



496 EAST COAST ROAD, WINDSOR PARK INFRASTRUCTURE CAPACITY ASSESSMENT FOR PLAN CHANGE JOB REF: P23-077, REV E DATE: 16/10/2024 Report Prepared by:

Alm

Peter Lowe BE (Civil), CPEng Landworks Ltd

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LIMITATION

This report has been prepared for "Windsor Park Community & Multisport Hub INC", according to their instructions, for the particular objectives described herein. Landworks Ltd accepts no responsibility for the content of this report if it is used by any other party or for any other objective. Any use of or reliance on the information contained in this report for decisions made by third parties is the responsibility of these third parties. Landworks Ltd accepts no responsibility for damage incurred by third parties resulting from the use of or reliance on this report, or if the report is used by any party for purposes other than the objectives described herein.

1 // INTRODUCTION

This report has been prepared on behalf of Windsor Park Community & Multisport Hub INC, for the purposes of a private plan change application. This report describes an illustrative option for the subject site to support a plans change, and to demonstrate how the site could be serviced with engineering infrastructure for 80 to 100 medium density dwellings, for a future resource consent application.

An indicative/potential design option has been depicted in the drawings and in this report to show as a base to assess capacity such as stormwater, wastewater, and other civil matters.

2 // SITE DESCRIPTION

The plan change site consists of one existing title with an area of 63,805m². However, the main area of development in the north of the site is only approximately 12,800m². The site is largely flat with an overall grade to the south. Large flat sports fields make up most of the site's area. There is an elevation difference of approximately 18m between the highest and lowest point on the site.

There are formal overland flowpaths with catchment areas over 4000m² or floodplains on the site.

There are multiple large diameter (600mm, 750mm and 1050mm) concrete stormwater pipes throughout the site. These pipes enter from northern, eastern, and western boundaries respectively and serve the larger catchment.

There is a 150mm diameter public wastewater main and manhole that traverses the main development area through the centre of the site from north to south.

There are multiple public water main in the road outside the site as well as a public water main within the site used by the sports field. A hydrant is located within the carpark area west of the site.

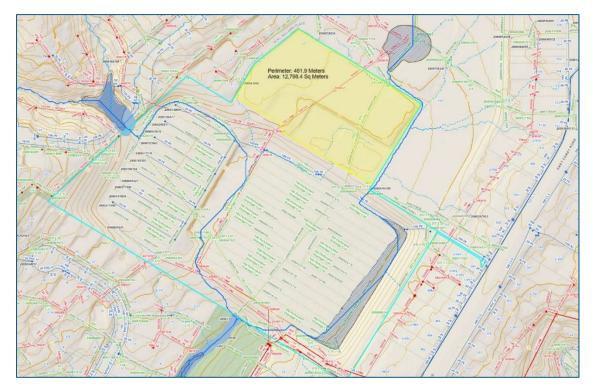


Figure 1 – Existing Public Services

3 // ILLUSTRATIVE OPTION FOR DEVELOPMENT

The plan change application proposal is to rezone part of the Active Recreation zoned parent site suitable for a residential development. Discussions with the urban designer and traffic engineer have estimated that the agreed development range is 80 – 100 units depending on the final design, layout and market demand.

For this plan change application for rezoning we have used an indicative scheme plan comprising of 85 units. The number of units could vary in any subsequent application in the range mentioned above. However, the infrastructure servicing requirements will not differ significantly over the range and can be appropriately managed within the MHU zone controls.

The current illustrative proposal is to subdivide into 85 units as generally shown below with:

- 60 walk up apartments
- 21 Terraced, two-storey dwellings
- 4 Duplexed, two-storey dwellings

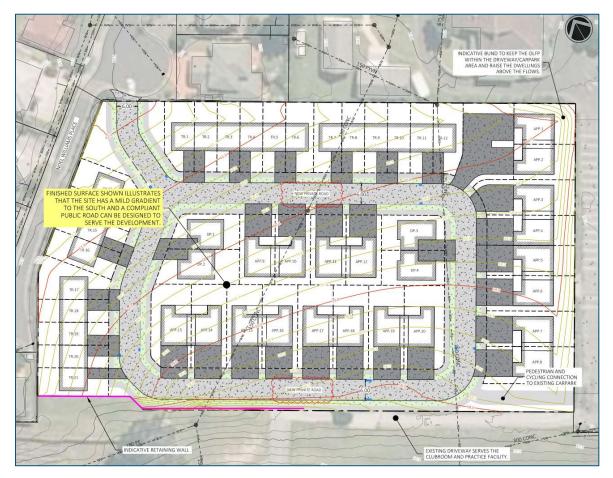


Figure 2 – Proposed layout

4 // EARTHWORKS

Earthworks for the site currently demonstrates that the site can be formed for use with compliant grades and is only indicative of what the site could look like. To generally grade the site to the south would involve an approximate cut of 7,000m³ and fill of 1,000m³ over an area of 13,000m². This is subject to future detailed design. The cut and fill volumes are calculated to indicative finished levels.

Retaining walls may be required through the site to provide suitable access grades, building platforms and outdoor living areas.

Erosion and sediment control drawings have been provided on drawing #220, to demonstrate that suitable erosion and sediment control measures can be implemented, and works can be completed in accordance with Auckland Council GD05.

5 // ACCESS TO THE SITE

Access to the development is demonstrated through a new private road and footpath for the residents within the site, with a road reserve corridor of 12m to show the proposal could be adequately serviced.

This potential design is detailed further within the traffic report from Commute.

The pavement design is not relevant at this stage for a plan change application and would be subject of an engineering approval.

A pedestrian and cycling connection is shown at the southeast corner of the site to connect to the existing carpark.

All accessways and roadways would be designed at the time of any actual consent application.

6 // STORMWATER MANAGEMENT AND DISPOSAL

Refer to the separate Stormwater management plan for all stormwater and Overland Flowpath related items.

7 // E36 - FLOODING AND OVERLAND FLOWPATH ASSESSMENT

Refer to the separate Stormwater management plan for all stormwater and Overland Flowpath related items.

8 // WASTEWATER

Wastewater would be serviced with new lot connections through a public wastewater extension.

Watercares requirement for a level 1 capacity check is given from their wastewater code of practice under section 5.3.5.1.2, specifically below;

Threshold criteria for eliminating the need for checks must meet <u>all</u> of the following criteria:

- (1) The site is outside Watercare's defined combined network area;
- (2) The net change in Peak Design Flow from the site is less than 1.0 L/s, or is for less than 20 new dwellings, or the proposed development reduces the current number of residential dwellings (for commercial/industrial/other users, reducing the current discharge);
- (3) There is no future upstream greenfield land that is required to gravitate through the site in order to connect into the existing wastewater network;
- (4) Any proposed buildings are less than four storeys high;
- (5) The development or area of connection will connect up to a wastewater main which is usually 300mm or larger.

Figure 3 - level 1 capacity check requirements for wastewater

As the site proposed more than 20 new dwellings, and the increase of peak flows from the additional dwellings is over 1.0 L/s, a level 1 capacity check down to the nearest 300mm network has been completed and demonstrates there is adequate capacity in the existing network for additional dwellings as shown.

9 // WATER

A new privately owned reticulated water supply system would be proposed for the site, this will need to include a new 100mm private main to supply a hydrant for firefighting purposes.

A bulk water meter would supply the site at the boundary with the existing car park. Individual check meters will be installed for the new dwellings. A resident's association would be proposed to managed finances for water meter billing.

Fire hydrant flowrate testing if required, will be supplied to demonstrate that the existing network has enough pressure and flow available to supply the development for domestic usage and firefighting purposes.

10 // POWER AND TELECOMS

Power and telecommunications are available in the street frontage, the development will need to arrange separate contracts for power and communication connections.

APPENDIX A – ENGINEERING DRAWINGS

DRAWING REVISION E FOR PLAN CHANGE

RESIDENTIAL SUBDIVISION

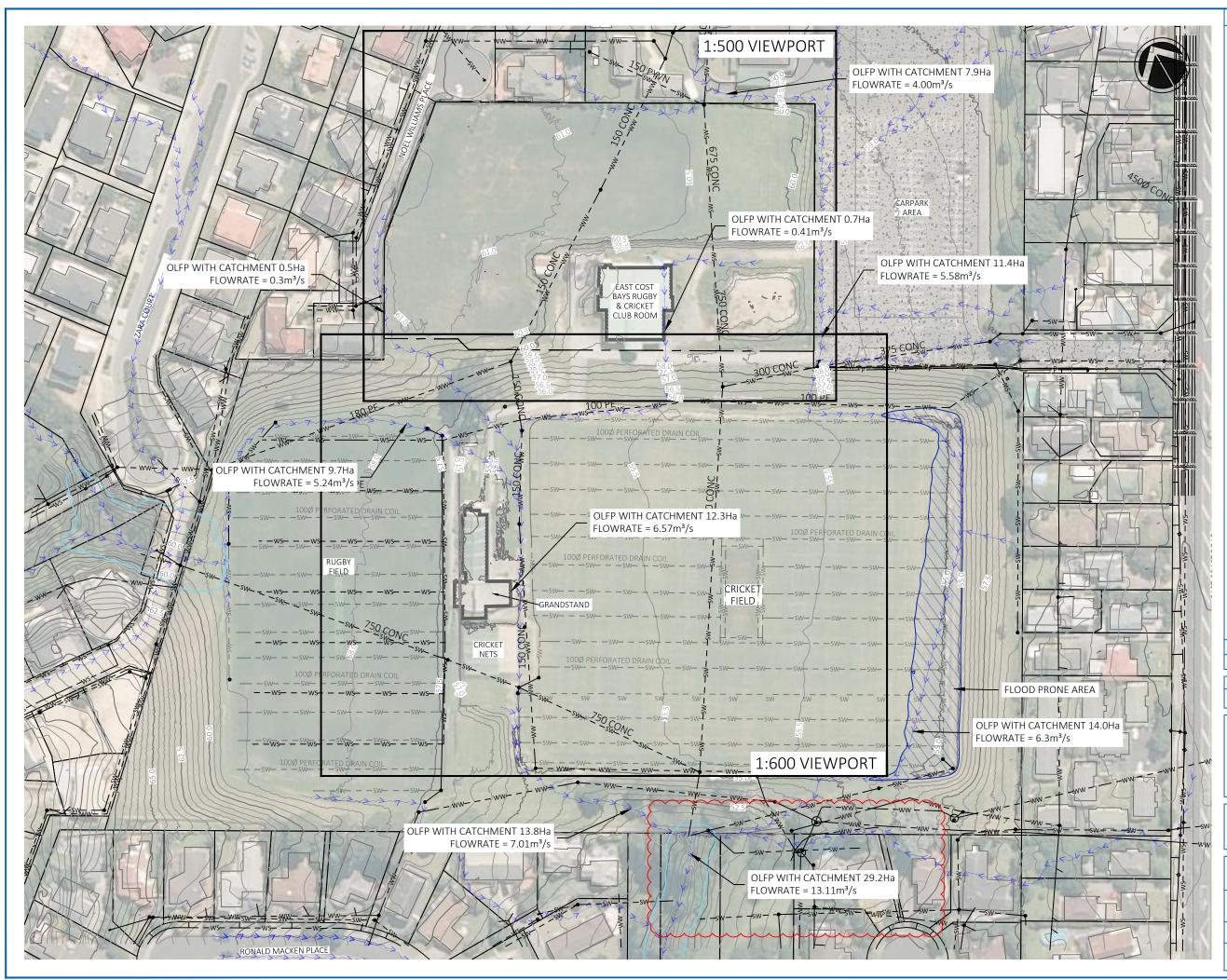
496 EAST COAST ROAD, WINDSOR PARK, AUCKLAND



LOCATION MAP

SHEET NO.	SHEET TITLE	26/03/2024	28/08/2024	4/09/2024	11/09/2024	15/10/2024
		Rev A	Rev B - SW ONLY	Rev C	Rev D	Rev E
000	GENERAL NOTES	A	А	-	-	-
100	EXISTING FEATURES PLAN - OVERALL VIEW	A	В	В	В	В
101	EXISTING FEATURES PART PLAN - SHEET 1	A	А	Α	A	А
102	EXISTING FEATURES PART PLAN - SHEET 2	A	A	А	A	A
200	ACCESSWAY LAYOUT PLAN - OVERALL VIEW	A	А	В	С	D
201	ACCESSWAY LAYOUT PART PLAN - SHEET 1	А	А	В	с (D
202	ACCESSWAY LAYOUT PART PLAN - SHEET 2	A	A	В	-	$\frac{1}{2}$
210	CUT & FILL PLAN	A	А	В	С	С
220	EROSION AND SEDIMENT CONTROL PLAN	A	А	В	С	С
221	EROSION AND SEDIMENT CONTROL DETAILS	A	A	А	A	А
223	EROSION AND SEDIMENT CONTROL POND DETAIL	A	А	А	A	A
310	ACCESSWAY TYPICAL CROSS SECTION	A	A	В	В	С
400	STORMWATER PLAN - OVERALL VIEW	A	В	С	D	D
401	STORMWATER PART PLAN - SHEET 1	A	В	С	С	С
402	STORMWATER PART PLAN - SHEET 2	A	В	С	-	-
410	EXISTING STORMWATER LONG SECTION	A	А	А	A	А
411	STORMWATER LONG SECTION - 1/3	А	A	В	В	В
412	STORMWATER LONG SECTION - 2/3	A	A	В	В	В
413	STORMWATER LONG SECTION - 3/3	А	A	В	В	В
420	OVERLAND FLOW PATH PLAN	A	В	С	D	D
450	DRY DETENTION BASIN INVESTIGATION PLAN	-	A	В	С	С
500	WASTEWATER AND WATER SUPPLY PLAN - OVERALL VIEW	A	A	В	С	С
501	WASTEWATER AND WATER SUPPLY PART PLAN - SHEET 1	A	A	В	В	В
502	WASTEWATER AND WATER SUPPLY PART PLAN - SHEET 2	А	A	В	-	-
510	EXISTING WASTEWATER LONG SECTION	A	A	В	В	В
511	WASTEWATER LONG SECTION - 1/3	A	A	В	В	В
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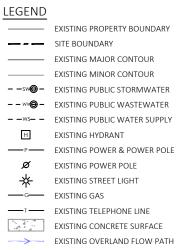


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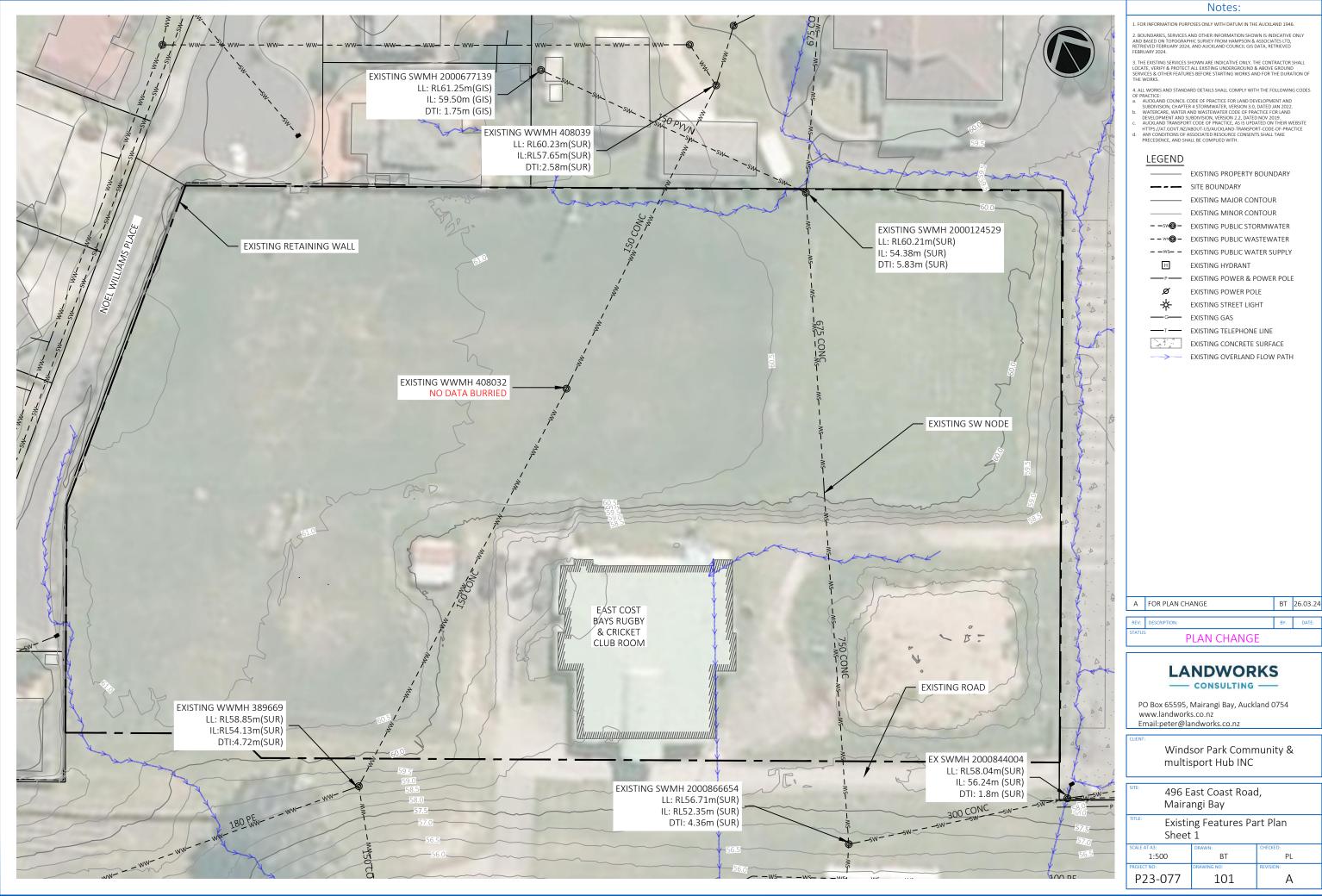


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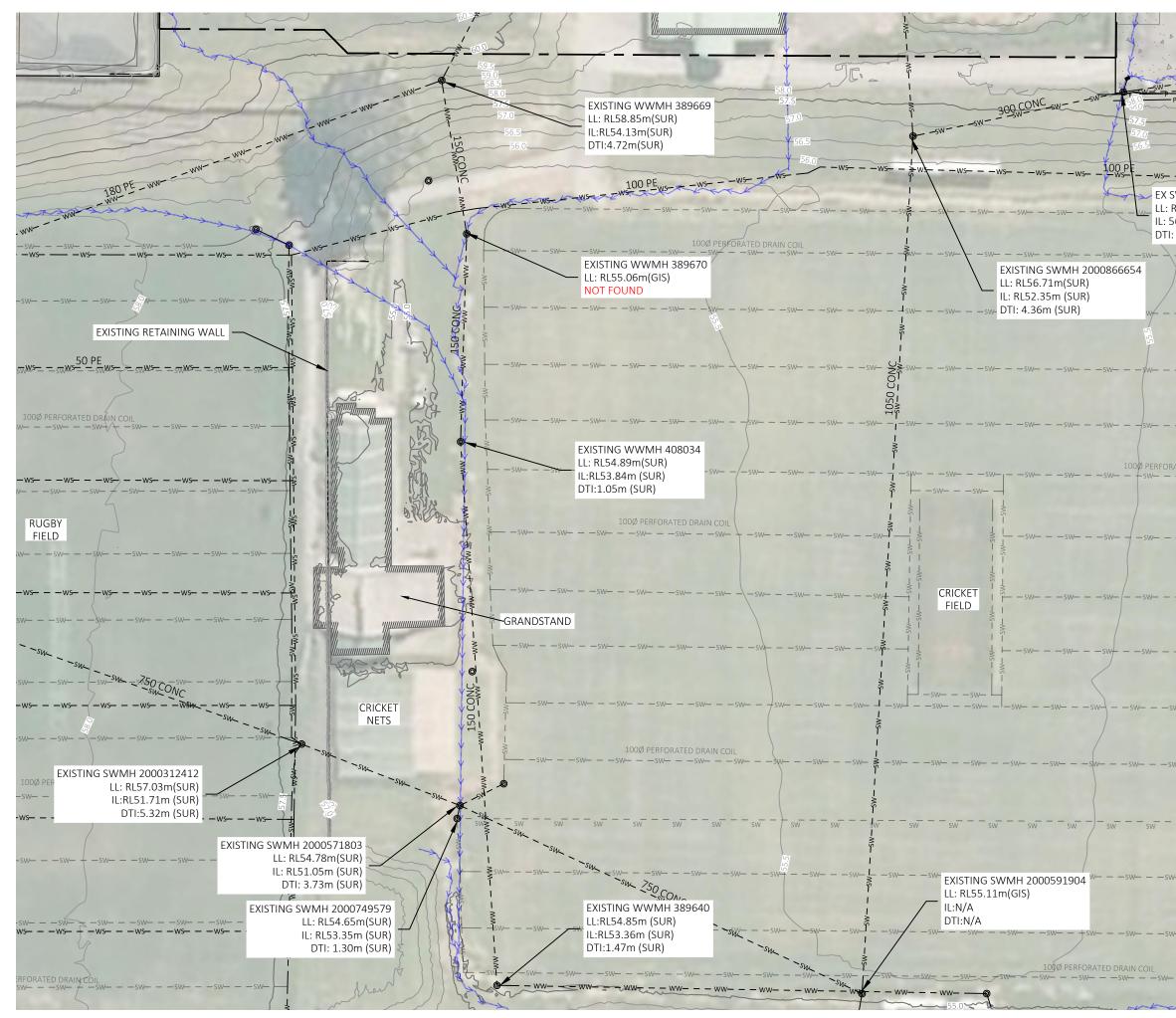
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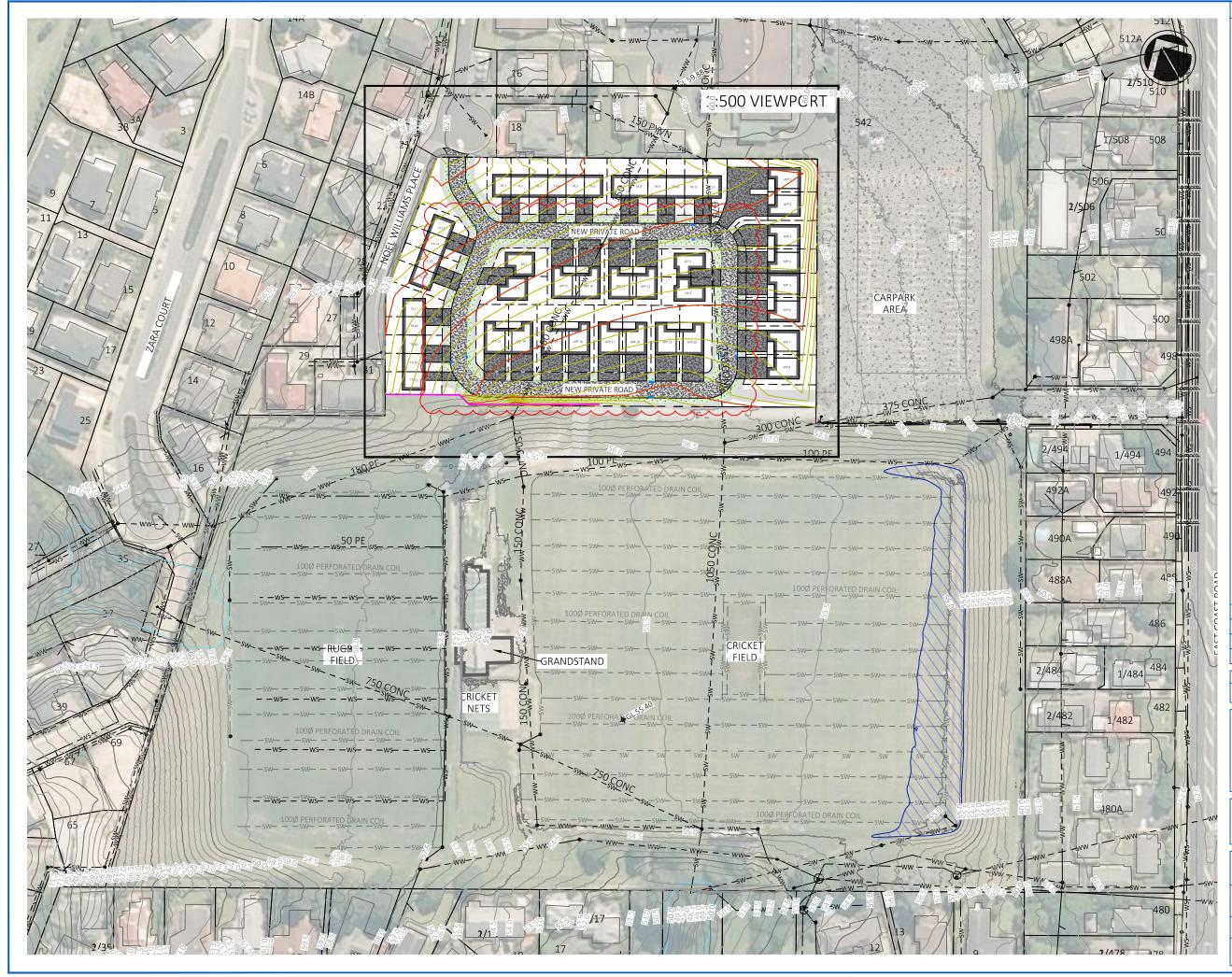
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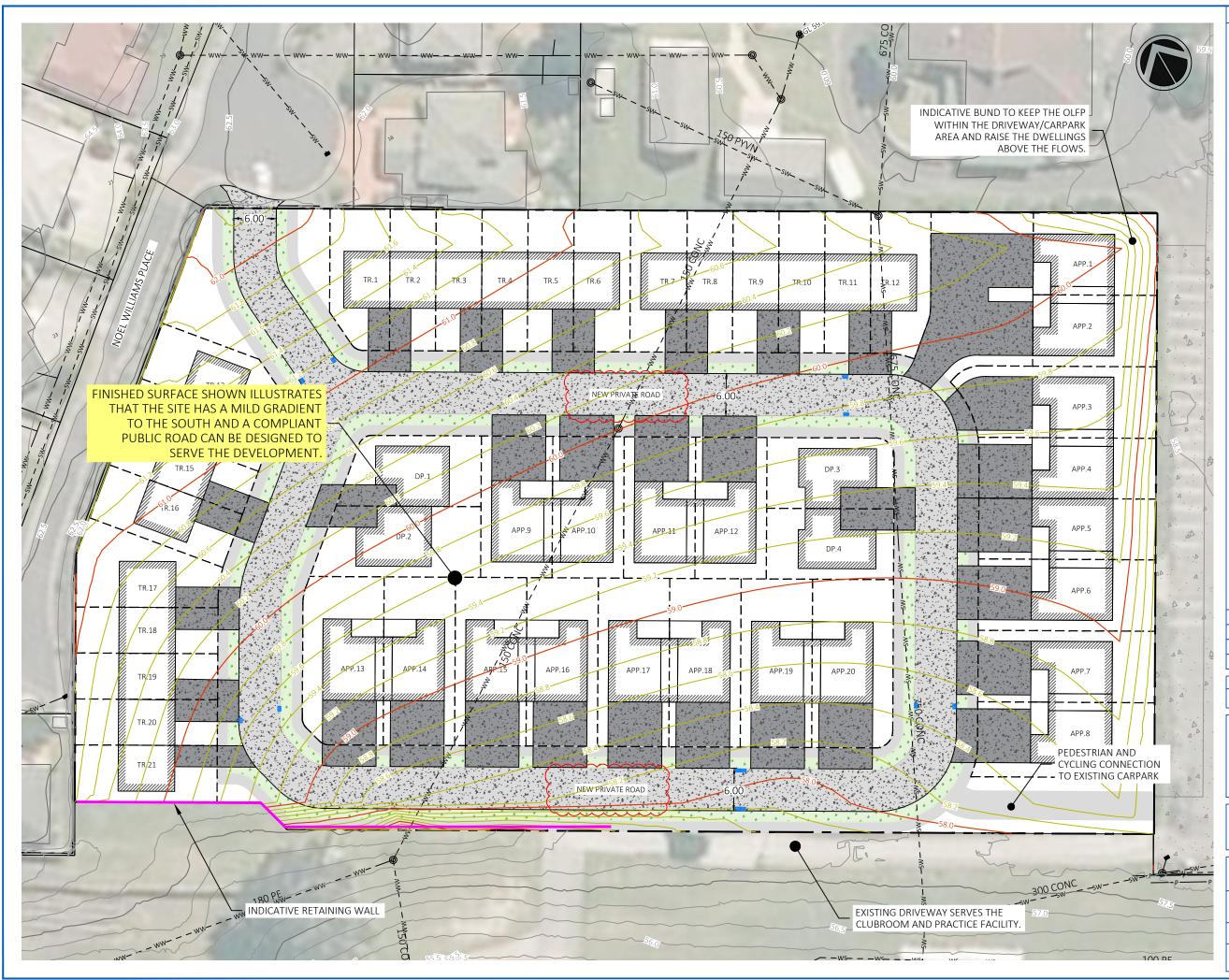
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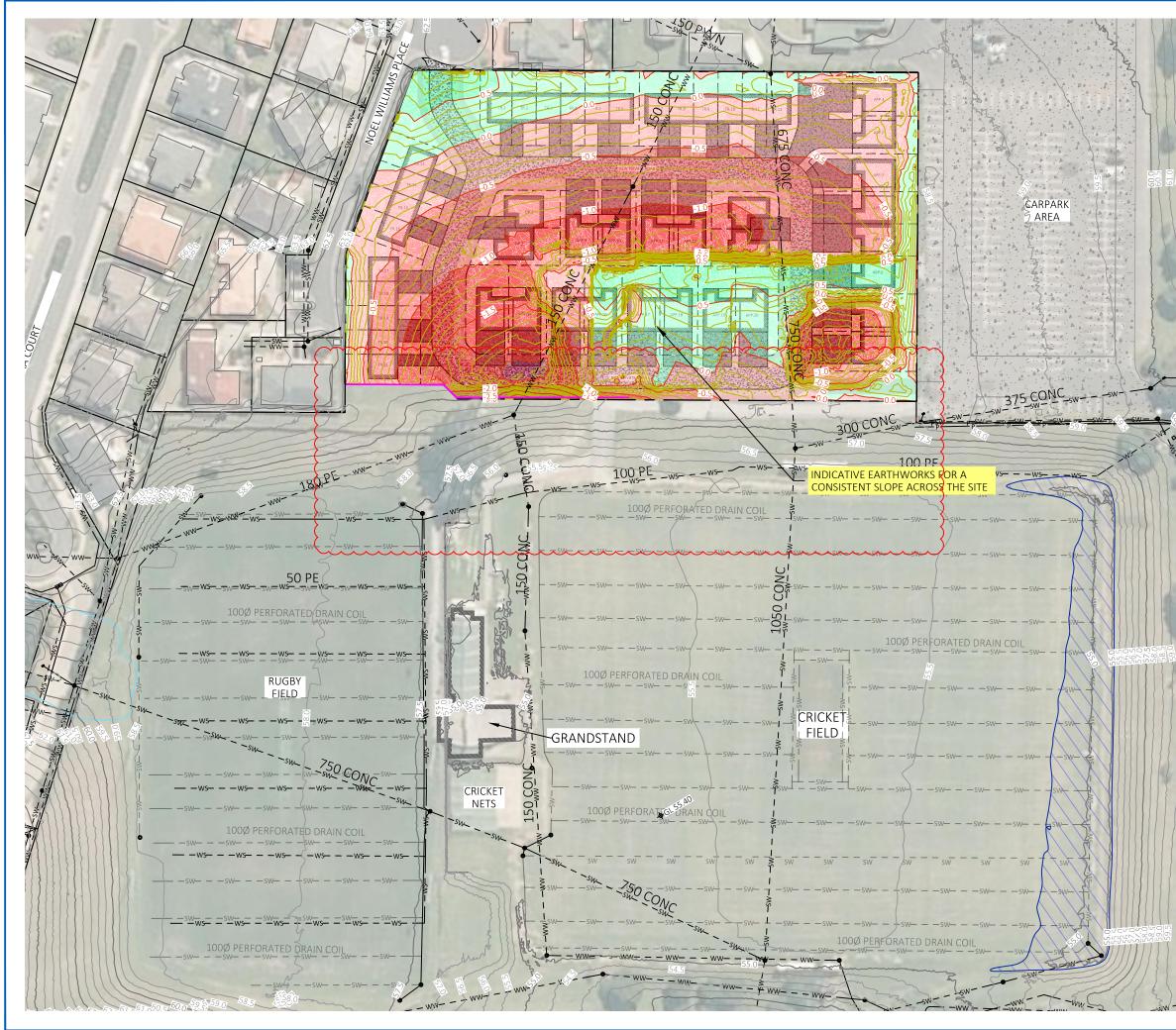
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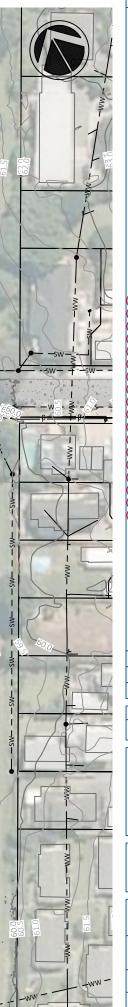
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COMPARISON BETWEEN EXISTING GROUND LEVEL AND FINISHED LEVELS.

EXTENT OF EARTHWORKS: 12,850m²

TOTAL CUT VOLUME: 6,740m³

4

TOTAL FILL VOLUME: 1,010m³

NET CUT VOLUME: 5,730m³

С	REMOVE CLUBROOMS	ΒT	11.09.24		
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А	FOR PLAN CHANGE	ΒT	26.03.24		
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PLAN CHANGE

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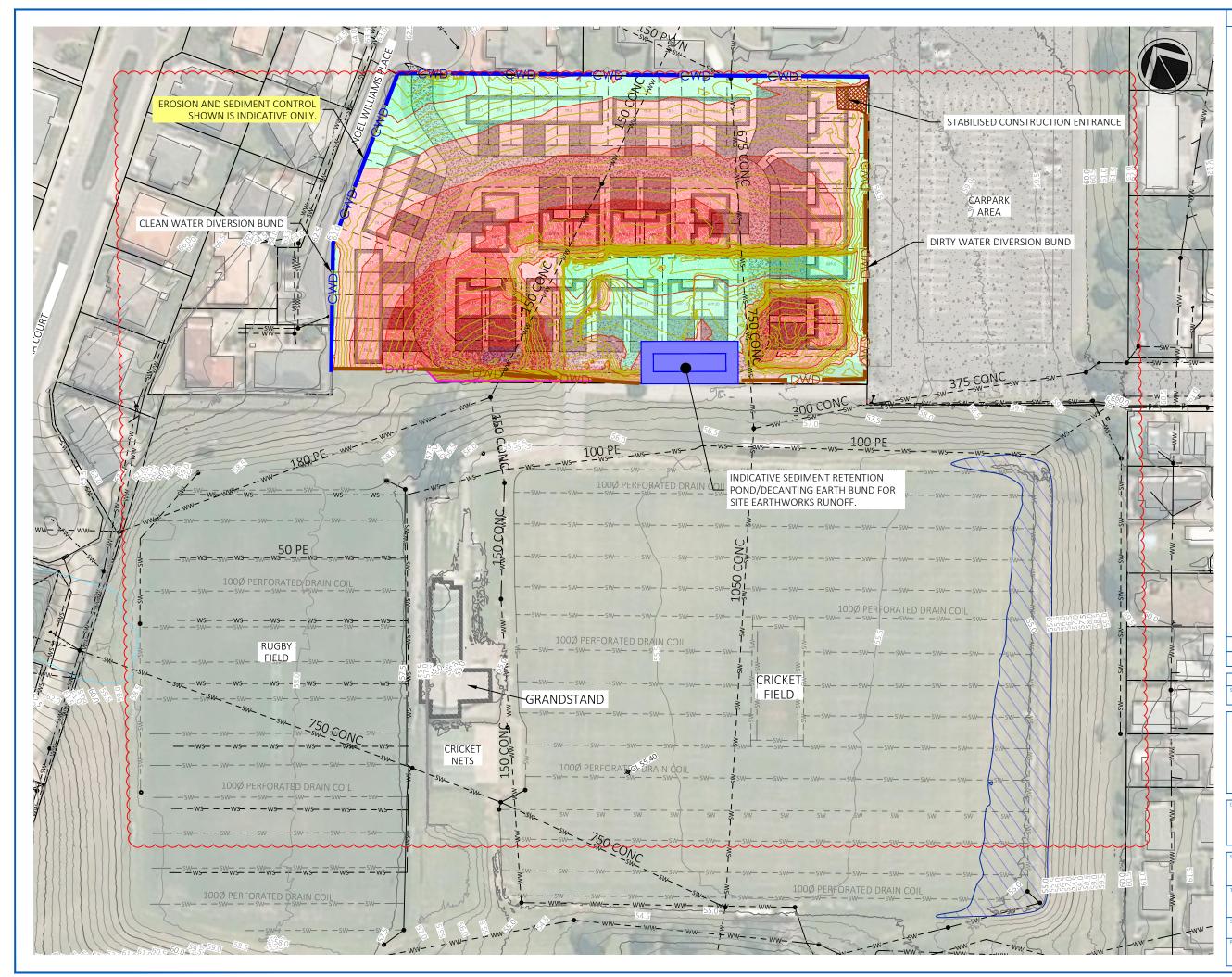
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Windsor Park Community & multisport Hub INC

496 East Coast Road, Mairangi Bay

Cut and Fill Plan

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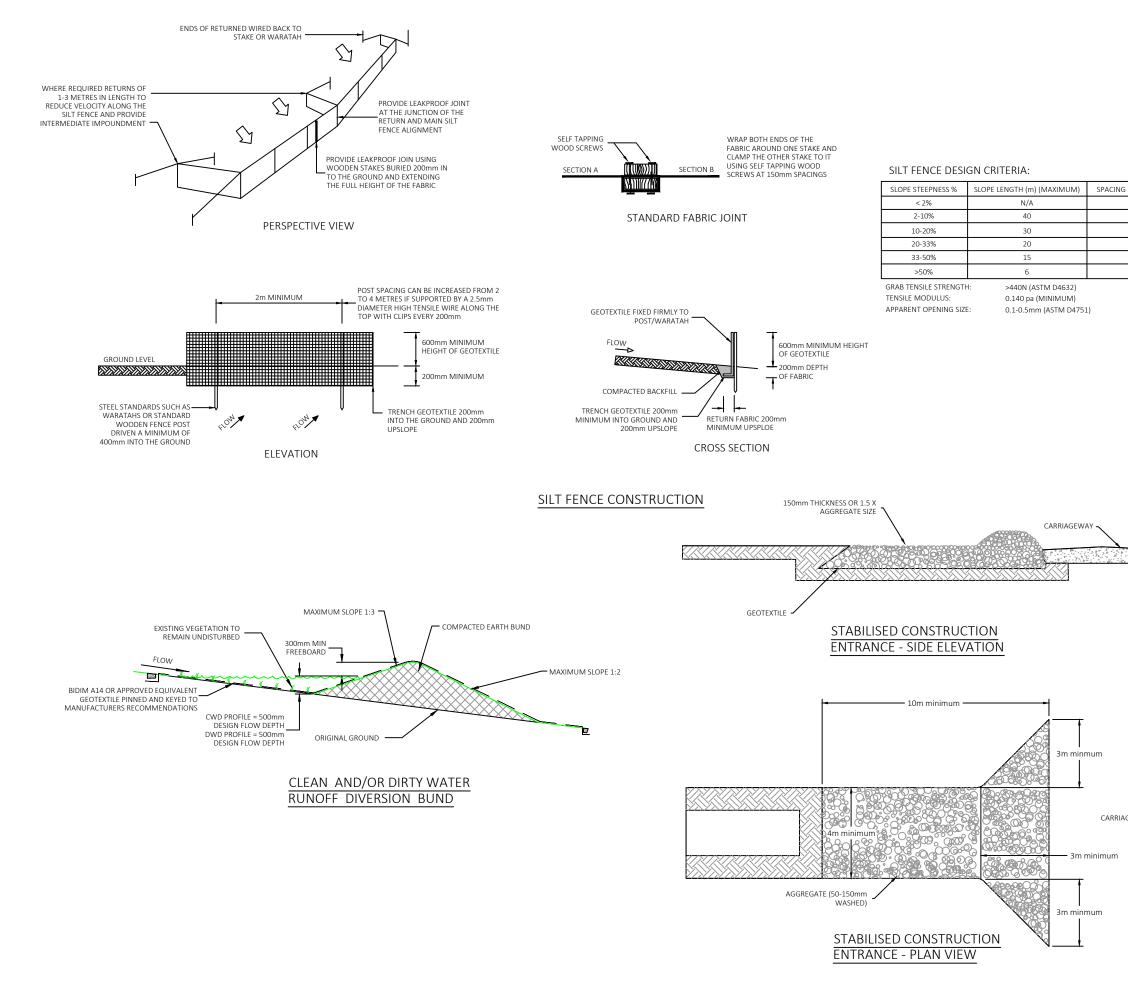
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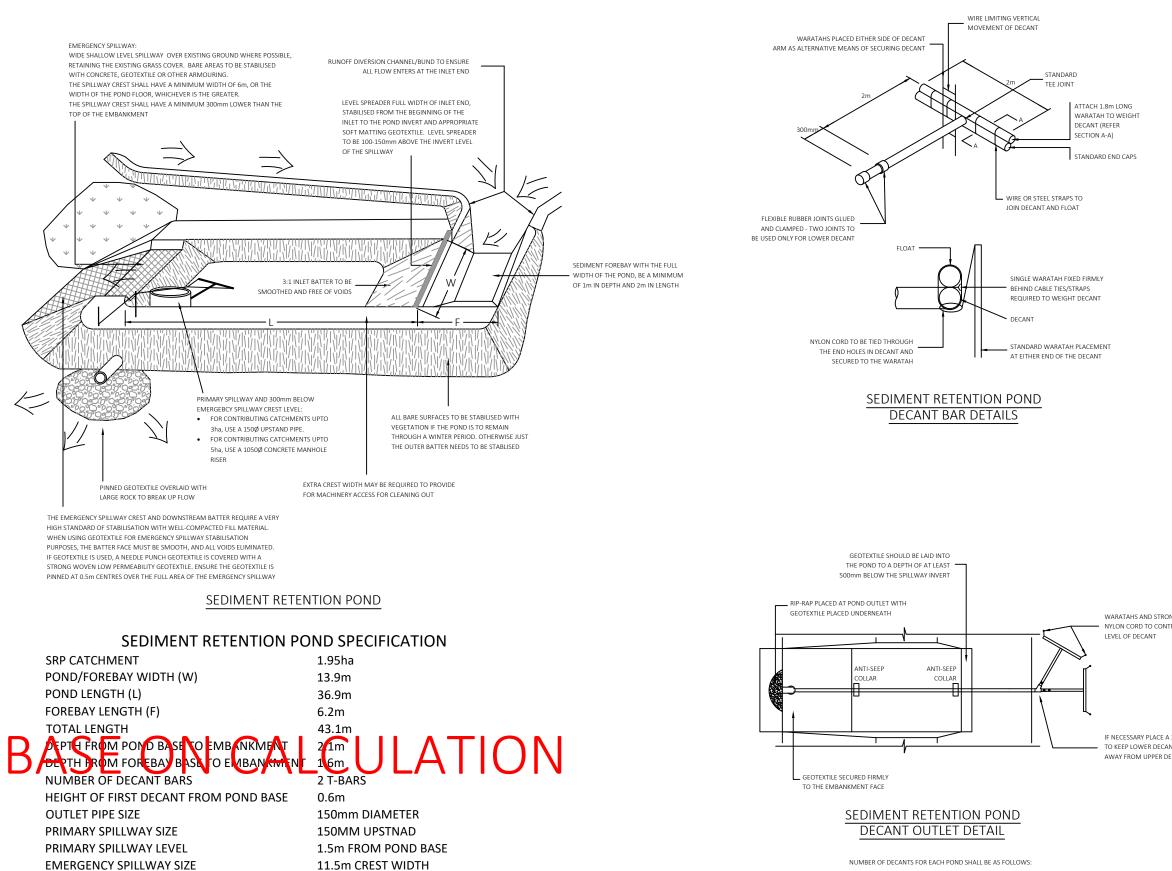
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PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz							
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	Maira	ast Coast Road ngi Bay	
		on and Sedime ol Details	nt
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	PROJECT NO: P23-077	DRAWING NO: 221	REVISION: A



EMERGENCY SPILLWAY CREST LEVEL

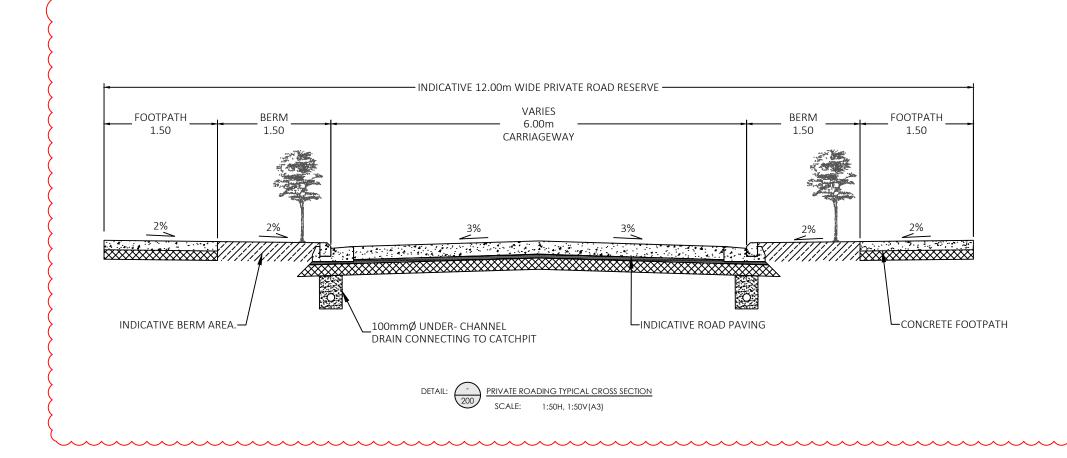
1.8m FROM POND BASE

I) UP TO 1.5HA CATCHMENT - 1 DECANT

II) 1.5-3.0HA CATCHMENT - 2 DECANTS

III) 3 TO 5 HA CATCHMENT - 3 DECANTS

		Notes:		
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	c. AUCKLAND TRANSPORT HTTPS://AT.GOVT.NZ/AI	BDIVISION, VERSION 2.2, DATED CODE OF PRACTICE, AS IS UPDA BOUT-US/AUCKLAND-TRANSPOR	TED ON THEIR \ T-CODE-OF-PRA	WEBSITE ACTICE
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	Email:peter@la	ndworks.co.nz		
	CLIENT: Winds	sor Park Comm	nunity 8	ર
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		ast Coast Road	l <i>,</i>	
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	Erosic	on and Sedime ol Pond Detail	nt	
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1. FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AUCKLAND 1946.

2. BOUNDARIES, SERVICES AND OTHER INFORMATION SHOWN IS INDICATIVE ONLY AND BASED ON TOPOGRAPHIC SURVEY FROM HAMPSON & ASSOCIATES LTD, RETRIEVED FEBRUARY 2024, AND AUCKLAND COUNCIL GIS DATA, RETRIEVED FEBRUARY 2024.

3. THE EXISTING SERVICES SHOWN ARE INDICATIVE ONLY. THE CONTRACTOR SHALL LOCATE, VEIRIY & PROTECT ALL EXISTING UNDERGROUND & ABOVE GROUND SERVICES & OTHER FEATURES BEFORE STARTING WORKS AND FOR THE DURATION OF THE WORKS.

- Ine HOAL.
 A.ALL WORKS AND STANDARD DETAILS SHALL COMPLY WITH THE FOLLOWING CODES OF PRACTICE:
 AUCKIAND COUNCIL CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION, CHAPTER 4 STORMWATER, VERSION 3.0, DATED IAN 2022.
 WATERCARE, WATER AND WASTEWATER CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION, VERSION 2.2, DATED NOV 2019.
 AUCKIAND TRANSPORT CODE OF PRACTICE, ASI SUPDATED ON THEIR WEBSITE HTTPS://AT.GOVT.NZ/ABOUT-US/AUCKIAND-TRANSPORT-CODE-OF-PRACTICE
 ANY CONDITIONS OF ASSOCIATED RESOURCE CONSENTS SHALL TAKE PRECEDENCE, AND SHALL BE COMPLIED WITH.
- S. FOR STANDARD CONCRETE PAVING : 175mm 20MPA CONCRETE WITH 665 REINFORCED MESH PLACED ON CENTER. SAWCUTS AT 5m INTERVAL 50mm COMPACTED GAP20 DR 4P20 GRANULAR BASECOURSE 150mm COMPACTED GAP56 GRANULAR SUBBASE

- G. FOR PERMEABLE PAVING:
 Somm FIRTH FLOWPAVE WITH WP87 CHIP FOR JOINTING. CONCRETE EDGE HAUNCH ON ALL OUTER EDGES.
 200m WP812 AVER
 100mm WP812 BASECOURSE FULLY WRAPPED IN GEOTEXTILE FILTER CLOTH
 150mm GAPSG GRANULAS UBBASE LAYER
 REFER FIRTH ECO PAVE INSTALLATION GUIDE

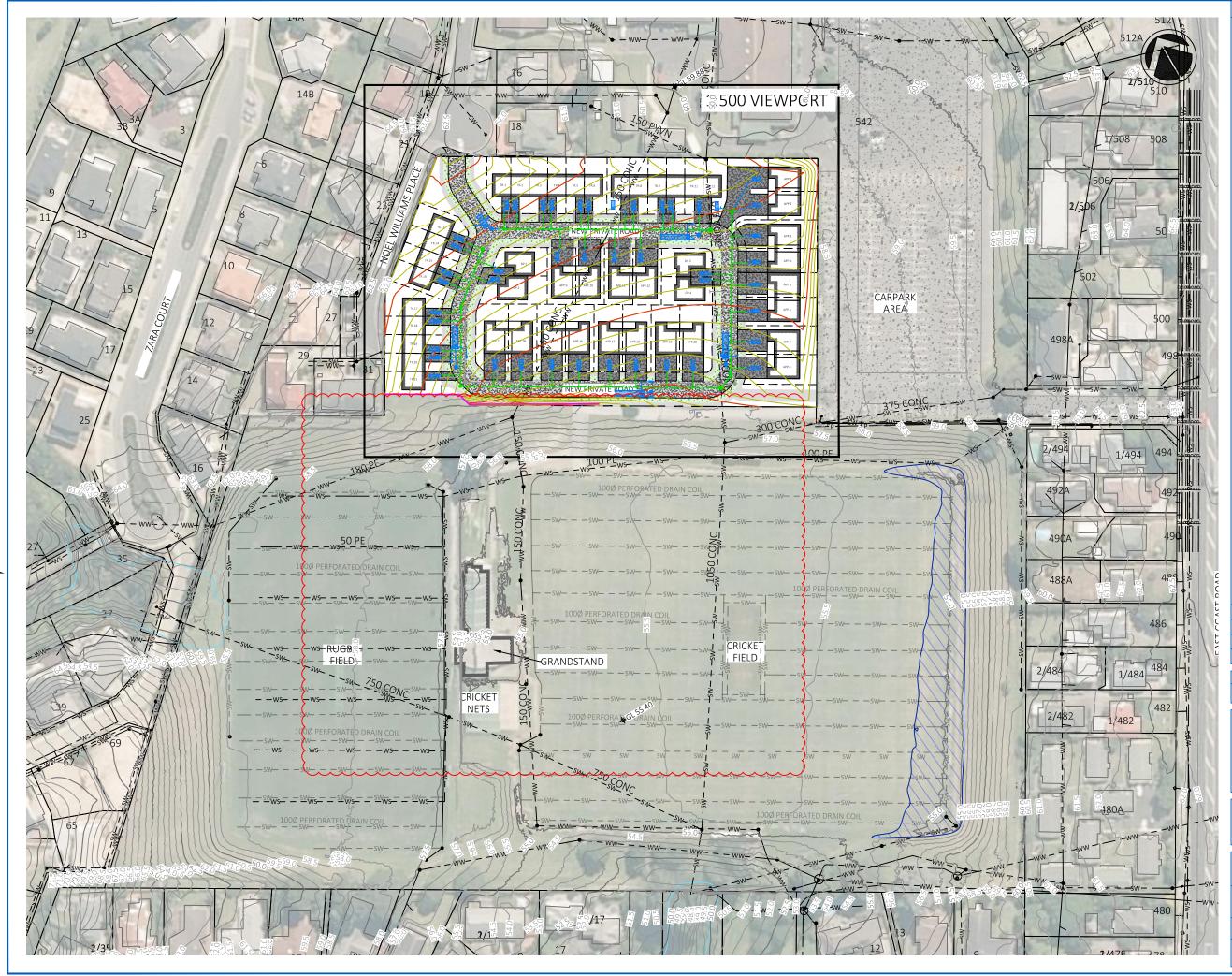
C UPDATE ROAD TO PRIVATE BT 15.10.24 B GENERAL UPDATES BT 04.09.24 A FOR PLAN CHANGE BT 26.03.24 REV: DESCRIPTION: BY: DATE:

PLAN CHANGE

LANDWORKS - CONSULTING -

PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz

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	sway/Road Ty Section	pical
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 a. AUCKINGN COUNCIL CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION, CHAPTER & STORMWATER, VERSION 3.0, DATED LAN 2022.
 b. WATERCARE, WATER AND WASTEWATER CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION, VERSION 2.2, DATED NOV 2019.
 c. AUCKLAND TRANSPORT CODE OF PRACTICE, SIS UPDATED ON THEIR WEBSITE HITTES://AT.GOVT.NIZ/ABOUT-US/AUCKLAND-TRANSPORT-CODE-OF-PRACTICE
 d. ANY CONDITIONS OF ASSOCIATED RESOURCE CONSENTS SHALL TAKE PRECEDENCE, AND SHALL BE COMPLIED WITH.

LEGEND	
	EXISTING PROPERTY BOUNDARY
	SITE BOUNDARY
	LOT BOUNDARY
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	MAJOR CONTOUR
	MINOR CONTOUR
	DRIVEWAY/ROADING PAVEMENT (CONCRETE PAVING)
	DRIVEWAY (PERMEABLE PAVING)
	RETAINING WALL
	DWELLING WITH EXTENT OF EAVES
Sw@-	EXISTING PUBLIC STORMWATER
ww@-	EXISTING PUBLIC WASTEWATER
ws	EXISTING PUBLIC WATER SUPPLY
	EXISTING CONCRETE PAVE
\rightarrow	EXISTING OVERLAND FLOW PATH
	PUBLIC STORMWATER
	PRIVATE STORMWATER CONNECTION (100Ø uPVC)
$\rightarrow \rightarrow$	NEW SLIPFORM DISH/KERB CHANNEL
=	675 X 450 PRIVATE CESSPITS WITH TETRA TRAP OR SIMILAR WITH 150mmØ uPVC SN16 LEAD.
0	UNDERGROUND DETENTION TANK. TO BE DESIGNED AT DETAIL DESIGN STAGE.
۲	PRIVATE STORMFILTER

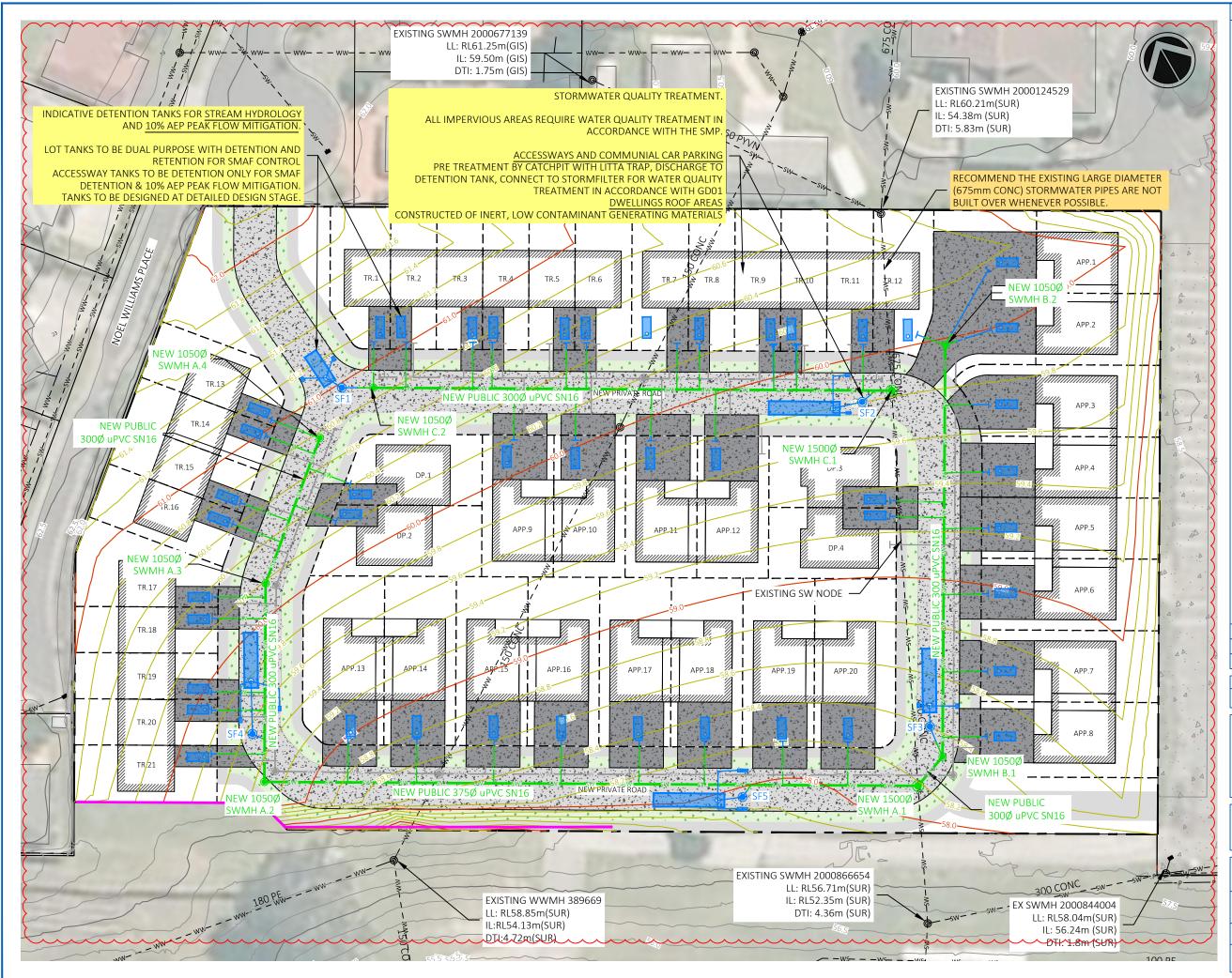
D	REMOVE NEW CLUBROOMS	ΒT	11.09.24		
С	GENERAL UPDATES	ΒT	04.09.24		
В	FOR HEALTHY WATERS COMMENTS	ΒT	28.08.24		
А	FOR PLAN CHANGE	ΒT	26.03.24		
REV:	DESCRIPTION:	BY:	DATE:		

PLAN CHANGE

LANDWORKS - CONSULTING -

PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz

	ast Coast Roac ngi Bay	1,
0.001111	water Plan II View	
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1. FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AUCKLAND 1946.

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4. ALL WORKS AND STANDARD DETAILS SHALL COMPLY WITH THE FOLL

- ALL WORKS AND STANDARD DETAILS SHALL COMPLY WITH THE FOLLOWING CODE PRACTICE: AUCKLAND COUNCIL CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION, CHAPTER A STORMWATER, VERSION 3.0, DATED NA 2022. WATERCARE, WATER AND WASTEWATER CODE OF PRACTICE FOR LAND DEVELOPMENT AND SUBDIVISION, VERSION 2.0, DATED NO'2 0019 R WEBSITE HTTPS://AT.GOVT.M2/ADOUT.US/AUCKLAND.TRANSPORT.CODE-OF-PRACTICE PROCEMPTICATE DE SOUDREC CONSENTS SHALL TAKE PRECEDENCE, AND SHALL BE COMPLED WITH.

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	DRIVEWAY/ROADING PAVEMENT (CONCRETE PAVING)
	DRIVEWAY (PERMEABLE PAVING)
	RETAINING WALL
	DWELLING WITH EXTENT OF EAVES
Sw@-	EXISTING PUBLIC STORMWATER
	EXISTING PUBLIC WASTEWATER
ws	EXISTING PUBLIC WATER SUPPLY
	EXISTING CONCRETE PAVE
—	EXISTING OVERLAND FLOW PATH
sw	PUBLIC STORMWATER
	PRIVATE STORMWATER CONNECTION (100Ø uPVC)
$\rightarrow \rightarrow$	NEW SLIPFORM DISH/KERB CHANNEL
	675 X 450 PRIVATE CESSPITS WITH TETRA TRAP OR SIMILAR WITH 150mmØ uPVC SN16 LEAD.
0	UNDERGROUND DETENTION TANK. TO BE DESIGNED AT DETAIL DESIGN STAGE.
\bigcirc	PRIVATE STORMFILTER

С	GENERAL UPDATES	ΒT	04.09.24
В	FOR HEALTHY WATERS COMMENTS	ΒT	28.08.24
А	FOR PLAN CHANGE	ΒT	26.03.24
REV:	DESCRIPTION:	BY:	DATE:

PLAN CHANGE

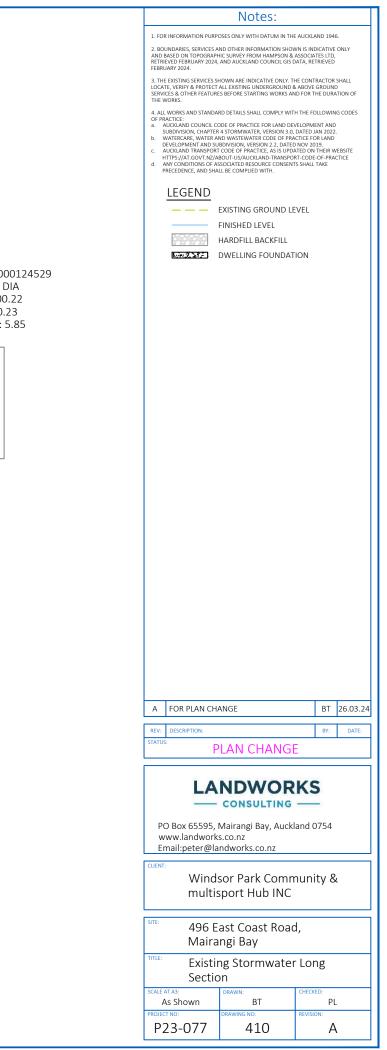
LANDWORKS - CONSULTING

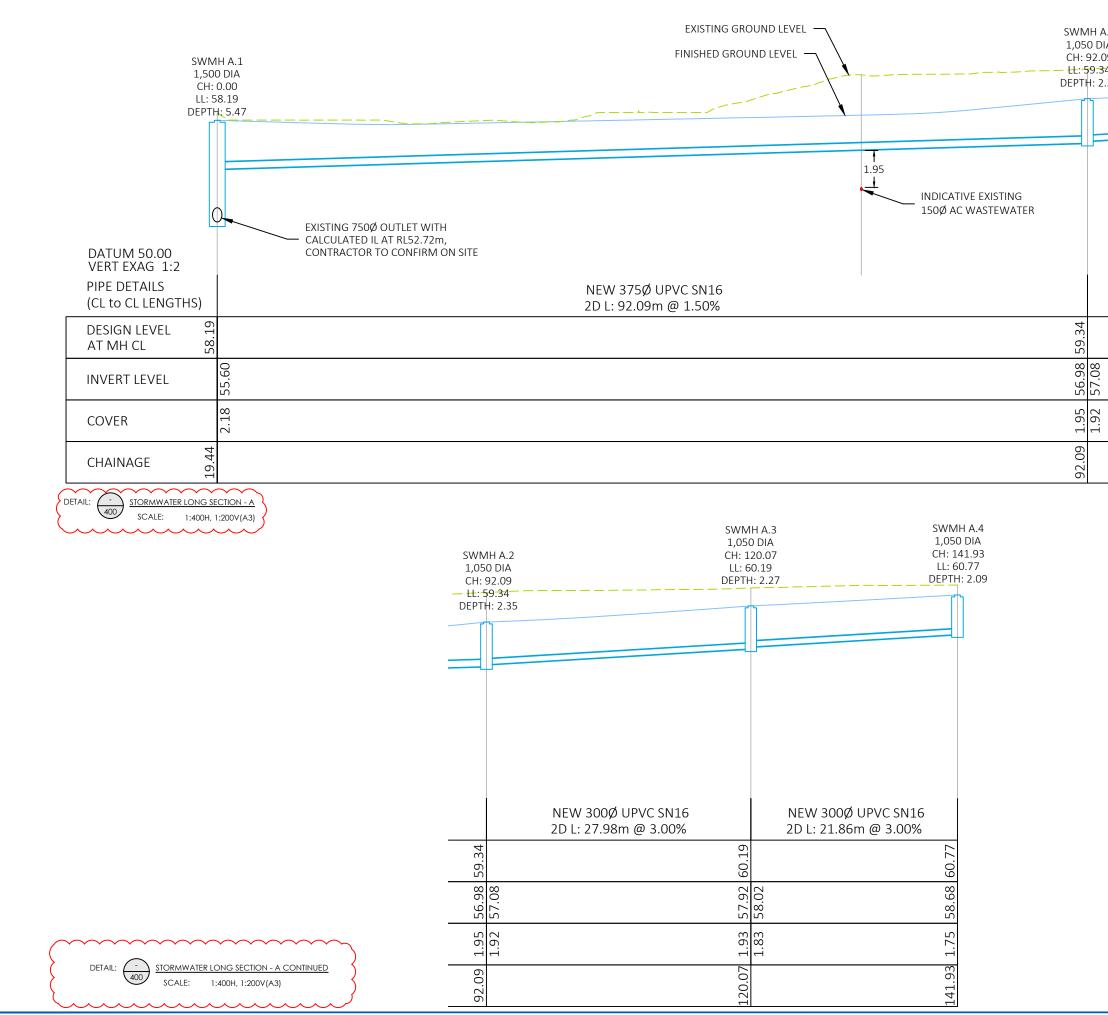
PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz

	496 East Coast Road, Mairangi Bay				
	Stormwater Layout Part Plan - Sheet 1				
SCALE AT A3:	DRAWN:	CHECKED:			
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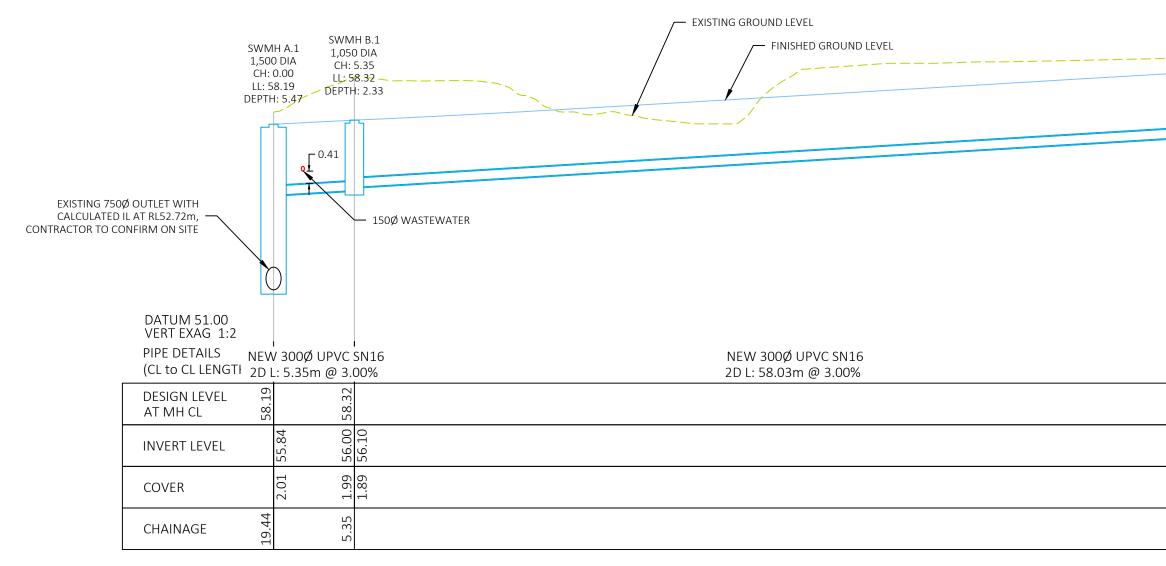
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	6.79				
۵. ۲		•	STORMWATER NODE FROM GIS		
		3.05 150Ø WASTEWATER			
DATUM 50.00 VERT EXAG 1:2					
PIPE DETAILS (CL to CL LENGTHS)	EX 750Ø CONC 2D L: 19.44m @ 1.90%	EX 750Ø CONC 2D L: 34.26m @ 1.90%	EX 675Ø CONC 2D L: 21.54m @ 1.90%	EX 675Ø CONC 2D L: 24.98m @ 1.90%	
DESIGN LEVEL C. AT MH CL S	58.19			59.83	60.23
INVERT LEVEL	52.35 52.72	52.74	53.39 53.48	53.91 53.91	54.38
COVER	3.63 4.66	4.64	4.96	5.20 5.20	5.13
CHAINAGE 8	19.44			75.24	100.22





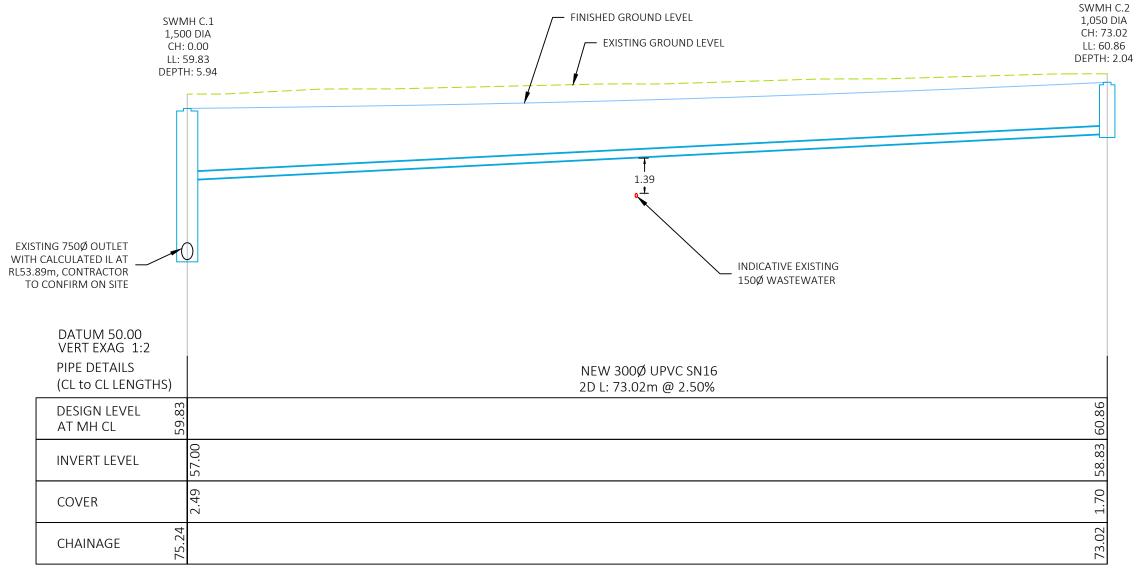


	Notes:	
	1. FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AU	JCKLAND 1946.
A.2	2. BOUNDARIES, SERVICES AND OTHER INFORMATION SHOWN AND BASED ON TOPOGRAPHIC SURVEY FROM HAMPSON & ASS RETRIEVED FEBRUARY 2024, AND AUCKLAND COUNCIL GIS DAT. FEBRUARY 2024.	SOCIATES LTD,
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	PO Box 65595, Mairangi Bay, Aucklar www.landworks.co.nz Email:peter@landworks.co.nz	nd 0754
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	stre: 496 East Coast Road, Mairangi Bay	
	Stormwater Long Section - 1/3	
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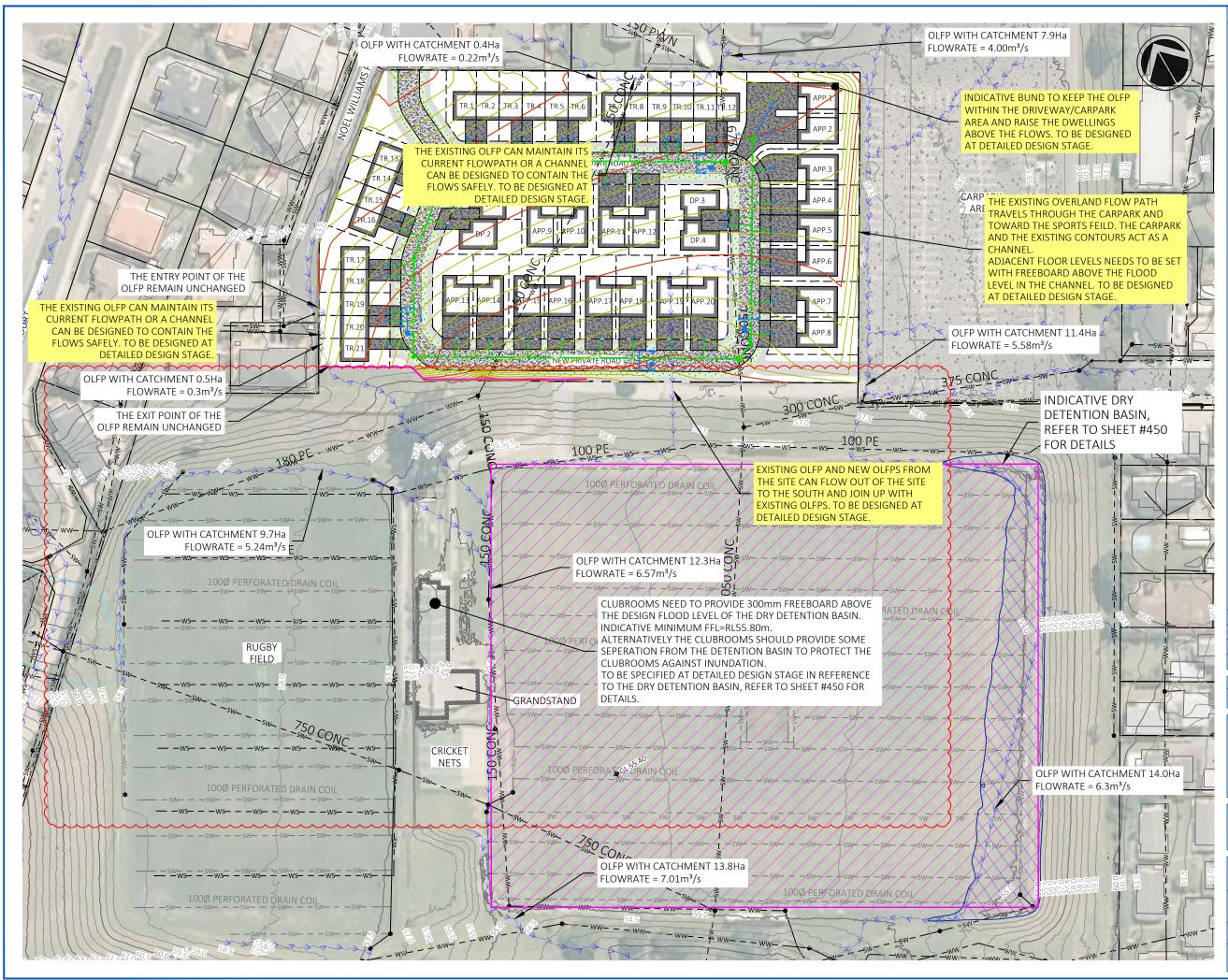


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	AND BASED ON TOPOGRAPH	ND OTHER INFORMATION SHOV IIC SURVEY FROM HAMPSON & . AND AUCKLAND COUNCIL GIS D	ASSOCIA [®]	TES LTD,	ONLY
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2. BOUNDARIES, SERVICES AND OTHER INFORMATION SHOWN IS INDICATIVE ONLY AND BASED ON TOPOGRAPHIC SURVEY FROM HAMPSON & ASSOCIATES LTD, RETRIEVED FEBRUARY 2024, AND AUCKLAND COUNCIL GIS DATA, RETRIEVED FEBRUARY 2024.				ONLY		
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4. ALL WORKS AND

- PRACTICE: AUCKLAND COUNCIL CODE OF PRACTICE FOR LAND DEVELOPMENT AND
- AUCKANAP CUDNIC LODE OF PARALICE PRICAND LEVELOPMENT AND SUBDIVISION, CHAPTER & STORMWATER, VERSION 30, DATED JAN 2022, WATERCARE, WATER AND WASTEWATER CODE OF PARATICE FOR LAND DEVELOPMENT AND SUBDIVISION, VERSION 22, DATED NOV 2019. AUCKAND TRANSPORT CODE OF PARATICE, AS IS UPDATED ON THER WEBSITE HTTPs://AT.CODI TAR/ABOUTS/AUCKANDE TRANSPORT-CODE OF PARATICE ANY CONDITIONS OF SACULATE RESOLUCE CONSENTS SHALL TAKE PRECEDENCE, AND SHALL BE COMPLEX WITH THE AUCTION OF ADMINISTRATION DECEDENCE, AND SHALL BE COMPLEX WITH THE AUCTION OF ADMINISTRATION OF ADMINISTRATICA ADMINISTRATION OF ADMINISTRATION OF ADMINISTRATIONO

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P	EXISTING POWER
G	EXISTING GAS
T	EXISTING TELEPHONE LINE
	EXISTING CONCRETE PAVE
	POST DEVELOPMENT OVERLAND FLOW PATH

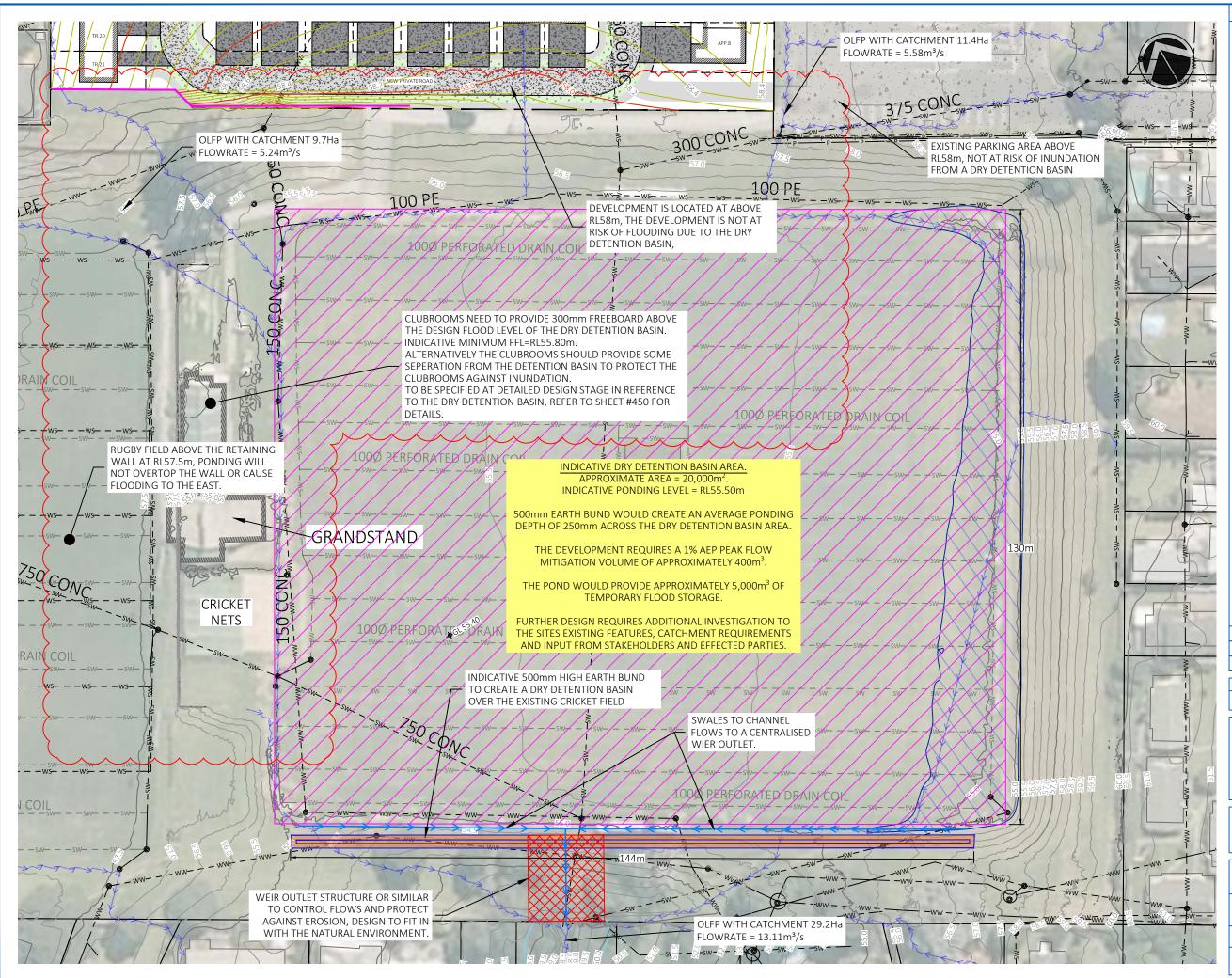
D	REMOVE NEW CLUBROOMS	ΒT	11.09.24
С	GENERAL UPDATES	ΒT	04.09.24
В	INVESTIGATE FIELD AS MITIGATION	ΒT	28.08.24
А	FOR PLAN CHANGE	ΒT	26.03.24
REV:	DESCRIPTION:	BY:	DATE:

PLAN CHANGE

LANDWORKS - CONSULTING

PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz

	496 East Coast Road, Mairangi Bay			
Overland Flow Path Plan				
SCALE AT A3:	DRAWN:	CHECKED:		
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FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AUCKLAND 1946

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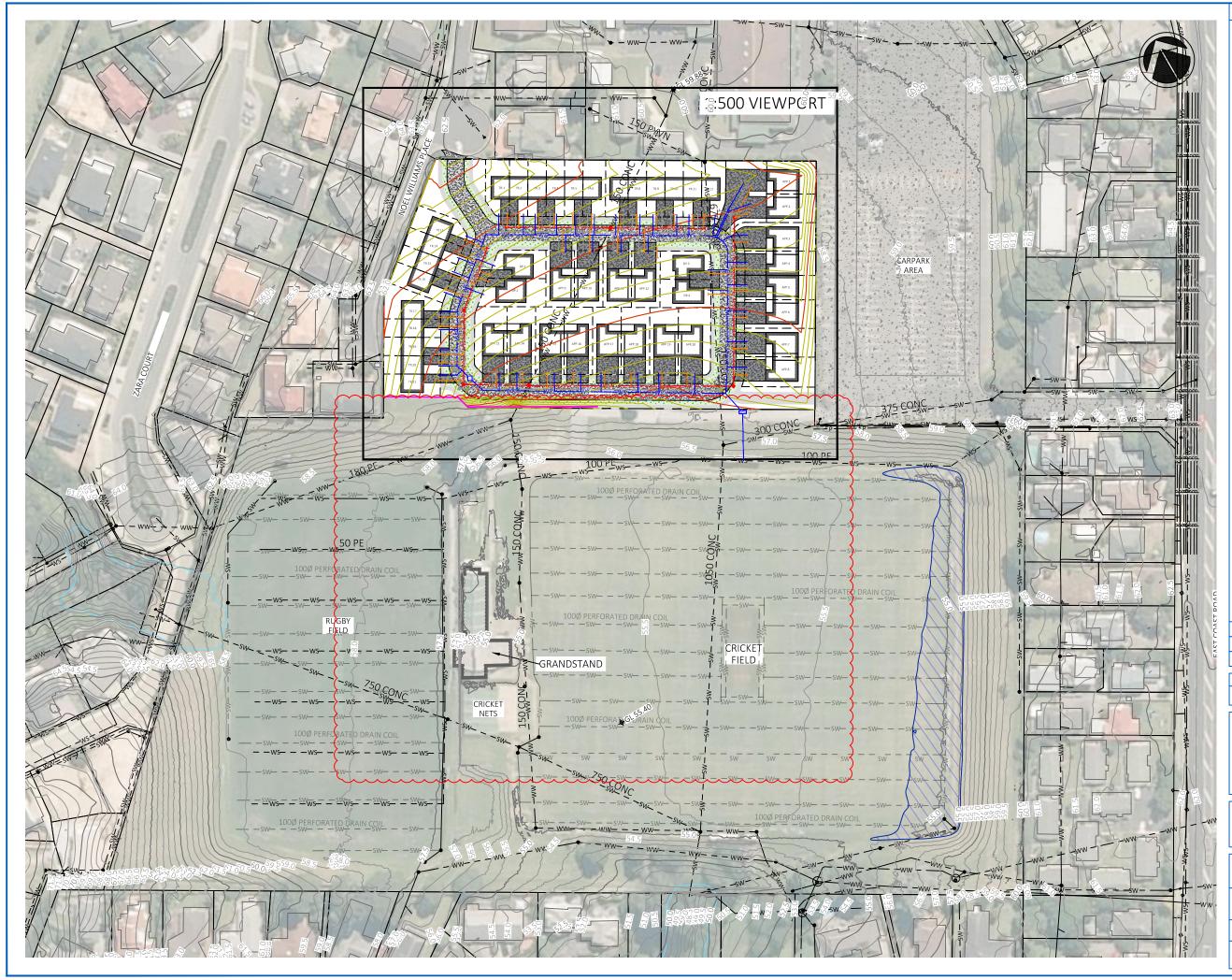
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	DWELLING WITH EXTENT OF EAVES
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	EXISTING PUBLIC WASTEWATER
ws	EXISTING PUBLIC WATER SUPPLY
Н	EXISTING HYDRANT
P	EXISTING POWER
G	EXISTING GAS
T	EXISTING TELEPHONE LINE
	EXISTING CONCRETE PAVE
	POST DEVELOPMENT OVERLAND FLOW PATH

С	REMOVE NEW CLUBROOMS	ΒT	11.09.24		
В	GENERAL UPDATES	ΒT	04.09.24		
А	INVESTIGATE FIELD AS MITIGATION	ΒT	28.08.24		
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STATUS	STATUS: PLAN CHANGE				

LANDWORKS - CONSULTING -

PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz

	496 East Coast Road, Mairangi Bay		
Dry Detention Basin Investigation Plan			
SCALE AT A3:	DRAWN:	CHECKED:	
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1. FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AUCKLAND 1946.

2. BOUNDARIES, SERVICES AND OTHER INFORMATION SHOWN IS INDICATIVE ONLY AND BASED ON TOPOGRAPHIC SURVEY FROM HAMPSON & ASSOCIATES LTD, RETRIEVED FERBUARY 2024, AND AUCKLAND COUNCIL GIS DATA, RETRIEVED FEBRUARY 2024.

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5. WASTEWATER 100mm SERVICE CONNECTIONS TO BE 1.7% min GRADE AND FOLLOWING WW15 OF WATERCARE'S STANDARD. Y (WYE)-JUNCTION SHALL B ORDINARILY. TEE JUNCTIONS ARE NOT ALLOWED.

6. WATERCARE ENGINEERING QUALITY STANDARD DRAWINGS SHALL BE USED WHEREVER APPLICABLE FOR THE WORK. WSL COP VERSION 2019.

7. A WORKS OVER APPROVAL IS REQUIRED WITHIN 2 METRES OF A PUBLIC WATER OR WASTEWATER ASSET.

LEGEND



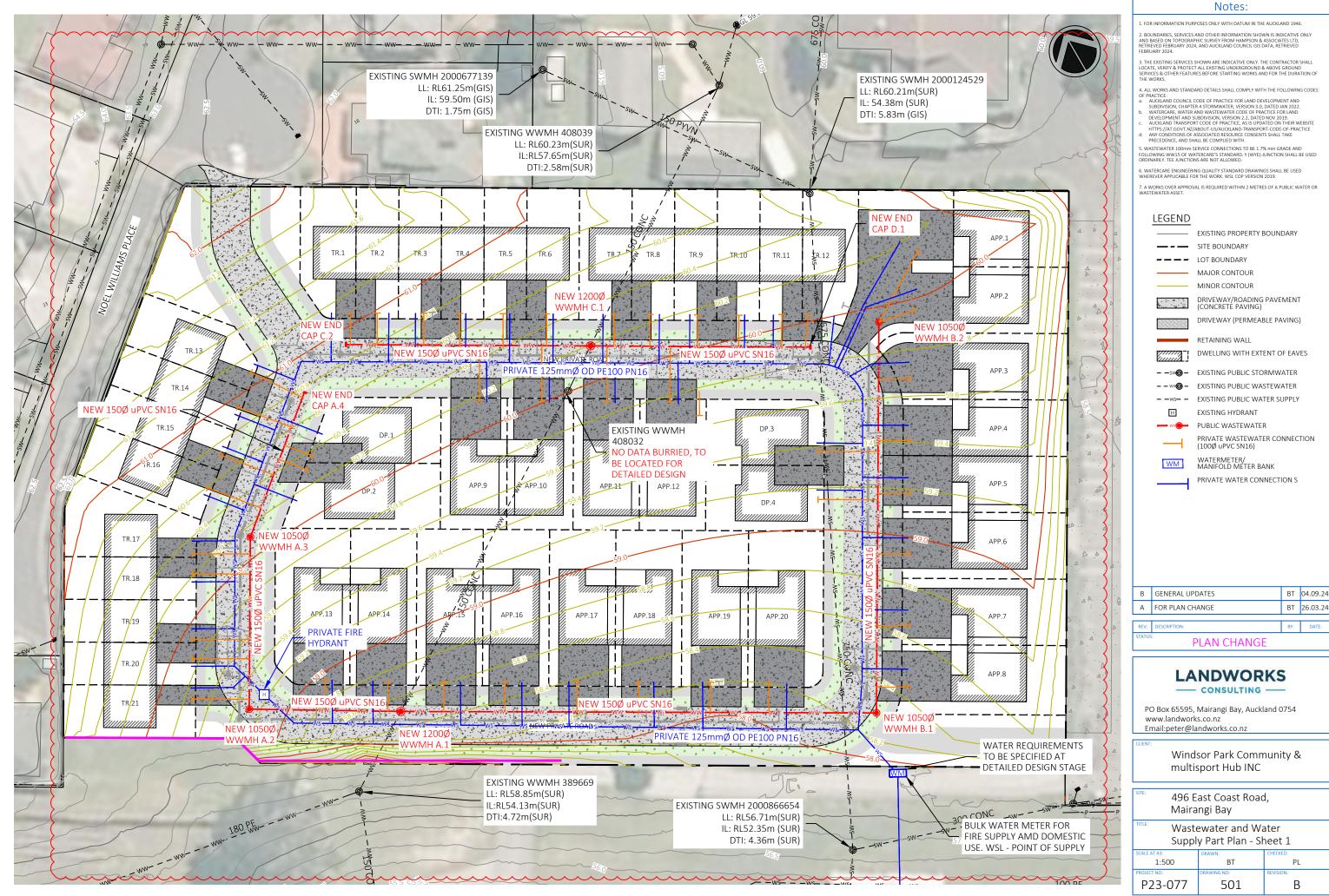
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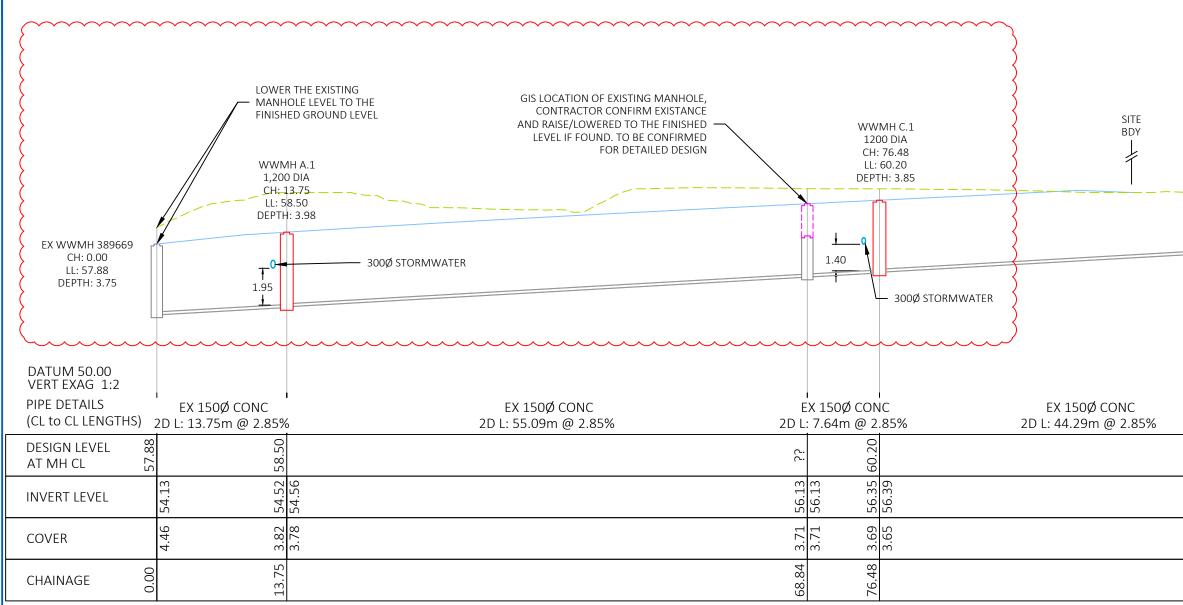
LANDWORKS - CONSULTING -

PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Email:peter@landworks.co.nz

	496 East Coast Road, Mairangi Bay			
Wastewater and Water Supply Plan - Overall View				
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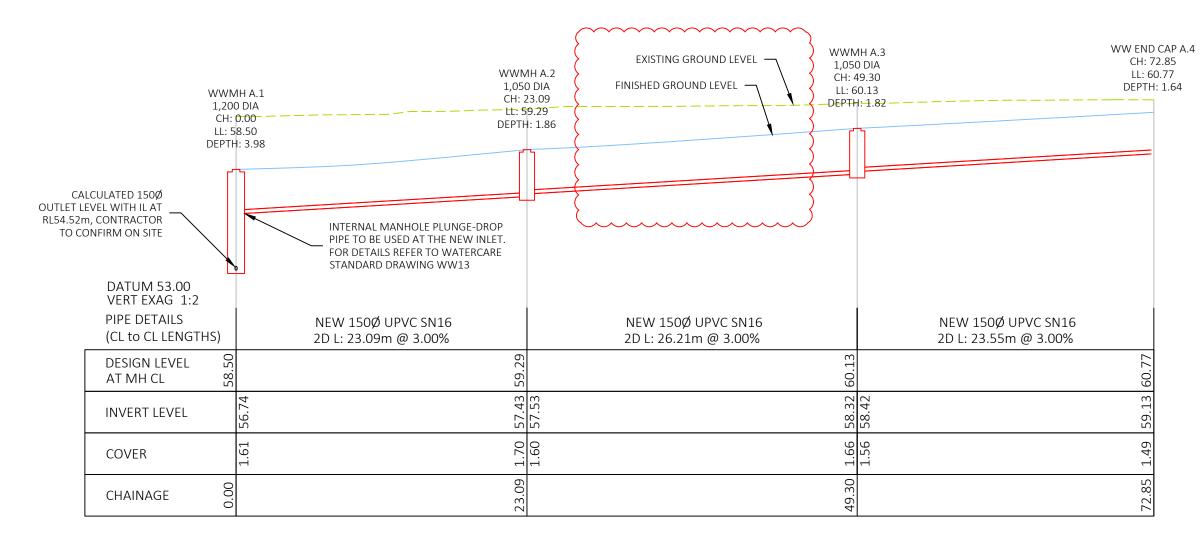
1. FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AUCKLAND 1946.



DETAIL: - EXISTING WASTEWATER LONG SECTION SCALE: 1:400H 1:200V(A3)

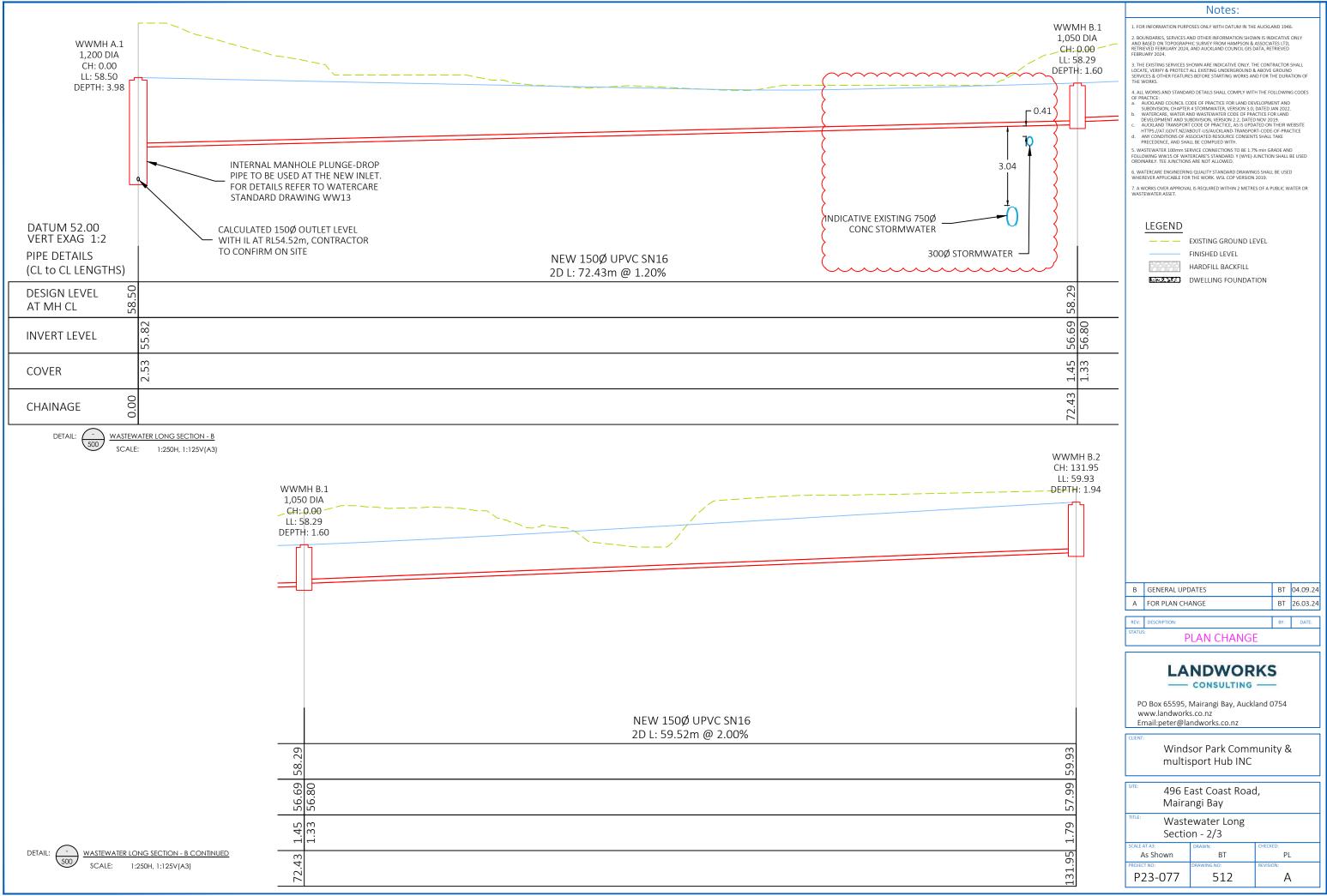
SCALE: 1:400H, 1:200V(A3)

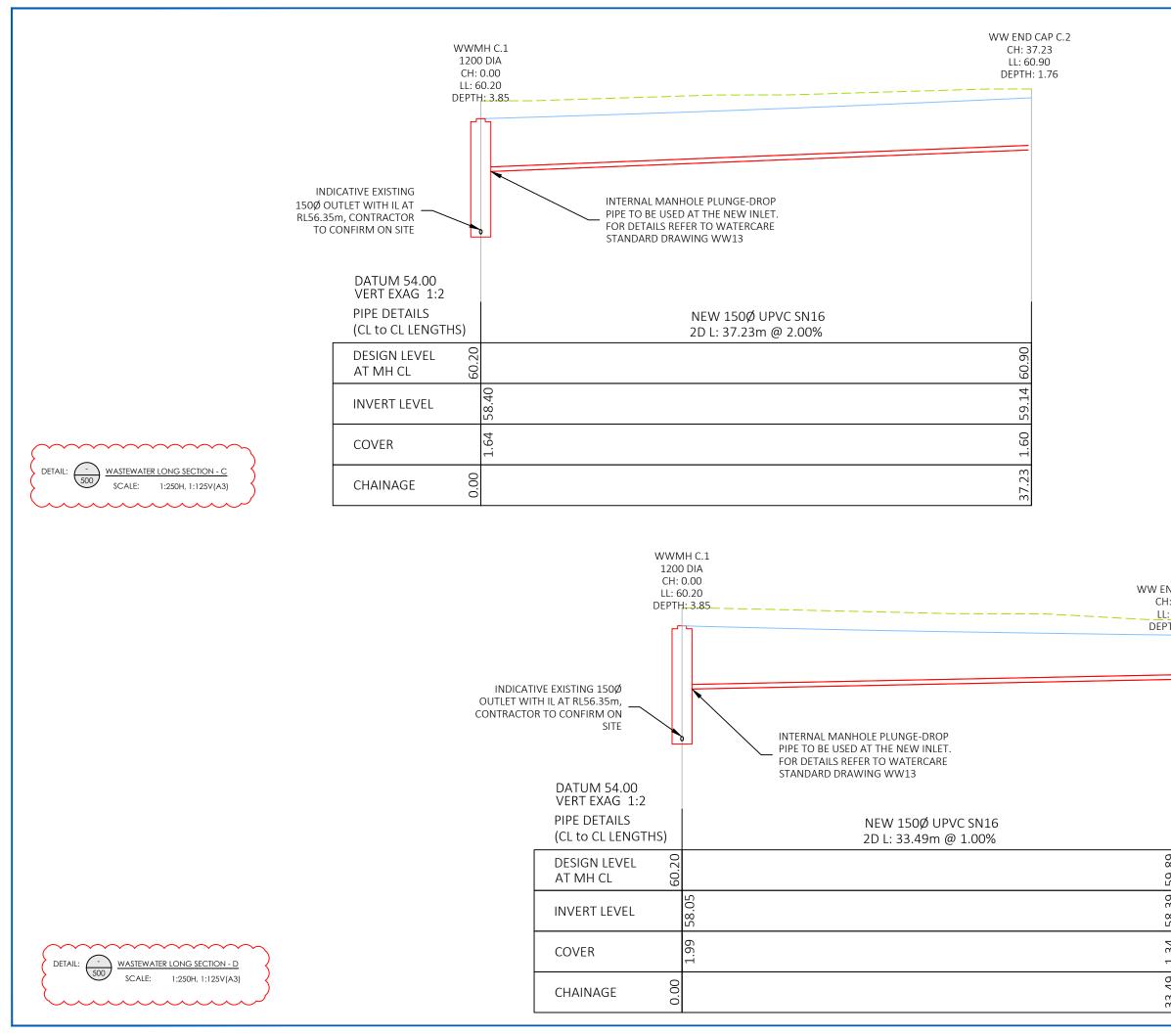
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	LA		KS	
	PO Box 65595		and 0754	
	PO Box 65595, Mairangi Bay, Auckland 0754 www.landworks.co.nz Emplipatar@landworks.co.nz			
	Email:peter@landworks.co.nz			
	Windsor Park Community & multisport Hub INC			
	sire: 496 East Coast Road, Mairangi Bay			
	Existin Sectio	ng Wastewater on	r Long	
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DETAIL: 500 WASTEWATER LONG SECTION - A SCALE: 1:250H, 1:125V(A3)

Notes:				
1. FOR INFORMATION PURPOSES ONLY WITH DATUM IN THE AUCKLAND 1946.				
2. BOUNDARIES, SERVICES AND OTHER INFORMATION SHOWN IS INDICATIVE ONLY AND BASED ON TOPOGRAPHIC SURVEY FROM HAMPSON & ASSOCIATES LTD, RETRIEVED FERUARY 2024, AND AUCKLAND COUNCIL GIS DATA, RETRIEVED FEBRUARY 2024.				ONLY
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APPENDIX B – GENERAL CALCULATIONS



CALCULATION SHEETS

PROJECT PROJECT NUMBER DATE AUTHOR 496 East Coast Road P23-077 26/03/2024 Peter Lowe

Contents:

Wastewater Flow Calculations Water Demand Calculations

PROJECT	496 East Coast Road
DATE	26/03/2024
AUTHOR	Peter Lowe

Wastewater and Water supply Assessment

Wastewater Flows	Pre development	Post Development	
Residential Catchment Area	89442	89442	m²
Average lot size	400	400	
Number of dwellings	157	242	
Number of new Dwellings	0	85	
Number of occupants per dwelling	3.0	3.0	
Design population	470	725	р
Design Flow per person	180	180	l/p/d
Design ADWF (Ave Dry weather Flow)	0.978	1.510	L/s
Self Cleansing Peaking Factor	3.0	3.0	
Self Cleansing Design flow	2.93	4.53	L/s
Peak Design Peaking Factor	6.7	6.7	
Peak Design Flow	6.55	10.11	l/s
Increase in Flows		3.56	l/s

Pipe Capacity Check

Colebrook White Flows	Pre development	Post Development
Downstream manhole GIS ID	408020	408020
Downstream manhole RL (m)	52.74	52.74
Upstream manhole	389640	389640
Upstream manhole RL (m)	53.40	53.4
Distance between manholes	76.80	76.8
Pipe Gradient (m/m)	0.0086	0.0086
Pipe Diameter (mm)	150.00	150.00
Colebrook-White 'k'	0.60	0.60
Flow Velocity (m/s)	0.93	0.93
Pipe Capacity (L/s)	16	16
Pipe Capacity OK?	YES	YES

Residential Water Demand	Pre development	Post Development	
Number of dwellings	0.0	85.0	
Number of occupants per dwelling	3.0	3.0	
Design population	0	255	р
Design Flow per person	220	220	L/p/d
Average Daily Demand	0	56100	L/d
Average Demand	0.00	0.65	L/s
Daily Peaking Factor	2.0	2.0	
Peak Day Demand	0	112200	L/d
Hourly Peaking Factor	2.5	2.5	
Peak Hourly Demand	0	11687.5	L/h
Peak Residential Demand	0.00	3.25	L/s
Increase in Demand		3.25	l/s

