Technical Memo

99 TOTARA ROAD, WHENUAPAI

Stage 1 - Fast Track Consent

Metlifecare Limited

TO:	Dylan Pell, Michelle Kemp	HG PROJECT NO:	A2213426
FROM:	Roshanak Rezaee	DATE:	13 FEBRUARY 2023

1.0 INTRODUCTION

This report has been prepared by Harrison Grierson (HG) on behalf of Metlifecare Limited in support of a Fast-track Consent application for the proposed development located at 99 Totara Road, Whenuapai. The site is situated at the north-west of Totara Road and has a land area of approximately 8.95ha. The legal description of the site is PT Lot 3 DP 52677.

The purpose of this report is to provide an overview of the proposed infrastructure required to service the development and outline the design rationale. This report should be read in conjunction with the Fast-track Consent drawings hereto attached under Appendix. B existing site

The existing site area is irregular in shape and generally falling in a west-east direction along Waitemata Harbour' coastal edge.

The site levels range between RL14m in the middle of site to approximately RL4.5m on the northern boundary before falling to the Harbour which is at approximate RL 2m. The site covers a total area of approximately 8.95 ha.

FIGURE 1 – SITE LOCATION PLAN

2.0 MASTERPLAN SUMMARY

The proposal seeks to redevelop the existing site and make provision for the new Retirement Village. The development will make provision for new 110 Villas, 1 amenity building, 50 Care home staff & visitors. A proposed masterplan has been provided. For further detail refer to Appendix. A "Proposed Master Plan"

The masterplan yields 135 Independent Living Units (ILU's) and 50 Care Units.

The site under the Auckland Unitary Plan has the following listed zones and limitations:

Legal Description

PT LOT 3 DP 52677

Zone

Coastal - General Coastal Marine Zone

Future Urban Zone

Overlays

Natural Resources: Significant Ecological Areas Overlay - SEA-M2-57b, Marine 2

Natural Resources: High-Use Aquifer Management Areas Overlay [rp] - Kumeu Waitemata Aquifer

Controls

Controls: Coastal Inundation 1 per cent AEP Plus 1m Control-1m Sea level rise

Controls: Macroinvertebrate Community Index - Native

Controls: Macroinvertebrate Community Index - Rural

Designations

Designations: Airspace Restriction Designations - ID 4311, Defence purposes - protection of approach and departure paths (Whenuapai Air Base), Minister of Defence

3.0 EARTHWORKS

The proposal seeks to undertake earthworks across an area of approximately 5.5ha. An overall bulk earthworks plan has been developed utilising the provided master plan and HG Topo Survey topographic survey data. The earthworks have been designed to allow for the conveyance of all overland stormwater flows to the gully near the east boundary and towards Waitemata Harbour.

For the purpose of estimating earthworks volumes, we have assumed some finished floor levels (FFL) for the proposed buildings. The earthwork volumes are the difference between the existing ground contours (200mm topsoil strip has been considered) and the proposed finished design contours (no allowance for pavement thickness or fill under the floor levels and no allowance for bulking factors) based on the levels shown in Appendix. B Civil Drawing sheet A2213426-00-200,220 Rev.B.

From our earthwork assessment, the following volumes have been calculated.

The earthwork volume is a comparison of the 200mm stripped existing ground level to the proposed finished ground levels.

TABLE 1 – EARTHWORKS VOLUMES

Description	Volume (m^3)
Cut Volume	17,429
Fill Volume	16,302
Net Fill	1,127
Max Cut Depth	2.25m
Max Fill Depth	3.12m

3.1 EROSION AND SEDIMENT CONTROL

3.1.1 GENERAL

In accordance with industry best practice and resource consent requirements, the implementation of erosion and sediment controls during the earthworks operation will be undertaken during the construction works.

Erosion and sediment control and site stabilisation during earthworks will be undertaken in accordance with the methodologies of Auckland Council Technical Publication No. 90 (TP 90 / GD 05). Earthworks undertaken in accordance with these guidelines will act to minimise and/or mitigate any adverse environmental effects of sediment discharge during the works through the appropriate use and design of erosion and sediment control techniques and measures.

The proposed erosion and sediment control methodology is detailed in the following sections. It is noted that the methodology may be subject to change depending on the Contractor's construction operation and phasing, which will be discussed with Council at the time of works.

A qualified and experienced Engineer will be appointed to monitor the sediment control measures on a regular basis (weekly) and after every significant rainfall event to ensure that the measures are being maintained to the correct standard and are in accordance with the erosion and sediment control plan. The Engineer will also undertake monitoring to ensure flocculation is occurring in accordance with the design prepared by the council approved environmental consultant.

3.1.2 PROPOSED CONTROLS

The proposed erosion and sediment control measures are as follows:

- Sediment Retention Pond (SRP)

One SRP will be installed to contain and direct the stormwater runoff towards the major existing gully. The pond will service a catchment of 2.63 ha and has a volume of 535.96.0 m^3. for further information refer to Appendix. B, Sheets A2213426-00-240,241,242,243.

Refer to the calculations provided in Appendix C for further information.

- Decanting Earth Bunds/Runoff Diversion Channels

16 decant earth bunds will be installed to contain and direct the stormwater runoff towards the existing gully and the adjacent water courses. The maximum catchment for each earth bund will be 0.3 hectares.

- Silt Fences/Filter Socks

Silt fences will be installed around the site perimeter and along each side of the gully / stream area to control sediment discharges from the site. Mulched-filled filter socks will be used around nearby road catchpits (as required) and will be retained until sufficient stabilisation is achieved over the site; given that sediment laden runoff onto the roadways can invariably occur during the construction works.

- Stabilised Construction Access

Two stabilised construction access will be constructed as primary access point to the site. The positions will be where the existing site access is on the south-eastern corner of site and where the new vehicle crossing for the east group of villas. Facilities to enable wash down of vehicles i.e., water blaster as a minimum, may be used to ensure vehicles' tyres are cleaned down prior to exiting the site onto the adjacent roads to ensure sediment is not transported offsite.

- Retention of Existing Vegetated Areas / Cleanwater Runoff Diversion

Existing vegetation will be maintained over the site to minimise the amount of bare earth exposed or to provide a buffer/filtration strip where possible.

Upstream clean stormwater runoff will be channelled away from the earthworks area by cleanwater runoff diversions to reduce erosion and additional treatment to sediment ponds.

- Site Stabilisation

Once the subgrade levels are achieved, progressive site stabilisation will be undertaken and shall comprise:

  - Re-topsoiling in conjunction with grass seeding to establish grass cover over development lots and berms/reserve areas.
  - Where necessary, areas will be stabilised by applying straw mulch in conjunction with topsoiling and grass seeding.
  - Roading aggregates will be placed over road, footpath and accessway pavement areas as soon as practicable.

- Site stabilisation will reduce the time bare earth is exposed to erosive forces and ability for generation of sediment laden runoff. Perimeter controls will remain in place until adequate stabilisation is achieved over the site.

4.0 3 WATERS INFRASTRUCTURE

4.1 STORMWATER

4.1.1 STORMWATER MANAGEMENT PLAN

The Whenuapai Structure Plan (WSP) was prepared to support and promote the sustainable long-term urban development of Whenuapai based on WSD principals.

The stormwater management methods in the WSP seek to protect and promote the enhancement of streams and the harbour to mitigate the potential adverse effects of development. The methods broadly need to address two main issues:

- Water quality to maintain the health of waterways.
- Flood risk management and protection of people, property, and waterways.

We noticed there are two Stormwater Management Reports for Whenuapai 1 and Whenuapai 2, however this site, 99 Totara Road is not included in these two stormwater management reports. We propose to prepare a site's specific stormwater management plan by having a private stormwater network to drain all roof runoff and to be held in underground tanks which service several buildings each. This attenuation volume includes 5mm of rainwater over all roof areas. Pre-treatment will be provided for all trafficable stormwater runoff catchments. It is proposed to provide proprietary stormwater filter devices to service the trafficable areas. The driveways leading into each unit can be constructed with permeable concrete / paving. Please refer to Appendix. B drawings A2213426-00-460 – 462 for more details.

4.1.2 FLOODING AND OVERLAND FLOW PATHS

Auckland Council GeoMap shows several overland flow paths within the vicinity of the development. We have carried out an initial OLFP assessment to determine pre and post development flooding.

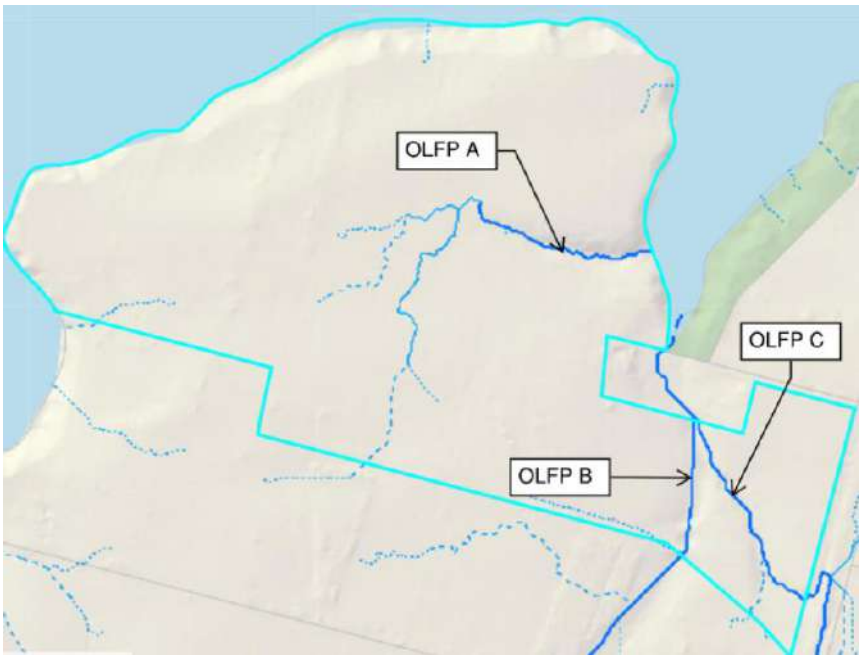

FIGURE 2 – OVERLAND FLOW PATHS FROM COUNCIL GEOMAPS 2022

- A major OLFP runs in an easterly direction across the site to a gully and then out to the harbour (OLFP A). The flow path has a flow of 1.33 m^3/s at its start. Several OLFPs exist that run into OLFP A. The proposed realignment of these flow paths will flow around a central 1,260m^2 building and join in the low point of the proposed road where it can then discharge through the gully. Please refer to A2213426-00-465 for further details. The FFL of this central building has been determined by allowing 500mm freeboard from where the flow paths meet at the low point in the road.
- Two major OLFP run in a norther direction to a point where they join and discharge though a gully and out to the harbour (OLFP B and OLFP C). OLFP B has a flow of 9.29m^3/s and OLFP C has a flow of 6.77m^3/s. When combined they have a flow of 14.85m^3/s. These OLFPs will not be altered as there is no work proposed within the area (existing gullies). The existing culvert across OLFP B is to remain functionable in order to convey this OLFP. Please refer to A2213426-00-468 cross section B for details of OLFP depth.
- Several minor flow paths exist around the northern perimeter of the site. These flow paths will be unaffected by the development and will discharge to the harbour.

4.1.3 STORMWATER NETWORK

The Auckland Council GIS map shows no existing public stormwater network serving the site.

An initial network reticulation sizing has been carried out for further information refer to Appendix. B, A2213426-00-402,401,402 Stormwater network reticulation. The stormwater network throughout the site is to run along the proposed carriageway and include a lot connection to each building. All stormwater will feed into three outlets which lead to the Waitemata Harbour. The proposed outlets will remain private.

4.2 WASTEWATER

The Auckland Council GIS map shows no public wastewater network currently serving the site or the adjacent sites along Totara Road.

A Desktop study of Auckland Council GIS Map reveals that the nearest existing public wastewater manhole / network is located at Totara Road & McCaw Avenue / Dale Road intersection that is approximately 1,700m away from the site. Also, AC GIS indicates the existing public wastewater manhole (at the above intersection) has invert level of RL 24.93. See Figure 3 below.

FIGURE 3 – EXISTING WASTEWATER SERVICE

Based on the difference in surface contours between the site and the public wastewater manhole, the highest contour within the site is approx. RL 13.5m and the lowest site contour is RL 4.5m while the invert level of the public manhole is RL 24.93m. This clearly demonstrates that a gravity network extension between the site and the existing public network is not an option since the site is at least 11m lower than the public manhole invert level.

Referring to Whenuapai Structure Plan – Section 7.7.2 suggests that parts of the northern catchment where the land contours slope towards the coastal edge, any proposed wastewater network will ideally follow the contours of the land and should flow to the lowest points on the coast and then be pumped back to the branch and trunk network. A series of small developer-provided local pump stations will therefore be required at intervals along the coast.

Given the site is located at the coastal edge and it is almost the lowest area within the northern part of the catchment, it is therefore anticipated a public pump station to pump sewage to another public pump station (or back to the gravity network) within the higher catchment so the site can be serviced.

MLC has been provided with a schematic diagram which shows the possible location of a public wastewater pump station within the adjacent NEIL Group landholding (south of the subject site) to serve the lower parts of the Totara Road catchment. Refer to Figure 3 (above). HG is coordinating the tie-in point with Neil Group to provide a public gravity wastewater connection to 99 Totara Road site.

Figure 4 (below) shows a possible future public pump station to be installed within the NZDF property along Totara Road which may form part of the series of pump stations as mentioned above in the WSP. This figure has been obtained from the Whenuapai Structure Plan.

Again, due to the levels of the existing site, having a gravity line from the subject site into this pump station will not be possible.

The proposed location of the pump station from the NEIL Group schematic plan is considered as a more definitive option for the pump station.

A proposed preliminary wastewater drainage network has been designed to convey the expected Peak Wet Weather Flows (PWWF), resulting from the development. For further information refer to Appendix. B Civil Set Sheets A2213426-00-410,411,412

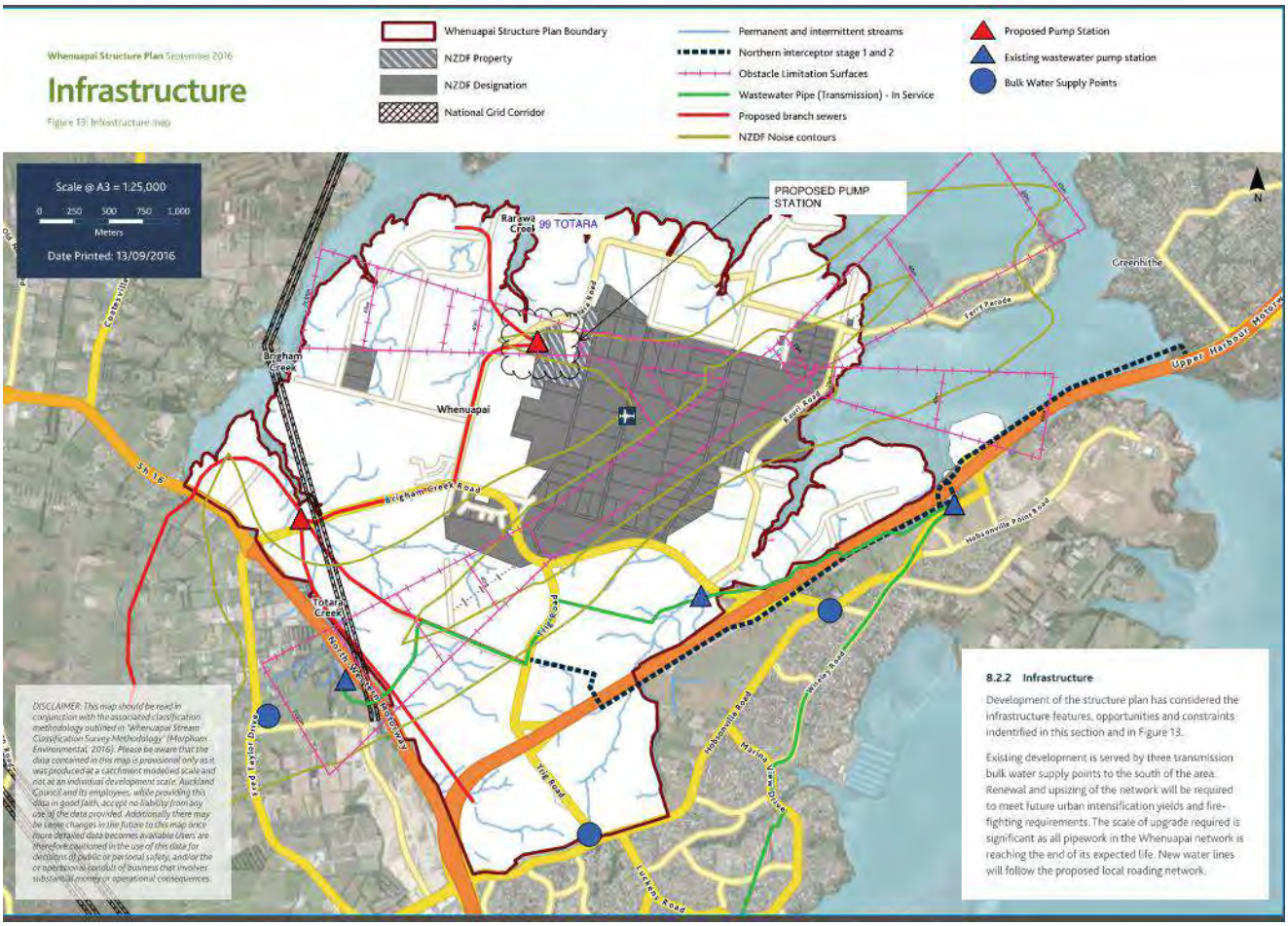

FIGURE 4 – WHENUAPAI STRUCTURE PLAN – WASTEWATER

Based on the proposed masterplan a yield of total 135 residential units and a care facility are proposed Referring to WSL CoP engineering standards, we carried out the calculation and for further information refer to Appendix. C

The PWWF from proposed development has been calculated to be totally 4.25800 l/s, this is based on WSLCoP requirements.

4.3 POTABLE WATER

Auckland Council GIS shows 150mm Dia. Watermain along Totara Road. According to Whenuapai Structure Plan, the transmission network servicing the Whenuapai area has good capacity to service the forecast growth in the short term.

The proposed development will be serviced by new water reticulation that connect to the existing 150mm dia watermain along Totara Road. The proposed site is to have its own private water supply and firefighting networks. The proposed water

reticulation plan has been provided and for further information please refer to Appendix. B, civil set sheets A2213426-00-550, 551,552

In case the existing 150mm dia. water main pipe will be insufficient to provide the development demand,

A booster pump might need to be provided within the site to provide the sufficient required flow.

Alternatively, a new supply from the upgrade trunk mains at Dale Road would need to be provided along Totara Road.

Based on the proposed master plan a yield of 135 residential units and a care facility are proposed. HG has provided the Water Supply calculation, for further information please refer to Appendix. C. The estimated post-development peak water demand from the proposed development is 4.071/s.

All water supply reticulation will be designed and constructed in accordance with the Warercare Water and Wastewater Code of Practice for Land Development and Subdivision. The New Zealand Building Code and the New Zealand Fire Fighting Water Supplies Code of Practice SNZ PAS 4509:2008. Whilst this assessment has been based on information to date which does not include water hydrant testing, it is deemed that this can be undertaken a necessary prior to building consent design phase of the project.

4.4 UTILITY SERVICES

4.4.1 POWER SUPPLY

Power supply for the proposed development will be connected from the existing power poles along Totara Road. All services will be laid within the accessway area. The Topo survey shows 8 existing power poles within this site, it is proposed to remove and transfer all the above ground power poles to the underground services within the site all power reticulation works will be carried out in accordance with New Zealand Standard – Land Development and Subdivision Infrastructure NZS 4404:2010 and Vector's requirements. For further information please refer to Appendix. D, B4Udig email.

4.4.2 TELECOMMUNICATIONS

Telecommunication supply will be connected from the existing below ground telecommunication reticulation and fibre network as available and in accordance with Spark/Chorus requirements. All services will be laid within the accessway area and taken to the building. For further information please refer to Appendix. D, B4Udig Plans.

6.0 CONCLUSION

Harrison Grierson have been requested by Metlifecare Ltd (MLC) to provide, a fast-track consent infrastructure report, for 99 Totara Road, Whenuapai. The site is situated at the north-west of Totara Road and has a land area of approximately 8.95ha.

The masterplan yields 135 Independent Living Units (ILU's) and 50 Care Units and staffs. An initial earthwork assessment, the following volumes have been calculated, the net volume for cut is approximately 1,127m^3.

The proposed development will be accessed via new accessway of way from Totara Road, two proposed vehicle crossings will be constructed, as per Auckland Transport Standards.

3 water infrastructure assessments have been carried out in accordance with the existing site condition and Whenuapai structure plan.

Services will be provided to the proposed development off the existing utility services along Totara Road.

Appendix A

PROPOSED SITE MASTER PLAN

WHENUAPAI METLIFECARE
RETIREMENT VILLAGE
99 TOTARA ROAD, WHENUAPAI

MASTERPLAN LAYOUT
FOR APPROVAL

27 January 2023

Prepared for METLIFECARE

RESET URBAN DESIGN

metlifecare

CONTENTS

Project: WHENUAPAI METLIFECARE
PN: 2902

Prepared for:
METLIFECARE

Prepared by:
Reset Urban Design Ltd

Document Status:

Rev	Status	Date	Author	Reviewed
0	For Discussion	20 January 2023	SR	JM
1	For Approval	27 January 2023	SR	JM

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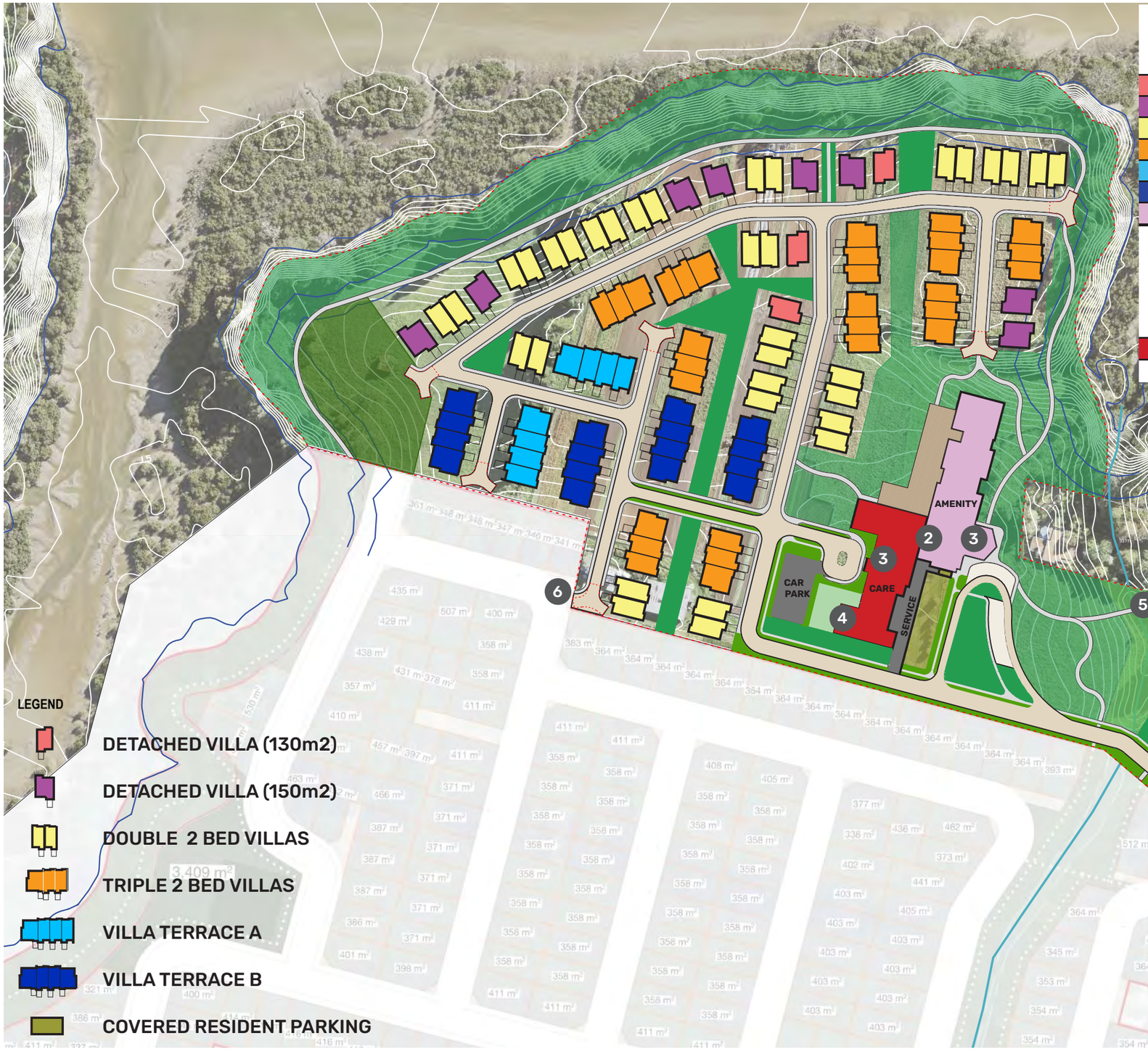
01 SITE ARRANGEMENT

Masterplan Arrangement



ILU Schedule						
Typology	1 Bed	2 Bed	3 Bed	ILU Per typology	Number	Total ILU
Detached Villa 130m2			1	1	5	5
Detached Villa 150m2			1	1	10	10
Double Villa		2		2	19	38
Triple Villa		2	1	3	11	33
Villa Terrace A		3	1	4	2	8
Villa Terrace B		2	2	4	4	16
Amenity Building	15	0	10	25	1	25
Totals	**15**	**9**	**16**	**40**		**135**

CARE UNIT SCHEDULE	
Care	50
Total	**50**

Layout Characteristics:

1. Main entrance located at southern side of property
2. Amenity and care building joined to share commercial kitchen
3. Amenity and care have separate entries into the building
4. Care/memory garden
5. Group of villas accessed through separate entrance, pedestrian access by bridge to amenity
6. Gated connection to Totara Landing

Scale 1:2000

Appendix B

CIVIL DRAWINGS

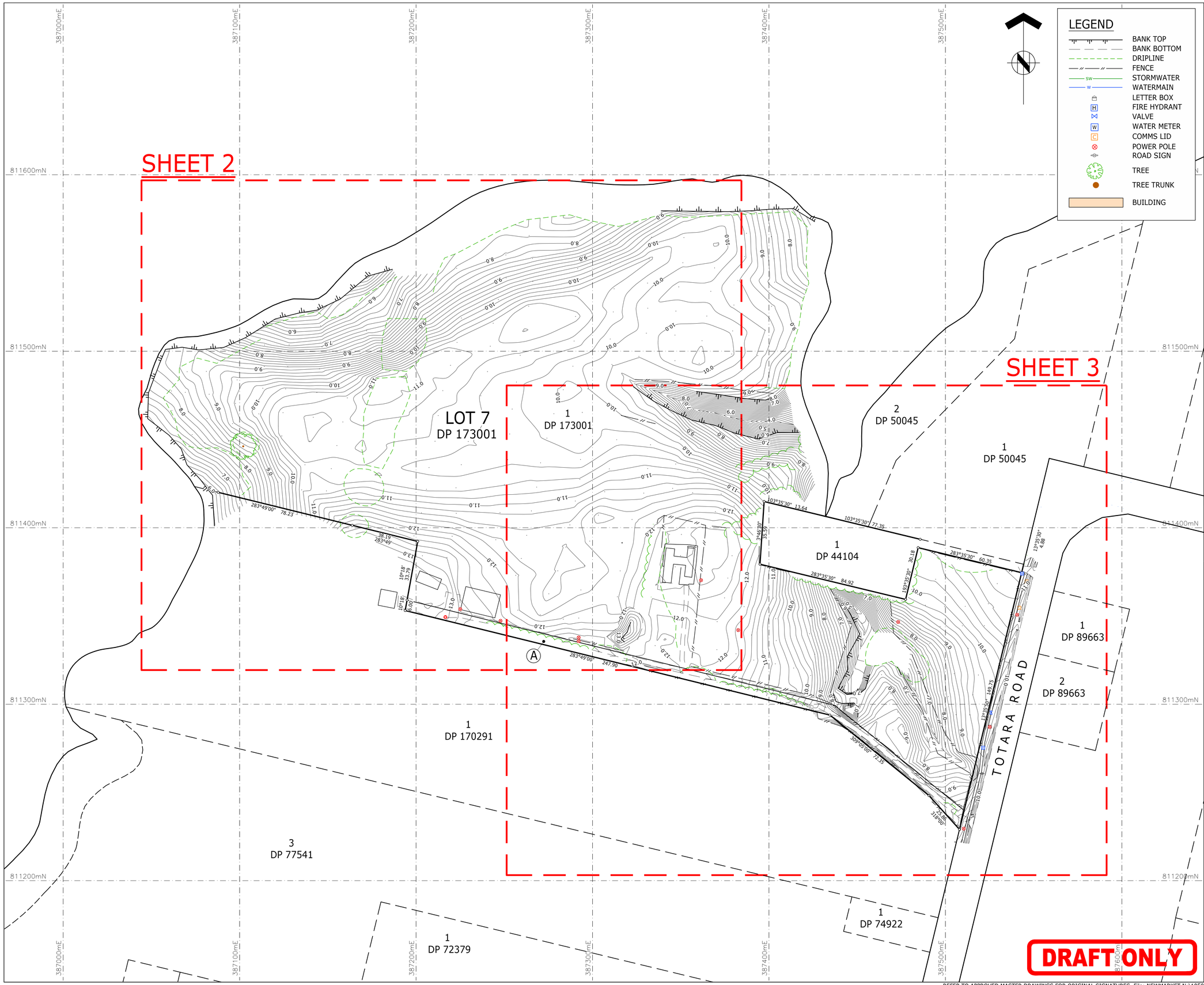
HARRISON
GRIERSON.
COM

99 TOTARA ROAD DEVELOPMENT

WHENUAPAI, AUCKLAND

CIVIL FAST-TRACK CONSENT DRAWING LIST	
DRAWING LIST	**DRAWING TITILE**
A2213426-00-000	COVER SHEET AND DRAWING INDEX
A2213426-00-001	SAFETY IN DESIGN
A2213426-00-200	FINISHED CONTOUR PLAN
A2213426-00-220	EARTHWORKS CUT AND FILL PLAN
A2213426-00-240	EROSION AND SEDIMENT CONTROL PLAN
A2213426-00-241	EROSION AND SEDIMENT CONTROL PLAN STANDARD DETAILS SHEET 1 OF 3
A2213426-00-242	EROSION AND SEDIMENT CONTROL PLAN STANDARD DETAILS SHEET 2 OF 3
A2213426-00-243	EROSION AND SEDIMENT CONTROL PLAN STANDARD DETAILS SHEET 3 OF 3
A2213426-00-400	STORMWATER OVERALL LAYOUT PLAN
A2213426-00-401	STORMWATER LAYOUT PLAN SHEET 1 OF 2
A2213426-00-402	STORMWATER LAYOUT PLAN SHEET 2 OF 2
A2213426-00-410	WASTEWATER OVERALL LAYOUT PLAN
A2213426-00-411	WASTEWATER LAYOUT PLAN SHEET 1 OF 2
A2213426-00-412	WASTEWATER LAYOUT PLAN SHEET 2 OF 2
A2213426-00-460	STORMWATER MANAGEMENT PLAN OVERALL LAYOUT
A2213426-00-461	STORMWATER MANAGEMENT PLAN SHEET 1 OF 2
A2213426-00-462	STORMWATER MANAGEMENT PLAN SHEET 2 OF 2
A2213426-00-465	100 YEAR OVERLAND FLOWPATH OVERALL LAYOUT PLAN
A2213426-00-466	100 YEAR OVERLAND FLOW PATH CROSS SECTION POST DEVELOPMENT
A2213426-00-550	WATER RETICULATION OVERALL LAYOUT PLAN
A2213426-00-551	WATER RETICULATION LAYOUT PLAN SHEET 1 OF 2
A2213426-00-552	WATER RETICULATION LAYOUT PLAN SHEET 2 OF 2
A2213426-00-590	WATER STANDARD DETAILS SHEET 1 OF 4
A2213426-00-591	WATER STANDARD DETAILS SHEET 2 OF 4
A2213426-00-592	WATER STANDARD DETAILS SHEET 3 OF 4
A2213426-00-593	WATER STANDARD DETAILS SHEET 4 OF 4

HARRISON GRIERSON PROJECT NO: A2213426-00
DATE OF ISSUE: FEBRUARY 2023
ISSUED FOR FAST-TRACK CONSENT STAGE 1



LEGEND

- BANK TOP
- BANK BOTTOM
- DRIPLINE
- FENCE
- STORMWATER
- WATERMAIN
- LETTER BOX
- FIRE HYDRANT
- VALVE
- WATER METER
- COMMS LID
- POWER POLE
- ROAD SIGN
- TREE
- TREE TRUNK
- BUILDING

ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND

ISO 9001 QUALITY ASSURED

NOTES

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946
   ORIGIN OF LEVELS
   SM 157 SO 56271
   RL 16.68
2. COORDINATES ARE IN TERMS OF NZ GEOGETIC DATUM 2000 MT EDEN CIRCUIT
   ORIGIN OF COORDINATES
   SM 157 SO 56271
   810921.19 mN
   387441.63 mE
3. CONTOURS ARE AT 0.2m INTERVALS. CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED FROM SPOT HEIGHT DETERMINATIONS AND MAY NOT REPRESENT THE TRUE GROUND LEVELS. ANY CRITICAL HEIGHTS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN AND CONSTRUCTION COMMENCING.
4. THIS PLAN HAS BEEN CARRIED OUT TO TOPOGRAPHICAL STANDARDS. ALL LEVELS SHOWN ARE CORRECT AT TIME OF SURVEY. CRITICAL DIMENSIONS AND LEVELS SHOULD BE VERIFIED.
5. BOUNDARIES SHOWN ON THIS PLAN ARE FROM DP 173001 AND HAVE NOT BEEN SURVEYED. A BOUNDARY DEFINITION SURVEY SHOULD BE CARRIED OUT TO ESTABLISH EXACT BOUNDARY POSITIONS ON SITE.
6. ALL EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS ASSOCIATED WITH THIS SITE MAY NOT BE SHOWN ON THIS PLAN. AN INVESTIGATION OF THE MOST CURRENT LEGAL RECORDS SHOULD BE UNDERTAKEN PRIOR TO DESIGN AND CONSTRUCTION COMMENCING.
7. SERVICES POSITIONS AND ALIGNMENT MAY HAVE BEEN OBTAINED FROM THIRD PARTY RECORDS AND SHOULD BE VERIFIED ON SITE PRIOR TO CONSTRUCTION COMMENCING. HARRISON GRIERSON DOES NOT IN ANY WAY GUARANTEE THE ACCURACY OF ANY UNDERGROUND SERVICE SHOWN ON THIS PLAN.
8. THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN.
9. THIS PLAN IS ISSUED FOR A SPECIFIC PROJECT AND MAY NOT BE ALTERED OR USED FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF HARRISON GRIERSON.
10. LEGAL DESCRIPTION
    LOT 1 DP 173001
    COMPRISED IN RT NA105B/72
    TOTAL AREA 89574 m²
11. MHWS HAS BEEN ADOPTED FROM DP 15221 AND HAS NOT BEEN SURVEYED

SCHEDULE OF EXISTING EASEMENTS

PURPOSE	SHOWN	DOMINANT TENEMENT	DOCUMENT
ROW, WATER SUPPLY, POWER AND TELEPHONE	A	LOT 1 DP 170291	C952546.5

AUCKLAND OFFICE
LEVEL 4, 96 ST GEORGES BAY ROAD
PARNELL AUCKLAND 1052
T +64 9 917 5000
W www.harrisongrierson.com

REF	REVISIONS	BY	DATE
A	CLIENT ISSUE	SJW	21.12.22

PROJECT:

METLIFECARE
99 TOTARA ROAD
WHENUAPAI

TITLE:

SITE SURVEY
(SHEET 1 OF 3)

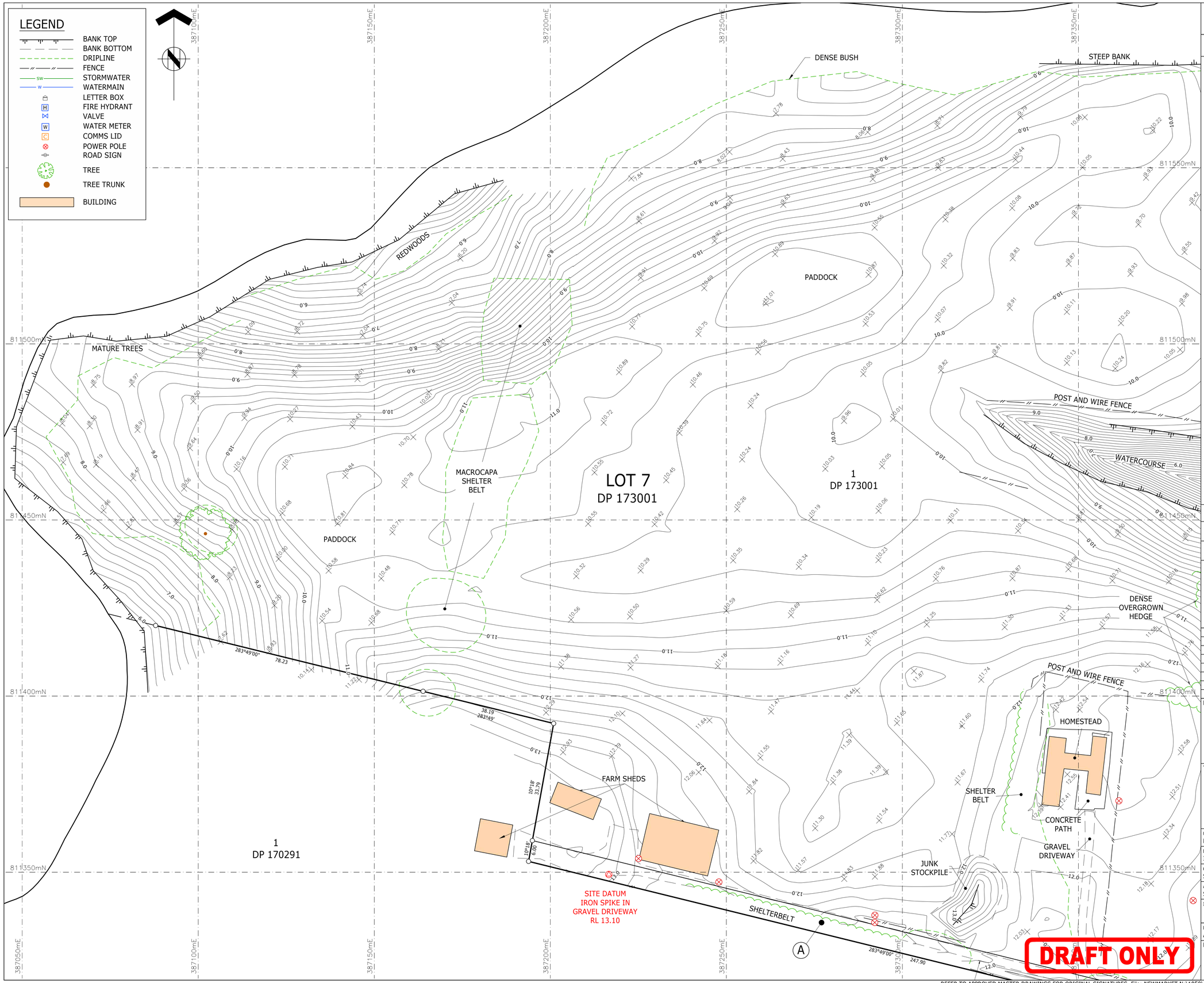
ORIGINATOR: MJS	DATE: 10.12.22	SIGNED:	PLOT BY: IZC
DRAWN: IZC	DATE: 16.12.22	SIGNED:	PLOT DATE: 21.12.22
CHECKED: SJW	DATE: 21.12.22	SIGNED:	SURVEY BY: MJS
APPROVED: SJW	DATE: 21.12.22	SIGNED:	SURVEY DATE: 10.12.22

ISSUE STATUS: CLIENT ISSUE

PROJECT No:	SCALES:	
A2213426.00	1:1000 - A1 1:2000 - A3	A1

DRAWING No: 2213426-HG-XX-DR-XX-G-SS01 REV A

DRAFT ONLY



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REF	REVISIONS	BY	DATE
A	CLIENT ISSUE	SJW	21.12.22

PROJECT:

METLIFECARE
99 TOTARA ROAD
WHENUAPAI

TITLE:

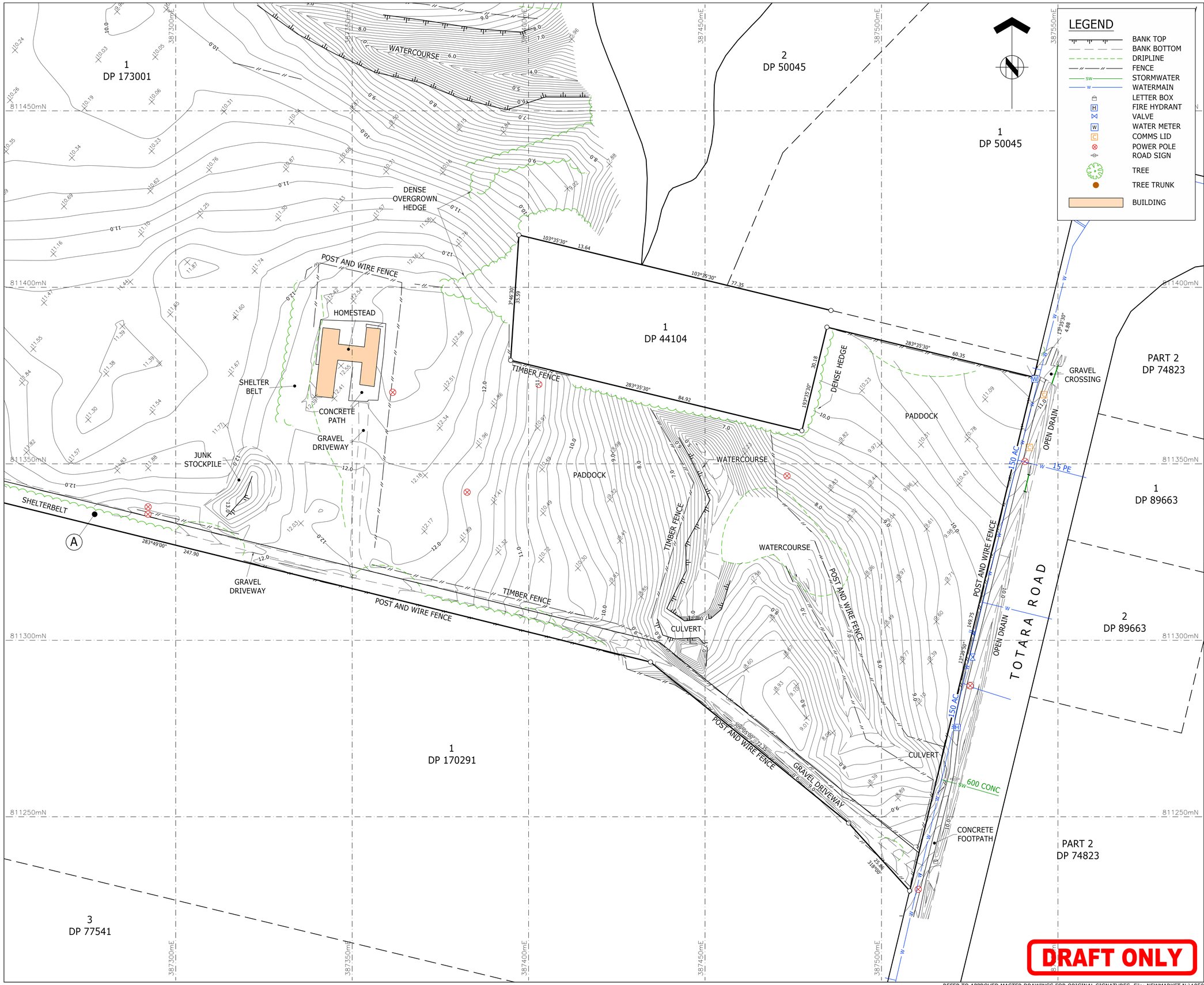
SITE SURVEY
(SHEET 2 OF 3)

ORIGINATOR: MJS	DATE: 10.12.22	SIGNED:	PLOT BY: IZC
DRAWN: IZC	DATE: 16.12.22	SIGNED:	PLOT DATE: 21.12.22
CHECKED: SJW	DATE: 21.12.22	SIGNED:	SURVEY BY: MJS
APPROVED: SJW	DATE: 21.12.22	SIGNED:	SURVEY DATE: 10.12.22

ISSUE STATUS: CLIENT ISSUE

PROJECT No:	SCALES:	
A2213426.00	1:500 - A1 1:1000 - A3	A1

DRAWING No: 2213426-HG-XX-DR-XX-G-SS01 REV A



LEGEND

- BANK TOP
- BANK BOTTOM
- DRIPLINE
- FENCE
- STORMWATER
- WATERMAIN
- LETTER BOX
- FIRE HYDRANT
- VALVE
- WATER METER
- COMMS LID
- POWER POLE
- ROAD SIGN
- TREE
- TREE TRUNK
- BUILDING

ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND

ISO 9001 QUALITY ASSURED

NOTES

1. LEVELS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946
   ORIGIN OF LEVELS
   SM 157 SO 56271
   RL 16.68
2. COORDINATES ARE IN TERMS OF NZ GEOGETIC DATUM 2000 MT EDEN CIRCUIT
   ORIGIN OF COORDINATES
   SM 157 SO 56271
   810921.19 mN
   387441.63 mE
3. CONTOURS ARE AT 0.2m INTERVALS. CONTOURS SHOWN ON THIS PLAN HAVE BEEN ELECTRONICALLY COMPUTED FROM SPOT HEIGHT DETERMINATIONS AND MAY NOT REPRESENT THE TRUE GROUND LEVELS. ANY CRITICAL HEIGHTS SHOULD BE CHECKED ON SITE PRIOR TO DESIGN AND CONSTRUCTION COMMENCING.
4. THIS PLAN HAS BEEN CARRIED OUT TO TOPOGRAPHICAL STANDARDS. ALL LEVELS SHOWN ARE CORRECT AT TIME OF SURVEY. CRITICAL DIMENSIONS AND LEVELS SHOULD BE VERIFIED.
5. BOUNDARIES SHOWN ON THIS PLAN ARE FROM DP 173001 AND HAVE NOT BEEN SURVEYED. A BOUNDARY DEFINITION SURVEY SHOULD BE CARRIED OUT TO ESTABLISH EXACT BOUNDARY POSITIONS ON SITE.
6. ALL EASEMENTS, COVENANTS AND OTHER LEGAL INSTRUMENTS ASSOCIATED WITH THIS SITE MAY NOT BE SHOWN ON THIS PLAN. AN INVESTIGATION OF THE MOST CURRENT LEGAL RECORDS SHOULD BE UNDERTAKEN PRIOR TO DESIGN AND CONSTRUCTION COMMENCING.
7. SERVICES POSITIONS AND ALIGNMENT MAY HAVE BEEN OBTAINED FROM THIRD PARTY RECORDS AND SHOULD BE VERIFIED ON SITE PRIOR TO CONSTRUCTION COMMENCING. HARRISON GRIERSON DOES NOT IN ANY WAY GUARANTEE THE ACCURACY OF ANY UNDERGROUND SERVICE SHOWN ON THIS PLAN.
8. THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN.
9. THIS PLAN IS ISSUED FOR A SPECIFIC PROJECT AND MAY NOT BE ALTERED OR USED FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF HARRISON GRIERSON.
10. LEGAL DESCRIPTION
    LOT 1 DP 173001
    COMPRISED IN RT NA105B/72
    TOTAL AREA 89574 m²
11. MHWS HAS BEEN ADOPTED FROM DP 15221 AND HAS NOT BEEN SURVEYED

SCHEDULE OF EXISTING EASEMENTS

PURPOSE	SHOWN	DOMINANT TENEMENT	DOCUMENT
ROW, WATER SUPPLY, POWER AND TELEPHONE	A	LOT 1 DP 170291	C952546.5

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REF	REVISIONS	BY	DATE
A	CLIENT ISSUE	SJW	21.12.22

PROJECT:

METLIFECARE
99 TOTARA ROAD
WHENUAPAI

TITLE:

SITE SURVEY
(SHEET 3 OF 3)

ORIGINATOR: MJS	DATE: 10.12.22	SIGNED:	PLOT BY: IZC
DRAWN: IZC	DATE: 16.12.22	SIGNED:	PLOT DATE: 21.12.22
CHECKED: SJW	DATE: 21.12.22	SIGNED:	SURVEY BY: MJS
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ISSUE STATUS: CLIENT ISSUE

PROJECT No:	SCALES:	
A2213426.00	1:500 - A1 1:1000 - A3	A1

DRAWING No: 2213426-HG-XX-DR-XX-G-SS01 REV A

DRAFT ONLY

Safety in Design

RISK REGISTER

PROJECT OR DESIGN ELEMENT		PROJECT NUMBER
99 TOTARA ROAD FAST-TRACK CONSENT STAGE 1		A2213426-00
DESIGN ELEMENT DESCRIPTION	**DESCRIPTION OF SPECIFIC SAFETY FOCUS / REQUIREMENTS**	
FAST TRACK CONSENT STAGE 1		
	REFERENCE LEGISLATION / APPROVED CODES OF PRACTICES / STANDARDS	
	Legislation	
	Health & Safety at Work 2015	
	Health and Safety at Work (Worker Engagement, Participation and Representation) Regulations 2016	
	Health and Safety at Work (Asbestos) Regulations 2016	

HAZARD IDENTIFICATION						RISK ASSESSMENT			RISK ACTION PLAN							
						BASE RISK				RESIDUAL RISK						
DESIGN REFERENCE NUMBER	LOCATION/ PLANT AREA	DESIGN LIFE CYCLE STAGE	RISK DESCRIPTION ACTIVITY OR TASK (Describe what could occur)	HAZARDS (Identify the source of harm relating to the event or situation)	POTENTIAL HARM (Identify the potential harm)	LIKELIHOOD	CONSEQUENCE/ SEVERITY	BASE RISK RATING	CONTROL MEASURES AND MITIGATION MEASURES (ELIMINATE, SUBSTITUTE, ISOLATE, ENGINEERING CONTROLS, ADMINISTRATIVE TOOLS, PPE)	LIKELIHOOD	CONSEQUENCE/ SEVERITY	BASE RISK RATING	RESPONSIBLE FOR CONTROLS	COMMENT/FURTHER ACTION	STATUS
1	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	Site Contamination	Contaminated soil	Human health sickness	C – Possible	2 – Major	Significant	The site will be handed over with topsoil removed and certified as Contaminant Free. Appropriate awareness and contamination management processes will need to be employed by the Contractor during construction for the ever present risk of contaminated materials. If suspicious material is found it must be contained, tested, collected, and removed as required.	C – Possible	3 – Moderate	Moderate	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction phase.	Open
3	99 TOTARA ROAD, WHENUAPAI	Setup, Construction and Commissioning	Moving traffic - construction v private traffic etc - also adjacent traffic movements from the adjacent construction site	Traffic or pedestrian movement	Traffic accidents	C – Possible	2 – Major	Significant	Contractor to submit a TMP and methodology.	C – Possible	4 – Minor	Low	Contractor	**Contractor** to Prepare TMP	Open
4	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	RW heights and fall from height when installing the structure itself and/ or building the houses and/ or adjacent landscaping amenity.	Fall from height	Human health incidents	C – Possible	3 – Moderate	Moderate	Notes on drawings @ BC stage and fencing to be put on all walls as per building code. Contractor to have adequate H&S controls in place and use temp fencing as required.	D – Unlikely	3 – Moderate	Low	Contractor	**Contractor to** address	Open
5	99 TOTARA ROAD, WHENUAPAI	Setup, Construction and Commissioning	Public accessing site during construction.	Traffic or pedestrian movement	Human injury and/ or damage to property	A – Almost Certain	4 – Minor	Moderate	Client to ensure that the site is fenced with appropriate access controls.	C – Possible	4 – Minor	Low	Owner/Principal	**Owner/ Principal** to assess and implement as and when required	Open
6	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	High voltage cables (overhead & buried)	Electric shock	Human injury or death and/ or damage to property	C – Pos	2 – Major	Significant	Do a Before U Dig to identify possible issues, identify on drawings, add notes as applicable.	D – Unlikely	3 – Moderate	Low	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction phase.	Open
7	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	Drainage & utility trenches in volcanic material/ rubble rock.	Trench collapse and entrapment.	Human injury and/ or damage to property	B – Lik	2 – Major	Significant	Keep trenches as short and shallow as possible. Benched or excavated with trench shields. Restrict open trench lengths/ durations and progressively backfill. Add note on Dwg.	C – Possible	4 – Minor	Low	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction phase.	Open
8	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	Deep manholes.	Falling from height. Excavation collapse.	Human injury and/ or damage to property.	C – Pos	3 – Moderate	Moderate	Install safety grills at top of MH's. Use trench shields during construction. Confined space internal entry permits during construction and operation.	D – Unlikely	3 – Moderate	Low	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction phase.	Open
9	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	Slope stability of exposed batters.	Material slippage and sediment contamination to receiving environments.	Human injury and/ or damage to property/ damage to the receiving environment.	C – Pos	3 – Moderate	Moderate	Geotech assessed batter slopes, impermeable cover with cut-off drain at the top of the batter/ cover. Limit duration of exposure to elements.	C – Possible	4 – Minor	Low	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction phase.	Open
10	99 TOTARA ROAD, WHENUAPAI	Operation	Extreme weather	Flooding	Property damage, injury	B – Lik	3 – Moderate	Moderate	Designed for 100 year storm events with redundant inlet capacity	D – Unlikely	3 – Moderate	Low	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction	Open
11	99 TOTARA ROAD, WHENUAPAI	Setup, Construction and Commissioning	Working at heights	Falling into deep excavation	Injury	D – Unl	2 – Major	Moderate	Controls to be developed by Contractor	D – Unlikely	2 – Major	Moderate	Contractor	**Contractor** to provide construction methodology and HSE documentation	Open
12	99 TOTARA ROAD, WHENUAPAI	Setup, Construction and Commissioning	Temporary works	Collapse of excavation, working at heights, confined space	Injury	D – Unl	2 – Major	Moderate	Controls to be developed by Contractor	D – Unlikely	2 – Major	Moderate	Contractor	**Contractor** to provide construction methodology and HSE documentation	Open
13	99 TOTARA ROAD, WHENUAPAI	Investigation and Design	Ground stability & ESC Measures	Soil erosion leading to sediment contamination of receiving environments.	Damage to the receiving environment.	B – Lik	3 – Moderate	Moderate	Implement ESC measures during the design and construction phases to be monitored and upkept.	C – Possible	4 – Minor	Low	Designer	**Designer** to manage through construction documentation. Contractor responsible and to manage during the construction phase.	Open

FAST-TRACK CONSENT

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REF	REVISIONS	BY	DATE
B	FOR FAST-TRACK CONSENT STAGE 1	OLZ	01.02.23
A	FOR FAST-TRACK CONSENT STAGE 1	OLZ	27.01.23

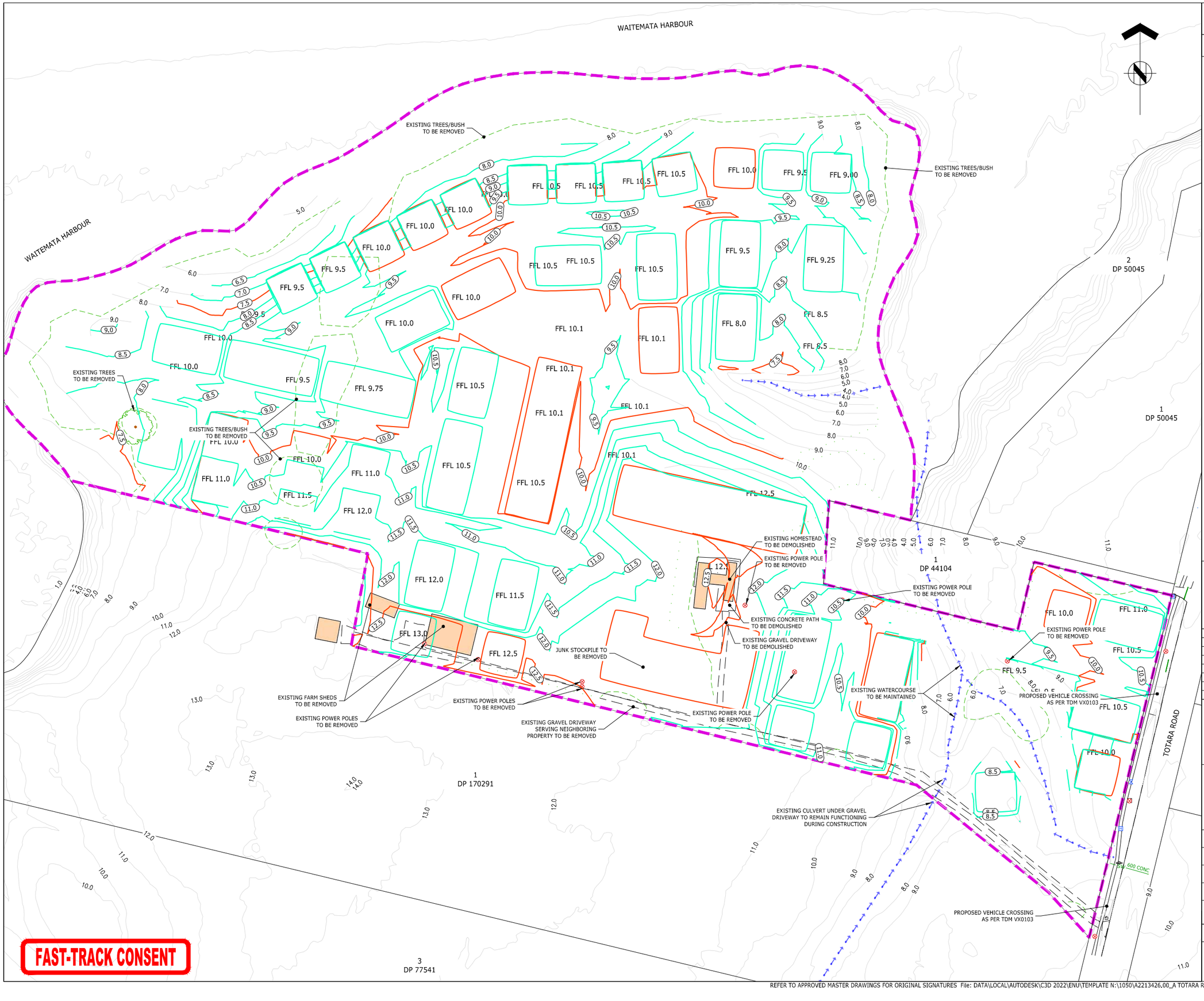
PROJECT:
Metlifecare
99 TOTARA ROAD DEVELOPMENT

TITLE:
SAFETY IN DESIGN

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
RZR	01.2023		OLZ
DRAWN:	DATE:	SIGNED:	PLOT DATE:
OLZ	01.2023		02.02.23
CHECKED:	DATE:	SIGNED:	SURVEY BY:
RZR	27.01.23		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
SXS	27.01.23		

ISSUE STATUS:
FOR FAST-TRACK CONSENT STAGE 1

PROJECT No:	SCALES:	
A2213426-00	N.T.S	A1
DRAWING No:		REV
A2213426-00-001		B



ASSOCIATION OF CONSULTING ENGINEERS NEW ZEALAND

ISO 9001 QUALITY ASSURED

NOTES:

1. ALL WORKS AND MATERIALS ARE TO COMPLY WITH AUCKLAND COUNCIL ENGINEERING STANDARDS .
2. ALL TOPSOIL TO BE STRIPPED AND STOCKPILED CLEAR OF THE PROPOSED EARTHWORKS IN A LOCATION AGREED WITH THE ENGINEER.
3. ALL EARTHWORKS SHALL COMPLY WITH THE AUCKLAND COUNCIL EROSION & SEDIMENT CONTROL GUIDELINES FOR LAND DISTURBING ACTIVITIES, TECHNICAL PUBLICATION GD05.
4. THE FINISHED GROUND CONTOURS ARE GENERIC PRELIMINARY CONTOURS. MORE DETAILS TO THE CONTOURS SHALL BE PROVIDED AT LATER STAGE.
5. THE FFLS ARE PRELIMINARY AND SHALL BE FINALISED ONCE THE OLFP ASSESSMENT IS DONE AT LATER STAGE.

LEGEND:

- FINISHED CONTOURS SHOWN AT 0.5m INTERVALS
- EXISTING CONTOURS SHOWN AT 1.0m INTERVALS
- SITE BOUNDARY
- EXISTING STREAM

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B	FOR FAST-TRACK CONSENT	OLZ	01.02.23
A	FOR FAST-TRACK CONSENT	RZR	27.01.23
REF	REVISIONS	BY	DATE

PROJECT:

Metlifecare

99 TOTARA ROAD DEVELOPMENT

TITLE:

FINISHED CONTOURS PLAN

ORIGINATOR: RZR	DATE: 01.2023	SIGNED:	PLOT BY: OLZ
DRAWN: OLZ	DATE: 01.2023	SIGNED:	PLOT DATE: 02.02.23
CHECKED: RZR	DATE: 27.01.23	SIGNED:	SURVEY BY:
APPROVED: SXS	DATE: 27.01.23	SIGNED:	SURVEY DATE:

ISSUE STATUS: FOR FAST-TRACK CONSENT STAGE 1

PROJECT No: A2213426-00	SCALES: 1:750 - A1 1:1500 - A3	A1
DRAWING No: A2213426-00-200		REV B