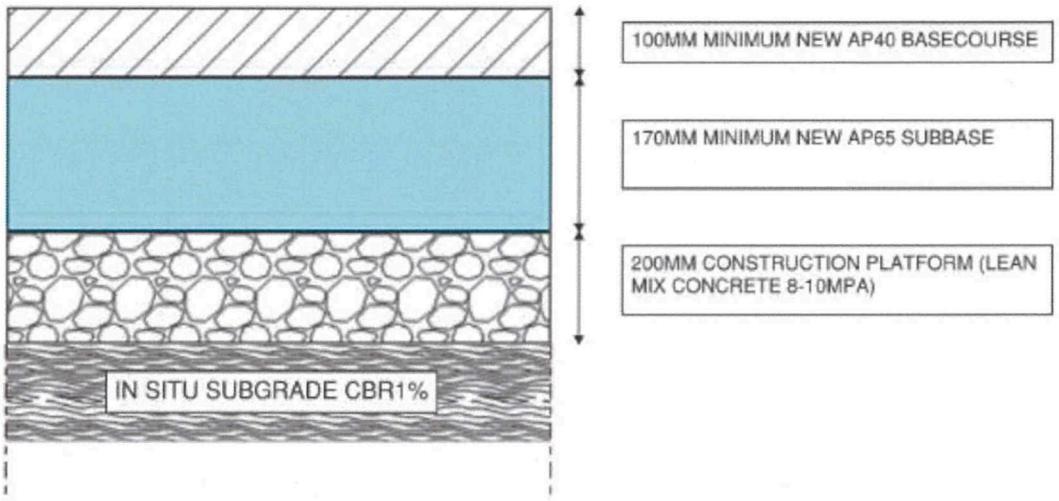

Figure 19: Ruataniwha Road typical pavement section used outside the floodway

Figure 17 below shows the proposed pavement design for Ruataniwha Road in the floodway, where wet conditions during its service life are anticipated. Cement-stabilised layers will help reopen the road quickly after flooding and reduce the pavement area needing reinstatement.

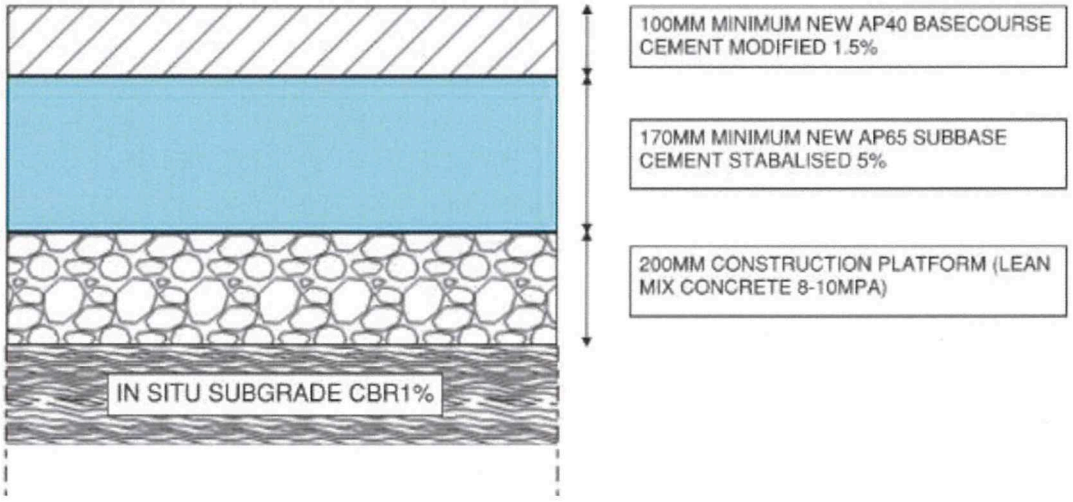

Figure 20: Ruataniwha Road typical pavement section used within the floodway

WAIHIRERE ROAD - PAVEMENT TYPICAL SECTIONS

Figure 18 shows the proposed pavement design for Waihirere Road in the floodway, where wet conditions during its service life are anticipated. Cement-stabilised layers will help reopen the road quickly after flooding

and reduce the pavement area needing reinstatement.

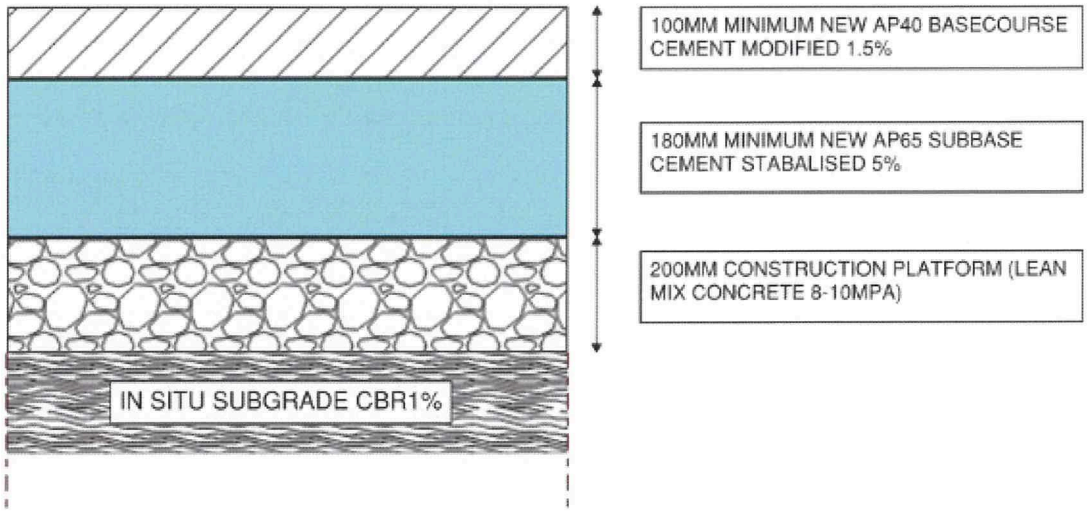

Figure 21: Waihirere Road typical pavement section used within the floodway words

11 FLOODWAY DRAINAGE

11.1 DESIGN PHILOSOPHY AND APPROACH

- The proposed floodway intersects groundwater. There is a shallow groundwater table of between 0.3 m and 0.6 m deep.
- The groundwater table will be permanently lowered 1 m below the finished floodway floor level.
- Our groundwater model estimates that the flow rate required to draw down the groundwater table to 1 m below the finished floodway floor are:
  - 1,300 m^3/day shortly after the drains are installed (if installed and activated all at once),
  - 150 m^3/day one year after the drains are installed.

11.2 TEMPORARY GROUNDWATER TABLE DRAW DOWN

During the construction phase, we propose to draw down the groundwater by installing cut off drains one month ahead of the earthworks phase. The drains will be 1 m to 2 m deep, and daylight at the floodway lowest point (the floodway outlet).

This methodology will be discussed and confirmed with the contractor and further described within their Sediment Control and Environmental Management Plan.

11.3 PERMANENT GROUNDWATER TABLE DRAW DOWN

We propose to permanently draw down the groundwater table by installing subsoil drains along the entire length of the floodway, at an approximate depth of 1 m below the finish surface level.

The drains will likely be installed via mole ploughing methodology. We expect approximately 10 to 20 drains to be installed. This methodology will be further refined with the contractor during the details design phase.

The drains will discharge into the scour protection zone at the outlet of the floodway (RipRap or similar).

Refer to the concept drawings Rev2 for the indicative subsoil drains extents, outlets and depths.

12 OTHER SERVICES

12.1 DESIGN PHILOSOPHY AND APPROACH

Other services that will need consideration during the detailed design phase are:

- Wastewater pipe crossing the proposed townside stopbank: it has been assumed at this stage that the pipe will not be affected by the proposed stopbank, and will not need to be deepened. It may require some form of protection that will be assessed during the detailed design phase (due to the extra weight and risk of settlement).
- Fibreoptic lines across the floodway: ducts will be allowed for at detailed design within the same trench as the watermains.
- Power lines run parallel to both Ruataniwha Road and Waihirere Road (Firstlight Network). Two options are available that will need to be discussed with stakeholders and the service provider: span the power lines across the floodway as per the current alignments or bury the power lines below the base of the floodway. This will be decided during the detailed design phase. Initial conversations with Firstlight Network indicate that it may be possible to span the floodway, but this will need to be checked, especially with respect to vertical clearance from the stopbanks.

13 SAFETY IN DESIGN

A Safety in Design workshop was held on 30 July 2025 and was attended by representatives from HBRC and WSP. Refer to the Safety in Design Register (Appendix B). Further Safety in Design workshops will be held during the detailed design phase. A Safety in Design workshop is planned in the near future with the newly-appointed contractor.

14 DEPARTURES

The following departures have been identified to date and will be discussed during detailed design; they will be formally requested if required:

- Stopbank – steeper batter at Churchill Avenue, using MSE wall or similar.
- Townside stopbank at private properties on Mitchell Avenue – steeper batter and narrower crest
- Modified freeboard
- Steeper verge slopes on Ruataniwha Road (steeper than 5H:1V).
- Climate change was not incorporated in the flood modelling.

15 FUTURE CONSIDERATIONS FOR DETAILED DESIGN

15.1 GEOTECHNICAL

- Refine all geotechnical modelling and assessments upon processing the 1C+ field and laboratory data.
- More detailed liquefaction (particularly lateral spreading) analysis will be undertaken in order to refine the areas at risk and predicted levels of damage that can be expected.
- The proposed northern floodway inlet location has experienced recent failures and continued land loss (refer to Section 1.1 – previous reports). The memo suggests rapid drawdown being the cause of failure. Geotechnical assessment of this area will be undertaken in detailed design to evaluate the risks in this area and how this affects the proposed earthworks, sill performance, and erosion protection elements in this area.
- The moisture sensitivity of the soils will be a key issue to manage during construction. This factor should be raised during a workshop with the physical works contractor to discuss methods and machinery that can be used to manage the soils and discuss possible contingency methodologies for any wetter-than-anticipated site conditions. Should the contactor have concerns on their ability to handle the soils, additional small-scale compaction trialling in summer conditions may be warranted to mitigate the risk of any delays during construction. This would also give the contractor an opportunity to witness the behaviour of the local soils with their specific machinery.
- Consider the effects of open drainage channels in proximity to stopbank. Minimise risk of destabilising stopbanks due to the drainage channels, particularly for lateral spreading.

15.2 GEOMETRIC

Geometric design components that will be considered during the detailed design phase are:

- Design speed limit.
- Driver sightlines along and over the stopbank transitions.
- Truck design vehicle tracking path used to develop lane widening along new alignments.
- Super elevation and design warp rates.
- Horizontal and vertical geometry coordination adjustments.
- Vertical transitions in relation to the design speed limit.
- Cross-section formation refined to match WDC design standards.
- Longitudinal road drainage.

15.3 SCOUR PROTECTION

Future scour protection design that will be considered during future design stages are:

- Assessment of localised critical scour events which may occur due to the build-up of sediment within the floodway as it drops out of suspensions. Once the floodway configuration is finalised an assessment of these critical events to infrastructure within the floodway will be completed (stopbanks, roads, retaining walls etc.)

- The current 2D hydraulic modelling shows high turbulence around the downstream end of btoh stop banks and retaining walls at the interface for the proposed Waihirere Road flood gates. During detailed design it is expected that the transition from stop bank to retaining will include a smoother taper transition. Any additional localised scour protection required for this transition will be confirmed during detailed design.
- Any additional localised scour protection required around the stop banks and earth embankments that turn to proposed flood gates at Ruataniwha Road will be confirmed during detailed design.
- Ruataniwha and Waihirere Road carriageways that cross the floodway will be designed during detailed design including any necessary scour protection and inputs into the geometry.
- The stop bank alignment will be further assessed and optimised to improve the influence on flow direction and available floodway width for conveyance
- A hydraulic model scenario will be created to assess the loss of material at the floodway inlet and the exposure of the grade control sill to determine increased erosion risk and potential outflanking.
- The floodway outlet slab geometry and baffle configuration, including any additional energy dissipation measures, will be further optimised
- Consideration for additional areas that could benefit from willow pole planting or other vegetation buffer planting flanking the sides of the inlet area
- A whole of life cost analysis will be completed for treatment options to confirm the best option for areas that require a high level of scour protection.

15.4 FLOOD GATES

- The proposed design requires two flood gates on Waihirere Road where the road intersects the floodway with concrete walls. The flood gates will be designed, supplied and installed by a specialist contractor. The geotechnical and structural requirements to install the flood gates are unknown at this stage and will need to be further investigated during the detailed design phase.

15.5 ROAD SWALES

- Road swales along Ruataniwha and Waihirere Roads will need further considerations.

16 PROPOSED CONSTRUCTION METHODOLOGY

A detailed construction methodology will be prepared during the detailed design phase of the project. As soon as a physical works contractor is appointed, input from them will be sought through workshops.

Key requirements known at this stage of the design are:

- The working area is a floodplain, and the contractor should consider a construction sequence that minimises risks from flooding.
- The groundwater table will need to be lowered before earthworks can commence. The proposed methodology is detailed in section 11.2.
- The silt proposed to form the stopbanks is a material that is very sensitive to water and should be handled with care.
  - The contractor should sequence the work to minimise the exposed silt layer by removing the very minimum amount of topsoil at each stage of construction.
  - The contractor should sequence the earthworks to minimise heavy vehicle loading on the silt before and during excavations. Heavy loading may 'pump' groundwater into the silt from below which will require drying back the material or alternative remediation before being suitable for compaction to form the stopbanks.
- Once the floodway floor is reached, the cut should be grassed as soon as practicable and not tracked to prevent damaging it.
- The stopbanks should not be used to track heavy machinery once built. They should be grassed as soon as possible to prevent any risk of erosion/degradation.
- Sequencing should consider the location of cut and fill areas.

17 RISK

17.1 RISK REGISTER

The project risk register was reviewed by HBRC and WSP on 30 October 2025. It is in Appendix C.

17.2 SUMMARY OF TOP SIX RISKS

There are six risks that are rated "high" after mitigation has been applied. These risks are summarised in Table 12.

Table 12: Summary of risks with "high" residual risk

Risk	Mitigation
There is a risk that landowners decline to make the required land available for the floodway. The consequences are adverse publicity, unknown future for the project because there are no other alignments that haven't already been discounted, and inability of affected properties to get insurance.	Understanding landowner concerns and mitigating where possible with the design Keep landowners informed Adjusting alignment where/if possible
Project is completed successfully but flooding still occurs because a rain event is higher than the design rain event.	Clearly define the design event at the outset and communicate to stakeholders to manage expectations; consider other possible mitigation options such as freeboard and secondary flow paths; accept the residual risk.
Design rework because design assumptions are found to be invalid because the concept design was carried out before all landowner approval was received, before the hydraulic model was fully refined, and before the CFD modelling is complete. The consequence is extra time and cost.	Mitigate for specific risks by using conservative design where appropriate. Accept the residual risk.
Pricing by tenderers is inaccurate because they have priced on a concept design only. The consequence is that tenderers may price extra risk into their rates, and there are likely to be a lot of variation requests during the contract.	Allow sufficient contingency in cost estimate. Allow for variations during the contract. Set up regular collaborative workshops between HBRC and the contractor to agree variations – reducing the administrative burden and encouraging relationship building. Accept the residual risk.
Floodway alignment changes during detailed design (i.e. once detailed design has started) because landowners decline to make the concept design alignment land available. The consequence is rework (hydraulic modelling, 3D CAD modelling, other design work) which will cause extra costs and programme delays.	Good, consistent communications with landowners. Address potential landowner concerns. Accept the residual risk.
Waihirere Road cannot cross the floodway due to physical constraints because the appropriate road geometry and alignment cannot be met.	Consider relaxing design parameters (e.g. reducing posted speed limit). Consider using flood gates (note: this is the current design). Consider connecting Waihirere Road to Ruataniwha Road.

17.3 OPPORTUNITIES

An opportunities register has not yet been developed for this project. However, there are likely to be benefits associated with the project, such as enhancing the local environment through planting; protecting the riverbanks by strengthening them as part of this project; and a net positive ecological outcome through

offsetting or mitigation that may be required. There are also other opportunities such as reducing construction cost through design; considering constructability by holding workshops with the contractor; and producing a fast and efficient design by close collaboration through workshops with HBRC, WDC, the contractor and the designers throughout the design period.

18 PROJECT COST ESTIMATE

HBRC commissioned WT Infrastructure (WT) to provide a developed concept design cost estimate. Table 13 summarises the cost estimate.

Table 13: Project cost estimate summary

Item	Amount (excluding GST)
Base estimate	$44,411,000
Contingency (P50)	$52,865,000
Project expected estimate	**$57,877,000**

The cost estimate report and breakdown are in Appendix D.

19 LIMITATIONS

This report ('Report') has been prepared by WSP exclusively for Hawke's Bay Regional Council ('Client') in relation to the Wairoa Flood Alleviation Design project ('Purpose') and in accordance with the Proposal letter dated 9 July 2025 and accepted on 18 July 2025. ('Agreement').

Permitted Purpose

This Report has been prepared expressly for the purpose of producing a concept design report for the Wairoa Flood Alleviation Design project ('Permitted Purpose'). WSP accepts no liability whatsoever for the use of the Report, in whole or in part, for any purpose other than the Permitted Purpose. Unless expressly stated otherwise, this Report has been prepared without regard to any special interest of any party other than the Client.

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APPENDIX A – Drawings

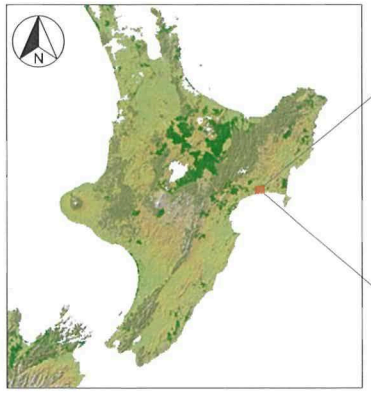
SHEET INDEX

HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

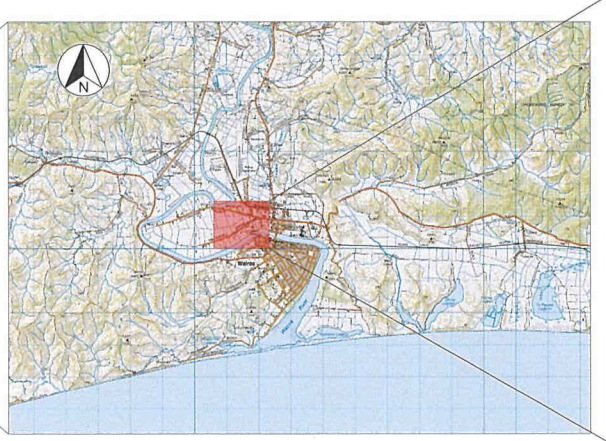
CIVIL
DEVELOPED CONCEPT DESIGN

Project No: 2-T4441-WSP-03-DR
Date: 2025-12-01

HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT



NZ-LOCATION MAP
NTS



LOCALITY MAP
NTS

LOCATION PLAN
N.T.S

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

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New Zealand

CIVIL

SCALES		ORIGINAL SIZE
N.T.S		A1
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
LOCALITY MAP AND PLAN

WSP PROJECT NO.	SHEET NO.	REVISION
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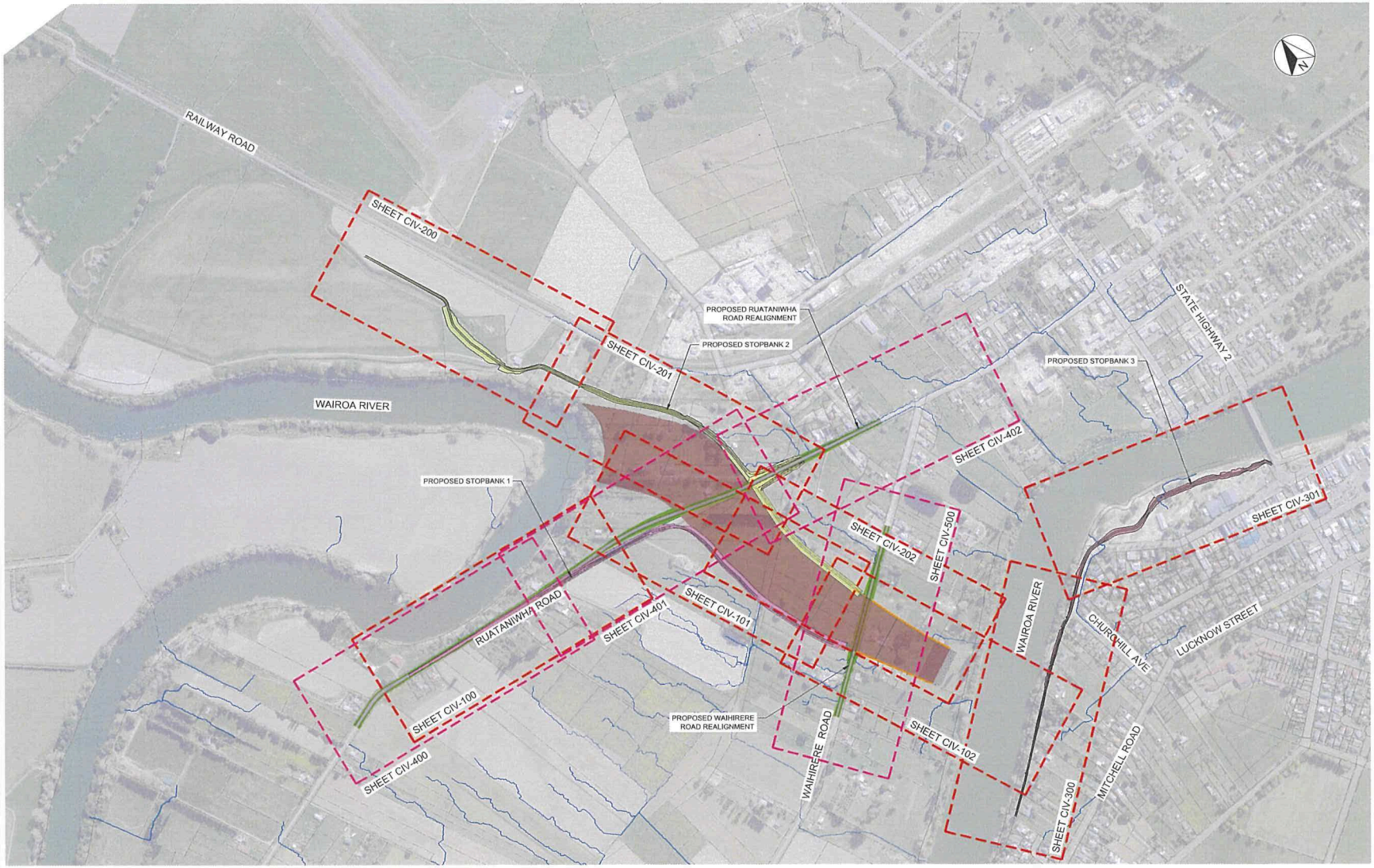

NOTE

1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.
4. DRAINS WILL BE REQUIRED WITHIN THE FLOODWAY TO PERMANENTLY DROP THE GROUND WATER TABLE.

LEGEND

- EXISTING BOUNDARY
- EXISTING FLOW PATHS
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED STOPBANK 3
- PROPOSED FLOODWAY
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- STOPBANK SHEETS
- ROAD REALIGNMENT SHEETS

0 10 mm 50 100 200 300 mm

OVERALL PLAN VIEW

SCALE: 1:5000(A1); 1:10000(A3)

1:5000@ A1
1:10000@ A3
0 50 100 150 200 250 300 350 400 450 500 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-12-01

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SCALES: 1:5000(A1); 1:10000(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-12-01

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
OVERALL PLAN VIEW

WSP PROJECT NO.: 2-T4441-WSP-03-DR
SHEET NO.: CIV-002
REVISION: C

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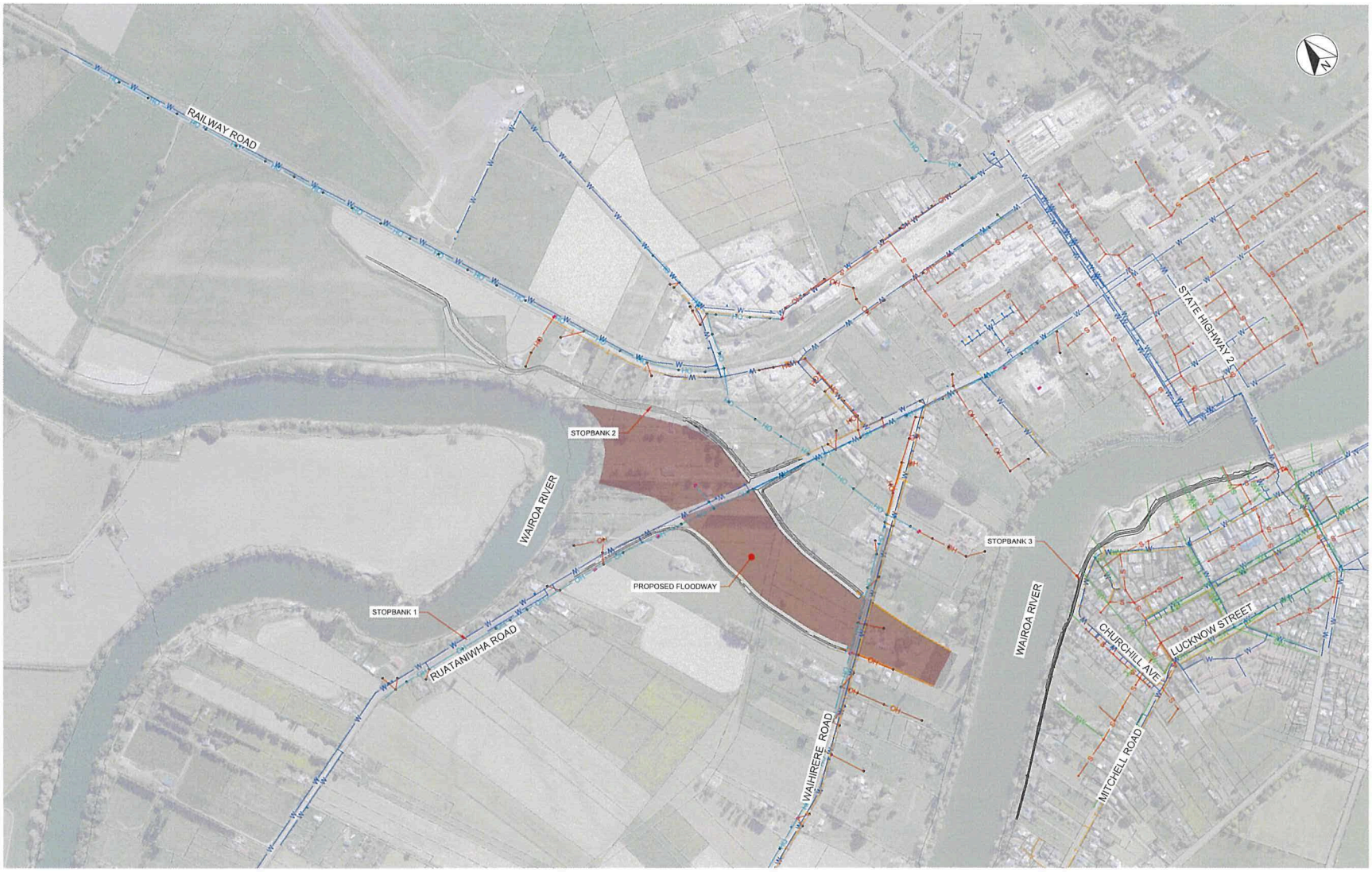

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2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP
4. EXISTING SERVICES CROSSING THE STOP BANK ALIGNMENTS WILL NEED TO BE RELOCATED, DETAILS WILL BE PROVIDED AT DETAILED DESIGN.

LEGEND

- EXISTING BOUNDARY
- OH — EXISTING 6.6/11kV OH CONDUCTOR
- OH — EXISTING 400V OH CONDUCTOR
- PROPOSED STOPBANK
- EXISTING BOUNDARY
- T — EXISTING FIBRE
- W — EXISTING WATER
- S — EXISTING SEWER
- SW — EXISTING STORMWATER
- EXISTING 6.6/11kV POLE
- EXISTING 400V POLE
- EXISTING STREET LIGHT
- EXISTING TRANSFORMER
- PROPOSED STOPBANK
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE

EXISTING SERVICES PLAN

SCALE: 1:5000 (A1)

300 mm
200
100
50
0 10 mm

1:5000@ A1
1:10000@ A3
0 50 100 150 200 250 300 350 400 450 500 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-12-01

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CIVIL

SCALES: 1:5000(A1); 1:10000(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-12-01

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
EXISTING SERVICES PLAN

WSP PROJECT NO.: 2-T4441-WSP-03-DR
SHEET NO.: CIV-003
REVISION: C

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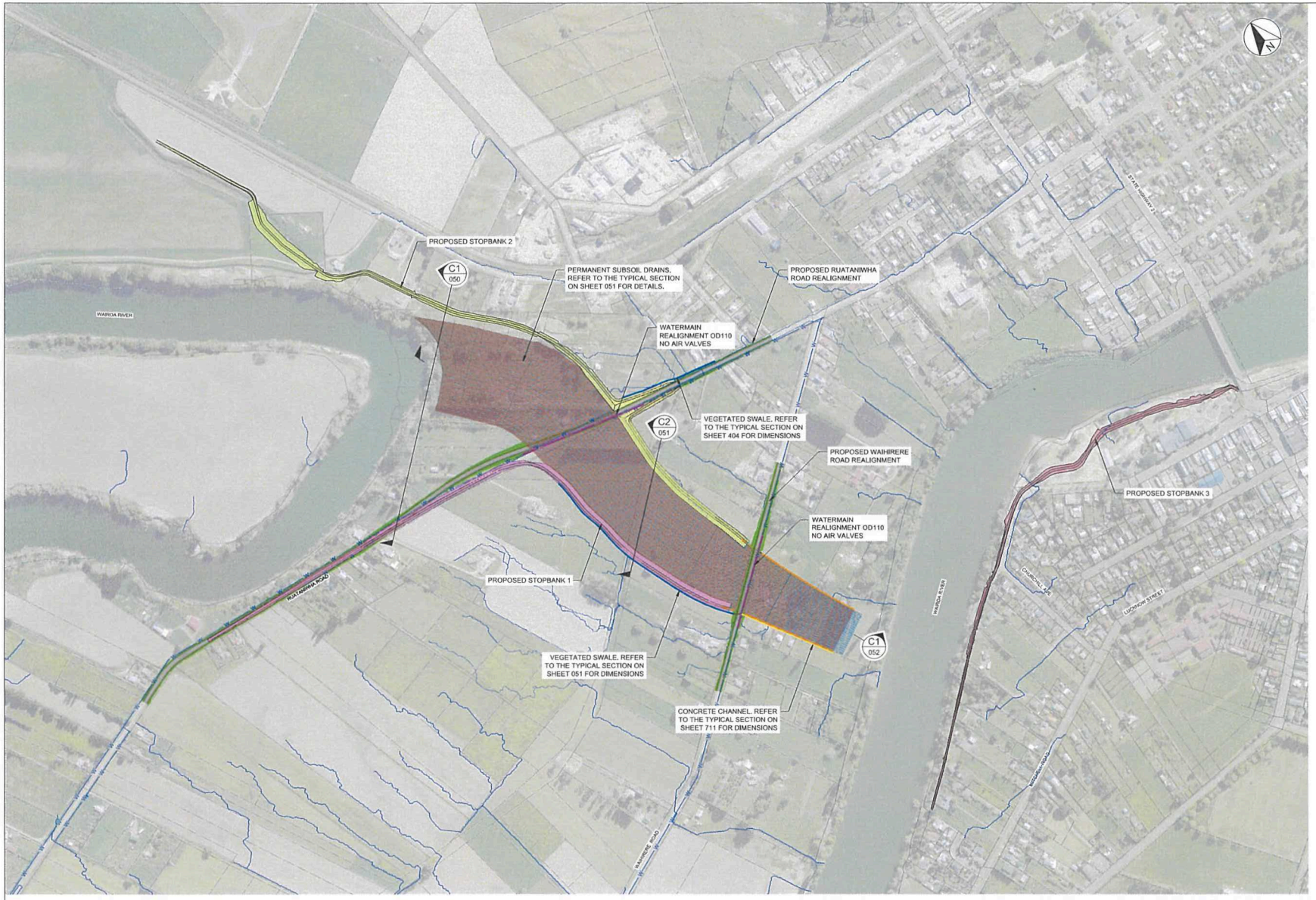

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4. DRAINS WILL BE REQUIRED WITHIN THE FLOODWAY TO PERMANENTLY DROP THE GROUND WATER TABLE.

LEGEND

- EXISTING WATER
- EXISTING BOUNDARY
- FLOW PATHS
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED VEGETATED SWALE
- PROPOSED CULVERT
- PROPOSED CONCRETE CHANNEL
- PROPOSED WATERMAIN
- PROPOSED SUBSOIL DRAIN

300 mm
200
100
50
0 10 mm

OVERALL PLAN VIEW

SCALE: 1:4000 (A1); 1:8000 (A3)

1:4000@ A1
1:8000@ A3
0 40 80 120 160 200 240 280 320 360 400 m

REVISION	AMENDMENT	APPROVED	DATE
A	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-12-01

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CIVIL

SCALES			ORIGINAL SIZE
1:4000(A1); 1:8000(A3)			A1
DRAWN	DESIGNED	APPROVED	
N.AUDEA	C.CREENCIA	A.SOWERSBY	
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE	
P.FIEREK	A.MOHAMMADINIA	2025-12-01	

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
OVERALL PLAN VIEW
STORMWATER AND WATER

WSP PROJECT NO.	SHEET NO.	REVISION
2-T4441-WSP-03-DR	CIV-040	B

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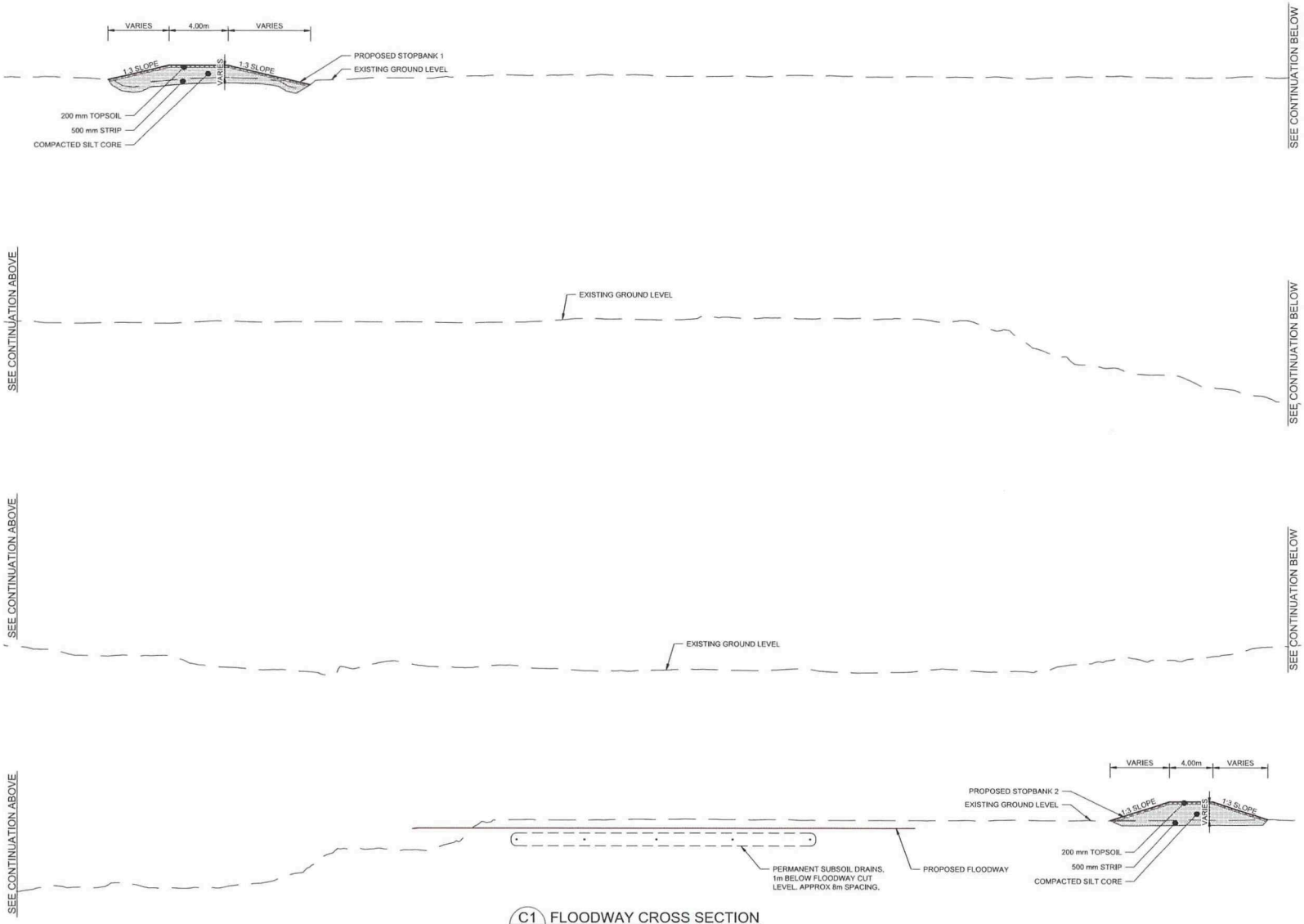


C1 CIV-040 FLOODWAY CROSS SECTION
SCALE: 1:200(A1); 1:400(A3)

1:200 @ A1
1:400 @ A3
0 2 4 6 8 10 12 14 16 18 20 m

REVISION	AMENDMENT	APPROVED	DATE
A	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:200(A1); 1:400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

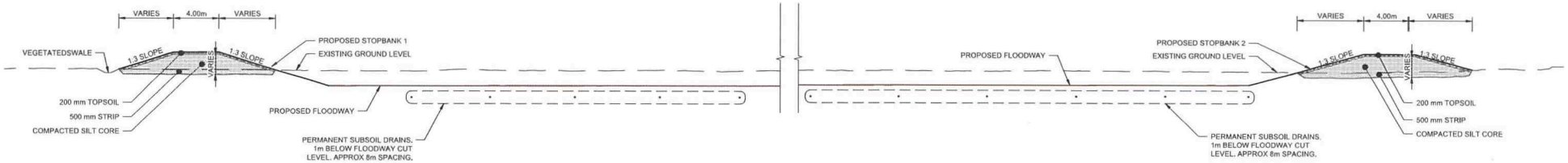
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
FLOODWAY CROSS SECTION
SHEET 1 OF 2

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-050
REVISION A

Original sheet size A1 (841x594) Plot Date 2025-11-19 at 10:54:45 PM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-050-051.dwg CIV-050



C2 / CIV-040 FLOODWAY CROSS SECTION

SCALE: 1:200(A1); 1:400(A3)

300 mm
200
100
50
0 10 mm

1:200 @ A1
1:400 @ A3
0 2 4 6 8 10 12 14 16 18 20 m

REVISION	AMENDMENT	APPROVED	DATE
A	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

WSP
Nelson Office
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Nelson 7042
New Zealand

CIVIL

SCALES		ORIGINAL SIZE
1:200(A1); 1:400(A3)		A1
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

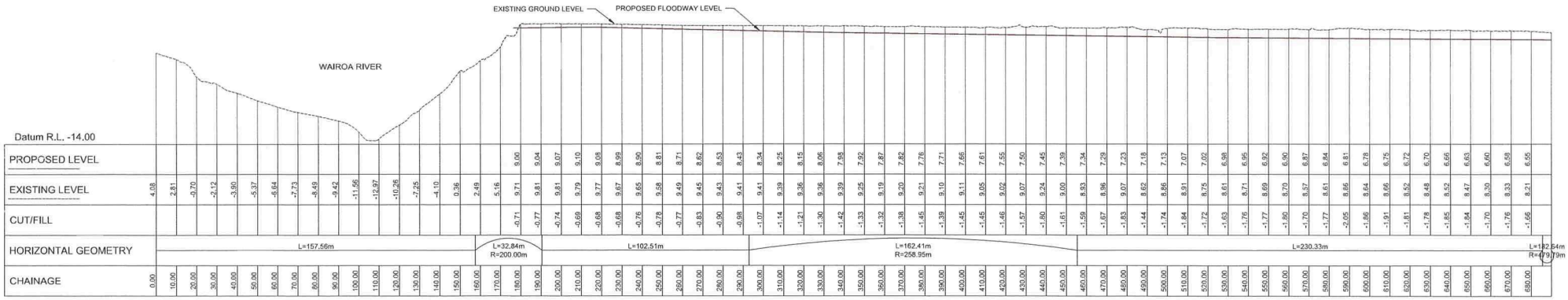
DEVELOPED CONCEPT DESIGN

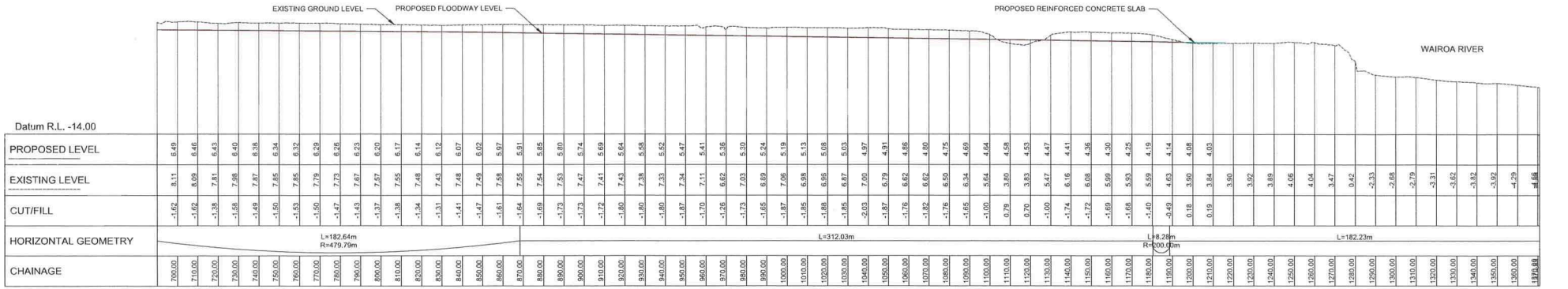
PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
FLOODWAY CROSS SECTION
SHEET 2 OF 2

WSP PROJECT NO.	SHEET NO.	REVISION
2-T4441-WSP-03-DR	CIV-051	A

Original sheet size A1 (841x594) Plot Date 2025-11-19 at 10:55:45 PM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-050-051.dwg CIV-051





C3 CIV-040 FLOODWAY LONGSECTION

SCALE: H=1:1000 V=1:200 @ A1

1:1000@ A1
1:2000@ A3
0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKES BAY REGIONAL COUNCIL
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Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES		ORIGINAL SIZE
1:1000(A1); 1:2000(A3)		A1
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
FLOODWAY LONG SECTION

WSP PROJECT NO.	SHEET NO.	REVISION
2-T4441-WSP-03-DR	CIV-052	A

Original sheet size A1 (841x594) Plot Date 2025-11-20 at 7:18:25 am C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-052.dwg CIV-052

NOTE

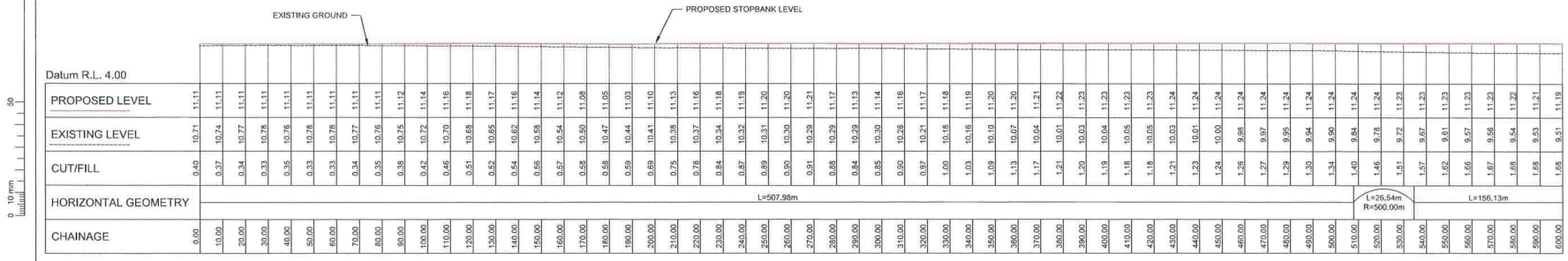
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- PROPOSED VEGETATED SWALE
- PROPOSED CONCRETE CHANNEL

STOPBANK 1 - PLAN VIEW

SCALE: 1:1000(A1); 1:2000(A3)



STOPBANK 1 - PROFILE VIEW

SCALE: H=1:1000 V=1:200 @ A1

1:200 @ A1, 1:400 @ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000 @ A1, 1:2000 @ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-27

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

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+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-27

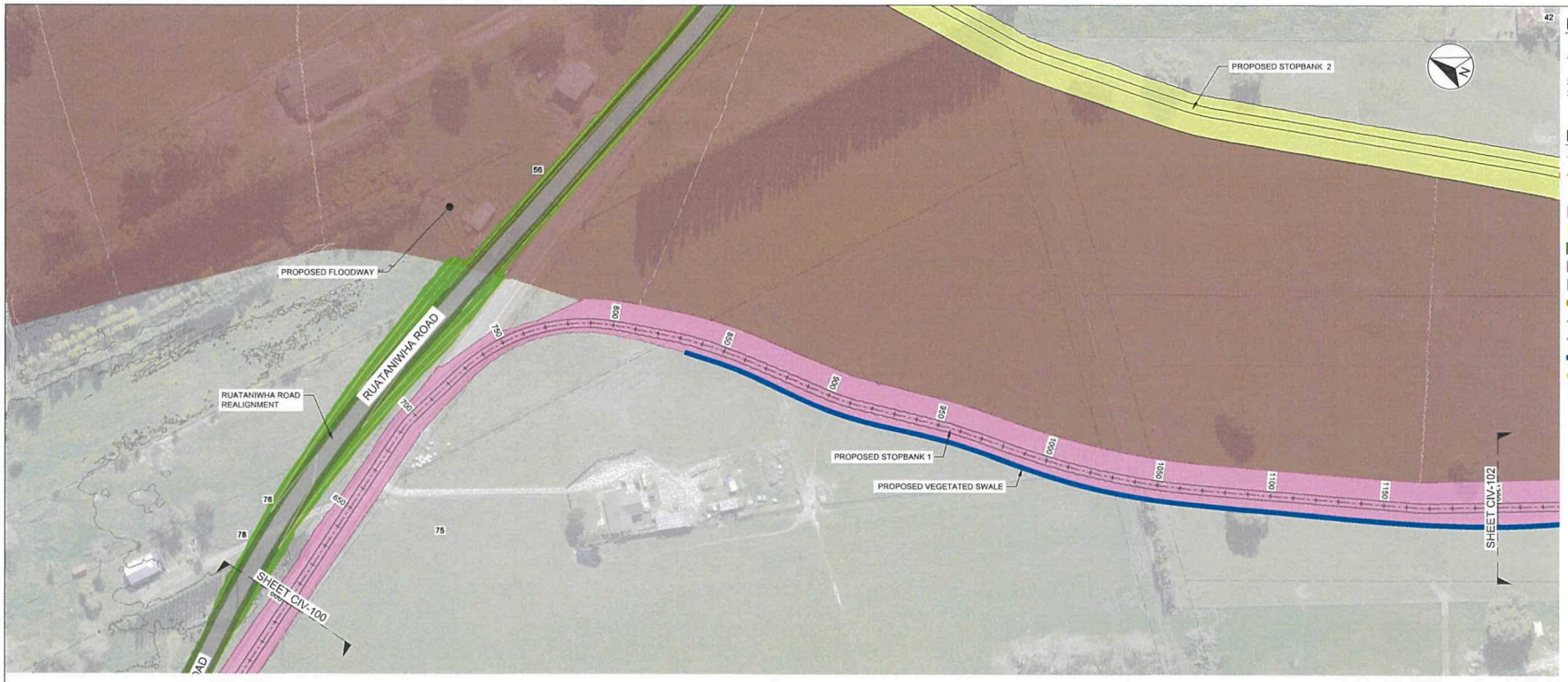
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 1
PLAN AND PROFILE - SHEET 1 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-100
REVISION C

Original sheet size A1 (841x594) Plot Date 2025-11-27 at 10:35:18 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-100-103.dwg CIV-100



NOTE

1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- PROPOSED VEGETATED SWALE
- PROPOSED CONCRETE CHANNEL

STOPBANK 1 - PLAN VIEW

SCALE: 1:1000(A1); 1:2000(A3)

STOPBANK 1 - PROFILE VIEW

SCALE: H=1:1000 V=1:200 @ A1

1:200@ A1 / 1:400@ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000@ A1 / 1:2000@ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-27

HAWKES BAY REGIONAL COUNCIL
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+64 3 548 1099
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Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1), 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-27

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 1
PLAN AND PROFILE - SHEET 2 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-101
REVISION C

Original sheet size A1 (841x594) Plot Date 2025-11-27 at 10:35:56 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-100-103.dwg CIV-101

NOTE

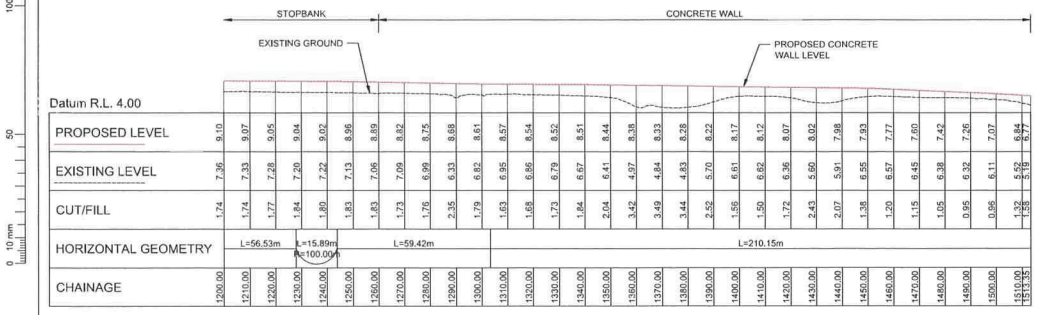
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- PROPOSED VEGETATED SWALE
- PROPOSED CONCRETE CHANNEL

STOPBANK 1 - PLAN VIEW

SCALE: 1:1000(A1); 1:2000(A3)



STOPBANK 1 - PROFILE VIEW

SCALE: H=1:1000 V=1:200 @ A1

1:200 @ A1, 1:400 @ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000 @ A1, 1:2000 @ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-27

HAWKES BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

wsp
Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1), 1:2000/400(A3) — ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-27

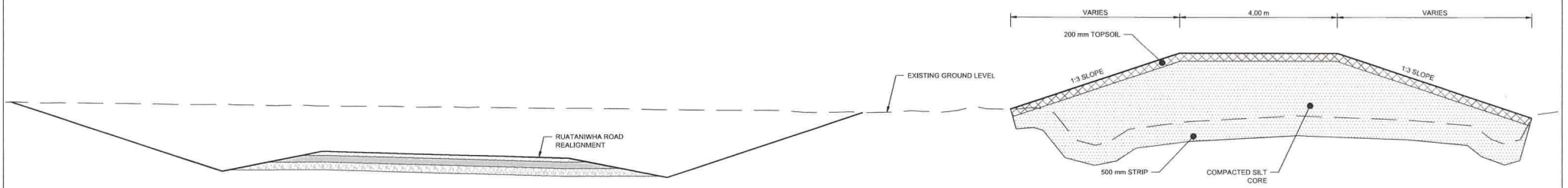
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 1
PLAN AND PROFILE - SHEET 3 OF 3

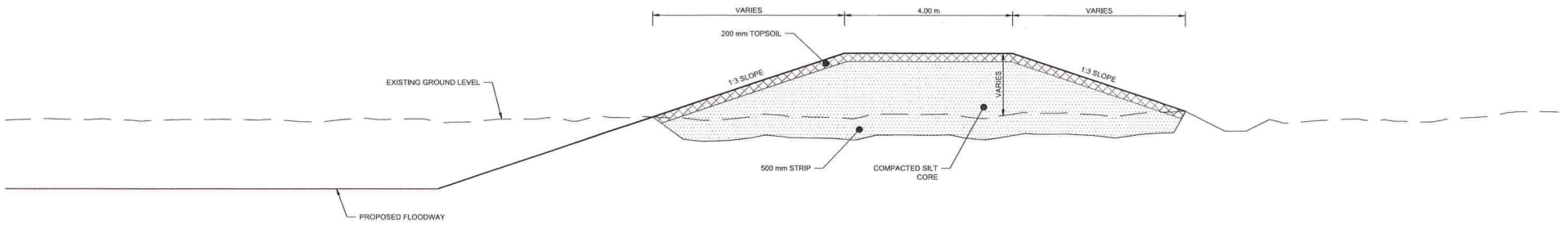
WSP PROJECT NO. 2-T4441-WSP-03-DR — SHEET NO. CIV-102 — REVISION C

Original sheet size A1 (841x594) Plot Date 2025-11-27 at 10:36:34 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-100-103.dwg CIV-102



STOPBANK 1 - TYPICAL CROSS SECTION AT INDICATIVE CH. 700

SCALE: 1:50 (A1)



STOPBANK 1 - TYPICAL CROSS SECTION AT INDICATIVE CH. 1000

SCALE: 1:50 (A1)

300 mm
200
100
50
0 10 mm

1:50@ A1
1:100@ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKES BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

wsp
Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:50(A1); 1:100(A3)
ORIGINAL SIZE: A1

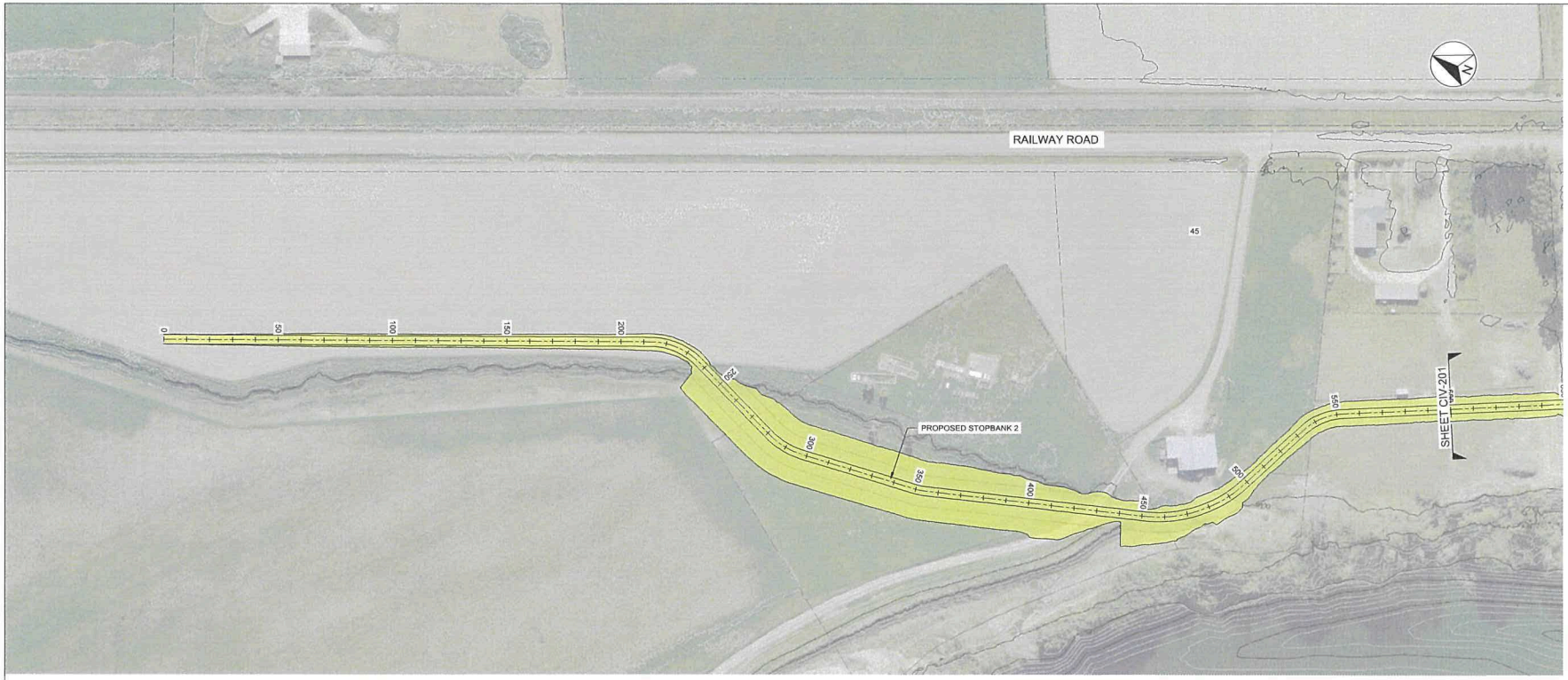
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 1
TYPICAL CROSS SECTIONS

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-103
REVISION B



NOTE

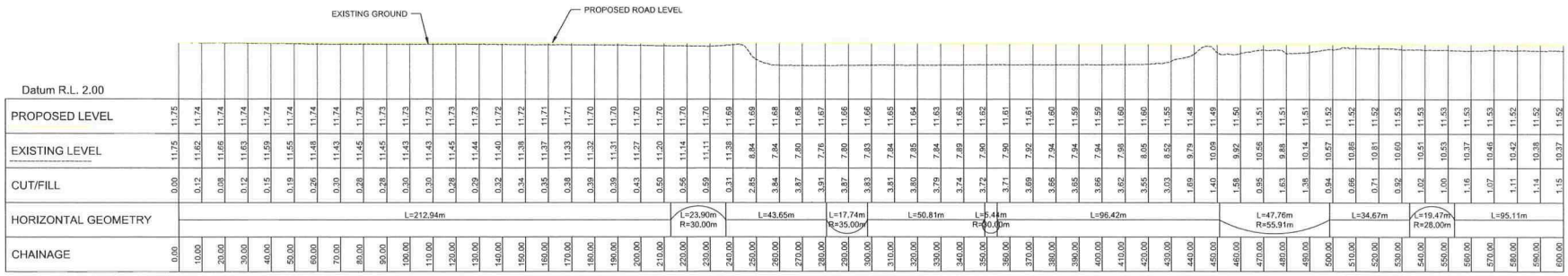
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK 2
- PROPOSED STOPBANK 1
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- PROPOSED VEGETATED SWALE
- PROPOSED CONCRETE CHANNEL

STOPBANK 2 - PLAN VIEW

SCALE: 1:1000(A1); 1:2000(A3)



STOPBANK 2 - PROFILE VIEW

SCALE: H=1:1000 V=1:200 @ A1

1:200@ A1
1:400@ A3 0 2 4 6 8 10 12 14 16 18 20 m

1:1000@ A1
1:2000@ A3 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-27
D	DEVELOPED CONCEPT DESIGN	A.S.	2025-12-01

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

WSP
Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-12-01

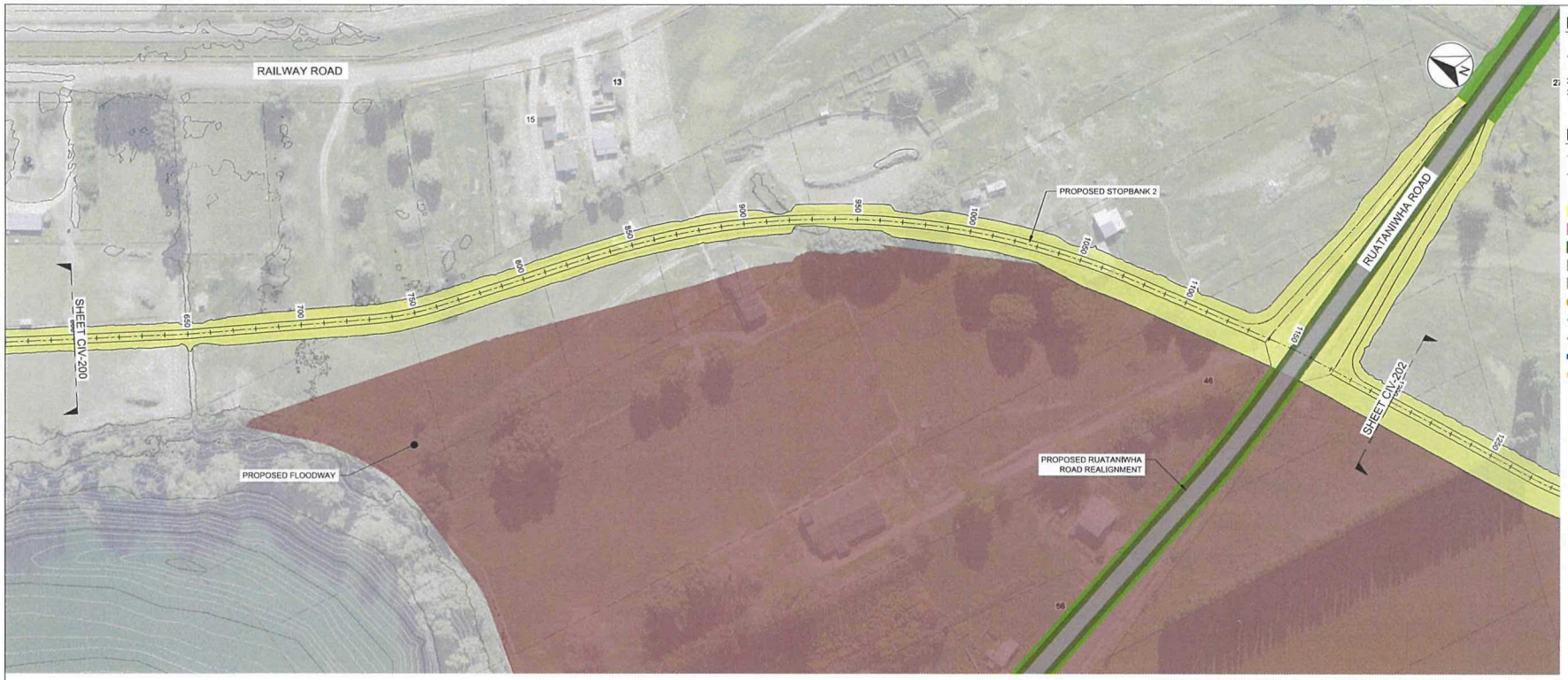
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 2
PLAN AND PROFILE - SHEET 1 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-200
REVISION D

Original sheet size A1 (841x594) Plot Date 2025-11-28 at 9:11:43 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-200-205.dwg CIV-200



NOTE

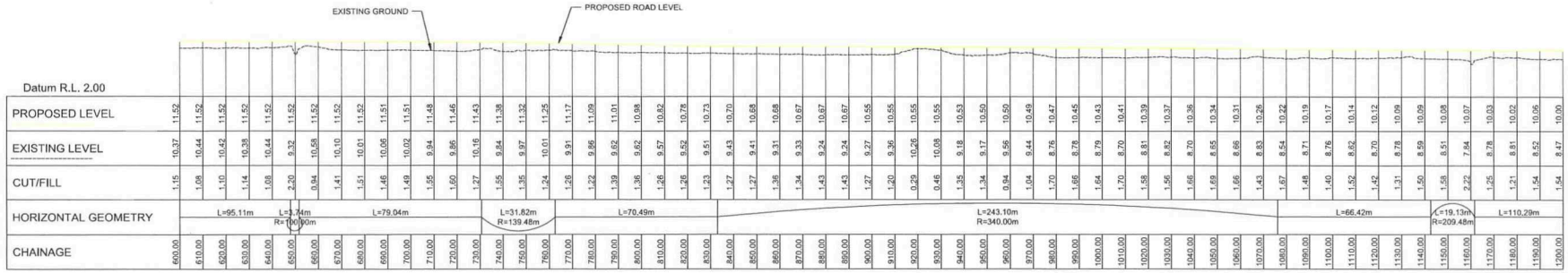
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK 2
- PROPOSED STOPBANK 1
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- PROPOSED VEGETATED SWALE
- PROPOSED CONCRETE CHANNEL

STOPBANK 2 - PLAN VIEW

SCALE: 1:1000(A1); 1:2000(A3)



STOPBANK 2 - PROFILE VIEW

SCALE: H=1:1000 V=1:200 @ A1

1:200@ A1 / 1:400@ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000@ A1 / 1:2000@ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-27
D	DEVELOPED CONCEPT DESIGN	A.S.	2025-12-01

HAWKES BAY REGIONAL COUNCIL
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+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY

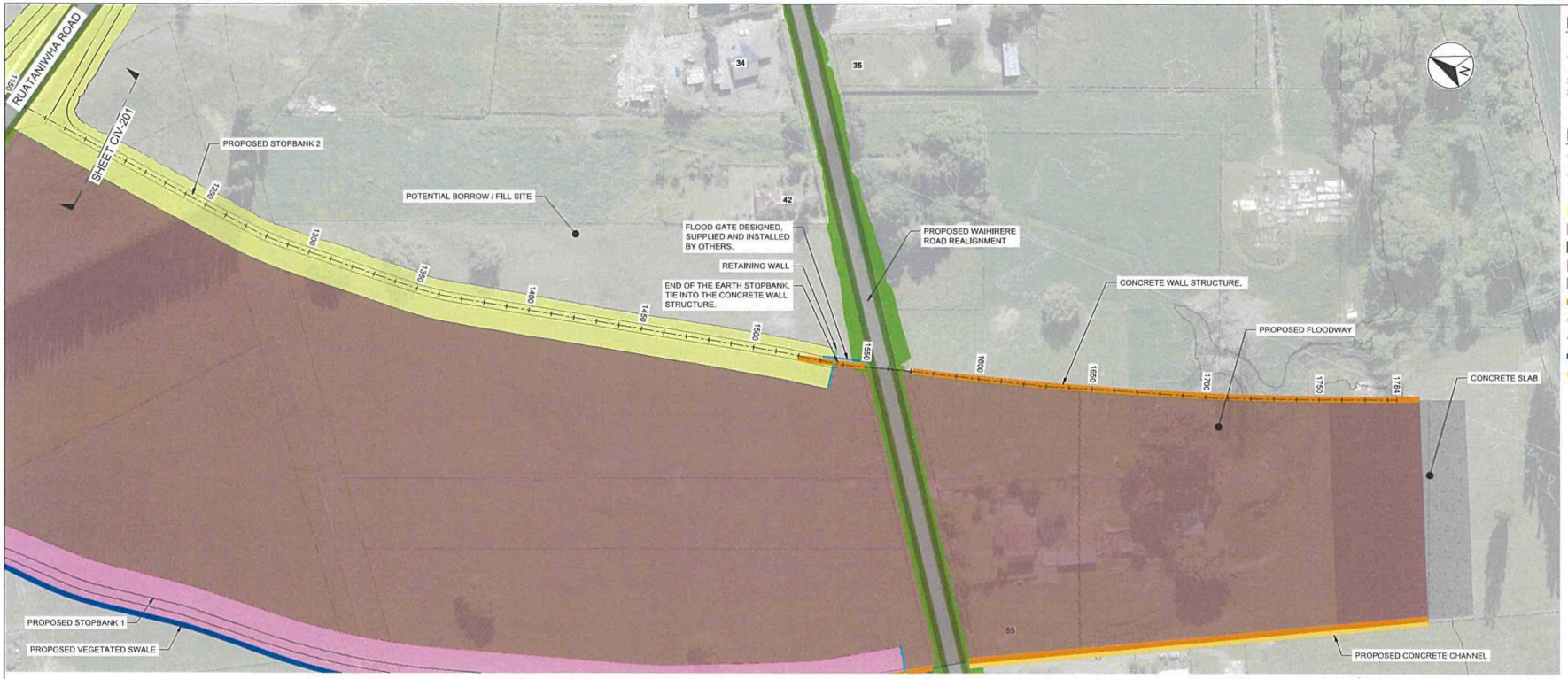
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-12-01

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 2
PLAN AND PROFILE - SHEET 2 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-201
REVISION D



NOTE

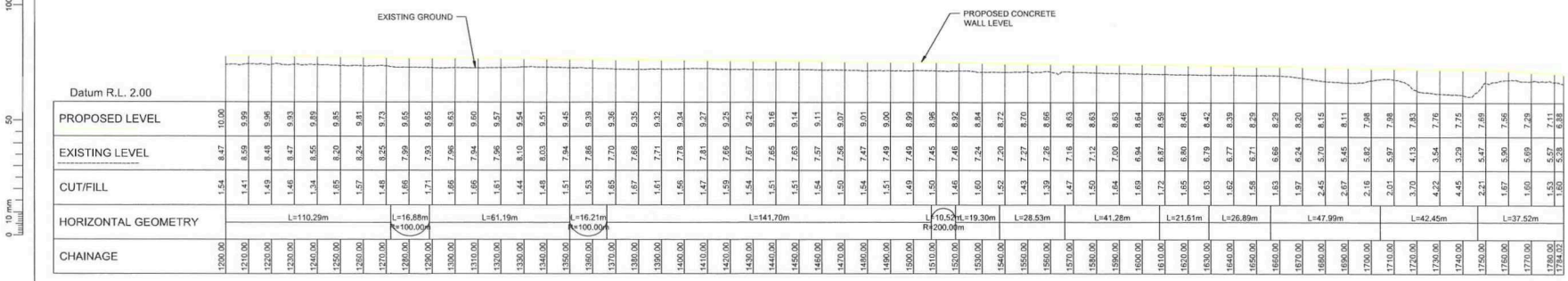
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK 2
- PROPOSED STOPBANK 1
- PROPOSED RUATANIWHA ROAD & WAIHIRERE ROAD REALIGNMENT
- PROPOSED FLOODWAY
- PROPOSED REINFORCED CONCRETE SLAB
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE
- PROPOSED VEGETATED SWALE
- PROPOSED CONCRETE CHANNEL

STOPBANK 2 - PLAN VIEW

SCALE: 1:1000(A1); 1:2000(A3)



STOPBANK 2 - PROFILE VIEW

SCALE: H=1:1000 V=1:200 @ A1

1:1000 @ A1
1:2000 @ A3
0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21
C	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-27
D	DEVELOPED CONCEPT DESIGN	A.S.	2025-12-01

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

WSP Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-12-01

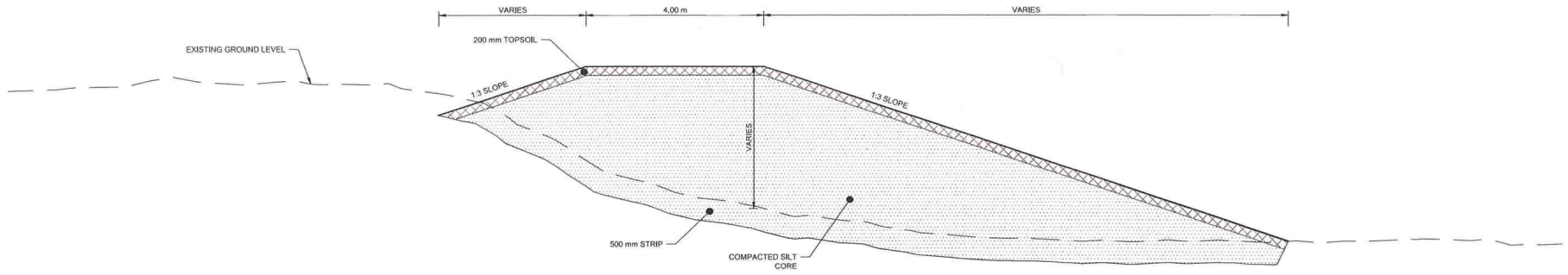
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 2
PLAN AND PROFILE - SHEET 3 OF 3

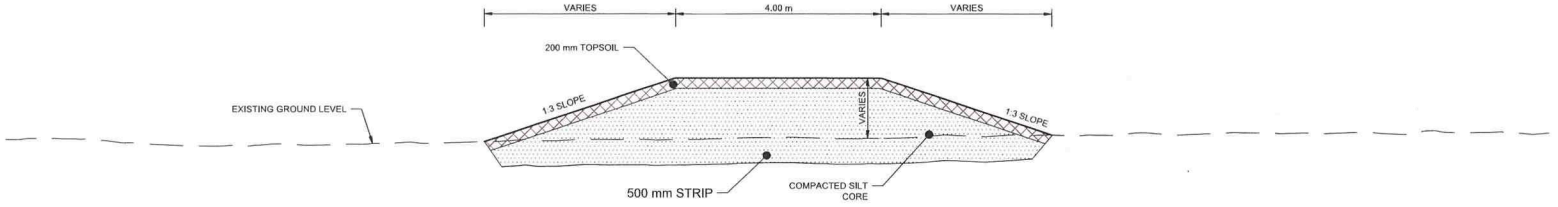
WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-202
REVISION D

Original sheet size A1 (841x594) Plot Date 2025-11-28 at 9:14:31 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-200-205.dwg CIV-202



STOPBANK 2 - TYPICAL CROSS SECTION AT INDICATIVE CH. 250

SCALE: 1:50 (A1)



STOPBANK 2 - TYPICAL CROSS SECTION AT INDICATIVE CH. 600

SCALE: 1:50 (A1)

1:50@ A1
1:100@ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES			ORIGINAL SIZE
1:50(A1); 1:100(A3)			A1
DRAWN	DESIGNED	APPROVED	
N.AUDEA	C.CREENCIA	A.SOWERSBY	
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE	
P.FIEREK	A.MOHAMMADINIA	2025-11-21	

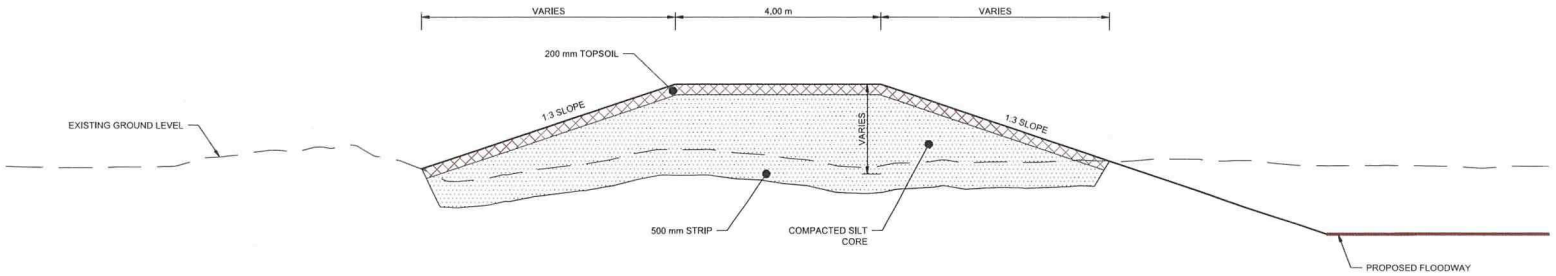
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 2
TYPICAL CROSS SECTION - SHEET 1 OF 2

WSP PROJECT NO.	SHEET NO.	REVISION
2-T4441-WSP-03-DR	CIV-203	B

Original sheet size A1 (841x594) Plot Date 2025-11-20 at 9:12:46 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-200-205.dwg CIV-203



STOPBANK 2 - TYPICAL CROSS SECTION AT INDICATIVE CH. 1100

SCALE: 1:50 (A1)

300 mm
200
100
50
0 10 mm

1:50@ A1
1:100@ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:50(A1); 1:100(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

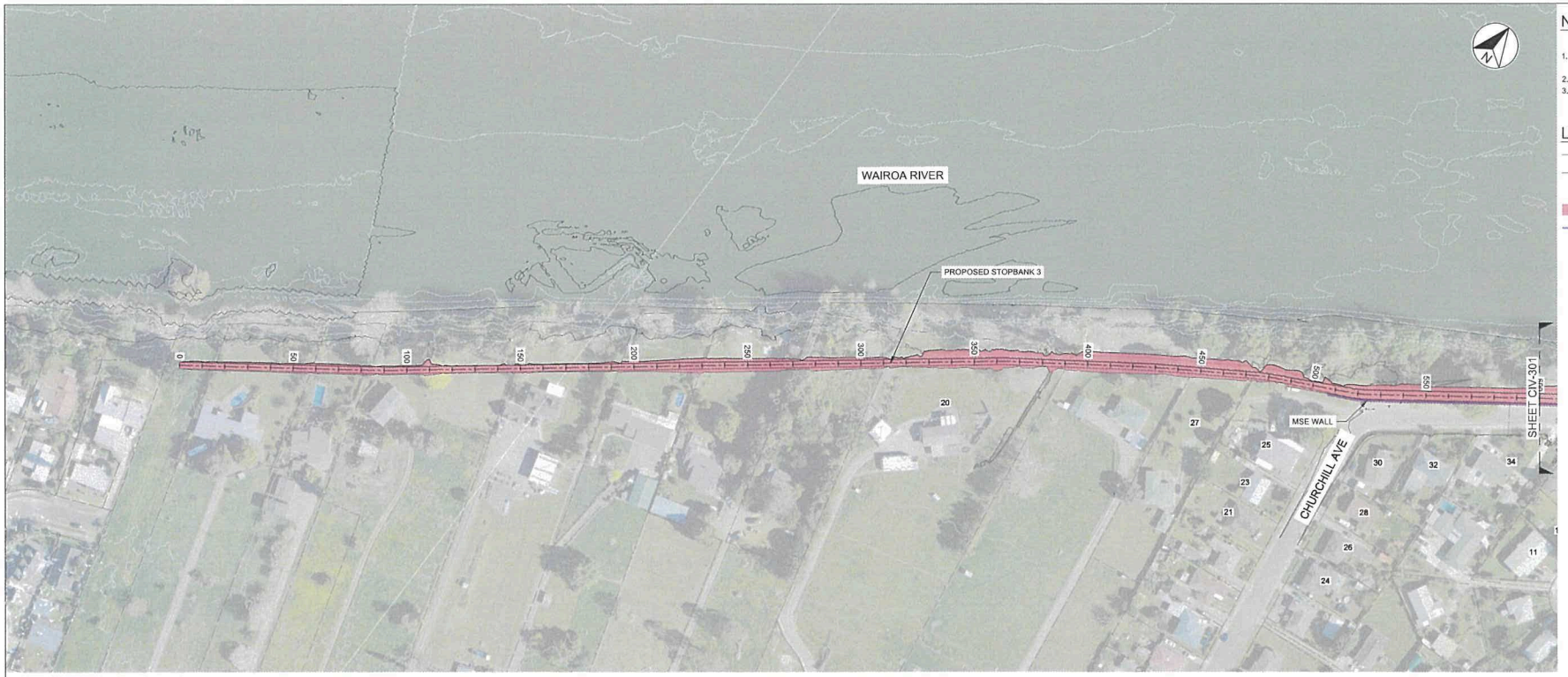
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 2
TYPICAL CROSS SECTION - SHEET 2 OF 2

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-204
REVISION B

Original sheet size A1 (841x594) Plot Date 2025-11-20 at 9:13:24 AM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-200-205.dwg CIV-204



NOTE

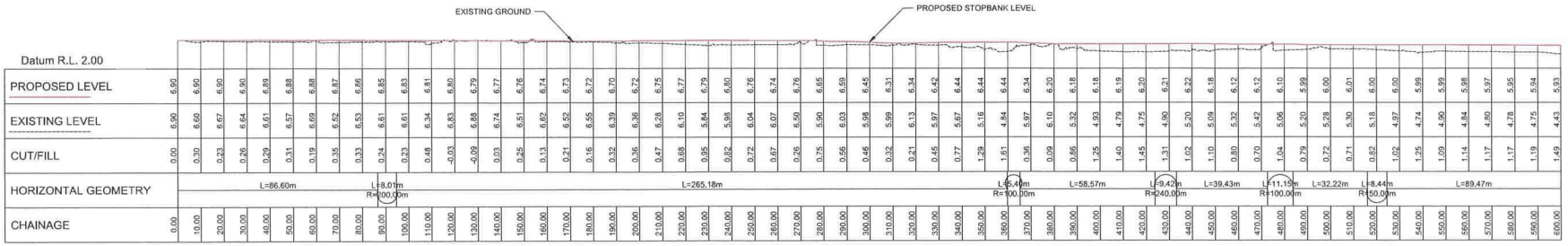
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK
- MSE WALL

STOPBANK 3 - PLAN VIEW

SCALE: 1:1000 (A1) ; 1:2000 (A3)



STOPBANK 3 - PROFILE

SCALE: H=1:1000 V=1:200 @ A1

1:200 @ A1, 1:400 @ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000 @ A1, 1:2000 @ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3) — ORIGINAL SIZE: A1

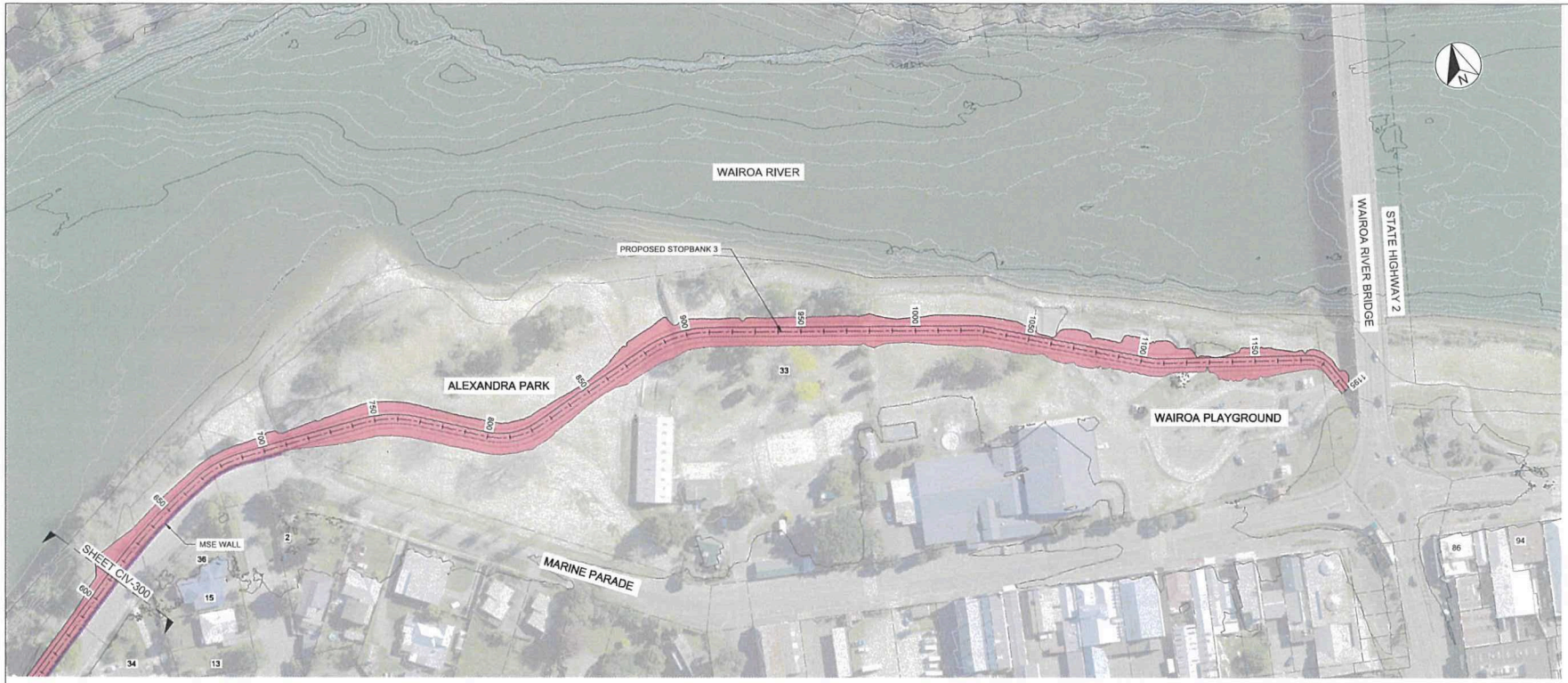
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT: HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE: STOPBANK 3
PLAN AND PROFILE - SHEET 1 OF 2

WSP PROJECT NO.: 2-T4441-WSP-03-DR
SHEET NO.: CIV-300
REVISION: B



NOTE

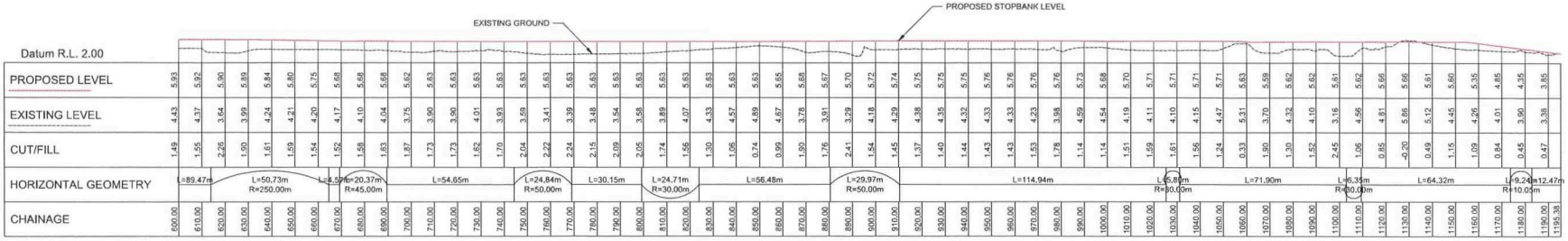
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED STOPBANK
- MSE WALL

STOPBANK 3 - PLAN VIEW

SCALE: 1:1000 (A1) : 1:2000 (A3)



1:200@ A1 / 1:400@ A3 0 2 4 6 8 10 12 14 16 18 20 m

1:1000@ A1 / 1:2000@ A3 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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WSP Nelson Office
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New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

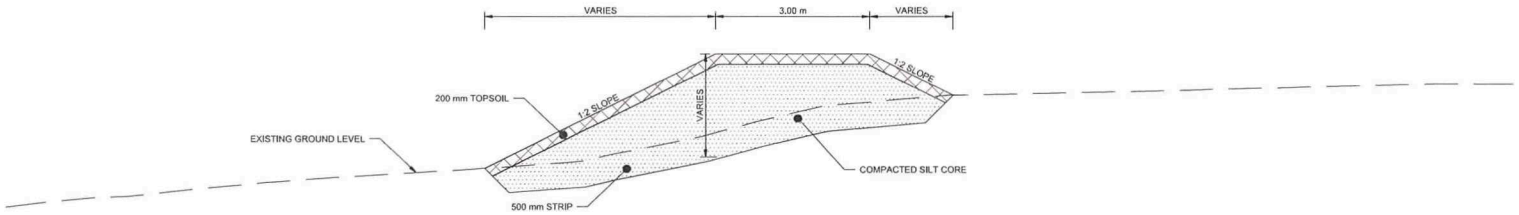
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

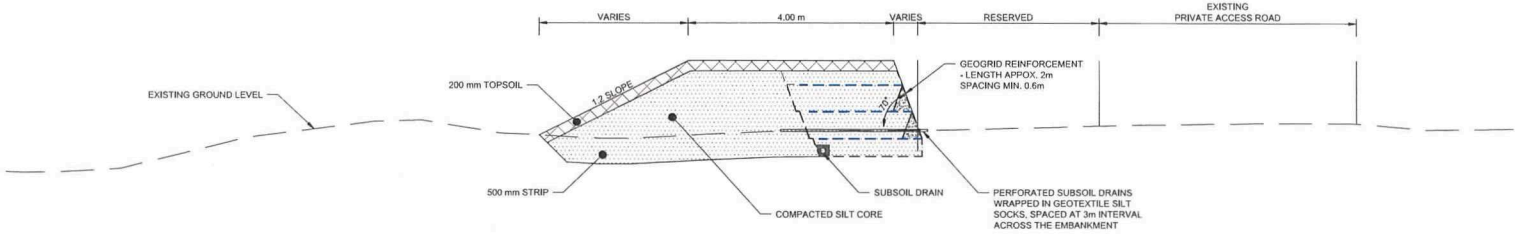
TITLE
STOPBANK 3
PLAN AND PROFILE - SHEET 2 OF 2

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-301
REVISION B



STOPBANK 3 - TYPICAL CROSS SECTION AT INDICATIVE CH. 450

SCALE: 1:50 (A1)



STOPBANK 3 - TYPICAL CROSS SECTION AT INDICATIVE CH. 550

SCALE: 1:50 (A1)

1:50 @ A1
1:100 @ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKES BAY REGIONAL COUNCIL
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Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:50(A1); 1:100(A3)
ORIGINAL SIZE: A1

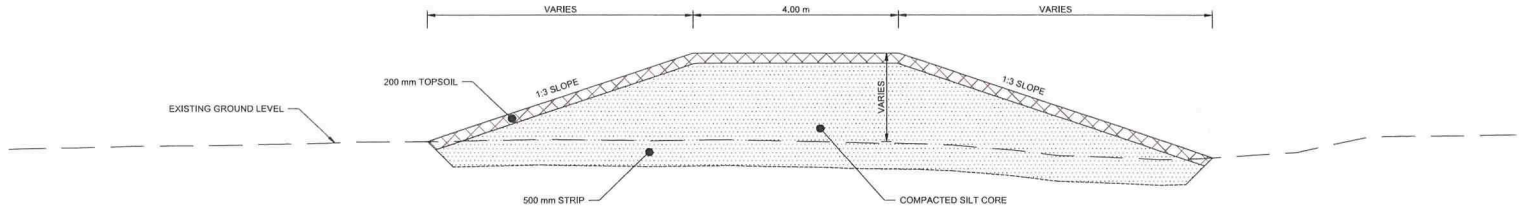
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 3
TYPICAL CROSS SECTIONS SHEET 1 OF 2

WSP PROJECT NO.: 2-T4441-WSP-03-DR
SHEET NO.: CIV-302
REVISION: B



STOPBANK 3 - TYPICAL CROSS SECTION AT INDICATIVE CH. 900

SCALE: 1:50 (A1)

300 mm
200
100
50
0 10 mm

1:50@ A1
1:100@ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

wsp
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+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES		ORIGINAL SIZE
1:50(A1); 1:100(A3)		A1
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
STOPBANK 3
TYPICAL CROSS SECTION SHEET 2 OF 2

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-303
REVISION B

NOTE

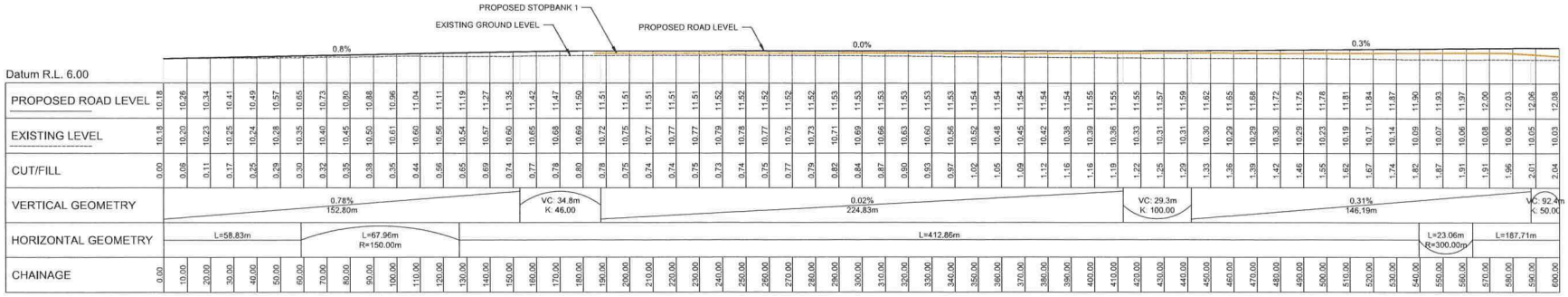
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED ROAD ALIGNMENT
- PROPOSED BATTER
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED FLOODWAY
- PROPOSED VEGETATED SWALE

RUATANIWHA ROAD - PLAN VIEW

SCALE: H=1:1000 @ A1



RUATANIWHA ROAD - PROFILE

SCALE: H=1:1000 V=1:200 @ A1

1:200 @ A1 / 1:400 @ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000 @ A1 / 1:2000 @ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY

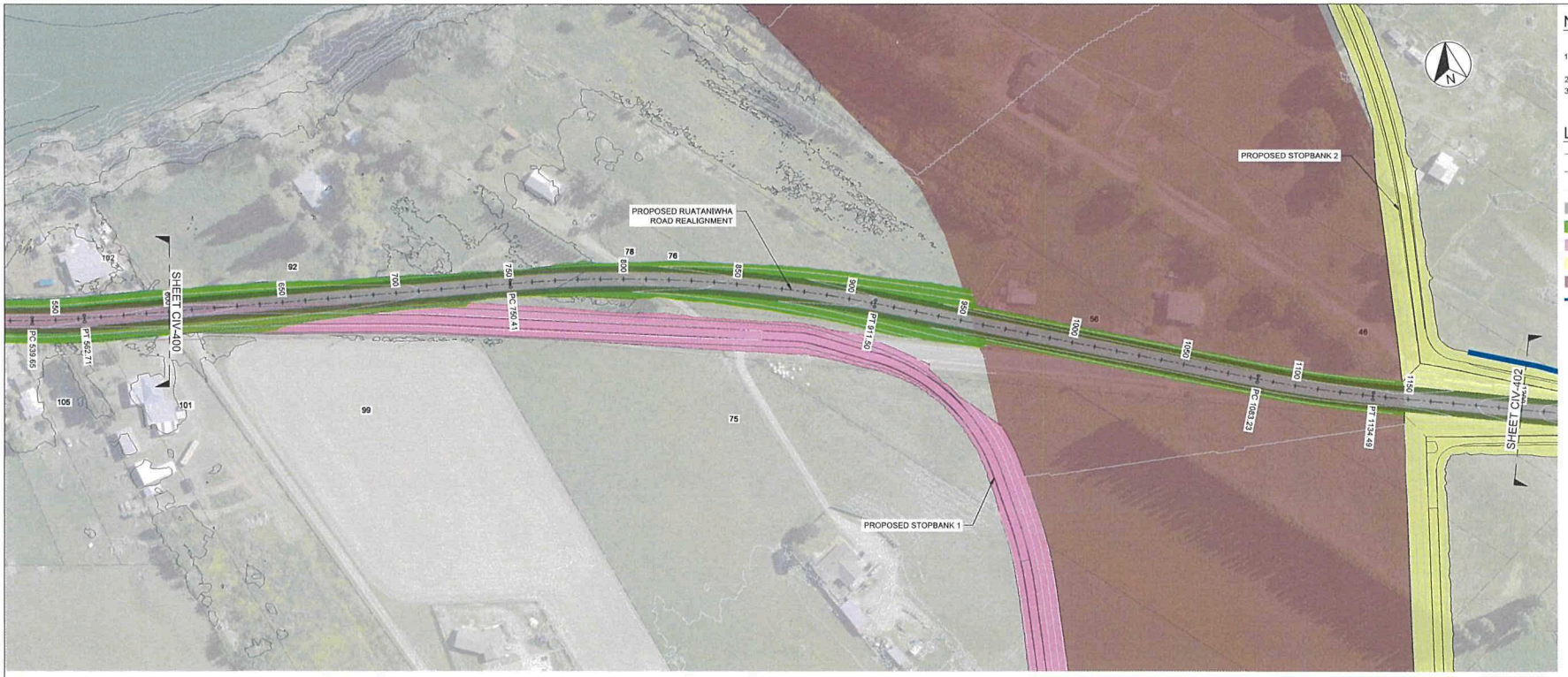
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
RUATANIWHA ROAD
PLAN AND PROFILE - SHEET 1 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-400
REVISION B



NOTE

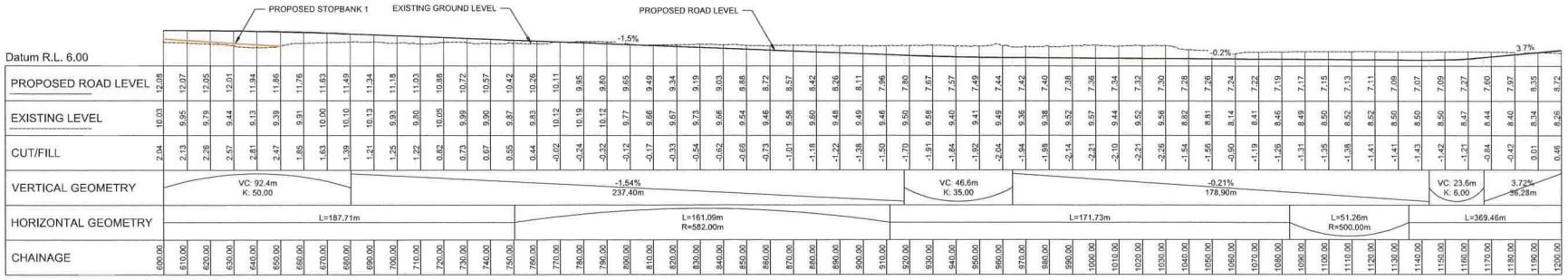
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED ROAD ALIGNMENT
- PROPOSED BATTER
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED FLOODWAY
- PROPOSED VEGETATED SWALE

RUATANIWHA ROAD - PLAN VIEW

SCALE: H=1:1000 @ A1



	600.00	610.00	620.00	630.00	640.00	650.00	660.00	670.00	680.00	690.00	700.00	710.00	720.00	730.00	740.00	750.00	760.00	770.00	780.00	790.00	800.00	810.00	820.00	830.00	840.00	850.00	860.00	870.00	880.00	890.00	900.00	910.00	920.00	930.00	940.00	950.00	960.00	970.00	980.00	990.00	1000.00	1010.00	1020.00	1030.00	1040.00	1050.00	1060.00	1070.00	1080.00	1090.00	1100.00	1110.00	1120.00	1130.00	1140.00	1150.00	1160.00	1170.00	1180.00	1190.00	1200.00
PROPOSED ROAD LEVEL	12.08	12.07	12.05	12.01	11.94	11.86	11.76	11.63	11.49	11.34	11.18	11.03	10.88	10.72	10.57	10.42	10.26	10.11	9.95	9.80	9.65	9.49	9.34	9.19	9.03	8.88	8.72	8.57	8.42	8.26	8.11	7.96	7.80	7.67	7.57	7.49	7.44	7.42	7.40	7.38	7.36	7.34	7.32	7.30	7.28	7.26	7.24	7.22	7.19	7.17	7.15	7.13	7.11	7.09	7.07	7.09	7.27	7.60	7.97	8.35	8.72
EXISTING LEVEL	10.03	9.95	9.79	9.44	9.13	9.39	9.91	10.00	10.10	10.13	9.93	9.80	10.05	9.99	9.90	9.87	9.83	10.12	10.19	10.12	9.77	9.68	9.67	9.73	9.66	9.54	9.46	9.58	9.60	9.48	9.49	9.46	9.50	9.59	9.40	9.41	9.49	9.36	9.38	9.52	9.57	9.44	9.52	9.56	8.82	8.81	8.14	8.41	8.46	8.49	8.50	8.52	8.52	8.50	8.50	8.50	8.47	8.44	8.40	8.34	8.26
CUT/FILL	2.04	2.13	2.26	2.57	2.81	2.47	1.85	1.63	1.39	1.21	1.25	1.22	0.82	0.73	0.67	0.55	0.44	-0.02	-0.24	-0.32	-0.12	-0.17	-0.33	-0.54	-0.62	-0.66	-0.73	-1.01	-1.18	-1.22	-1.38	-1.50	-1.70	-1.91	-1.84	-1.92	-2.04	-1.94	-1.98	-2.14	-2.21	-2.10	-2.21	-2.26	-1.54	-1.56	-0.90	-1.19	-1.26	-1.31	-1.35	-1.38	-1.41	-1.41	-1.43	-1.42	-1.21	-0.84	-0.42	0.01	0.46
VERTICAL GEOMETRY	VC: 92.4m K: 50.00															-1.54% 237.40m												VC: 46.6m K: 35.00														-0.21% 178.90m																			VC: 23.6m K: 6.00		3.72% 36.28m				
HORIZONTAL GEOMETRY	L=187.71m															L=161.09m R=582.00m												L=171.73m																										L=51.26m R=500.00m								L=369.46m						
CHAINAGE	600.00	610.00	620.00	630.00	640.00	650.00	660.00	670.00	680.00	690.00	700.00	710.00	720.00	730.00	740.00	750.00	760.00	770.00	780.00	790.00	800.00	810.00	820.00	830.00	840.00	850.00	860.00	870.00	880.00	890.00	900.00	910.00	920.00	930.00	940.00	950.00	960.00	970.00	980.00	990.00	1000.00	1010.00	1020.00	1030.00	1040.00	1050.00	1060.00	1070.00	1080.00	1090.00	1100.00	1110.00	1120.00	1130.00	1140.00	1150.00	1160.00	1170.00	1180.00	1190.00	1200.00

RUATANIWHA ROAD - PROFILE

SCALE: H=1:1000 V=1:200 @ A1

1:200 @ A1 / 1:400 @ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000 @ A1 / 1:2000 @ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKES BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

WSP Nelson Office
+64 3 548 1099
Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
RUATANIWHA ROAD
PLAN AND PROFILE - SHEET 2 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-401
REVISION B

Original sheet size A1 (841x594) Plot Date 2025-11-19 at 9:22:34 PM C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-400-402.dwg CIV-401

NOTE

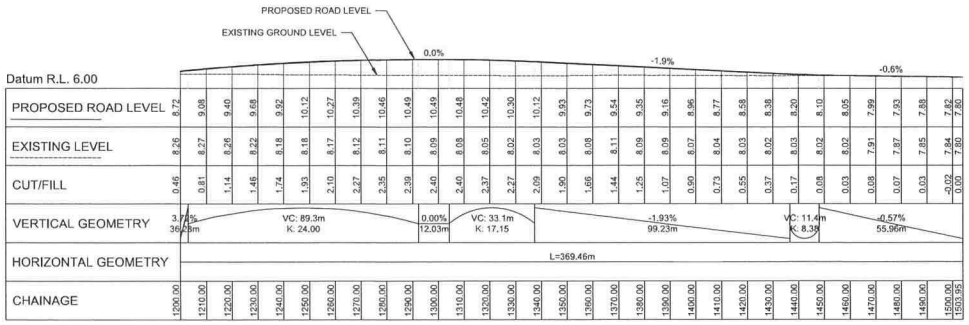
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED ROAD ALIGNMENT
- PROPOSED BATTER
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED FLOODWAY
- PROPOSED VEGETATED SWALE

RUATANIWHA ROAD - PLAN VIEW

SCALE: H=1:1000 @ A1



RUATANIWHA ROAD - PROFILE

SCALE: H=1:1000 V=1:200 @ A1

1:200 @ A1, 1:400 @ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000 @ A1, 1:2000 @ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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Private Bag 36
Nelson 7042
New Zealand

CIVIL

SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

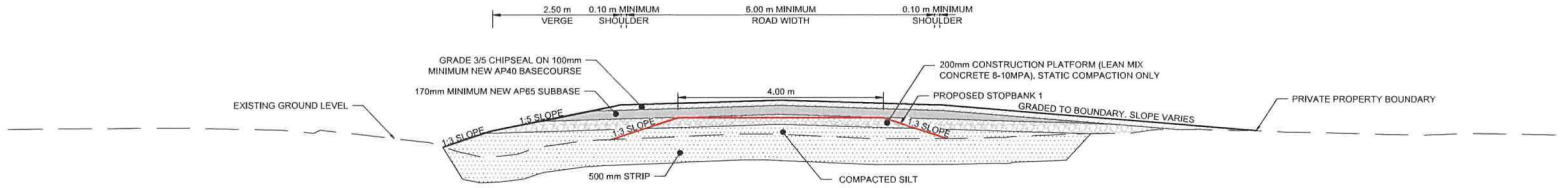
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

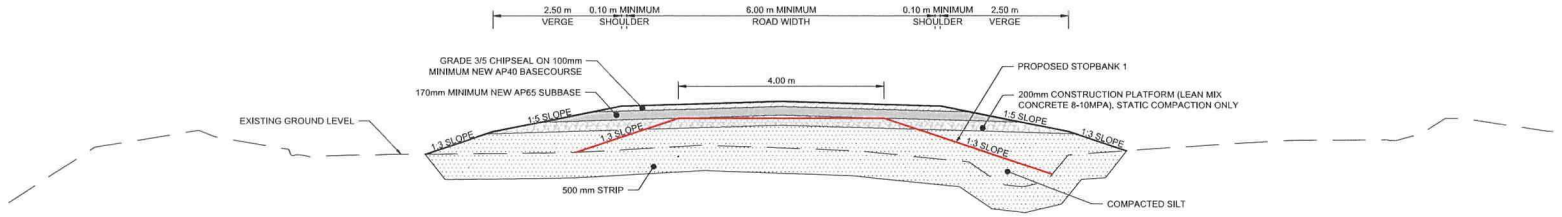
TITLE
RUATANIWHA ROAD
PLAN AND PROFILE - SHEET 3 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-402
REVISION B



RUATANIWHA ROAD - TYPICAL CROSS SECTION - ACROSS DRIVEWAYS AT INDICATIVE CH. 205

SCALE: 1:50 (A1)



RUATANIWHA ROAD - TYPICAL CROSS SECTION AT INDICATIVE CH. 360

SCALE: 1:50 (A1)

300 mm
200
120
50
0 10 mm

1:50@ A1
1:100@ A3
0 1 2 3 4 5 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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Nelson 7042
New Zealand

CIVIL

SCALES: 1:50(A1); 1:100(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

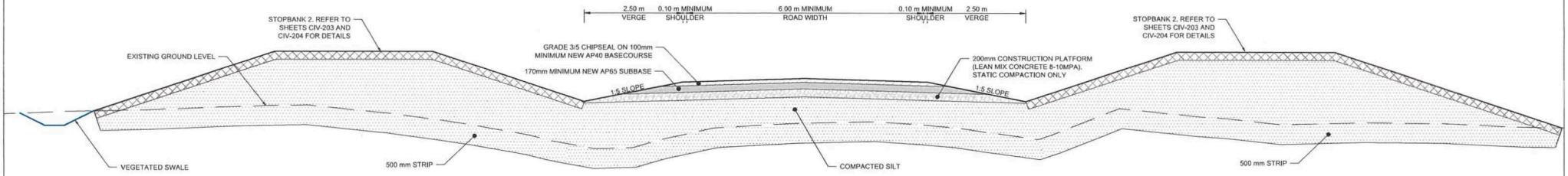
TITLE
RUATANIWHA ROAD
TYPICAL CROSS SECTIONS - SHEET 1 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-403
REVISION B

Original sheet size A1 (841x594) Plot Date 2025-11-19 at 8:16:32 pm C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-403-405.dwg CIV-403

RUATANIWHA ROAD - TYPICAL CROSS SECTION AT INDICATIVE CH. 1060

SCALE: 1:50 (A1)



RUATANIWHA ROAD - TYPICAL CROSS SECTION AT INDICATIVE CH. 1200

SCALE: 1:50 (A1)

1:50 @ A1
1:100 @ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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New Zealand

CIVIL

SCALES: 1:50(A1); 1:100(A3)
ORIGINAL SIZE: A1
DRAWN: N.AUDEA
DESIGNED: C.CREENCIA
APPROVED: A.SOWERSBY
DRAWING VERIFIED: P.FIEREK
DESIGN VERIFIED: A.MOHAMMADINIA
APPROVED DATE: 2025-11-21

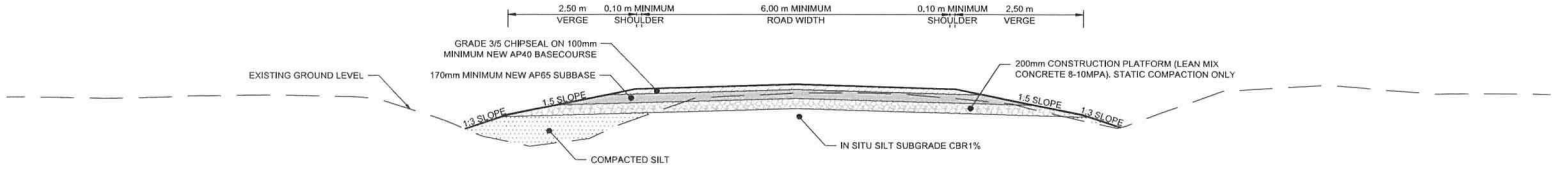
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
RUATANIWHA ROAD
TYPICAL CROSS SECTIONS - SHEET 2 OF 3

WSP PROJECT NO. 2-T4441-WSP-03-DR
SHEET NO. CIV-404
REVISION B

Original sheet size A1 (841x594) Plot Date 2025-11-19 at 8:18:36 pm C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-403-405.dwg CIV-404



RUATANIWHA ROAD - TYPICAL CROSS SECTION AT INDICATIVE CH. 1440

SCALE: 1:50 (A1)

300 mm
200
100
50
0 10 mm

1:50@ A1
1:100@ A3
0 1000 2000 3000 4000 5000 mm

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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SCALES: 1:50(A1); 1:100(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
RUATANIWHA ROAD
TYPICAL CROSS SECTIONS - SHEET 3 OF 3

WSP PROJECT NO.: 2-T4441-WSP-03-DR
SHEET NO.: CIV-405
REVISION: B

NOTE

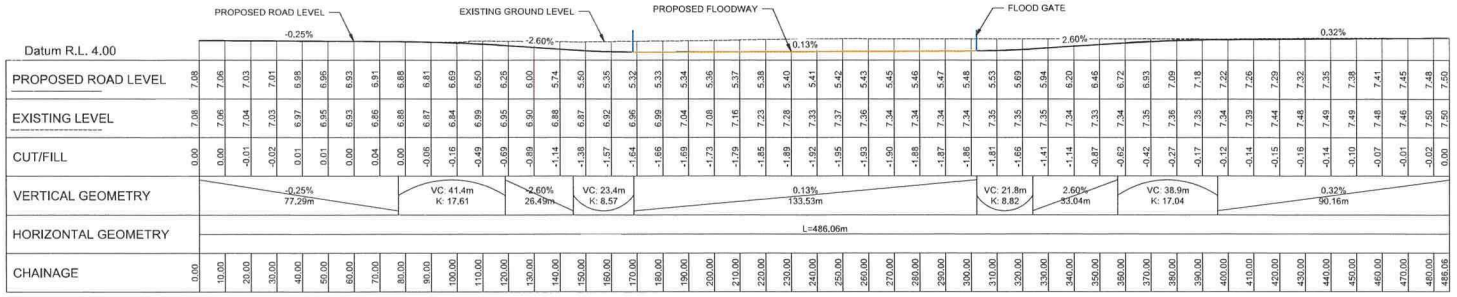
1. CO-ORDINATES ARE IN TERMS OF NEW ZEALAND TRANSVERSE MERCATOR (NZTM) PROJECTION.
2. VERTICAL LEVELS ARE IN TERMS OF NZVD2016 DATUM.
3. AERIALS AND BOUNDARIES SOURCED FROM GRIPMAP.

LEGEND

- EXISTING BOUNDARY
- MAJOR CONTOUR (1m)
- MINOR CONTOUR (5m)
- PROPOSED ROAD ALIGNMENT
- PROPOSED BATTER
- PROPOSED STOPBANK 1
- PROPOSED STOPBANK 2
- PROPOSED FLOODWAY
- PROPOSED CONCRETE WALL
- PROPOSED RETAININGWALL
- PROPOSED FLOODGATE

WAIHIRERE ROAD - PLAN VIEW

SCALE: 1:1000 (A1) ; 1:2000 (A3)



WAIHIRERE ROAD - PROFILE

SCALE: H=1:1000 V=1:200 @ A1

1:200@ A1 / 1:400@ A3: 0 2 4 6 8 10 12 14 16 18 20 m

1:1000@ A1 / 1:2000@ A3: 0 10 20 30 40 50 60 70 80 90 100 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

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SCALES: 1:1000/200(A1); 1:2000/400(A3)
ORIGINAL SIZE: A1

DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

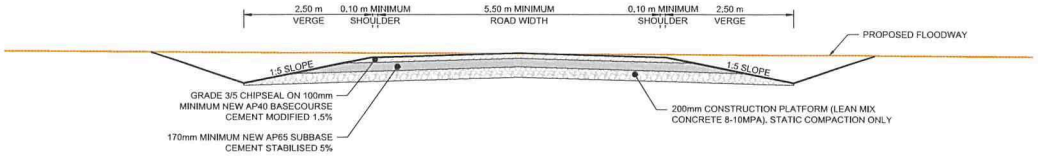
DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
WAIHIRERE ROAD
PLAN AND PROFILE

WSP PROJECT NO.: 2-T4441-WSP-03-DR
SHEET NO.: CIV-500
REVISION: B

Original sheet size A1 (841x594) Plot Date 2025-11-19 at 8:05:07 pm C:\DC\ACCDocs\WSP ANZ projects (AMER)\NZ-Wairoa Floodway\Project Files\02 WIP\CIV\03 Sheet Files\2-T4441-WSP-03-DR-CIV-500.dwg CIV-500



WAIHIRERE ROAD - TYPICAL CROSS SECTION AT INDICATIVE CH. 240

SCALE: 1:50 (A1)

300 mm
200
100
50
0 10 mm

1:50 @ A1
1:100 @ A3
0 1 2 3 4 5 m

REVISION	AMENDMENT	APPROVED	DATE
A	ISSUE FOR TENDER	A.S.	2025-08-06
B	DEVELOPED CONCEPT DESIGN	A.S.	2025-11-21

HAWKE'S BAY REGIONAL COUNCIL
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Nelson 7042
New Zealand

CIVIL

SCALES		ORIGINAL SIZE
1:50(A1); 1:100(A3)		A1
DRAWN	DESIGNED	APPROVED
N.AUDEA	C.CREENCIA	A.SOWERSBY
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
P.FIEREK	A.MOHAMMADINIA	2025-11-21

DEVELOPED CONCEPT DESIGN

PROJECT
HAWKE'S BAY REGIONAL COUNCIL
WAIROA, HAWKE'S BAY
WAIROA FLOOD MITIGATION PROJECT

TITLE
WAIHIRERE ROAD
TYPICAL CROSS SECTION

WSP PROJECT NO.	SHEET NO.	REVISION
2-T4441-WSP-03-DR	CIV-501	B