Civil Design Memo

PAPAKURA INTERIM COURTHOUSE

Project no: 23-1920
Address: 40 Elliot Street, Papakura, Auckland
Prepared for: The Building Intelligence Group c/ Ministry of Justice
Date: 02-05-2024
Revision: 2

1 INTRODUCTION

BCD Group Limited (BCD) has been engaged to undertake civil design for the proposed development at the above referenced site. This memo provides a high-level summary of the three-waters servicing strategy, retaining walls, earthworks and flooding to support an application for a Notice of Requirement.

2 INFRASTRUCTURE

Please see attached calculations in Appendix B showing existing and proposed water supply, wastewater and stormwater flowrates and demands.

2.1 Water Supply

- Re-use existing 50ØMS connection
- Fire-fighting to be supplied by nearby fire hydrants. Nearby hydrants can provide FW3. Fire engineers will need to be engaged to confirm fire cell separation.

2.2 Wastewater

- Re-align existing main that runs under the existing building as per C-105 & C-107 attached.
- One 150Ø connection to this re-aligned main, location shown on C-105.

2.3 Stormwater

- We understand there is sufficient capacity in the existing stormwater network to accommodate the proposal.
- Appropriate stormwater mitigation will be provided at the time of future development which will be managed by stormwater conditions to mitigate the effects of stormwater runoff associated with the proposal.

The proposal will be able to be appropriately serviced with respect to three waters and can be accommodated within the existing reticulated network. Any potential adverse infrastructure and servicing effects will be appropriately managed by consent conditions.

2.4 Power and Telecommunication

The proposal will be appropriately serviced with respect to power and telecommunications.

3 RETAINING WALLS

- Three retaining walls are proposed:

- Basement:
  - Masonry wall with ground floor slab on top tied into the wall.
  - 2.70m max height
- Northern
  - Timber pole wall supporting landscape.
  - 0.74m max height
- Eastern
  - Timber pole supporting judges courtyard and landscape.
  - 3.07m max height.

The detailed design of the retaining walls will be informed by the recommendations of a qualified geotechnical specialists to ensure they are appropriate for the site and managed by relevant conditions.

4 FLOODING

The project area contains flood hazards, including an overland flow path, floodplain and flood prone area, as identified on Auckland Council's GeoMaps. Site specific flood modelling will be undertaken and design mitigation measures will be implemented at the time of future development to avoid adverse flooding effects on the receiving environment. These measures will ensure that natural hazard risk is appropriately managed. In regards to climate change risk, the project area is setback over 160m from the Pahurehure Inlet, and therefore, the potential risk of coastal inundation or sea level rise is low, and is not a risk that would prevent future development of the site.

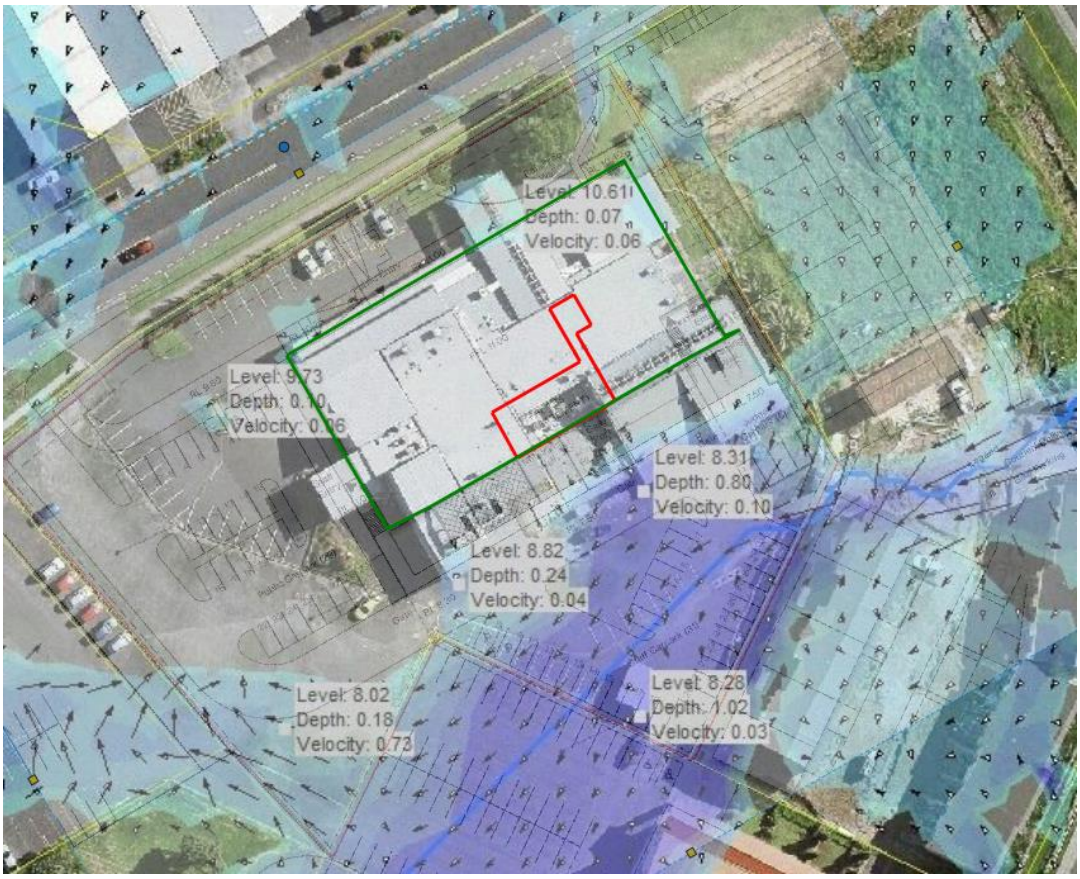


Figure 1: Flood and building overlay.

5 EARTHWORKS

The general earthworks required to facilitate the proposed courthouse development is approximately 2,400m³ over an area of approximately 7,925m². All earthworks activities will be undertaken in accordance with Auckland Council's GD05 Erosion and Sediment Control Guidelines to ensure potential adverse effects associated with dust and sediment control are appropriately managed.

6 REGIONAL SIGNIFICANCE

As noted above, the project area is well connected to Council's reticulated servicing network, including three waters, power and telecommunications, and is a suitable location for the proposed future development. The implementation of mitigation measures to address earthworks, stormwater and flooding effects, will support the establishment of this facility, which is a nationally significant project for the Ministry of Justice, to allow the continued operation of the Papakura District Court in Auckland.

7 REPORT LIMITATIONS

This memo has been prepared for our client for their purposes. It is not to be relied upon or used out of context by any other person without reference to BCD Group Ltd. The reliance by other parties on the information or opinions contained in this report shall, without prior review and agreement in writing, be at such parties' sole risk.

This memo is draft report and is not to be used for design purposes.

Engineering design and/or engineering design recommendations have been made based on the preliminary information provided to BCD. Should these recommendations be utilised for construction, BCD are to sight approved Building Consent drawings to ensure compliance with recommendations made within this report. If a Producer Statement 4 or construction observation is required from BCD (see BCD report and/or consent requirements from council), we are to be contacted prior to construction to outline appropriate inspections milestones.

Prepared by:

Josh Buckley
Graduate Civil/Environmental Engineer
BCD Group Ltd

Reviewed and approved for release by:

Callum Davison
Hamilton Office Manager
BCD Group Ltd

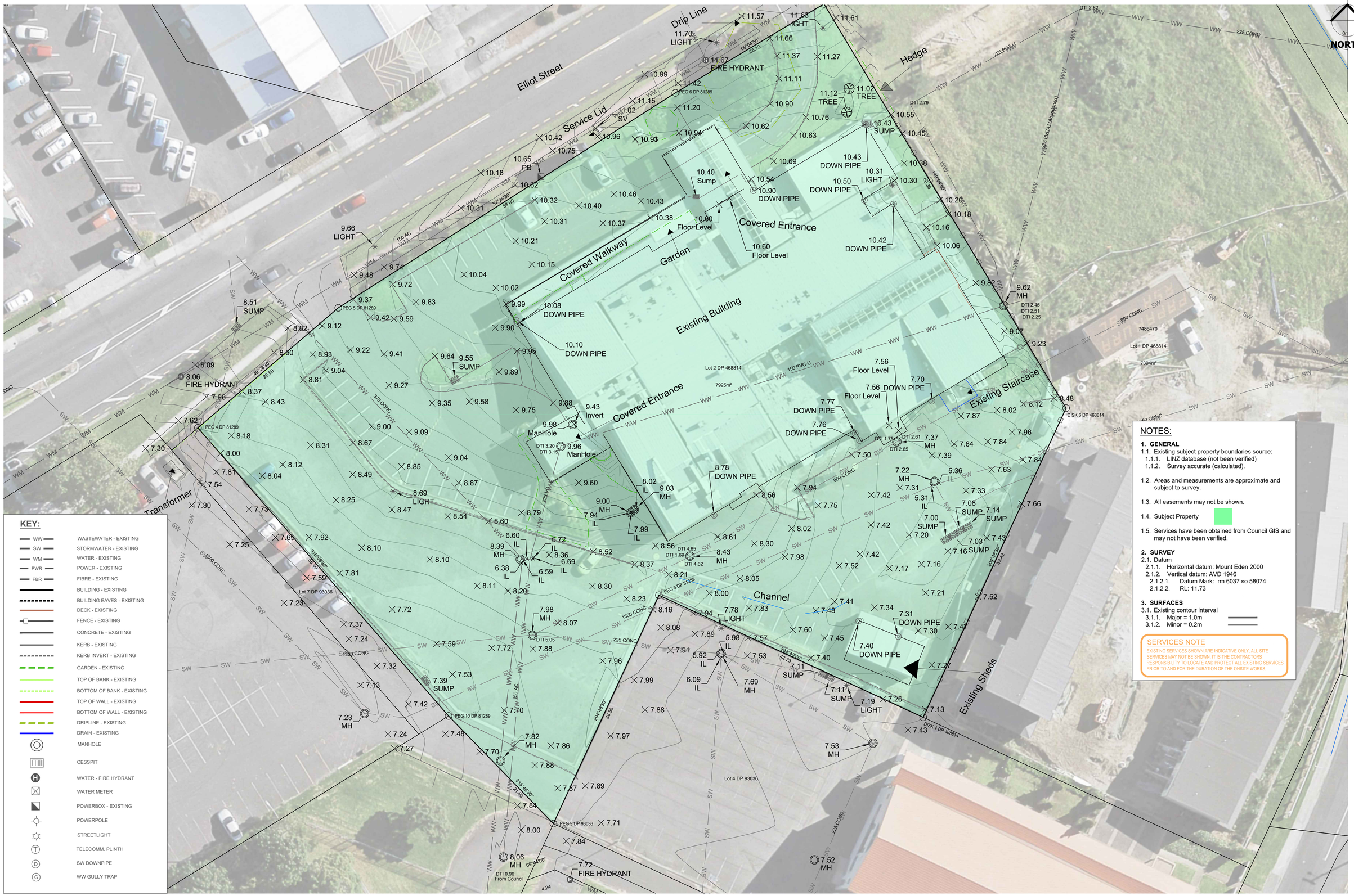
ATTACHMENTS

Appendix A: Survey Topographical Plan

Appendix B: Three Waters Calculations

Appendix C: WIP Civil Drawings

APPENDIX A – Survey Topographical Plan



KEY:

- WW — WASTEWATER - EXISTING
- SW — STORMWATER - EXISTING
- WM — WATER - EXISTING
- PWR — POWER - EXISTING
- FBR — FIBRE - EXISTING
- BUILDING - EXISTING
- BUILDING EAVES - EXISTING
- DECK - EXISTING
- FENCE - EXISTING
- CONCRETE - EXISTING
- KERB - EXISTING
- KERB INVERT - EXISTING
- GARDEN - EXISTING
- TOP OF BANK - EXISTING
- BOTTOM OF BANK - EXISTING
- TOP OF WALL - EXISTING
- BOTTOM OF WALL - EXISTING
- DRIPLINE - EXISTING
- DRAIN - EXISTING
- MANHOLE
- CESSPIT
- WATER - FIRE HYDRANT
- WATER METER
- POWERBOX - EXISTING
- POWERPOLE
- STREETLIGHT
- TELECOMM. PLINTH
- SW DOWNPIPE
- WW GULLY TRAP

NOTES:

1. GENERAL

1.1. Existing subject property boundaries source:
- 1.1.1. LINZ database (not been verified)
- 1.1.2. Survey accurate (calculated).

1.2. Areas and measurements are approximate and subject to survey.

1.3. All easements may not be shown.

1.4. Subject Property

1.5. Services have been obtained from Council GIS and may not have been verified.

2. SURVEY

2.1. Datum
- 2.1.1. Horizontal datum: Mount Eden 2000
- 2.1.2. Vertical datum: AVD 1946
  - 2.1.2.1. Datum Mark: rm 6037 so 58074
  - 2.1.2.2. RL: 11.73

3. SURFACES

3.1. Existing contour interval
- 3.1.1. Major = 1.0m
- 3.1.2. Minor = 0.2m

SERVICES NOTE

EXISTING SERVICES SHOWN ARE INDICATIVE ONLY. ALL SITE SERVICES MAY NOT BE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE ONSITE WORKS.

Client

Contractor

BCD GROUP

Sheet
TOPOGRAPHICAL SURVEY OF LOT 2 DP 468814

Project Title
PAPAKURA ITERIM COURTHOUSE
40 Elliot Street, Papakura

Rev	Date	by	Reason
1	22/01/24	DL	FOR INFORMATION

Drawn: DL | Scale: 1:250 | at A1
Engineer: SJ
Job No: 23-1920 | Sheet No: C-001 | Revision 1

all dimensions to be verified on site before making any shop drawings or commencing any work.

BCD GROUP

FOR INFO
FOR INFORMATION PURPOSES ONLY

DRAFT

JOB NUMBER: 23-1920

PAPAKURA INTERIM COURTHOUSE
40 ELLIOT STREET, PAPAKURA, AUCKLAND

bcdgroup.nz

NORTH

Tender Notes

1. Drawings issued prior to the completion of Building Consent issue are for the purpose of enabling the client/contractor to prepare, submit and negotiate a cost competitive and compliant tender for the project only.
2. The client acknowledges that the Preliminary Design is an incomplete design, prepared with a limited time frame, with input provided by the client, other organisations and third parties and in many respects relied on experienced engineering judgement. Accordingly, amendments to the design may be required when further information is obtained as design/construction progresses. Such amendments may include additional work, increased quantities and or additional time. The consultant shall not be responsible for the cost of such additional work, quantities or time unless the consultant is proven to have been negligent in preparation of the design. Furthermore, the consultant shall not be liable for any inaccuracies or incompleteness of any information not collected under the consultants direct control notwithstanding any coordination or management role undertaken by the consultants part of the services. To mitigate such risks of errors or omissions, the consultant will exercise due care and diligence in preparing the Design Documentation and will be available at the clients request to participate in a cost risk analysis with the client to enable a contingency sum for risk to be included in the tendered price for the project.
3. The parties agree that:
   - 3.a. The services and design documents do not and cannot constitute a complete Engineering Design and are likely to contain differences from the final engineering design when produced.
   - 3.b. The risk of any such differences and any consequences that may flow from such differences (whether in relation to cost or otherwise) are solely the risk of the client.
   - 3.c. BCD has provided Preliminary Design information and such information cannot be considered to be a fully detailed and checked design and that the client will prepare and price tender generally having regard to issues which arise as a result of not having such a fully detailed and checked design.
4. The client must act in good faith and use all reasonable endeavours to work on a regular basis with the consultant to minimise the risk of error to develop solutions that fulfil the project requirements and embrace the clients preferred construction methodologies and practices.

Standard Abbreviations

Structural Abbreviations

UB	universal beam
UC	universal column
SHS	square hollow section
RHS	rectangle hollow section
UA	unequal angle
EA	equal angle
PFC	parrallel flange channel
CHS	circular hollow section
TFB	tapered flange beam
WB	welded beam
G	grade
Galv	galvanised
SP	splice
DB	drossbach tube
PC	precast concrete panel
CON	concrete
CJ	control joint
EJ	expansion joint
HDG	hot dip galvanised
MS	mild steel
FT	flat
PLY	plywood
SS	stainless steel
FWAR	fillet weld all round
BW	butt weld
FP	full penetration

Foundation / Reinforcing Abbreviations

crs	centres
T&B	top & bottom
EW	each way
EF	each face
vert	vertical reinforcing
horz	horzontal reinforcing
IF	inside face
OF	outside face
BF	both faces
SSL	structural slab level

Civil Abbreviations

MH	manhole
CP	catchpit
LL	lid level
IL	invert level
RL	reduced level
SW	stormwater
SS	sanitary sewer
WW	waste water
WM/S	water main/supply
ROW	right of way
BC	basecourse
SB	subbase
SG	subgrade

General Abbreviations

TBC	to be confirmed
NTS	not to scale
COS	confirm on site
RL	reduced level
FFL	finish floor level
EX	existing
DTF	document transmittal form
max	maximum
min	minimum
APPR	approved
BLDG	building
CL	centre line
CNR	corner
DIM	dimension
m	metre
mm	millimetre
MISC	miscellaneous
NO	number
NZS	New Zealand Standard
R	radius
REF	reference
SK	sketch
SPEC	specification
TYP	typical

Plumbing Abbreviations

GT	gully trap
ORG	overflow relief gully
TV	terminal vent
FWG	floor waste gully
WC	water closet
HT	hose tap
GT	gully trap
DP	down pipe
DIA	diameter
ID	inside diameter
OD	outside diameter
IL	invert level
OF	over flow
OFO	over flow outlet

Architectural Abbreviations

DPM	damp proof membrane
DPC	damp proof course

Drawing List

Sheet Number	Sheet Name	Current Revision Date	Revision
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C-100	PROPOSED SITE PLAN	22-03-2024	1
C-105	SITE SERVICES PLAN	22-03-2024	2
C-107	WASTEWATER PIPE SECTIONS	22-03-2024	2
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C-251	SITE SECTIONS SHEET 2	22-03-2024	1
C-252	SITE SECTIONS SHEET 3	22-03-2024	1
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Sheet Setouts

C-001 series - civil drawings
A-100 series - architectural plans
A-200 series - architectural elevations & sections
A-300 series - architectural details
A-400 series - door & window schedule and details
A-450 series - joinery details
A-460 series - interior finishes schedules

S-500 series - structural ground floor and mid floor plans
S-550 series - foundation details
S-560 series - mid floor details
S-600 series - precast & masonry elevations & details
S-620 series - precast stairs & details
S-700 series - holding down bolt plans
S-705 series - structural roof framing plans
S-800 series - structural elevations and sections
S-900 series - structural details
S-1000 series - 3D views

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Original in Colour

Client: MINISTRY OF JUSTICE Tāhū o te Ture

Contractor

BCD GROUP

Sheet: INDEX & STANDARD NOTES

Project Title: PAPAKURA INTERIM COURTHOUSE
40 ELLIOT STREET, PAPAKURA

Rev	Date	by	Reason
2	22-03-2024	JGB	FOR INFORMATION
1	13-02-2024	JGB	FOR INFORMATION

Drawn: JGB Scale: at A1
Engineer: JGB
Job No: 23-1920 Sheet No: C-000 Revision: 2

NORTH

Notes:

- While all due care has been taken during design, the Contractor is to confirm all invert levels and existing surface levels prior to commencing permanent works construction. If any levels are significantly different, these are to be reported to the Engineer immediately.
- The location and extent of existing services shown may not be exhaustive and cannot be guaranteed. All efforts have been made to identify the utilities in the construction area.
- **The Contractor MUST confirm the location of all existing services, and pothole potentially conflicting services prior to commencing permanent works construction if required.**
- If the Contractor locates any utilities not shown on the drawings, or identified by the relevant authority, they are to inform the Engineer immediately. The Engineer shall then advise the Contractor on how to proceed. The Contractor is to include the location of the extra services in the As-Built information they provide to the Engineer.
- Not all service connections have been shown.
- Levels in terms of Auckland Vertical Datum 1946 (AVD 1946)

Legend

- property boundary
- existing contours (0.2m intervals)
- existing manhole
- existing catchpit
- existing hydrant
- SW — existing stormwater
- WW — existing wastewater
- WM — existing water supply
- existing light pole
- existing downpipe

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Sheet: **EXISTING SITE PLAN**

Project Title: **PAPAKURA INTERIM COURTHOUSE**

40 ELLIOT STREET, PAPAKURA

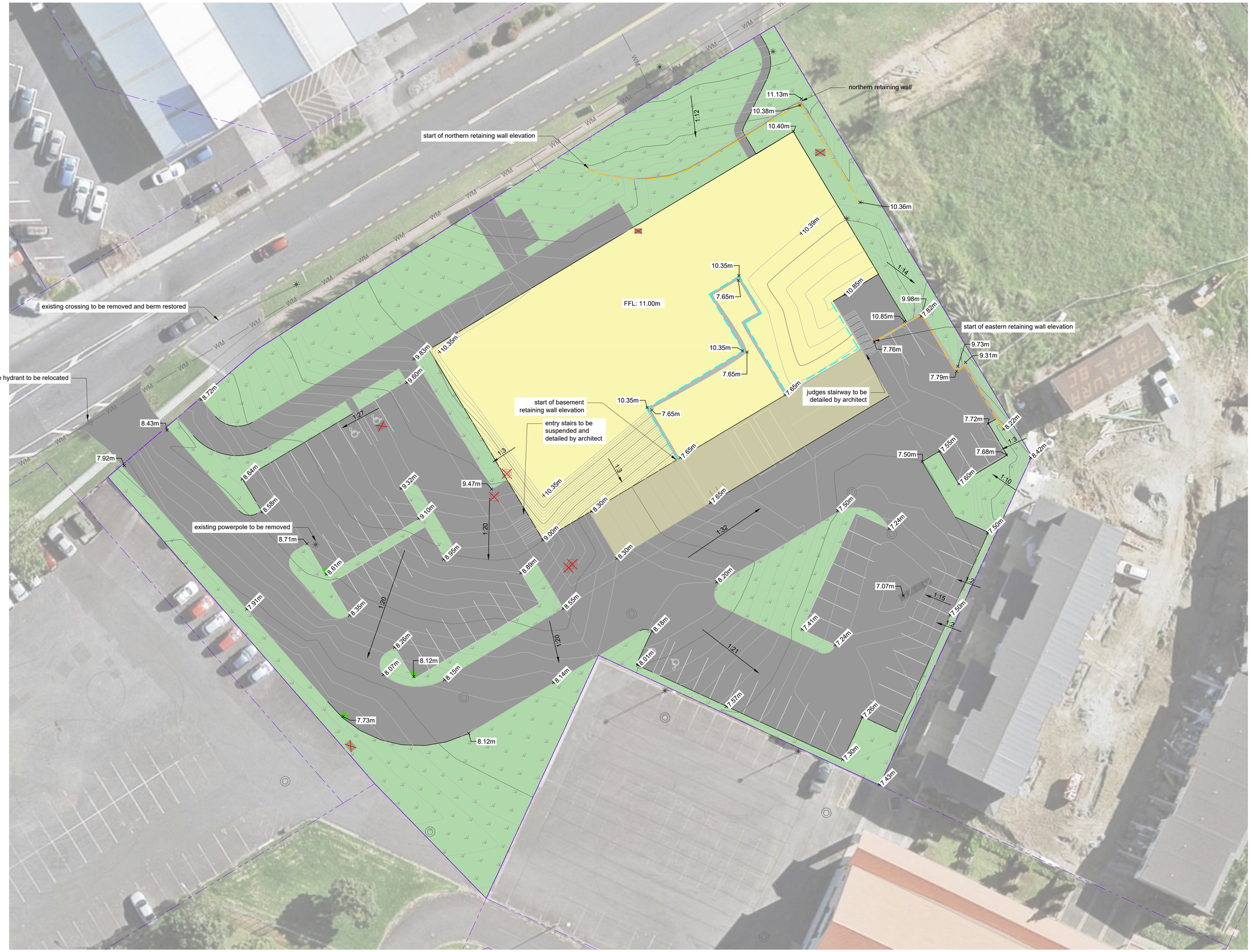
Rev	Date	by	Reason
1	13-02-2024	JGB	FOR INFORMATION

Drawn: JGB | Scale: 1:250 | at A1

Engineer: JGB

Job No:	Sheet No:	Revision
23-1920	C-001	1

all dimensions to be verified on site before making any shop drawings or commencing any work.



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- Not all service connections have been shown.
- Levels in terms of Auckland Vertical Datum 1946 (AVD 1946)

Legend

- property boundary
- proposed contours (0.1m intervals)
- vehicle asphalt pavement
- vehicle concrete pavement
- concrete footpath
- existing manhole
- existing manhole to be removed
- proposed stormwater manhole
- proposed wastewater manhole
- existing catchpit
- existing catchpit to be removed
- proposed catchpit
- existing hydrant
- existing downpipe
- masonry retaining wall
- timber pole retaining wall

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Sheet: **PROPOSED SITE PLAN**

Project Title: **PAPAKURA INTERIM COURTHOUSE**

40 ELLIOT STREET, PAPAKURA

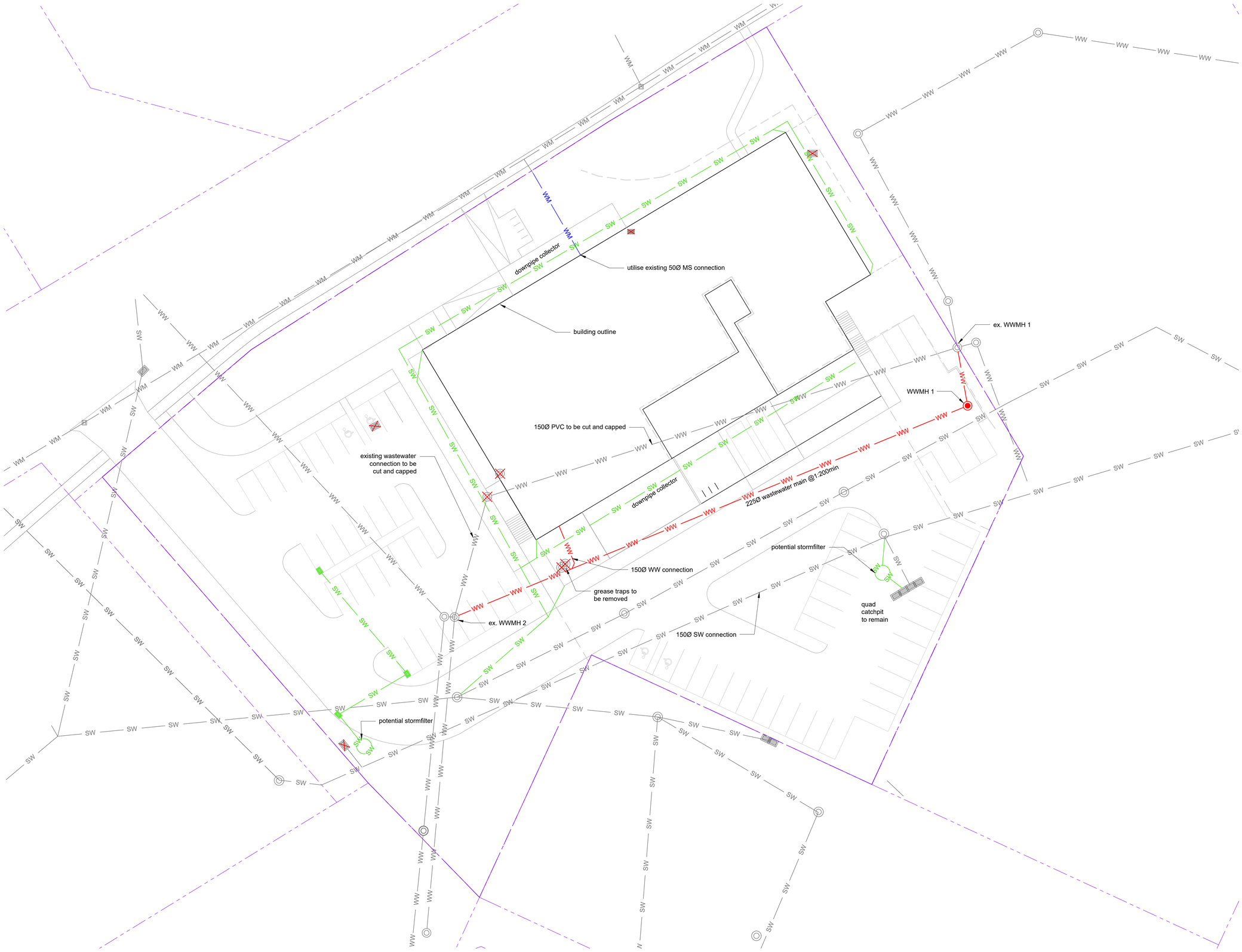
Rev	Date	by	Reason
1	22-03-2024	JGB	FOR INFORMATION

Drawn: JGB | Scale: 1:250 | at A1

Engineer: JGB

Job No:	Sheet No:	Revision
23-1920	C-100	2

all dimensions to be verified on site before making any shop drawings or commencing any work.



Notes:

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- Not all service connections have been shown.
- All manholes to be 1050Ø unless otherwise noted.
- All pipes uPVC SN10 or greater unless otherwise noted.
- Refer to sheet C-107 for wastewater section.

Legend

- property boundary
- existing manhole
- existing manhole to be removed
- existing catchpit
- existing catchpit to be removed
- existing hydrant
- SW — existing stormwater
- WW — existing wastewater
- WM — existing water supply
- proposed stormwater
- WW — proposed wastewater
- WM — proposed water supply
- SW — potential stormfilter
- retaining wall

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Sheet: **SITE SERVICES PLAN**

Project Title: **PAPAKURA INTERIM COURTHOUSE**

40 ELLIOT STREET, PAPAKURA

Rev	Date	by	Reason
2	22-03-2024	JGB	FOR INFORMATION
1	13-02-2024	JGB	FOR INFORMATION

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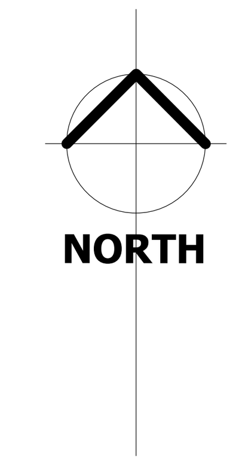
Engineer: JGB

Job No: 23-1920 | Sheet No: C-105 | Revision: 2

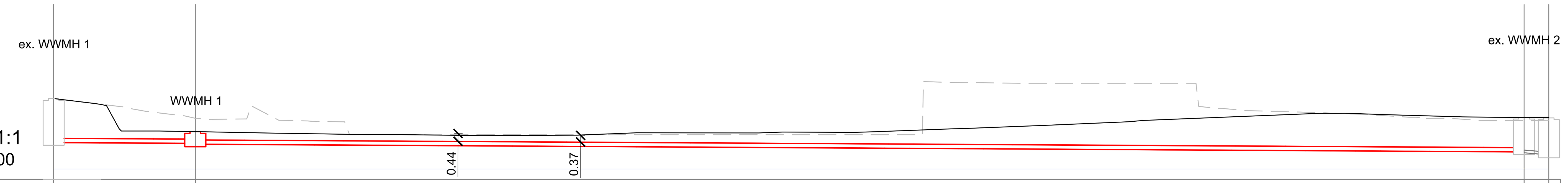
all dimensions to be verified on site before making any shop drawings or commencing any work.



Notes:

- Assumed groundwater RL: 5.6m based on auger results from Soil & Rock
- **The Contractor MUST confirm the location of all existing services, and pothole potentially conflicting services prior to commencing permanent works construction if required.**
- All pipes uPVC SN10 or greater unless otherwise noted.
- Levels in terms of Auckland Vertical Datum 1946

VERT EXAG 1:1
Datum 5.000



pipe details	225NB UPVC SN16 0.50% (1:200)		225NB UPVC SN16 0.58% (1:172)	150 NB AC 8.51% (1:12)	
lid level	9.62	7.74		8.56	8.52
invert level	7.11	7.07 / 7.02		6.58	6.53 / 6.41
cover to pipe	2.27	1.19 / 1.24		1.54	0.00 / 0.00
distance	0.00	8.08		83.91	85.32

WW longsection

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Sheet
WASTEWATER PIPE SECTION

Project Title
PAPAKURA INTERIM COURTHOUSE
40 ELLIOT STREET, PAPAKURA

Rev	Date	by	Reason
2	22-03-2024	JGB	FOR INFORMATION
1	13-02-2024	JGB	FOR INFORMATION

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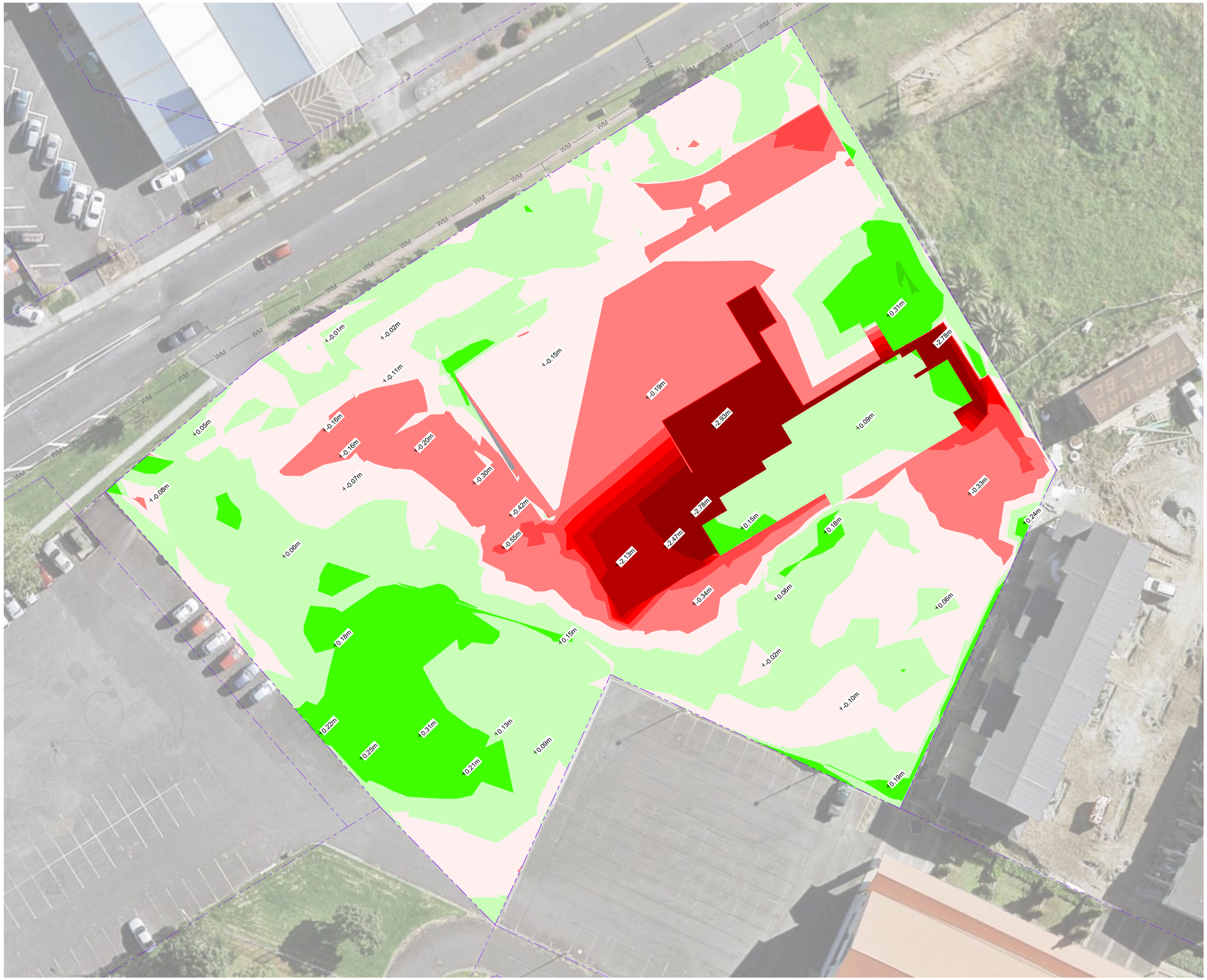
Engineer: JGB
Job No: 23-1920 Sheet No: C-107 Revision 2

all dimensions to be verified on site before making any shop drawings or commencing any work.



NORTH

Notes:

Plan shows necessary change in levels required to achieve finished ground levels. Including proposed and existing pavement seal and build up.

- Any site won material to be used as Fill is to be approved by a Geotechnical Engineer

To be read in conjunction with Soil & Rock Consultants Geotechnical Report.

Earthworks Summary

- Affected Area
  - 7906m^2
- Cut (to achieve finished ground levels)
  - 2044m^3
- Fill (to achieve finished ground levels)
  - 356m^3

Note: Volumes are indicative only, as they are solid measure, and do not take in to consideration:

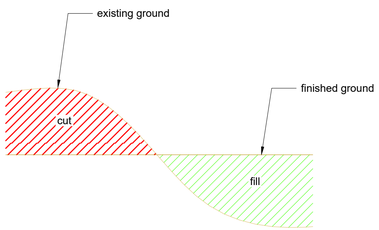
- *service trenching;*
- *temporary site works; or*
- *additional excavation beneath pavement or structure following discovery of unsuitable material.*

Legend

property boundary

Surface Analysis: Elevation

Number	Color	Minimum Elevation (m)	M
1		-3.500	
2		-3.000	
3		-2.500	
4		-2.000	
5		-1.500	
6		-1.000	



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Sheet: **CHANGE IN LEVELS PLAN**

Project Title: **PAPAKURA INTERIM COURTHOUSE**

40 ELLIOT STREET, PAPAKURA

Rev	Date	by	Reason
1	22-03-2024	JGB	FOR INFORMATION

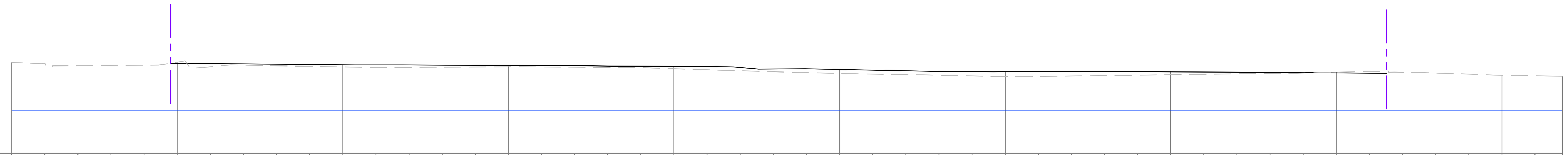
Drawn: JGB | Scale: 1:250 | at A1

Engineer: JGB

Job No:	Sheet No:	Revision
23-1920	C-200	1

all dimensions to be verified on site before making any shop drawings or commencing any work.

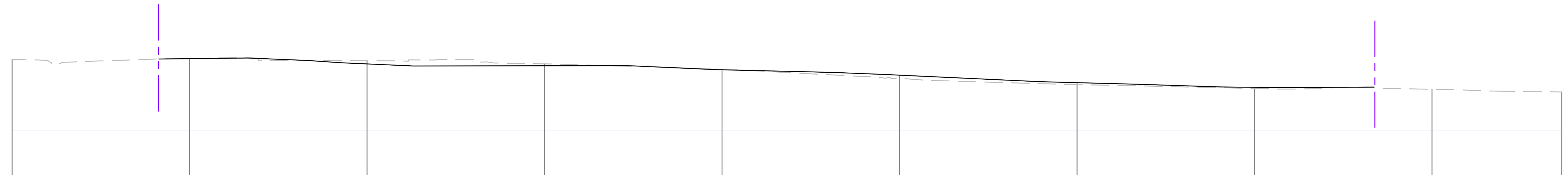
NORTH



VERT EXAG 1:1
Datum 3.000

distance	design level	existing level	change in levels
0.00		8.51	
2.00		8.45	
4.00		8.32	
6.00		8.33	
8.00		8.34	
10.00	8.46	8.53	-0.06
12.00	8.44	8.25	0.19
14.00	8.43	8.35	0.08
16.00	8.41	8.31	0.10
18.00	8.39	8.28	0.11
20.00	8.37	8.25	0.12
22.00	8.36	8.22	0.14
24.00	8.36	8.22	0.13
26.00	8.34	8.23	0.11
28.00	8.33	8.24	0.09
30.00	8.32	8.25	0.07
32.00	8.32	8.25	0.07
34.00	8.31	8.23	0.08
36.00	8.29	8.22	0.07
38.00	8.29	8.20	0.08
40.00	8.28	8.13	0.15
42.00	8.28	8.07	0.21
44.00	8.21	8.01	0.20
46.00	8.12	7.95	0.17
48.00	8.13	7.90	0.23
50.00	8.09	7.85	0.23
52.00	8.04	7.81	0.23
54.00	8.01	7.78	0.23
56.00	7.96	7.74	0.22
58.00	7.95	7.70	0.25
60.00	7.95	7.66	0.29
62.00	7.96	7.66	0.29
64.00	7.96	7.69	0.27
66.00	7.96	7.72	0.25
68.00	7.95	7.74	0.21
70.00	7.94	7.77	0.17
72.00	7.93	7.80	0.14
74.00	7.93	7.83	0.10
76.00	7.92	7.86	0.06
78.00	7.90	7.88	0.02
80.00	7.88	7.92	-0.04
82.00	7.87	7.96	-0.09
84.00		7.92	
86.00		7.88	
88.00		7.81	
90.00		7.74	
92.00		7.70	
93.64		7.68	

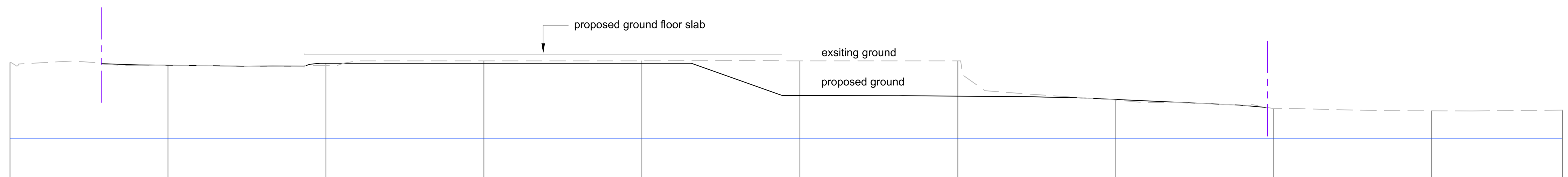
Section A longsection



VERT EXAG 1:1
Datum 3.000

distance	design level	existing level	change in levels
0.00		9.63	
2.00		9.57	
4.00		9.51	
6.00		9.57	
8.00		9.64	
10.00	9.67	9.69	-0.02
12.00	9.69	9.72	-0.03
14.00	9.68	9.57	0.10
16.00	9.59	9.57	0.03
18.00	9.48	9.56	-0.08
20.00	9.37	9.56	-0.18
22.00	9.28	9.54	-0.25
24.00	9.26	9.61	-0.35
26.00	9.26	9.62	-0.35
28.00	9.27	9.41	-0.15
30.00	9.27	9.38	-0.11
32.00	9.27	9.32	-0.05
34.00	9.27	9.27	0.01
36.00	9.22	9.21	0.01
38.00	9.13	9.14	-0.02
40.00	9.04	9.07	-0.03
42.00	9.00	8.98	0.02
44.00	8.95	8.87	0.08
46.00	8.90	8.76	0.13
48.00	8.82	8.66	0.16
50.00	8.74	8.55	0.18
52.00	8.65	8.44	0.21
54.00	8.55	8.38	0.18
56.00	8.46	8.32	0.14
58.00	8.37	8.26	0.11
60.00	8.32	8.21	0.11
62.00	8.26	8.17	0.10
64.00	8.21	8.13	0.08
66.00	8.14	8.08	0.06
68.00	8.08	8.04	0.05
70.00	8.05	7.99	0.06
72.00	8.04	7.96	0.09
74.00	8.04	8.01	0.03
76.00	8.03	8.07	-0.04
78.00		7.99	
80.00		7.95	
82.00		7.90	
84.00		7.83	
86.00		7.81	
87.31		7.79	

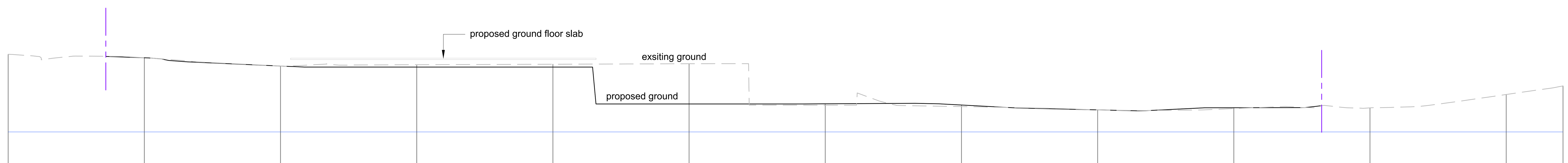
Section B longsection



VERT EXAG 1:1
Datum 3.000

distance	design level	existing level	change in levels
0.00		10.39	
2.00		10.38	
4.00		10.49	
6.00	10.32	10.29	0.03
8.00	10.25	10.20	0.04
10.00	10.23	10.22	0.00
12.00	10.20	10.21	-0.01
14.00	10.18	10.18	-0.01
16.00	10.17	10.15	0.02
18.00	10.17	10.14	0.03
20.00	10.35	10.20	0.15
22.00	10.35	10.50	-0.15
24.00	10.35	10.50	-0.15
26.00	10.35	10.50	-0.15
28.00	10.35	10.50	-0.15
30.00	10.35	10.50	-0.15
32.00	10.35	10.50	-0.15
34.00	10.35	10.50	-0.15
36.00	10.35	10.50	-0.15
38.00	10.35	10.50	-0.15
40.00	10.35	10.50	-0.15
42.00	10.35	10.51	-0.16
44.00	10.04	10.51	-0.47
46.00	9.33	10.52	-1.19
48.00	8.62	10.52	-1.90
50.00	8.31	10.50	-2.19
52.00	8.30	10.50	-2.20
54.00	8.30	10.50	-2.20
56.00	8.29	10.50	-2.21
58.00	8.29	10.50	-2.21
60.00	8.27	10.50	-2.23
62.00	8.25	8.59	-0.34
64.00	8.24	8.44	-0.20
66.00	8.20	8.29	-0.10
68.00	8.15	8.15	-0.01
70.00	8.06	8.03	0.03
72.00	7.97	7.86	0.11
74.00	7.88	7.86	0.02
76.00	7.78	7.78	0.01
78.00	7.69	7.70	-0.01
80.00		7.50	
82.00		7.47	
84.00		7.41	
86.00		7.37	
88.00		7.35	
90.00		7.34	
92.00		7.33	
94.00		7.35	
96.00		7.36	
98.00		7.38	
98.27		7.39	

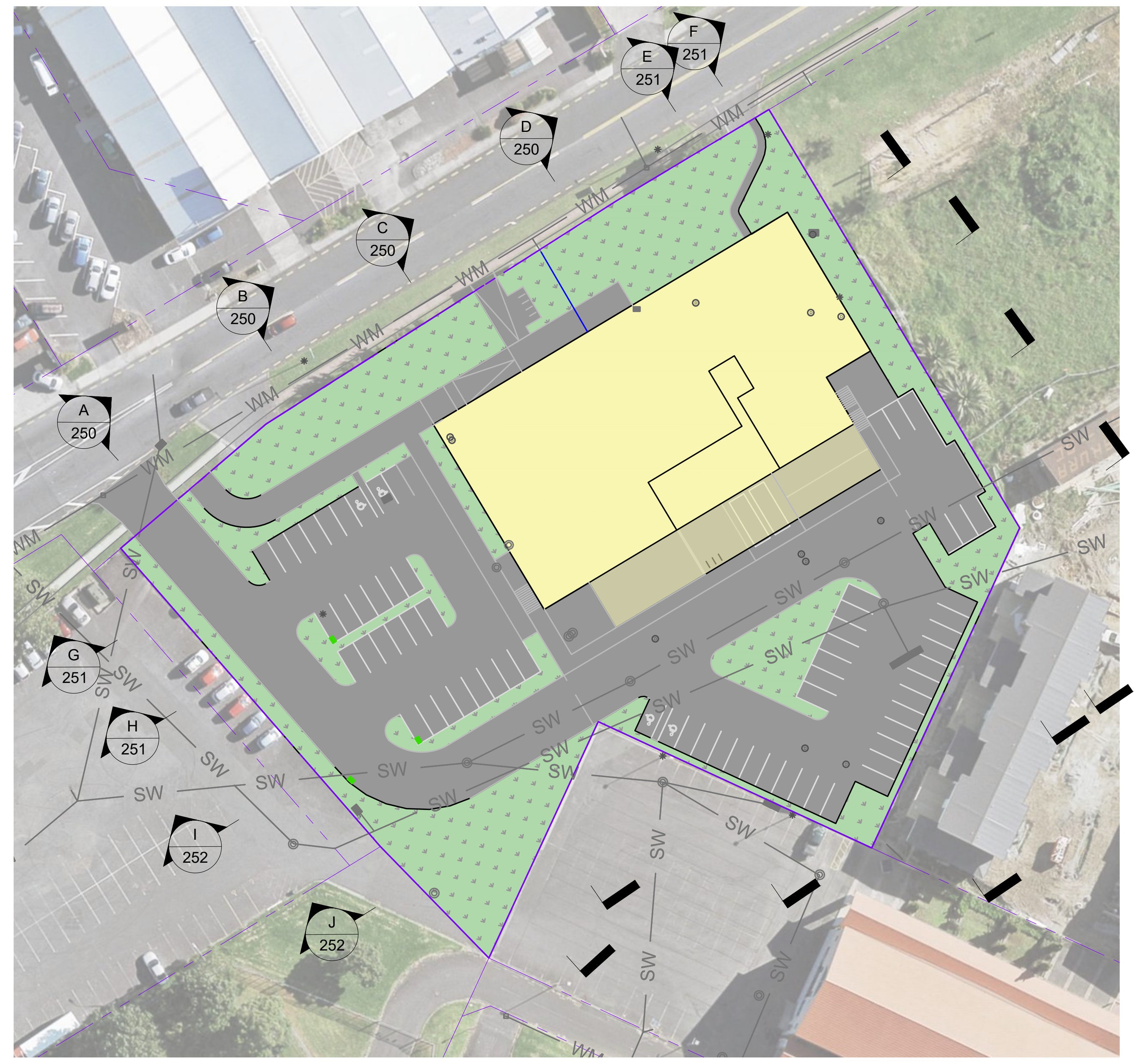
Section C longsection



VERT EXAG 1:1
Datum 3.000

distance	design level	existing level	change in levels
0.00		11.28	
2.00		11.15	
4.00		11.07	
6.00		11.15	
8.00	11.10	11.14	-0.04
10.00	11.03	11.03	0.00
12.00	10.82	10.89	-0.08
14.00	10.70	10.73	-0.03
16.00	10.60	10.63	-0.02
18.00	10.51	10.53	-0.01
20.00	10.42	10.43	0.00
22.00	10.35	10.49	-0.14
24.00	10.35	10.51	-0.16
26.00	10.35	10.50	-0.15
28.00	10.35	10.51	-0.16
30.00	10.35	10.52	-0.17
32.00	10.35	10.53	-0.18
34.00	10.35	10.53	-0.18
36.00	10.35	10.54	-0.19
38.00	10.35	10.55	-0.20
40.00	10.35	10.56	-0.21
42.00	10.35	10.56	-0.21
44.00	7.65	10.57	-2.92
46.00	7.65	10.58	-2.93
48.00	7.65	10.59	-2.94
50.00	7.65	10.59	-2.94
52.00	7.65	10.60	-2.95
54.00	7.65	10.60	-2.95
56.00	7.65	7.56	0.09
58.00	7.65	7.56	0.09
60.00	7.66	7.56	0.10
62.00	7.67	7.56	0.11
64.00	7.68	7.85	-0.17
66.00	7.69	7.53	0.17
68.00	7.67	7.49	0.18
70.00	7.57	7.46	0.11
72.00	7.46	7.42	0.04
74.00	7.36	7.38	-0.02
76.00	7.31	7.34	-0.03
78.00	7.26	7.29	-0.03
80.00	7.22	7.21	0.00
82.00	7.17	7.18	-0.01
84.00	7.18	7.17	0.00
86.00	7.28	7.19	0.08
88.00	7.37	7.23	0.15
90.00	7.37	7.31	0.06
92.00	7.38	7.39	-0.02
94.00	7.38	7.45	-0.07
96.00	7.47	7.37	0.10
98.00		7.40	
100.00		7.36	
102.00		7.41	
104.00		7.51	
106.00		7.77	
108.00		8.05	
110.00		8.34	
112.00		8.63	
114.00		8.94	
114.17		8.97	

Section D longsection



Site Section Reference Plan
scale 1:750

Notes:

- Assumed groundwater RL: 5.6m based on auger results from Soil & Rock
- Levels in terms of Auckland Vertical Datum 1946
- Levels beyond boundary are retrieved from LINZ

FOR INFO
FOR INFORMATION PURPOSES ONLY

DRAFT

Client: MINISTRY OF JUSTICE Tāhū o te Ture

Contractor

BCD GROUP

Sheet: **SITE SECTIONS SHEET 1**

Project Title: **PAPAKURA INTERIM COURTHOUSE**

40 ELLIOT STREET, PAPAKURA

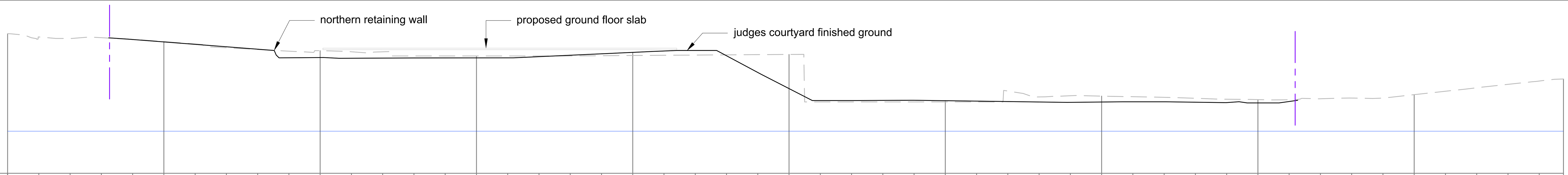
Rev	Date	by	Reason
1	21-03-2024	JGB	FOR INFORMATION

Drawn: JGB Scale: 1:200 at A1
Engineer: JGB

Job No:	Sheet No:	Revision
23-1920	C-250	1

all dimensions to be verified on site before making any shop drawings or commencing any work.

VERT EXAG 1:1
Datum 3.000



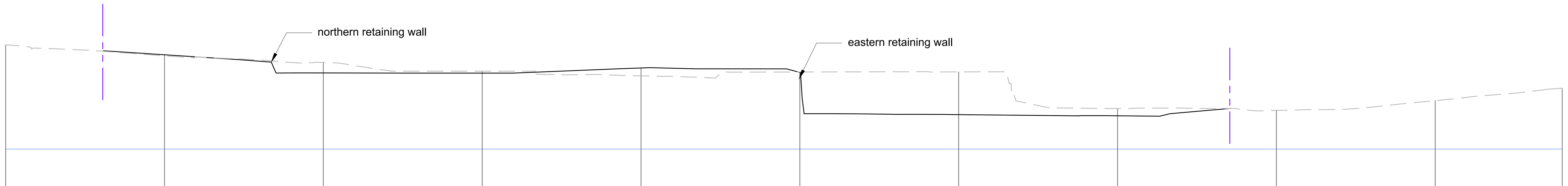
design level					11.55	11.40	11.24	11.09	10.93	10.38	10.40	10.35	10.36	10.37	10.38	10.38	10.38
existing level	11.93	11.71	11.62	11.67	11.56	11.42	11.27	11.02	10.91	10.81	10.84	10.77	10.77	10.50	10.50	10.50	10.50
change in levels					0.00	-0.02	-0.03	0.07	0.02	-0.42	-0.44	-0.42	-0.40	-0.13	-0.12	-0.12	-0.12
distance	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00

design level	10.46	10.55	10.64	10.73	10.82	10.85	10.51	9.44	8.41	7.65	7.65	7.66	7.67	7.64	7.61	7.59	7.56
existing level	10.50	10.50	10.52	10.53	10.54	10.56	10.57	10.59	10.60	7.56	7.56	7.56	7.56	7.56	7.56	8.26	7.88
change in levels	-0.04	0.04	0.12	0.20	0.27	0.29	-0.06	-1.14	-2.18	0.09	0.09	0.10	0.11	0.08	0.05	-0.67	-0.32
distance	34.00	36.00	38.00	40.00	42.00	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00	62.00	64.00	66.00

design level	7.54	7.56	7.57	7.57	7.54	7.52	7.50	7.59									
existing level	7.96	7.93	7.90	7.86	7.79	7.74	7.71	7.70	7.76	7.81	7.82	8.03	8.24	8.47	8.69	8.90	9.03
change in levels	-0.42	-0.38	-0.33	-0.29	-0.25	-0.22	-0.21	-0.11									
distance	68.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00	84.00	86.00	88.00	90.00	92.00	94.00	96.00	98.00	99.55

Section E longsection

VERT EXAG 1:1
Datum 3.000

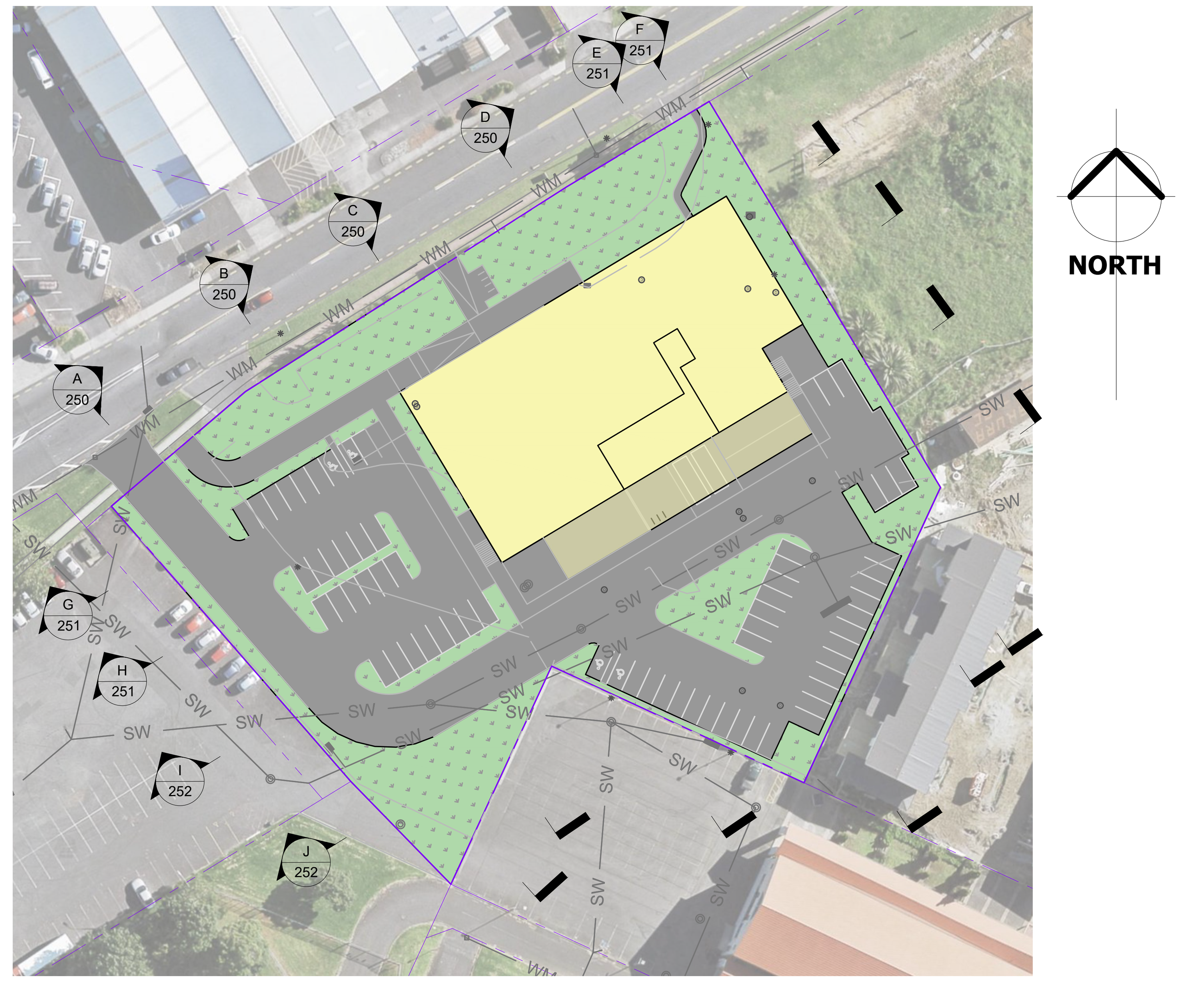


design level					11.66	11.53	11.40	11.27	11.12	10.39	10.39	10.38	10.38	10.38	10.38	10.38	10.38
existing level	12.16	11.95	11.87	11.76	11.61	11.46	11.41	11.30	11.20	11.04	11.05	10.85	10.55	10.50	10.50	10.50	10.50
change in levels					0.05	0.07	-0.01	-0.03	-0.08	-0.66	-0.66	-0.46	-0.17	-0.12	-0.12	-0.12	-0.12
distance	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00

design level	10.46	10.54	10.62	10.70	10.68	10.65	10.65	10.65	10.42	7.82	7.81	7.79	7.78	7.77	7.74	7.72	7.71
existing level	10.30	10.28	10.26	10.20	10.17	10.09	10.44	10.44	10.45	10.45	10.46	10.46	10.47	10.45	10.46	8.55	8.19
change in levels	0.17	0.27	0.36	0.50	0.51	0.55	0.21	0.20	-0.03	-2.63	-2.64	-2.68	-2.68	-2.69	-2.72	-0.82	-0.49
distance	34.00	36.00	38.00	40.00	42.00	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00	62.00	64.00	66.00

design level	7.70	7.69	7.67	7.89	8.06											
existing level	8.17	8.15	8.17	8.18	8.16	8.07	8.03	8.08	8.10	8.24	8.45	8.65	8.86	9.03	9.22	9.43
change in levels	-0.47	-0.46	-0.50	-0.30	-0.10											
distance	68.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00	84.00	86.00	88.00	90.00	92.00	94.00	96.00	98.00

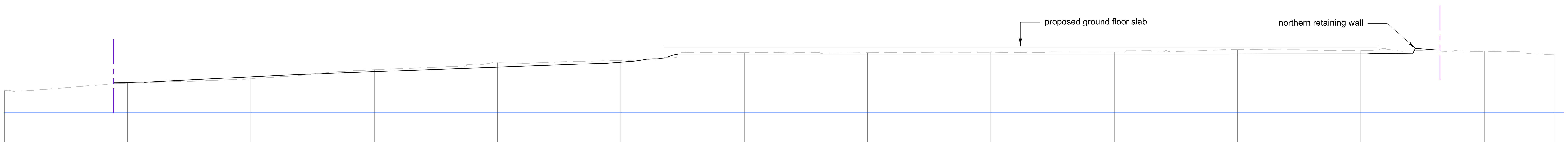
Section F longsection



Site Section Reference Plan

scale 1:750

VERT EXAG 1:1
Datum 3.000



design level						8.03	8.09	8.19	8.29	8.40	8.50	8.60	8.69	8.77	8.84	8.92
existing level	7.40	7.38	7.53	7.69	7.86	7.99	8.06	8.10	8.17	8.24	8.33	8.48	8.63	8.81	8.98	9.07
change in levels						0.04	0.03	0.09	0.13	0.15	0.17	0.12	0.07	-0.04	-0.13	-0.16
distance	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00

design level	8.99	9.06	9.14	9.21	9.28	9.36	9.43	9.51	9.58	9.69	9.91	10.20	10.35	10.35	10.35	10.35
existing level	9.16	9.24	9.32	9.52	9.64	9.61	9.67	9.73	9.78	9.83	9.90	10.10	10.48	10.48	10.48	10.48
change in levels	-0.17	-0.17	-0.18	-0.31	-0.36	-0.25	-0.24	-0.23	-0.20	-0.14	0.00	0.10	-0.13	-0.13	-0.13	-0.13
distance	32.00	34.00	36.00	38.00	40.00	42.00	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00	62.00

design level	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35
existing level	10.43	10.48	10.43	10.45	10.47	10.48	10.50	10.50	10.50	10.48	10.47	10.51	10.51	10.51	10.67	10.52
change in levels	-0.08	-0.13	-0.08	-0.10	-0.12	-0.13	-0.15	-0.15	-0.15	-0.13	-0.12	-0.16	-0.16	-0.16	-0.32	-0.17
distance	64.00	66.00	68.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00	84.00	86.00	88.00	90.00	92.00	94.00

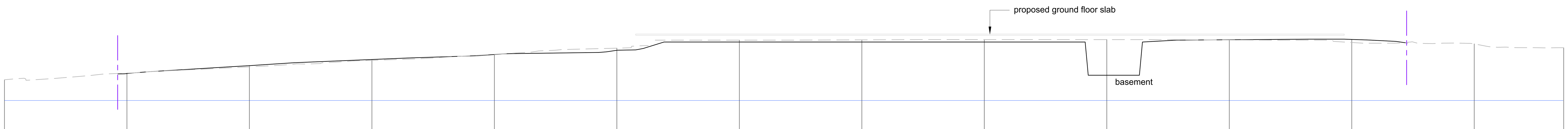
design level	10.35	10.35	10.35	10.36	10.36	10.36	10.36	10.36	10.39	10.37	10.69					
existing level	10.59	10.67	10.73	10.74	10.75	10.67	10.66	10.65	10.79	10.61	10.61	10.61	10.56	10.56	10.35	10.35
change in levels	-0.24	-0.32	-0.38	-0.39	-0.39	-0.31	-0.30	-0.28	-0.40	-0.24	0.08	0.09				
distance	96.00	98.00	100.00	102.00	104.00	106.00	108.00	110.00	112.00	114.00	116.00	118.00	120.00	122.00	124.00	125.74

Section G longsection

Notes:

- Assumed groundwater RL: 5.6m based on auger results from Soil & Rock
- Levels in terms of Auckland Vertical Datum 1946
- Levels beyond boundary are retrieved from LINZ

VERT EXAG 1:1
Datum 3.000



design level						7.79	7.95	8.07	8.19	8.31	8.43	8.56	8.68	8.76	8.85	8.93
existing level	7.28	7.25	7.38	7.54	7.74	7.83	7.94	8.04	8.13	8.23	8.33	8.43	8.57	8.66	8.78	8.86
change in levels						-0.04	0.00	0.03	0.06	0.08	0.10	0.13	0.11	0.10	0.07	0.07
distance	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00

design level	9.01	9.09	9.15	9.22	9.34	9.41	9.44	9.47	9.50	9.68	9.80	10.35	10.35	10.35	10.35	10.35
existing level	8.93	9.00	9.12	9.24	9.35	9.47	9.64	9.75	9.80	9.85	10.04	10.50	10.50	10.50	10.50	10.50
change in levels	0.09	0.09	0.04	-0.02	-0.02	-0.06	-0.20	-0.28	-0.30	-0.17	-0.25	-0.15	-0.15	-0.15	-0.15	-0.15
distance	32.00	34.00	36.00	38.00	40.00	42.00	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00	62.00

design level	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35	7.65	7.65	10.41
existing level	10.50	10.51	10.51	10.52	10.53	10.54	10.54	10.54	10.54	10.54	10.54	10.54	10.54	10.54	10.54	10.54
change in levels	-0.15	-0.16	-0.16	-0.17	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-2.89	-2.89	-0.13
distance	64.00	66.00	68.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00	84.00	86.00	88.00	90.00	92.00	94.00

design level	10.50	10.52	10.53	10.55	10.56	10.58	10.58	10.56	10.48	10.34							
existing level	10.53	10.52	10.52	10.51	10.50	10.50	10.50	10.31	10.25	10.27	10.23	10.26	10.19	9.92	9.89	9.87	9.88
change in levels	-0.03	-0.01	0.01	0.04	0.06	0.08	0.08	0.25	0.23	0.08	0.00						
distance	96.00	98.00	100.00	102.00	104.00	106.00	108.00	110.00	112.00	114.00	116.00	118.00	120.00	122.00	124.00	126.00	127.30

Section H longsection

FOR INFO
FOR INFORMATION PURPOSES ONLY

DRAFT

Client: MINISTRY OF JUSTICE Tāhū o te Ture

Contractor

BCD GROUP

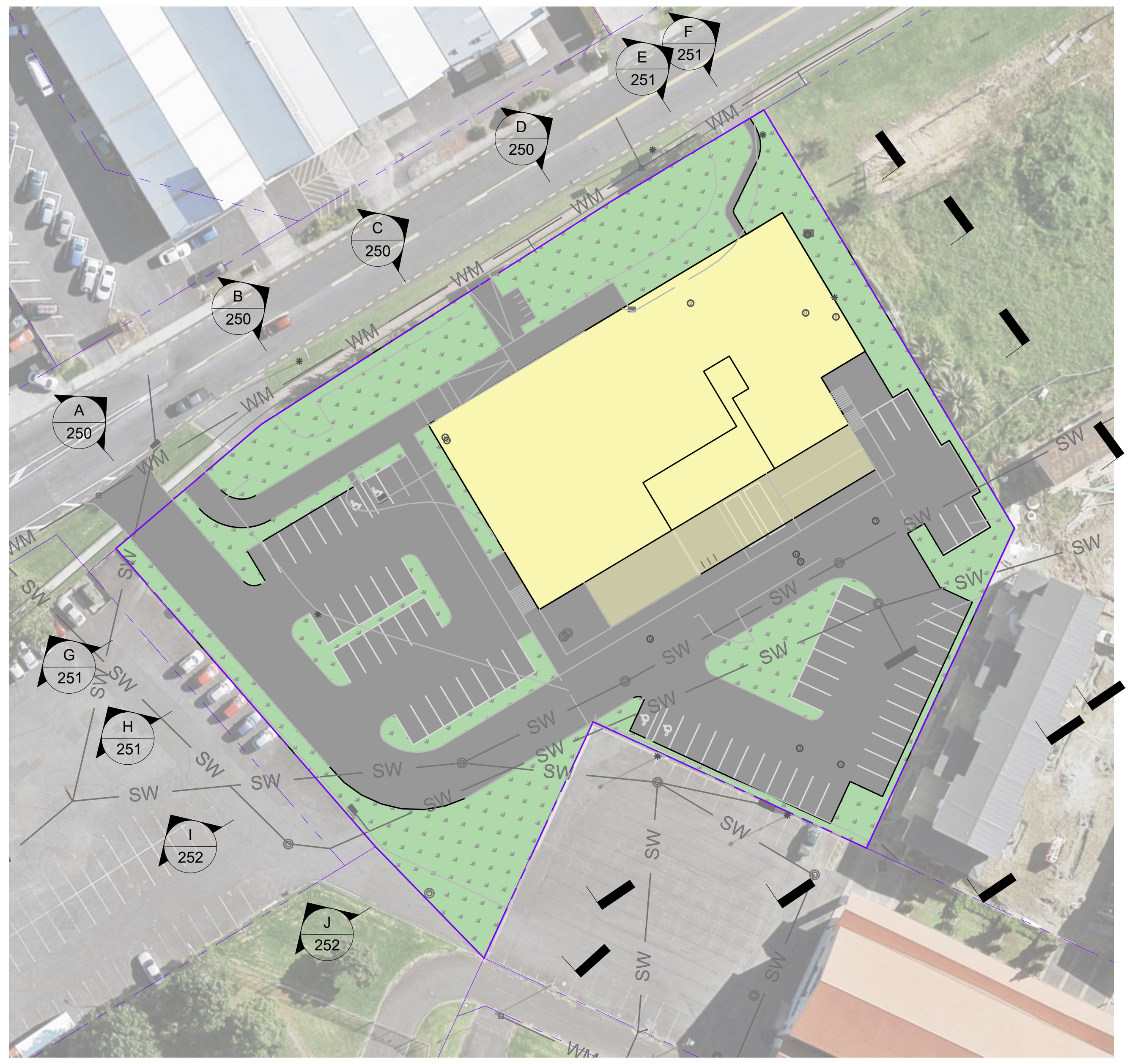
Sheet
SITE SECTIONS SHEET 2

Project Title
PAPAKURA INTERIM COURTHOUSE
40 ELLIOT STREET, PAPAKURA

Rev	Date	by	Reason
1	22-03-2024	JGB	FOR INFORMATION

Drawn: JGB Scale: 1:200 at A1
Engineer: JGB
Job No: 23-1920 Sheet No: C-251 Revision: 1

all dimensions to be verified on site before making any shop drawings or commencing any work.



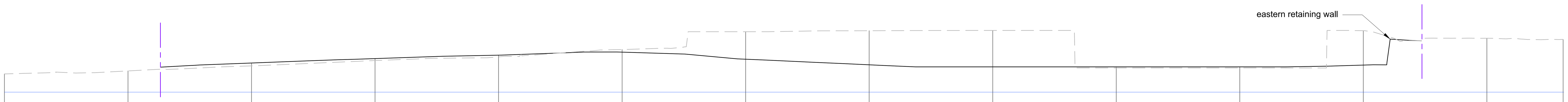
Site Section Reference Plan

scale 1:750

Notes:

- Assumed groundwater RL: 5.6m based on auger results from Soil & Rock
- Levels in terms of Auckland Vertical Datum 1946
- Levels beyond boundary are retrieved from LINZ

NORTH



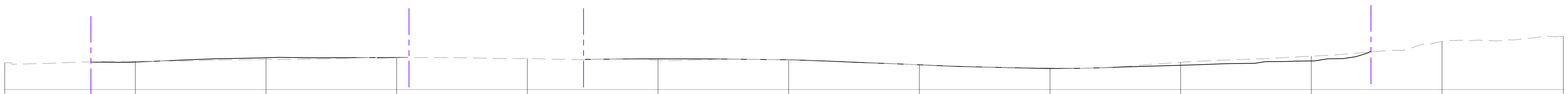
VERT EXAG 1:1
Datum 3.000

design level								7.70	7.81	7.89	7.96	8.04	8.12	8.19	8.25	8.32	8.39	8.46	8.52	8.56	8.60	8.67
existing level	7.08	7.13	7.19	7.16	7.21	7.32	7.43	7.48	7.57	7.66	7.73	7.81	7.90	7.99	8.07	8.16	8.24	8.32	8.36	8.38	8.46	8.55
change in levels								0.23	0.24	0.22	0.23	0.23	0.22	0.20	0.18	0.16	0.15	0.14	0.16	0.18	0.14	0.12
distance	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	42.00

design level	8.74	8.81	8.86	8.85	8.78	8.72	8.60	8.42	8.27	8.18	8.09	8.00	7.91	7.82	7.73	7.65	7.65	7.65	7.65	7.65	7.65	7.65
existing level	8.70	8.85	8.99	9.05	9.12	9.15	10.50	10.50	10.50	10.50	10.54	10.57	10.58	10.58	10.59	10.59	10.60	10.60	10.60	10.60	10.60	10.60
change in levels	0.04	-0.04	-0.14	-0.21	-0.33	-0.43	-1.90	-2.08	-2.23	-2.32	-2.45	-2.57	-2.66	-2.76	-2.86	-2.94	-2.95	-2.95	-2.95	-2.95	-2.95	-2.95
distance	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00	84.00	86.00

design level	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.66	7.69	7.73	7.79	8.63	9.79							
existing level	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	10.60	10.58	10.11	9.77	9.97	9.97	9.97	9.96	9.86	9.87	9.88
change in levels	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.13	-2.87	-2.79	-1.48	0.02	0.00						
distance	88.00	90.00	92.00	94.00	96.00	98.00	100.00	102.00	104.00	106.00	108.00	110.00	112.00	114.00	116.00	118.00	120.00	122.00	124.00	126.00	126.18

Section I longsection



VERT EXAG 1:1
Datum 3.000

design level					7.68	7.70	7.78	7.87	7.94	7.98	8.03	8.04	8.02	8.03	8.04	8.04					
existing level	7.64	7.56	7.62	7.70	7.76	7.76	7.77	7.78	7.84	7.87	7.89	7.91	7.93	7.98	8.03	8.02	8.04	8.04	8.01	7.97	7.96
change in levels					-0.08	-0.06	0.01	0.09	0.11	0.11	0.13	0.13	0.09	0.05	0.00	0.03					
distance	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00

design level			7.92	7.94	7.94	7.94	7.94	7.92	7.89	7.87	7.81	7.73	7.65	7.57	7.49	7.40	7.34	7.29	7.25	7.21	7.22
existing level	7.92	7.87	7.91	7.91	7.82	7.83	7.89	7.91	7.89	7.85	7.78	7.69	7.62	7.56	7.50	7.43	7.36	7.31	7.27	7.25	7.23
change in levels			0.00	0.03	0.12	0.11	0.05	0.01	0.00	0.02	0.03	0.04	0.03	0.01	-0.01	-0.02	-0.03	-0.02	-0.03	-0.05	-0.01
distance	42.00	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00

design level	7.27	7.33	7.39	7.45	7.52	7.58	7.65	7.74	7.78	7.95	8.29								
existing level	7.28	7.39	7.54	7.68	7.79	7.87	7.94	8.04	8.15	8.26	8.42	8.58	8.89	9.26	9.34	9.32	9.44	9.68	9.68
change in levels	-0.01	-0.06	-0.15	-0.22	-0.27	-0.29	-0.29	-0.30	-0.36	-0.31	-0.13	0.00							
distance	84.00	86.00	88.00	90.00	92.00	94.00	96.00	98.00	100.00	102.00	104.00	106.00	108.00	110.00	112.00	114.00	116.00	118.00	119.29

Section J longsection

FOR INFO
FOR INFORMATION PURPOSES ONLY

DRAFT

Client	Contractor	Sheet	
MINISTRY OF JUSTICE *Tāhū o te Ture*		**SITE SECTIONS SHEET 3**	
		Project Title: **PAPAKURA INTERIM COURTHOUSE** 40 ELLIOT STREET, PAPAKURA	

Rev	Date	by	Reason
1	22-03-2024	JGB	FOR INFORMATION

Drawn: JGB | Scale: 1:200 at A1
Engineer: JGB

Job No:	Sheet No:	Revision
23-1920	C-252	1

all dimensions to be verified on site before making any shop drawings or commencing any work.

VERT EXAG 1:1
Datum 3.000

distance	top of wall	bottom of wall	retained height
0.00			
2.00	8.33	7.65	0.68
4.00	9.01	7.65	1.36
6.00	9.68	7.65	2.03
8.00	10.35	7.65	2.70
	10.35	7.65	2.70
10.00	10.35	7.65	2.70
12.00	10.35	7.65	2.70
14.00	10.35	7.65	2.70
16.00	10.35	7.65	2.70
18.00	10.35	7.65	2.70
20.00	10.35	7.65	2.70
22.00	10.35	7.65	2.70
	10.35	7.65	2.70
24.00	10.35	7.65	2.70
26.00	10.35	7.65	2.70
28.00	10.35	7.65	2.70
30.00	10.35	7.65	2.70
32.00	10.35	7.65	2.70
	10.35	7.65	2.70
34.00	10.35	7.65	2.70
36.00	10.35	7.65	2.70
	10.35	7.65	2.70
38.00	10.35	7.65	2.70
40.00	10.35	7.65	2.70
42.00	10.35	7.65	2.70
	10.35	7.65	2.70
44.00	10.35	7.65	2.70
46.00	10.35	7.65	2.70
	10.35	7.65	2.70
48.00	10.35	7.65	2.70
50.00	10.35	7.65	2.70
52.00	10.35	7.65	2.70
54.00	10.35	7.65	2.70
56.00	10.35	7.65	2.70
	10.35	7.65	2.70
58.00	10.35	7.65	2.70
60.00	10.35	7.65	2.70
62.00	10.35	7.65	2.70
64.00	10.35	7.65	2.70
66.00	10.35	7.65	2.70
68.00	10.35	7.65	2.70
	10.35	7.65	2.70
70.00	10.47	8.40	2.07
72.00	10.60	9.27	1.33
74.00	10.74	10.16	0.58
75.69			

Basement TOW longsection

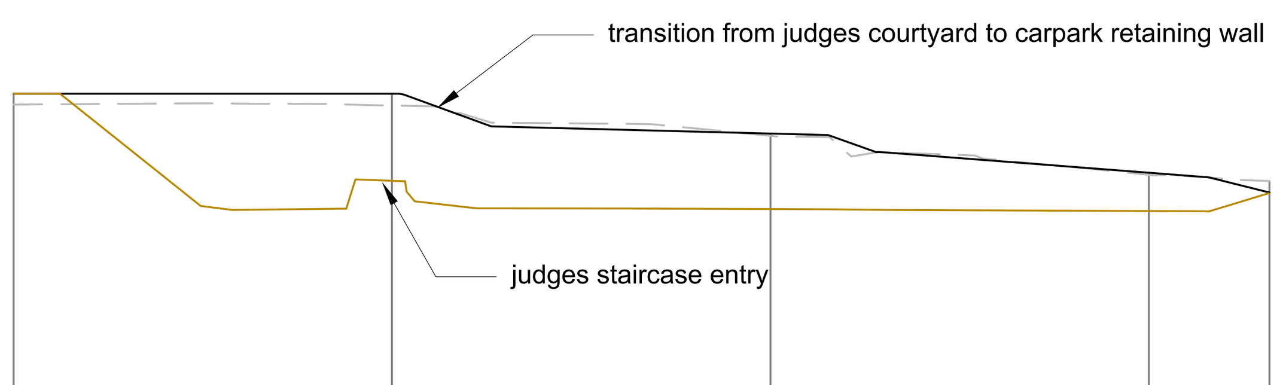
Notes:

- Assumed groundwater RL: 5.6m based on auger results from Soil & Rock
- Levels in terms of Auckland Vertical Datum 1946

VERT EXAG 1:1
Datum 5.000

distance	top of wall	bottom of wall	retained height
0.00			
2.00	10.90		
4.00	10.82	10.66	0.16
	10.82	10.65	0.17
6.00	10.73	10.51	0.21
	10.73	10.51	0.21
8.00	10.72	10.38	0.33
	10.72	10.38	0.34
10.00	10.68	10.38	0.30
	10.66	10.38	0.28
12.00	10.64	10.38	0.26
14.00	10.59	10.38	0.21
	10.59	10.38	0.21
16.00	10.66	10.38	0.28
	10.68	10.38	0.30
18.00	10.72	10.38	0.34
20.00	10.78	10.38	0.40
22.00	10.84	10.38	0.46
24.00	10.90	10.38	0.52
26.00	10.96	10.38	0.58
28.00	11.02	10.38	0.63
30.00	11.07	10.38	0.69
32.00	11.12	10.38	0.74
	11.11	10.38	0.73
34.00	11.01	10.38	0.64
36.00	10.92	10.37	0.54
38.00	10.82	10.37	0.45
40.00	10.72	10.36	0.36
42.00	10.62	10.36	0.26
44.00	10.53	10.36	0.17
46.00	10.43	10.35	0.08
47.74			

Northern TOW longsection



VERT EXAG 1:1
Datum 3.000

distance	top of wall	bottom of wall	retained height
0.00			
2.00	10.85	10.23	0.62
4.00	10.85	8.64	2.21
	10.85	7.88	2.97
6.00	10.85	7.78	3.07
8.00	10.85	7.80	3.05
10.00	10.85	8.55	2.30
12.00	10.21	7.85	2.37
	9.99	7.82	2.17
14.00	9.95	7.82	2.13
16.00	9.90	7.82	2.08
18.00	9.85	7.81	2.04
20.00	9.80	7.80	1.99
22.00	9.75	7.80	1.96
	9.59	7.79	1.80
24.00	9.31	7.78	1.53
	9.23	7.77	1.45
26.00	9.07	7.77	1.31
28.00	8.92	7.76	1.16
30.00	8.76	7.75	1.01
32.00	8.64	7.74	0.90
	8.54	7.86	0.67
33.19			

Eastern TOW longsection

FOR INFO
FOR INFORMATION PURPOSES ONLY

DRAFT

Client: Ministry of Justice — Tāhū o te Ture

Contractor

BCD GROUP

Sheet: **RETAINING WALL ELEVATIONS**

Project Title: **PAPAKURA INTERIM COURTHOUSE**

40 ELLIOT STREET, PAPAKURA

Rev	Date	by	Reason
1	22-03-2024	JGB	FOR INFORMATION

Drawn: JGB | Scale: 1:200 at A1
Engineer: JGB
Job No: 23-1920 | Sheet No: C-260 | Revision: 1

all dimensions to be verified on site before making any shop drawings or commencing any work.