO MSA 03 & MSA 04 DRAWINGS FOR GUIDANCE.
11. CONCRETE PIPES SHOULD BE BASED ON FIGURES 11 TO 13 IN NZS 0125.



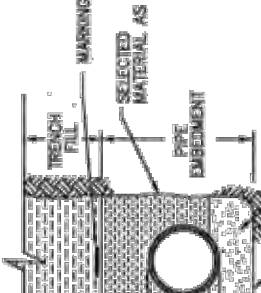
TYPE 2 SUPPORT

FOR RIGID PIPES ONLY (SEE NOTE 3)
(SEE NOTE 9)



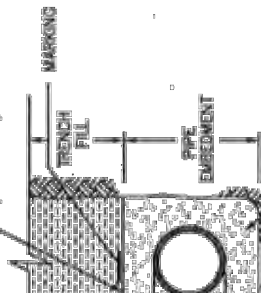
TYPE 4 SUPPORT

WITH GEOTEXTILE
FOR FLEXIBLE & RIGID PIPES
(SEE NOTE 3)



TYPE 1 SUPPORT

(SEE NOTE 9)



TYPE 3 SUPPORT

FOR FLEXIBLE & RIGID PIPES (SEE NOTE 3)

EMBEDMENT TYPES TO BE SPECIFIED
IN DESIGN DRAWINGS



STANDARDS
NEW ZEALAND
ORIGINAL SOURCE DRAWINGS:
WATER SERVICES ASSOCIATION OF AUSTRALIA

NZS 4404:2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE	NOT TO SCALE
STANDARD EMBEDMENT FLEXIBLE & RIGID PIPES	CM - 002

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

DESIGNED BY	DATE	APPROVED	DATE
DESIGNED BY	DATE	APPROVED	DATE
REVISION	CHANGES	CHECKED	DATE

NOTES
The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT
DUNCAN LEIGHTON

PROJECT
99 TAMUMU ROAD
WAIPAWA

TITLE
STANDARD DETAILS
SHEET 1 OF 10



ENGINEERS • RESOURCE MANAGERS • SURVEYORS
AUCKLAND 09 278 7078
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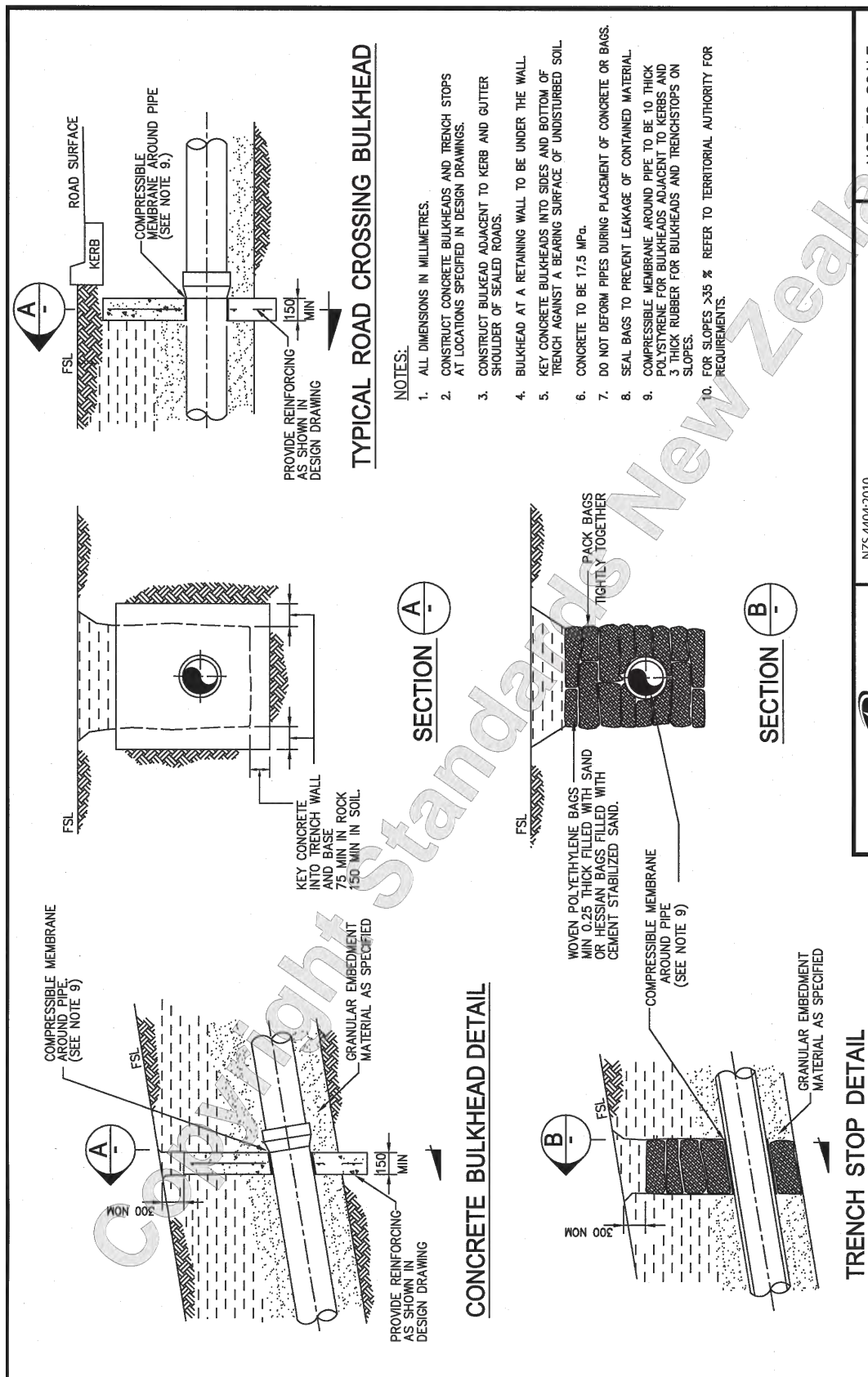
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STATUS
EPA
Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.

SCALE
AS SHOWN (A3)

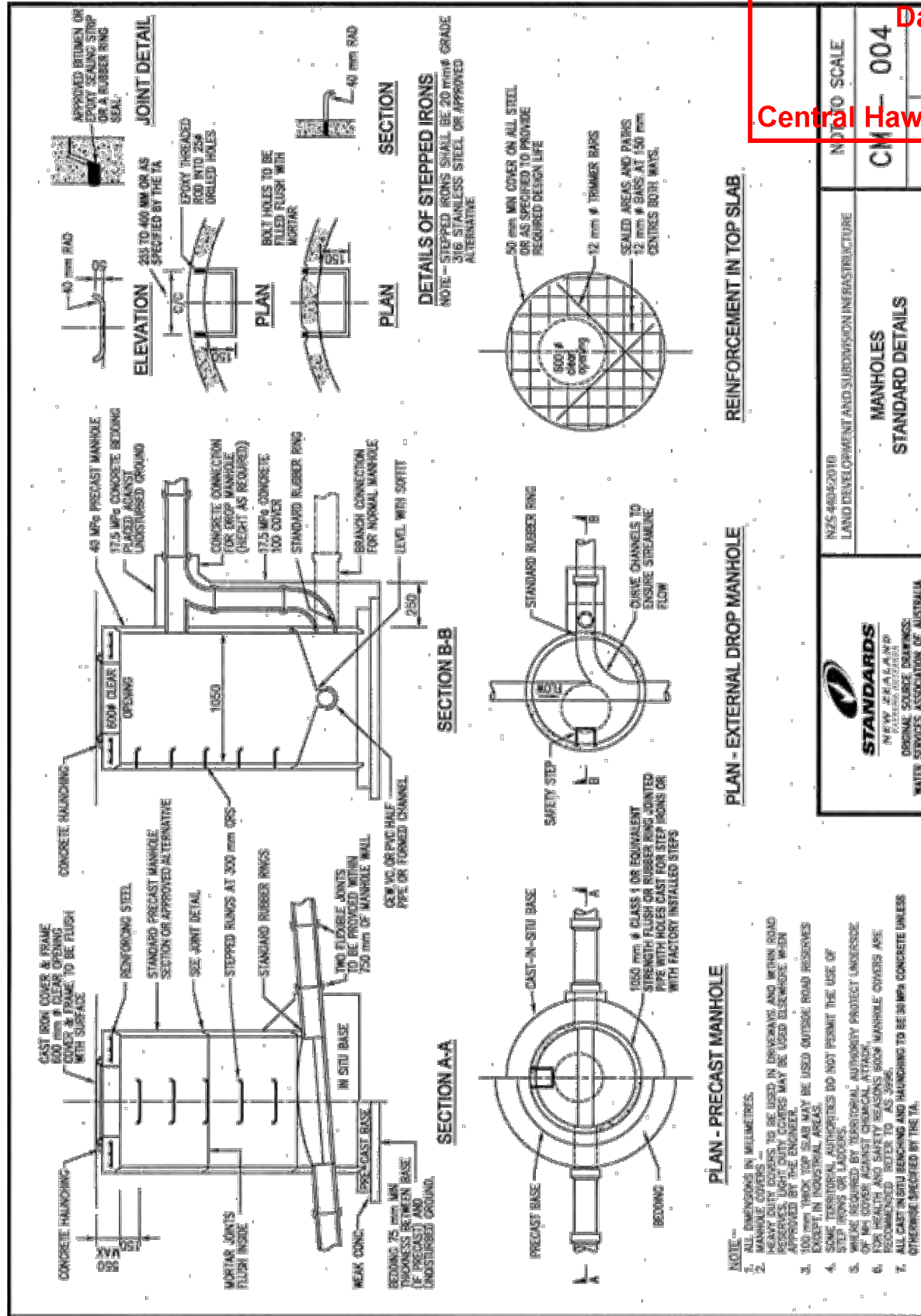
DRAWING No
HB00059-C-401

FOR CONSENT



 STANDARDS NEW ZEALAND STANDARDS NEW ZEALAND PAPERMA 4074 04/04	NZS 4404:2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE	NOT TO SCALE
	BULKHEADS & TRENCHSTOP STANDARD DETAILS	CM - 003

ORIGINAL SOURCE DRAWINGS:
 WATER SERVICES ASSOCIATION OF AUSTRALIA



FOR CONSENT

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED		DESIGNED BY		APPROVED		DATE	
DRAWN		31/01/2024					
Project No: RMZ10082A 19/12/2024							
CONTRACT		CHANGES				CHECKED	
REVISION						DATE	
to: Condition 4 - 5 19/12/2024 Kingston Bay District Council							

The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

DUNCAN LEIGHTON

99 TAMUMU ROAD
WAIPAWA

STANDARD DETAILS
SHEET 2 OF 10



ENGINEERS	RESOURCE MANAGERS	SURVEYORS
AUCKLAND	09 278 7078	
HAWKE'S BAY	06 211 2766	
CHRISTCHURCH	03 358 5936	
BLENHEIM	03 428 3292	
NELSON	03 222 1132	

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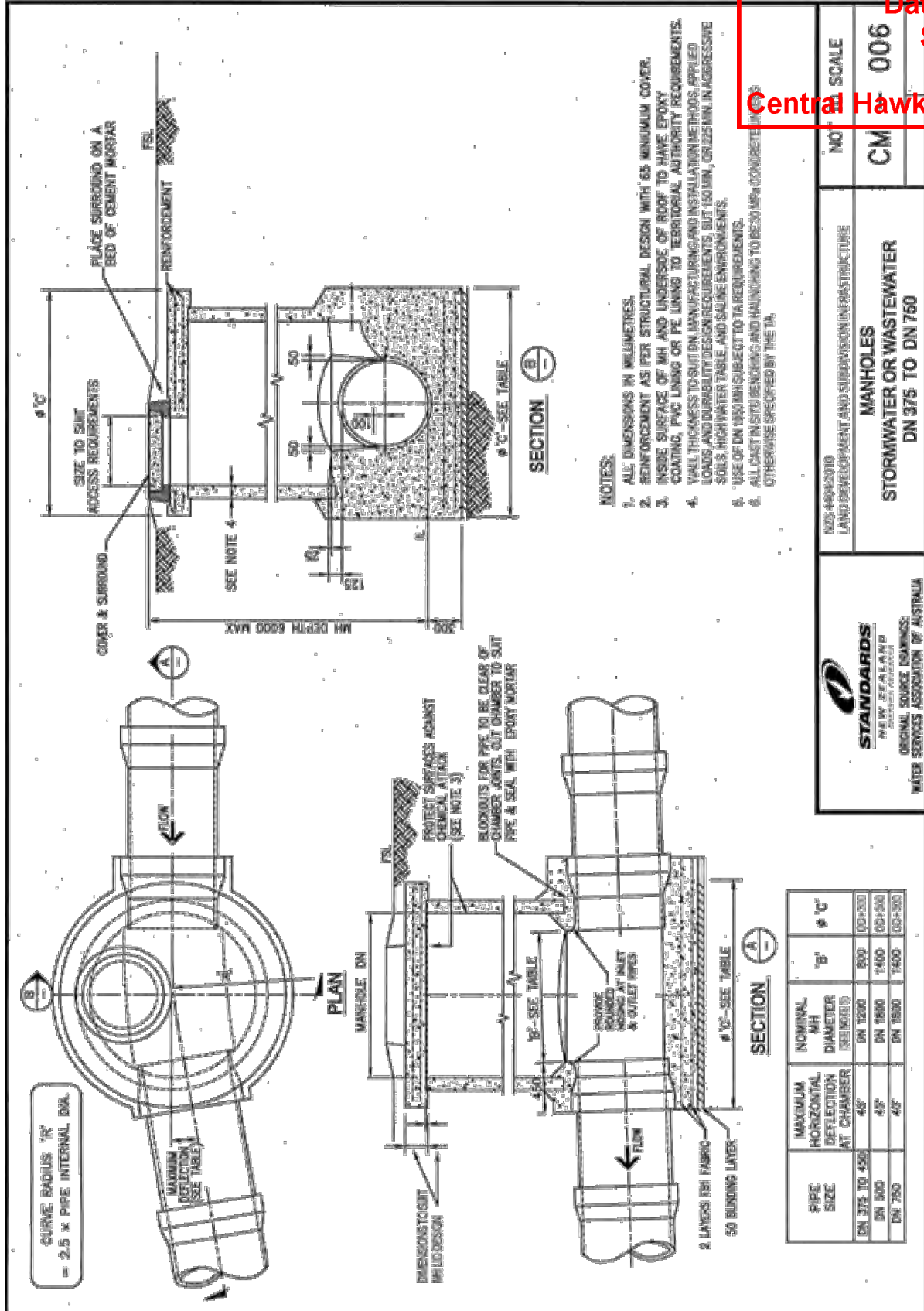
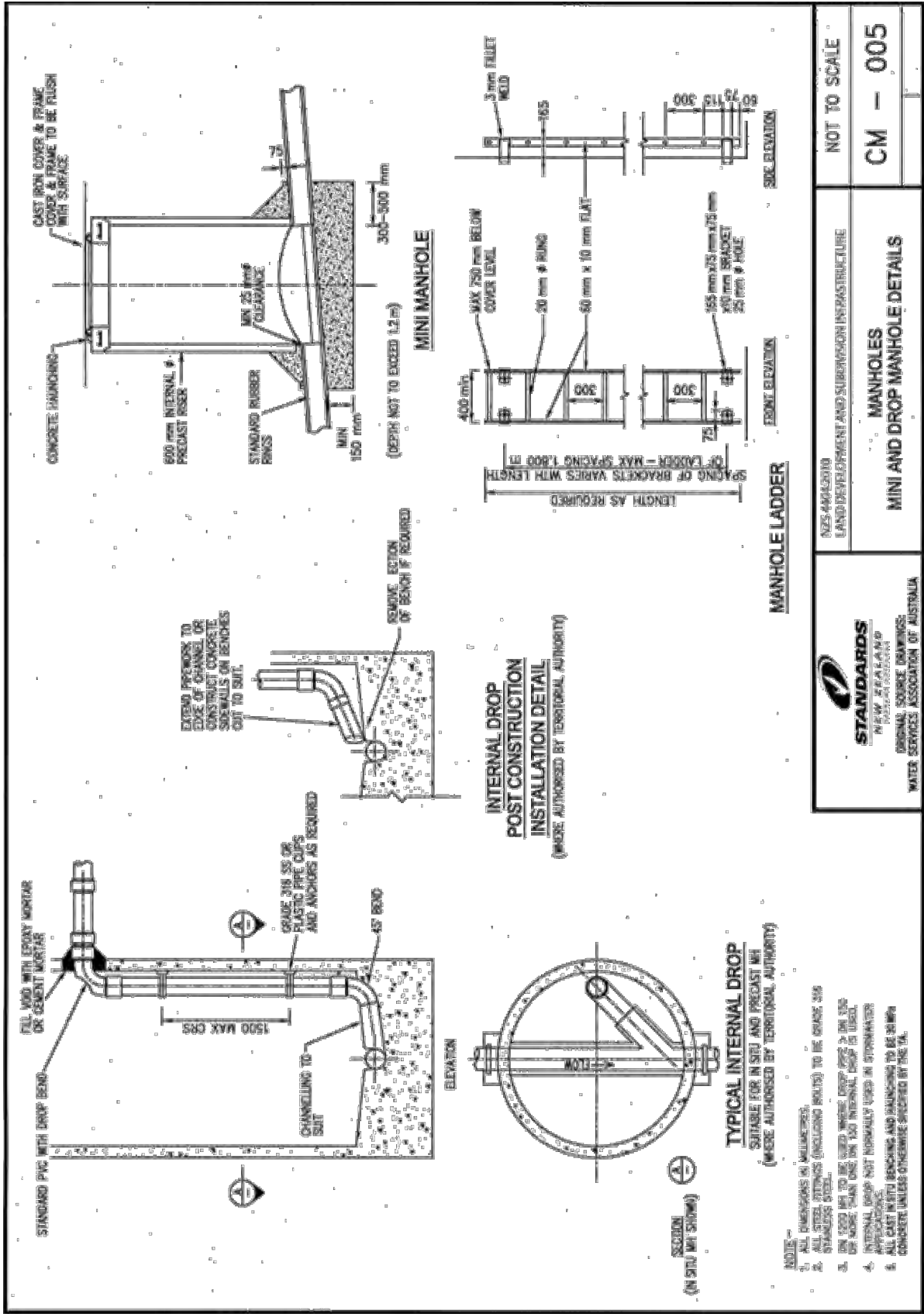
EPA

Construction works shall commence only on receipt of and in accordance with the Council or Council organisation stamped approved drawings, unless otherwise indicated.

SCALE AS SHOWN (A3)

DRAWING No	REVISION
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HB00059-C-402 -



APPROVED FOR CONDITION

Resource Consent No: RM210082A

Date: 19/12/2024

Condition No: Condition 4 - 5

Date: 19/12/2024

S Kingston

Central Hawke's Bay District Council

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

STANDARD DETAILS
SHEET 3 OF 10

Fraser Thomas

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND 09 278 7078

HAWKE'S BAY 06 211 2766

CHRISTCHURCH 03 358 5936

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NELSON 03 222 1132

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STATUS

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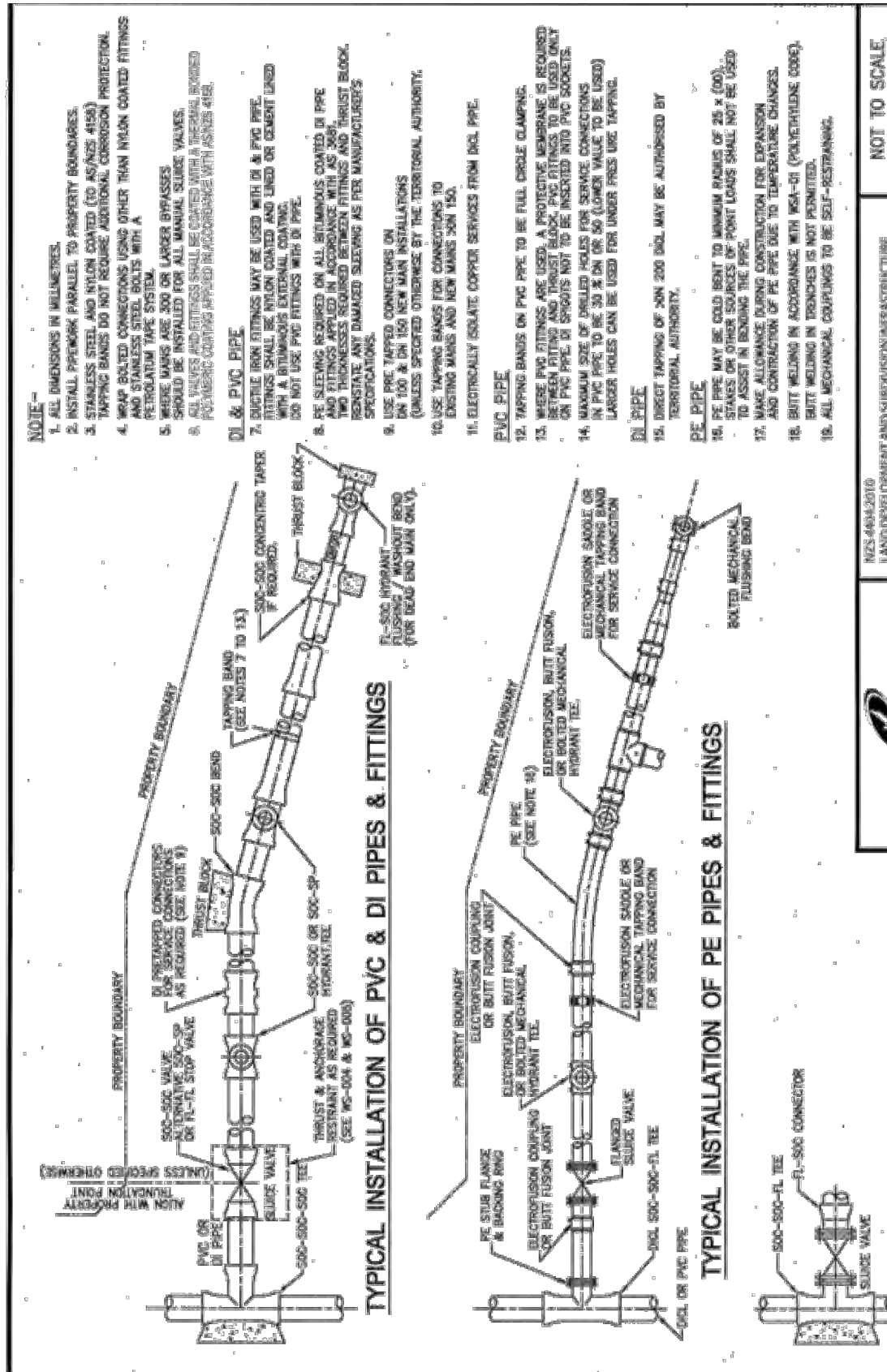
SCALE AS SHOWN (A3)

DRAWING No HB00059-C-403

REVISION

-

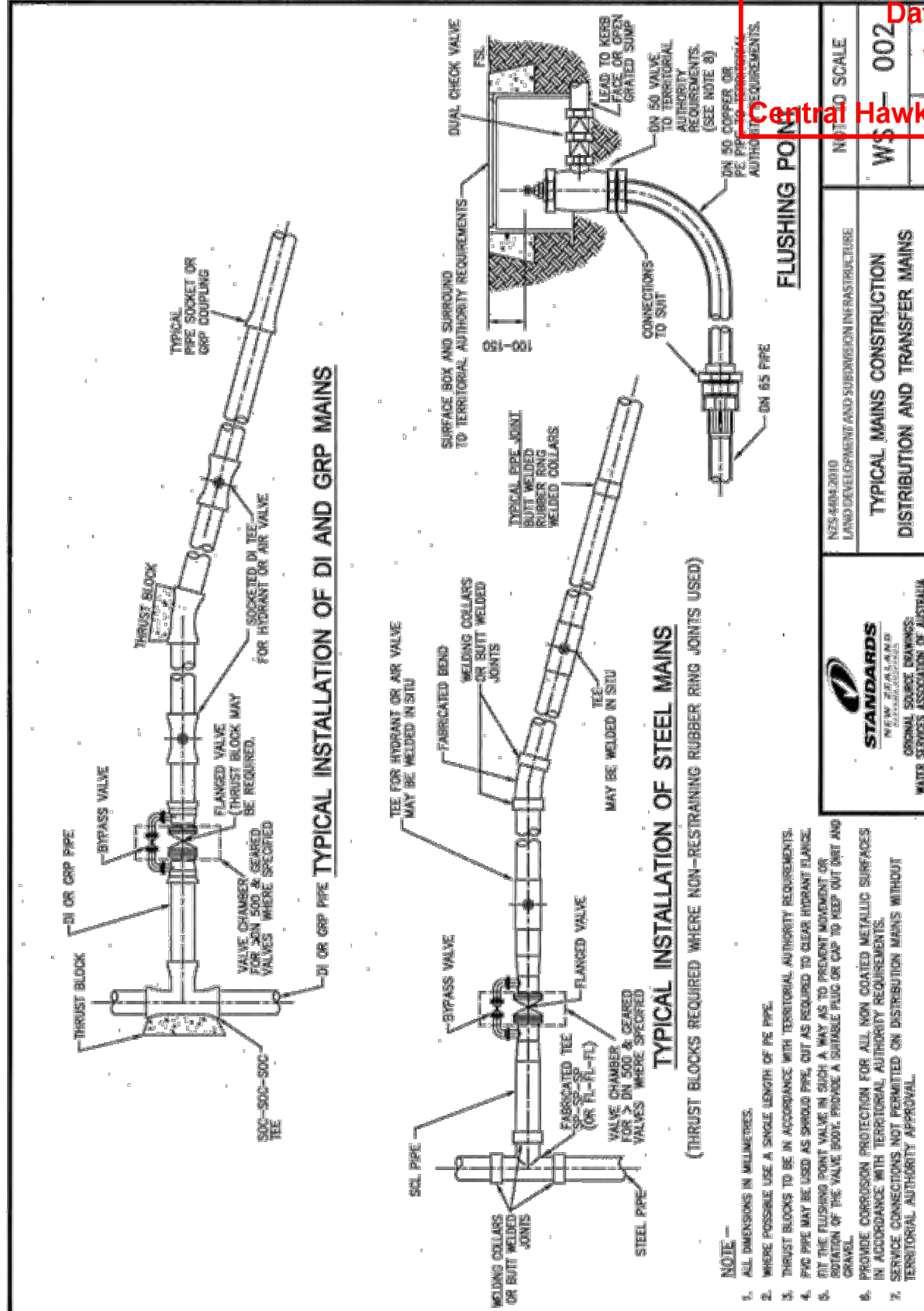
FOR CONSENT



TYPICAL VALVE CONNECTION
DIRECT TO NEW MAIN

STANDARDS
NEW ZEALAND
ORIGINAL SOURCE DRAWINGS
WATER SERVICES ASSOCIATION OF AUSTRALIA

R/23 4404-2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE	NOT TO SCALE
TYPICAL MAINS CONSTRUCTION RETICULATION MAIN ARRANGEMENTS	WS - 001



FOR CONSENT

APPROVED FOR CONDITION

Resource Consent No: RM210082A

Date: 19/12/2024

Condition No: Condition 4 - 5

Date: 19/12/2024

S Kingston

Central Hawke's Bay District Council

SURVEYED	ASIN	APPROVED	DATE
DESIGNED	ASIN		
19/12/2024	19/12/2024		
19/12/2024			
REVISION	CHANGES	CHECKED	DATE
0: Condition 4 - 5			
19/12/2024			
Kingston			
Bay District Council			

NOTES

The existing ground level was based on Hawke's Bay
LiDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

STANDARD DETAILS
SHEET 4 OF 10

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

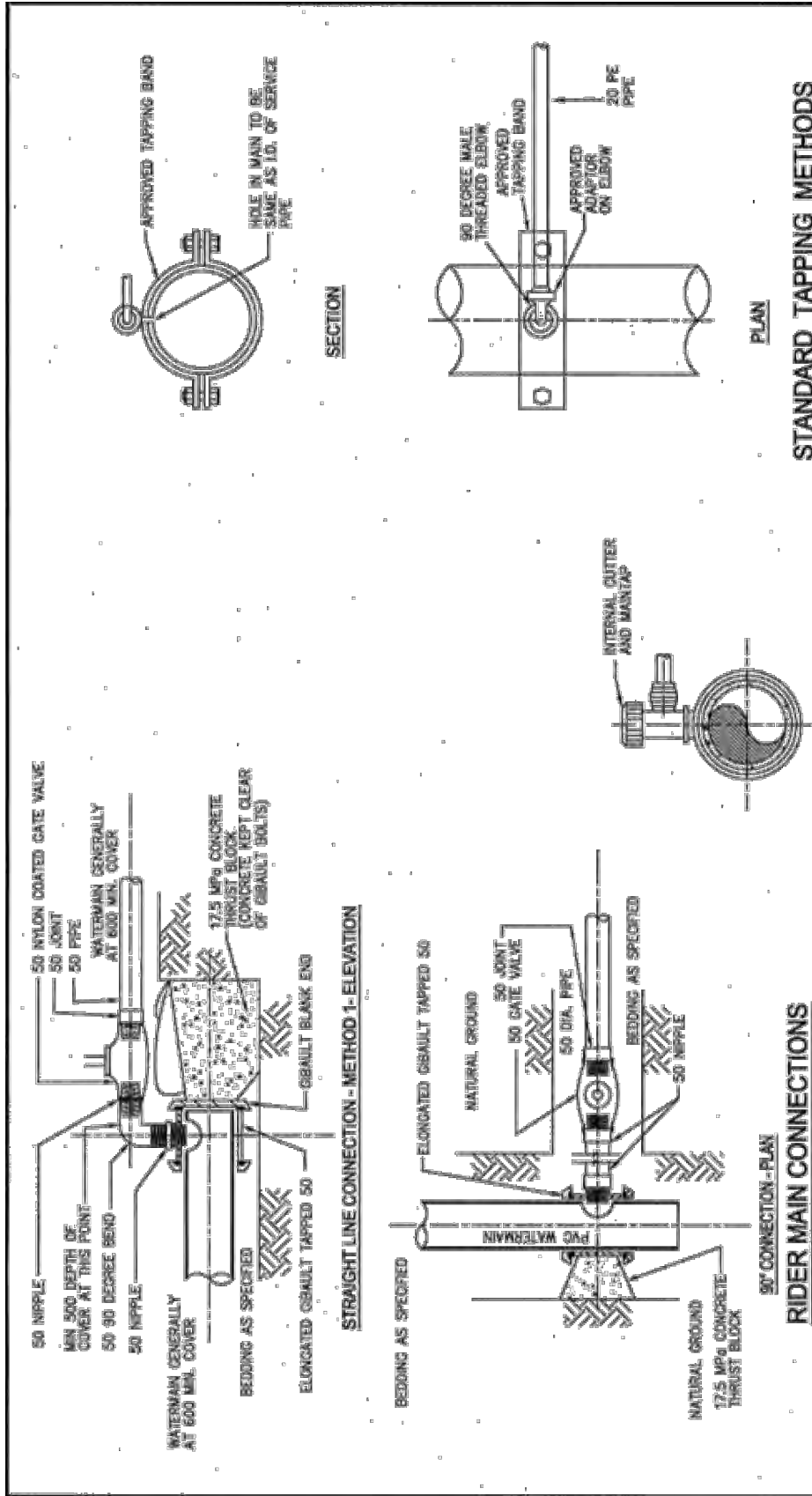
AUCKLAND	09 278 7078
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SCALE	AS SHOWN	(A)
DRAWING No	HB00059-C-404	REVISION



STANDARD TAPPING METHODS

PLAN

SECTION

NOT TO SCALE

PROPERTY SERVICES CONNECTION TO MAIN

WS - 003

STANDARDS

NEW ZEALAND

WATER SERVICES ASSOCIATION OF AUSTRALIA

ORIGINAL SOURCE DRAWINGS

NZS 4404:2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE

MINIMUM THRUST AREA FOR BLOCKS IN SQUARE METRES (m²)

DESIGN PRESSURE 1000 kPa (NOM. 100 m HEAD)

90° & 60°		45° & 30°		22.5°		11.25°		TEES AND DEAD ENDS	
HORIZONTAL BENDS/HORIZONTAL BENDS/HORIZONTAL BENDS		HORIZONTAL BENDS/HORIZONTAL BENDS/HORIZONTAL BENDS		HORIZONTAL BENDS/HORIZONTAL BENDS/HORIZONTAL BENDS		HORIZONTAL BENDS/HORIZONTAL BENDS/HORIZONTAL BENDS		HORIZONTAL BENDS/HORIZONTAL BENDS/HORIZONTAL BENDS	
PSH	4%	100	200	50	100	200	50	100	200
100	0.34	0.17	N	0.18	N	N	N	N	0.24
150	0.70	0.35	0.18	0.38	0.19	N	0.20	N	0.50
200	1.20	0.60	0.30	0.64	0.32	0.16	0.34	0.17	N
225	1.92	0.75	0.38	0.81	0.41	0.21	0.42	0.22	0.11
250	1.90	0.91	0.45	0.98	0.49	0.25	0.50	0.25	0.12
300	2.68	1.33	0.69	1.44	0.72	0.36	0.74	0.37	0.18
375	4.04	2.02	1.01	2.18	1.09	0.55	1.12	0.56	0.28
225	5.71	2.86	0.73	3.09	1.55	0.40	1.58	0.79	0.20
250	6.98	3.49	0.89	3.78	1.89	0.49	1.93	0.98	0.25
300	9.95	4.95	1.27	5.36	2.68	0.68	2.73	1.36	0.35
375	15.16	7.58	1.94	8.21	4.10	1.05	4.19	2.10	0.53

NOTE -

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

2. EAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.

3. DO NOT USE STANDARD THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN:
- VERY SOFT, SIFT, OR FINE CLAY.
- LOOSE CLEAN SAND.
- UNCOMPACTED FILL OR REFUSE.
- A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE SOILS.

4. THE NOMINAL THRUST AREA 'N' TO BE ACHIEVED BY POURING CONCRETE THE FULL LENGTH OF THE FITTING AND TO A DEPTH THAT ENSURES THE THRUST IS VERTICALLY AND HORIZONTALLY CENTRED ON THE RESULTING THRUST BLOCK (ALSO SEE NOTE 1).

5. DESIGN PRESSURES OTHER THAN 1000 kPa REDUCE OR INCREASE THE MAXIMUM THRUST AREA BY THE RATIO OF THE DESIGN PRESSURES EXCEPT WHERE:
- MIN. THRUST AREA IS 40.1 m², AND
- 'N' APPEARS IN THE TABLE AND DESIGN PRESSURE IS ABOVE 1000 kPa. CALCULATE THE AREA.

6. FINISH THRUST BLOCKS APPROXIMATELY 100 ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DESIGN IF NECESSARY TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENGAGEMENT TO BE 100.

7. THE MINIMUM THRUST AREA FOR TAPER THRUST BLOCKS TO BE EQUAL TO THE DISTANCE BETWEEN THE THRUST AREAS FOR DEAD ENDS OF EQUIVALENT DIAMETER TO THOSE EACH SIDE OF TAPER.

8. FOR FORWARD THRUST, THE ALLOWABLE BEARING PRESSURES FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN.

9. WHEN POURING CONCRETE AGAINST FITTINGS PLACE A MEMBRANE OF POLYETHYLENE, PVC OR FELT BETWEEN THE FITTING AND CONCRETE TO PREVENT DAMAGE TO THE FITTING. JOINTS TO BE CLEAR OF CONCRETE.

10. CONCRETE TO BE KEPT CLEAR OF BOLTS & FLANGES OR ORGANELLS TO ALLOW FITTINGS TO BE REMOVED WITHOUT INTERFERING WITH ANCHOR BLOCK.

THRUST BLOCK FOR TEES (FOR HORIZONTAL THRUST)

THRUST BLOCK FOR BENDS (FOR HORIZONTAL THRUST)

TAPER THRUST BLOCK (FOR HORIZONTAL THRUST)

CONCRETE BLOCK DETAILS

WS - 004

NOT TO SCALE

PROPERTY SERVICES CONNECTION TO MAIN

WS - 003

STANDARDS

NEW ZEALAND

WATER SERVICES ASSOCIATION OF AUSTRALIA

ORIGINAL SOURCE DRAWINGS

NZS 4404:2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE

FOR CONSENT

APPROVED FOR CONDITION

Resource Consent No: RM210082A

Date: 19/12/2024

Condition No: Condition 4 - 5

Date: 19/12/2024

S Kingston

Central Hawke's Bay District Council

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

STANDARD DETAILS
SHEET 5 OF 10

Fraser Thomas

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND 09 278 7078
HAWKE'S BAY 06 211 2766
CHRISTCHURCH 03 358 5936
BLENHEIM 03 428 3292
NELSON 03 222 1132

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STATUS

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SCALE

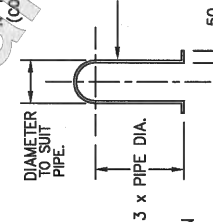
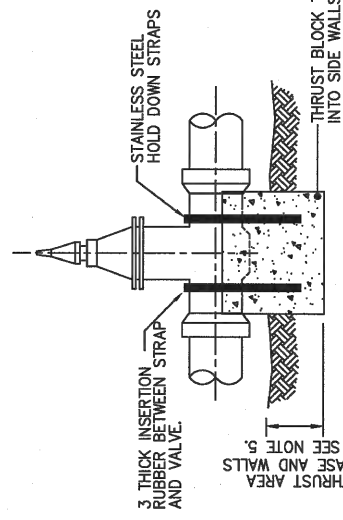
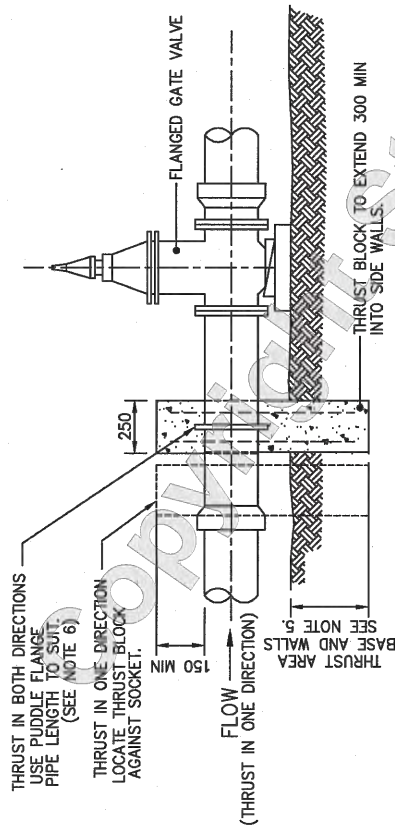
AS SHOWN (A3)

DRAWING No

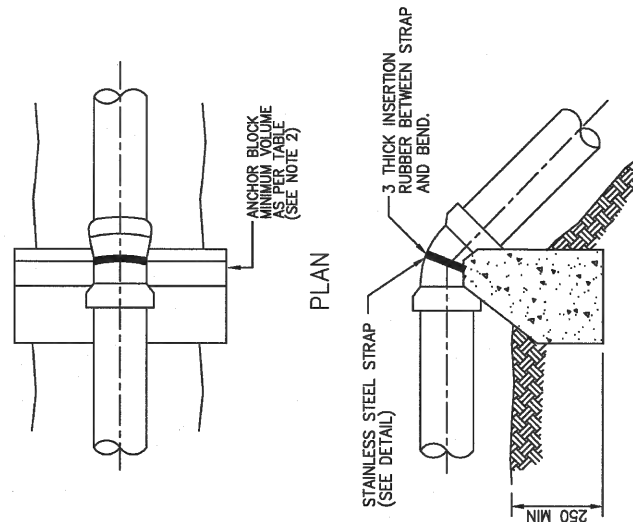
HB00059-C-405

REVISION

-



MINIMUM BLOCK VOLUME FOR ANCHORAGE		VERTICAL BENDS FOR TEST PRESSURE OF 1000 kPa (SEE NOTE 2)		CONCRETE VOLUME		DETAILED DESIGN REQUIRED		(ALTERNATIVE METHODS TO BE CONSIDERED)	
PIPE DN		11.25° BEND	22.5° BEND	45° BEND					
100	N	N	N	N	0.3	0.3	0.6		
150	N	N	N	N	0.3	0.3	0.6		
200	N	N	N	N	0.3	0.3	0.6	1.1	
225	N	N	N	N	0.3	0.3	0.6	1.4	
250	N	N	N	N	0.3	0.3	0.6	2.5	
300	N	N	N	N	0.4	0.4	1.1	3.8	
375	N	N	N	N	0.7	0.7	1.8	5.8	
450	N	N	N	N					
500	N	N	N	N					
600	N	N	N	N					
750	N	N	N	N					



VERTICAL BENDS

50
TYPICAL SS STRAP

NOTE -

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. ANCHOR BLOCKS IN THE TABLE ARE DESIGNED FOR A TEST PRESSURE OF 1000 kPa (100 m HEAD). ADJUST CONCRETE VOLUME TO SUIT ACTUAL TEST PRESSURE.
3. WHERE DIPIPES AND FITTINGS WITH RESTRAINED JOINTS ARE USED THRUST BLOCKS ARE NOT REQUIRED.
4. THRUST BLOCK REINFORCEMENT AS SPECIFIED IN DESIGN DRAWINGS.
5. WHERE SPECIFIED PROVIDE CONCRETE THRUST BLOCKS FOR SOO-SOC VALVES. THRUST AREA TO BE AS FOR DEAD ENDS AS SHOWN IN WS-004.
6. INSTALL PUDDLE FLANGES ON CLASS K12 DIOL PIPE.

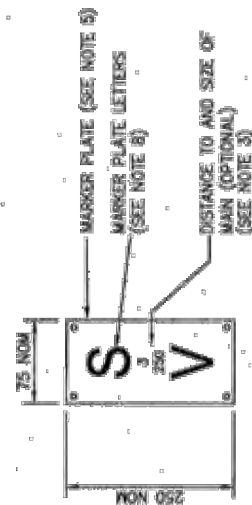
ANCHOR BLOCK CONSTRUCTION NOTES:

- LOCATE ANCHOR BLOCK CENTRALLY AROUND BEND.
- KEY ANCHOR BLOCK INTO BASE OF TRENCH A MINIMUM DEPTH OF 250.
- POUR CONCRETE AGAINST A SOUND EXCAVATION FACE.
- USE GRADE 17.5 MPa CONCRETE.
- KEEP CONCRETE CLEAR OF ALL BOLTS, NUTS, AND PIPE JOINTS.

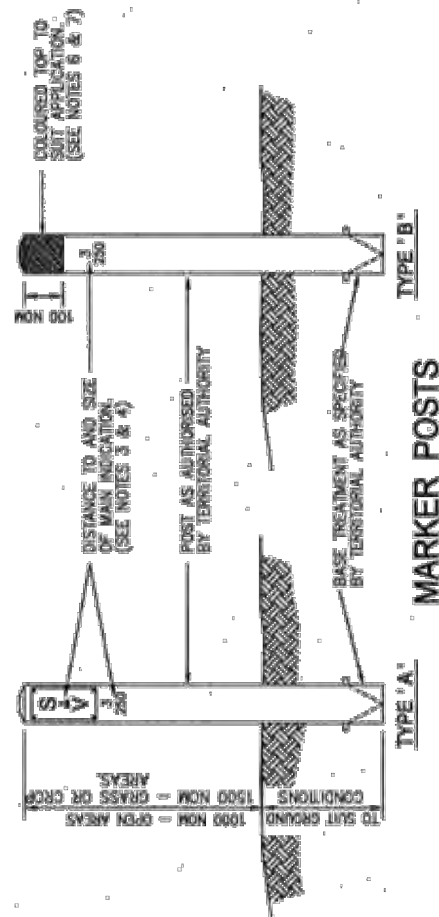
 **STANDARDS**
NEW ZEALAND
PAERUA AOTEAROA

ORIGINAL SOURCE DRAWINGS:
WATER SERVICES ASSOCIATION OF AUSTRALIA

NOT TO SCALE
WS - 001



TYPICAL PLATE ARRANGEMENT
MAY BE FIXED TO POST, KERB OR BUILDING



MARKER POSTS

STANDARD MARKER LETTERS:
80 HIGH X 80 WIDE X 15 STROKE WIDTH
TO BE ENGRAVED INTO THE KERFL.
ENGRAVED LETTERING TO BE PAINTED
GOLDEN YELLOW (Y14) TO AS 2700.
MARKER PLATES MAY BE USED AS AN
ALTERNATIVE & FIXED USING MASONRY NAILS
OR EPOXY ADHESIVE. (SEE NOTE 4)



MARKER PLATES

- NOTE -**
1. ALL DIMENSIONS IN MILLIMETRES.
2. TYPE, LOCATION AND ORIENTATION OF MARKERS INCLUDING FOR SERVICE VEHICLES TO BE IN ACCORDANCE WITH RELEVANT TERRITORIAL AUTHORITY REQUIREMENTS.
3. DISTANCE TO AND SIZE OF MAIN/TITING TO BE MARKED ON POST OR MANHOLE SHALL BE:
 - NUMBERS TO BE 12 (MAX) Ht/24
 - LETTERS TO BE PAINTED OR PUNCHED TO CREATE A PERMANENT IDENTIFICATION.
 - TOP NUMBER TO BE DISTANCE TO MAIN (m).
 - BOTTOM NUMBER TO BE DN OF MAIN (mm).
4. LOCATE MARKERS AT RIGHT ANGLES TO THE MAIN WITH MARKINGS FACING TOWARDS THE VALVE ON HYDRANT.
5. METALLIC MARKER PLATES TO BE POLYESTER WHITE WITH NON-REFLECTIVE FINISHING. LETTERING TO BE HANDPAINTED RED (R22). LEAD (P22) COLOURED LETTERS TO BE 80 MM X 40 MM X 10 STRIKE WIDTH.
6. COLOURED MARKER TOPS ON TYPE 'B' POSTS TO BE:
 - WHITE (GENERAL PURPOSE) (W41)
 - RED (HYDRANTS) (R22)
 - HYDRANTS -- HANDPAINTED RED (P22).
7. INSTALL TYPE 'A' AND TYPE 'B' MARKER POSTS AS SPECIFIED BY TERRITORIAL AUTHORITY.
8. RAISED PAVEMENT RETROREFLECTIVE MARKERS TO COMPLY WITH BS 1906-3.

HYDRANT® RETRO-REFLECTIVE PAVEMENT MARKER

STANDARDS
 THE NEW ZEALAND
 STANDARDS ASSOCIATION
 ORIGINAL SOURCE DRAWINGS
 WATER SERVICES ASSOCIATION OF AUSTRALIA

NZS 4404:2010
LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE
**VALVE AND HYDRANT IDENTIFICATION
IDENTIFICATION MARKERS & MARKER POSTS**

NOT TO SCALE
WS - 006

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED		APPROVED		DATE	
DESIGNED BY	RMZ10082A				
CHECKED BY	19/12/2024				
REVISION	CHANGES	CHECKED	DATE		
o: Condition 4 - 5					
19/12/2024					
Kingston					
Bay District Council					

NOTES

The existing ground level was based on Hawke's Bay
LiDAR 1m DEM (2020-2021) in NZVD2016.

DUNCAN LEIGHTON

99 TAMUMU ROAD
WAIPAWA

STANDARD DETAILS
SHEET 6 OF 10



ENGINEERS • RESOURCE MANAGERS • SURVEYORS	
AUCKLAND	09 278 7078
HAWKE'S BAY	06 211 2766
CHRISTCHURCH	03 358 5936
BLENHIEIM	03 428 3292
NELSON	03 222 1132

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STATUS

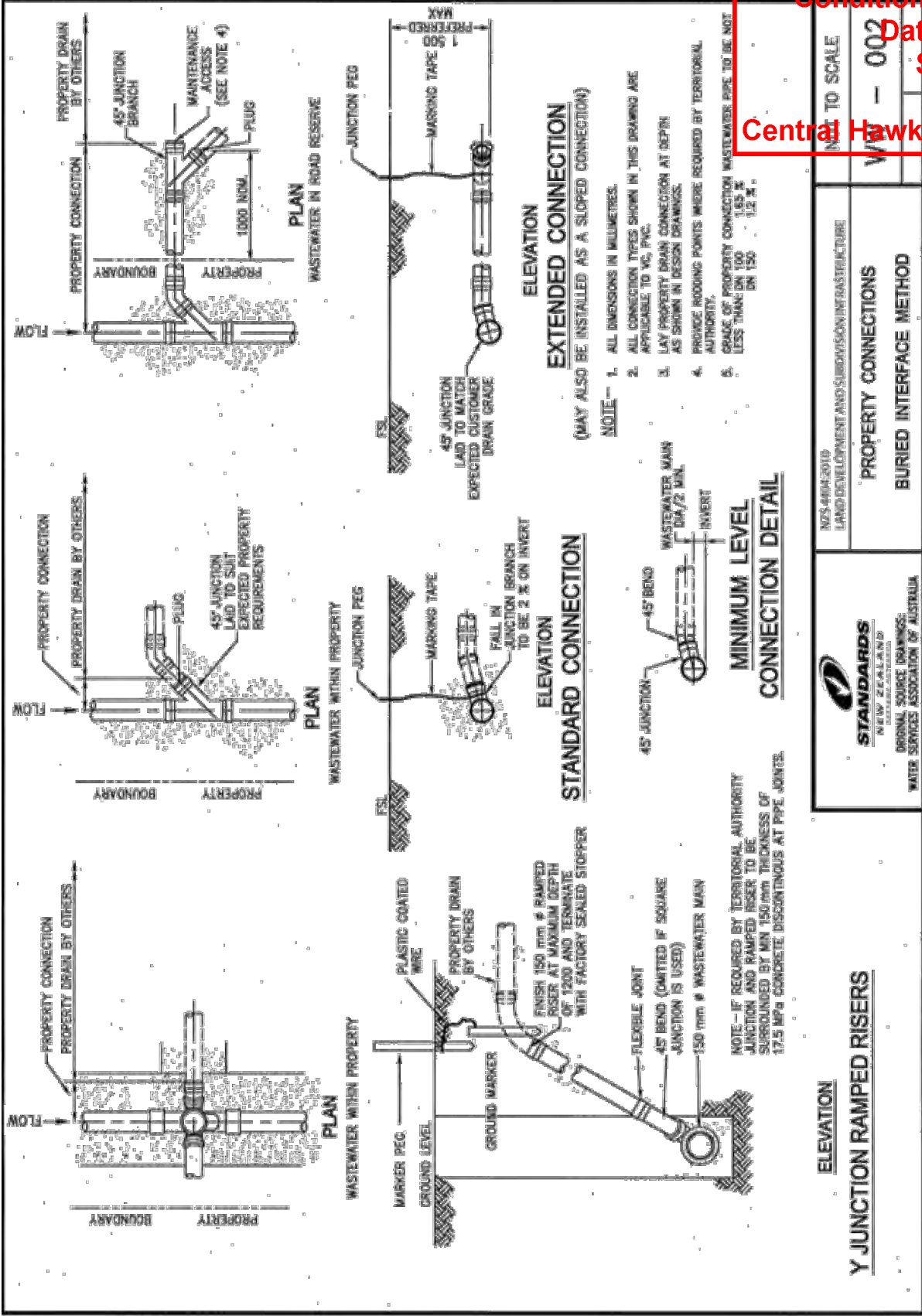
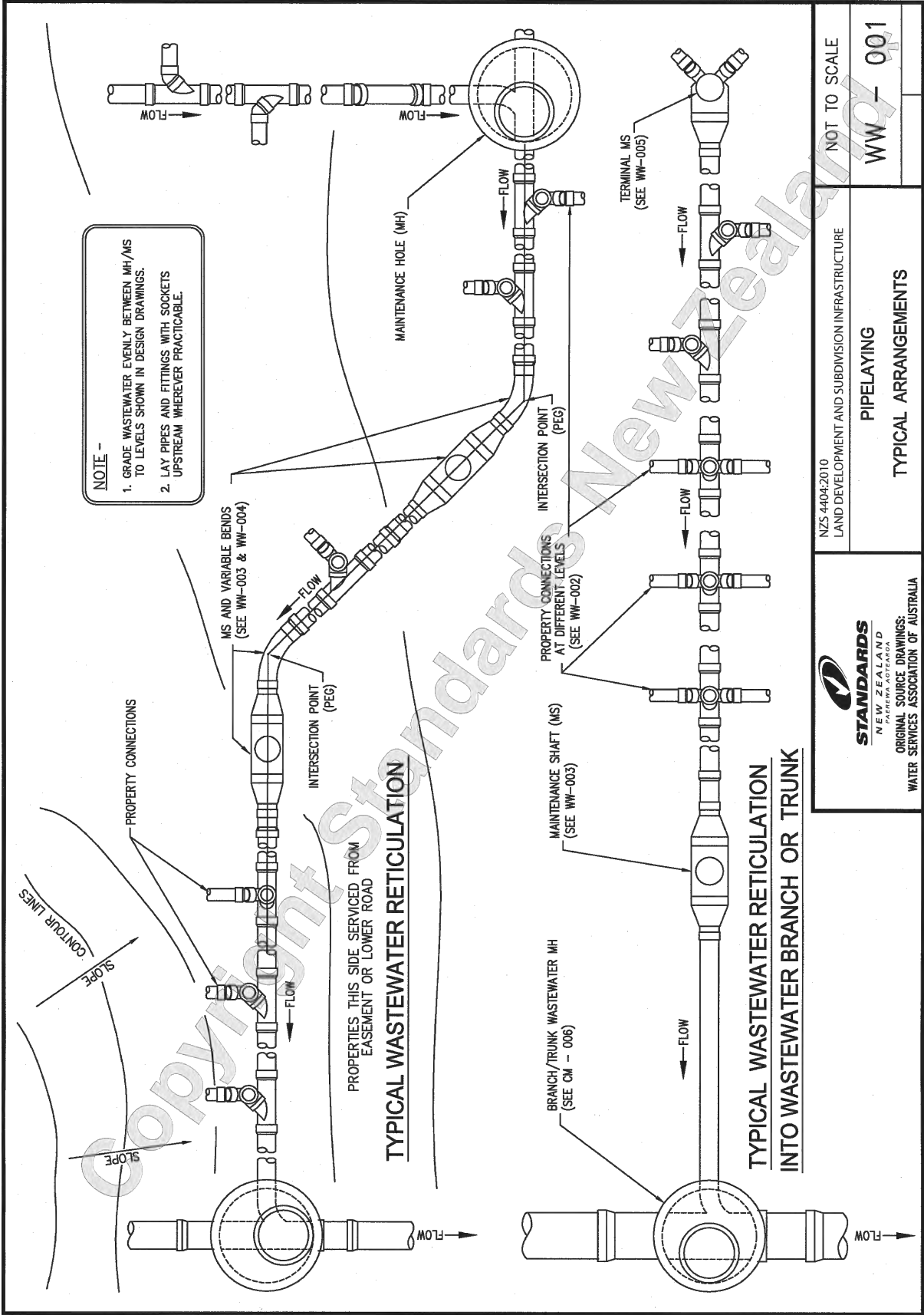
EPA

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SCALE AS SHOWN (A3)

HB00059-C-406

FOR CONSENT



APPROVED FOR CONDITION

Resource Consent No: RM210082A

Date: 19/12/2024

Condition No: Condition 4 - 5

Date: 19/12/2024

\$ Kingston

Central Hawke's Bay District Council

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

DUNCAN LEIGHTON

99 TAMUMU ROAD
WAIPAWA

STANDARD DETAILS
SHEET 7 OF 10

**Fraser
Thomas**

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

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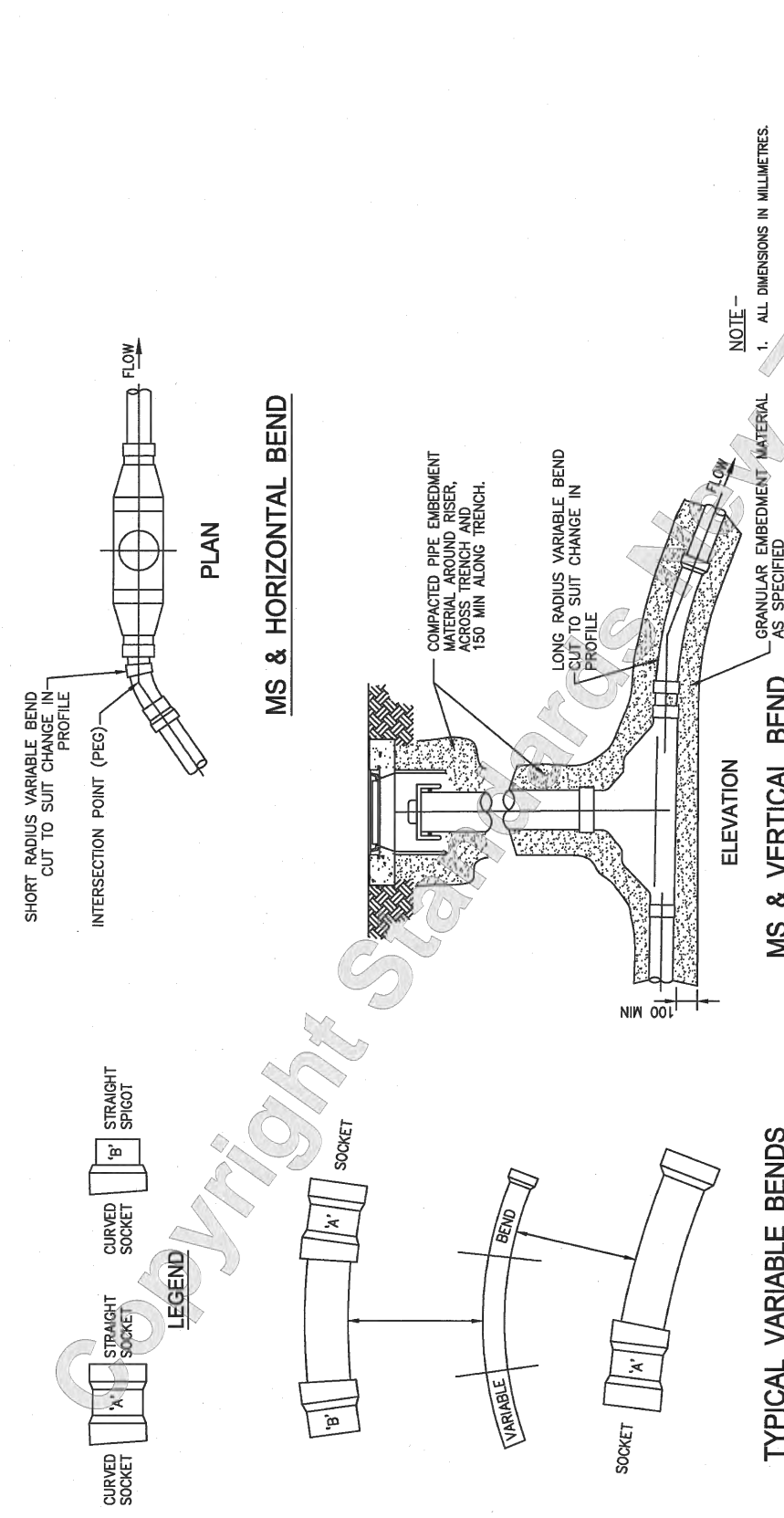
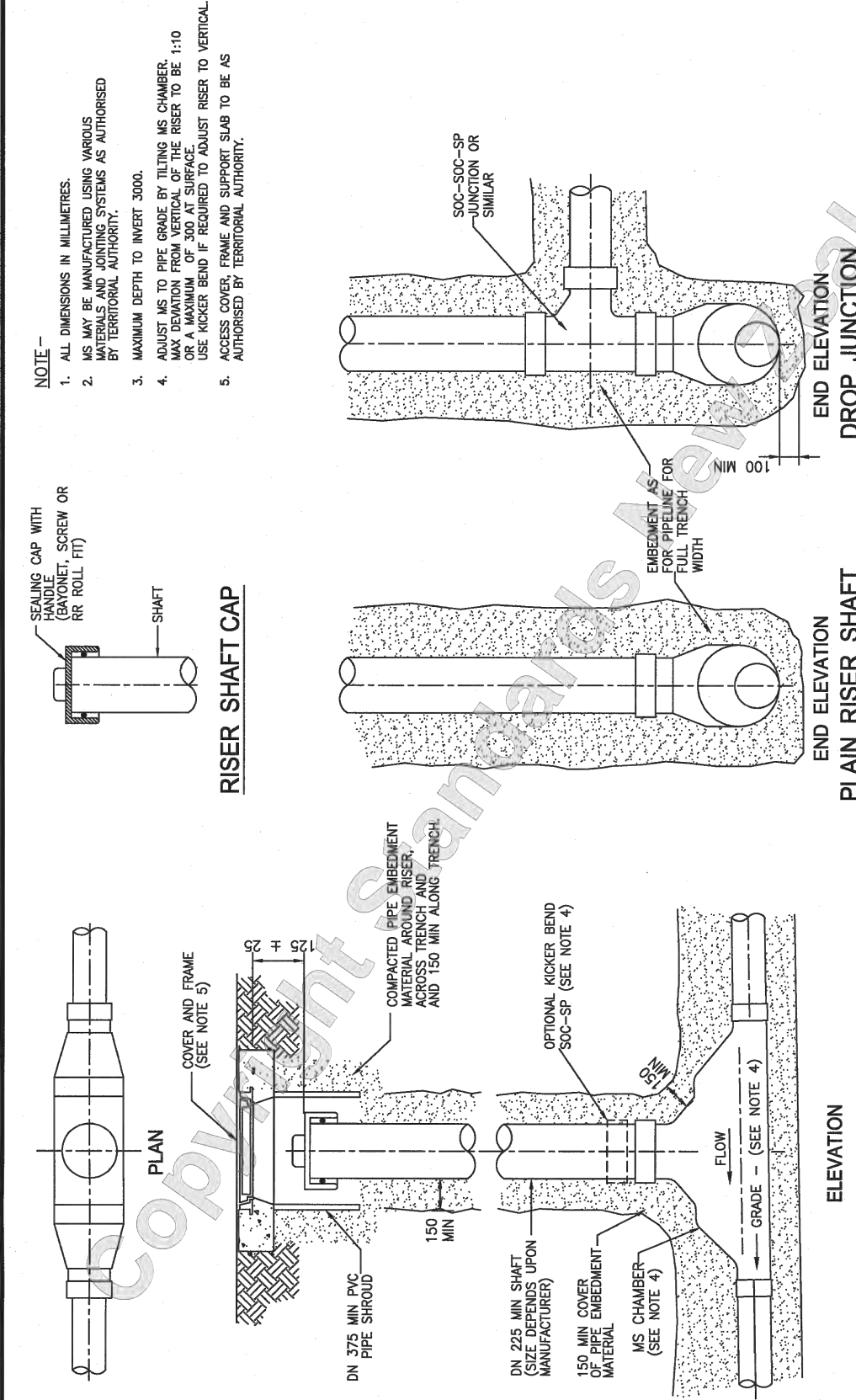
DRAWING No

HB00059-C-407

REVISION

-

FOR CONSENT



Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED		DATE
SN	SN			
19/12/2024	19/12/2024			
REVISION	CHANGES	CHECKED		DATE
o: Condition 4 - 5				
19/12/2024				
(Kingston)				
s Bay District Council				

NOTES

The existing ground level was based on Hawke's Bay LiDAR 1m DEM (2020-2021) in NZVD2016.

DUNCAN LEIGHTON

99 TAMUMU ROAD
WAIPAWA

STANDARD DETAILS
SHEET 8 OF 10



ENGINEERS • RESOURCE MANAGERS • SURVEYORS

AUCKLAND	09 278 7078
HAWKE'S BAY	06 211 2766
CHRISTCHURCH	03 358 5936
BLenheim	03 428 3292
NELSON	03 222 1132

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STATUS

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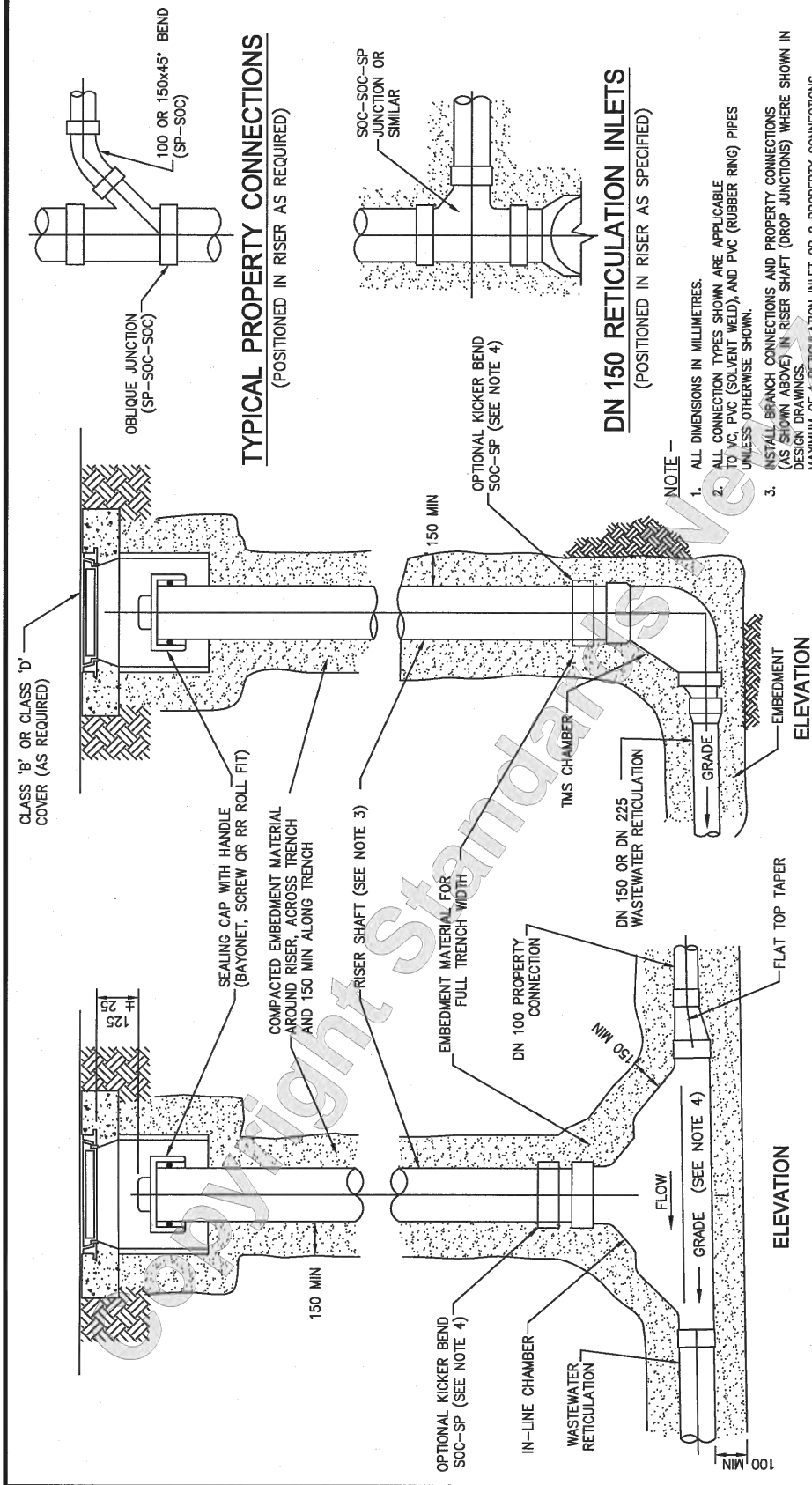
SCALE AS SHOWN (A3)

DRAWING No	REVISION
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HB00059-C-408 -

FOR CONSENT

HB00059-C-408 -



TERMINAL MAINTENANCE SHAFT WITH PROPERTY CONNECTION AHEAD



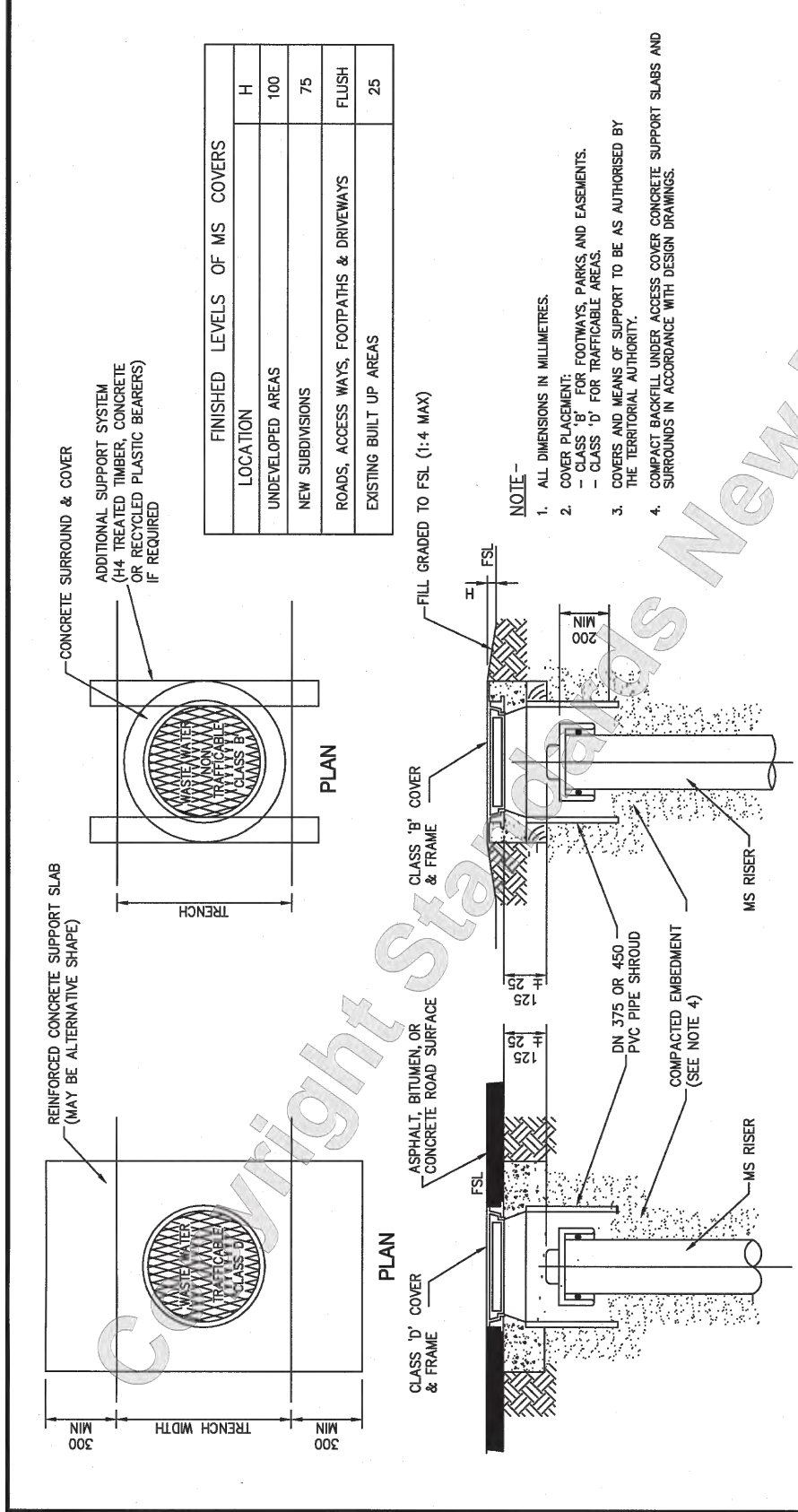
STANDARDS
NEW ZEALAND
FABRICA ADAPTARGA
ORIGINAL SOURCE DRAWINGS:
WATER SERVICES ASSOCIATION OF AUSTRALIA

NZS 4404:2010
LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE

MAINTENANCE SHAFTS
TMS AND CONNECTION INSTALLATIONS

NOT TO SCALE

WW - 005



NON TRAFFICABLE COVER (CLASS B)

TRAFFICABLE COVER (CLASS D)



STANDARDS
NEW ZEALAND
FABRICA ADAPTARGA
ORIGINAL SOURCE DRAWINGS:
WATER SERVICES ASSOCIATION OF AUSTRALIA

NZS 4404:2010
LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE

MAINTENANCE SHAFTS
TYPICAL MS COVER ARRANGEMENTS

NOT TO SCALE

WW - 006

FINISHED LEVELS OF MS COVERS	
LOCATION	H
UNDEVELOPED AREAS	100
NEW SUBDIVISIONS	75
ROADS, ACCESS WAYS, FOOTPATHS & DRIVEWAYS	FLUSH
EXISTING BUILT UP AREAS	25

- NOTE -
- ALL DIMENSIONS IN MILLIMETRES.
 - COVER PLACEMENT:
 - CLASS 'B' FOR FOOTWAYS, PARKS, AND EASEMENTS.
 - CLASS 'D' FOR TRAFFICABLE AREAS.
 - COVERS AND MEANS OF SUPPORT TO BE AS AUTHORISED BY THE TERRITORIAL AUTHORITY.
 - COMPACT BACKFILL UNDER ACCESS COVER CONCRETE SUPPORT SLABS AND SURROUNDS IN ACCORDANCE WITH DESIGN DRAWINGS.

APPROVED FOR CONDITION

Resource Consent No: RM210082A
Date: 19/12/2024
Condition No: Condition 4 - 5
Date: 19/12/2024
S Kingston

Central Hawke's Bay District Council

SURVEYED	DESIGNED	APPROVED	DATE
REVISION	CHANGES	CHECKED	DATE

NOTES

The existing ground level was based on Hawke's Bay LIDAR 1m DEM (2020-2021) in NZVD2016.

CLIENT

DUNCAN LEIGHTON

PROJECT

99 TAMUMU ROAD
WAIPAWA

TITLE

STANDARD DETAILS
SHEET 9 OF 10



Fraser
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ENGINEERS • RESOURCE MANAGERS • SURVEYORS

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NELSON 03 222 1132

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SCALE AS SHOWN (A3)

DRAWING No HB00059-C-409 REVISION

FOR CONSENT

