

**Absolutely Positively
Wellington City Council**

Me Heke Ki Pōneke

Ordinary Meeting of Kōrau Tūāpapa | Environment and Infrastructure Committee Rārangi Take | Agenda

9:30 am Rāpare, 5 Hakihea 2024

9:30 am Thursday, 5 December 2024

Ngake (16.09), Level 16, Tahiwī

113 The Terrace

Pōneke | Wellington



MEMBERSHIP

Mayor Whanau
Deputy Mayor Foon
Councillor Abdurahman
Councillor Apanowicz
Councillor Brown (Chair)
Councillor Calvert
Councillor Chung
Councillor Free
Pouiwi Hohaia
Pouiwi Kelly
Councillor Matthews (Deputy Chair)
Councillor McNulty
Councillor O'Neill
Councillor Pannett
Councillor Randle
Councillor Rogers
Councillor Wi Neera
Councillor Young

Have your say!

You can make a short presentation to the Councillors, Committee members, Subcommittee members or Community Board members at this meeting. Please let us know by noon the working day before the meeting. You can do this either by phoning 04-499-4444, emailing public.participation@wcc.govt.nz, or writing to Democracy Services, Wellington City Council, PO Box 2199, Wellington, giving your name, phone number, and the issue you would like to talk about. All Council and committee meetings are livestreamed on our YouTube page. This includes any public participation at the meeting.

AREA OF FOCUS

The Kōrau Tūāpapa | Environment and Infrastructure Committee has responsibility for:

- 1) RMA matters, including urban planning, city design, built environment, natural environment, biodiversity, and the District Plan.
- 2) Housing.
- 3) Climate change response and resilience.
- 4) Council property.
- 5) Waste management & minimisation.
- 6) Transport including Let's Get Wellington Moving.
- 7) Council infrastructure and infrastructure strategy.
- 8) Capital works programme delivery, including CCOs' and Wellington Water Limited's capital works programmes.
- 9) Three waters

To read the full delegations of this committee, please visit wellington.govt.nz/meetings.

Quorum: 9 members

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1. Meeting Conduct

1.1 Karakia

The Chairperson will open the hui with a karakia.

Whakataka te hau ki te uru, Whakataka te hau ki te tonga. Kia mākinakina ki uta, Kia mātaratara ki tai. E hī ake ana te atākura. He tio, he huka, he hauhū. Tihei Mauri Ora!	Cease oh winds of the west and of the south Let the bracing breezes flow, over the land and the sea. Let the red-tipped dawn come with a sharpened edge, a touch of frost, a promise of a glorious day
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At the appropriate time, the following karakia will be read to close the hui.

Unuhia, unuhia, unuhia ki te uru tapu nui Kia wātea, kia māmā, te ngākau, te tinana, te wairua I te ara takatū Koia rā e Rongo, whakairia ake ki runga Kia wātea, kia wātea Āe rā, kua wātea!	Draw on, draw on Draw on the supreme sacredness To clear, to free the heart, the body and the spirit of mankind Oh Rongo, above (symbol of peace) Let this all be done in unity
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1.2 Apologies

The Chairperson invites notice from members of apologies, including apologies for lateness and early departure from the hui, where leave of absence has not previously been granted.

1.3 Conflict of Interest Declarations

Members are reminded of the need to be vigilant to stand aside from decision making when a conflict arises between their role as a member and any private or other external interest they might have.

1.4 Confirmation of Minutes

The minutes of the meeting held on 17 October 2024 will be put to the Kōrau Tūāpapa | Environment and Infrastructure Committee for confirmation.

1.5 Items not on the Agenda

The Chairperson will give notice of items not on the agenda as follows.

Matters Requiring Urgent Attention as Determined by Resolution of the Kōrau Tūāpapa | Environment and Infrastructure Committee.

The Chairperson shall state to the hui:

1. The reason why the item is not on the agenda; and
2. The reason why discussion of the item cannot be delayed until a subsequent hui.

The item may be allowed onto the agenda by resolution of the Kōrau Tūāpapa | Environment and Infrastructure Committee.

Minor Matters relating to the General Business of the Kōrau Tūāpapa | Environment and Infrastructure Committee.

The Chairperson shall state to the hui that the item will be discussed, but no resolution, decision, or recommendation may be made in respect of the item except to refer it to a subsequent hui of the Kōrau Tūāpapa | Environment and Infrastructure Committee for further discussion.

1.6 Public Participation

A maximum of 60 minutes is set aside for public participation at the commencement of any hui of the Council or committee that is open to the public. Under Standing Order 31.2 a written, oral, or electronic application to address the hui setting forth the subject, is required to be lodged with the Chief Executive by 12.00 noon of the working day prior to the hui concerned, and subsequently approved by the Chairperson.

Requests for public participation can be sent by email to public.participation@wcc.govt.nz, by post to Democracy Services, Wellington City Council, PO Box 2199, Wellington, or by phone at 04 499 4444 and asking to speak to Democracy Services.

2. General Business

TE AWARUA O PORIRUA WHAKARITENGA – PORIRUA HARBOUR ACCORD

Kōrero taunaki | Summary of considerations

Purpose

1. This report seeks Council endorsement of Te Awarua o Porirua Whakaritenga – Porirua Harbour Accord (The Accord).

Strategic alignment

2. The most relevant community outcomes, strategic approaches, and priorities for this paper include *Environmental Wellbeing - A city restoring and protecting nature, integrating te ao Māori, value for money and effective delivery*, and *Fix our water infrastructure and improve the health of waterways*

Relevant previous decisions

3. N/A

Financial considerations

- Nil Budgetary provision in Annual Plan / Long-term Plan Unbudgeted \$X

4. The Porirua Harbour Accord requires no immediate additional resources. The accord is a relationship agreement, seeking to maximise co-ordination efforts across partner organisations to improve harbour health outcomes. Any additional budgetary requirements would need to be addressed through a future Annual or Long Term Plan process.

Risk

- Low Medium High Extreme
5. The Porirua Harbour Accord requires no immediate additional resources. The accord is a relationship agreement, seeking to maximise co-ordination efforts across partner organisations to improve harbour health outcomes. Any additional budgetary requirements would need to be addressed through a future Annual or Long-Term Plan process.

Author	Michael Duindam, Manager District Planning
Authoriser	Sean Audain, Manager Strategic Planning Liam Hodgetts, Chief Planning Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion:

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. **Receive** the report.
2. **Endorse** Te Awarua o Porirua Whakaritenga – Porirua Harbour Accord
3. **Agrees** in principle to the Programme Monitoring Framework.
4. **Agrees** to future development of a mauri ora approach to guide the restoration and monitoring of the Porirua Harbour's health.
5. **Agrees** to the steps required for the formal signing of Te Awarua o Porirua Whakaritenga – Porirua Harbour Accord.

Whakarāpopoto | Executive Summary

6. The purpose of this report is to seek Council endorsement of Te Awarua o Porirua Whakaritenga – Porirua Harbour Accord (The Accord) and approve in principle the associated Programme Monitoring Framework (PMF).

Takenga mai | Background

7. Te Awarua o Porirua (Porirua Harbour) is a taonga and essential to the identity, heritage, and values of Ngāti Toa Rangatira (Ngāti Toa), the communities of Porirua that live on its shores, and through the streams that flow north, the communities of Northern Wellington in the Tawa and Takapu Valley's. The importance of the harbour is recognised under legislation through the Ngāti Toa Rangatira Claims Settlement Act 2014.
8. The health of Porirua Harbour has been negatively impacted by human activity over many years, including by reclamation of land and discharges of contaminants, to the point where environmental values have been severely degraded. Unacceptable levels of sediment and other contaminants continue to flow into the harbour, resulting in poor water quality and chronic negative environmental effects.
9. Restoring the health of Porirua Harbour is a priority for Porirua City Council, Ngāti Toa, Greater Wellington Regional Council, Wellington City Council and Wellington Water, along with the many stakeholders, community groups and other organisations that wish to see the health of the harbour restored.
10. Due to a lack of progress towards achieving goals for Porirua Harbour and its catchments, partners of the former Joint Harbour Committee agreed that a refreshed approach was needed. This led to discussions around a principles-based approach and the need for an accord. This was to bind the partner organisations and hold them to account for their actions, to help improve the health of Porirua Harbour. As a result, Te Whakaritenga Project Team was set up to create Te Awarua o Porirua Whakaritenga - Porirua Harbour Accord (The Accord).

11. Efforts to develop The Accord, to date, have been led by the Core Project Team which comprises representatives from each of the partner organisations. District Planning Manager Michael Duindam is the Wellington City Council representative.
12. A copy of the Accord has been provided as **Attachment 1**. A flowchart depicting key document relationships with the Accord has been provided as **Attachment 2**.
13. Te Rūnanga o Toa Rangatira board has endorsed The Accord and supporting documents. Wellington Water Limited has been engaged and provided with the relevant documentation.
14. Greater Wellington Regional Council's executive leadership team (ELT) have endorsed the draft and supporting documents. Greater Wellington Regional councillors have also received the Harbour Accord information.

Kōrerorero | Discussion

15. The partners have agreed a vision for the Accord:

The health and mauri of Te Awarua o Porirua is restored, its waters are healthy and sustainable for future generations, and for those who live, work, play or connect with the harbour.

1. To achieve the vision, The Accord will:
 - a) establish an agreed approach between the partner organisations to improve the health of Porirua Harbour.
 - b) agree consistent, harmonised, and collaborative actions which improve, restore, and positively impact the harbour; and
 - c) enable the establishment, implementation and monitoring of well-resourced, accountable work programmes that deliver the improvements to restore harbour health.
16. The purpose of The Accord is not to duplicate the role of statutory, regulatory and investment plans and strategies prepared under the Resource Management Act (RMA), Local Government Act (LGA) and other statutes, or takeover from the various non-regulatory and voluntary initiatives aimed at improving catchment health. Instead, it aims to achieve a joined-up, integrated approach to overseeing, monitoring, and reporting on progress towards restoring the health of the harbour, and to ensure the partner organisations are committed to and prioritising actions to achieve the vision of The Accord.

OBJECTIVES AND MONITORING FRAMEWORK

17. The Accord includes objectives that clearly articulate how the vision will be achieved and establish 'what success looks like'.
18. The Programme Monitoring Framework (PMF) measures the progress of the programme commitments made by the partner organisations that will help achieve the objectives of The Accord. In doing so, it provides a measuring stick by which the partner organisations can be held to account in terms of meeting their obligations under The Accord. These provide a framework for monitoring progress towards achieving the vision.
19. The PMF is based on the 2024 – 34 Long Term Plans (LTPs), and annual plans and reports of the partner organisations. This sets the priorities, programme commitments and budgets for both the capital investment and operational activities required to

achieve the objectives of The Accord. It is primarily focussed on the first three years of the LTP period (2024 – 27).

20. PMF reporting is proposed to be at quarterly intervals for some measures. However, monitoring and reporting associated with Council annual reporting and annual plan processes will provide the most comprehensive monitoring information.
21. No new monitoring measures or data sources are proposed to be established initially. All performance indicators are based on existing monitoring measures and data sources currently managed or utilised by the partner organisations.
22. Performance indicators for the PMF have been selected based on meeting SMART criteria (as relevant) i.e., specific, measurable, achievable, relevant and time bound. A copy of the PMF has been provided as **Attachment 3**.
23. Overlaying the PMF, a holistic mauri ora approach to support restoration and the monitoring of the harbour's health will be developed. A finalised PMF will be worked through and presented to the Governance Group for implementation before the next LTP. This allows time for the PMF to mature and allow space to consider how a mauri ora approach can be appropriately implemented into the monitoring and restoration of the harbour.
24. A mauri ora approach is a key component of this framework for iwi and is seen as a long-term approach to support the current PMF model. It is likely to consider the actual physical, environmental, social, and cultural outcomes for Te Awarua o Porirua and its catchment.

PRINCIPLES

25. The Accord sets out several principles that will guide and influence the behaviour and actions of the partner organisations, stakeholders, and the community with respect to achieving the vision of The Accord. There are specific principles in relation to:
 - a) Mana Whenua;
 - b) Partnership;
 - c) Governance;
 - d) Community involvement;
 - e) Resourcing, implementation and monitoring;
 - f) Regulation and evidence;
 - g) Limits of the Accord; and
 - h) Reviewing the Accord.

GOVERNANCE MODEL

26. The governance principles set out in the Accord are as follows:
 - a. The chief executives of each partner organisation are accountable for implementing The Accord and formalising an agreed governance structure.
 - b. The chief executives will set the terms of reference for how their organisations will implement The Accord; and
 - c. An appropriate governance model, based on the Accord principles, is to be considered by the Chief Executives of the intended signatories of the Accord.

FUNDING, RESOURCING AND OPERATIONS

27. The Project Team comprises representatives from each of the partner organisations, and their role on the Project Team is integrated into their day-to-day home organisational roles.
28. PCC and Te Rūnanga o Ngāti Toa Rangatira have taken leading roles in developing the Accord to date, with Project Team meetings hosted by PCC, who has also provided project management resourcing and secretariat support to The Accord development process. Each organisation has relevant and vital expertise and experience to the project.
29. As development and implementation of The Accord is proposed to form part of the day-to-day roles of the members of the Project Team, additional operational budget from the partner organisations to fund the on-going development of The Accord is not considered necessary at this point.
30. A staged approach to cost estimates in relation to monitoring will be considered, allowing the operational progress of The Accord within an agreed period from its signing. This will provide an opportunity to identify additional requirements before the next Long-term planning process.
31. The Tawa Community Board would be expected to receive reporting on the PMF and be provided an opportunity to input into the Project Team via the WCC representative.

Kōwhiringa | Options

32. The recommendations within this report have been provided to all partner organisation ELTs / Boards / Chief Executives.
33. Once the recommendations have been agreed to by all partner organisations, the Accord will be finalised and prepared for signing.
34. Should the Council not agree to the recommendations set out in this report, all partner organisations would be required to regroup and work through any feedback. Any agreed changes to documents would then need to be recirculated and formally agreed by the partner organisations' executive leadership teams (or equivalent) and councils (where applicable), later.

Option 1 (Recommended)

35. Agree to the recommendations set out in this report.

Option 2 (Not recommended)

36. Not agree to the recommendations set out in this report.

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

37. The Accord seeks to give effect to Council's Tūpiki Ora Māori Strategy. It is consistent with the enabling the principles within that strategy, in particular Mana Motuhake, Rangatiratnga, Pito mata, Mahi tika, Toitū te whakaahu and Te auaha.
38. The Accord aligns with 'Our Natural Capital', which identifies a need to work with Porirua City Council and Greater Wellington Regional Council on cross-boundary management of important catchments and ecosystems such as the Porirua Stream and the Harbour catchment.

Engagement and Consultation

39. Information on Te Awarua o Porirua Whakaritenga – Porirua Harbour Accord will be shared via partner organisation media channels. This information will be agreed collectively between the partner organisations.
40. There may be some media interest in The Accord, as it is expected to be a positive step forward for the health of Te Awarua o Porirua and is culturally significant to local Ngāti Toa Rangatira.

Māori Impact Statement

41. The importance of the harbour is recognised under legislation through the Ngāti Toa Rangatira Claims Settlement Act 2014.
42. Te Rūnanga o Toa Rangatira (acting on behalf of Ngāti Toa) has been a partner in the development of The Accord.

Financial implications

43. No additional financial implications for Wellington City Council beyond our 2024-34 LTP.
44. The PMF is based on the 2024 – 34 Long Term Plans (LTPs), and annual plans and reports of the partner organisations. This sets the priorities, programme commitments and budgets for both the capital investment and operational activities required to achieve the objectives of The Accord. It is primarily focussed on the first three years of the LTP period (2024 – 27).

Legal considerations

45. There are no legal risks to endorsing the recommendations of this report. They simply seek to establish a principles-based collaborative approach to improving Porirua Harbour Health. The Accord is not legally binding, but instead signals an intent to work together with relevant partners to improve environmental outcomes in the Porirua Stream and Harbour catchment.

Risks and mitigations

46. There are no obvious risks requiring mitigation. The Accord seeks to establish a collaborative approach to improving Porirua Harbour health outcomes. This is set to be achieved through actions already agreed through the LTP.

Disability and accessibility impact

47. Not applicable

Climate Change impact and considerations

48. The Accord will help facilitate co-ordinated improvements to the Porirua Stream and Harbour catchment. This will likely promote positive sustainability outcomes, climate change resilience and emission reduction through biodiversity improvements via riparian planting programmes.

Communications Plan

49. A communications plan will be prepared by The Accord working group to help facilitate awareness and ongoing communication about actions undertaken by each partner organisation to improve Porirua Harbour health.

Health and Safety Impact considered

50. Not relevant.

Ngā mahinga e whai ake nei | Next actions

51. Should the Kōrau Tūāpapa | Environment and Infrastructure Committee endorse the recommendations of this report, The Accord will progress towards completion and the governance arrangements will be confirmed by Chief Executives of each partner organisation. A formal signing will follow and likely be organised for late 2024.

Attachments

Attachment 1.	Te Awarua o Porirua Whakaritenga - Porirua Harbour Accord	Page 16
Attachment 2.	Porirua Harbour Accord Flowchart	Page 22
Attachment 3.	Performance Monitoring Framework	Page 23

TE AWARUA O PORIRUA WHAKARITENGA - PORIRUA HARBOUR ACCORD

[Date: DD,MM,YYYY]

INTRODUCTION

This document sets out Te Awarua o Porirua Whakaritenga – the Porirua Harbour Accord (The Accord¹). It is an agreement to restore the health² of Te Awarua o Porirua.

Te Awarua o Porirua (Porirua Harbour)³ is a national treasure and an iconic feature of Porirua. The harbour is at the heart of the community and essential to the identity, heritage and values of Ngāti Toa Rangatira (Ngāti Toa)⁴.

For Ngāti Toa, there is no compromise. *We wish our people to be able to harvest food from, swim in and enjoy the waters of Te Awarua o Porirua. And we wish for the fish, birds, insects and plants of this ancient ecosystem to thrive once again.*

The harbour is a nationally significant ecological area. It is the largest estuary in the lower-north island of New Zealand and has important cultural, economic and recreational values. The harbour is also an important source of kaimoana and the location of pā, tauranga waka, marae, urupā and papakainga.

However, the health of the harbour has been negatively impacted by human activity over many years, including reclamation of land and discharges of contaminants, to the point where environmental values have been severely degraded. Unacceptable levels of sediment and other contaminants continue to flow into the harbour, resulting in poor water quality and chronic environmental effects.

Restoring the health of Te Awarua o Porirua is a priority for the partner organisations Porirua City Council, Te Rūnanga o Toa Rangatira (acting on behalf of Ngāti Toa), Greater Wellington Regional Council, Wellington City Council, Wellington Water Limited and the many stakeholders, community groups and other organisations that wish to see the health of the harbour restored.

The desire to see harbour health restored is also signalled in the Porirua Whaitua Implementation Plan and Ngāti Toa Statement (to be read alongside it), and The Accord will assist with the implementation of these plans.

¹ An accord is an agreement intended to bind people together for a common purpose, or goal.

² Health means: that the harbour, streams and coast are clean and brimming with life and have diverse and healthy ecosystems. They can be used to gather and catch kaimoana and mahinga kai for food, are safe and accessible for people to enjoy and undertake recreational activities. These waters flow naturally and with energy, attracting people to connect with them. That land (which affects the harbour and streams) is developed, used and managed sustainably, recognising its effect on water quality and quantity but acknowledging the use of water and waterways provides for economic opportunities and benefits. That the harbour and catchments is recognised as an ancestral treasure of Ngāti Toa Rangatira. *Te Awarua-o-Porirua Whaitua Implementation Programme 2019.*

³ For the purpose of the Accord, Te Awarua o Porirua (Porirua Harbour), often referred to as simply "the harbour", includes the harbour body, surrounding catchments, streams and the sea into which the waters of the harbour flow. It's considered a living, breathing entity made up of the two main arms of the harbour – Pāuatahanui and Parumoana (often called Te Onepoto) and surrounding catchments and streams which flow into these arms. The waters of the harbour's arms are connected to Te Moana o Raukawa (Cook Strait) and Te Mana o Kupe (Mana Island) as the guardian of Te Awarua o Porirua. A map outlining the boundaries of the harbour and catchments has been appended.

⁴ The importance of the harbour is recognised in legislation under the Ngāti Toa Rangatira Claims Settlement Act 2014.

The intention of this document is to provide the partners, stakeholders, community groups and other organisations with a clear focus to help prioritise and drive actions which will improve harbour health. It also intends to assist and support the various organisations to work together to achieve the shared vision.

For the partner organisations, this document provides the foundation of what is an enduring relationship.

DRAFT

TE AWARUA O PORIRUA WHAKARITENGA - PORIRUA HARBOUR ACCORD

VISION

The health and mauri of Te Awarua o Porirua is restored, its waters are healthy and sustainable for future generations, and for those who live, work, play or connect with the harbour

Purpose

In order to achieve the vision and objectives, The Accord will:

- 1 establish an agreed approach between the partner organisations to improve the health of Porirua Harbour;
- 2 agree consistent, harmonised and collaborative actions which improve, restore and positively impact the harbour; and
- 3 establish, implement and monitor well-resourced, accountable work programmes that deliver the improvements that will restore harbour health.

Objectives

- 1 The Accord seeks to achieve Te Mana o Te Wai and other relevant objectives of the National Policy Statement for Freshwater (NPS-FM);
- 2 The role of tikanga is upheld and guided by mana whenua through the practice of kaitiakitanga;
- 3 Restoration of the harbour provides for the safe and sustainable gathering of mahinga kai; and
- 4 A water sensitive catchment is established, where natural water systems are integrated with the built environment to minimise environmental degradation and promote sustainable water outcomes;
- 5 The Harbour's terrestrial, aquatic and marine ecology and biodiversity is restored and protected;
- 6 Freshwater and coastal water quality in the catchment is restored and protected;
- 7 Current and future development and growth must contribute to the protection and restoration of harbour health;
- 8 Efforts to restore the health of the harbour must also support efforts to mitigate and adapt to the effects of climate change; and
- 9 Creative and innovative infrastructure minimises degradation to, and protects the health of, the harbour.
- 10 Equitable partnership is developed and maintained through the life and application of The Accord.

Principles

Mana Whenua

- 1 The fundamental principles for Ngāti Toa are rangatiratanga, whakapapa, mana whenua, mahinga kai, manaakitanga, whānaungatanga, wairuatanga, kotahitanga and kaitiakitanga. These principles guide the relationship with Te Awarua o Porirua as a living and breathing entity;

Partnership ⁵

- 1 Efforts to restore harbour health are based on a partnership model that honours Te Tiriti o Waitangi, the Deed of Settlement between the Crown and Ngāti Toa Rangatira, Ngāti Toa Rangatira relationships with responsible councils and communities, and a recognition of the relationship of mana whenua with the environment;
- 2 The partners demonstrate kotahitanga (solidarity and collective action) and manaaki tangata through a commitment to partnership which involves acting in good faith and respecting one another, and the sharing and gathering of knowledge and resources which benefit the health of the harbour; and
- 3 Effective and efficient ways of working together are fostered in addition to business-as-usual practices.

Governance

- 1 The chief executives of each partner organisation are accountable for implementing The Accord and formalising an agreed governance structure; and
- 2 The chief executives will set the terms of reference for how their organisations will implement The Accord.

Community

- 1 The Accord supports the participation of the community and community groups dedicated to restoring the health of the harbour; and
- 2 Community groups are encouraged to participate to help achieve the vision and objectives, however they are not subject to the same level of accountability as the partner organisations.

Resourcing, implementation and monitoring

- 1 Resourcing and funding of actions and work programmes should be prioritised through each partner organisation's strategic planning activities, wānanga, long-term plans and other planning processes and funding mechanisms;
- 2 Agreed actions should include a combination of capital investment, regulatory and non-regulatory actions;

⁵ For the purposes of The Accord, the partnership is primarily between Ngāti Toa (as represented by Te Rūnanga o Toa Rangatira) and local authorities and other agencies (the governance parties) who exercise powers, responsibilities and functions in relation to the harbour.

- 3 Decisions relating to the resourcing of actions and work programmes of the partner organisations are joined-up and aligned;
- 4 To share, in a timely fashion, progress on meeting obligations under The Accord by monitoring and reporting using a Programme Monitoring Framework which will be supported by an iwi-led mauri ora approach for the restoration of Te Awarua o Porirua. The mauri ora approach is to be developed before the Local Government Act's next Long-term Plan cycle for 2027 and a matured approach to monitoring agreed by the governing parties; and
- 5 To give effect to The Accord, the governance parties agree the timeframes and priorities for implementation within six-months of the document's signing.

Regulation and evidence

- 1 Use all available regulatory and evidence-based practices and/or mechanisms to prevent further degradation and restore harbour health; and
- 2 To share information relating to the state of the harbour environment as outlined in the Performance Monitoring Framework.

Limits of Te Whakaritenga (The Accord)

This Accord does not override or limit:

- 1 The legislative rights, powers or obligations of the partner organisations;
- 2 The ability of the parties to interact or consult with any other person or government agency, iwi, hapū, marae, whānau or their representative; and
- 3 The development of regulatory mechanisms such as Joint Management Agreements or Transfers of Powers under environmental legislation.

Reviewing The Accord

- 1 The partner organisations agree that The Accord is a living document which should be updated every three years (aligned with the Local Government Act long-term planning process);
- 2 The first review of The Accord will take place no later than three years from the document's signing;
- 3 Work programmes will be established and aligned annually and agreed by the parties' chief executives within six-months of their adoption; and
- 4 Annual reports setting out the progress of work programmes, as captured by the Performance Monitoring Framework and any future mauri ora approach will be presented to the governance body.

SIGNED by,

agreeing parties to Te Awarua o Porirua Whakaritenga - Porirua Harbour Accord:

poriruacity

Wendy Walker Chief Executive



Helmut Modlik Chief Executive



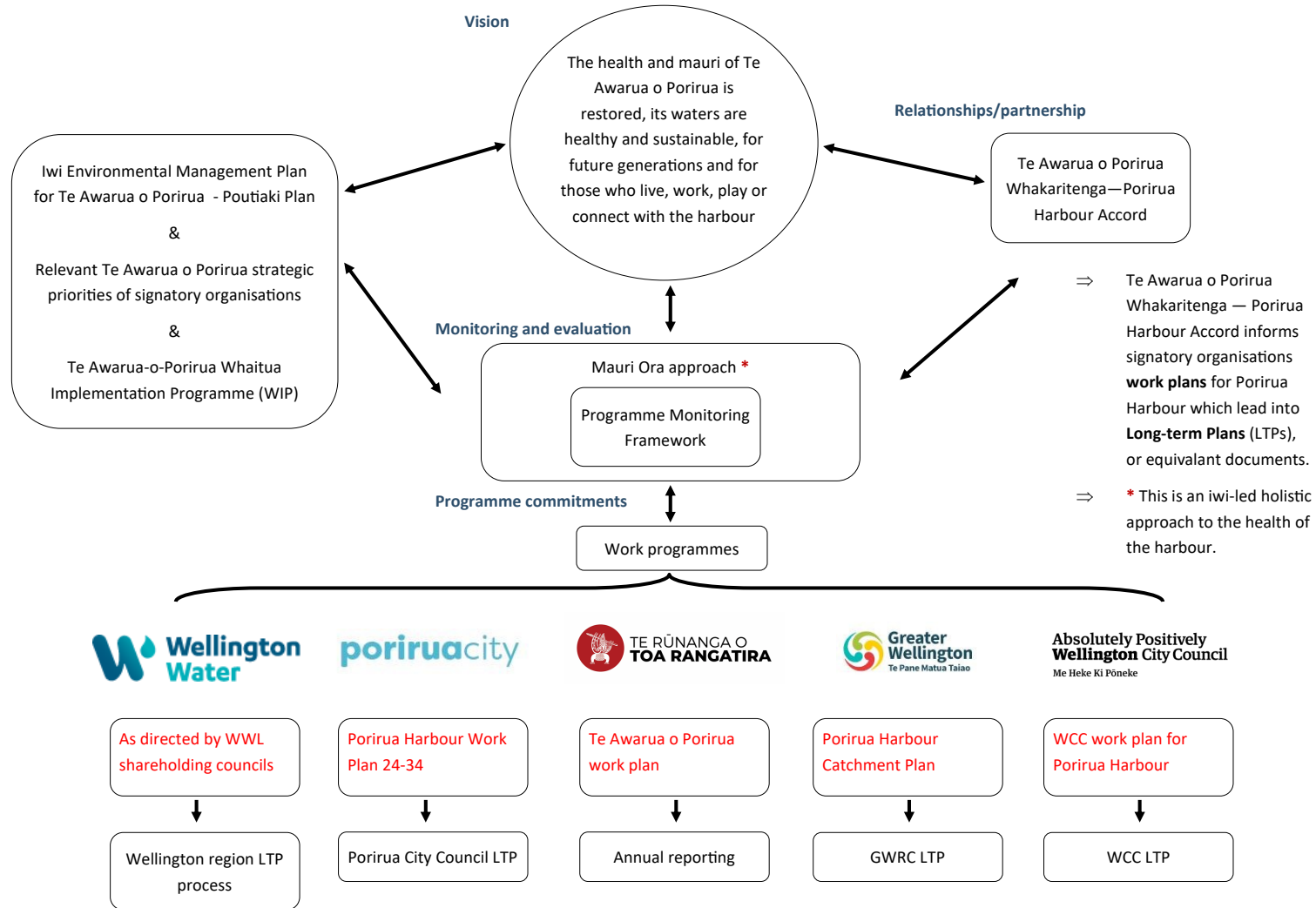
Nigel Corry Chief Executive

**Absolutely Positively
Wellington City Council**
Me Heke Ki Pōneke

Barbara McKerrow Chief Executive



Pat Dougherty Chief Executive



Te Whakaritenga - Porirua Harbour Accord

Programme Monitoring Framework - April 2024

1. Overview and purpose

The Programme Monitoring Framework (PMF) is a key component of Te Whakaritenga – Porirua Harbour Accord (The Accord). The purpose of the PMF is to measure the progress of the programme commitments made by the partner organisations that will help achieve the vision and objectives of The Accord. In doing so, it provides a measuring stick by which the partner organisations can be held to account in terms of meeting their obligations under The Accord.

It differs from the role of the Mauri Ora framework which monitors the actual physical, environmental, social and cultural outcomes for Te Awarua-o-Porirua and its catchment. The monitoring information gathered from the Mauri Ora framework (and other sources) will be fed back and considered by the partner organisations and will shape the future programme commitments.

[INSERT PROCESS DIAGRAM SHOWING HOW THE ACCORD AND SUPPORTING DOCUMENTS RELATE TO EACH OTHER]

The vision and purpose of The Accord are as follows:

Vision

The health and mauri of Te Awarua o Porirua is restored, its waters are healthy and sustainable, for future generations and for those who live, work, play or connect with the harbour

Purpose

In order to achieve the vision and objectives, The Accord will:

- 1 establish an agreed approach between the partner organisations to improve the health of Porirua Harbour;*
- 2 agree consistent, harmonised and collaborative actions which improve, restore and positively impact the harbour; and*
- 3 establish, implement and monitor well-resourced, accountable work programmes that deliver the improvements that will restore harbour health.*

2. Structure and approach

The PMF establishes a structured approach for measuring the commitments of the partner organisations required to achieve the vision and objectives of The Accord in the following way:

- The PMF is based primarily on the 2024 – 34 Long Term Plans (LTPs) of the partner organisations, as these set the strategic priorities, programme commitments and budgets for both the capital investment and operational activities required to achieve the objectives of The Accord;
- It is focussed on the first three years of the LTP period (2024 – 27);
- The PMF measures programme commitments by monitoring progress towards implementing programmes, projects, regulatory and non-regulatory methods, and by measuring annual capital and operating expenditure against budgets;

- Each of the partner organisations has a separate numbered table in the PMF, and a summary table is proposed once the PMF is established that will aggregate and summarise overall progress towards meeting commitments by the partner organisations; and
- Progress towards implementing and/or meeting the programme commitments will be measured based on a five-point scale, with commentary provided as appropriate. The five-point scale is as follows:

	commitments fully met/project implemented as planned
	commitments largely met/projects largely implemented as planned
	commitments partially met/slight delay in project being implemented
	commitments partially met/moderate delay in project being implemented
	commitments not met/significant delay in project being implemented

3. Assumptions

Key assumptions of the PMF include:

- Strategic priorities, programmes, projects and budgets are based on the consultation versions of the PCC, WCC and GWRC LTPs as released in April. Once these are confirmed in June by the relevant partner organisations the PMF will be updated to reflect finalised LTPs;
- The representatives of the individual partner organisations on the Project Team are responsible for confirming the accuracy of the strategic priorities, programmes, projects and budgets of their organisations where they differ from published LTP and Annual Plan information, along with confirming the suitability of the performance indicators;
- The monitoring and update of the PMF is proposed to be at quarterly intervals for some measures, however monitoring and reporting associated with Council annual reporting and annual plan processes will provide the most comprehensive monitoring information;
- No new monitoring measures or data sources are proposed to be established. All performance indicators are based on existing monitoring measures and data sources currently managed or utilised by the partner organisations; and
- Performance indicators for the PMF have been selected based on meeting SMART criteria (as relevant) i.e. specific, measurable, achievable, relevant and time bound.

Te Whakaritenga Porirua Harbour Accord

Programme Monitoring Framework - April 2024

1. Harbour Accord partner organisation: Porirua City Council									
Relevant LTP outcomes and priorities	Programmes and projects				LTP investment 2024 - 27				
	Performance indicators	Summary of progress		Commentary	Operational expenditure (total)	Status	Capital expenditure (total)	Status	Commentary
		Initiative	Status						
<p>Community Outcomes We have a healthy harbour and catchment - a thriving natural environment:</p> <ul style="list-style-type: none"> - A place to gather food - A place of recreation and enjoyment - Diversity of organisms - A taonga <p>Strategic priorities In the short-term Council will focus on [four] things of key importance:</p> <ul style="list-style-type: none"> - Commit to the health of Te Awarua-o-Porirua Harbour and its catchment through investment, advocacy and regulation - Build towards a low carbon city and proactively address the challenges of climate change <p>Key principle Partnering with Ngati Toa Rangatira in all we do</p>	Wastewater								
	- PCC Annual Plan	Operations	example		24/25 \$32.596m	example	24/25 \$60.504m	example	
	- PCC Annual Report activity class reporting								
	- Wellington Water operations reporting	Network upgrades and renewals	example		25/26 \$36.003m		25/26 \$51.026m		
	- Wellington Water project reporting								
	- Kainga Ora Eastern Porirua project reporting	City Centre wastewater storage tank	example		26/27 \$41.314m		26/27 \$36.821m		
	- Frequency, volume and location of wastewater overflows and leaks (Wellington Water and GWRC reporting)	Know your pipes programme	example						
	- Harbour and catchment monitoring data (various sources)	Bothamley Park wastewater main upgrade	example						
	Stormwater								
	- PCC Annual Plan	Operations			24/25 \$6.412m		24/25 \$3.855m		
	- PCC Annual Report activity class reporting								
	- Wellington Water operations reporting	Network upgrades and renewals			25/26 \$7.040m		25/26 \$36.003m		
	- Wellington Water project reporting								
	- Harbour and catchment monitoring data (various sources)	TBA			26/27 \$7.446m		26/27 \$41.314m		
	Te Awarua O Porirua Harbour & Catchments								
	- PCC Annual Plan	Streamside planting programme			24/25 \$2.700m		N/A		
	- PCC Annual Report activity class reporting								
	- Number of native plantings per year (project reporting)	TBA			25/26 \$2.785m		N/A		
	- Total area of plantings (project reporting)	TBA			26/27 \$2.877m		N/A		
	Statutory and regulatory methods								
- All new development hydraulically neutral (DP and CME monitoring)	District Plan			N/A		N/A			
- Resource and building consents issued for developments incorporating water sensitive design measures (DP and CME reporting)	Resource consents and building assurance			N/A		N/A			
- water sensitive design incorporated into land development and infrastructure projects (District Plan monitoring and CME reporting)	Environmental monitoring and compliance			N/A		N/A			
	By-laws								

1. Harbour Accord partner organisation: Porirua City Council									
Relevant LTP outcomes and priorities	Programmes and projects				LTP investment 2024 - 27				
	Performance indicators	Summary of progress		Commentary	Operational expenditure (total)	Status	Capital expenditure (total)	Status	Commentary
		Initiative	Status						
<ul style="list-style-type: none"> - Identification and protection of Significant Natural Areas (SNAs) - Trade-waste and stormwater bylaw monitoring (CME reporting) 	Non-regulatory methods								
	- Planting and restoration work completed	Harbour and catchment related projects			N/A		N/A		
		Other Council plans and strategies			N/A		N/A		
		Community led projects			N/A		N/A		

DRAFT

2. Harbour Accord partner organisation: Wellington City Council

Relevant LTP outcomes and priorities	Programmes and Projects				LTP investment 2024 – 27*				
	Performance Indicators	Summary of progress		Commentary	Operational Expenditure (total)	Status	Capital Expenditure (total)	Status	Commentary
		Initiative	Status						
<p>Community Outcome Environmental wellbeing</p> <ul style="list-style-type: none"> - A city restoring and protecting nature <p>Focus priority</p> <ul style="list-style-type: none"> - Fix our water infrastructure and improve the health of waterways <p>Community Outcome Urban Form</p> <ul style="list-style-type: none"> - A liveable and accessible, compact city <p>Focus priority</p> <ul style="list-style-type: none"> - Collaborate with our communities to mitigate and adapt to climate change 	Wastewater								
	- PCC Annual Plan	Operations	example		24/25 \$99.724m	example	24/25 \$52.879	example	
	- PCC Annual Report activity class reporting								
	- Wellington Water operations reporting	Network upgrades and renewals	example		25/26 \$103.833m		25/26 \$41.387		
	- Wellington Water project reporting								
	- Frequency, volume and location of wastewater overflows and leaks (Wellington Water and GWRC reporting)	TBA			26/27 \$118.678m		26/27 \$37.256		
	- Harbour and catchment monitoring data (various sources)	TBA							
		TBA							
		TBA							
	Stormwater								
	- WCC Annual Plan	Operations			24/25 \$45.929		24/25 \$3.721m		
	- WCC Annual Report activity class reporting								
	- Wellington Water operations reporting	Network upgrades and renewals			25/26 \$46.912		25/26 \$3.789		
	- Wellington Water project reporting								
	- Harbour and catchment monitoring data (various sources)	TBA			26/27 \$46.907		26/27 \$13.323		
Statutory and regulatory methods									
- All new development hydraulically neutral (DP and CME monitoring)	District Plan			N/A		N/A			
- Resource and building consents issued for developments incorporating water sensitive design measures (DP and CME reporting)	Resource consents and building assurance			N/A		N/A			
- water sensitive design incorporated into land development and infrastructure projects (District Plan monitoring and CME reporting)	Environmental monitoring and compliance			N/A		N/A			
- Identification and protection of Significant Natural Areas (SNAs)	By-laws								
- Trade-waste and stormwater bylaw monitoring (CME reporting)									
Non-regulatory methods									
- Planting and restoration work completed	Harbour and catchment related projects			N/A		N/A			
	Other Council plans and strategies			N/A		N/A			

*Not specific to the Porirua catchment - further refinement of opex and capex figures required

3. Harbour Accord partner organisation: Greater Wellington Regional Council									
Relevant LTP outcomes and priorities	Programmes and Projects				LTP investment 2024 – 27*				
	Performance Indicators	Summary of progress		Commentary	Operational Expenditure (total)	Status	Capital Expenditure (total)	Status	Commentary
		Initiative	Status						
Focus areas	Restoring biodiversity								
Environment Holistic approaches to deliver improved outcomes for te taiao Climate Change Leading action for climate resilience and emissions reduction Partnerships Active mana whenua partnerships and participation for improved outcomes for Māori	- GWRC Annual Plan - GWRC Annual Report - Percentage of the catchment protected through SNAs Reserves, Forest Parks, QEII covenants and other legal protections (PCC, WCC and GWRC spatial and planning data) - Percentage of forest cover in the catchment (PCC, WCC and GWRC spatial data) - total plantings per year, total area replanted, percentage exotic vs native replanting (PCC, WCC and GWRC and reporting)	Recloaking Papatuanuku			24/25 \$2.900m		24/25 N/A		
		Replanting 700 ha of previously grazed land at Belmont Regional Park with native vegetation.							
		TBA			25/26 \$2.900m		N/A		
		TBA			26/27 \$2.900m		N/A		
		TBA							
		TBA							
	Catchment approach								
	- GWRC Annual Plan - GWRC Annual Report - State of the environment monitoring data	TBA			TBA		N/A		
		TBA			TBA		N/A		
		TBA			TBA		N/A		
	Statutory and regulatory methods								
	- GWRC Annual Plan - GWRC Annual Report - Establishment and implementation of Porirua Catchment contaminant limits - State of the environment monitoring data	RPS Change 1			TBA		N/A		
NRP Change 1				TBA		N/A			
Whaitua Implementation Programme				TBA		N/A			
NRP implementation				TBA		N/A			
Non-regulatory methods									
- Planting and restoration work completed	Work with partners to protect areas with high biodiversity values			TBA		N/A			
	Other Council plans and strategies			TBA		N/A			

4. Harbour Accord partner organisation: Wellington Water									
Relevant LTP outcomes and priorities	Programmes and Projects				LTP investment 2024 – 27*				
	Performance Indicators	Summary of progress		Commentary	Operational Expenditure (total)	Status	Capital Expenditure (total)	Status	Commentary
		Initiative	Status						
Refer partner organisations strategic priorities	Wastewater								
	- Refer PCC and WCC wastewater programme indicators - Compliance with network discharge consents, NPS-FM and NRP permitted activity standards (WWL and GWRC monitoring data)	Wastewater treatment and discharge consents			TBA		N/A		
		Network overflow consents			TBA		N/A		
		TBA			TBA		N/A		
		TBA							
	TBA								
	Stormwater								
	- Compliance with network discharge consents, NPS-FM and NRP permitted activity standards (WWL and GWRC monitoring data) - Progress on implementing catchment wide stormwater management strategies and action plans (Wellington Water Stage 2 global stormwater consent)	Stage 2 Global Stormwater Consent			TBA		N/A		
		implementation of stormwater management strategies and action plans			TBA		N/A		
		TBA			TBA		N/A		
Statutory and regulatory methods									
- Review and update of Regional Standards for Water Services (RSWS)	RSWS								

5. Harbour Accord partner organisation: Ngāti Toa Rangitira									
Relevant outcomes and priorities	Programmes and Projects				Investment 2024 – 27*				
	Performance Indicators	Summary of progress		Commentary	Operational Expenditure (total)	Status	Capital Expenditure (total)	Status	Commentary
		Initiative	Status						
<p>Te Ao Tūroa</p> <p>Nurturing a resilient environment to sustain future generations through:</p> <ul style="list-style-type: none"> - Reclaimed mātauranga relevant to our natural resources - Empowered leaders and co-managers of our natural environment - Our commitment to environmental sustainability - Our ability to adapt to the impacts of climate change 	Kaitiakitanga monitoring framework & cultural monitoring framework								
	- Kaitiaki monitoring indicators TBA	Ngāti Toa continue to take steps toward the restoration of Te Awarua o Porirua with a seasonal monitoring programme of the harbour and associated tributary streams in association with ESR.							
	- Attaining a state of mauri of these areas as we work to restore the harbour to full health where we can swim and harvest kai once again.								
	Kaitiakitanga-ā-Awa								
	Kaitiakitanga-ā-Awa monitoring indicators TBA	Two Kaimanaaki Awa Te Raukura and Tuteremoana wwork to assess and remediate in-stream structures that are a barrier to fish passage. Collectively with Greater Wellington the team have remediated over 130 structures increasing the health of awa throughout the rohe.							
	Kaitiakitanga-ā-Ngāhere								
	Kaitiakitanga-ā-Ngāhere monitoring indicators TBA	Native planting programme in partnership over 7,000 plants as we look to restore indigenous flora and fauna throughout the rohe and restore the mauri of our awa. We've also set up a 379 hectare possum, rat and stoat control networks with automated traps protecting Ngāti Toa owned whenua for generations to come. Community days: We've lead and attended six community days for harbour clean up and planting days on various tūtohu whenua throughout the rohe							
	Poutiaki Plan								
		TBA							
	Regulatory processes and methods								
	Environmental Planning activities								
	Assessing and advising on resource consents								
	Cultural impact assessments								

CITY TO SEA BRIDGE AND CAPITAL E

Kōrero taunaki | Summary of considerations

Purpose

1. This paper seeks the Committee's agreement to proceed with demolition of the City to Sea Bridge and the Capital E building, following the community consultation which has now concluded.

Strategic alignment

2. The most relevant community outcomes, strategic approaches, and priorities for this paper include cultural wellbeing, social wellbeing, urban form and environmental wellbeing, the full set of strategic approaches, and the city revitalisation priority.

Relevant previous decisions

3. Previous decisions relevant to this paper include:
 - In October 2021, the Strategy and Policy Committee adopted the Te Ngākau Civic Precinct Framework on the basis that Council is committed to Te Ngākau Civic Square being the musical, creative and democratic heart of Wellington.
 - In October 2023, the Council agreed to increase funding to enable the completion of the Town Hall and to progress with a tender process for the redevelopment of the CAB and MOB sites in line with the Framework and, amongst other things, deliver the Town Hall's front-of-house facilities.
 - In November 2023, the Environment and Infrastructure Committee agreed to bring forward funding from 2024/25 to 2023/24 to accelerate CAB demolition.
 - In November 2023, the LTP Committee resolved to remove \$230m capex provision for Te Ngākau strengthening projects, including Capital E, City to Sea Bridge and the Te Ngākau basement, from the draft LTP budget, and instead include \$65m to investigate other options, including demolition.
 - In April 2024, Council agreed to partner with Precinct Properties to redevelop the CAB and MOB sites.
 - In June 2024, following LTP consultation, the LTP Committee adopted the LTP budget, which included the \$65m for the Te Ngākau basement, Capital E and the City to Sea Bridge.
 - In September 2024, the Environment and Infrastructure Committee agreed the preferred option for Te Ngākau basement strengthening and plaza reinstatement, noting these would be completed in time for Te Matapihi and City Gallery reopening in early 2026.
 - In October 2024, the Environment and Infrastructure Committee agreed to initiate community consultation on the Te Ngākau development master plan and the options to remediate the City to Sea Bridge.

Significance

4. The decision is **rated high significance** in accordance with schedule 1 of the Council’s Significance and Engagement Policy. The proposal meets the following criteria – Importance to Wellington City and Community Interest.

Financial considerations

Nil Budgetary provision in Annual Plan / Long-term Plan Unbudgeted \$X

Risk

Low Medium High Extreme

Authors	Katherine Meerman, Chief Advisor Farzad Zamani, Manager Urban Regeneration & Design Iestyn Burke, Manager, Property & Capital Projects
Authoriser	James Roberts, Chief Operating Officer

Taunakitanga | Officers' Recommendations

Officers recommend that the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information
2. Note that the Council has now completed consultation with the community on:
 - a. Te Ngākau Development Plan and scenarios to guide the future development of the precinct; and
 - b. Options for the City to Sea Bridge and Capital E sites
3. Note that feedback on the Development Plan will be used as part of advice to the Council when relevant decisions are taken on future projects; there are no immediate decisions required or implications from the consultation feedback
4. Note that officers will bring the Development Plan back to the Council for finalisation next year, with the Council's decision on the City to Sea Bridge and Capital E incorporated
5. Note officers have considered the following options for the City to Sea Bridge/Capital E:
 - a. Option 1 (short-term preferred): demolish the City to Sea Bridge/Capital E and replace with an at-grade crossing;
 - b. Option 2 (long-term preferred): demolish the City to Sea Bridge/Capital E and replace with an at-grade crossing and a new bridge;
 - c. Option 3 (not preferred): Full strengthening of the City to Sea Bridge/demolish Capital E, replace with abutment;
 - d. Option 3a (not preferred): minimum strengthening of the City to Sea Bridge/Capital E/seawall;
 - e. Option 3b (not preferred): demolish Capital E, replace with abutment/do nothing on the City to Sea Bridge and seawall
 - f. Option 4 (not preferred): Do nothing.
6. Note that community feedback on the City to Sea Bridge was split as follows:
 - a. 57.5% of submitters supported the demolition of the bridge/Capital E and the replacement with either an at-grade crossing (23%) or a replacement bridge (34%)
 - b. 39% submitters did not support either option
7. Agree to:
 - a. Proceed with Option 1, with design of the crossing informed by the Te Ngākau Development Plan; and
 - b. Explore funding Option 2 – a replacement bridge – through the 2027-37 LTP subject to financial feasibility
8. Note that the Town Hall loading dock strengthening forms part of the project and, to ensure work is completed in time for Town Hall completion, demolition work would begin in January 2025, with the project completed by end of 2026.

Whakarāpopoto | Executive Summary

5. The Council has a vision to revitalise Te Ngākau and restore it as the heart of the city, and has a major programme of work underway to deliver on this vision. This work includes:
 - Strengthening and redevelopment of Te Matapihi, Town Hall and City Gallery to provide modern community, and cultural facilities, and performance venues;
 - Demolition and redevelopment of CAB and MOB to provide front-of-house facilities for the Town Hall, and 24/7 precinct reactivation;
 - Basement strengthening works to support the operation of Te Matapihi, Town Hall and the new CAB/MOB building, to be completed within 18 months, in time for Te Matapihi and the City Gallery to reopen; and
 - Development of a precinct development plan to integrate existing projects and develop a blue-print and options for the remainder of the precinct to be considered and rolled out over the coming years.
6. Like the rest of the city, Te Ngākau has been significantly impacted by the Kaikoura quake, and the changes to building and regulatory requirements, and lessons learned as a result of that event. CAB was irreparably damaged in the Kaikoura quake (following closure of the Town Hall following the Seddon quake), and Te Matapihi was closed in 2019 due to earthquake risk. With the resulting changes in regulatory standards since then, Capital E, MOB and the MFC are considered earthquake prone.
7. Given the resulting scale of the work required in the square, officers have undertaken Detailed Seismic Assessments (DSAs), engineering and ground assessments, life safety analysis, and other assessments, as needed, to provide the Council with a robust view of the risks in the precinct and the work required to address those risks and deliver on the Council's vision. This analysis, as well as insights from projects as they progress, has informed officers' advice to the Council on the precinct's buildings, including the advice on Capital E and the City to Sea Bridge in this paper.
8. Major components of the work in the precinct will be completed within two years – Te Matapihi and the City Gallery will reopen in March 2026 and the Town Hall is on track to be completed later in 2026. Basement strengthening work and plaza redevelopment will be completed in time for Te Matapihi and City Gallery reopening. CAB has already been demolished and MOB demolition will be complete by October 2025.
9. With decisions taken on the City to Sea Bridge and Capital E taken, and the work completed, the Council will have completed a major phase of the programme – and the revitalisation of Te Ngākau and its restoration as the heart of the city will be substantially advanced.
10. Between 21 October and 13 November, the Council undertook community consultation on the draft Development Plan as well as on specific options for the City to Sea Bridge and Capital E sites. Feedback on the preferred option for the bridge showed more than half of submitters supported demolition and replacement with either a new bridge or an at-grade crossing. More than one-third did not support either option.
11. Officers have considered several options for the City to Sea Bridge/Capital E structure and recommend that the Council demolish the structure and replace it with an at-grade

crossing, which is designed in line with the principles and values of the Te Ngākau Development Plan. In the longer-term, officers recommend that the Council also replaces the bridge with a new bridge to provide better pedestrian accessibility between the square and the waterfront. The \$36m cost of demolition and new at-grade crossing can be funded within existing LTP funding allocations; the estimated \$13m additional funding for a new bridge would need to be provided for in a future LTP.

12. Subject to the Committee's agreement to the recommendations in this paper, officers would begin demolition work in January 2025 to ensure the work was complete by late 2026. The particular driver for this timing is to ensure that the element of the project that strengthens the Town Hall loading dock is completed in time to fit in with the completion of the wider Town Hall project in late 2026. This element of the project is required to meet the Town Hall's building consent and fire egress requirements.

Takenga mai | Background

Te Ngākau Civic Precinct Framework

13. The Te Ngākau Civic Precinct Framework was adopted by the Council in October 2021 and is now being used to guide all work in the precinct. The Te Ngākau Civic Precinct Framework was developed to provide a strategic, integrated guide for the future development of the precinct.
14. Through the preparation of the Framework, the following issues were identified by stakeholders:
 - Closure of buildings has meant a loss of people, activity and vibrancy from the precinct;
 - Te Ngākau does not reflect Wellington's unique culture and identity, specifically, it does not reflect mana whenua and te ao Māori;
 - The precinct is not equipped to deal with future resilience challenges such as climate change or a major earthquake; and
 - The precinct is not integrated with the central city and the waterfront and provide clear and safe access between these important spaces.
15. The Te Ngākau vision is that Te Ngākau is the beating heart of the capital city; a thriving neighbourhood where creativity, culture, democracy, discovery and arts experiences collide on the edge of Te Whānganui-a-Tara. The vision is supported by the following objectives which need to guide the precinct's development and programme decisions:
 - A place that is resilient, sustainable and enduring;
 - Integrated with the city and waterfront;
 - Safe and easy access and integrated with wider transport network;
 - Respects and incorporates experiences of architecture, design and heritage balanced with its enduring functional role in the city;
 - Vibrant, welcoming and supports a range of uses alongside its core civic role;
 - Expresses our culture and embeds mana whenua values into design; and
 - Safe, inclusive, comfortable and green.

Current work underway in Te Ngākau

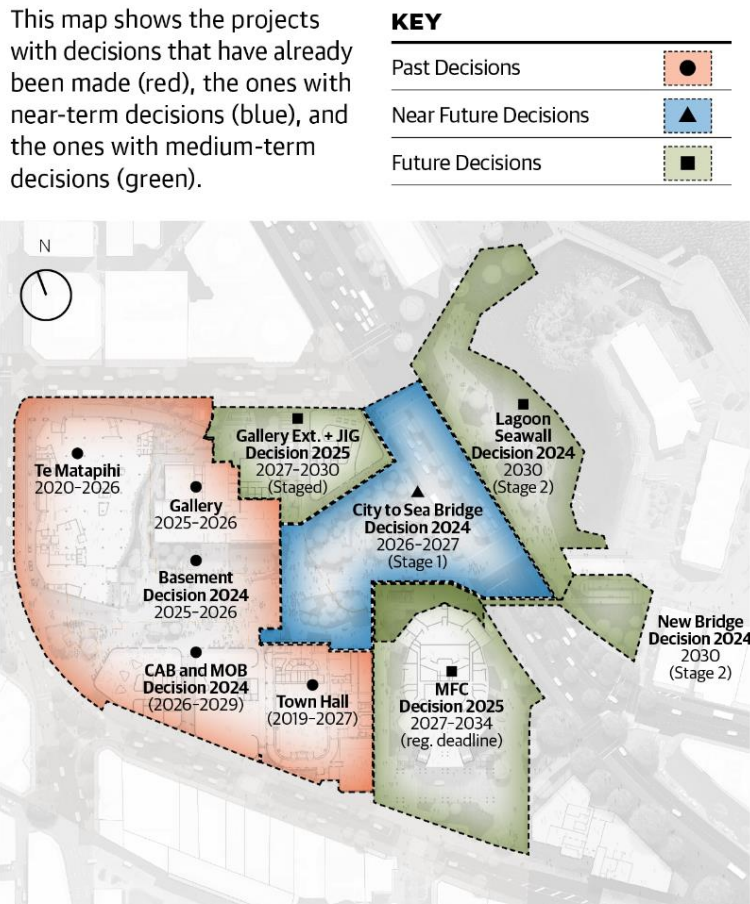
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16. Te Ngākau has been significantly impacted by the Kaikoura quake, and the changes to building and regulatory requirements, and lessons learned as a result of that event. CAB was irreparably damaged in the Kaikoura quake (following closure of the Town Hall following the Seddon quake), and Te Matapihi was closed in 2019 due to earthquake risk. With the resulting changes in regulatory standards since then, Capital E, MOB and the MFC are considered earthquake prone.
17. Given the resulting scale of the work required in the square, officers have undertaken DSAs, engineering and ground assessments, life safety analysis, and other assessments, as needed, to provide the Council with a robust view of the risks in the precinct and the work required in order to address those risks and deliver on the Council's vision. This analysis, as well as insights from projects as they progress, has informed officers' advice to the Council on the precinct's buildings, including the advice on Capital E and the City to Sea Bridge in this paper.
18. The Council has a major programme of work underway to deliver on the Te Ngākau vision, which includes:
- Strengthening and redevelopment of Te Matapihi and the Town Hall to provide modern library, community, and cultural facilities, and venues to enable the operation of the national music centre;
 - Demolition and redevelopment of CAB and MOB, in partnership with Precinct Properties, to provide front-of-house facilities for the Town Hall, 24/7 precinct reactivation, and integration of the square with surrounding streets; and
 - Basement strengthening works to support the operation of Te Matapihi, Town Hall and the new CAB/MOB building, to be completed within 18 months, in time for Te Matapihi and the City Gallery to reopen
 - Development of a precinct development plan to integrate existing projects and develop a blue-print and options for the remainder of the precinct to be considered and rolled out over the coming years.
19. Major components of the precinct will be completed within two years – Te Matapihi and the City Gallery will reopen in March 2026 and the Town Hall is on track to be completed shortly after that. Basement strengthening work and plaza redevelopment will be completed in time for Te Matapihi and City Gallery reopening. CAB has already been demolished and MOB demolition will be complete by mid-2025. With decisions on the City to Sea Bridge and Capital E, the Council will have made all necessary decisions to complete this major phase of the programme.

Te Ngākau Development Plan

20. The draft Te Ngākau Development Plan was developed to provide scenarios and options to bring the Framework to life and to inform Council planning and decision making about the buildings and spaces in the precinct where work is yet to get underway. It builds on decisions the Council has already taken and work already underway on the Town Hall, Te Matapihi Central Library, CAB and MOB (the western side of the precinct, shown red in Figure 1).
21. The scenarios presented in the draft Plan include maximising green space, maximising creative and cultural spaces, generating commercial outcomes, activation of the precinct, resilience, and climate adaptation.

22. Giving effect to the scenarios, the draft Plan considers possible options for each remaining site in the square (e.g., Michael Fowler Centre, Jack Ilott Green, City Gallery). The Plan does not make recommendations on specific options for each site – detailed options analysis and cost estimates would be undertaken in the future if, or when, the Council came to make a decision on the sites.

Figure 1: Te Ngākau Civic Precinct decision map



Development Plan and City to Sea Bridge consultation

23. Between 21 October and 13 November, the Council undertook community consultation on the draft Development Plan as well as on specific options for the City to Sea Bridge and Capital E sites (blue and green areas of Figure 1). The purpose of the consultation was to:

- Enable the community to provide feedback on the future vision for the precinct and their preferences for the scenarios presented; and
- Seek community views on specific options for the City to Sea Bridge and Capital E as both sites have earthquake and safety risks which need to be addressed as the Council’s next priority. The options provided for feedback were demolition of both structures with either a replacement bridge or an at-grade pedestrian crossing. The consultation material also included information about strengthening the City to Sea Bridge and why it was not considered a reasonably practicable option.

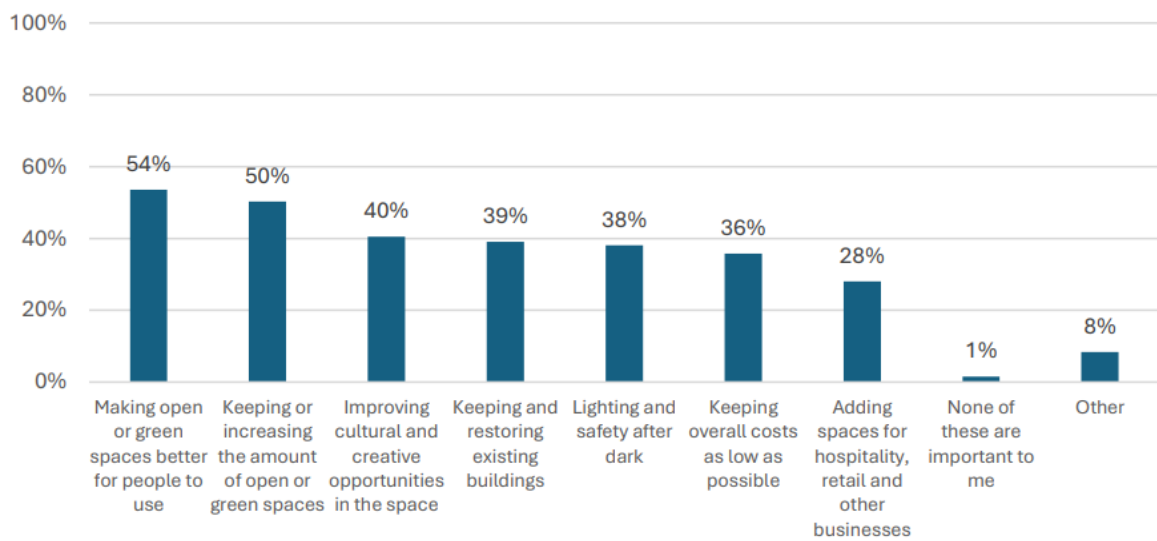
-
24. The consultation programme included a wide range of forums and ways to provide feedback, including:
- Kōrero Mai | Let's Talk, the Council's online engagement platform – this hosted the consultation document, submission form and supplementary information and documents about Te Ngākau and the consultation;
 - Print copies of the consultation document and submission forms available at all our libraries and other key Council-owned spaces;
 - Drop-in events around the city;
 - A public event which was recorded and shared publicly via Council-owned channels;
 - Presentations to key stakeholder groups including Te Ngākau businesses and residents, Independent Urban Design Panel, Wellington Waterfront TAG, Civic Trust, Infrastructure New Zealand, developers, Urban Development Institution of New Zealand, and New Zealand Institute of Architects;
 - Youth engagement activities via a Victoria University and WCC advisory groups; and
 - Mana whenua engagement.

Kōrerorero | Discussion

Consulation feedback

25. Consultation on the Development Plan and City to Sea Bridge attracted strong public interest and participation. In total we had:
- 1,406 total submissions
 - 1,301 completed surveys
 - 105 document or email submissions
 - Of the total submitters, 100 speakers submitters attended oral hearings representing 76 individuals and 24 organisations.
26. A summary of feedback received is attached as Appendix 1 and the full set of submissions (Appendix 2) has been provided separately to this paper.
27. Submitters on the Development Plan were asked to identify which factors were most important to them in considering the scenarios presented – responses were reasonably spread across all priorities:
- approximately one half of all submitters identified creating or increasing the amount of green space available as important to them; and
 - more than one-third identified cultural and creative spaces, lighting and safety, restoring existing buildings, and keeping costs low.
28. The feedback on the Development Plan will be used as part of advice to the Council when relevant decisions are taken on future projects. There are no immediate decisions required or implications from the consultation feedback.

Figure 2: Te Ngākau Development Plan priorities



29. A total of 1,273 submitters answered the questions on the City to Sea Bridge. In total, 57.5% of submitters supported the demolition of the bridge/Capital E and its replacement with either an at-grade crossing (23%) or a new bridge (34%). More than one-third of submitters did not support either option (refer Figure 3).
30. When asked what factors are important to consider in designing a new bridge, submitters identified ease of use, resilience, and lighting and safety as the three most important considerations, with approximately half of submitters identifying each of those issues. Other factors are included in Figure 4.
31. When those who identified 'other' bridge considerations (refer Figure 4) were asked to discuss or provide further feedback, most of those respondents (79 respondents) expressed overall opposition to the proposed demolition of the bridge, noting their view that demolition was unnecessary or suggesting the bridge should be strengthened. Some supported demolition, but did not support a replacement.
32. Where respondents were asked to provide any additional feedback or comments, many respondents reiterated or explained their preferred scenario for the bridge. The most common feedback was that neither option was suitable and the existing bridge should be retained. Other comments discussed the engagement process or design suggestions for either the new bridge or the crossing.

Figure 3: Preferred City to Sea Bridge scenario

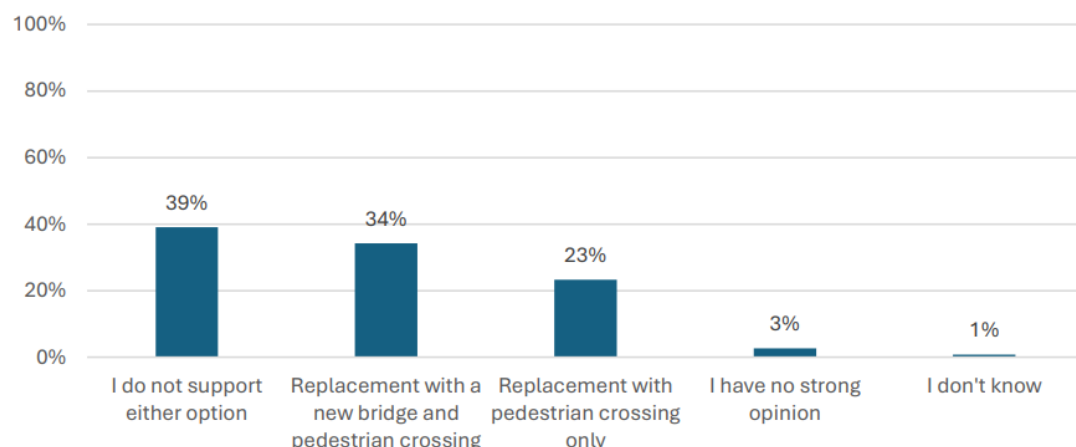
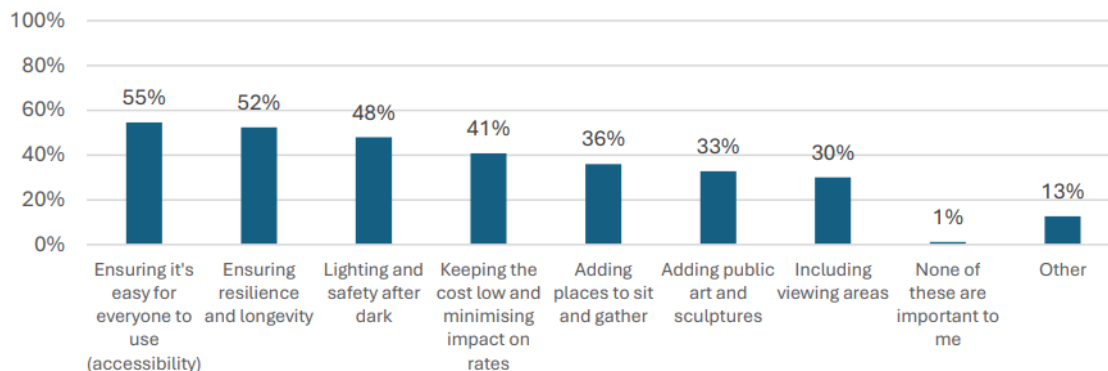


Figure 4: Important bridge considerations



33. Oral submissions were heard during the Kōrau Tūāpapa | Environment and Infrastructure Committee meeting held on 22 and 25 November. Many oral submissions were made by those who supported retaining the City to Sea Bridge. There were also several submissions in support of the demolition of the City to Sea Bridge. Other areas of discussion included the proposals for Jack Ilott Green and the future of the City Gallery and Michael Fowler Centre. The majority of submitters were in support of the objective to revitalise Te Ngākau Civic Precinct.

Kōwhiringa | Options

Condition of City to Sea Bridge and Capital E

34. The City to Sea Bridge and Capital E, and the lagoon seawall, are functionally integrated structures, with the roof of Capital E supporting the city side of the bridge and the lagoon seawall supporting the harbour side; on this basis it is important to consider solutions that address the set of structures together or provide an integrated solution across the structures.
35. Capital E has been declared earthquake prone, at 15% NBS, with a current regulatory deadline under the earthquake-prone notice of June 2027 for its removal or remediation. This deadline will be extended to June 2031 once the Building (Earthquake-prone Building Deadlines and Other Matters) Amendment Bill receives Royal assent.
36. The bridge has also been assessed as at risk in an earthquake, with particular implications for traffic safety and emergency access along Jervois Quay if the bridge was compromised in a major earthquake. This assessment has been undertaken using the earthquake geotechnical engineering practice guidelines developed by MBIE, the New Zealand Geotechnical Society and Engineering New Zealand; these guidelines are considered best practice in earthquake geotechnical engineering with a focus on New Zealand conditions, regulatory frameworks and practice.
37. While the bridge is not subject to earthquake-prone building requirements of the Building Act 2004 (meaning it does not have regulatory requirements and deadlines for

remediation), the Council has other legal duties that should be considered when making a decision including:

- Council is required to take all sufficient precautions for the general safety of the public, traffic and workers employed on or near any road under section 353 of the Local Government Act 1974; and
 - Council has a duty under the Civil Defence Emergency Act 2002 as a lifeline utility (in its role as road controlling authority) to focus on readiness and reduction of risk to ensure that it can undertake its roading functions to the fullest extent possible during and after an emergency. Jervois Quay is identified as a Priority 1 Emergency Transport Route in the Wellington Region Earthquake Plan providing a spine of access through the city and to the hospital. Damage to the City to Sea Bridge in a major earthquake could prevent the use of this route.
 - Council may also have a common law duty of care (negligence) as the bridge owner, in relation to health and safety of people and property in the vicinity of the bridge.
38. The following assessments on the condition of the City to Sea Bridge and Capital E are attached to this report:
- Appendix 3: Geotechnical assessment on bridge and seawall (Tonkin and Taylor)
 - Appendix 4: DSA bridge (Hoffcon)
 - Appendix 5: DSA Capital E (Aurecon)
 - Appendix 6: Peer review of Geotech and bridge DSA (Beca)
 - Appendix 7: Life Safety Assessment (Kestrel).

Consultation options

39. The Council consulted on two options for the City to Sea Bridge/Capital E structures:
- Option 1 (short-term preferred): Demolition of the bridge/Capital E to be replaced with an at-grade pedestrian crossing; or
 - Option 2 (long-term preferred): Demolition of the bridge/Capital E to be replaced with an at-grade pedestrian crossing and a new bridge, to be reorientated towards the Wharewaka/St Johns area rather than the seawall/lagoon.
40. Under Option 1, the bridge, Capital E and the walkways up to the bridge (from Harris Street and the Michael Fowler Centre) would be demolished and remediation work undertaken on the lagoon seawall. The Council would replace the bridge with an at-grade pedestrian crossing, which could be temporary (until another bridge was built) or permanent. The cost of this option is estimated at \$36m which can be funded from the existing \$65m allocation in the 2024-34 LTP, with no additional funding needed through the current LTP amendment (refer Appendix 8).
41. The pedestrian crossing would be wide (similar to that at Queen's wharf) spanning the eastern entrance to Te Ngākau, opening up Te Ngākau from city/western side to the sea, and enable pedestrians' direct access across to the lagoon and down towards the Wharewaka and Te Papa. Traffic signals would prioritise foot traffic and would be integrated with the surrounding traffic signals to minimise impact to vehicle traffic. The surrounding area would be enhanced with planting, pavement design and distinct road

surfacing to indicate an entrance to Te Ngākau. Figure 5 provides an illustration from the Te Ngākau Development Plan.

Figure 5: Demolition and pedestrian crossing



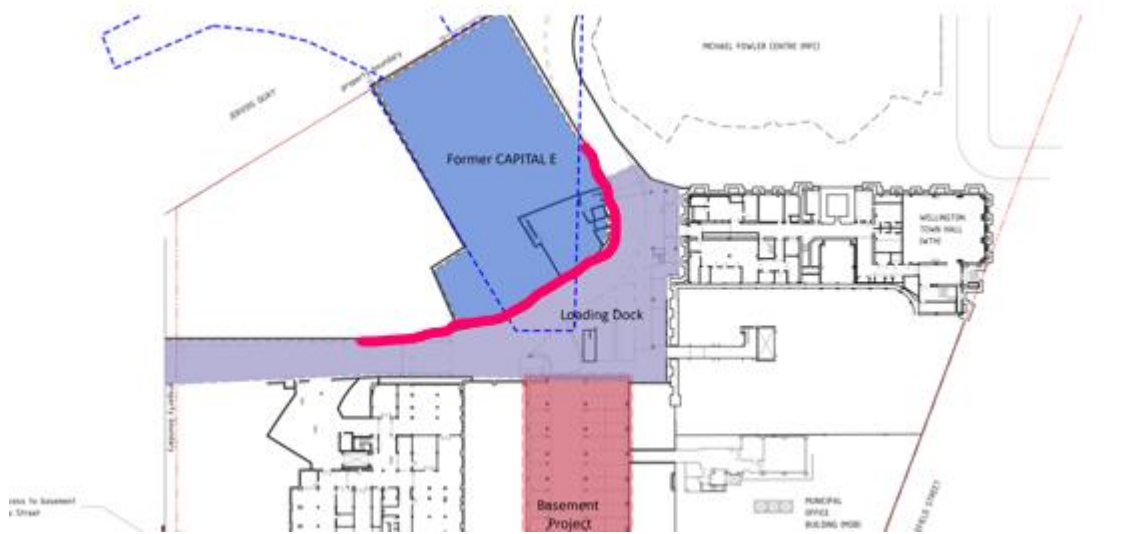
42. Like Option 1, under Option 2, the bridge, Capital E and the walkways up to the bridge (from Harris Street and the Michael Fowler Centre) would be demolished and reinstatement work undertaken on the lagoon seawall. The same at-grade pedestrian crossing would also be installed, and, in addition, a new elevated pedestrian bridge would be built over Jervois Quay.
43. The new bridge would be orientated towards the Wharewaka/St Johns so that it was not reliant on the lagoon sea wall for support as it is now. The bridge would be designed to create pedestrian pathways between Te Ngākau and Te Papa and avoid creating obstructed views at the street level between Te Ngākau, the lagoon and waterfront. Depending on the Council's future decision on the Michael Fowler Centre, the bridge could be designed to wrap around a remediated MFC or a new development. Figure 6 provides an illustration from the Te Ngākau Development Plan.

Figure 6: Demolition, pedestrian crossing, and new bridge



44. The cost of this option is estimated at \$49m (refer Appendix 8) - \$36m for the work on Option 1 plus an additional \$13m for a new bridge. The \$36m can be funded from the existing \$65m allocation in the 2024-34 LTP; the additional funding for the new bridge would need to be considered through the future 2027-37 LTP process.
45. An at-grade crossing can provide a reasonable short/medium term solution; however officers consider that there are significant urban development benefits of a new pedestrian bridge, and recommend this option is investigated further as part of the 2027-37 LTP.
46. Under either Option 1 or 2, the artwork on the bridge would be relocated or decommissioned in line with Wellington City Council's Public Art policy, including discussion with whānau and representatives of the artists.
47. Officers have considered the implications of the extension to the earthquake-prone notice deadline for Capital E and whether it would allow demolition or remediation to be delayed. Part of the project involves strengthening the loading dock for the Town Hall, which cannot be delayed as it is required for the Town Hall's fire egress and building consent requirements (refer red line on Figure 7, which is the wall of the Capital E building and loading dock). Additionally, delaying the work would result in escalating cost (at approximately 5% per year, for each year of deferral) and the safety risks identified would remain unaddressed until work was undertaken.

Figure 7: Loading dock



48. Further options were considered prior to consultation, or through the consultation period, but officers do not consider them to be reasonably practicable options:
- Option 3 (not preferred): Full strengthening of the City to Sea Bridge/demolish Capital E, replace with new abutment;
 - Option 3a (not preferred): minimum strengthening of the City to Sea Bridge/Capital E/seawall
 - Option 3b (not preferred): demolish Capital E, replace with new abutment/do nothing on the City to Sea Bridge and seawall
 - Option 4 (not preferred): Do nothing.
49. Under Option 3, strengthening the bridge to 100% NBS, demolishing the Capital E building and constructing a new abutment (structure) on the Capital E site would be required. This abutment would either be simplified or reconstructed to a similar scale of the existing building. The cost of this option is \$85.6m (refer Appendix 8).
50. Officers explored strengthening options for the bridge/Capital E with three engineering firms with the cost estimates ranging between \$86-120M (with further invasive ground testing required to refine the cost). The most cost effective option is described as Option 3 at \$85.6m. A key driver of this cost is the significant foundation work that would be needed to deal with liquefaction and associated lateral spread. In light of the Council's experiences, including with the ground conditions, of the adjacent Town Hall, there is risk in pursuing any strengthening option that costs at the outset would underestimate costs to complete the work.
51. Information about Option 3 and why it was not considered a reasonably practicable option was included in the consultation document alongside Options 1 and 2. Submitters were able to, and did, give feedback on this option and this is included in the feedback in Appendices 1 and 2.

52. Further to full strengthening (Option 3), officers have investigated two other strengthening variations (Option 3a and 3b):
- Option 3a is a reduced strengthening scheme to improve the performance of the bridge and Capital E to above 34% NBS (IL3). This scheme includes placing rocks in the Lagoon to mitigate the movement of the sea wall, additional foundation and bridge span ties, and strengthening Capital with roof bracing only. This scheme would improve the performance to above 34% NBS (IL3) and current estimates indicate the works would cost \$53.3m (refer Appendix 8).
 - Option 3b would fully strengthen Capital E (like Option 3) by demolishing the existing structure and replacing it with a large abutment to support the bridge. The existing bridge and sea wall would be left as they are, with no work done, meaning the Council would be retaining the risks associated with the bridge. The option is estimated to cost \$60m (refer Appendix 8).
53. In light of the costs of the strengthening options (3, 3a and 3b) relative to other options, including the risks of cost escalation, and Council's current financial constraints, and months of expected traffic disruption along Jervois Quay while work was undertaken, these are not considered to be reasonable practicable options. In the case of 3b, the risks to the road associated with a vulnerable bridge would also be left unaddressed.
54. Option 4 is not considered a reasonably practicable option in light of the Council's earthquake prone building requirements for Capital E and other regulatory and life and city safety obligations related to the bridge.

Timing and implementation

55. Subject to the Committee's agreement to the recommendations in this paper, officers would seek to begin demolition work in January 2025 to ensure the work was complete, including the crossing and landscaping, by late 2026.
56. Demolition is expected to occur progressively, with the key driver of timing being the need to ensure that the element of the project that strengthens the Town Hall loading dock is completed in time to fit in with the completion of the wider Town Hall project. The Town Hall project is now expected to be completed by late 2026.
57. The feedback from the community received through the consultation process will be considered and incorporated where possible, as part of the development of the more detailed design.

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

58. The recommendations in this paper are consistent with the priorities in the LTP – particularly the community outcomes around cultural wellbeing, social wellbeing, urban form and environmental wellbeing, the full set of strategic approaches, and the city revitalisation priority. The recommendations in the paper are also consistent with the vision and objectives in the Te Ngākau Civic Precinct Framework.

Engagement and Consultation

59. A summary of the consultation undertaken on the Development Plan and the City to Sea Bridge is provided in this paper and attached as Appendix 1 and the full set of submissions received is attached as Appendix 2.

Māori Impact Statement

60. The Te Ngākau Civic Precinct Framework which guides the preparation of the development plan for the precinct was developed in partnership with mana whenua, Councillors, Council staff and advisors, existing users of the precinct and local community. Through the development of the Framework one (of several) issues identified was that Te Ngākau does not reflect Wellington's unique culture and identity, specifically, it does not reflect mana whenua and te ao Māori.
61. One of the key objectives in the Framework therefore is Te Ngākau is a place that welcomes and expresses our diverse culture and integrates Mana Whenua values into design and delivery processes. This will include reconnecting the precinct with Te Whānganui-a-Tara and the foreshore as a matter of importance, ensuring the precinct references the origins of the place for mana whenua, and embedding mana whenua values into its design and delivery.
62. The Te Ngākau Development Plan has been developed in close partnership with mana whenua to ensure it gives effect to the Te Ngākau Framework.

Financial implications

63. The funding for the demolition the bridge and Capital E and replacement crossing is provided for in the current LTP. The cost of any future replacement bridge would need to be funded through a future LTP.

Legal considerations

64. Wellington City is a high seismic hazard area. Capital E has been assessed as earthquake-prone under the Building Act and Council must carry out seismic work (remediation or demolition) in respect of Capital E by June 2031 (subject to the Building (Earthquake-prone Building Deadlines and Other Matters) Amendment Bill receiving Royal Assent. While the City to Sea Bridge is not subject to the same earthquake-prone legislative requirements, there are legal duties that apply as noted above.
65. The legal duties that apply to decisions on the City to Sea Bridge are not directive as to what action needs to be taken, or by when, to address the safety risks associated with the City to Sea Bridge. Whether any of these duties require the Council to take action should be assessed against what a reasonable and prudent local authority would do knowing the safety risks that have been identified.
66. The relevant matters to take into consideration when making a decision in respect of the City to Sea Bridge include:
- Expert advice as to the risks and consequences. Council received a Detailed Seismic Assessment (DSA) from Hoff Consultants in June 2024, which was supported by a geotechnical assessment from Tonkin & Taylor and peer reviewed by Beca. This report concludes the City to Sea Bridge represents a life-safety risk to occupants comparable to 10-25 times that expected for a new

building. The DSA recommends Council take steps to remove or mitigate the risk.

- The bridge crosses Jervois Quay, which is a Priority 1 Emergency Transport Route. Should the bridge fail in a major earthquake, it may inhibit use of that route.
- The identification of other earthquake-prone buildings along Jervois Quay, such as the Wellington Harbour Board building, Capital E and Michael Fowler Centre, as priority buildings under earthquake-prone provisions due to their potential to impede a transport route of strategic importance during an emergency response (Jervois Quay). Priority buildings have a reduced timeframe for seismic work.
- The prioritisation of the City to Sea Bridge across all the Council's assets that require earthquake-strengthening and funding available for remediation.
- The options available to avoid or mitigate the risk and the reasonableness of each option within Council's constrained financial circumstances.

Risks and mitigations

67. Project risk for this and other Te Ngākau projects is regularly monitored by the Te Ngākau Programme Board, which includes commercial, construction and property, creative sector and professional governance expertise.

Disability and accessibility impact

68. Accessibility impact has been considered across the Te Ngākau precinct and will be factored into design and development replacement crossing.

Climate Change impact and considerations

69. Climate change risk and impact has been considered across the Te Ngākau precinct and will be factored into design and development of the replacement crossing.

Communications Plan

70. Following the Committee's decision on this paper, officers will prepare a media release on the outcomes and will include an update on the decision for the next Te Ngākau neighbours' newsletter.

Health and Safety Impact considered

71. Not applicable.

Ngā mahinga e whai ake nei | Next actions

72. Subject to the Committee's agreement to the recommendations in this paper, the next steps are to:
- Procure a contractor to undertake the demolition work;
 - Complete programming of the work to align with adjacent work in the Town Hall, its loading docks, and the Te Ngākau basement;
 - Continue to work with whanau and representatives of the artists to confirm the relocation or decommissioning of the bridge artworks; and
 - Finalise the Te Ngākau Development Plan for Council adoption in 2025.

Attachments

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Attachment 2.	Appendix 3 - geotech assesment - Tonkin and Taylor	Page 155
Attachment 3.	Appendix 4 - DSA bridge - Hoffcon	Page 215
Attachment 4.	Appendix 5 - DSA Capital E - Aurecon	Page 341
Attachment 5.	Appendix 6 - peer review - Beca	Page 490
Attachment 6.	Appendix 7 - lifesafety - Kestrel	Page 498
Attachment 7.	Appendix 8 - options costs	Page 514



Global Research
Turning Information Into Insight

THE FUTURE OF TE NGĀKAU CIVIC PRECINCT

ENGAGEMENT SUMMARY AND ANALYSIS

Public Engagement Report

November 2024

Prepared by Global Research Ltd for:

Absolutely Positively
Wellington City Council

Me Heke Ki Pōneke

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Executive Summary

Introduction

From 21 October to 13 November 2024, Wellington City Council received feedback from the public about the future of Te Ngākau Civic Precinct and the City to Sea Bridge. The engagement proposed potential scenarios and asked respondents to select their top priorities, both for the bridge, and for the Te Ngākau Civic precinct.

Key Findings

Part 1 — City to Sea Bridge

Preferred Scenario

- The most commonly selected option was **I do not support either option** (39%)
- In total, 57.5% of people supported either of the bridge replacement options:
 - **Replacement with a new bridge and pedestrian crossing** was supported by 34%
 - **Replacement with pedestrian crossing only** was supported by 23%.

Priorities to Consider

Respondents could select up to three of their most important bridge considerations, and were asked to explain why they selected each option:

- **Ensuring it's easy for everyone to use (accessibility) – selected by 55%**
Over half of respondents who commented on this topic expressed that accessibility is necessary or a requirement, given that the bridge is a public space, and that all members of the public, including people with disabilities, should therefore be able to access it. The current accessibility of the current bridge was also discussed, although opinion on how accessible it is was mixed. Suggestions for features to be included in a future design were also offered. Other respondents argued that an overbridge is a safer and more effective crossing route and should therefore be made accessible to all users.
- **Ensuring resilience and longevity – selected by 52%**
Respondents in favour of prioritising resilience and longevity shared the view that building to last is an important quality for any new infrastructure. The expectation for a new bridge to outlive the current one by at least a few more decades was a point frequently made, with respondents stating their preference to avoid a repetition of the current situation too soon. Earthquakes, climate change effects, and cost efficiency of long-lasting infrastructure were frequent arguments respondents provided to support building a resilient long-lasting bridge.

- **Lighting and safety after dark – selected by 48%**
 Respondents argued that lighting and safety is important and should be an obvious priority, particularly after dark. They stated that a safe and well-lit area would be more welcoming and thus invite more use, as well as that lighting would deter anti-social behaviour and ensure the safety of more vulnerable populations, such as women.
- **Keeping the cost low and minimising impact on rates – selected by 41%**
 Those who selected keeping costs low as a priority for the City to Sea Bridge typically indicated a lack of faith that the proposed options would deliver good value for money for Wellington. They expressed concern about the city’s already high rates making the capital harder for people to afford to live in, and stated that there were other, more pressing projects that money should be spent on at this time, such as water infrastructure.
- **Adding places to sit and gather – selected by 36%**
 Places to sit and gather were popular features of the current City to Sea Bridge, and desired for a replacement bridge. Respondents stated that seating would encourage people to visit the bridge as a destination, and that being able to socialise in the space would be beneficial for social cohesion.
- **Adding public art and sculptures – selected by 33%**
 Respondents commented that public art and sculptures add value to a space, and commended the existing art on the bridge. Some called for this existing art to be reused on a new bridge, while others called for new art to be commissioned. Wellington’s identity as a creative city was also discussed by respondents, who argued that its reputation should be supported.
- **Including viewing areas – selected by 30%**
 Respondents who selected viewing areas shared that they make a bridge more than just a way to cross the street; a Wellington landmark connecting the city with the sea, and an enjoyable experience of public space with unique elevated views of the water. These comments indicated that the viewing areas on the current bridge are highly valued, with respondents frequently praising the view from there as well as articulating their preference for the design of the current bridge; describing the way it widens and focuses on harbour views.
- **Other – selected by 13%**
 Respondents who discussed other bridge considerations most commonly opposed the demolition of the bridge. Other comments included design suggestions for the bridge, including calls to keep the design and character of the current bridge.

Additional comments about new bridge priorities

Additional comments about new bridge priorities which didn’t discuss the topic above often reiterated and explained respondents’ preferred scenarios for the City to Sea Bridge. The most popular scenario mentioned was one not offered in the survey; to retain the existing bridge.

These comments also contained criticisms of the project as a whole, including the rationale provided by Council for the demolition of the City to Sea Bridge, as well as the engagement process and the options being presented for consultation.

Other comments discussed design suggestions for a new bridge and/or crossing, the current City to Sea Bridge's status as an "iconic" part of Wellington and the need to retain this character or energy; the importance of maintaining or enhancing a clear connection between the city and the waterfront; concerns about the cost of the project; and a desire for people to be the focus of the design, rather than cars.

Part 2 — Te Ngākau Draft Precinct Development Plan

Preferred Te Ngākau Draft Precinct Scenario Option Selection

Respondents were presented with some potential scenarios for further development in Te Ngākau Civic Precinct, and could select up to three that are most important to them. They were then asked to explain why they selected those options:

- **Making open or green spaces better for people to use – selected by 54%**
Respondents who indicated that enhancing the usability of open and green spaces should be a priority frequently emphasised the importance of having green and open spaces that are enjoyable to relax in, with the subsequent benefit of these spaces attracting people to spend time in the city centre. Greenery was often highlighted as an important feature to enhance people's enjoyment of the space and their overall wellbeing, by providing aesthetic appeal, temperature control and shade, and respite from the surrounding urban environment.
- **Keeping or increasing the amount of open or green spaces – selected by 50%**
Proponents of keeping and increasing the amount of open or green spaces made similar comments to those discussed in the previous topic. Expressions of support for green and open space were commonly voiced, with respondents claiming benefits for public wellbeing, aesthetic appeal, and the environment. Public outdoor spaces were often described as places to relax as well as foster community or social activity, and were noted as something currently missing in Central Wellington.
- **Improving cultural and creative opportunities in the space – selected by 40%**
Respondents were in favour of cultural and creative opportunities, as they saw these as opportunities that would make the space livelier while helping to support the city's reputation as a *creative capital*. The precinct's role as a civic centre and its location near cultural spaces such as the City Gallery were other points raised by respondents in support of providing more creative and cultural opportunities. Respondents also pointed out that more creative opportunities and activations would attract more people to the space.
- **Keeping and restoring existing buildings – selected by 39%**
Respondents often cited support for this scenario due to an overall belief that the heritage, architectural aesthetic, and cultural and civic use of Te Ngākau should be preserved. Individually, the Michael Fowler Centre (MFC) was the building most respondents argued should remain in the square due to its cultural and public significance. The collection of existing buildings and structures surrounding the square such as the City Gallery, MFC, City to Sea

Bridge, Town Hall and Central Library were described as central to the precinct's identity.

- **Lighting and safety after dark – selected by 38%**
Lighting and safety, especially after dark, were seen as important, with respondents arguing that safe design features would encourage people to use the space after dark while minimising anti-social behaviour. The safety of women and other more vulnerable groups was also highlighted as a concern by some respondents.
- **Keeping overall costs as low as possible – selected by 36%**
Again, respondents indicated scepticism that the development of Te Ngākau Precinct would deliver good value for money for the city, and that given the city's current financial position, this project should not be a priority. In particular, respondents expressed concern that the project would lead to further rates increases, which Wellingtonians would struggle to afford.
- **Adding spaces for hospitality, retail and other businesses – selected by 28%**
Respondents who were in support of adding spaces for hospitality, retail and other businesses argued that commercial activity would attract more people, and therefore more vibrance to the precinct. Economic benefits and improved safety were also cited as other advantages of increasing commercial activity in Te Ngākau. Respondents were particularly supportive of adding hospitality and retail businesses to the precinct.
- **Other – selected by 8%**
Respondents also suggested other design suggestions for the precinct, including retaining open and green spaces in the square. Some called for existing elements of Te Ngākau to be retained, such as the City to Sea Bridge, and the Michael Fowler Centre. Other topics such as the cost of the project and potential commercial activities (including comments against commercial activity in the area) were also discussed.

Additional comments

A variety of additional comments were received, with respondents most commonly suggesting uses for the revitalised square, as well as offering suggestions for how the space should be designed to support these uses. In these comments, respondents argued that the square should be used for civic and community centred functions, and that it should be a welcoming, people-oriented space.

Respondents also commonly discussed the precinct's role in connecting the city to the sea, with some arguing in favour of retaining or replacing the City to Sea Bridge to support this connection.

Other comments discussed green space, greening, and environmental considerations; cost and spending; stances on new development in the precinct; the future of existing buildings such as the Michael Fowler Centre and City Gallery; general criticisms of WCC; the vibrance, character, and identity of Te Ngākau; play areas and opportunities for play; safety and security; transport and parking; and stances on renovation versus demolition of existing buildings.

Project Overview

Background

Wellingtonians have told WCC they want a city that is vibrant, resilient, and creative, so the Council is investing in the improvements that the city needs to flourish.

Right now, Wellington is in a period of transition, as the city’s infrastructure is upgraded to create a city where people and nature thrive.

One of the most important projects is the revitalisation of the heart of the city, the precinct around Te Ngākau Civic Square. Te Ngākau Civic Precinct is a large area of land near the waterfront in central Wellington, approximately 3.36 hectares (33,600sqm). The precinct is home to some of the city’s most important cultural, creative, and civic functions such as Te Matapihi Central Library, Wellington Town Hall and City Gallery.

When all the work in Te Ngākau is finished, it will be a place that everyone can be proud of – full of creativity, culture, and excitement, both day and night.

Objectives

Te Ngākau Civic Precinct Framework was adopted in October 2021 after consulting with Wellingtonians on their priorities for the area.

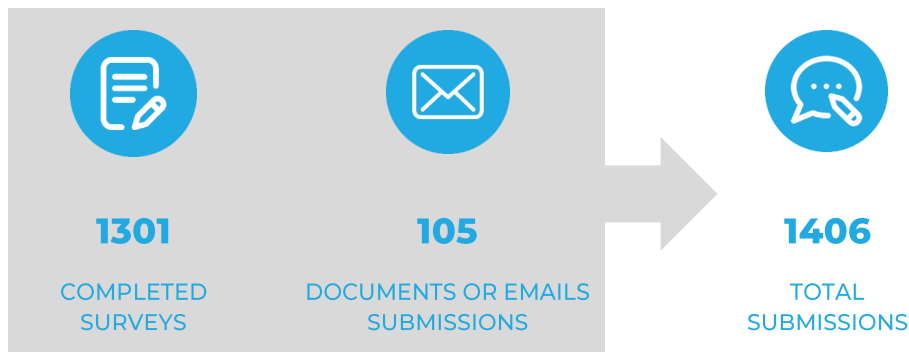
This Framework set the broader vision and objectives to guide the redevelopment of Te Ngākau over the next 20 years. The vision for Te Ngākau from the Framework is:

Te Ngākau is the beating heart of our capital city: A thriving neighbourhood where creativity, culture, democracy, discovery and arts experiences collide on the edge of Te Whanganui-a-Tara.

Over the next few years, there are some key decisions that need to be made about the remaining buildings and spaces in Te Ngākau, including the City to Sea Bridge, Michael Fowler Centre, Jack Ilott Green and City Gallery.

This consultation is a chance for Wellingtonians to have their say on the City to Sea Bridge replacement and the direction of future development in the precinct, which will be guided by the final Te Ngākau Development Plan.

Engagement and Reach



Analysis Overview

Qualitative Analysis

All written feedback has been read and analysed by data analysts. Comments were sorted (coded) to relevant themes and topics to inform this report.

To give a clear and consistent indication of the number of comments received on each topic, the following key is used to describe the relative number of comments on each topic:

Key for comment numbers	
2 comments	A couple
3 comments	A few
4–7 comments	A small number
8–14 comments	Several
15–24 comments	A moderate number
25–49 comments	A considerable number
50–74 comments	A substantial number

Quantifying written feedback

In addition to the use of descriptors above, themes and topics discussed by respondents are quantified throughout this report to enable readers to see the volume of discussion for each theme or topic.

- > **Number of respondents** shows the number of individual respondents whose feedback touched on a particular theme or topic.
- > **Number of comments** refers to the number of individual points made on a topic.

Note that one respondent may make multiple points on a particular topic, so the number of **comments** can be higher than the number of **respondents**.

Quantitative Analysis

Frequency analysis has been completed for all quantitative (option selection) questions.

Results have been presented in charts, which are accompanied by descriptions of results.

Reading this report

Use of acronyms

Throughout this report, a number of acronyms have been used to refer to commonly discussed items. These include:

- WCC – Wellington City Council
- NBS – New Building Standards (related to earthquake strength)
- MFC – Michael Fowler Centre
- CAB – Civic Administration Building
- MOB – Municipal Office Building

'Other topics'

Topics discussed by fewer than 10 respondents have been included under the heading *Other topics* in the relevant sections of this report.

Quotes are included throughout this report to show the ways in which respondents talked about issues. Comments have been inserted verbatim, however grammatical errors and spelling have been corrected where this did not change the meaning or sentiment of the comment.

Engagement limitations and analysis explanations

This report reflects the views and opinions expressed by those who participated in this engagement. When reading this report, these limitations should be considered:

- This survey was conducted on a voluntary, self-select basis. People who choose to participate in such engagements often have stronger opinions than other members of the public, and therefore a self-select sample cannot be taken as being representative of the entire community.
- Due to the structure of the survey and some repetition in the topics respondents were asked to discuss, a number of respondents made comments such as “see above”. Analysts have made best efforts to include these comments where it is obvious which previous comment respondents were referring to. In many cases, this was not clear, so these comments have not been included within the analysis.
- One hundred and five submissions were received outside of the survey form. These submissions varied in format, and often did not answer the questions asked in the survey. Therefore, these additional submissions have been analysed under topics deemed most appropriate; generally under *Additional comments* relating to either the bridge or remaining parts of the precinct.
- The quantitative results (multi-choice survey questions) presented as percentages and in charts contain only the opinions of those who completed a survey. The opinions of those expressed in other formats, such as emails and other documents are presented in the discussion of written comments.

RESULTS

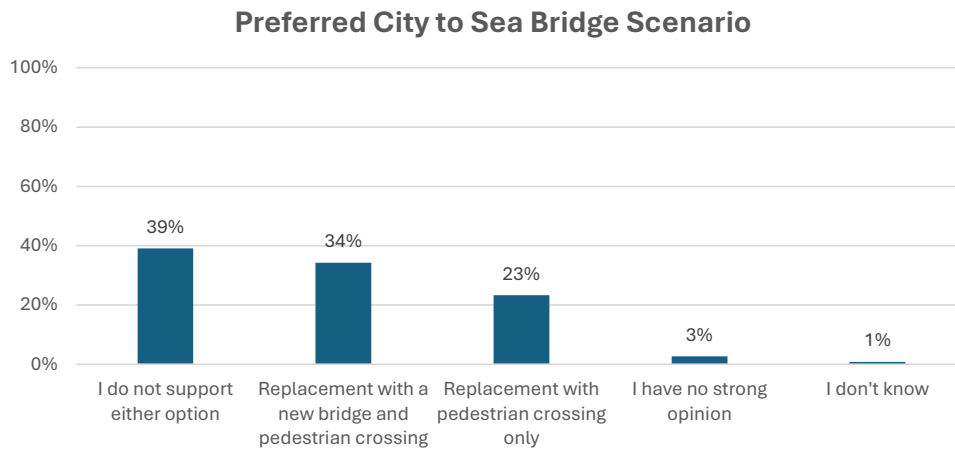
Part 1 - City to Sea Bridge

Question 1: Preferred Scenario

RESPONDENTS WERE ASKED: *Please choose your preferred City to Sea Bridge scenario.*

[respondents could select one option]

- *Replacement with a new bridge and pedestrian crossing*
- *Replacement with pedestrian crossing only*
- *I have no strong opinion*
- *I do not support either option*
- *I don't know*



n=1273

RESULTS:

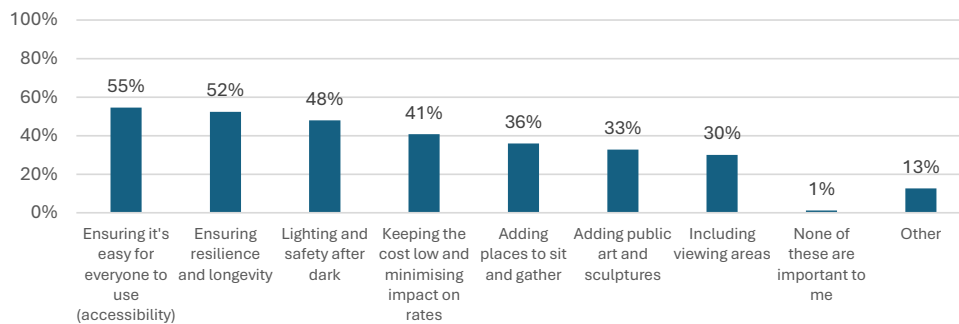
- > The most popular option, selected by 39% of respondents, was I do not support either option.
- > In total, 57.5% of people supported either of the bridge replacement options:
 - Replacing the existing City to Sea Bridge with a new bridge and a pedestrian crossing was the next most popular option (34%).
 - Replacement with a pedestrian crossing only was selected by just under a quarter of respondents (23%).

Question 2: Priorities to Consider

RESPONDENTS WERE ASKED: *If people want a new bridge, there are many things to think about when designing it. Whether you support building a bridge or not, we want to know what the most important things to consider are. Please choose up to three from the list below.*

- *Keeping the cost low and minimising impact on rates*
- *Ensuring resilience and longevity*
- *Ensuring it's easy for everyone to use (accessibility)*
- *Adding places to sit and gather*
- *Including viewing areas*
- *Adding public art and sculptures*
- *Lighting and safety after dark*
- *None of these are important to me*
- *Other*

Top Three Most Important Bridge Considerations



n=1209

RESULTS:

- > The most popular priority was ensuring it's easy for everyone to use (accessibility), selected by over half of respondents (55%), closely followed by ensuring resilience and longevity (52%), and lighting and safety after dark (48%).
- > Including viewing areas was the least popular priority, selected by 30% of respondents who answered this question.

Question 3: Bridge priority reasoning

RESPONDENTS WERE ASKED: *Please tell us why you chose those areas.*

[This question, followed the question on the previous page]

1. Ensuring it's easy for everyone to use (accessibility)

Summary

Many respondents viewed accessibility as a necessity or requirement, especially because public spaces should be available to all members of the public, including people with disabilities, as well as families with prams, cyclists, and elderly people. As such, respondents advocated for an accessible and universal design.

Perspectives on the level of accessibility of the current bridge were mixed, with respondents identifying accessibility features which were done well or could be improved on the current bridge. Respondents also offered suggestions for features to be included in a future design.

Other respondents argued that bridges offer a safer, more effective, and if designed well, a more accessible way to cross the road, thus arguing that it should be easy to access for all.

The bridge should be accessible (479)

A very common theme among these comments was the assertion that a replacement bridge should be accessible. This was made in a number of ways, including general statements that the bridge should be accessible or “for everyone”, statements made in support of fair and equitable access for people with a disability, or comments which called for the use of universal or accessible design. These topics are discussed below:

The bridge should be for everyone (226)

Over half of the respondents who argued that the bridge should be accessible stated that the bridge should be accessible to “all”, or “everyone”. While many of these comments were broad statements, a considerable number of respondents made the point that the bridge is a piece of public infrastructure and a significant throughfare in the city. Access for all members of the public, therefore, “should be a given”. Some of these respondents named specific populations such as children, the elderly, disabled people, and families, as groups that should be able to use the bridge. As such, they argued that the bridge should accommodate people with prams, bicycles, and mobility aids such as wheelchairs.

Too many developments just now are focussed on young and able people (eg bicycle lanes) so it is important to think of pushchairs, wheelchairs, older people who move slowly, perhaps with a stick, visually impaired and so on.

Everyone should be able to easily and safely use a public space. That's the whole point of being public!

To me it seems like the entire point of having a bridge is to make accessibility between Te Ngākau and the waterfront easier and flow better. There are many people, like senior people, those in wheelchairs, those with other accessibility

issues, and children, for whom a pedestrian crossing isn't so safe or ideal. So everyone being able to use the area and cross between it and the waterfront is key.

Access should be fair and equitable for disabled people (119)

A large number of respondents emphasised the need to accommodate disabled people's use of the bridge. Respondents argued that making the bridge accessible, such as accommodating wheelchairs and other mobility aids, would ensure that disabled people have the same access to public spaces, as well as a safe way to cross the road. These respondents therefore argued that accommodating disabled people ensures that fairness, equality, and inclusion is upheld, as opposed to the "ableist" alternative. A small number of respondents further articulated that disability affects a significant proportion of the population who would be barred from using the bridge if it was not accessible. A few respondents also identified common obstacles to accessibility, such as steps and steep ramps.

I am physically impaired and have had several friends and family members who are physically disabled. Accessibility is such an important part of having a city that EVERYONE can live, work, and thrive in, especially if we want to be an environmentally friendly city where people have alternatives to driving easily available.

All spaces we design in public space should meet modern accessibility standards. WCC's reports show that about 20% of Wellingtonians have some form of disability (Accessibility in Wellington, 2022). That's an incredibly large portion of our constituency with a diverse range of needs that should be considered in the design and development of the development of this precinct

Public spaces should be available to all, including those with disabilities or accessibility issues. They are also ratepayers.

A small number of respondents also highlighted that accessibility for disabled people should not be limited to accessibility for those with mobility impairments but should also consider other forms of disability such as neurodivergence, blindness, and deafness.

Much of Pōneke is super inaccessible for our disabled whānau. It's really important that the new design for the bridge is created with accessibility as a foundation and thorough consultation with our disabled, deaf and neurodiverse community here in Wellington :))

Everyone deserves to access the waterfront from the major bus routes! Lots of Wellington is difficult to access for many different folks, least we can do is encourage access to public spaces. equity!! Accessibility is more than ramps too - I have autism and find busy roads very very overwhelming - a bridge allows access without having to interact with roadways and traffic.

General calls for a replacement bridge to be accessible (60)

A substantial number of respondents made broad statements that the bridge should be accessible. These comments highlighted that accessibility is "important", a

“necessity”, a “non-negotiable”, and “good practice”. These comments did not offer much elaboration, with a several respondents arguing that their reasoning for supporting accessibility should be “self-explanatory” or “obvious”. A moderate number of respondents noted that ease of access, particularly to the waterfront, is highly valued.

A basic modern necessity, I'm not sure why this is even being asked.

Accessibility is important to support better connections between the waterfront and the city.

Support for universal or accessible design (48)

A considerable number of respondents argued the design of the bridge should prioritise universal or accessible design. These respondents often implied or stated outright that universal design should be defaulted to because it benefits all users and creates usable and accessible public spaces, without the need for additional accessible routes.

Accessible design benefits everyone, not just those with disabilities, by creating a more user-friendly and welcoming environment.

Building accessibility into the original design is easier, cheaper, and better for everyone.

Wellington as a diverse, inclusive, and welcoming city (26)

A considerable number of respondents were in favour of accessibility and easy use for everyone, as they were supportive of diversity and inclusivity. Respondents emphasised the importance of a welcoming civic precinct, and city as a whole. As such, they argued that accessibility is essential for making the city more inclusive.

We live in a city that's topographically tricky for people with mobility challenges. Let's make our public spaces inclusive

Our community is diverse, as are people's abilities. We should be as inclusive as possible.

Accessibility of the current bridge (69)

The level of accessibility of the current City to Sea Bridge was discussed by a substantial number of respondents, who either argued that the current bridge is accessible and that these features should be retained on a new bridge, or conversely, that the current bridge is not accessible, and that a new bridge should be improved. These arguments are discussed below:

The current bridge is accessible (this feature should be retained in a new design) (36)

A considerable number of respondents claimed that the bridge is currently accessible and wanted to see this accessibility retained in the design of any replacement bridge. Respondents either stated that the design is accessible, or specifically noted accessible features. These features discussed include the inclusion of ramps, seating, and the lift. Respondents also commonly noted that the current bridge offers an accessible way to cross the road without interacting with traffic.

The standard for accessibility is equivalent provision. Currently (until they were closed for construction work) the ramp on the city side and the lift provide(d) good access and the accessible route is a main. Route rather than a secondary route implying those with mobility difficulties are second class citizens. The proposed at grade crossing has nowhere to rest partway across- unlike the crossing by the St John's bar, which is in 2 three lane stages.

At present the bridge has been constructed so as many people as feasible can cross the Quays without endangering their health. This required ramps that extend a long way back into the city, but this was a priority of the original design and it requires a welcoming structure of the type that currently exists to preserve that accessibility and welcome.

The current bridge is not accessible (a new bridge must be better) (33)

A considerable number of respondents stated that the current bridge is not accessible, and that accessibility should be improved in a future design. Several respondents broadly claimed that the current bridge is not accessible, while others identified specific issues with the bridge. These issues included:

- That it is not accessible for wheelchair users
- That it is inconvenient using the existing ramps, as they are too steep, or are inconveniently located
- That the elevator is has been out of order for some time, or is often out of order
- That the harbour side is difficult to access (including for prams, bikes and scooters)
- That the stairs are slippery.

One of the challenges with the existing bridge is the difficulty of use for anyone with lower levels of mobility, or anyone using wheeled mobility devices (including wheelchairs, pushchairs and bicycles). The ramps include incredibly sharp turns and the stairs can be dangerous in wet and windy weather.

It is essential that every new public space the council builds is accessible to all. One of the current problems with the bridge is that some of the things that had made it more accessible were no longer available (the elevator has not worked for a while I don't think). Public space is important and it must be accessible.

Must be accessible to all abilities – the current bridge is steep in parts with tight corners, and overall requires a long detour to avoid stairs. Mitigated by the road-level crossing which will be accessible to all.

A safe option to cross the road should be available for all (43)

A considerable number of respondents argued that a bridge is a safer or better option than a pedestrian crossing, and that as such, a new bridge should be accessible so that everyone has the option of a safe way to cross Jervois Quay. Respondents highlighted that the crossing was through a six-lane road, and as such, a bridge would be a safer pedestrian crossing than a level crossing, as it avoids interaction with traffic. Respondents also argued that it is a more efficient mode of crossing the road, as it avoids having to wait for traffic lights. In addition, some respondents noted that bridges

can be more accessible than level crossings, especially for those with mobility issues or with children, as pedestrians would be able to move at their own pace.

I really value a means of crossing the road without having to wait at traffic lights, and everyone should be able to use this, regardless of any disabilities they might have.

The bridge is a connection between the city and the harbour. It allows families with prams to cross a major transit road safely. The lack of a bridge, and reliance on pedestrian crossing lights, would severely impact the safety for people with mobility issues, and young families and discourage pedestrian flow from the waterfront to the square. A pedestrian bridge is integral to the precinct.

The benefit of a bridge over a pedestrian crossing includes the ability to cross at an extremely leisurely pace, which is important for young children and people with reduced mobility.

Design suggestions (29)

Suggestions for accessible design were offered by a moderate number of respondents. These suggestions included:

- Ramps with a gentle gradient
- A lift
- Making the bridge wide
- Seats for resting
- Shallow steps (or no steps at all)
- Avoiding hostile architecture
- Handrails
- Even surfaces to avoid trips and falls.

Accessibility encourages usage of the space (19)

A moderate number of respondents argued that by making the bridge more accessible, it would encourage people to use the bridge. Respondents made the point that frequent usage, and thus “return on investment”, would only be achieved if the bridge is easy to be used by everyone.

The more accessible it is, the more child-friendly and people friendly, the more they will use it, the more it will be valued. Making it the preferred way (and easiest way) to cross the road, means less congestion below, less congestion is less carbon emissions.

In the end, if a pedestrian bridge is built it is important that it can be used, not just a beautiful piece for decoration. And accessibility is important because all citizens are equally important.

Accessibility as a human right and a legal requirement (16)

Statements that accessibility is a human right or is legally required were made by a moderate number of respondents. These comments often simply cited “human rights” without much elaboration or argued that accessibility should already be considered due to the Council’s legal obligations.

*It's important that everyone can use it regardless of their level of physical ability.
And isn't it the law anyway to build accessible structures and buildings?*

*Ensuring public accessibility like outside area for instance overpassing (bridge) to
individuals including persons who are disabled have right to use and it's the
responsibility of the government.*

First- and second-hand perspectives of people with a disability (13)

Several respondents shared their own experiences and issues with accessibility in the city as a person with a disability or discussed the experiences of a disabled friend or family member. These respondents often utilised these perspectives to argue for more inclusive and accessible infrastructure.

*I am an SEN teacher and having a space for families to be able to cross a busy
road with no time limits or risk of harm is important. Walking difficulties and
wheelchairs can move at a slow pace.*

*I am a disabled person and there are many areas of Wellington that are just not
accessible to me. So we have the opportunity here to make a beautiful and
universally designed accessible space for everyone to enjoy.*

*I'm disabled and Wellington infrastructure is already dangerous or inaccessible
already which means there are places I just can't go to*

Bridges are not accessible (8)

Several respondents stated that bridges are less accessible, especially for people with mobility issues. These respondents argued that a level crossing eliminates accessibility issues associated with raised bridges and therefore are a more convenient option.

*Because it's ground-level... making easier to walk/move and loco mote around for
all people of all ages including those with disabilities.*

2. Ensuring resilience and longevity

Summary

A very large number of respondents supported resilience and longevity being prioritised. The majority argued that this should be a given, with comments repeatedly stating that structures should be “built to last”, and that the city should avoid having to demolish the new bridge in the future because it has not been built to a high enough standard.

Benefits of resilient design were frequently cited. These included: value for money, longer enjoyment of quality infrastructure, convenience of movement due to minimal construction disruption, reduced financial burden for future generations, and increased sustainability.

Respondents often articulated that given the inevitability of earthquakes and climate change impacts, building for resilience and longevity is a necessity.

General support for quality infrastructure (285)

Build to last (135)

A large number of comments contained the sentiment that all infrastructure should be built to last, expressing that resistance and longevity is an important quality of any structure, so a new bridge should be designed to last too.

It's important what we build lasts.

The majority of comments contained the phrase “built to last” and expressed that it was a feature that should “obviously” be a priority.

Any 'permanent' infrastructure should be designed to last. We should be thinking of the future, not the present when it comes to our buildings / urban design.

Infrastructure needs to be built to last across many generations, we cannot afford and shouldn't need to be replacing key infrastructure frequently.

Respondents shared the view that 30 years, the age of the existing bridge, was too short a life span for a bridge, and that a replacement bridge should be built with a much longer-term view lasting over 50 or 100 years. A small number of comments included suggestions on design and materials to increase the resilience of a new bridge, such as designing for minimal maintenance requirements.

Avoid repeating mistakes (116)

A large number of respondents stressed their preference for avoiding the current situation occurring again in the future (the bridge needing to be repaired or rebuilt after an earthquake or changing NBS requirements).

We don't want to have to tear it down in 20 years.

So we're not having to repeat this exercise in another 30 years.

In the scheme of things the development of the civic precinct wasn't that long ago and to have it all redone is frustrating. I remember when it opened and going there

as a teenager and I don't want to see it redeveloped 3 times in my life and pay for that.

The sentiment among these comments was very similar, and generally implied that it is important to get the design of a new bridge right, or take action now, so that Wellington does not find itself in the same situation, needing to fund another bridge, in the future.

Do it once, do it right (34)

Comments making statements along the lines of “do it once, do it right” were made by a considerable number of respondents. These statements were frequently short and to the point, for example, “do things once properly” and “build it once, build it right”. Respondents who offered longer comments expressed that this was the better method of doing things and created less waste.

Built it once to a high standard to minimise maintenance and structural issues in the future.

No point in having something that is going to fall to bits. Do it once and do it right.

Anticipated benefits of resilient design (217)

Value for money (140)

A large number of respondents proposed cost effectiveness as a reason to prioritise resilience and longevity. These respondents often made the point that it is cheaper to build for the long term than frequently repair and replace infrastructure, or simply commented “value for money”.

Because I believe building it well now, will ensure it lasts a long time and will continue into the future saving money in the long run.

Financially it doesn't make sense to build something that doesn't include this as key element if it'll need replacement in near future.

Respondents frequently argued that given the cost, it would be a waste of money if a new bridge did not last.

It should be a structure that will last to make the expenditure worthwhile.

Ratepayers cannot afford to be replacing structures before their service life is reached. Demolition of CAB less than 50 years after it was built shows importance of meeting design standards and constructing simple robust structures.

Respondents also proposed that it was the responsibility of WCC to build resilient infrastructure to minimise cost to ratepayers whilst maximising return on investment, often expressing frustration with Wellington's infrastructure planning in general.

Longer enjoyment of a new bridge (26)

A considerable number of respondents expressed that it is important for a new bridge to have a long life so that the public can enjoy it for a long time. Comments maintained that given the location, a new bridge will (also) become an icon that people will grow attached to, therefore they should get to experience it for as long as possible.

So it can be enjoyed for years to come.

Public structures and infrastructure should be beautiful, practical, sustainable and last a long time as it can then be iconic and part of the city. Example: The Millenium Bridge or some of the cycling infrastructure in Denmark.

Respondents also argued that longevity itself contributes to adding value to public assets, and an important connection point for people should be available for a long time.

Convenience of movement (21)

A moderate number of respondents offered the view that resilient infrastructure minimised the inconvenience of repeated construction.

The disruption of construction and 'court of public opinion' regarding what should get built is draining on the city.

Te Ngākau is the heart of the city. It would be wonderful if once the works are finished that the space doesn't require further large works for sometime so Wellingtonians can move back in and make use of the space without disruption.

Respondents stated the importance of maintaining the transport connections that the current bridge and ramp provide, as well as the arterial road below. A small number of respondents expressed frustration at ongoing repairs of Wellington infrastructure. There was also annoyance expressed at the proposed future disruption that the rebuild would bring to the whole Te Ngākau Precinct.

Future generations (12)

Several respondents agreed that building with longevity and resilience was a way to look out for future generations. They argued that the bridge should last for future generations to enjoy and that they should not have to carry the burden of replacing a short-term build.

Ensures value for money and for our mokopuna.

We're investing for our future generations.

Sustainability (12)

Several respondents reported that resilience is essential for sustainable practice.

I want Wellington to be green as possible - in all meanings of the word green! I also don't want temporary measures - we need to plan way ahead.

It is so wasteful to keep pulling buildings and structures down.

Comments brought up waste in reducing the impact of the environment and noted that long lasting structures contribute to a circular economy. A couple of respondents raised concerns about the carbon cost of demolishing the existing bridge.

Earthquakes and climate change preparedness (128)

A large number of respondents expressed that resilience and longevity were important considerations due to the expectation of future earthquakes and events caused by climate change. These comments expressed an attitude of acceptance and inevitability

when stating that large future earthquakes would occur, and often noted the extra risk of the location the bridge is placed in.

As an earthquake-prone city, and bearing in mind that the structure will be on reclaimed land, it's important that the bridge is resilient so as to ensure its safety and sustainability.

Because the area is at high earthquake risk.

Especially with unknowns due to climate change events + earthquakes, ensuring it is built well and built to last is important.

With respondents noting these events on the horizon, they made the point that planning for earthquakes (and future NBS regulations) in new builds, along with sea level rise, is necessary for longevity. Respondents brought up safety concerns in relation to a bridge falling down in an earthquake. There was also frustration expressed at the current bridge and other infrastructure not meeting requirements and wasting money, with blame placed on engineers and WCC.

Obviously the last one was built without earthquakes in mind - it is important to build the new bridge to the highest standard so that it can last for generations.

The vast majority of these comments were insistent that for these reasons, a new bridge must be strong enough to withstand an earthquake. However, the opinion that the potential danger was a reason not to include a bridge in the design at all was also expressed. A couple of respondents argued that infrastructure in this area should be moved to higher ground in preparation for sea level rise and earthquakes.

Other resilience and longevity topics (64)

Opinions on bridge scenarios (24)

A moderate number of respondents offered their opinions on the proposed scenarios for the City to Sea Bridge; the majority opposed the two scenarios presented in this consultation, and instead argued that the current bridge should remain.

Frustration with WCC (16)

A moderate number of respondents expressed frustration at the consultation process for this project, or raised concerns relating to other Wellington infrastructure.

Typical Wellington will build a new one and in another 20-30 years it will need replacing. No future proofing ever happens in this city. And everything gets blamed on an old council and no one is ever accountable. Start owning up to things!

A small number of these comments proposed that resilience and longevity were obvious qualities to prioritise and ridiculed the fact that they were being presented as an option to consider.

Alternative suggestions (14)

Several respondents provided other suggestions or reasons to focus on resilience and sustainability. A few of these comments argued that Te Ngākau Precinct should be planned in conjunction with the surrounding area. Respondents argued that resilience

and longevity are important for maintaining the vital link between city and sea, and that high quality infrastructure is easier for disabled people to navigate.

Robust, safe pedestrian access provides important uninterrupted civic-sea connection.

A small number of respondents discussed resilience in relation to aesthetics, noting “a resilience to looking dated” while another couple of comments stated that resilience should be prioritised above attractiveness.

Low earthquake risk (10)

Several respondents offered the opinion that NBS requirements were more of a barrier to longevity of infrastructure than earthquake risk. These comments conveyed a lack of trust in engineers.

We can't keep demolishing structures that don't meet NBS rating, it is not sustainable.

Many structures in Wellington are out of commission because of new earthquake requirements. I'd like a structure that will withstand any future EQ inspections, as well as retain its aesthetic looks into the future.

Respondents stressed that it was not worth demolishing structures that did not meet the NBS rating. When discussing a new bridge, these comments noted the need for it to be resilient to inspections, rather than mentioning earthquakes.

3. Lighting and safety after dark

Summary

A very large number of respondents argued that safety and lighting are important, especially at night. Respondents stated that safe environmental design features such as lighting would encourage the usage of the bridge and curb antisocial behaviour.

Some respondents also expressed concern for more vulnerable groups such as women, while others stated that proper lighting helps to reduce trips and falls.

Safety is important (325)

A very large number of respondents highlighted the importance of safety in public spaces, raising concerns about safety at night, as well as more generally, and arguing that lighting and safety should be paramount or is obviously needed. These arguments are discussed below:

Safety is important at night (156)

General comments about safety at night, or using the bridge in the dark, were made by a very large number of respondents. These comments included statements about the importance of feeling safe when using the bridge at night, especially as the bridge is a “main thoroughfare” which, if lit properly, could be used as a safe route after dark. Respondents also argued that keeping the bridge safe at night encourages a sense of security during the day. A moderate number of respondents elaborated that safety after dark was especially important during winter, as well as for people who live in the city, commute early for work, or are taking part in the city's nightlife. Respondents also

expressed that safety in the city after dark is particularly important as Wellington has become increasingly dangerous at night.

I used to use the bridge to get from work to bus stops when it was dark, and I imagine many other people would too. It's important for people to feel safe using it as a pedestrian thoroughfare so that it gets used

I walk to work from the railway station and use this bridge several times a week - since I start early it is often still dark when I use the bridge, particularly in winter (note: I have never had any safety issues or concerns using the City to Sea bridge, but it might be different for women).

It is no secret that Courtney Place and the surrounding areas have become materially less safe in recent years. There are no easy fixes to this, but having the bridge well-lit would serve to make people feel safer when using it after dark

Safety is important generally (90)

Broad comments about the importance of safety in the city were made by a sizeable number of respondents. These were mostly short, simple comments which stated that safety is valued, “increasingly important”, and that safety needs to be maintained or improved in Wellington’s CBD.

Safety is important to the revitalisation of Civic Square.

Feeling safe in your home city is important for quality of life.

Principles of safe city should always be included in any public project. We expect safe spaces in our city to traffic through in and around with our children which are activated with lighting or other means.

Lighting and safety should be paramount or is obviously needed (79)

A sizable number of respondents argued that lighting and safety is an integral part of the planning for the area, that safety must be considered and included, and that it would be remiss not to do so. Most of these comments argued that prioritising lighting and safety is “obvious”, a “basic requirement”, “a no brainer” and that it should already be prioritised in the plan for the bridge.

This is kind of self-explanatory right? Nobody wants a darkened unsafe space?

I think it's obvious. So people spend time there without worrying about their safety.

Again this is a worrying question. It implies that lighting and safety might be left out of consideration. That would be highly irresponsible. Good lighting and safety features should be incorporated as standard considerations in all WCC projects.

Lighting makes public spaces welcoming, inviting, and comfortable (78)

A sizable number of respondents were in favour of a well-lit bridge, as they argued that good lighting would encourage usage, be inviting or welcoming, or create a comfortable setting where people would feel safe using the space, especially in the evening.

Respondents stated that lighting would encourage a “vibrant nightlife”, as well as draw people to the city and waterfront at night.

We want people to enjoy the waterfront; therefore it needs to be safe, ergo it needs to be well lit.

Increased Usage: Adequate lighting encourages more people to use the bridge, especially during the evening hours. A safe, well-lit environment makes it more inviting for pedestrians and cyclists, promoting active transportation and community engagement.

Allowing safe access 24/7 is important when considering public spaces to ensure maximum use and engagement with them.

Curbing anti-social behaviour (54)

Comments referencing crime and the importance of safety from anti-social behaviour were made by a substantial number of respondents. These respondents argued that the city feels “sketchy” and that there are issues with anti-social behaviour and crime, especially after dark. Respondents argued that proper environmental design can act as a deterrent to anti-social behaviour and crime. Design features suggested included good lighting, cameras, and the elimination of blind spots.

Because all people deserve to feel safe walking our city. As someone who lives centrally (Dominion Building) I fear for some of the unhoused people who are vulnerable at night, and for people who enjoy other activities and need to walk back to their transport home.

Well-lit areas deter criminal activities like theft, or assault, as criminals are less likely to operate in illuminated spaces where they can be easily seen.

I've heard a bit about crime around the waterfront so if we want to have nightlife around there then lighting is v important for people to feel safe exploring the area.

The safety of women and other more vulnerable groups (29)

Concerns regarding the safety of women and other more vulnerable groups were raised by a considerable number of respondents. The majority of these comments discussed women’s safety, however several respondents also raised concerns about the safety of other groups, such as the elderly, the rainbow community (particularly trans people), and children and young people. Respondents noted that safety has been of concern for these groups, and as such, lighting and safety precautions are particularly important, as it deters targeted antisocial behaviour and as a result makes these spaces safer for them.

Again, I feel like this is an obvious answer. Less crime happens when areas are lit and safety is prioritised. With Courtenay Place being less safe than it was being so close, and I think is speak for a lot of women here, it would be nice if I didn't have to add assault to the list of things I had to seriously worry about walking home.

People are injured around the lagoon all the time and honestly, I have never felt less safe as a woman and a queer person walking around Wellington. When you

remove lighting and safety measures you effectively close an area of egress to women, queer people, young people or vulnerable people.

As a woman walking through the city at night well-lit areas make me feel more comfortable.

Safety from trips and falls (18)

A moderate number of respondents were in favour of lighting and safety after dark in order to prevent trips and falls. Respondents argued that proper lighting supports better accessibility and helps people “to see” and to be aware of their surroundings, especially when visibility would otherwise be limited.

Proper lighting helps people see clearly in low-light conditions, reducing the risk of accidents, such as tripping

Enhanced Visibility: Proper lighting improves visibility for all users—drivers, cyclists, and pedestrians—reducing the risk of accidents. It ensures that everyone can see and be seen, fostering safer interactions. [...] Accessibility: Good lighting can improve accessibility for individuals with visual impairments, ensuring that everyone can navigate the bridge safely and confidently.

Lighting design suggestions (12)

Several respondents offered ideas for potential lighting design. These ideas varied, but generally supported creative or aesthetically attractive designs, including designs that could adapt for special occasions. Specific suggestions included: Light incorporated into artwork, RGB lighting, and pulsing or changing lights.

Other topics (13)

Other comments were made by a moderate number of respondents, most of which were not relevant to the topic, for example one off comments such as: put a sign up saying use at one risk, and spend money on pipes; the bridge is a safe way to access the beautiful harbour; in the respondent’s youth it was a great place to meet.

One comment argued that lighting would support faster emergency responses.

4. Keeping the cost low and minimising impact on rates

Summary

The general sentiment among respondents who selected *keeping the cost low and minimising impact on rates* as a priority was scepticism that this project will provide good value for money for the city, especially when WCC currently has a lack of funds and a number of significant and more urgent infrastructure projects requiring funding. Respondents expressed concern that Wellington’s already high rates are increasing at an unsustainable rate, arguing that it is important to keep costs down so that people can afford to continue living in the capital. Others questioned the necessity of the project, or suggested ways that costs could be reduced.

Criticisms of WCC spending (214)

A very large number of respondents criticised the way that WCC spends or has spent money. These criticisms varied, but the overall sentiment among these comments was the view that WCC has a poor track record for spending public money.

Prioritise ‘essentials’ over ‘nice to haves’ (82)

Over a third of the comments that criticised Council spending were made by respondents who argued that Wellington has a number of other, more urgent things that need investment at present. “Pipes”, “infrastructure” and “the essentials” were seen as more of a priority by this group than replacing the City to Sea Bridge with a new bridge and/or crossing.

This is not a priority - water and sewage are!

Wellington's water infrastructure is collapsing and needs to be funded and prioritised.

WCC should concentrate on repairing and renewing vital infrastructure such as our water supply and forget about the nice to haves until we are in a position to afford them.

General criticisms of WCC’s financial management (43)

General criticisms of how WCC chooses to spend money were made by a considerable number of respondents. These comments typically expressed the view that WCC has a track record of “wasting money” by spending large amounts on projects with little public support.

Stop spending our money frivolously.

Because the council has shown an incredible propensity to pay a lot of money for projects that do not have popular support.

The city is being ruined by Council over spending.

Wellington's current financial situation (42)

A considerable number of other respondents argued that keeping costs low on this project is important simply because the city does not have the funds to invest significantly in a new bridge and/or crossing. These points were often simple and concise, such as “we can't afford it”, and:

The city does not have the money to spend needlessly.

Other concerns about cost (47)

A substantial number of other respondents expressed general concern that the project will cost too much. These respondents discussed previous “budget blowouts”, a lack of scrutiny/accountability during the tendering process or when dealing with contractors carrying out work, and poor prioritisation of projects. These respondents expressed that they felt cost estimates were not realistic or that the proposed cost was too much for what is proposed/needed; either arguing that it will likely cost more in the end because projects are rarely completed within budget, or suggesting that it should not cost nearly as much as what has been estimated.

How can we trust the numbers quoted in the document? Responsible governance/budgetary oversight is a must. Any increases need to be picked up early and people held accountable.

Honestly \$30m is exorbitant for demolishing a bridge. It's insanity that the council will just pay literally whatever their construction company buddies will charge. It should be much lower than this for option one.

The overall sentiment expressed in these comments was a lack of faith in WCC to responsibly spend public funds and deliver value for money.

Concern over rates increases (155)

Another very common reason people gave for selecting *Keeping the cost low and minimising impact on rates* as one of their top three things to think about was that Wellington's rates are already very high, and are increasing too much, too quickly, making the city unaffordable for many. A very large number of respondents made this point, often in very similar ways, and often alongside comments about WCC spending (above).

Respondents argued that relying on rates to fund projects such as this one, deemed unnecessary, “nice to haves”, or “vanity projects” by some, is driving the cost of living in Wellington up too high for many, especially given the current cost of living crisis. These respondents also indicated the overall view that ratepayer money in Wellington is not being spent with care or consideration, expressing frustration at council spending and decision making.

Our rates are already quite high, and we can't afford for them to continue rising.

People are struggling with rates and every dollar counts.

Because rates have become unaffordable for many. Ratepayers are sick of gold-plated projects.

Let's face it - as a city, we're basically broke - with proposed rates increases that aren't affordable for residents and which are destroying the vibrancy of our city. Therefore, the least expensive option is the best in the short term.

The bridge project is not necessary (78)

A sizeable number of respondents argued that the proposed project is not necessary. Around a third of these respondents argued that there is no need for a bridge in the area, particularly if there is a new pedestrian crossing. A small number of respondents also highlighted the fact that there are already other bridge/crossing options nearby.

Do not need a pedestrian bridge so close to a pedestrian crossing. People will just use the crossing as it is more convenient.

A case has not been made to justify the expense of a bridge. With a pedestrian crossing a bridge is superfluous and unnecessary = a waste of money.

The remaining two thirds of these respondents predominantly argued that the proposed options are unnecessary as the current bridge could either be left as is (acknowledging and choosing to accept the current earthquake risk of the existing City to Sea Bridge), or should be strengthened. These comments included criticisms of rationale for demolition provided by WCC.

We have a bridge no need to replace it. Put more support underneath.

I do not believe officers have seriously looked into restoring the current bridge. In my opinion this would be a cheaper option. If you decide to demolish it do not build a new one.

Preference for a cheaper, simpler solution (48)

A considerable number of respondents suggested that a cheaper, more basic solution could be found that would cost less money and deliver acceptable outcomes without having such a large impact on the city financially. This point was often made based on respondents' concerns about impacts on rates/ratepayers, a desire for 'essential' work to be prioritised over cosmetic projects, or WCC's current financial position (all discussed above).

I think it's okay for the bridge to be simple and functional, as the enhancements to the square should provide ample places to gather or rest.

It's important to not over engineer and to keep any bridge affordable given the current climate and financial constraints.

Successive rates increases have been brutal amidst cost-of-living pressures. While I don't want an ugly, pure utilitarian design akin to the other bridge over Jervois quay, I'd rather have something "good enough" if it meant significant difference in cost.

It is generally important to keep costs down (35)

A considerable number of respondents made simple statements noting that it is generally important that costs are kept low and the impact on rates is minimised. These

comments were often short and simple, indicating that it should be obvious or standard practice to endeavour to keep costs low.

Cost is always important.

Does this really need an explanation in this economic climate?

Cost of living is a challenge for many in Wellington so an innovative low-cost option would be best.

Alternative suggestions (18)

A moderate number of respondents offered alternative suggestions or ways to keep costs low. Suggestions included: opting to build just a pedestrian crossing now but designing it in such a way that a bridge could be added in the future; looking into ways to strengthen the existing bridge; building a Bailey bridge instead of the bridge currently proposed; replacing the City to Sea Bridge with a new bridge but no crossing; using existing crossing options instead of creating a new crossing; and finding other innovative ways to pay for the project, such as a sponsorship programme for companies/families or individuals, or securing grants or funding from private trusts or corporates.

In Japan, after the Kobe Earthquake, all bridge supports were strengthened by putting concrete sleeves around the existing support legs. More work should be done on solutions to save the existing infrastructure.

There are ways to reduce costs for ratepayers through smart architectural design. Using existing traffic lights and walkways can reduce building costs.

Other topics (21)

A range of other comments were made that did not relate to the cost of the project. Examples of comments were: the current financial crises is temporary; if geotechnically compromised land the cost will be significant; cost of living pressures.

5. Adding places to sit and gather

Summary

Many respondents were supportive of including places to sit and gather on a new bridge, as the current bridge works effectively as a space to relax and gather with others. Respondents argued that these places to sit and gather make the bridge an enjoyable public space and destination, making it more than just a walkway, and fostering a sense of community.

Suggestion for how a future bridge could further serve this purpose were also made by a considerable number of respondents.

Places to sit and gather on the current bridge are valued (155)

Comments about the current bridge and how it is used as a social space were made by a very large number of respondents. These respondents expressed appreciation for the existing seating on the bridge, describing these spaces as “a major attraction”, “popular”, and something that they “like” about the current bridge. As such, these

respondents were in support of similar opportunities to sit and congregate on a new bridge.

One of the great things about the current bridge is that it provides a lovely area to sit with views over Te Ngākau and Whairepo. I'd like to keep that.

The great thing about the current bridge is that it isn't just a pedestrian transport route, it is a place for people to gather and connect.

Respondents also discussed how they utilise the bridge as a destination, frequently describing using the current bridge as a place to meet and “hang out” with others, rest, have meals (such as a place which office workers frequent for their lunch breaks), or to enjoy the view. In some cases, respondents argued that the bridge should be kept because of how well the current bridge fulfils this purpose.

The current City to Sea Bridge, although impractical to keep because of earthquake reasons, is a hub of sorts. No matter the time of day, you will find people sitting down and gathering as groups on the bridge. It is important that third spaces like this continue to exist in the future. I firmly believe that any new bridge constructed should serve a similar function.

The current bridge is an extension of the Civic square, not just a functional bridge. It provides meeting, sitting and viewing locations that are separated from the traffic level. I often eat my lunch on the bridge and arrange to meet others there as it's nicer and more open than the civic square itself.

The Bridge as a public space (103)

Discussion around the bridge being a public space, a destination, and more than just a thoroughfare was raised by a large number of respondents who argued that places to sit and gather would attract people to the space, with a smaller number of people who were in support of there being a place for people to spend time in without spending money. These points are discussed below:

Seating will encourage usage of the bridge as a destination (90)

A sizeable number of respondents argued that by including places to sit and gather, the bridge would be utilised as more than a walkway, and instead would be a destination itself. Respondents also highlighted the value of making a space to sit and enjoy the view, due to the bridge's connection with, and view over the waterfront.

Why not have a lovely space over the civic square and lagoon, if we are going to build a bridge why not have a spectacular structure that is a tourist spot and hub for connecting to Wellington and Wellingtonians, as well as tourists. Its a civic square / town gathering space and should be celebrated as such.

If there is a bridge, then as well as providing access, it should make use of its elevation to be able to look out from and also to provide gathering places without blocking the main thoroughfare for people to keep moving through

It's good to be able Take time out to look at the view across the harbour, rest awhile, or meet friends on one's way somewhere nearby away from traffic.

Respondents also made the point that places to sit and gather both allow people to relax or hang out on the bridge, as well as facilitating public events in the space.

The liveliness of the bridge, where people gather to eat lunch, to chat or to look at the view, and the way it can be used for art events and music, is one of its most endearing features. Having a bridge that welcomes people and encourages them to linger would be wonderful.

Making the most of views, and creating micro-spaces where people can enjoy the sun, the view, and passers by adds to a sense of place and comfort for people. One of the reasons I've not really liked civic square at the moment is that it's just a huge expanse with not many of such spaces (edges, walls spots to hang out) around it. These could be designed in, whilst still keeping the big expanse needed in the square for when that scale of space is wanted for events, gatherings etc.

Support for places for people to spend time in without spending money (13)

Several respondents highlighted the importance of a public third space. Respondents articulated that third spaces are important for the city as they offer a place in the city to spend time in and connect with others without having to spend money.

One of the things that has made the current bridge so important is that it was not just a wayfare - it was a piece of public space. Public space where people can spend time and not spend money is essential for a city - and creating a wide variety of public spaces should be a council priority.

With the loss of the Wellington City to Sea Bridge being inevitable, it is vital that its identity as a "third space" where Wellingtonians can gather and interact comfortably in a sheltered space, without pressure to spend, is maintained in the new district.

Places for city workers, visitors and events to enjoy their city and overlap into each others lives is vital to create a "Third Place" the goal of any neighbourhood.

Benefits of enabling social gathering (74)

The importance of social gathering was discussed by a substantial number of respondents. These respondents stated that social gathering would be enabled by having spaces to sit and gather, and highlighted the social dimensions of the bridge as a gathering space. Respondents argued that it is important to have a “community focus”, which would create a “vibrant” place meet and connect with people, thus fostering a “sense of community”.

As a teenager myself, I think it is important to have spaces where groups can enjoy themselves. Teenagers in particular make up a solid portion of traffic through town, and if we don't have spaces to convene, we will move away from hanging out in town, and all the economic benefit brought by teenagers in town will be lost.

The focus of this square is community building. That can only occur through space for people to gather and enjoy. It should be accessible and usable to the general population.

Some respondents also argued that a communal space and the ability to connect with others would be beneficial for peoples' wellbeing, while others emphasised the importance of a public space for young people to gather and socialise.

This encourages social interaction and community building which is crucial in this era of online living. Many people are doing it rough psychologically because they have no tangible sense of community to connect with. We feel disembodied, not tied to a specific place or group of people. Instead, we are floating between potent groups of online people which tend to be less diverse than the people that physically surround us. Seats/tables would also encourage people to stay in the area rather than it being only a path for foot traffic.

General support for including places to sit and gather (39)

Broad comments about needing a space to sit and gather were made by a considerable number of respondents. These respondents did not elaborate further, simply stating that having these spaces would be "important" and "functional", making the area "inviting", "enjoyable", "vibrant", and "attractive".

On a sunny day it's a really nice spot, and I don't just want a narrow and borrowing bridge like in other cities.

It is important to have open space in the city.

Design suggestions (22)

Design suggestions for seating and gathering varied but called for designs which would make spending time on the bridge enjoyable and multifunctional. These suggestions included shelter and shade, a view over the waterfront, a wide bridge, tables, charging stations, multifunctional zones, art, and more green space. A couple of respondents also supported replicating or using a similar design to the current bridge, and one respondent rejected the use of "hostile architecture".

Other topics (31)

Other comments were made by a moderate number of respondents, most of which did not make relevant comments on the topic, such as: "The waterfront is beautiful. Wellington should embrace it", "When the library is completed the area will be full of people.", "Why do you think?", "to enjoy the art".

A small number of respondents argued that having places to sit on the bridge would make it more accessible, as people would be able to sit and rest when necessary.

6. Adding public art and sculptures

Summary

Respondents were supportive of adding public art and sculptures, as they viewed public art as adding interest, and vibrancy, as well as fostering connection to a space. The current bridge art was of importance to a large number of these respondents, who stated that the bridge was iconic and special. A considerable number of respondents called for the current art to be retained or reused in a future design, while other respondents were supportive of incorporating new art by local artists.

Wellington's identity as a creative city was also discussed by a substantial number of respondents, who argued that a future bridge should be representative of this reputation.

Art adds value & enriches public spaces (119)

Comments arguing that public art is important or adds value to a space were made by a large number of respondents. These respondents argued that public art is "important", "interesting", "visually attractive", can be "interactive", and would "enrich" people's experience of the bridge. Several respondents added that public art can also foster a sense of pride in, and connection to the city by bringing a "unique" quality to the space. The importance of art to society was also highlighted by respondents.

Art is the cornerstone of society. It draws people in, encourages conversation and provides a sense of culture and identity to a place and its residents. It also supports our local artists, who earn about half of the national average income.

As I SEN teacher, public art can engage people with neurodiversity and others while making the space attractive.

Public art is something I really like about Wellington, I like the sculptures around the city, it gives the place flavor.

A moderate number of respondents also expressed opposition to a "sterile", "utilitarian", "soulless", or "boring" bridge, and argued that adding art to it would make the bridge more than just a thoroughfare.

People don't realise how necessary art is in public life. This city cannot turn into an art-less soul-less hellscape of new pipes and low rates at the expense of zero enjoyable public spaces.

Public art is the lifeblood of any city. I enjoy the sculpture and decoration on the old bridge, which adds to the character of the Te Ngākau area. Simply making a utilitarian bridge with no decoration whatsoever would be a massive wasted opportunity. All the great cities of the world are noteworthy for their architecture and public art that reflect their culture and character.

Praise for the current bridge art (106)

A large number of respondents offered positive comments about the current City to Sea Bridge artwork. These respondents claimed that the current artwork adds value to the

city, and described it as “iconic”, “unique”, “distinctive”, and a “landmark”. The bridge’s status as an attraction was used to further argue this point. Respondents also highlighted the “quirky” uniqueness of the bridge, arguing that this special quality makes the bridge meaningful to the city and contributes to Wellington’s identity as a creative city. Losing the artwork, they argue, would therefore be a loss for the city and its character. Some of these respondents expressed opposition to changes to the bridge or a loss of the artwork, while others used the art’s “iconic” status to support their argument for investing in new art.

The art and sculptures in Civic Square are one of the major attractors for people- from the sweeping architecture of the bridge itself, the art along the sides, the interest garnered from the pyramid, to the poetry stones, these pieces reflected Wellington uniquely. Without embracing our artistic side, we fail to embrace what defines the very fabric of our city- its people. Civic Square is the heart of our city, but we cannot truly keep that heart beating without art!

The City to Sea bridge is iconic because of the public art and sculpture it incorporates. Building another bridge is a great opportunity to create more iconic public art which makes our city special.

The sculptures making up the bridge are of their place - the sculptural design is unlike anything I have seen elsewhere and that specificity is absolutely core to the identity of Wellington's waterfront. Design is so often following the hottest trend, which can't help but be globally referenced these days, whereas this is a very particular design language. It is warm, evocative, thoroughly iconic in a lived in, well loved way.

Several respondents also commended the current bridge’s connection to Māori art and storytelling, and the “cross-cultural kaupapa” of the bridge’s design. These respondents emphasise an importance of collaborating and connecting with mana whenua and ensuring that te ao Māori is “more visible” in the city.

Local artists need to be supported, and the current bridges story of the taniwha Ngake and Whātaītai is brought to life by the amazing work of artist Paratene Matchitt (helped by Rewi Thompson and John Gray)

An integral part of the present bridge is the superb work by Māori artists and a Māori architect - it connects Wellington to the sea superbly through the use of te aho a Maui (Maui's fishing line). And connects North and South Island with Maui's line pulling out the pounamou pyramid.

A small number of respondents also named the Writers Walk sculptures as artwork which they enjoy on the current bridge.

Design suggestions (104)

A large number of respondents gave suggestions for the artwork on a potential new bridge. Around half of respondents argued that the existing artwork should be reused, while other respondents offered other suggestions. The ideas offered included the following:

Retain or reuse the existing artwork (54)

A substantial number of respondents argued that the existing artwork should be retained or reused. Respondents argued that by doing so, the new bridge would be a “tribute” to the current bridge and retain its cultural value. These comments included those in support of keeping the existing artwork alongside new artwork, as well as those calling for a replication of the existing bridge.

I do not support the demolition of the current City to Sea Bridge, but if this option is chosen I would like to see as much of the current artwork and sculptures incorporated into a new bridge as a way to honour the current bridge and make it more than just a bridge. Wellington prides itself on being a creative capital and our public spaces should reflect this.

Ideally the art and sculptures of the existing bridge could be incorporated into a new, smaller pedestrian bridge to maintain continuity and to acknowledge the mana of the existing bridge

The existing sculptures on the City to Sea bridge (by Para Matchitt on the Rewi Thompson and John Gray bridge design) are a very important part of our built and artistic heritage as a city, telling stories of and connecting us to our past. It would be great for these sculptures to be repurposed within a design of a new bridge in a sensitive way, much like the Nikau Palm sculptures are being repurposed within Athfield Architects' design of the renovated library.

Other design suggestions (50)

A substantial number of respondents offered a range of other design suggestions. Most of these respondents were supportive of commissioning new artwork of a similar quality to the current bridge, ideally created by local artists.

One of the best parts of the current City to Sea bridge is all the art across it. Wellington is an artistic city full of creatives and with a long history of showcasing local and NZ artists around the city. Although the current bridge will need to be removed as it is no longer safe it would be great to replace it with one that also represents the art and culture that makes this city what it is.

This city is full of sculptors whose work should be on display.

Other suggestions included:

- Collaborating with mana whenua and Māori artists
- Allowing for changing art installations to feature local artists
- Including signs discussing the old City to Sea Bridge and its art
- Keeping costs low
- Incorporating greenery.

Wellington is an arty city (65)

A substantial number of respondents made comments relating to Wellington's identity as a “creative capital”. These comments often drew connections to the value of public art and sculpture in affirming this identity, stating that public art is what “makes Wellington great”. Some respondents also drew a connection to the current bridge,

arguing that because the current bridge is representative of the city’s creative identity, public art on a future bridge should fulfil that purpose in a similar way. Respondents also argued that to maintain the city’s reputation, it is important to celebrate local artists in public spaces.

It's Wellington! Wouldn't be Wellington without some public art showcasing the city from our communities.

The existing bridge is essentially a public artwork ... This bridge has been a critical part of Wellington's story as the arts capital of NZ.

I love the existing bridge but appreciate that it must be removed. There is something special about standing above the central city. The bridge adds character and wonder to the city. Any replacement option should recapture that. It's a bit like the bucket fountain: it may technically have a function, but its purpose is to fulfil that function in a characteristically quirky Wellington way, not just as plainly and efficiently as possible.

Art will attract tourists (23)

A moderate number of respondents claimed that art would make the bridge a tourist attraction. Respondents noted that with the bridge’s location and proximity to other attractions such as the City Gallery, Te Papa, and the waterfront, adding interest to the bridge would draw more tourists to explore the area. A couple of respondents noted that Wellington should have tourist attractions that lean into its reputation as a creative city, while others articulated that the current art is already popular with visitors.

Public art and sculpture are cultural artifacts. They are not utilitarian but serve for people to stop and take notice, to contemplate. They represent us. When travelling overseas there is wonderment in public art. Tourists look to our art for meaning and for a sense of our history and depth of culture.

This can make walking in that area a tourist attraction and also has great mental health benefits for locals.

The art and sculptures in Civic Square are one of the major attractors for people- from the sweeping architecture of the bridge itself, the art along the sides, the interest garnered from the pyramid, to the poetry stones, these pieces reflected Wellington uniquely. Without embracing our artistic side, we fail to embrace what defines the very fabric of our city- its people.

Other topics (14)

A range of other comments were made by a small number of respondents, including a few respondents who support public art on the bridge due to its location in the city’s civic and cultural precinct. One respondent expressed a general opposition to the removal of public art.

Comments discussing the cost of art were also made by several respondents. These comments included general statements that art can be inexpensive, as well as suggestions to reduce the cost of art.

7. Including viewing areas

Summary

In discussion of including viewing areas, respondents repeatedly expressed their appreciation of the harbour views, and the design of the current bridge for providing an ideal outlook from the city to the sea.

Additional benefits that good viewing areas provided were raised frequently and included; increased enjoyment of the public space, opportunity for a unique elevated view of the water, turning the bridge into a landmark, and enhancing the connection between city and sea.

Some respondents made suggestions for maximising viewing potential on a new bridge or argued that viewing areas were an “easy win”.

Benefits of viewing areas (143)

Increases utilisation and enjoyment (66)

A substantial number of respondents highlighted how viewing areas on a bridge improve the experience, often illustrating aspects they appreciate in the current bridge design. Recurring examples included: photo opportunities, especially for tourists; a gathering place in which people can view fireworks or events in the lagoon; a calming space to reflect or relax; an enjoyable place to spend time with friends and family; a better crossing experience; a point to spot stingrays; and an elevated outlook for tourists to get their bearings.

It's not that we need specific viewing platforms, but the bridge, as it does now, has to have the width and elevation to enable people to stop, chat and admire. The element of surprise as the crest of the bridge as the harbour opens out in front is a critical component.

That's one of the great things about the current bridge - such an excellent viewpoint for fireworks and spotting the whairepo! :-)

I really enjoy the communal space with the current bridge. If this was just made to as a way to cross the street it loses this nice feature and might as well not even bother.

There was agreement in these comments that good viewing areas increased the opportunities for enjoyment on the bridge and made the space comfortable for the public to spend time, rather than purely for transit.

Taking advantage of elevation (33)

A considerable number of respondents discussed the views with specific regard to elevation. Comments frequently noted that the elevation provided by the bridge allows for the views they value to actually be visible to the public, arguing that it is important to take advantage of this with viewing areas.

It's elevated, so it makes sense to give people something to properly look from as they cross (and another reason to use it rather than the proposed ground level crossing).

The existing bridge provides a unique viewing opportunity over the harbour & surrounds which you can't get anywhere else along this stretch of road unless you work in one of the high rise buildings

Respondents often described the surrounding views and argued that the uniqueness of the location around the bridge, along with the elevated viewing opportunity above the water, was a reason to offer areas to enjoy the landscape.

Bridge as a landmark (28)

A considerable number of respondents argued that viewing areas turn the bridge into a destination or landmark, which they proposed would enhance the harbour and make the bridge more special than just an accessway.

Don't want to lose the views we get from the City to Sea Bridge now. A huge attraction for the city, for locals and visitors alike.

Respondents claimed that viewing areas would provide an incentive for people to want to use the bridge. Comments frequently stated that the views available from the areas on the current bridge are an attraction for visitors and they did not want to lose that experience.

Connection between city and sea (16)

The role of the bridge as a connector of Te Ngākau and the harbour, or city and sea, was discussed by a moderate number of respondents. Respondents illustrated that viewing areas maximise the feeling of connection between these different areas.

Because the bridge provides a connection between Te Ngākau Civic Square, the heart of the city, and the waterfront. As part of this connection it should be a place where people can look out to the sea, back to the city, and feel proud of our city.

A couple of comments noted that viewing areas are important for enjoying the connecting views without danger of traffic.

Viewing areas on the current bridge are valued (110)

A large number of respondents shared their appreciation of both the views and viewing areas that the current City to Sea Bridge provides. These comments are also discussed in the topics below (*Appreciation of the view*), apart from several who simply stated that this was an important feature of the existing bridge.

This is a special feature of the existing bridge worth retaining/recreating.

The majority of respondents expanded on this point by sharing that they value the unique and easy access to a view of the city and harbour from a high vantage point, and that the viewing areas on the current bridge are inviting to spend time in while taking in the view.

Because the height and width of the present bridge provides views of activities in the Civic Square as well as spectacular views of Wellington Harbour in all weathers.

The City to Sea bridge provides a spectacular vista of the city, and the art work and structures contribute to historical and cultural significance. This type of grand view is valuable.

Some respondents urged that these valued aspects of the current bridge must be retained in a new design, while more used these points to justify keeping the bridge as it is.

Appreciation of the view (93)

A sizeable number of respondents placed high value on the views themselves and maintained that viewing areas would allow them to be fully appreciated. These comments described the view from the current bridge as “beautiful”, “amazing”, or simply mentioned “the view”. Respondents maintained that good viewing areas are scarce in the city; emphasising the importance of the availability of this particular viewing area.

The views in Wellington are amazing and people should be provided the opportunity to enjoy them more, instead of looking a cars and buildings.

We have one of the most beautiful harbours in the world; let's see it!

The views from the existing bridge are unique for all to access. Pausing up there is a key benefit of the existing bridge.

Comments repeatedly brought up aspects of the of the view they admired which included; the harbour, waterfront, hills, Whairepo lagoon, Civic Centre, ocean, city, coast, Te papa, and Frank Kitts Park. The importance of the opportunity to see these areas in Wellington was repeated by respondents, who often expressed a sense of pride in the Wellington waterfront.

Other viewing area comments (59)

Design suggestions (22)

Design suggestions for a new bridge to maximise viewing potential were offered by a moderate number of respondents. The most frequent suggestion was seating, which was outlined in a small number of comments to be important for people to be able to relax and enjoy the views.

This should be a space that people can enjoy some peace & tranquility. It should be a space that can have outdoor exhibitions in the same that are free to the community. To do that you need to provide some seated areas.

Respondents often expressed approval of the seating provided on the current bridge, as well as its viewing area being focused on the harbour side, the artworks that also act as viewing shafts, and the enclosure of civic square created by the steps.

A sense of enclosure for the square is created by the stairs "closing" the harbour side, but then walking up here the views over the lagoon and harbour adjacent make great spaces to sit and people-watch... this aspect needs to stay.

Respondents repeatedly stressed that viewing areas needed to be incorporated into the bridge without impeding the flow of foot traffic. The majority of respondents insisted the

current bridge design was ideal for achieving this. As an improvement, a couple of respondents suggested adding a viewing platform or cantilevered deck overlooking Whairepo lagoon, while one proposed multiple tiers, incorporating a Hakari stage. A couple of respondents were not in favour of a narrow or covered walkway.

Easy win (20)

A moderate number of respondents reported that viewing areas on a bridge were an “easy win”. These statements were short and often questioned why viewing areas would not be incorporated if effort is put into building the bridge and the views in the location are stunning.

This seems like the lowest-hanging fruit if building a new bridge. The views exist - they just need to be framed.

The lagoon!!! Hello! It'd be a crime not to.

These comments often conveyed a sense of annoyance at the possibility of a bridge not taking advantage of the views.

Bridge opinions (17)

A moderate number of respondents highlighted the viewing opportunity on the current bridge as a reason to leave it there. However, a couple of respondents indicated a preference for building a new bridge instead of a pedestrian crossing, as this would allow views.

8. Other topics

Summary

When asked to discuss ‘other’ bridge considerations, most respondents expressed overall opposition to the proposed demolition of the City to Sea Bridge, claiming that it was unnecessary or suggesting that it should instead be strengthened. Less often, various suggestions for the design of the abridge were offered, the most popular being that it should retain the character, style, and art of the current bridge.

Stance on City to Sea Bridge replacement (90)

Oppose demolition of the City to Sea Bridge (79)

A sentiment that was expressed in close to half of the comments on ‘other’ bridge considerations was that respondents are opposed to the demolition of the City to Sea Bridge, or would like to see it repaired.

I do not want to see the bridge demolished. It is an iconic part of Wellington's waterfront and has survived two earthquakes. In the event of another one the surrounding area and roading would be compromised.

Respondents expressed they would prefer to strengthen the existing bridge to withstand seismic activity, and that this should be among the options proposed within the consultation.

There is another option - keep the bridge and strengthen it.

Doubt about the legitimacy of the Council’s assessment of the bridge’s safety and structural integrity was also voiced – with respondents maintaining that there was no “reason” or “need” to demolish it.

Don't demolish the Bridge. The seismic report fails to mention that if an earthquake is strong enough to demolish the bridge it will also damage the road beneath and the surrounding area. Leave the bridge alone and carry the risk, as with everything else on the waterfront area.

The existing bridge shouldn't be demolished on a whim. There's no evidence to support councils claims.

Less often, respondents detailed the historical, artistic, cultural or sentimental value of the bridge to describe the impact that demolition would have on the public, and Te Ngākau as a whole.

The City to Sea Bridge is a valuable part of our city. It offers a stunning view of Civic Square, Te Papa, and the harbour, and its connections to artist Paratene Matchitt and architects Rewi Thompson and John Gray are significant. It has been, and should remain, a marvellous feature of our urban landscape. Put the architectural and art value to one side, as seems to be the way of Wellington City Council, the structure also enables a platform for graduations, celebrations, protests, and many civic gatherings which is important, and can continue if retained.

Other perspectives on the City to Sea Bridge (11)

A small number of respondents expressed alternative opinions about proposed options following the planned demolition, including:

- Opposition to construction of a replacement bridge
- General support for a new bridge.

Bridge design, aesthetic and heritage value (43)

Retain the character of current bridge (17)

Support for retaining the character, art pieces, and style of the current City to Sea Bridge, so as to preserve its conceptual and artistic message, was expressed in moderate numbers.

Retaining the character, kaupapa and cultural narrative of a historically important architectural and artistic developments in Wellington and Aotearoa

Other bridge design suggestions (26)

Various other suggestions for how the new bridge should be designed were offered in smaller numbers, including:

- The bridge should be a destination, or attract people to the area
- Concerns with the proposed design
- Calls to include weather protection elements.

Connectivity and impact on traffic (16)

A moderate number of respondents agreed that enhancing connectivity and reducing impact on traffic were important aspects to consider for the construction of a new

bridge. While many of these comments were more general in nature, connections to the waterfront, and the flow of the bridge to the square were specific aspects identified.

Making sure the flow of the bridge is nice and that it is aesthetic being one of the main hubs in Wellington. Bring people to the square.

A few respondents agreed that reducing pedestrian and traffic conflict was key, especially along Lambton and Jervois Quay.

Not impeding the flow of traffic along the quays. Previously it has been used indicated that while lambton quay will be pedestrian oriented, arterial routes will focus on vehicular flow.

Cost concerns and excessive council spending (10)

Several respondents indicated that the highest priority consideration should be cost-effectiveness and reducing council spending, with this group claiming that the proposed plan for the bridge was an unnecessary use of funds.

Why have a bridge when you are broke! Use the pedestrian crossing and when you have sorted the dire finances out, then consider a bridge. Don't spend what you don't have!

Question 4: Additional Comments

RESPONDENTS WERE ASKED: *Do you have any other thoughts about the City to Sea Bridge or how people can move between Te Ngākau and the waterfront?*

Summary

Many respondents took this question as an opportunity to reiterate and explain their preferred scenario for the City to Sea Bridge. The most common stance taken was that neither of the options provided was suitable, and the existing bridge should be retained.

A large number of respondents were widely critical of the engagement process and council's actions regarding the planned demolition of the City to Sea Bridge. The majority of these respondents criticised the rationale behind WCC's decision to demolish the bridge, viewing this as unwarranted, a waste of money, or frivolous, particularly when the city has many other projects requiring funding.

Other comments discussed design suggestions both for a new bridge, or for the proposed pedestrian crossing and the surrounding areas; the current City to Sea Bridge's status as an "iconic" piece of Wellington and the need to retain its character; the importance of maintaining or enhancing a clear connection between the city and the waterfront; concerns about the cost of the project; and a desire for people to be the focus of the design, rather than cars.

Stance on the project (694)

Respondents often reiterated their preferred position on what should happen with the City to Sea Bridge and the proposed crossing and/or replacement bridge. These comments included support for either scenario 1 or scenario 2, as well as a preference for options that were not included in the engagement document, including maintaining the current City to Sea Bridge, or replacing the existing bridge with a replacement bridge only (no crossing).

Do not demolish the bridge (343)

The most common stance expressed by respondents who made additional comments was that the current bridge should not be demolished. This view was often stated in simple terms without elaboration, with respondents simply urging Council to keep the bridge or to further explore options to repair or strengthen it.

Those who did elaborate on the reasons why they felt the bridge should be kept typically either held the view that the earthquake risk posed by the existing bridge did not warrant its demolition; argued that the City to Sea Bridge is of significant cultural, creative, or social value to Wellington and should therefore be preserved; or criticised WCC for being too eager to demolish structures rather than strengthen them.

I oppose both options. The bridge is iconic and a well recognised unique sight in Wellington. It is much loved and used by Wellingtonians and visitors alike. It must be feasible to save it.

The large number of respondents who expressed the view that the earthquake risk did not warrant the bridge's demolition often argued that people who use the bridge would

be willing to accept some risk and continue using the structure, or that there are many other, more dangerous things that people continue to do. Therefore, they argue that to demolish a bridge over a comparatively low risk is unwarranted.

Do not demolish the bridge. Take the risk for a 1000 year event.

Don't put it down - people love the bridge. I'm prepared to take my chances if there just happens to be a major earthquake when I'm half-way across!

To cross the road put more people at risk than any earthquake would. If we look at the statistics more people have died crossing busy roads than by a structure falling down in an earthquake. We are focusing on the wrong risks.

Concerns about a new crossing (136)

A large number of respondents opposed building a new pedestrian crossing on Jervois Quay, primarily due to concerns about how this would impact the flow of traffic on such a busy arterial road. Over half of these comments suggested that a preferable option would be a bridge and *no pedestrian crossing*.

I do not support the idea of a pedestrian crossing here on such a busy thoroughfare. There is already one near the Michael Fowler Centre.

Don't do level crossing. Just do the replacement bridge only.

Just have the new bridge, do NOT add a pedestrian crossing as this would impede access along Jervois Quay...Adding a pedestrian crossing is a complete waste of money for something which is not needed.

General support for a bridge (130)

A sizeable number of respondents expressed general support for the inclusion of a bridge in the design. The primary argument made by this group was that separating pedestrians and cyclists from cars and providing unimpeded access between the city and waterfront is crucial from a safety perspective and for the general enjoyment of the area, as well as for the flow of both vehicular and pedestrian traffic.

I believe bridges are a vital piece of infrastructure to enable a pedestrian-friendly city, while reducing disruption to traffic. The verticality offered by bridges also provides landmarks and vantage points, making traversing the city more enjoyable.

About a third of these respondents supported the inclusion of a bridge due to safety concerns. These respondents argued that that an at-grade crossing on such a large, busy road would put pedestrians at risk, and therefore having a bridge is important as it provides a safer crossing option.

The road is quite wide, and pedestrians crossing it can pose a safety risk. A bridge crossing would provide a safer solution.

As a mum I prefer a bridge to a pedestrian crossing.

A bridge is not necessary (70)

A substantial number of respondents argued that there is no real need for a bridge in the area. These respondents generally argued that a pedestrian crossing alone would be adequate, that the value added by a bridge is not enough compared to the cost involved for the city, or that the removal of the bridge would open up the area and improve the connection between city and sea.

I actually think a crossing is better than a bridge. Especially if it prioritises foot/cycle traffic heavily. Mentally the city will feel much more connected to the waterfront.

A small number of respondents also argued that if an at-grade crossing was available, most people would not use a bridge.

I do not support a new narrow bridge, if there is a major pedestrian crossing. Why would anyone choose to walk up and over it? It would be similar to the existing Jervois Quay foot bridge.

Support proposed crossing scenario (35)

A considerable number of respondents expressed support for the proposed pedestrian crossing, with or without including the new bridge. Around two thirds of these respondents supported the addition of a new at-grade pedestrian crossing, often noting that a crossing would enhance the area, opening up Te Ngākau to the waterfront and encouraging the flow of foot traffic. These respondents often also indicated a preference for no bridge (discussed above).

The pedestrian crossing concept looks great. I am supportive of the demolition of the City to Sea bridge to improve connectivity between Civic Square and the waterfront.

Several others expressed support for both a new pedestrian crossing *and* bridge.

Both a bridge and a crossing are needed to connect to and from the waterfront.

Any new crossing options are unnecessary (30)

A moderate number of respondents argued that there is no need for either a new bridge or a new pedestrian crossing, often citing the numerous other nearby options for crossing Jervois Quay, such as the crossing at Queens Wharf and the bridge near Harris Street.

There are a sufficient number of crossings along this stretch of road. A bridge / pedestrian crossing here is unnecessary and likely to be very costly.

There is an existing bridge about 100m away and a pedestrian crossing maybe 200m in the other direction. That is enough.

Bridge design suggestions (243)

A very large number of respondents offered design suggestions for a replacement bridge. Suggestions varied and most commonly related to the following:

- **Existing bridge and/or artwork:** A considerable number of calls were made to retain existing artworks (or parts of the City to Sea Bridge structure) and incorporate these in some way into the design of a new bridge or within the wider Te Ngākau Precinct development project.
- **Character:** A considerable number of comments also called for a new bridge to be artistic, or in some way special, as people feel the existing bridge is.
- **Uses:** A considerable number of respondents wanted to see a new bridge designed with various uses in mind, including places for people to meet and gather, and places to sit and rest or enjoy the view.
- **Access and accessibility:** A considerable number of respondents called for the bridge to be accessible, including to those with additional mobility needs, as well as to parents with prams, cyclists, and scooters. Several people highlighted the need for the bridge to be wide to accommodate different transport modes and to accommodate crowds for events or gatherings in the area.
- **Preference for a simple design:** A moderate number of respondents expressed a preference for a simpler, more basic design for a new bridge. Cost was often cited in these comments, with respondents arguing that a bridge's primary function should be to allow access, so a new bridge does not need to be "fancy".
- **Wind and weather protection:** A moderate number of respondents called for the design of a new bridge to incorporate protection from the wind, sun, and rain, such as sails or overhead rain covers, or discussed bridge design in relation to Te Ngākau more widely, noting that a bridge acts as a wind break for the square, or urging designers to ensure that Te Ngākau does not become a funnel or wind tunnel.
- **Cultural aspects:** Several respondents highlighted the cultural significance of the existing bridge and called for a new bridge design to incorporate a similar cross-cultural kaupapa and highlight te ao Māori.
- **Climate, resilience, future proofing:** Several respondents wanted to see a new bridge designed with resilience and longevity in mind. Sea level rise, earthquake risk and greening were all commonly discussed.
- **Other design suggestions:** A number of other design suggestions were made, including ensuring the new bridge offers similar amenity to the current bridge; concerns with the current design proposal; and specific, technical design recommendations relating to the structure.

Council actions, decisions, and processes (158)

A very large number of respondents offered criticisms of Wellington City Council and its actions or processes relating to this project. Most of these respondents criticised the rationale behind WCC's decision to demolish the current City to Sea Bridge, viewing this as unwarranted, a waste of money, or frivolous.

Can someone in the council please do a real cost:benefit analysis. I love the work you guys are doing on making cycling safer, but this just doesn't stack through a pragmatic lens.

A considerable number of these respondents noted that for several reasons, including a lack of funds, unsatisfactory reasoning, a lack of public buy-in, or potential changes to

earthquake risk requirements, the project should be paused and revisited at a later date.

Once the pipes are completely fixed, come back and consult on this vanity project. Until then, don't bother to ask ratepayers for any funding for low priority projects

The project should be deferred as long as possible. If there is a major earthquake the City to Sea Bridge will be the least of our problems. What about the hundreds of earthquake prone buildings which will collapse.

Several respondents suggested that a more cost effective and realistic approach to this project could be to build only the pedestrian crossing, but incorporate plans to add a bridge in the future when the city has more money to spend.

Is there a way to begin now with a pedestrian crossing but leave the door open architecturally for a raised structure to be added later if the resource becomes available?

A moderate number of other respondents made other comments, including broad criticisms of other council actions and processes, including how WCC spends money and which projects they decide to undertake; and calls for a more rigorous or creative tender and design process to ensure value for money.

Hold a competitive design and tender process for a financially viable future for Te Ngākau and submit that, including cost, to a binding referendum at the next Council elections. Then get some competent lawyers to negotiate a robust contract to carry out the winning bid on time and on budget.

Roading design (105)

A range of roading design suggestions were offered, including various ways a pedestrian crossing could be designed; how the area could be pedestrianised or altered to improve the connection of city and sea; and how traffic speed and lights could be changed to improve safety or efficiency of travel (either for pedestrians, cars, or both).

One of the most prominent themes among the comments on this topic (as well as other topics discussed above) was that the road acts as a barrier between the city and the waterfront, and it hampers the connection and flow of pedestrians through this area. Respondents suggested a range of ways that this area could be designed to improve connectivity, including:

- **Traffic calming:** Lowering speed limits or reducing the number of lanes on Jervois Quay
- **Trenching or a tunnel:** Either rerouting the section of road between Te Ngākau and the waterfront to go underground to allow unimpeded pedestrian/cycle access or creating an underpass for pedestrians to cross underneath the road.
- **Light phasing and prioritisation:** Prioritising pedestrians at lights on Jervois Quay to ensure that they do not have long wait times, and that people, including those with reduced mobility, have enough time to safely and comfortably cross the road.

- **Changes to existing crossings:** Removing or changing existing nearby crossings to reduce the impact on vehicular traffic and maintain flow.
- **Greening:** Using plantings to create visual separation between cars and pedestrians, help absorb traffic noise, and make the area more appealing.
- **Cycle/scooter access:** Consider how cyclists and people on scooters can be accommodated safely in the design.
- **Other safety suggestions:** Consider how edge protection and landscaping can be used to ensure pedestrian safety.
- **Future-proofing:** Consider how the design can accommodate future changes such as the addition of a bridge, or light rail/public transport access.
- **Accessibility:** Ensuring that a crossing is designed to be accessible for everyone, considering factors such as the level of the crossing (e.g. footpath level) and light cycle lengths.

A few respondents also expressed concerns that physically opening up Te Ngākau to the waterfront too much would result in the square losing its function and becoming a thoroughfare rather than a place where people stop and spend time.

Wellington's character (and the bridge's role in this) (73)

A substantial number of respondents discussed Wellington's unique character, and the current City to Sea Bridge's role in this. The vast majority of these comments discussed the bridge's status as an 'icon' of Wellington, and expressed that it would be a significant loss to the city if the bridge were demolished. Around half of the respondents who made these comments wanted the bridge retained, while others expressed a desire for the new design to retain this special character, or hope that this project would revitalise Te Ngākau and bring back life and vibrancy to the area.

The bridge should be retained. It is a key part of the city's identity.

The City to Sea Bridge is an iconic landmark in Wellington, and we should make every effort to preserve it. If that's not feasible, we should aim to construct a new bridge with a similar function.

Going over the old bridge on my first day in Wellington was one of the reasons I fell in love with the city. I understand why it has to go but if we can keep some of that energy around Te Ngākau that'd be awesome.

Connecting city and sea (66)

A substantial number of respondents discussed the connection between the city and the waterfront. The majority of these comments highlighted the importance of this connection and ensuring it is either maintained or enhanced.

The link between the waterfront and Civic Square is so important and needs to be done well to elevate the area as a beautiful link not just an access way.

Several people noted that the current City to Sea Bridge acts to contain or enclose the square; a small number wanted to see this aspect retained, while a greater number seemed in favour of opening up the square to the waterfront and creating a more open space.

Opening up Civic Square to the road with a crossing is a very poor option which would destroy the square containment. The City to Sea Bridge is a major sculptural artwork that must be preserved. In place.

I think there should be a clear visual link between Te Ngākau and the water, and the demolition of the bridge will help with this.

Concerns about cost (62)

A substantial number of respondents expressed their concerns about the cost of the project, often echoing the concerns raised in discussions on page 27-31. The main arguments made by these respondents were that Wellington does not currently have the money for this project; that WCC should be focusing on more urgent infrastructure projects; or that the cost estimates are too high for what is being proposed.

Leave it as is. If fails after a quake them demolish. Seems silly to pull it down now. The city is also broke. Stop spending money on non critical stuff (everything but the pipes).

Cost, cost, cost. No nice to haves. Don't make decisions without ensuring that budgets are realistic and peer reviewed. Put tenders out to overseas firms. NZ productivity is among the worst in the developed world.

Wellington ratepayers have made it clear they want the WCC to stop spending money unnecessarily and focus major funding on fixing the pipes.

Prioritise people over cars (56)

A substantial number of respondents supported taking actions to prioritise people (including pedestrians and cyclists) over cars in the area. These respondents generally supported giving traffic light priority to pedestrians over vehicular traffic, and designing Te Ngākau and access to the waterfront with people at the centre.

It's great idea to prioritise pedestrian crossing over traffic flow - the current crossing at St Johns involves 2 different lights, always out of sync, resulting in a very frustrating (and dangerous as drivers often run the red lights) access to the waterfront.

Around half of these comments stressed the importance of having a bridge as this will allow pedestrians safe, car-free access to the waterfront.

A single pedestrian crossing will not provide the level of connection required, it is essential that free pedestrian access is enabled without crossing vehicle routes.

It's so important to separate pedestrians from traffic. Sure it would be cheaper to not rebuild a bridge, but it's an investment. Waiting for traffic, especially with so many lanes, is too much to ask of a highly pedestrianised population.

Other topics:

A range of other topics were discussed in smaller numbers. These included comments:

- Relating to Te Ngākau Precinct more widely, as opposed to the bridge or the connection between Te Ngākau and the waterfront
- General expressions of fondness for the existing bridge and its artwork

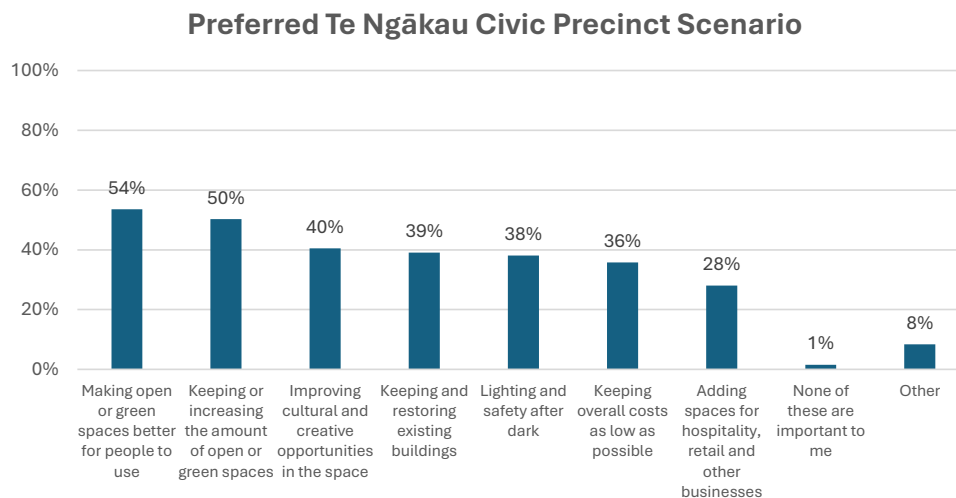
- Wishes for the future of Te Ngākau and Wellington in general
- Concerns about construction disruption and timeframes
- Expressions of support for a submission made by Inner City Wellington
- Transport related concerns; comments about the consultation process
- A variety of other one-off comments.

Part 2 – Te Ngākau Draft Precinct Development Plan

Question 1: Preferred Scenarios

RESPONDENTS WERE ASKED: Below are some potential scenarios for further development in Te Ngākau Civic Precinct. Please choose up to three that are most important to you.

- Keeping and restoring existing buildings
- Keeping or increasing the amount of open or green spaces
- Making open or green spaces better for people to use
- Adding spaces for hospitality, retail and other businesses
- Keeping overall costs as low as possible
- Improving cultural and creative opportunities in the space
- Lighting and safety after dark
- None of these are important to me
- Other



n=1270

RESULTS:

- > Open or green spaces were highly valued by respondents; the most popular option, selected by 54% of respondents, was making open or green spaces better for people to use, followed by keeping or increasing the amount of open or green spaces (50%).
- > Adding spaces for hospitality, retail and other businesses was the option selected least often (28%).

Question 2: Reasoning for Preferred Te Ngākau Civic Precinct Scenarios

RESPONDENTS WERE ASKED: *Please tell us why you chose those areas.*

1. Making open or green spaces better for people to use

Summary

A strong theme in these comments was that green and open spaces are important to people and their wider community, particularly as a place to relax outdoors and socialise, or by attracting activity and vibrancy to the city centre. The importance, therefore, of having outdoor spaces that allows enjoyable use of outdoor space in this way was emphasised.

Respondents also frequently affirmed that usable open green spaces are a key aspect of city life that is currently lacking, and commended the varied wellbeing, environmental and aesthetic benefits provided by added greenery.

Various suggestions were also offered for preferred design and layout of the space, with increased greening, or a park-like environment more frequently supported.

Less often, respondents cited issues with existing outdoor spaces, generally conveying that these spaces are unattractive, difficult to access or unenjoyable to use. Added greenery, better connectivity and added seating were the most frequent suggestions to improve these.

Social and community function (230)

A very large number of respondents conveyed in various ways that green and outdoor spaces are valuable because they currently do, or could, play an important role in general social and community function.

A place to sit, rest, and relax (89)

The design of green, open space as an enjoyable place to rest and relax, rather than simply travel through, was the aspect most commonly cited as important for public use. Seating, protection from the elements, and increased natural greenery were frequently suggested to compliment this.

Spaces where people can sit, play, relax, connect with people and nature whilst in the sun or shade would benefit us all.

Need to make a space that is enjoyable and relaxing to use and create a sense of nature that can be enjoyed, as opposed to astroturf and concrete areas.

Respondents also argued that outdoor public space should be designed to fulfil this function, as it reflects the way most people enjoy, or used to enjoy, using them. Anecdotal accounts of people sitting, eating, or taking some time away from the busyness of city life were also illustrated fondly.

When the area was fully open I liked using it as a place to socialise when I was young (eg sit on the grass to eat takeaways). I would like more benches and

terraced layers of grass like there currently is on the town hall side of civic square for this purpose.

The old Civic Square was great on a sunny day, with young children and parents, office workers and others relaxing and enjoying the sunshine

Attracting people to the city centre (54)

Respondents frequently argued that providing improved green and open spaces would mean that people would want to spend more time there. The subsequent increase in activity and vibrancy played a key part in respondent's vision for Te Ngākau as a 'beating heart'.

The square is underutilized and full of opportunity to be a great place to meet. I can see it functioning like a public square in parts of Europe- in which families meet up to snack and chat, kids kick balls, people skate, play music, watch the world go by... the heart of the city

Need more parks and gathering places to bring back a city centre.

These comments tended to emphasise the general importance of outdoor open space for people to congregate rather than "green" space specifically, although proponents of increased greenery often described this as an attracting factor, enhancing the aesthetic and atmospheric appeal of the city centre.

The Civic Square is surrounded by tall buildings and concrete. Green spaces breathe more life into an area and are known to improve the wellbeing of the people in the area. Whilst wider Wellington is very green, the city centre is less so. This is a great opportunity to add more life to the city.

Green spaces attract people.

Multifunctional design (33)

A considerable number of respondents described the multifaceted ways people use public open spaces, proposing that an important part of making these spaces better to use is ensuring that they flexibly cater to these activities. A common suggestion was that a variety of spaces or amenities should be offered, with large public spaces open for big gatherings or events as well as smaller, landscaped spaces for relaxation and to add visual interest.

Many people enjoy(ed) using the green space in front of the gallery, especially for playing sport, eating lunch, or relaxing during a sunny day. However- this space could certainly be maximised, such as bringing in native species, providing dedicated eating spaces, ensuring a good mixture of sunny/shaded spots, etc. Especially if these green spaces can also provide for the same larger users e.g. gatherings for rallies, or even provide the space for new ones e.g. music events - something akin to the music events in the botanical gardens, but on a smaller scale.

As it is currently constructed, Te Ngākau has potential as a public space but is a bit barren. More green space and focused seating areas would help alleviate that.

However there should be still provision for "square" usage for things like protests, gatherings, open-air screenings, etc.

Community or event space for large gatherings (21)

Being able to facilitate large gatherings, events, and meeting as a community was a key theme in how people anticipated the space would be used, or that they noted was a valued aspect in how it is currently used that should be preserved.

I would also like to highlight the importance of the final design also having a large open space for big gatherings and important parts of civic life (protests, celebrating big events together, graduations) and for festivals (cultural, musical, food—and probably all three at once!).

Accessibility and inclusivity (17)

Support for accessibility features was given in moderate numbers, with the overall aim of catering open spaces to enhance comfort and ease of use across various demographic cohorts, but particularly for disabled and elderly users.

Make them accessible, open to different types of people (young, old and in-between).

Make this city more accessible to the wider population, the elderly, the young, those who have accessibility challenges, spaces that people can use for their mental wellbeing and that allows the city to breathe.

Connectivity and pedestrian access (16)

A similar proportion of respondents highlighted the importance of intuitive connections and ease of pedestrian access to, and between, outdoor open spaces.

Accessibility, as well as logical through routes are all important.

For me, this option includes a bridge. People aren't going to use spaces if they aren't easily accessible from other spaces.

Support for usable outdoor space (175)

A large number of people expressed general support for green, outdoor spaces, highlighting their role in making Te Ngākau a desirable and relaxing place for them and the wider community to live, work, and play.

We like open and green public spaces.

It is lovely to have a green space in the city centre that everyone can use.

In a similar vein to the discussion around “keeping or increasing green open spaces”, (below) these respondents often emphasised that there was a general lack of these spaces in the city to ‘make better’, repeating the appeal to retain or increase the amount of green and open space available, as well as improving what is already there.

Wellington is desperately short of green spaces in our urban areas. Let's make sure they're actually usable where they exist.

There simply aren't enough green spaces in the city, where people can simply go to meet, socialise etc, or simply just to eat lunch etc. We need more of these to create a city for more than just traffic flow.

Over a third of these respondents cited various anticipated benefits and uses for providing green space for people to enjoy, without any suggestions or desired functionality specified to further cater them for public use. Enhanced health and wellbeing, environmental impact, and aesthetic appeal were specific outcomes anticipated by respondents, and often conveyed as inherent to the provision of natural, open space.

Green spaces in the city promote better mental health and overall well-being, and they also make the city more beautiful.

Green spaces are important for relaxing, are visually appealing and help regulate the temperature of build-up areas. So, more green spaces please!

Layout and design suggestions (102)

Support for increased greening and park features (33)

A moderate number expressed support for increased greening in open spaces, or to create a “park-like” environment through landscaping and plantings to support this. Greening was generally anticipated to make open space more enjoyable to be in, by providing natural shelter and aesthetic appeal.

I would love to have natural shade and grass, and shelter trees (rain and wind rather than beating sun!).

The era of making public squares hard-surfaced is over. All over the world grass and trees are showing the way to more liveable and desirable cities. Wellington is lagging well behind.

Whilst increased greening, namely trees or native plants, was the most common suggestion, other park elements such as water fountains or sculptures were also offered.

A fountain or other focal point would be nice. There are great examples of lovely city parks which can be used as inspiration.

Weather protection and year-round functionality (32)

Weather protection elements such as wind shelter and shade from the sun were aspects that respondents conveyed would improve day-to-day comfortability and quality of time spent in public outdoor spaces.

Eg, adding sun and wind shelter so that people can hang out.

Providing some shelter or wind breaks, maybe? Places to sit outside even in less-than-ideal weather. That would be amazing (especially now some of us are avoiding indoor dining).

It was also noted that functionality of outdoor spaces is reduced by bad weather, excess wind, or during colder parts of the year. Natural or purpose-built shelters were

proposed to combat this, as well as designing the space in accordance with surrounding structures.

While maintaining green space, we also must ensure that it is sustainable and usable- for example that the design does not force people to walk over waterlogged lawns and damage them in winter, or trample shrubbery to shelter under trees. The green spaces in and around Civic Square should be designed to support a range of uses throughout the year and in a range of weather.

We need shelter, which is what the Te Ngākau area has had in the past, with the surrounding buildings providing a wind-break and natural area for entertainment, music, markets, etc. If it becomes just a passing-through zone, it will end up being a wind tunnel and not a pleasant place to sit eat your lunch, watch buskers or entertainers, access the library and gallery, etc.

Preference for green, open space over buildings (14)

Several respondents expressed that green, open spaces are a better use of space in Te Ngākau than buildings and expressed concerns about crowding the square, or shadowing that may result from high rise development.

The objective of bringing green space into the square is a good one - people are drawn to green space but it would be important to ensure any development around the square/bridge is not of a scale that creates shading which could inhibit this.

Other layout and design suggestions (23)

Other suggestions for the layout and design of green or open spaces were varied in nature, and included the following ideas:

- Aiming to achieve a balance of civic buildings, commercial activity, large open spaces, and smaller outdoor spaces.
- Support for more dynamic, visually interesting outdoor spaces – i.e. calls smaller pockets of open space and increased landscaping and greening features, as well as opposition to “barren” or “vast” open space.
- Opposition to elements that interrupt large public open space, and the capacity to gather - i.e. excessive greening or landscaping features.
- One-off suggestions for specific layouts, amenities, and design aspects to include such as lighting and shelter from road noise.

Existing space (110)

Limited usability or appeal of existing open spaces (73)

People also reported the *lack* of perceived appeal or usability of existing green and open spaces in Wellington Central. Respondents often expressed that these areas are under-utilised, needing various improvements, poorly maintained, or generally not fulfilling their current potential.

The current green spaces are so under utilised these could be so much better.

I don't think the current green spaces function well as a public space for people to relax, meet or congregate. Natural green space, structures to sit at/on, and better shade from trees/shrubs would be a good start.

The ones we have are hopeless.

Around a third of these comments mentioned Jack Ilott Green specifically as a space that was difficult, or undesirable to use. An underlying issue highlighted was that the space was poorly located, being next to a high-volume traffic route, difficult to access, and relatively isolated from more popular areas. Respondents generally conveyed that they had little incentive to visit due to a lack of activities and atmospheric appeal.

The Jack Ilott Green is a pretty non-functional space that doesn't connect with anything - has no real opportunities for people to do anything there. I think green space in the area could be greatly improved.

Concerns around the design of the current Civic Square were noted by a fifth of these respondents; namely, that it is “barren” with not enough greenery or a lack of places for people to relax comfortably.

The old space was non real grass and was just one square. Although the bridge had some benches and spots to sit (which I think the new build should incorporate as well) the actual square was pretty underwhelming. You could sit there for a while but there was no exciting areas or anything to want to see. I would make it a more diverse environment with a few different spots broken up by more natural elements.

Stance on astroturf (24)

A moderate number shared their perspective on the current artificial lawn in Civic Square. Three quarters of these respondents expressed criticism of this space, the main argument being that it was unattractive or that natural greenery was preferred.

The current green space is thin artificial turf over bricks - green coloured plastic does not make an area a green space.

Proponents for astroturf argued that it made the space more usable, by providing a comfortable area to sit, or play sports.

At the moment with all the construction it is hard for people to use the open spaces, but things like the artificial football pitch have been great for attracting people into the square. It could do with more proper seating alongside the edges to perch on that we have at present.

Stance on Jack Ilott Green development (13)

Several respondents shared their thoughts about building on Jack Ilott Green, removing some of the available open space there. A slight majority expressed support for this, largely due to its limited functionality currently, anticipating that development would better activate the area.

The empty field on the north east corner is never used. It's right next to a busy road, doesn't get good sun and has no activities around it. It would be better to sell this off and build something here.

Those opposed generally argued that the proposed development was a “mistake”, and that it should not be removed as one of the only remaining local green spaces.

We need to enlarge our green spaces, not cover what we have with more buildings - the Jack Ilott building proposal removes one of the few green spaces in the central city and should not go ahead. Wellington already has a surplus of unoccupied retail and commercial space.

Other topics (26)

Other topics about making open or green spaces better for people to use were discussed in smaller numbers and included the following:

- Support for recreational and “play” elements e.g. playgrounds, sports fields.
- Support for enhancing open space as a cost-effective and efficient course of development.
- The view that existing open space is usable.

2. Keeping or increasing the amount of open or green spaces

Summary

Overall, themes discussed within this topic were similar to the previous topic, ‘making green or open spaces better to use’. Three key ideas were prevalent:

Expressions of support for green and open space, with emphasis on the benefits of greenery for the environment and public wellbeing was the most commonly articulated point.

The value of green and open spaces as serving a necessary public need for relaxation, socialising, and community activity was underscored, with respondents conveying that these spaces are already, or would be, well-utilised.

Claims that the area was currently lacking and in need of more green and open space was a related argument given to justify that keeping and increasing these spaces should be an obvious course of development.

Support for green or open space (207)

A very large number of respondents cited various benefits they anticipated from green or open spaces being provided in the city centre or expressed general support for their inclusion in Te Ngākau. Much of this discussion included specific reference to green space, nature and greenery, or was alluded to within discussion of its various benefits.

Environmental benefits (66)

Green spaces and greenery were most frequently praised as having a positive environmental impact, providing a space for wildlife, reducing the urban heat island effect and increasing the city’s resiliency to climate change or natural disasters.

Vital both for enjoyment - including for my dog - and also to contribute to mitigating climate change by providing cooling green space.

Green Is Good. Cool shade, green to see and interact with, good for wildlife, nice to be in. Lots of concrete already.

Wellbeing and happiness (54)

Respondents often asserted that green spaces and greenery are inherently beneficial to people's wellbeing, health, and happiness by providing a link to nature and fostering social connection.

Green space is good for mental health.

As our urban landscape becomes more built-up, accessible green spaces are essential for maintaining the well-being of residents and fostering a sense of community.

While this reasoning was often stated simply as "mental health" or "wellbeing", some respondents offered further anecdotal, general, or scientific evidence to illustrate this link.

Vital both for enjoyment - including for my dog - and also to contribute to mitigating climate change by providing cooling green space.

More green space = happier and healthier residents.

Atmospheric and aesthetic appeal (47)

A theme that was often highlighted by proponents of greenery and green space was its atmospheric and aesthetic appeal, which was described as "welcoming", "attractive" and providing respite or visually "softening" the surrounding urban environment.

The beauty of the Te Ngākau precinct is in the fact that it is a place that people can gather and spend time with other people. The open and green spaces serve to make the precinct more welcoming and friendly. I am therefore strongly in favour of increasing, or at least maintaining the amount of open and green spaces available.

Nature is important break from cement city life.

This point was often linked to the idea mentioned within the theme of open green space providing a 'social and community function', in that people are naturally drawn to linger in these spaces due to their idyllic atmosphere.

Increasing the harmony with nature and the amount of greenery will only increase the attractiveness of the precinct and make more people want to spend more time there.

General support for green, open space (40)

A moderate number of respondents gave more general affirmations about the need for green, open space either articulating that these spaces are "good", "nice" or "important" to have in the city.

I love cities with parks, and greenery.

Can never have too much green

Social and community function (173)

The importance of open outdoor spaces as serving a public need to relax, socialise, gather as a community, play, or spend time in nature was another point commonly illustrated within comments. This discussion echoed a similar sentiment expressed in the previous section about *making open or green spaces better for people to use*.

Increasing green space in Te Ngākau can help offset the high density of the surrounding urban environment, providing much-needed respite and recreational areas for residents, workers, and visitors.

Green spaces also play a vital role in building social cohesion by providing a communal area for gatherings, events, and social interaction, strengthening community bonds and reducing isolation.

Under a third of these respondents articulated the need for a public outdoor space to sit, rest and relax – with a common point being that this space would be appreciated by residents, families, and workers on their lunch breaks. Greenery and green spaces were often noted as providing an ideal and relaxing atmosphere for this, as well as allowing city dwellers to connect with nature.

If you want us office workers to work in the city, we need outdoor places for lunch breaks.

Spaces in this area are well utilised by Wellingtonians and visitors alike, as they provide a relaxing environment that serves as a much needed respite from the surrounding urban cityscape.

Around a fifth of comments emphasised the importance of outdoor open space in providing a space for large gatherings and events in the city centre. This activity was expressed as being characteristic to Te Ngākau, either because its central location acts as a natural locus for this activity, or due to the square's proximity to civic buildings such as the City Gallery, the Central Library and the Town Hall.

Outside access to the City Gallery, Library, and MFC, the main use for the square is for large groups of people to meet. Whether in protest or celebration. The large open areas are what makes Civic Square so civic.

Respondents also expressed that people are naturally drawn to gather in these green and open spaces, activity which coincides with increased vibrancy and liveliness characteristic of a bustling city centre. A small number of respondents also proposed that this activity could bring economic benefits through increased patronage to local businesses.

Inner city 'green areas' are important. The Council needs to ensure that the city's centre is functional, vibrant and appealing to visitors and residents.

Green spaces are less capital intensive to create and they are good for attracting people to the city which would deliver indirect economic benefits at a low cost and quicker delivery.

Less often, multipurpose functionality was proposed as an important feature for public open spaces – allowing for both large scale civic activity as well as for day-to-day relaxation or recreational enjoyment.

Civic square is such a key location for the city, being in the heart and so close to the waterfront. Part of what makes Wellington so unique is how walkable the city is and how close to the water it is. Having a large open space for public gatherings, concerts, cultural events and also socializing and outdoor activities is great for the city.

Green and open space is needed, or currently lacking (152)

The most common point voiced by respondents who indicated that keeping or increasing the amount of green or open spaces is a top priority, was that these spaces are “vital”, “needed”, or that there are already not enough of them in the city centre.

There is precious green space within the cbd at present so needs to be prioritised when opportunities for green space development arise.

The City Centre does not have adequate green space for the current population who live there and there are few options for increasing this.

There is already a lack of green space in parts of the city, this is the perfect opportunity to increase the amount.

Over a quarter of these respondents particularly emphasised the importance of *maintaining* existing green and open spaces, such as the Jack Ilott Green, in the Te Ngākau development plan due to the existing deficit.

There's little green and open space in the centre city. I don't like the idea of the space being crowded out with bridges, buildings, etc

Respondents often appealed to *increase* the amount of green and open spaces, particularly in the city centre, with comments stating that opportunities, such as the Te Ngākau development, to deliver on this public need should be prioritised. Again, respondents maintained that green and natural spaces are a crucial aspect of central civic infrastructure and public wellbeing – especially with increased urban densification.

In this day and age there is a nature deficit in city dwellers' lives so I think the more accessible green spaces the better.

Wellington is desperately short of green space in the central city. If there is a chance to create more usable green space it should be prioritised.

There is a lack of accessible green space in the inner city, an area where the resident population is increasing rapidly.

Suggestions (82)

Opportunities to develop, increase open space in Te Ngākau (37)

A moderate number of respondents gave specific suggestions or expressed support for increasing available green open space in Te Ngākau through the demolition of existing structures – several of these included general affirmations of this opportunity.

The most popular part of Te Ngākau at the moment is the green space in front of the art Gallery. more green space can be provided by using the spaces cleared through the demolition of buildings.

The most frequently voiced suggestion was that the slated removal of the CAB would provide a good opportunity to establish more green, open space. This, along with the proposed removal of the MOB, was supported in a small number of comments – echoing a proposal offered by Inner City Wellington (ICW), Wellington Central’s residents association, titled “Te Ngākau – The Green Heart of the City”.

The space where the CAB and MOB buildings stood should be made into open green parklike space. Te Aro urgently needs more green space for the health of the people who live, work and visit. The need for urban green space has been made evident in numerous reputable studies about the future of cities. The council has a magnificent opportunity to create a parklike setting for the existing buildings, rather than overshadowing the tiny Civic Square with tall unneeded buildings. There is a high vacancy rate in Wellington's city buildings - no more space is needed. Green space is a legacy for future generations.

This proposal, outlined in a longer submission by ICW, expressly aimed to address the need for open green space in Te Ngākau amid a projected increase in the resident population. The following is an excerpt from this submission.

TE NGĀKAU - THE GREEN HEART OF THE CITY.

[...] we ask the Council that, instead of putting a high-rise, commercial building on the current CAB/MOB location, to please return that land to open green space so that Te Ngākau/Civic Square can become an enhanced, publicly owned, ecosystem-supportive amenity that supports the civic needs and the green space needs of the growing number of residents of our city.

A small number were in favour of establishing more open space, such as enlarging Jack Illott Green, by demolishing the City to Sea Bridge and connected Capital E building, with suggestions to extend this to the MFC or even providing a “green connection” to Frank Kitts Park.

Demolishing the bridge structure and the old Capital E will allow the JI Green to be incorporated into an enlarged park space.

Enhancement of existing spaces (22)

A moderate number of suggestions for specific amenities, planting, and other enhancements were articulated in order to make existing open spaces such as Jack Illott Green and the Civic Square better for public use. Increased greening was generally supported by this group.

The green spaces in the square are well used on hot days but there are not enough of them with good tree/shade cover. Too much brick/concrete.

Retain, don't increase green or open space (13)

Several respondents generally affirmed that quality green, open spaces currently exist or that it was good "as is". The focus, therefore, should be on retaining these, rather than expanding or creating them anew.

Mainly keeping rather than increasing - it need living vibrant cities with useable outdoor spaces and lots of trees (absorbent cities)

Other suggestions and commentary on proposed design (11)

Other design suggestions and commentary was discussed in smaller numbers, including the following points:

- Specific concerns about the proposed design including building heights and shadowing; lack of planned green space; and lack of planned civic open space.
- Miscellaneous suggestions for open space in Te Ngākau.

Preference for open space over buildings (52)

Concerns about overcrowding of the square, shadowing from high rise development, and ineffective use of space were asserted by a considerable number of respondents as likely negative impacts of establishing new buildings instead of public open space.

I am also opposed to any construction on Jack Ilott Green as this would privatise use of the space, create more separation between Te Ngākau and the waterfront and could darken the area by casting shade from the north side of the square.

We don't want the area to become crowded with buildings.

There are so many unoccupied buildings in the CBD, therefore another building is not required in this only open space for people to enjoy.

The abundance of buildings was often simply conveyed through comments expressing that no more are needed.

Avoiding building another building is good.

Over half of the comments on this topic further emphasised that commercial buildings specifically, including both office and retail offerings, were not needed or an undesirable use of the available space in the centre city. A similar concern about overdevelopment was conveyed here, as well as the idea that Te Ngākau as the "heart" of Wellington city should be a public community space, able to be enjoyed by all.

I feel that the CAB/MOB provides sufficient commercial activity without detracting from the tranquility of the square or removing the civic character. Over development would make the square seem secondary to a mall and risk losing the current feel of primarily public space. And there is plenty of underutilized commercial space in Wellington adding more is creating the risk of empty shop fronts on the square.

Improved connections (15)

Improved connectivity to the waterfront and city centre were aspects that a moderate number of respondents valued, or anticipated, from the provision of more public open space.

Jack Illott Square is currently very disconnected by the City to Sea bridge, demolishing the bridge will help create better connection to the square and make the whole area more connected and usable.

Affordability and cost considerations (14)

Several respondents expressed support for keeping or increasing open outdoor spaces as being a comparatively affordable development option whilst yielding a positive outcome for the city.

Green spaces are less capital intensive to create and they are good for attracting people to the city which would deliver indirect economic benefits at a low cost and quicker delivery.

Conversely, one respondent expressed that low cost should not be prioritised due to the central location and long-term impact of the development.

3. Improving cultural and creative opportunities in the space

Summary

Respondents who valued improving cultural and creative opportunities in the precinct argued that these opportunities would add more vibrance and character to the space, would support the City's reputation as a creative city, and would encourage the arts sector while engaging the wider population in creative activations. Respondents also offer suggestions for potential activations in the space, as well as design suggestions to accommodate them.

The square's proximity to cultural institutions such as the City Gallery and MFC, as well as its function as a civic precinct were other reasons cited in support of improving these opportunities.

Respondents also noted that improved cultural and creative opportunities would attract more people to Te Ngākau.

Vibrance, Character and identity (64)

A substantial number of respondents supported improving cultural and creative opportunities in the precinct as this makes the space more appealing, increases vibrance and activity in the precinct, or makes the area unique. Respondents highlighted the benefits of a space revitalised by such opportunities, such as attracting people to the area and strengthening people's sense of place and community. A small number of these respondents described Te Ngākau as the "heart" of the city, emphasising the importance of vibrancy in the area.

Te Ngākau is where our community meets and immerses itself in matters that relate to our local community, along with art and culture. Our library, city gallery,

town hall, and one of our primary music venues all border the precinct. We need to embrace this to cement the identity of the area as it goes through this period of rapid evolution. A big risk is the area loses its sense of identity; we must keep in mind what this space means to people; and I believe it encapsulates art & culture, along with a place many congregate to have their voices heard.

It makes the area more interesting and gives it features to make it lively.

A small number of respondents also noted that Te Ngākau was vibrant “in the past”, and called for it to be restored to its previous lively state.

Life needs to [be] brought back into this space. It has seriously lost its mojo in recent years.

Civic Square has been the heart of the city in the past. it is therefore needed to be full of vitality, reactive and community to reflect and nourish the people of Wellington.

Suggested uses (59)

Suggestions for how Te Ngākau could be used for cultural and creative opportunities were offered by a substantial number of respondents, and included the following:

- A variety of public events such as festivals, markets, fairs, concerts, light shows
- Cultural tours (particularly with a focus on Māori history and culture)
- A general venue for music and art
- An outdoor performance space
- Housing the National Music Centre and New Zealand School of Music
- An expansion of the City Gallery.

Ideal location for a creative precinct (56)

Some respondents argued that Te Ngākau’s location makes it an ideal space to be a “creative hub”. Respondents noted the precinct’s proximity to cultural institutions and attractions such as the City Gallery, the Library, the MFC, Town Hall, Te Papa, and the waterfront. Some respondents also made the point that the area receives a lot of foot traffic, and that for these reasons, the area has significant potential for activation.

Te Ngākau links the Wellington City Museum, the City Gallery, and Te Papa into a coherent whole - a magnet for national and international tourists, a heart for a capital city.

As one of the big off-street areas in the CBD Te Ngākau is an important site for cultural and creative events and I'd like to see that emphasised in future development.

I want it to live up to its name -- Civic Precinct. I hope for it to become an even better open community space for the myriad associations the people of a city need. Its location also lends itself to this purpose as the corridor linking the library with Te Papa.

Wellington as a cultural capital (56)

Wellington’s identity as a ‘cultural capital’ was mentioned or alluded to by a substantial number of respondents. While most respondents referred to Wellington having this creative reputation, a small number of respondents noted that this reputation had been somewhat lost in recent years. Respondents argued that to foster Wellington’s creative identity, WCC should be encouraging and supporting artists in the revitalisation of Te Ngākau. A few respondents also noted that the city’s creative reputation is a “draw card” for visitors.

People come to Wellington because of our strong cultural and creative identity. We must do everything in our power to embrace this as this is what will fuel the longevity of our city.

Our current government is showing limited interest in Maaori, ethnic minorities or art. Wellington is meant to be the arts capital and a mixing pot, would be incredible if we could reflect this in our use of space!

Keen to see more culture in this place! This has always been a strength of Wellington, long may it continue!

It is important for a city like Wellington to be a cultural and creative centre. It used to have a vibe when it was given the title of 'The Coolest Little Capital'. Sadly that has been lost with unending roadworks, destroying access to many businesses whose livelihoods have been badly impacted. Its citizens are feeling angry and depressed!

The function of a civic centre (53)

A substantial number of respondents argued that the function of a civic centre should be on creative and cultural activities. Respondents who discussed this topic either argued that non-commercial uses should be the goal of the Civic Square or argued more generally that civic functions are important and should be supported. These topics are discussed further below:

Support for non-commercial uses (29)

Support for non-commercial use was expressed by a considerable number of respondents who argued that Te Ngākau should not have a commercial focus, and that there should be no pressure to spend money when spending time in the space. Many of these respondents also expressed that they are open to some commercial activity, so long as cultural and creative opportunities are prioritised and not “overly compromised”. Other respondents, however, expressed concern that commercial spaces would “price out” cultural and community organisations and that they should therefore be avoided.

Cultural and creative opportunities are major building blocks in the creation of a great community. They increase the need for social interaction as well as provide an alternative to purely commercial and financially gate-kept activities like shopping, opening up this space for a wider range of people to use.

This is a civic square, a civic location. Retail development is secondary to, and must be complimentary to cultural and creative opportunities.

That is the essence of a civic square. Commercial activities are transient - cafes and shops may be nice to have but they come and go and rely on our insatiable desire for consumption. Libraries, art galleries, museums, performance spaces - these are things of and for the people. Even if not everyone chooses to use them - they are there for all.

A small number of respondents also made the point that there are many commercial spaces nearby the square, and argued that more of these spaces are not necessary.

Wellington has lots of areas for retail and commercial, many of which are struggling. The Civic Square is one of the areas of the city that has a civic centre, which includes its citizens' expression of their cultures.

The importance of a civic centre (24)

A moderate number of respondents highlighted the importance of a civic centre more generally, arguing that a civic centre should have a cultural and community focus. Several respondents also noted that Te Ngākau is an important place in the city for protests and political engagement, and that a civic and community focus in the square is aligned with this use of the square

Civic square is culturally significant to Wellington. Any plan needs to retain if not enhance Civic Square as Wellington's cultural and civic heart.

Civic square should be the heart of our city. It's hard to imagine that without cultural and creative activities. It should continue to be a place to meet for protests and the community engaging in championing for a better world.

It should be our town square - a place for everyone to gather, meet and participate.

Design suggestions (41)

Design suggestions were given by a considerable number of respondents, most of whom offered ideas for how the precinct could be designed to best facilitate creative opportunities in the space. Many of these suggestions involved calls for more arts venues, including medium sized venues, multifunctional spaces, and both indoor and outdoor spaces such as amphitheatres. Other suggestions included:

- Outdoor seating
- More restaurants and bars in the area
- An outdoor movie screen
- Ensuring there is inclusive access to the space
- Consultation and collaboration with mana whenua and including Te ao Māori design principles
- Adding some facilities at a later date to save on costs
- Building on Jack Iott Green.

Suggestions for public art were also offered, including suggestions to commission new art, including Māori art, to keep the Ferns sculpture, and to remove the Rugby World Cup sculpture.

Encouraging the arts (40)

Increasing opportunities for and engagement with artists was supported by a considerable number of respondents, who emphasised the need to encourage the “cultural life of Wellington”. Some respondents identified current issues for the creative sector, including “struggling” creative venues, and a lack of spaces for artists. They argued that supporting and providing opportunities for artists, as well as encouraging public engagement with the arts is necessary or beneficial for the creative sector, as well as for the wider Wellington public.

This is what Welly is known for and our creative venues are struggling. An arts/culture/hospo focussed hub might do better than like retail?

This is an essential part of making Wellington a good place to live and visit, I would like to see more spaces and support for the cultural and creative sectors in Wellington generally and having this centrally located is ideal

Yes, there are so many possibilities for further heightening cultural and creative experiences around the circumference of the square and enabling access into (and visibility of) the cultural providers that will be present around the Square.

General support for improving cultural and creative opportunities (35)

Comments that were generally in support of cultural and creative opportunities were made by considerable number of respondents. These were mostly broad, simple statements that these opportunities are needed or are “always good”. Respondents noted that Te Ngākau has the potential to host these opportunities and that as the “heart of the city”, it is an appropriate place for creative and cultural events.

Cities thrive when the arts thrive.

Until its closure, Te Ngākau has been used for cultural celebrations and protest activities. This use should be encouraged and retained.

More cultural and creative opportunities can only be a good thing for Wellington.

Te Ngākau as a destination or attraction (35)

A considerable number of respondents stated that with improved cultural and creative opportunities, Te Ngākau would become a destination or attraction in the city. These respondents made the point that cultural and creative activations would make the precinct more attractive and draw both tourists and residents into the area.

This would draw people in to claim it as "their" space and also positively reinforce the library / art / music cultural amenity inherent in the larger buildings.

Once constructed, the precinct will need buzz to lure people there. By having cultural and creative opportunities there, you have a reason for people to go look. People want something interesting to look at while they relax and play.

Other topics (25)

A considerable number of respondents made other comments. This includes a small number of respondents who noted other benefits of improving cultural and creative opportunities, including improving safety through increased activity; increased wellbeing; increased social cohesion; urban development; and an increased acceptance of different cultural communities.

Other topics discussed included retaining the MFC, the cultural value of the City to Sea Bridge, and a call to highlight inclusivity and diversity through cultural and creative opportunities.

4. Keeping and restoring existing buildings

Summary

Respondents primarily used this prompt as an opportunity to note preferred aspects of Te Ngākau that should remain in future.

Overall, most comments cited preference for retaining the MFC, with many expressing dismay at the proposed demolition of what was described as an iconic cultural asset.

The overall rationale highlighted within support of Scenario 1 “retain and restore” was that the collection of existing buildings such as the City Gallery, City to Sea Bridge, Town Hall and Central Library contribute greatly to Te Ngākau’s aesthetic appeal and identity as a public and cultural space.

Less often, respondents argued that renovation and strengthening would be more cost-effective and efficient course of development or indicated concerns about the proposed development to justify support for Scenario 1.

Preferred structures or elements to retain (383)

Michael Fowler Centre (159)

The structure that held the strongest support for maintenance and restoration was the MFC, mentioned over three times more than any other individual building. Disappointment was often expressed that the demolition of this building was included as a potential scenario offered for the future of Te Ngākau. Rather than being simply included in lists as an aspect to retain, respondents gave lengthy responses, detailing its personal and public value as a cultural mainstay of Wellington Central. The potential loss of the MFC as a significant architectural or cultural asset was often considered a “shame” or would symbolise a “step back” in the city’s overall development.

The Michael Fowler is an iconic and unique building that should be retained. The building provides for creativity and culture.

Michael Fowler centre is a state-of-the-art performing arts centre and local cultural landmark. Removing it for the sake of more bars and restaurants or office blocks would seem like a step back for Wellington.

Along with this underscoring of cultural and heritage value, doubt was expressed that its replacement would be adequate, particularly due to the proposed development prioritising increased commercial activity. Respondents conveyed that this

development would be a radical, and undesired, change in the city's identity. Note that this larger idea was also expressed about preference for the 'retain and restore' scenario compared to 'more commercial activity' overall, captured in the below topic: 'Concerns about the design proposal'.

I am appalled that one of the potential scenarios for further development in Te Ngākau Civic Precinct involves demolishing the Michael Fowler Centre. It is an architecturally significant building, Wellington icon and amazing venue to attend performances and events of all kinds. It has great acoustics. Any option must keep and restore this important building.

The consultation document includes options to add more commercial spaces and demolish the Michael Fowler Centre. A quick look at the vacant spaces in the CBD will suggest there is little need for commercial spaces (retail etc). The Michael Fowler Centre must be preserved. The proposal option suggests replacing it with commercial building and even housing. This is very short sighted. Look to the example of Christchurch, which supported the restoration of the Town Hall on which Michael Fowler Centre is based.

Comments often emphasised the utility of the MFC as a performance and arts space due to its unique features, fulfilling a role unmatched by other existing buildings such as the Town Hall. This appeared to be a particular concern due to the impact on performance groups such as the New Zealand Symphony Orchestra (NZSO), Orchestra Wellington and various choral groups.

The Michael Fowler Centre is iconic and a top-rate space that has been identified by top talent locally and globally as an exceptional concert hall. The acoustics are incredible and I would love to see it recognised as a gem in our built heritage. Far better than the library or the Opera House!

The MFC should NOT be under threat. The Town Hall is simply not enough on its own for Wellington's cultural and large event needs. The NZSO can not bring full sized programs to the Town Hall due to space / stage limitations. The Town Hall is terrible for amplified sound. A single venue in this precinct will be quickly booked out leaving no options for other events (rehearsals, recording, etc). We need BOTH the Town Hall and the MFC.

City Gallery (66)

A sizeable number expressed support for retaining the City Gallery, often suggesting that it should be further strengthened. The main reasoning given was that it is a key identifier of Wellington City as a cultural capital and enhances vibrancy in the city centre by attracting people to the area. Respondents often emphasised that City Gallery should belong in Civic Square.

The city gallery and Michel Fowler centre are good icons and draw people to the area. These are important ways to reinvigorate the civic square in the shortest possible time. Once the library and the gallery are reopened there will be reasons to use the space again.

Similarly, respondents expressed concerns with proposed commercial development proposed within the City Gallery extension design. Descriptors such as "food court" or

“shopping mall” were invoked to describe how commercialisation would undermine cultural and civic use, rather than contributing positively to the space.

It remains one of the last spaces in the city where the value is placed on spiritual and emotional health, and not financial. The Gallery is a welcoming whare for all people to exist in a space shoulder to shoulder with great art, with aspirational thinking. It is a space for visionaries, and future idea-makers. A place for education and cultural exchange. Retaining The City Gallery is integral to the future building of our city.

Several separate submissions detailed anticipated negative impacts from the proposed relocation or potential additions, namely that community engagement would decrease; Gallery space was to be minimised; or that construction would be disruptive to gallery functioning.

City to Sea Bridge (41)

General opposition to the proposed demolition of City to Sea Bridge was stated in considerable numbers, and often expressed as simple appeals to “keep” or “retain” the bridge.

Please retain the iconic City to Sea Bridge

The structure was also hailed as a cultural and architectural icon, paramount to public understanding of the city’s identity and its connection with the harbour. The bridge itself was described as an “artwork” in-and-of-itself, rather than a structure, to convey the potential emotional impact on the general public if it was demolished.

The City to Sea Bridge is an important link and has seen the city go from turning its back to the harbour to building a truly wonderful waterfront precinct. We use the bridge daily. In addition the Para Matchitt sculptures are iconic and more worthy of preservation than some derelict structures.

Central Library (37)

A considerable number expressed general support for the restoration of the Central Library, as one of the defining structures of Te Ngākau and as a significant civic amenity.

Key area of Wellington, especially the National Library. We are a capital city with large universities yet we have limited library’s available for study spaces etc.

It was often included in lists of preferred structures to retain, with respondents expressing hope that it would once again be opened to the public.

Because the council is spending large amounts to restore the Town Hall and city library, which is sorely missed

Town hall (34)

A similar proportion of respondents supported the continued restoration of the current Town Hall, again, often listing this as a component of the area’s cultural identity and one of the square’s key landmarks.

The buildings which remain i.e. Town Hall, Library, Michael Fowler Centre and Art Gallery are very important to the cultural life and heritage of the city.

Another point raised was that significant investment has already been made in its restoration and that this should be continued.

Work and money have already been spent on the Town Hall, the Library, and the City Gallery. It would be a bad idea not to complete these projects

Retain defined, yet open layout of Civic Square (25)

A moderate number of respondents argued that the surrounding structures physically define the open square and “heart” of the city, noting that this layout should be retained without crowding the open area with buildings or by removing the buildings that define the enclosed outdoor space.

There is much merit in keeping the square as it is, contained, perhaps analogous to an Italian piazza. The proposed plan seems to open it up for through traffic (pedestrian) from Victoria Street to the waterfront. This and the emphasis on greens space, trees is not optimal. The bridge needs to be kept, strengthened if proved necessary in due course to maintain the sense of a square or a place for activities.

The circle concept works well in Te Ngākau Civic Precinct. It gathers people up, draws them together and helps them develop a sense of belonging in the city.

Support for other elements to retain (12)

A small number of comments expressed support for retaining the following structures and areas:

- Council Administration Building and Municipal Office Building
- Green and open space (e.g. Jack Ilott Green)
- Capital E building.

Aesthetic, heritage and character value (104)

The main idea conveyed by those who indicated support for retaining and restoring existing buildings (such as the MFC, City Gallery, Town Hall and Central Library) was that these structures hold deep historical significance, and that removing them would have a large impact on the city centre’s identity.

An important part of the cities heritage regardless of what people say, without keeping touch with our own history there’s no sense of place

Several of these buildings are heritage status. We need to protect a significant selection of heritage buildings throughout our city or we will become just another characterless McCity.

Collectively, buildings were often portrayed as an important cornerstone of the public’s memory of Wellington City and its evolution over time. Words such as “iconic”, “precious”, “unique” and “character” were often used within comments to articulate their value to the public’s perception of the city.

Preserving and restoring existing buildings in Te Ngākau Civic Precinct is vital for maintaining the unique character and heritage of our community. These structures hold stories and memories that connect us to our past, providing a sense of identity and continuity.

A lot of the buildings in this area are iconic and important to Wellington.

The general aesthetic appeal of these buildings, as well as providing visual contrast to more modern structures, was a feature that respondents expressed was valuable to them.

Some of the existing buildings are being restored (Library & Town Hall) and I love that this area has a juxtaposition of old and new-ish architecture.

I like the randomness of wellington's waterfront buildings and how michael fowler contrasts against the heritage buildings. Demolishing it to put in more modern commercial spaces would reduce the unique character of the heart of the city.

General preference for renovation over demolition (76)

Renovation of current structures rather than demolition was preferred by a substantial number of respondents, who, in various ways, expressed that this was a more straightforward or cost-effective course of development than “starting from scratch”.

I don't understand why the option of demolishing Michael Fowler is part of a wider redevelopment. That seems unnecessary. Strengthening that, and a small extension to the gallery should suffice.

It's all very well to have wonderful ideas and solutions but the rate increases are already unacceptable. We need to cut our cloth to fit within a reasonable, sensible budget. We can't afford Rolls Royce solutions.

Prior investment into the restoration of these structures was argued to be a sunk cost that would be wasted if they were replaced entirely, the Town Hall and the Central Library were commonly cited examples of this.

I think the buildings (particularly the Town Hall) are too far down the restoration road to turn back. The City Gallery is definitely worth preserving

Factors such as resource use and sustainability, as well as minimizing disruption were highlighted benefits of the restoration and strengthening approach generally supported by this group.

To save expense and disruption

Concerns about proposed development (55)

Various issues with aspects of the Te Ngākau design proposal were highlighted by a substantial number of respondents. Over half of these included concern about commercial developments being prioritised, shifting the identity of the area from a cultural hub to a business or shopping district. It was argued that Te Ngākau should continue to comprise primarily of civic and cultural amenities.

Cultural Activation: Civic Square is the cultural heart of our city. Scenario 3's excessive consideration of the Square as a mixed-use site focusing on commercial to the detriment of the existing traditional cultural activities detracts from its civic purpose. Just as Cuba Street and Lambton Quay are hubs for retail and hospitality, Civic Square must be the destination for community and cultural activities.

Under half of these comments included a variety of other concerns about the design proposal which included criticism of excessive building heights (10-12 storeys specifically), preference for green spaces over rebuilding, and general complaints about ill-considered council design or consultation processes.

Preferred development suggestions (32)

Whilst most of the commentary on this topic tended to focus on aspects that respondents would like to see maintained, a considerable number gave suggestions or listed structures they would like to see developed, which included the following:

- City Gallery additions
- Support for redeveloping Capital E site
- CAB and/or MOB buildings
- Jack Ilott Green development
- Other structures, locations (e.g. the MFC, car parks, bridge space, support for new cultural use development).

Current buildings are adequate (31)

A considerable number expressed that demolition, renewal, or replacement was unnecessary as the existing buildings appear to be functional and generally adequate for public use. This group often questioned the need to further develop these or reported risks that would be faced in doing so without sufficient reason.

Because they're reasonably attractive and there's nothing wrong with them

They are fine buildings and simply need to be maintained. There is no justification for fiddling with them in any other way, nothing is 'broken' don't try to fix nothing.

Mixed sentiment and conditionalities for 'retain and restore' option (24)

Conditional support for keeping and restoring existing buildings was shared in moderate numbers, namely that respondents preferred this option so long as it was economically viable or cheaper than demolition and rebuilding.

Only if this provides balance of value with cost.

A small number of respondents expressed that they would like a balance of new, complementary development to activate the square whilst key structures or uses are maintained.

Again, all of the circled [ticked] components are 'givens' or no-brainers. A and B are the crux [Keeping and restoring existing buildings, Adding spaces for hospitality, retail and other businesses].

Earthquakes and NBS (15)

Several respondents expressed doubt that the New Building Standards (NBS) ratings for existing structures reflected the level of risk likely posed in an earthquake, often suggesting that demolishing buildings deemed high risk was unnecessary.

The Michael Fowler Centre is not that old and I cannot believe that it is such a great risk in an earthquake. Please tell us again why it is such a risk.

I believe too many buildings are being demolished due to highly risk adverse engineering assessments. Eg: the WGC tower block took months longer to demolish than expected due to all the steel in it, there was no way that building was going to collapse in an earthquake!

A few respondents proposed that a certain amount of risk is inevitable, and therefore should be accepted.

At the public meeting it was constantly said that the “experts” now understood the seismic requirements more from what they learned in Christchurch /Kaikoura. Whilst this should not be discounted, the issue of risk (300 people die in cars each year) or our economic position have not been considered by government regulation.

Other topics (4)

A small number of respondents gave one-off commentary expressing concerns with council processes or the consultation.

5. Lighting and safety after dark

Summary

Respondents who showed support for lighting and safety in Te Ngākau made similar arguments to the comments made about safety on the City to Sea Bridge, discussed from page 24.

The importance of safety was discussed by a very large number of respondents, including comments about safety after dark, safety more generally, as well as comments arguing that safety is paramount and that its importance should be obvious. A substantial number of respondents also noted that usage of the space, especially in the evenings, would encourage people to feel comfortable in, and thus use the space. A considerable number of respondents also argued that safe environmental design would deter crime and anti-social behaviour.

A smaller number of respondents also raised concern about the safety of women and other vulnerable groups.

Safety is important (247)

A very large number of respondents discussed the importance of safety, including comments about safety at night and safety more generally, as well as comments that safety is paramount or is obviously needed. These topics are discussed below:

Safety at night (97)

Respondents most commonly highlighted the importance of safety at night. These respondents argued that adequate lighting and safety would ensure that Te Ngākau would be “fit for purpose” as a public space and encourage use of the space at night. Several respondents discussed the city more generally, emphasising the importance of making the CBD safer at night, or mentioned currently feeling unsafe at night. The safety of inner city residents after dark, as well as the safety of people in the city for events in the evening was also highlighted by a small number of respondents.

The park should feel safe at night or it won't feel safe during the day

We don't want to accidentally create an unsafe area after dark. Spaces should be useable and safe by all members of our community.

It would be self-defeating to design this corridor between city and sea in such a way that people don't feel safe to use it after dark.

General comments about safety (77)

Comments that highlighted the importance of safety in general (as opposed to *after dark* specifically), were made by a sizeable number of respondents. These comments included broad statements that safety in the area is “important”. Some respondents further articulated that safety is especially important as the precinct is an important space for movement, especially between the city and the waterfront.

Access ways between the city and the waterfront must be well lit for human safety

Because I walk through the area early morning and I want it to be a safe way to work.

People need to feel safe in the city; the waterfront is a prime attraction- we want people to feel safe all the time, and good lighting will help achieve that.

The state of safety in Wellington was also discussed by several respondents, who discussed the city as dangerous or “increasingly unsafe”, or called for safety in the city to be better supported and maintained.

As I discussed regarding the bridge, Courtney Place has become increasingly unsafe (at least perceptions of it have shifted that way) in recent years. Having increased lighting in Te Ngākau would make people feel safer and provide a space which could be used at night as well as being the day.

Wellington already has undesired areas in the city where people don't feel safe. We don't want to encourage the expansions of those areas

Safety is paramount or obviously needed (73)

A substantial number of respondents argued that safety should already have been prioritised in the planning for this area, and that a failure to do so would be remiss. These respondents offered broad statements which described safety as “non negotiable”, “essential”, “important”, or claimed that the reason for prioritising safety was “obvious” and “self explanatory”.

Safety is imperative to success of any design - not an optional extra

This is an area that can be felt to be unsafe. It shouldn't be. This should just be a given as well rather than an option.

Safety in design including quality lighting is fundamental to any public space.

Safe design would encourage use (68)

A substantial number of respondents discussed lighting in relation to making Te Ngākau Precinct feel inviting and attractive. The point was often made that good lighting was critical for the space to be utilised to its full potential; as it would be welcoming and enjoyable at night, and would allow evening events to be held in the space.

If the lighting is sufficient, and the Civic Square is opened up and re-grassed, the whole of Civic Park would become a safe, useable space for evening entertainment as well as daytime activities.

No one wants to go through a dodgy dark, dark-looking area at night. Also, with bright lights, you can create an atmosphere where people want to go there to sit and talk.

Lighting is essential to ensuring the space is accessible and inclusive and welcoming to all ages, stages and recreation users.

This is a key through route, as well as a meeting place after dark.

Respondents agreed that because lighting makes people feel safe and can make the square seem inviting, prioritising it would increase the use of the space.

Public safety and security is always important, especially after dark. If it's not provided, people are likely avoid the area.

No place is vibrant if it feels unsafe, and no one wants to use it. Keeping it lit, safe, and clean is essential to keeping it well-loved and used by everyone.

Anti-social behaviour (46)

Concerns regarding anti-social behaviour were raised by a considerable number of respondents. These respondents argued that poor design would encourage crime and dangerous behaviour, and that safety features such as lighting and cameras would act as deterrents to such anti-social behaviour.

Well-lit areas deter criminal activities like theft, or assault, as criminals are less likely to operate in illuminated spaces where they can be easily seen.

Because the central city is feral, not just after dark but also during the day so any new spaces need to be well lit and monitored to avoid increasing the issue.

Just less than a quarter of these respondents raised concerns about anti-social behaviour from rough sleepers. Respondents argued that inadequate lighting would attract more rough sleepers to the precinct, with some commenting on an increase in the number of people sleeping rough in the area in recent years.

It will become a magnet for homeless if there isn't suitable lighting.

The number of homeless in the city has increased the last few years. Open and lit areas are critical to maintaining public safety.

You still want to be able to feel safe after dark. Parks are often used by homeless people - especially when there are benches. They have to sleep somewhere but that could be a bit of a worry.

Safety of women and other vulnerable groups (23)

A moderate number of respondents raised concerns about the safety of women and other vulnerable groups. While the majority of these comments pertained to women's safety, other groups such as the rainbow community (particularly trans people), elderly people, families, young people, and people with mobility issues were identified by respondents as vulnerable groups. Respondents stated that these groups, (often including the respondents themselves), are likely to not feel safe at night without appropriate safety precautions. These populations, therefore, are unlikely to use the space, especially in the evenings.

It is important that people, especially women, feel safe when they are walking around. Dimly lit areas become 'no go' areas and cannot thrive commercially.

Again, we have so many young people, women, and rainbow community members in the city that deserve to feel safe in public spaces. Lightening is one way to help with this.

This area has long been a little unsafe after dark, especially for women and those walking alone. More lighting would help a lot.

Other topics (29)

Several respondents were in support of prioritising safety and lighting to prevent trips and falls, as people would have better visual awareness of their surroundings.

Calls for security features other than lighting were also made by several respondents. These features included CCTV, non-slip surfaces, and easy access to help such as through the presence of police and neighbourhood patrols.

Other comments included statements that lighting and safety in the area is currently good, or conversely that current lighting on the City to Sea Bridge is lacking, and a comment arguing that while lighting is important to safety, the impact on wildlife should be considered and minimised.

6. Keeping overall costs as low as possible

Summary

The comments made on this topic were very similar to those made in relation to the City to Sea Bridge, discussed from page 27.

Again, respondents indicated scepticism that the development of Te Ngākau Precinct would deliver good value for money for the city, and that given the city's current financial position, this project should not be a priority. Respondents particularly expressed concern that the project would lead to further rates increases, which Wellingtonians would struggle to afford.

Criticisms of WCC spending (162)

A very large number of respondents made comments criticising WCC's financial management or discussing concerns relating to the cost of the Te Ngākau Precinct development.

Prioritise 'essentials' over 'nice to haves' (65)

A substantial number of respondents argued that there are more important projects requiring funding at present, namely infrastructure projects relating to water and transport. These respondents argued that the development of Te Ngākau Civic Precinct is a lower priority, and that funds should therefore be spent on other, more urgent projects.

Wellington has a lot of infrastructure to mend and I'd rather see that prioritised moneywise.

Because the council needs to focus of fixing vital infrastructure - ie pipes, before doing 'nice to have'.

Obviously this is a really important area of the city, but money is needed for more human-focused issues e.g. water, poverty, housing insecurity, health and education so I don't believe this development should be the biggest financial priority.

General criticisms of WCC's financial management (53)

A considerable number of comments indicated a general lack of faith in WCC's ability to responsibly spend public money and deliver value for money. These respondents argued that projects often run over budget and/or take longer to complete than originally advised, or that the proposed options simply cost too much.

WCC needs to learn how to run disciplined projects that are delivered on or under budget and on time.

Because our council are very good at spending money we don't have on things we don't need.

As above, there has been so much unnecessary and wasteful spending. With good financial management, great vision and well thought out planning we can do so much better for less.

Wellington's current financial situation (44)

A considerable number of others simply noted that Wellington must keep costs low, or suggested that the city cannot afford this project at all.

The WCC is not financially well off and we need to keep costs low.

Important given the fiscal concerns for Wellington.

Self evidently, Wellington cannot afford substantial optional capital projects. Civic Square should be enhanced following removal of the bridge but prudently and within the context of wider cost pressures

Rates increases (126)

Another of the most common reasons people gave for selecting ‘Keeping overall costs as low as possible’ as one of their three most important scenarios for the development of Te Ngākau Civic Precinct was that Wellington’s rates are already very high, and that rate increases driven by projects such as this are making the city unaffordable for many. A large number of respondents made this point, and the overall sentiment among these respondents was that rate payers simply cannot afford further rates increases to continue funding projects they feel are unessential or do not offer good value for money for Wellingtonians.

Our rates bills are soaring and becoming unaffordable. Council simply cannot go on spending our money as if there is no tomorrow. Choose simpler plans, defer projects, and look at manageable options. When water costs are added to rates bills it's simply disastrous. We cannot cope with constant extravagance from the Council.

Rates have increased to an unaffordable level. All spending needs to minimise impact on / reduce rates.

I am a rate payer that is likely to go into debt or have to leave Wellington city as it will no longer be sustainable or tenable to stay in a city with such high rates.

It is generally important to keep costs down (67)

A substantial number of respondents made general comments about the importance of keeping costs low. Though these comments varied significantly in how they were phrased, they were generally short, simple statements highlighting a desire for costs to be kept low. Below are a few examples of such comments:

Everything needs fixing in Wellington! So we need to be mindful of costs.

Value for money.

Be frugal with Wellingtonians money.

This is a no brainer.

Essential in Wellington city's budgetary climate.

Several of these comments focused on the importance of keeping costs down because it is public money that is being spent.

Fiscal responsibility of the rate payers' funds

Alternative suggestions (27)

A considerable number of respondents offered alternative suggestions for the Te Ngākau Precinct development, both relating to design, and to funding options. These suggestions varied significantly, ranging from calls to prioritise creating open, usable green spaces rather than developing the area and introducing commercial activities, to suggesting alternative actions regarding buildings/structures including the MFC, the City Art Gallery, the Capital E building, and the City to Sea Bridge.

Funding options suggested by respondents included selling the MFC; partnering with developers to fund public space and having corporate investors fund commercial spaces; and generating income by leasing land to private developers.

Preference for a cheaper, simpler solution (22)

A moderate number of respondents made suggestions for a simpler, more basic and affordable option than what is currently being proposed for Te Ngākau. These respondents did not want a “gold plated” solution, but instead wanted to keep things simple with functional, usable spaces that are fit for purpose but not unnecessarily fancy.

*Because you shouldn't need to spend a lot of money on an open green space.
Don't go for a “state of art” green space - keep it simple - grass*

If you do anything it should be low cost and not gold plated like everything else the WCC seems to do.

These features can be achieved with reasonable costs. Other more ambitious features can be added when the city's & Council's financial position improves.

Other topics (45)

A couple of other topics were discussed by a small number of respondents. These included comments relating to the City to Sea Bridge, and calls to abandon the project altogether (generally based on the view that it is not needed, or that there are other more important projects that should be prioritised). Remaining comments were not relevant to the cost of the project.

7. Adding spaces for hospitality, retail and other businesses

Summary

Respondents who supported adding spaces for hospitality, retail, and other businesses most commonly argued that commercial spaces would attract more activity and people to the area, making the space more vibrant and attractive. Respondents also noted that such activity would make the space livelier and safer in the evening. A considerable number of respondents also noted that commercial spaces would bring economic benefits to the city.

Commercial spaces would attract activity (220)

Comments about how commercial activity would draw people to the square were made by a very large number of respondents. This included comments about how commercial activity would make the precinct more vibrant and livelier, as well as comments about how such activity would make Te Ngākau a destination. Respondents also expressed support for commercial activity outside of office hours, as this would encourage activity in the area after dark. These points are further discussed below:

Commercial activity will bring life and vibrancy to the area (108)

A large number of respondents argued that increased commercial spaces would make the area more “vibrant”, “buzzy”, “lively”, and “attractive”. Without commercial activity, respondents argued, the area would be “dead”.

It also brings people to spaces and makes them lively. Having businesses invested in positive spaces by helping to activate and care about the area is vital. You need a village of people that help care for civic spaces, business can be an important part of achieving this goal.

This would add Atmosphere in a location of the city that would be well suited to cafes and bars. They're close to the cbd but also close to the water would be attractive attributes.

Hospitality businesses such as cafes and restaurants were discussed by a considerable number of respondents as a type of business which would bring liveliness to the precinct and the city more generally.

Some more cafes or retail areas would be nice - branch out of the grim Courtney Place and dingy Cuba areas to create new hubs for people (and hopefully new business opportunities). I'm definitely not a fan of office spaces there though - it should be commercial opportunities that everyone can enjoy, not just some people.

Carefully curated and well located commercial and food and beverage activities that complement the civic, community and cultural facilities will be important to activate the area. However this should not overwhelm as is shown with Scenario 3.

A small number of respondents also offered suggestions based on outcomes in other places such as Auckland, Christchurch, and cities in Europe:

Cafes, galleries and craft spaces make an area interesting and lively. Indoor and outdoor seating areas are a feature of French cities and they are wonderful.

These would need to be chosen carefully to enhance the vibrancy of the space. It could even start with shipping containers the way they did in Christchurch to keep the area in use (if possible) while the work proceeds.

A moderate number of these respondents also argued that an increase in vibrancy in the area would occur as more people were drawn to the area as a destination. These points are further discussed below in 'Te Ngākau Precinct as a destination – commercial activity will draw people to the area'.

Te Ngākau Precinct as a destination – commercial activity will draw people to the area (97)

A sizeable number of respondents were in support of adding spaces for businesses, as they viewed commercial activity as a draw for both locals and tourists. These respondents claimed that businesses would provide a reason for people to visit and stay in the area. Respondents also viewed the precinct as underutilised, with a small number of respondents noting that the square's location in the city "has a lot of potential".

This is crucial when designing and building new areas in the CBD. With the failing town area, we need to bring people back into the City. This area is near public transport (train station) and is a central area (close to the waterfront) it would be the best opportunity to utilise this space and create an area where people can

relax at cafes and bars and retail shop. It would help the economy and provide a place to spend on the weekends and at lunch times. Our waterfront is beautiful and we need to maximise that.

This will draw in more public more regularly to the space from surrounding areas rather than bypassing it because they may not be a user of library or artistic spaces

Gives me a reason to go here. At the moment this part of the city is dead. Turn this area into a destination, not just something you have to walk through to get to where you want

A considerable number of respondents argued that more people would be attracted to the area by hospitality, and to a lesser extent, retail businesses (as opposed to the existing attractions such as the City Gallery). Respondents also noted that commercial activity would draw more people to other attractions in the area.

Hospitality and business are major drawcards for people to visits anything in a city, Parrot Dog in Island Bay is a great example, it will be a positive factor for potential homebuyers to move there as well. Golding's Free Dive in the Hannah's laneway made an unsafe and neglected street safe and prosperous. It's vital that it is made very very easy for hospitality entrepreneurs and business owners to set up shop. A combination of green public space with professional hospo surrounding it is a recipe for harmony.

By activating the space with retail and hospitality, low rent art studios, and market rent businesses, the square will regain some of its focus and encourage people to come back in, while enjoying the refurbished library and town hall.

Commercial spaces would attract more activity in the evenings (15)

A moderate number of respondents also were in favour of more people being drawn to the precinct at night, particularly by businesses such as bars and restaurants. These respondents emphasised the importance of there being things to do in the square outside of business hours, stating that it would encourage people to stay in the square in the evenings. Around a third of these comments also noted that activity in the evenings would ensure that Te Ngākau is safer after dark.

Retail and hospitality gives an active edge to the square and encourages people to come and spend time. It also adds to the safety of the space after dark with (hospitality) passive surveillance.

Adding some more business in would help keep it lively, particularly outside the 9 - 5.

This has been the overriding mistake of the previous civic centre which had internalized destination buildings with little connection to the outside. Hospitality and retail provide destinations for people day and night and a live area would be much safer at night than a barren area. The more business the more choice for people to come.

Suggested commercial activity (149)

A large number of respondents offered suggestions for types of businesses that could exist in the precinct. More than half of these suggestions mentioned hospitality businesses such as cafes, bars, and restaurants. This was followed by suggestions for retail activity, which were offered by a considerable number of respondents. Other suggestions for commercial activity included:

- Markets and food trucks
- Galleries and performance spaces
- Residential spaces and places for accommodation
- A “Wellington’ themed shop” or i-SITE for visitor information and for purchasing tickets for attractions.

A small number of respondents also called for limiting commercial presence in the area to small local businesses.

Economic stimulation/benefits (44)

A range of economic benefits were also noted by a considerable number of respondents. Around half of these respondents argued that businesses would be a source of revenue for WCC, and in turn would offset the costs of the Te Ngākau Precinct revitalisation.

Important to increase the ratepayer base and get private sector to help contribute to costs

Commercial opportunities could provide opportunities for private funding of projects and provide long-term council revenue.

Hospitality and retail bring vibrancy to the area throughout the day. This also provides an opportunity to recoup costs. This achieves both goals of activating activity and keeping overall costs low.

Other respondents argued that commercial activity in the precinct would attract residents and tourists, thus resulting in greater opportunities for businesses, more spending, and greater economic stimulation. Respondents made note of the “struggling” businesses in Wellington, arguing that the economic situation would be improved by more commercial spaces and opportunities.

Wellington needs business growth and providing spaces for businesses along a key tourist and worker foot traffic area is an opportunity to be embraced.

Serviced open areas are a great way of attracting and keeping both residents and visitors spending time and money in the central city - and on a larger scale attractive centres will reflect well on the rest of what Wellington has to offer.

We need a thriving economy in Wellington again, and for this to happen we must provide the spaces for businesses to function and bring jobs back into the city, especially in the wake of the public sector job cuts

General support for mixed and commercial use (36)

A considerable number of respondents expressed general support for mixed use and commercial spaces. These were mostly broad comments arguing that commercial activity would be beneficial to the city, or that there are significant opportunities to utilise the space commercially.

Adding spaces for hospitality, retail, and other businesses, within the surrounding buildings' architecture, will strengthen and diversify the purpose and use of the Civic Precinct.

Hospitality and business help maintain the lovely feel of our city.

Design suggestions (23)

Suggestions for how the design of the precinct can best accommodate commercial spaces and activities were offered by a moderate number of respondents. These ideas included the following:

- Creating a balance between green spaces and commercial spaces, such as including hospitality spaces on the edges of outdoor spaces
- Incorporating an outdoor space with performances, or a screen for viewing sports and movies
- Using small kiosks and affordable spaces, as well as semi-permanent commercial spaces such as shipping containers
- Activating the edges of the square instead of building new buildings
- Focusing on ground floor spaces for people to access in poor weather, as well as to activate the public space
- Avoiding creating shaded spaces, especially in the evening
- Maximising commercial spaces through removing or increasing height limits
- Linking the space with lower Cuba Street
- Ensuring the availability of parking and access to public transport.

A few respondents voiced opposition to a multi-storey building being developed near Jack Ilott Green, particularly as it would block light into the space.

Safety (16)

A small number of respondents argued that added commercial spaces would improve safety in the area, as added activity and vibrancy would result in “passive surveillance” in the precinct.

This is by far the most important. It needs to have things that will attract people - crowds beget crowds. More people will make it feel more safe, and attract more people to walk in between the waterfront and golden mile. Just green space, a library, city gallery and office buildings alone will not attract enough people to do that.

Bringing people into the area will increase safety. Adding hospitality businesses (not retail, given the proximity of Willis St and Lambton Quay) will enhance that.

As discussed under ‘Commercial spaces would attract more activity in the evenings’, respondents claimed that additional activity in the evenings through businesses like bars and restaurants would also result in a safer square at night.

Other topics (21)

A moderate number of respondents made other comments regarding adding commercial spaces. This included a small number of comments regarding developments and developers, a couple of which argued that any development should be the responsibility of developers, and not WCC. Conversely, one respondent was opposed to more development.

Other respondents argued that the Council should ensure there is a balance between commercial and civic use in the precinct or argued that commercial spaces would support creative opportunities.

8. Other

Summary

Respondents who indicated that there were ‘other’ aspects to prioritise most commonly suggested design elements they argued should be included in the Te Ngākau Precinct development. Retaining open space for civic uses, not overdeveloping the square, and including green space were the top suggestions.

A smaller number of respondents called for elements of the current Te Ngākau to be retained; mostly the City to Sea Bridge, and the Michael Fower Centre.

Concerns about the cost of the project, and discussions about whether to include commercial opportunities were also raised.

Design suggestions for public use (115)

A large number of respondents who indicated that there were ‘other’ aspects to prioritise, offered various suggestions for design elements they expressed should be included in the Te Ngākau Precinct development.

Of these, the idea to include or retain an open space for civic use was the most frequently articulated, with a considerable number of respondents describing different ways this space would be, or currently is, used by their community. Protests and rallies, meetings and other gatherings, as well as events were all commonly mentioned by these respondents.

The square still needs a central area for gatherings such as graduations and protests.

Allowing Te Ngākau to become a hub of celebration e.g. large scale civic celebrations of Matariki, Chinese New Year, Dawali - open to everyone would be a wonder to see.

Places for protest and amicable friction.

This group often expressed the importance of not ‘overdeveloping’ the square, by crowding out the available public space with buildings – some conveying this through directives such as “leave it alone” or that it should “stay as it is”.

Over developing the square runs the risk of losing public space and green space to commercial use, detracting from the city residents experience of using the square.

Leave the waterfront alone. The amphitheatre area is a sheltered green space and good for small gatherings, lunches and concerts.

Suggestions to increase the amount of available greenspace, or to introduce more “green” elements into the precinct were also made by a considerable number of respondents. This was often conveyed as something the area was currently lacking, or that the city centre should accommodate, to increase its attractiveness and usability for locals and visitors alike.

There is now an option of returning the Civic Square to the open, grassed, public park it was meant to be. Not enclosed by shade-inducing commercial buildings. If the vacant site is kept open, Wellington could have an open, visible, accessible “Central Park “ that this city sorely needs.

The city centre does NOT need more commercial space or activity here. There is now a large residential population who have a greater need of green space.

A moderate number of respondents proposed ideas for how to best cater the space to people; various elements such as seating or toilets were suggested, as well as landscape design that would make the space more user-friendly, or able to accommodate various recreational activities. Picnic tables, drinking fountains, play areas, dog-friendly spaces (including bins for dog poo), and features designed to accommodate ‘wheeled sports’ while containing them within designated areas were among these suggestions.

We're getting fewer and fewer public toilets and the ones being removed with Capital E should be replaced. They make a public space far more practical to use.

Flexible infrastructure, such as seating and planter boxes that can be moved to create more open spaces for events. Including utilities such as power and water across the site to minimise the need to add power for events. Including crowd safety features into the design.

Other aspects that were discussed in smaller numbers included calls for natural light access in the precinct; suggestions for new, or improved buildings; calls to retain the existing layout of the square; the inclusion of features to provide shelter from the elements; and the addition of security features such as CCTV cameras and policing.

Retaining existing elements of Te Ngākau (77)

A sizeable number of respondents made calls to retain existing elements of Te Ngākau. Just under half of these comments urged Council not to demolish the City to Sea Bridge, while a slightly smaller number wanted to see the MFC retained.

Please don't destroy the Michael Fowler Centre. It is such an iconic Wellington building on the waterfront, you may as well knock down the Beehive while you are at it.

Several others commented more broadly about the need to preserve the area’s “heritage” or character.

Costs and spending (49)

A considerable number of respondents articulated the need to evaluate the cost of the development before proceeding. These respondents typically expressed that the development is either unnecessary altogether or more extravagant than it needs to be, or that investment into other areas such as core infrastructure should take priority over this project.

*The WCC track record on creating areas that are highly used is seriously not good!
The areas created are also usually way overly expensive for what is actually
wanted and needed.*

*Stop the fake engineers reports to support vanity projects. There's a crisis. Get the
council back on track and stop wasting money which should be spent when the
purse is healthy.*

Council expenditure was also linked to rates increases, with a small number of respondents emphasising that rates are currently “unaffordable”, or that generally the proposed development was going to unnecessarily impact ratepayers.

Commercial opportunities (43)

Whether or not to include commercial opportunities in Te Ngākau Precinct was a controversial topic, with over half of respondents who discussed this expressing opposition. There were two repeated arguments offered by these respondents: that it would add too much competition with nearby struggling businesses; and that encouraging spending went against the essence of a civic square.

*Don't add commercial stuff! It's the CIVIC square and shouldn't be about
capitalism.*

*Given the downturn in commercial activity in the city it seems unrealistic to
imagine thriving commercial activity in the square.*

Several others expressed support for commercial activity, particularly hospitality.

*Hotel, bars would be amazing in here. We need additional commercial offerings to
make the place more diverse and to attract a wider ranging group of people.*

Finally, several respondents also expressed mixed views on whether commercial opportunities should be included, such as supporting only small/local businesses or preferring hospitality over retail.

Connections and transport (29)

A considerable number of respondents made connectivity and transport related comments. Several of these respondents wanted to see the area cater better to active transport modes, while a slightly smaller number called for the provision of public car parking spaces in the area. A small number of others spoke broadly about the need to highlight or enhance the connection between Te Ngākau and the harbour.

Frustration with Council actions (24)

A moderate number of respondents expressed frustration at the Council’s actions, including the engagement process for this project. Criticisms included the view that

WCC has already decided which course to take and presented options in a biased way to suit their plans; criticisms of the designs provided; and the view that Council does not listen to Wellingtonians.

The discussion document is limited and biased. The suggested options in this document are very limited and not inclusive of potential solutions.

Art and culture (17)

Comments pertaining to art and culture were made by a moderate number of respondents. The majority of these comments called for the inclusion of art in the development of Te Ngākau, while a few added that Māori and Pacific stories should also be a part of the design.

If new buildings on the CAB and Jack Ilott Green sites were designed to balance the existing buildings and tell a strong Māori, mana whenua and Pacific story through their architecture, materials and co-design process, the precinct could once again bring life to our city and help realise an inclusive and equitable future that allows us all to breathe and to thrive.

Earthquake and seismic concerns (14)

Several comments discussed earthquake risk, generally referring to the City to Sea Bridge, rather than other buildings in Te Ngākau. Half of these argued that the earthquake risk has been overstated. Remaining comments included general statements that in an earthquake large enough to affect the City to Sea Bridge or other buildings in the precinct, Wellington will have bigger problems; calls to remove any buildings that are at imminent risk of collapse; and concerns about the seismic risk to any future developments in the area.

Other topics (16)

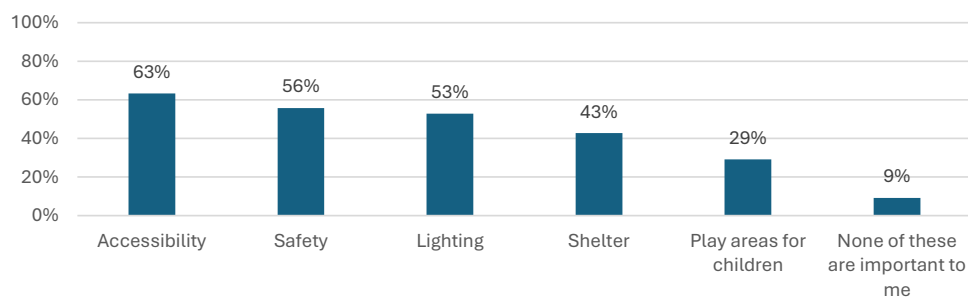
One respondent supported the demolition of the Capital E building, while one each suggested the demolition of the Town Hall and the Central Library. A small number of other general design suggestions were made.

Question 3: Other Design Considerations

RESPONDENTS WERE ASKED: Below are some other potential design considerations for further development in Te Ngākau Civic Precinct. Please choose up to three that are most important to you.

- Lighting
- Safety
- Accessibility
- Shelter
- Play areas for children
- None of these are important to me

Preferred other potential Te Ngākau design considerations



n=1146

RESULTS:

- > The most popular option, selected by 63% of respondents who answered this question, was accessibility, followed by safety (56%), and lighting (53%).
- > All options were selected by less than half of respondents; shelter by 43%, and play areas for children by 29%.

Question 4: Additional Comments

RESPONDENTS WERE ASKED: *Do you have any other thoughts about what we should be prioritising in Te Ngākau Civic Precinct?*

Summary

Suggested uses, namely that Te Ngākau should prioritise civic and cultural activity rather than commercial opportunities, was the overall direction respondents commonly supported for future development. Keeping Civic Square a central open space bordered by the surrounding buildings was also encouraged to physically define the area whilst accommodating community activations, events, and larger gatherings.

Consistent with this overall idea, respondents conveyed their vision for Te Ngākau as a “space for people” that is attractive, accessible, can flexibly accommodate a variety of public uses, and is a place where people will want to relax, rather than travel through.

Respondents also emphasised the connection between the central city and harbour as a defining feature of Te Ngākau, retained through preserving the existing City to Sea Bridge, by establishing a new one in its place, or through well-considered design.

Suggested uses (204)

A very large number of respondents discussed potential uses for the revitalised Te Ngākau Civic Square. These suggested uses varied, ranging from commercial to civic activities, or suggestions of mixed-use spaces.

The most common suggestion among these responses was that Te Ngākau should be used for non-commercial activities. A substantial number of respondents argued that commercial activity should be kept out of the square; either entirely, or by allowing only certain types of commercial opportunities, such as restaurants and cafes.

I would like the area to remain retail free. Retail spoils the relaxing vibe and there is plenty of retail on Lambton Quay and other spots.

These respondents indicated that they felt there are enough commercial spaces nearby, and comments gave the overall impression that respondents wanted Te Ngākau to remain a civic space, there to be enjoyed by all without having to spend money to be there.

Commercial activities have room to expand throughout te aro, and I don't believe they should be the priority of this development, which should remain in the public realm.

Several respondents discussed the civic function of Te Ngākau specifically, calling for this to remain the core focus of the development, encouraging its use as a space for civic gatherings, protests and events, and a space that is defined, rather than a thoroughfare.

This is Wellington city's civic space. As a civic space it must be "a space" that is more than a transitional place for people to pass through. The only options shown seems to have taken a specific narrative and used that as the only driver.

In a similar vein, a substantial number of others suggested the space should be used for concerts and events, both large and small, without specifically mentioning the ‘civic function’ of Te Ngākau. These respondents suggested using the square to hold events like fairs, music and dance performances, festivals, outdoor movie screenings, as well as casual gatherings like picnics and meetups with friends.

Operating at both a large event civic level and small, lunchtime use is important.

Welcoming of all citizens and visitors space for gatherings both formal and informal - eg WCC events, public demonstrations, celebrations, hangout space.

A considerable number of respondents supported Te Ngākau being a mixed-use space; somewhere where people could spend time informally, as well as being able to access commercial or creative activities. These respondents suggested a mixture of shops and cafes, as well as spaces that people can sit and relax in.

It's essential to balance this with strategic commercial development to ensure the precinct's long-term viability and vitality. Mixed-use developments have been shown to create more dynamic urban environments, supporting a range of activities throughout the day and night.

A moderate number specifically noted a desire for commercial opportunities in Te Ngākau, including hospitality and retail. These respondents argued that commercial spaces would draw people to the area and increase revenue for WCC.

Without a reason to come (ie. Businesses that sell things) it's just another empty space.

More hospitality, retail, office space.

Finally, several others suggested that the development of Te Ngākau should be done in a way that creates flexible spaces that can be used for a variety of different things. Considering how the space could be used in different weather conditions and allowing things like food trucks and markets to come in and out were suggested.

Creating flexible, multi-use spaces that can adapt to changing community needs and support a diverse range of activities.

As much open space as possible. Flexible arrangement for hospitality providers - think food and coffee carts rather than permanent installations. Be more flexible!

Shelter to hold markets in the weekend -arts and craft and a food market.

Design suggestions (149)

A large number of respondents offered suggestions for the design of the square. These suggestions varied, with most respondents criticising the scenarios proposed.

Around a third of these respondents argued that the civic function of the square should be prioritised in the design of the precinct, and that the proposed draft lacks support for civic function. A suggestion made by a moderate number of respondents was to design the precinct as an enclosed square to provide a defined space that has a strong sense of identity, rather than a thoroughfare. These respondents also added that an enclosed square would provide better separation from the traffic on Jervois Quay.

The emphasis should be on creating a great Civic space rather than on the buildings around it. The sense of enclosure needs to be emphasised more and protected from the traffic on Jervois Quay.

I believe that the priority for Te Ngākau Civic Square is to create a place of containment, with defined, yet permeable boundaries. It should have a strong sense of identity as a place that people can gather for civic discourse, debate and celebration.

Continuing from this overall idea of promoting civic function, several respondents also recommended that the new design should consider how the current square has been used by the public, arguing that it should build on the current design of the space. A small number of respondents further claimed that the Civic Square should be an open area designed for public gatherings instead of being interrupted by park features. Other suggestions included an elevated space for public speaking and performances, as well as designing the space using universal design principles so that it is accessible to everyone.

I do not support converting Te Ngākau into a park. There are sufficient park spaces already in the city for recreation. Civic Square should be the urban heart of our city. I support the intention to introduce additional planting, but in a manner that supports and strengthens the urban structure, rather than blurring it.

Recommendations that the square be designed with Wellington's environment in mind were also articulated, with a considerable number of respondents suggesting that shelter from the weather should be included.

Wellington's climate is unpredictable. It can often be sunny and many would love to be able to sit outside and enjoy a rest, a drink or something to eat, but it is often windy. Adequate shelter would encourage visitors to visit and stay in the Square.

The old civic square was a good sheltered space to relax in the sun on a windy day when the waterfront was too exposed. It would be great to see a new design maximise sun and minimise wind.

Other suggestions offered by small numbers of respondents included:

- Establishing strong connections and access to the surrounding area, including Cuba Street, Victoria Street, Parliament, Courtenay Place, Harris Street, Wakefield Street, and Jervois Quay
- Adding seating areas
- Adding amenities such as accessible public toilets, places for changing babies, drinking fountains, a community notice board, and bins
- Integrating Māori cultural values, and working with mana whenua
- Prioritising safety and lighting
- Supporting recreational use of the space.

A small number of respondents called for the existing bridge to be retained, or suggested keeping the design of the existing bridge in the new build.

Art and aesthetic suggestions (35)

Art and aesthetic design suggestions were made by a considerable number of respondents. This included general comments about making the space aesthetically appealing and incorporating public art, as well as more specific suggestions offered in small numbers. These suggestions included the following:

- Incorporating Māori art and design
- Working with the kaupapa of the original precinct design, such as the integration of narratives of migration and arrival, to shape the art on the new bridge
- Preserving and reinstalling the current art, such as Ferns by Neil Dawson.
- Reinstalling older artwork originally in the square, such as the water pools with Robert Franken’s paintings, and Chris Booth’s standing stones
- Moving or getting rid of the Water Whirler and the Rugby World Cup sculpture.

Other one-off suggestions include incorporating a connection with the environment; a mural; interactive art; a large digital screen; and a fountain.

Connecting city and sea (127)

A large number of respondents discussed the connection between Te Ngākau and the waterfront. Over half of these comments were about the City to Sea Bridge; either generally calling for the existing bridge to be saved rather than demolished, or stressing the importance of having a bridge to connect city and sea.

Please please please keep a big happy bridge where City to Sea is. It's such an important feature, and it's really great not having to interact with the cars at all.

A small number of respondents supported the demolition of the bridge.

A considerable number of remaining comments highlighted the importance of the connection between Te Ngākau and the waterfront, and urged WCC to preserve or enhance this connection through well considered design.

Please take care to ensure that the access to and through civic square and the waterfront flows and is well thought out.

An attractive open space with good planting and seating that provides good access to the important buildings surrounding the square and gives better access and views between the city and the harbour.

Stance on new development (100)

A large number of respondents expressed their opinions about the proposed development of new buildings in Te Ngākau highlighted in *Scenario 3: More Commercial Activity*, as well as offering ideas for the development of the CAB and MOB sites post-demolition. More respondents expressed opposition to the development of new buildings, particularly for the 10-12 storey commercial development on Jack Lott Green and building on the MOB and CAB sites, advocating for these areas to be left as public open space to maximise public amenity, ease of access, natural light, and views of the harbour. [Note that suggestions to retain or establish green space in these areas are also included in the below topic ‘*Green space, greening and environmental considerations*’].

Access from the Square into the buildings that surround it. Definitely NOT a 10-storey building on Jack Ilott Green. No significant shading from the surrounding buildings - we need all the sunshine we can get. I love going there at lunchtime (I work nearby) to sit in the sun.

Instead of putting a towering commercial building in the CAB/MOB location, please return that land to open space so that Te Ngākau/Civic Square can become an enhanced publicly-owned amenity that supports the civic needs and the green space needs of the residents of our city.

Conversely, less than half of respondents indicated *support* for the development of new buildings, with most comments including various stipulations and design aspects that should be carefully considered before proceeding. The overall concept supported by this group was that new development should define the edges of the square, promote activity, and complement the current uses of Civic Square, rather than make significant changes or transform it into something new. Emphasis was placed on building to a height consistent with existing structures or to prevent overshadowing, as well as prioritising cultural and civic activities.

While I appreciate that the design of the buildings in all options are placeholders, the scale appears too domineering in this space. Consideration needs to be given to how these buildings relate and contribute to the civic precinct as a whole. In the images provided the buildings don't contribute to the surrounding spaces (albeit that the spaces and most importantly a main civic space are ill designed themselves). The buildings instead appear to be plonked on the sites without much thought given to their contribution to the precinct.

Definition of the central open space relies on the buildings that surround it. The activities associated with those buildings, particularly at ground level, should be appropriate to and encourage use of the space. Current buildings at the edges support cultural and the arts. New buildings like the Pacifica Fale Malae or a green wall of dense tall forest could be used to define the edge. Any detail design must meet CEPTD principles, viewshafts to Te Papa and the waterfront, incorporate green network and sustainable water policies of the Wellington City Council.

A small number expressed general support for development opportunities, such as those provided by demolition of older buildings, to better activate the square through commercial activity or to generate revenue.

Noting that replacing the City To Sea Bridge with something similar adds unbudgeted costs, we should be open to a strategic part of the overall precinct being able to be developed with a building to raise some revenue. Done in the right place, this could be a net positive thing.

Green space, greening and environmental considerations (95)

Most of these comments expressed support for increasing or retaining the number of trees, plants, or green space in Te Ngākau, with various suggestions offered on how to achieve this. The most common specific suggestions noted were to preserve Jack Ilott Green and allow for more green space in place of the demolished CAB and MOB buildings. [Note that specific suggestions to establish green open space to replace the

MOB and CAB buildings or to not develop on Jack Ilott Green that are included in this topic, are also raised in the previous topic ‘*Stance on new development*’. A general preference for greenery and green spaces over more buildings was also frequently expressed in respondent’s vision for the future development of the precinct.

The district plan is for higher density living in the city. in most cases this will be apartments, and limited in floor and outdoor space. therefore increase in green out door spaces essential for health and wellbeing. by green spaces I mean grass, trees, plantings for activities like picnics, relax, exercise, talk, walk, kick a ball, fly a kite, play with pets. need spaces not requiring buying a coffee/drink or food.

Various social and environmental benefits of greenery and green space were also illustrated to back up this perspective. Biodiversity, enhanced air quality, reduction of the urban heat island effect and overall public wellbeing were specific positive outcomes anticipated from the provision of outdoor green space for everyone to enjoy.

Urban green spaces play a crucial role in creating liveable, sustainable cities. They provide numerous benefits, including improved air quality, reduced urban heat island effect, enhanced biodiversity, and positive impacts on mental and physical health.

Less often, environmental management and resilience to natural disasters were design aspects supported, as well as the need to consider the development’s impact on climate change and carbon dioxide emissions.

We should be accounting for global warming in our constructions, especially so close to the sea. Most recent models suggest a global temperature rise of around 3.1°C under optimistic conditions, which will lead to a substantial change in inner city temperature, and higher sea levels.

A welcoming, inclusive, and people-oriented space (94)

Respondents made calls for Te Ngākau to be “a space for people”; indicating that they want the precinct to feel welcoming, inclusive, and attractive. Respondents expressed a desire for Te Ngākau to continue to be used as a gathering place, and to be designed in a way that prioritises people and the experience of being in the space.

I think it’s really important to retain the features of civic square that enable it to be used for large gatherings of people.

A people friendly space which celebrates the city’s cultural amenities.

Public places for people. Don’t privatise any land by allowing developers to build. Any new building should be by council.

A “space for people” was described as an attractive public gathering place, not a privately developed one or just a thoroughfare. Respondents called for pedestrians to be prioritised and for Te Ngākau to be a place where people can eat lunch and spend time away from the streets. For the area to be inclusive, respondents emphasised that the precinct should be welcoming for everyone, including all ages and cultures, and have seating provided.

Costs and spending (88)

A sizeable number of respondents discussed cost and spending, in relation to the Te Ngākau Civic Precinct development project. The majority of these respondents expressed concerns about how WCC is spending money; how projects are being prioritised, and the impact spending is having (or will have) on ratepayers. The general tone of these comments was frustration, with many expressing the view that this project is not a priority and money should be saved and/or spent elsewhere, such as on core infrastructure.

Keeping rates as low as possible. How many more buildings need to be rebuilt because they have failed. Again council failed. I'm not a cash cow.

Just build a new pedestrian bridge and strengthen the existing buildings, don't blow out the budget putting up new buildings or extensions to existing buildings.

Strip back the cost of the project - do the bare minimum and reduce the impact on rate payers.

The future of existing buildings (87)

Michael Fowler Centre (63)

The vast majority of these comments expressed opposition to the proposed demolition of the Michael Fowler Centre offered in *Scenario 3: More Commercial Activity*. The main argument here was that the MFC defines Wellington City as the creative capital of New Zealand and that its demolition would degrade this status. Respondents emphasised the value of the MFC as both a historical architectural asset and a performance space, that if removed, would be sorely missed by the community.

It is a building of tremendous architectural and historical merit, with world-class acoustic qualities. It was one of the first structures constructed with the input of the pioneer of modern concert hall design, Harold Marshall, who is a Kiwi but has since helped design the acoustics of renowned buildings all over the world. Any eventual replacement would likely not have the same qualities, and could be afflicted with permanent design flaws. Christchurch saved the MFC's sister building and we should do the same here.

Respondents often generally advocated that works to retain and strengthen the building should be prioritised to ensure its future resilience.

The Michael Fowler Centre is an important building for Wellington and every effort should be made to retain the building.

Michael Fowler Centre. I support the strengthening of this wonderful building, including the insertion in its foundations of base isolators if this is deemed practical, necessary and desirable.

Less often, logistical and practical benefits such as cost saving and reducing waste were offered as justification for retaining the structure.

And if we can save money by not rebuilding existing buildings like the MFC then perhaps there is more to spend on another iconic bridge.

Conversely, a small number supported the demolition, noting that the Town Hall would be a suitable alternative performance space, and that increased commercial activity could reinvigorate the square.

Sell Michael Fowler for development. There seems to be little point spending money here - it's a distinctly unattractive building and other venues such as the Town Hall (when finished), Tākina, TSB Arena and St James Theatre could pick up business instead. Additionally it would raise money towards developing the area instead of asking ratepayers to pay more.

City Gallery (24)

A moderate number of respondents expressed general opposition to the relocation and commercial additions proposed for Te Whare Toi City Gallery in *Scenario 2: Maximise Green Space* and *Scenario 3: More Commercial Activity*. This group instead proposed that it should be retained, strengthened, and further invested into as both an integral part of Wellington's art scene and as a valued public amenity.

Not building an extension on the Art Gallery (but ensuring the existing Gallery is maintained and properly funded)

the City Gallery options are not supported by any discussion of the future direction for the gallery instead a choice to replace exhibition space with a shopping laneway and an annex building;

Conversely, one respondent expressed support for the small extension over the larger one.

Criticisms of WCC (60)

A substantial number of comments included criticisms of WCC. The general sentiment among these comments was concern about WCC's decision-making processes, and frustration at a number of the actions taken by Council, both recently, and in the past, that were said to have led to problems in the city, including the current state of Te Ngākau. These respondents seemed sceptical that this project would improve the precinct.

It's never been, in my 45 years in this city, the beating heart of the city. At best it has been meaningless - or perhaps a starting point for marches on Parliament if we are lucky. It's merely another half baked project from an inept and spendthrift council.

Don't break it like you have other parts of the city.

Lighting is fine, security is fine (if the CCTV camera operators are working?), access is fine. Why does the council have to "fix" things when they are not broken?

Poor choices have been made previously with the Town Hall and Central Library. Please don't repeat this by building an unnecessary bridge.

Leadership is important. Council needs to show a commitment to get things done and stop the current dysfunctionality, procrastination and politicising of issues.

Vibrance, character and identity of Te Ngākau (57)

Comments about the precinct's vibrance, character and identity were made by a substantial number of respondents. These respondents highlighted the importance of making Te Ngākau the "heart of the city" and the "cultural hub" of Wellington, arguing that the redevelopment is an opportunity to make the area, and in turn, the city, more vibrant. Some respondents offered suggestions for how to make the space attract more people to add to this liveliness. These suggestions included more open space, places to sit and gather, increased car parking or pedestrian access, and adding a limited number of commercial spaces.

Showcase Wellington with culture, open spaces, furniture to sit and gather, views, and ultimately being a core area to enjoy as a visitor or resident.

Civic square is the heart of our city. It's no wonder the city is struggling when the heart is under construction. What we do here is really important for restoring the city's mojo.

Respondents were also in support of more cultural and artistic activations in the space, including more public art, live performances, and public art programmes.

A public creative programme that aims to enliven and fill the spaces in and around Te Ngākau and allows the buildings and organisations to integrate and partner well with each other and mana whenua will help ensure Te Ngākau's heart and spaces are actually full and activated.

As Te Ngākau transforms, the role of live performance will remain central to the precinct's success, amplifying Wellington's reputation as a vibrant arts city.

Play areas and opportunities (36)

A considerable number of respondents discussed areas and opportunities for play. Most of these respondents were in favour of including play areas, although a small number of these respondents noted that opportunities for play did not have to be in a designated space. Instead, play opportunities could include open or interactive spaces. A few respondents also noted that separation from traffic is necessary for safety.

It would be great to have some fun things for kids, like sculptures or structures they can climb on, or safe water fountains they can play in on hot days. It should feel fun, peaceful, and expansive for the whole family. I'd love to feel like my kid can run around safely.

Play areas for children that are integrated into public spaces, and not specifically designed fenced off plastic playgrounds, are really important. Children are already and will likely grow up into active city dwellers and this type of space fuels a love for their place.

Conversely, a moderate number of respondents argued that additional play areas were not needed, making the point that there are play areas nearby, such as in Frank Kitts Park, Oriental Bay, and Waitangi Park.

I don't think we need play equipment for children, there is a playground across the road at Frank Kitts.

No need for a playground - Frank Kitts is across the road. Having open space for kids to run around is more than enough.

Safety and security (30)

A considerable number of respondents discussed safety and security within Te Ngākau. These comments ranged from general calls to consider safety in the precinct, to specific suggestions that including more retail and hospitality in Te Ngākau will increase activity allowing for passive surveillance of the area, or that separating pedestrians and vehicles will enhance safety in public spaces.

Thoughtfully placed hospitality and retail spots would enhance community spirit and safety without overextending the city's finances. Prioritizing lighting and safety measures, especially for vulnerable groups.

Transport and parking (28)

A considerable number of respondents discussed transport and parking as an aspect of Te Ngākau that needs to be designed carefully to complement future development. Most of these comments emphasised ease of active travel within, as well as to and from, the precinct by fostering connections between key areas and reducing conflict between pedestrians, cyclists, and vehicles.

Please make sure that there are more exit/entry points from the surrounding streets so crowds can disperse quickly and easily when necessary. The broad access onto the City to Sea Bridge is excellent for crowds.

Prioritise car free green space and safer ways to get around the city without conflicting with cars.

Overall connectivity and ease of access were described necessary elements of increased activity and vibrancy in the city, especially relevant to commercial developments and use of developed public space in Te Ngākau. Transport infrastructure such as locally available secure parking, nearby public transport routes, and cycle facilities were other specific suggestions proposed to facilitate this.

Having access to parking if you want people to attend anything in the city or here.

Effect on nearby businesses - Victoria Street already has a number of unused business premises; businesses open there only to close again quite quickly. It needs to be made a more attractive place for pedestrian activity so that the businesses in the area have a chance to succeed - if no one comes to the area because it's unpleasant, no amount of shopping infrastructure will be supportable.

A few respondents expressed general support for deprioritising car-centric infrastructure and enhancing public or active transport modes within the city.

3. Prioritising sustainable transport options and discouraging car dependency.

Conversely, a similar number emphasised that vehicular traffic should *not* be impeded, especially along high-volume routes.

*Think about how walkers and cyclists can move through and around the precinct.
While keeping Jervois Quay as an important artery for traffic with 4 or more
wheels.*

Don't reduce existing road space cars. Few do and can ride bikes.

Stance on renovation versus demolition of existing buildings (24)

A moderate number of respondents gave various opinions on whether existing buildings in Te Ngākau should be retained and enhanced or demolished and replaced. Most respondents expressed support in one way or another for retaining and restoring existing buildings – either to respect their cultural, architectural, and heritage value or because of the perceived cost-effectiveness and efficiency of this option.

*Prioritise restoration of this Heritage site. New Zealand needs to respect and
celebrate its cultural history not demolish it.*

*Why are we not just restoring the front of these buildings? Why are options only
ever all or nothing? If WCC had worked on just restoring and strengthening the
front of the old townhall instead of a cost blowout maybe it would be finished by
now and money saved*

A couple of comments expressed support for replacing old, earthquake-prone buildings.

*There should be no more earthquake strengthening of any buildings. Problem
buildings should be demolished.*

Other topics

Consultation and design process (51)

A considerable number of respondents articulated criticisms of WCC's consultation process and proposed designs. These respondents argued that there was a lack of public consultation for creating the scenarios offered in the engagement, and/or that the proposed scenarios are not fit for purpose or "lack any sense of vision". For these reasons, a few respondents suggested that WCC defer the decision-making process and reconsider additional scenarios.

Other comments made about the consultation process included general statements that transparency and consideration of public feedback are important; that the multichoice questions were too limited; and that there was a lack of public awareness about the consultation.

The Disabled Persons Assembly noted that the consultation documents were inaccessible for some disabled people, including blind and deafblind people.

Other suggestions for aspects to prioritise (64)

The following points were made by respondents in smaller numbers:

- General support for finishing restoration works and reopening Te Matapihi Central Library to the public

- Reiteration of respondents' stance on the City to Sea Bridge and replacement options
- General design process suggestions
- Preferred development values (e.g. accommodate residents, prioritise heritage/history, general support for "good" or considered design)
- Support for the Inner City Wellington residents' association campaign and design proposal for Te Ngākau Precinct
- The importance of resilient, quality construction completed in a non-disruptive or timely manner
- Social issues and suggestions relating to homelessness.

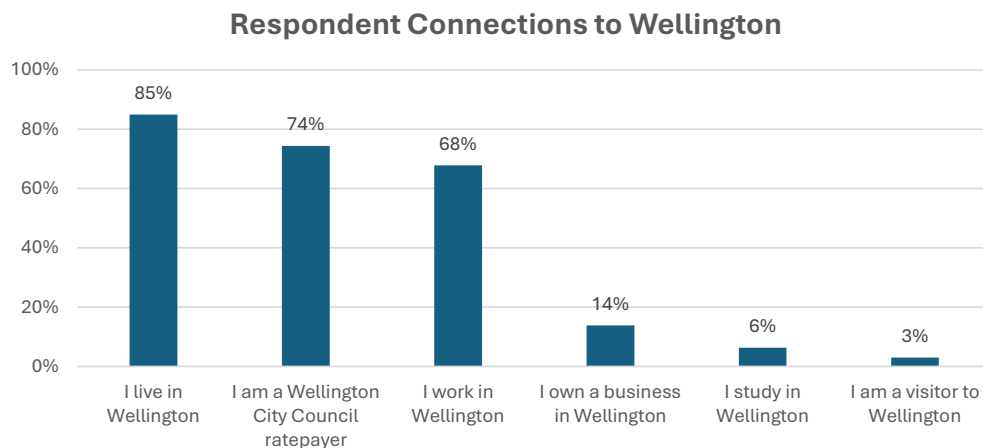
Who we heard from

Connection to Wellington

RESPONDENTS WERE ASKED: *What is your connection to Wellington?*

[respondents could select all options that applied to them]

- *I am a Wellington City Council ratepayer*
- *I live in Wellington*
- *I work in Wellington*
- *I own a business in Wellington*
- *I study in Wellington*
- *I am a visitor to Wellington*



n=1285

Note: respondents could select more than one response option.

RESULTS:

- > Living, paying rates, and working in Wellington were the most common selections;
 - I live in Wellington was selected by 85% of respondents
 - I am a Wellington City Council ratepayer was selected by 74%
 - I work in Wellington was selected by 68% of respondents.
- > 14% of respondents indicated that they own a business in Wellington.
- > Remaining options were both selected by fewer than 10% of respondents.

This report has been prepared by:

Global Research
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Global Research
Turning **Information** Into **Insight**

24 June 2024
Job No: 1091837.1000

Wellington City Council
PO BOX 2199
WELLINGTON 6140

Attention: Farzad Zamani

Dear Farzad

City to Sea Bridge, Wellington
Desktop Geotechnical Seismic Assessment

1 Introduction

This report presents a desktop geotechnical seismic assessment for the City to Sea Bridge as input to the Detailed Seismic Assessment (DSA) being undertaken by the project structural engineer, Hoff Consultants Ltd (HoffCon). The study was undertaken by Tonkin & Taylor Ltd (T+T) at the request of Wellington City Council in accordance with Variation Order VO1 dated 5 October 2023 (T+T Ref: 1091837.1000).

T+T has previously undertaken a geotechnical seismic assessment of the structure in 2018. To enable assessment of %NBS (New Building Standard), HoffCon require further geotechnical parameters to assess the behaviour of the structure pre-liquefaction and after liquefaction is triggered. In particular, the post liquefaction assessment is required to understand if a “step change” occurs in accordance with the Assessment Guidelines, which could affect the % NBS rating. This letter supersedes our report dated 24 October 2018 (T+T Ref. 1007825.001).

The scope and objectives of the desktop study consisted of:

- Review work undertaken in 2018 and meet with HoffCon and agree the geotechnical issues which could influence the DSA and the geotechnical parameters required as input to the DSA.
- Review and update ground model based on any new available geotechnical information available since the 2018 assessment.
- Review the site’s potential for liquefaction and liquefaction trigger.
- Assess geotechnical consequences to the structure from liquefaction.
- Assess and provide HoffCon geotechnical vertical capacity and stiffness of pile foundations.
- Provide geotechnical parameters to HoffCon to allow them to carry out lateral pile analyses using LPILE software.
- Liaise with HoffCon during their application of the geotechnical parameters to the DSA.
- Preparation of this desktop report presenting the conclusions of the study.

This geotechnical assessment has been undertaken generally in line with Section C4: Geotechnical Considerations, The Seismic Assessment of Existing Buildings Guideline¹ July 2017. In accordance with that guideline this assessment is focused on geotechnical aspects which could influence the behaviour of the structure with respect to life safety. Serviceability aspects are not considered.

The conclusions presented in the report are based on readily available data reviewed as part of a desktop study. Conclusions developed based on the information in this report are to be discussed with the geotechnical engineer before finalising those conclusions. This is to allow the opportunity to confirm that the information has been applied as intended and to challenge any parameters which prove to be critical. If it is determined that further investigations, assessment or modifications of the existing foundations are required, then the concept design for these works should be developed in consultation with a geotechnical engineer.

Information presented in this report is not intended for the design of building foundation modifications.

2 Review of available information

2.1 Site description

Conclusion	Information reviewed
<ul style="list-style-type: none"> Refer Figure A.1 (site plan), in Appendix A. The site is located at Jervois Quay, Wellington. The City to Sea Bridge is a pedestrian bridge over Jervois Quay, and connects Te Ngakau Civic Precinct and Wellington waterfront. The eastern bridge abutment is founded adjacent to an approximately 6m high mass concrete seawall which retains the reclamation edge at this location adjacent to the man-made Whairepo Lagoon. 	<ul style="list-style-type: none"> Wellington City Council, City to Sea Bridge Drawings (December 1992) Historic Seawall Drawings Spencer Holmes Drawings, City to Sea Bridge, Plan and Sections (August 2010) <p>Above Drawings attached in Appendix C.</p>

¹ The Seismic Assessment of Existing Buildings Guideline - Part C (Detailed Seismic Assessment), Section C4: Geotechnical Considerations. July 2017. View online at: [The Seismic Assessment of Existing Buildings Guideline](#).

2.2 Ground and groundwater conditions

Conclusion	Information reviewed
<ul style="list-style-type: none"> Refer Figure 1 for a cross section. Available geotechnical investigation data near the site comprises: <ul style="list-style-type: none"> City to Sea Bridge 1993 investigations (BH-A1 to BH-A3) One 1988 borehole at Capital E (CSD-B9) Geotechnical information (boreholes and CPTs) within the vicinity of the site (approximately 100m) listed below has been used in the assessment, refer Appendix B. <ul style="list-style-type: none"> 6 No. Cone penetration tests (CPT) at 260 Wakefield Street. 2 No. Boreholes at 260 Wakefield Street. The inferred soil profile is summarised below and in Figure 1. <ul style="list-style-type: none"> 1889 Reclamation Fill: Silty, sandy gravel fill, from ground surface (~RL +2m). Fill compacted above groundwater table and is medium dense to dense. Below groundwater table Fill is loose. Beach Deposits: Loose to medium dense sand with shells. From ~RL -3m. Alluvium: Typically silty sandy gravel with occasional lenses of sandy silt. Gravel in upper part of layer is medium dense to dense. Becomes dense to very dense with depth. Silt in upper part of layer is typically firm to stiff. Stiff to very stiff at depth. From ~RL-5m. Bedrock: Greywacke sandstone and siltstone. Approximately 40 to 60m bgl. Groundwater levels from historical boreholes nearby the site indicate the groundwater level varies between approximately RL -0.2m and RL +1m. The average groundwater level is RL+0.4m, however a lower groundwater level is more critical for this assessment. Therefore, a groundwater level of RL +0.2m has been adopted in this assessment. 	<ul style="list-style-type: none"> Kaiser, A.E., et. al., 2019. Updated 3D Basin model and NZS 1170.5 subsoil class and site period maps for the Wellington CBD: Project 2017-GNS-03-NHRP. GNS Science consultancy report 2019/01. New Zealand Geotechnical Database Levels are in terms of Wellington 1953 Vertical Datum

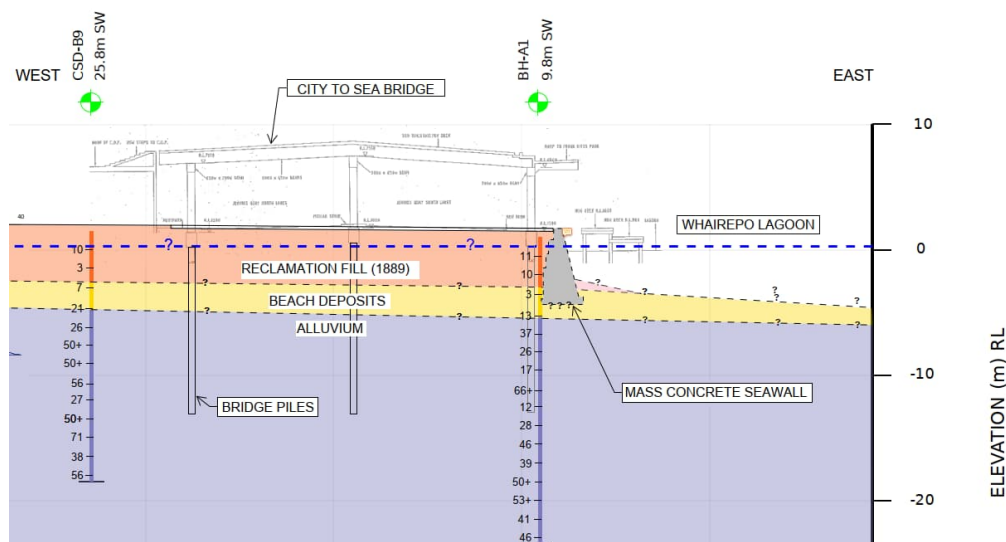


Figure 1: Cross Section

2.3 Active Faults

Conclusion	Information reviewed
<ul style="list-style-type: none"> No active or inactive faults are mapped beneath the site. The Wellington Fault lies approximately 1.5km northwest from the site. The Wellington Fault is included in Table 3.6 of NZS 1170.5:2004 as a major fault requiring near fault factors when assessing structural design actions. There are numerous other active and inactive faults mapped nearby in Wellington city. Bathymetric survey of the Wellington Harbour identified the active Aotea Fault. The Aotea Fault is inferred to project onshore and extend southward beneath Te Aro. Although the precise onshore location is currently inferred, the alignment of the fault is approximately 650m east of the site. The inferred location is poorly constrained and for this reason GNS has only published the offshore fault alignment. The Aotea Fault is not considered a major fault according to NZS 1170.5:2004. 	<ul style="list-style-type: none"> GNS Online database of active faults NZS1170.5: 2004 Section 3.1.3 and Table 3.6

2.4 Previous earthquakes

Conclusion	Information reviewed
<p>The following recent earthquakes were felt at the site:</p> <p>Kaikoura Earthquake (14 November 2016 at 12:02am) Magnitude: M_L 7.8 Intensity felt at site PGA 0.16g recorded at Frank Kitts Park (FKPP).</p> <p>Cook Strait Earthquake (21 July 2013 at 5:09pm) Magnitude: M_L 6.5 Intensity felt at site PGA 0.12g recorded at Frank Kitts Park (FKPP).</p> <p>Lake Grassmere Earthquake (16 August 2013 at 2:31pm) Magnitude: M_L 6.6 Intensity felt at site PGA 0.11g recorded at Frank Kitts Park (FKPP).</p> <p>There is no known evidence of ground damage at the site as a consequence of these earthquakes.</p>	<p>Earthquake magnitude source of data: http://geonet.org.nz/</p> <p>Ground damage source data: Tonkin + Taylor observations</p>

2.5 Existing building foundations

Conclusion	Information reviewed
<ul style="list-style-type: none"> Bridge abutments and piers are supported on 500mm shaft diameter Franki piles. Bulb diameter unknown, assumed to be 600mm dia. in this assessment. The specification indicates piles are expected to be founded 14 to 16m bgl. This assessment assumes piles are founded 15m bgl. Columns are supported by 2 pile groups with a 1.2m deep pile cap. Pile caps are tied together with a 0.6m deep ground beam in one direction (parallel to Jervois Quay). Abutment ramps are supported on 275mm square precast reinforced concrete driven piles. This assessment assumes piles found ~8m bgl (1m embedment into Alluvium as these lightly loaded piles is likely to achieve the required set with 1m embedment into dense soils). Top of ground beams -RL +1.5m. Top of piles -RL+0.3m. 	<ul style="list-style-type: none"> Wellington City Council, City to Sea Bridge Drawings (December 1992) (selected drawings in Appendix C).

3 Earthquake shaking hazard

3.1 Seismic site subsoil class

Conclusion	Information reviewed
<ul style="list-style-type: none"> • Site subsoil class is assessed to be near the boundary between Class C and D. • In the absence of site-specific information to inform the subsoil class, the following is considered prudent for this assessment: <ul style="list-style-type: none"> - Subsoil Class C – Shallow soil sites for the geotechnical assessment. - Subsoil Class D – Deep soil sites for the structural assessment. 	<ul style="list-style-type: none"> • Refer Section 2.2. • NZS1170.5:2004 • Kaiser, A.E., et. al., 2019. <i>Updated 3D Basin model and NZS 1170.5 subsoil class and site period maps for the Wellington CBD: Project 2017-GNS-03-NHRP</i>. GNS Science consultancy report 2019/01.

3.2 Ground shaking hazard

In accordance with guidance published on the MBIE website ([Module 1: Overview of the geotechnical guidelines | Building Performance](#)), ground shaking hazard to be considered in geotechnical assessment and any associated calculation of %NBS has been assessed based on Module 1² (Version 0, 2016). The conclusions are presented in Table 3.1.

Module 1 has been updated and published as Module 1³ (Version 1, 2021). In accordance with MBIE guidance this update is to be applied in geotechnical design of new structures but not in a DSA of existing structures. The shaking hazard based on Module 1 (Version 1, 2021) is included in Table 3.1 for comparison only.

In October 2022, GNS Science released the revised National Seismic Hazard Model (NSHM)⁴. This represents the latest scientific knowledge of earthquake hazard in New Zealand and is an important factor for understanding and managing earthquake risk in the built environment.

Updates to Building Code compliance documents for design of new structures (including update of Module 1³(Version 1, 2021)) are expected to be released between 2023 and 2025. Those updates will be informed by the NSHM. It is not known if these updates will be applied in any way to the assessment of existing buildings and calculation of %NBS.

Table 3.1 includes the likelihood of various levels of earthquake shaking as indicated by the NSHM. This likelihood is provided to inform an understanding of seismic risk and does not influence the calculation of %NBS.

² MBIE/NZGS. Earthquake Geotechnical Engineering Practise, Module 1 (Version 0, 2016): Overview of the Guidelines, Section 5, Method 1.

³ MBIE/NZGS. Earthquake Geotechnical Engineering Practise, Module 1 (Version 1, 2021): Overview of the Guidelines, Section 5, Method 1.

⁴ <https://nshm.gns.cri.nz/>

Table 3.1: Shaking hazard for geotechnical assessment and design

Case	NZS1170.5:2004 limit state	PGA (g)	Magnitude	Approximate likelihood based on NSHM 2022
Assessment of existing buildings Module 1 (Version 0, 2016) [adopted for this assessment]	ULS(IL3)	0.59	M_{eff} 7.1	20% In the next 50 years
Design of new buildings Module 1 (Version 1, 2021)	ULS(IL3)	0.91	M_w 7.7	8% In the next 50 years

Note:

Building design life	50 years – as advised by DTC.
Building importance level	IL3 (NZS 1170.0:2004, Table 3.2) – as advised by HoffCon / WCC.
Subsoil class	C (shallow soil) – refer Section 3.1 Relevant to Module 1 (Version 0, 2016) only.
VS30	Approximately 250m/s inferred from published Vs30 maps by Semmens et al (2010) and Kaiser et al (2019). Relevant to NSHM only.

In this report ground shaking is expressed as a %ULS(IL3) shaking relative to Module 1 (Version 0 2016).

The Kaikoura M7.8 earthquake recorded a PGA of The PGA of 0.16g at Frank Kitts Park (see Section 2.4) was magnitude weighted to a $M_w = 7.1$ in accordance with the procedure of Idriss and Boulanger (2014)⁵. This yields a PGA of 0.18g at $M_w = 7.1$. As a comparison, this indicates that the intensity of shaking felt as a result of that event was approximately 30% ULS(IL3) shaking.

4 Liquefaction assessment

4.1 Liquefaction potential

Liquefaction only occurs in some soils. Liquefaction susceptible soils are typically saturated, non-cohesive and loose or medium dense. Soils which are susceptible to liquefaction require a certain level of earthquake shaking (trigger) to cause them to liquefy. Denser soils require more intense and/or longer duration of shaking (higher trigger) than less dense soil.

The liquefaction susceptibility and trigger for each soil layer has been assessed by the method proposed by Idriss and Boulanger (2014)⁶. The conclusions are summarised in Table 4.1. Refer 2.2 for further details of each layer.

⁵ Boulanger, R.W and Idriss, I.M., 2014. CPT and SPT based liquefaction triggering procedures." Report No. UCD/CGM-14/01, Center for Geotechnical Modeling, Department of Civil and Environmental Engineering, University of California, Davis, CA, 134 pp.

⁶ Boulanger, R.W and Idriss, I.M., 2014. CPT and SPT based liquefaction triggering procedures." Report No. UCD/CGM-14/01, Center for Geotechnical Modeling, Department of Civil and Environmental Engineering, University of California, Davis, CA, 134 pp.

Table 4.1: Liquefaction potential

Layer No.	Description	Conclusion
1	Reclamation Fill	<ul style="list-style-type: none"> Above groundwater (crust layer): Not susceptible to liquefaction. Below groundwater level: Widespread liquefaction triggered at $-0.2g$ M7.1 to $0.25g$, M7.1 (~35% to ~40% ULS(IL3)). Refer Table 4.2.
2	Beach Deposits	<ul style="list-style-type: none"> Widespread liquefaction triggered at $-0.2g$ M7.1 to $0.25g$, M7.1 (~35% to ~40% ULS(IL3)). Refer Table 4.2.
3	Alluvium	<ul style="list-style-type: none"> This layer generally comprises dense to very dense silty sandy gravel. Because of its dense nature liquefaction of this material is not expected at 100%ULS(IL2) shaking. Liquefaction of pockets within upper part of layer (medium dense sand and low plasticity silt) is possible at $-0.3g$ to $0.4g$, M7.1 (~50% to 70% ULS(IL3)).
4	Bedrock	<ul style="list-style-type: none"> Not susceptible to liquefaction.

4.2 Liquefaction consequences

Considering the potential for liquefaction described in Section 4.1, consequences of liquefaction at the site and for the existing building have been identified as listed in Table 4.2.

Table 4.2: Liquefaction consequences

ID	Consequence	Comments
1	Lateral spread	<ul style="list-style-type: none"> Can be expected to be large (100's mm to metres) towards Whairepo lagoon (see Section 6 for seawall stability conclusions).
2	Cyclic displacement	<ul style="list-style-type: none"> Of the order of 150mm. This is displacement (in any direction) of the crust relative to the top of the Alluvium.
3	Reduced soil strength and stiffness	<ul style="list-style-type: none"> Foundations in or near liquefied soils will result in loss or substantial reduction in vertical and lateral support to foundations.
4	Free field settlement	<ul style="list-style-type: none"> Of the order of 100 to 200mm estimated in an earthquake triggering liquefaction.
5	Sand boils	<ul style="list-style-type: none"> Possible as thickness of crust is $\leq 2m$. Ground settlement (in addition to free field settlement) is likely as a result of sand boils.
6	Negative skin friction on deep foundations	<ul style="list-style-type: none"> Liquefaction induced free field settlement can cause down-drag (NSF) on pile foundations. NSF loads have not been assessed here as other load scenarios are more critical to the structure.

5 Geotechnical issues identified

Key geotechnical issues that may affect the structure's seismic performance are listed in Table 5.1. Geotechnical parameters to assess these issues are presented in Section 6.

Table 5.1: Geotechnical issues identified

ID	Issue	Comments
1	Seawall instability (resulting in large lateral ground deformations / lateral spread impacting bridge foundations)	Refer Section 6 for seawall stability conclusions.
2	Limited uplift and compression capacity of piles, and differential soil stiffness between piles.	Refer Section 7.1.
3	Kinematic soil loads on foundations from cyclic displacement and lateral spread	Refer Section 7.2.
4	Differential lateral spread (lateral stretch) across the bridge	Refer Section 7.2.
5	Limited resistance to resist base shear	Refer Section 7.2.

6 Seawall stability

HoffCon have advised that the bridge loses gravity support at a lateral spread ground displacement of 115mm. A stability assessment of the seawall has been carried. Conclusions relevant to the bridge are summarised below:

- The seawall becomes unstable (sliding and rotation) in an earthquake event triggering widespread liquefaction. This assessment assumes that the seawall is founded on non-liquefiable soils which is unconservative. However, the calculations already indicated that the seawall is unable to resist the earth pressures from the retained liquefied soils. Liquefaction of founding soils will yield worse results.
- Large displacements of the retained soils of the order of 100's mm or even metres can be expected when the seawall becomes unstable. This lateral displacement is very likely to exceed the 115mm tolerance indicated by HoffCon.

7 Assessment of existing foundations

In line with Section C4 of the Assessment Guidelines, the capacities presented in this section do not need to be reduced by a strength reduction factor.

If the parameters presented in this section prove to be critical to the assessment, HoffCon is to discuss this with T+T, to allow review.

7.1 Vertical capacity of piles

The vertical load displacement behaviour of the existing concrete piles may be modelled as elastic – plastic as outlined in Figure 1 and Figure 2 in Appendix D1.

7.2 Lateral aspects

Liquefaction-induced lateral ground movements (cyclic displacement and lateral spread) is possible in an earthquake where widespread liquefaction is triggered. Four scenarios should be considered to represent the ground behaviour during different stages of an earthquake. These scenarios are described in Table 1 in Appendix D2.

Lateral capacity to resist base shear may be taken as a combination of the following:

- a Lateral resistance of piles:

- Geotechnical parameters to allow HoffCon to carry out lateral pile analyses using LPile software are provided in Sketch 1 of Appendix D2. This includes soil parameters and displaced ground profiles for the cyclic displacement and lateral spread scenarios.
- b Passive resistance of ground beams and pile caps:
 - Refer Sketch 2 in Appendix D2.

8 Step Change

Hoffcon to assess if the geotechnical parameters provided result in a severe structural weakness in accordance with the Guidelines. If so, a step change factor of 2 may be required to be applied to the %NBS score.

9 Potential Geotechnical Strengthening Options

From discussions with HoffCon, we understand the following:

- Scenario 1 – No liquefaction: Structure loses gravity support at approx. 25 to 30% NBS (pile head joint failure)
- Scenario 3 – Cyclic displacement: Pile lateral capacity reached at approx. 80mm cyclic displacement.
- Scenario 4 – Lateral spread: Pile vertical capacity lost at approx. 115mm lateral spread displacement.

Considering the above, the following possible options can be considered for further development:

- To provide foundations offering reliable lateral and vertical support to structure:
 - Re-found structure with large diameter bored piles capable of resisting liquefaction induced kinematic soil loads and structure inertia loads.
 - Ground improvement (e.g. CFA/jet grout lattice cells) to mitigate liquefaction at Bridge site.
- Seawall strengthening to reduce lateral spread ground displacements and provide foundations to resist remaining kinematic and structural loads and associated displacements:
 - New foundations could comprise micro piles with steel casing extending into Alluvium.
 - Seawall strengthening could comprise (extents of treatment dependent on the performance of the new foundations):
 - o New large diameter bored pile wall adjacent existing seawall; or
 - o Excavation of liquefiable material at base of lagoon and partial infilling of the lagoon.

10 Further work

If strengthening is proposed, further analyses and development of the strengthening concepts in conjunction with HoffCon would be required.

11 Applicability

This report has been prepared for the exclusive use of our client Wellington City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Recommendations and opinions in this report are based on data from discrete investigation locations. The nature and continuity of subsoil away from these locations are inferred but it must be appreciated that actual conditions could vary from the assumed model.

Tonkin & Taylor Ltd

Report prepared by:



.....

Reviewed and authorised for Tonkin & Taylor Ltd by:

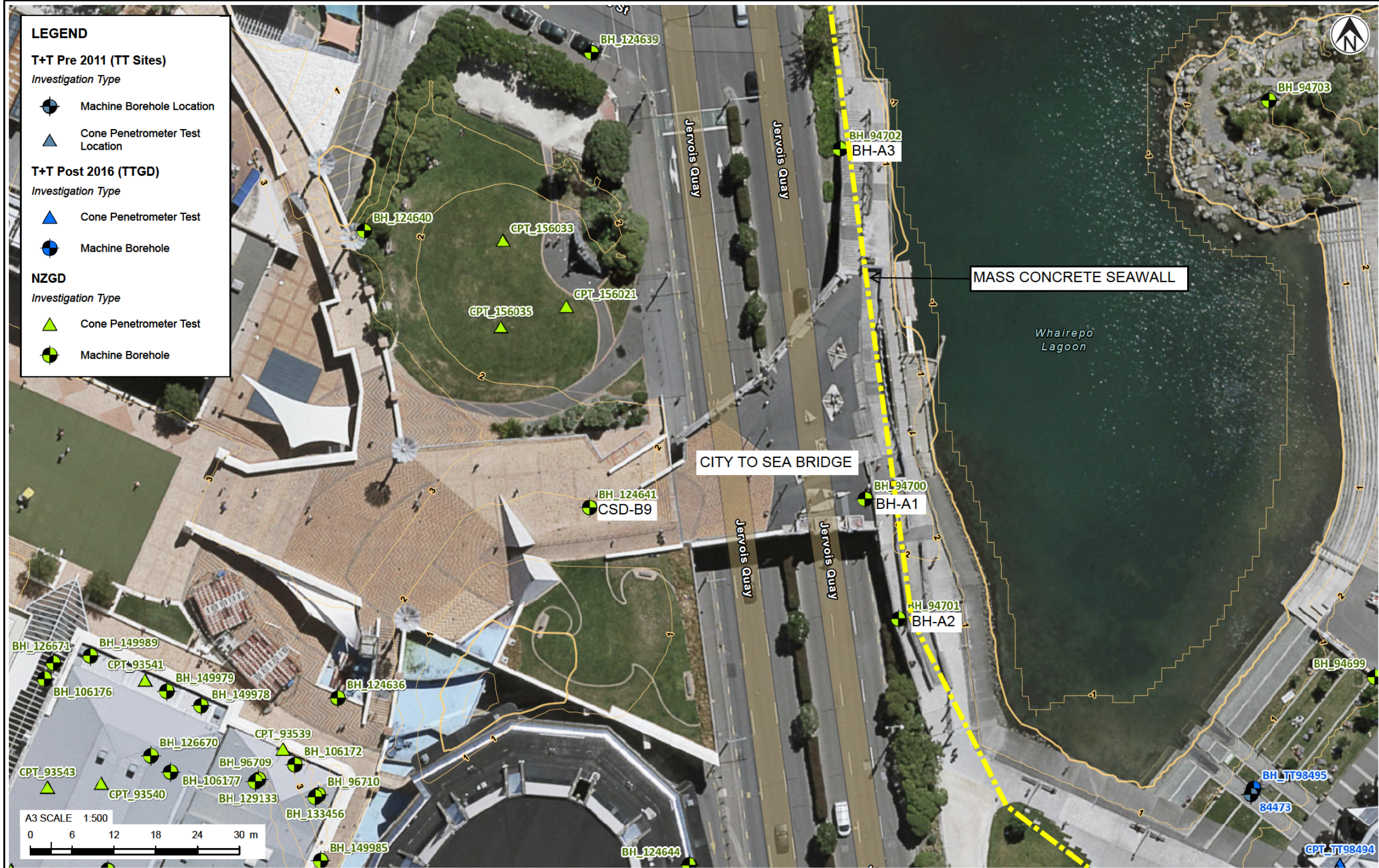


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24-Jun-24
p:\1091837\1091837.1000\workingmaterial\7. report\20231117_t+t_city to sea bridge_report_v0 final.docx

Appendix A Figures

- Figure 1: Site plan



NOTES:

CRS: NZGD 2000 New Zealand Transverse Mercator Credits: Tonkin & Taylor Group, Earthstar Geographics, Esri Community Maps Contributors, LINZ, Stats NZ, Esri, HERE, Garmin, Foursquare, METI/NASA, USGS, LINZ, LINZ, Stats NZ, Esri, HERE, Garmin, Foursquare, METI/NASA, USGS



PROJECT No.	1091837.1	
DESIGNED	BHR	NOV.23
DRAWN	-WEB-	NOV.23
CHECKED		
APPROVED	DATE	

CLIENT	WELLINGTON CITY COUNCIL	
PROJECT	CITY TO SEA BRIDGE	
TITLE	SITE PLAN	
SCALE (A3)	1:500	FIG No. FIGURE A1.
REV	0	

Appendix B Geotechnical investigation data

SOURCE: NZGD BH_94700

T82774-A1

04/05/99 15:54 64 4 5269948
 04/05/1999 16:12 64-4-5269948

GRIFFITHS DRILLING

T82774-A1

PAGE 02

GRIFFITHS DRILLING CO. LTD.

Client: Wellington City Council

Telephone 289-943 Upper Hutt
 P.O. Box 40422, Upper Hutt.

INVESTIGATION DRILLING RECORD

SITE: Proposed Foot Bridge Aotea Lagoon

HOLE No: 1

DATE: 6-1-93

WATER LEVEL: Fluctuates between 0.85m & 1.85m.

Depth Metres	MS	Description
.20	[Pattern]	Firm grey sandy gravel fill.
.30	[Pattern]	Concrete, possibly old road or path.
2.60	[Pattern]	Firm brown and orange brown silty sandy gravel fill.
4.00	[Pattern]	Loose brown and orange brown silty sandy gravel fill.
6.40	[Pattern]	Loose dark grey coarse sand with shells.
7.00	[Pattern]	Moderately dense bluey grey silty sandy gravels
8.40	[Pattern]	Moderately dense brown, orange brown and grey mottled, slightly silty sandy gravel.
9.40	[Pattern]	Moderately dense bluey grey silty sandy gravel.
9.80	[Pattern]	Firm bluey grey sandy silt.
10.40	[Pattern]	Firm brownish grey silt.
11.20	[Pattern]	Firm grey silt.
11.60	[Pattern]	Firm brown silt.
	[Pattern]	Dense blue grey mottled

Depth Metres	MS	Description
14.70	[Pattern]	Firm grey sandy silt.
15.00	[Pattern]	Moderately dense bluey grey silty sandy gravel
16.00	[Pattern]	Moderately dense bluey grey silt.
17.50	[Pattern]	Dense bluey grey mott silty sandy gravels.
18.10	[Pattern]	Moderately dense brown sandy silt.
22.00	[Pattern]	Dense bluey grey silt sandy gravels.
24.42	[Pattern]	Dense bluey grey sand silt.

S.P.T. TESTS

Depth (m)	N
1.50	= 11 6/4/7
3.00	= 10 4/7/3 *
4.50	= 3 2/1/2 *
6.00	= 13 4/7/6 *
7.50	= 37 14/17/20
9.00	= 26 11/15/11
10.50	= 17 5/8/9
12.00	= 66+ 18/26/40 for 100mm
13.50	= 12 3/8/4
15.00	= 28 6/12/16
16.50	= 46 8/16/30
18.00	= 39 8/16/23
19.50	= 50+ 41 for 150mm
21.00	= 53+ 53 for 150mm
22.50	= 41 16/19/22
24.00	= 46 11/19/27

Lost Sample *

7 metres casing used

Bore completed to 24.

GRIFFITHS DRILLING CO. LTD.

Client: Wellington City Council

Telephone 269-943 Upper Hutt
 P.O. Box 40422, Upper Hutt.

INVESTIGATION DRILLING RECORD

SITE: Proposed Foot Bridge Aotea Lagoon

HOLE No: 2

DATE: 11-1-93

WATER LEVEL: Fluctuates between 0.85m & 1.85m.

Depth Metres	MS	Description
.30		Firm grey sandy fill.
2.70		Firm brown and orange mottled silty sandy gravel fill.
4.60		Loose brown, orange and grey silty sandy gravel fill.
4.85		Loose dark grey coarse sand with shells.
5.00		Soft brown, grey and greenish brown silt.
6.50		Loose dark grey coarse sand with shells.
9.50		Moderately dense greenish bluey silty sandy gravel
10.00		Firm greyish brown silt.
11.80		Firm grey silt.
11.90		Firm brown silt.
13.20		Dense bluey grey Slightly silty sandy gravel.
13.40		Firm brown silt.
14.50		Dense bluey grey Slightly silty sandy gravel.

Depth Metres	MS	Description
15.00		Dense bluey grey slightly silty silt sandy gravel.
15.90		Moderately dense bro and bluey grey sand silt.
18.10		Dense brown and gre slightly silty sand gravel.
18.40		Firm brown and grey sandy silt.
19.65		Dense bluey grey slightly silty sand gravel.

S.P.T. TESTS

1.50	=	18	5/7/11
3.00	=	11	6/6/5
4.50	=	6	4/3/3 *
6.00	=	8	1/1/7
7.50	=	36	15/17/19
9.00	=	27	13/14/13
10.50	=	21	5/9/12
12.00	=	79	17/31/48
13.50	=	92	27/42/50 for 80mm
15.00	=	33	22/14/19
16.50	=	57	28/57 for 150mm
18.00	=	26	12/14/12
19.50	=	61	51 for 150mm

Lost Sample *

Casing used 7metres
 Bore completed to 19

SOURCE: NZGD BH_94702

T82774-A3

04/05/99 15:55 64 4 5269948
 04/05/1999 16:12 64-4-5269948

GRIFFITHS DRILLING

T82774-A3

PAGE 04

GRIFFITHS DRILLING CO. LTD.

Telephone 269-843 Upper Hutt
 P.O. Box 40422, Upper Hutt.

Client: Wellington City Council

INVESTIGATION DRILLING RECORD

SITE: Proposed Footbridge Aotea Lagoon

HOLE No: 3

DATE: 12-1-93

WATER LEVEL: Fluctuates between 0.85m & 1.85m.

Depth Metres	MS	Description
.05		Concrete tarseal.
.25		Firm brown silty fill.
.40		Concrete.
5.40		Firm brown and grey silty sandy gravel fill.
6.60		Loose soft bluey grey gravelly sandy silt.
6.90		Loose dark grey coarse sand with shells and some gravel.
8.20		Firm bluey grey mottled silty sandy gravels.
11.80		Firm bluey grey sandy silt.
12.00		Loose bluey grey silty sandy gravel.
13.20		Firm greyish brown silt with vegetation.
14.20		Dense bluey grey silty sandy gravel.
14.30		Firm brownish grey silt.
14.60		Dense bluey grey silty sandy gravels.

Depth Metres	MS	Description
15.50		Firm brownish bluey silty gravelly sand.
16.30		Moderately dense bluey grey silty sandy gra
17.00		Firm brown and grey mottled gravelly sil
21.15		Dense bluey grey sil sandy gravel.

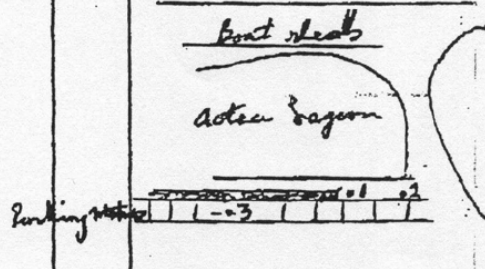
S.P.T. TESTS

Depth (m)	MS	S.P.T. Value
1.50	=	6/8/6 14 N
3.00	=	3/5/3 8 *
4.50	=	3/3/7 10
6.00	=	1/1/1 2 *
7.50	=	3/7/13 20
9.00	=	4/5/8 13
10.50	=	4/7/9 16
12.00	=	4/6/8 14
13.50	=	25/53 for 150mm S
15.00	=	7/9/11 20*
16.50	=	14/10/10 20
18.00	=	23/45 for 150mm 50
19.50	=	16/24/41 65
21.00	=	43 for 150mm 50+

Lost Sample *

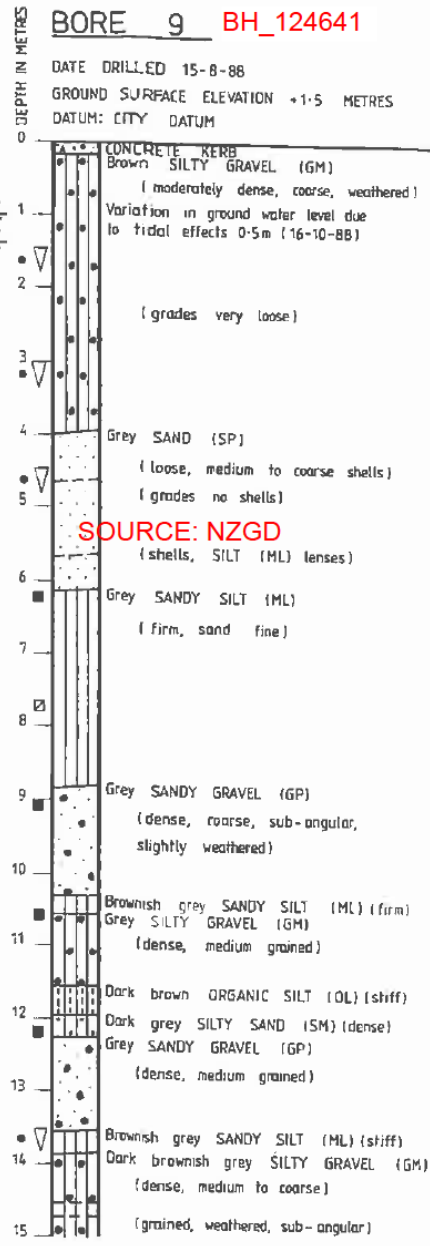
Casing used 7 metre

Bore completed to 21



JOB NO. 152985 CLIENT: H.C.C. LOCATION: Harris St. Wellington BY: J.E.P. CHECKED:

	TYPE OF TEST	TEST SURCHARGE PRESSURE kPa	SHEAR STRENGTH kPa	NATURAL WATER CONTENT %	DRY DENSITY kg/m ³	PENETRATION RESISTANCE
				11.5		N = 10
				16.9		N = 3
				24.1		N = 7
	DS	50	55	19.4	1750	S = 21
	DS	100	100	19.4	1750	
	DS	150	114	20.5	1750	
						S = 26
				12.7	1940	S = 41 / 150
				17.6	1810	S = 32 / 150
	DS	100	111	26.6	1500	S = 56
	DS	180	131	32.6	1350	
	DS	262	194	33.4	1350	
				19.0		N = 27



ABBREVIATIONS AND SYMBOLS

■ Undisturbed sample recovered in split barrel, 60mm ID ring lined sampler	● Disturbed observation sample
⊠ Undisturbed sample attempted, but missed in recovery	▼ Observed ground water level
▽ Standard Penetration Test (SPT), performed in general accordance with standard ASTM D1586-67	DS Direct shear test
▼ Standard Penetration Test (SPT) performed with solid nose	TR Triaxial shear test
S 60mm ID ring lined barrel driven by a SPT hammer	UC Unconfined compression test
N Standard Penetration Test driven by a SPT hammer.	VS Vane shear test
50/285 Number of blows with SPT hammer and penetration (mm) of sampler for penetration less than 300mm	d drained
⊥ Insitu pressuremeter test showing depth through which the test was carried out.	u undrained
■ Groundwater piezometer showing depth at which the collection head has been sealed.	c consolidated
▨ Depth over which coring has been attempted. The hatched zone indicates the core recovered.	T90 One dimensional oedometer test with loading at 90 percent of consolidation.
	T20min One dimensional oedometer test, loading at 20 minute intervals
	T24 hr One dimensional oedometer test, loading at 24 hour intervals

BORE LOG

Brickell Moss Ltd
 PLATE 2I

BH_TT134524

TYPE OF TEST	TEST SURCHARGE PRESSURE kPa	SHEAR STRENGTH kPa	NATURAL WATER CONTENT %	DRY DENSITY kg/m ³	PENETRATION RESISTANCE
			11.3		N = 40 / 150
			13.4		N = 71
			12.4		N = 38
			13.8		N = 56

BORE 9 CONTINUED BH_124641

DATE DRILLED 15-8-88
 GROUND SURFACE ELEVATION +1.5 METRES
 DATUM: CITY DATUM

DEPTH IN METRES

15 Dark brown SILTY GRAVEL (GM)
 (very dense, coarse, weathered)

16 (occasional SILT (ML) lenses)

17

18

19 Grey SILT (ML)
 (stiff)

20 Dark grey SILTY GRAVEL (GM)
 (very dense, weathered)

SOURCE: NZGD

DRILLING DEPTH 20.0 METRES
 CASING DEPTH 6.0 METRES

INSITU WEATHERED ALLUVIUM

CHECKED
 BY J.E.P.
 LOCATION Hones St., Wellington
 CLIENT HQS

- ABBREVIATIONS AND SYMBOLS**
- Undisturbed sample recovered in split barrel, 60mm I.D. ring lined sampler
 - ☑ Undisturbed sample attempted, but missed in recovery.
 - ▽ Standard Penetration Test (SPT), performed in general accordance with standard ASTM D1586-67.
 - ▼ Standard Penetration Test (SPT) performed with solid nose
 - S 60mm I.D. ring lined barrel driven by a SPT hammer.
 - N Standard Penetration Test driven by a SPT hammer.
 - 50/2B5 Number of blows with SPT hammer and penetration (mm) of sampler for penetration less than 300mm.
 - I Insitu pressuremeter test showing depth through which the test was carried out
 - Groundwater piezometer showing depth at which the collection head has been sealed.
 - ▨ Depth over which coring has been attempted. The hatched zone indicates the core recovered.
 - Disturbed observation sample
 - ▼ Observed ground water level
 - DS Direct shear test
 - TR Triaxial shear test
 - UC Unconfined compression test
 - VS Vane shear test
 - d drained
 - u undrained
 - c consolidated
 - T90 One dimensional oedometer test with loading at 90 percent of consolidation
 - T20min One dimensional oedometer test, loading at 20 minute intervals
 - T24 hr One dimensional oedometer test, loading at 24 hour intervals

BORE LOG **Brickell Moss Ltd**
 PLATE 21

BH_TT134524

Appendix C Existing foundation and seawall
drawings



CITY TO SEA BRIDGE

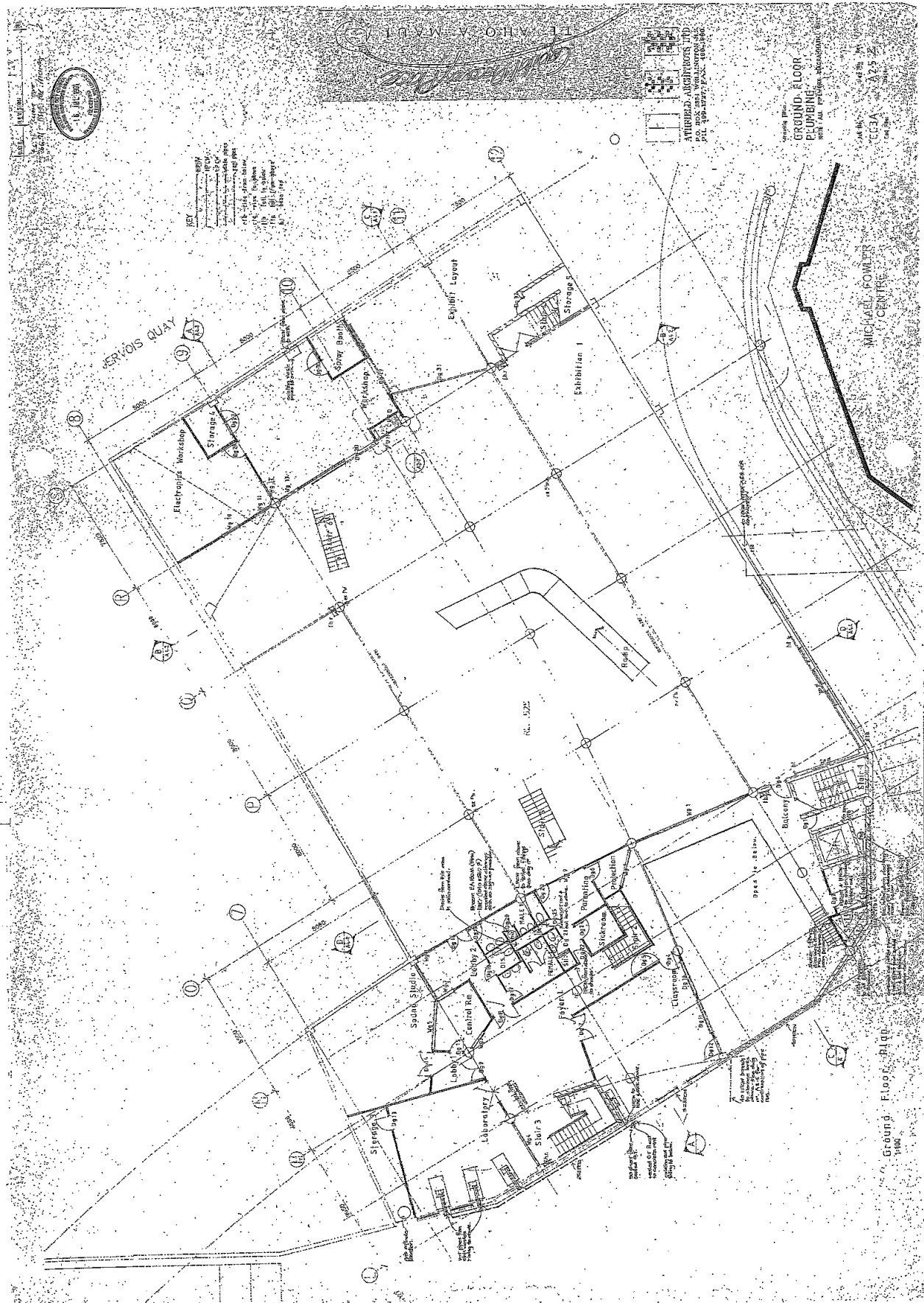
W.C.C. STRUCTURAL BRANCH

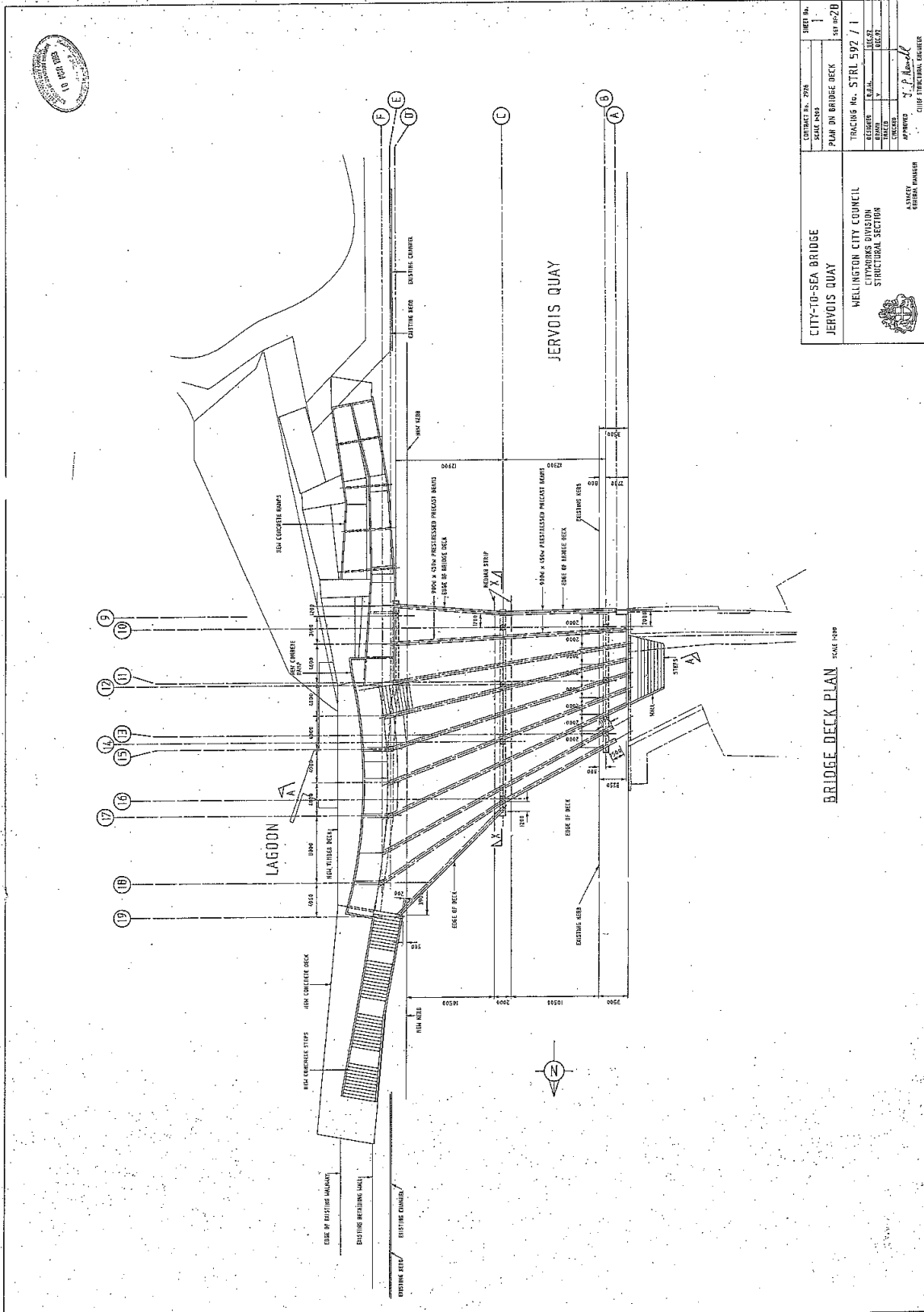
STRUCTURAL DRAWING INDEX

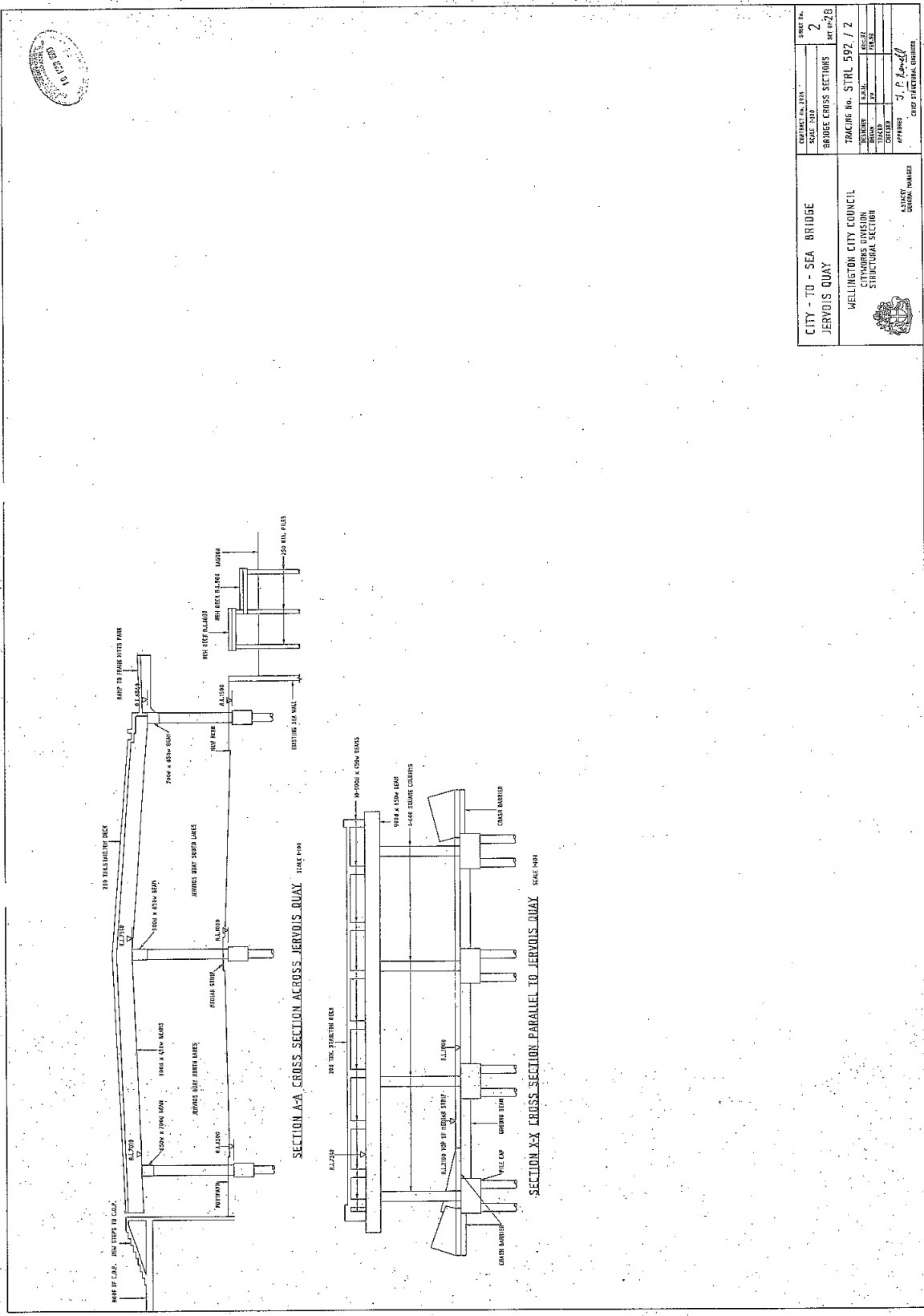
No.	GENERAL	BRIDGE DECK
1	GENERAL LAYOUT	15 DECK PLAN
2	BRIDGE SECTIONS	16 DECK SECTIONS AND DETAILS
3	DEMOLITION AND SERVICES	17 DECK REINFORCEMENT
	<u>FOUNDATIONS</u>	18 IN-SITU RAMP AND DECK
4	PIILING PLAN AND DETAILS	19 IN-SITU RAMP AND DECK SECTIONS
5	BRIDGE FOUNDATION PLAN	20 IN-SITU RAMP AND DECK DETAILS
6	BRIDGE FOUNDATION DETAILS	
7	BRIDGE FOUNDATION DETAILS	<u>RAMP</u>
8	RAMP FOUNDATIONS AND WALLS	21 RAMP DECK SLAB
9	RAMP FOUNDATION DETAILS	22 RAMP WALLS
	<u>COLUMNS AND BEAMS</u>	23 RAMP WALLS
10	COLUMNS AND BEAMS GRIDS R.C	24 LOWER RAMP DETAILS
11	COLUMNS AND BEAMS GRIDS D.E.F	<u>STAIRS</u>
12	COLUMN AND BEAM DETAILS GRIDS D.E.F	25 NORTH STAIRS GROUND BEAMS AND LOWER DECK
13	PRECAST BEAMS I	26 NORTH AND SOUTH STAIR DETAILS
14	PRECAST BEAMS II	27 NORTH STAIRS WALLS
		28 TIMBER WALKWAY SUBSTRUCTURE

CONTRACT No. 2926

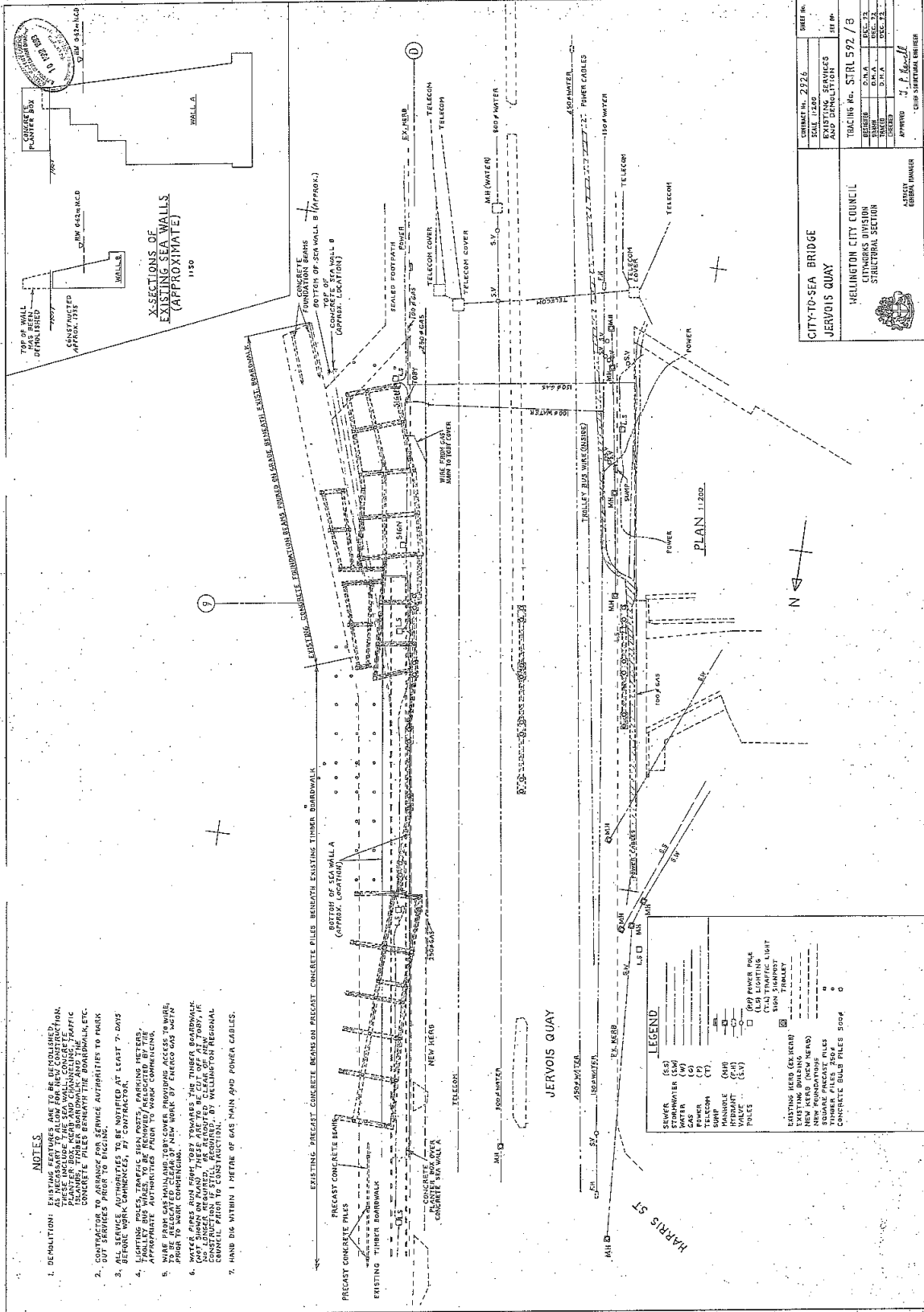
SET No.

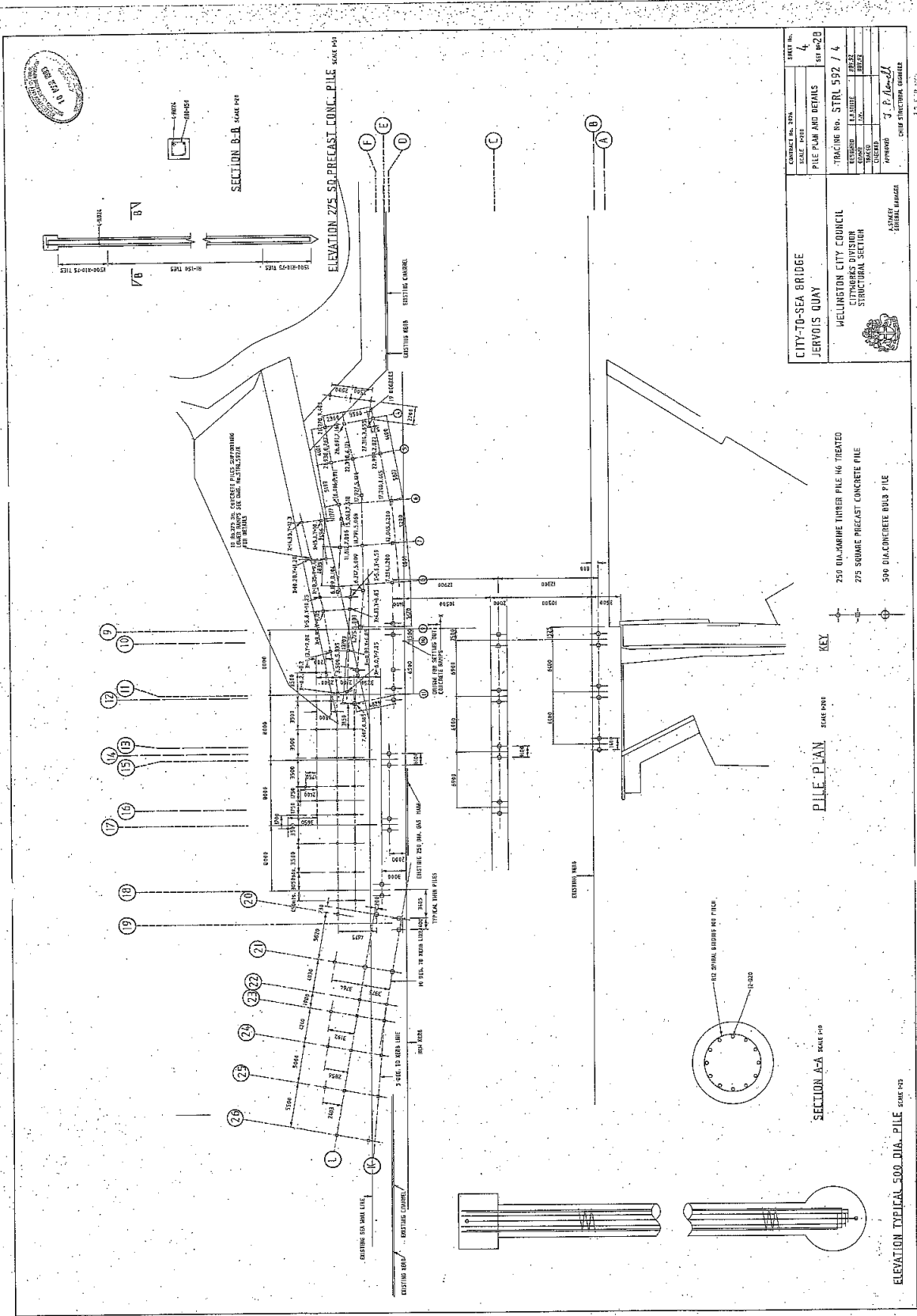




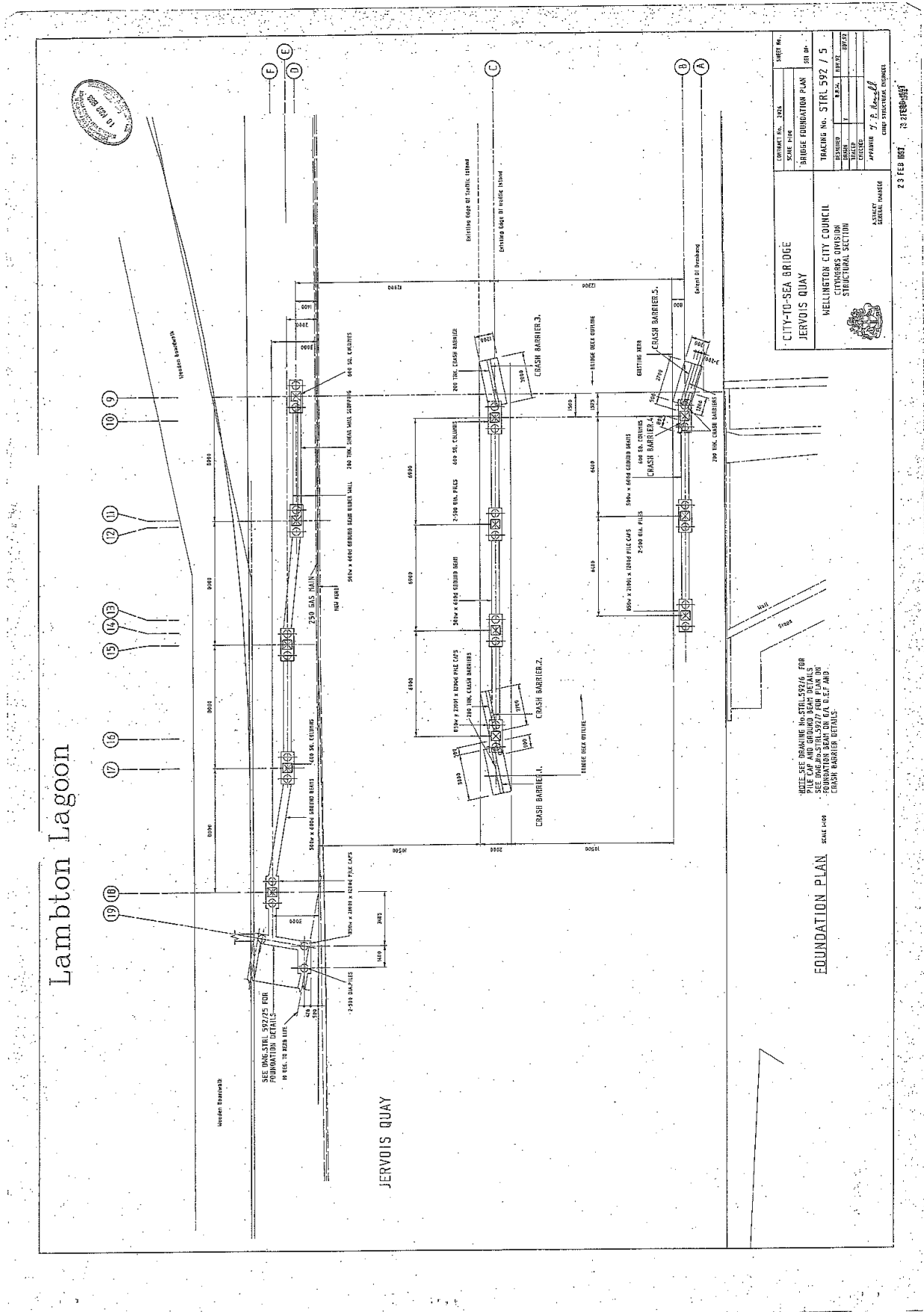


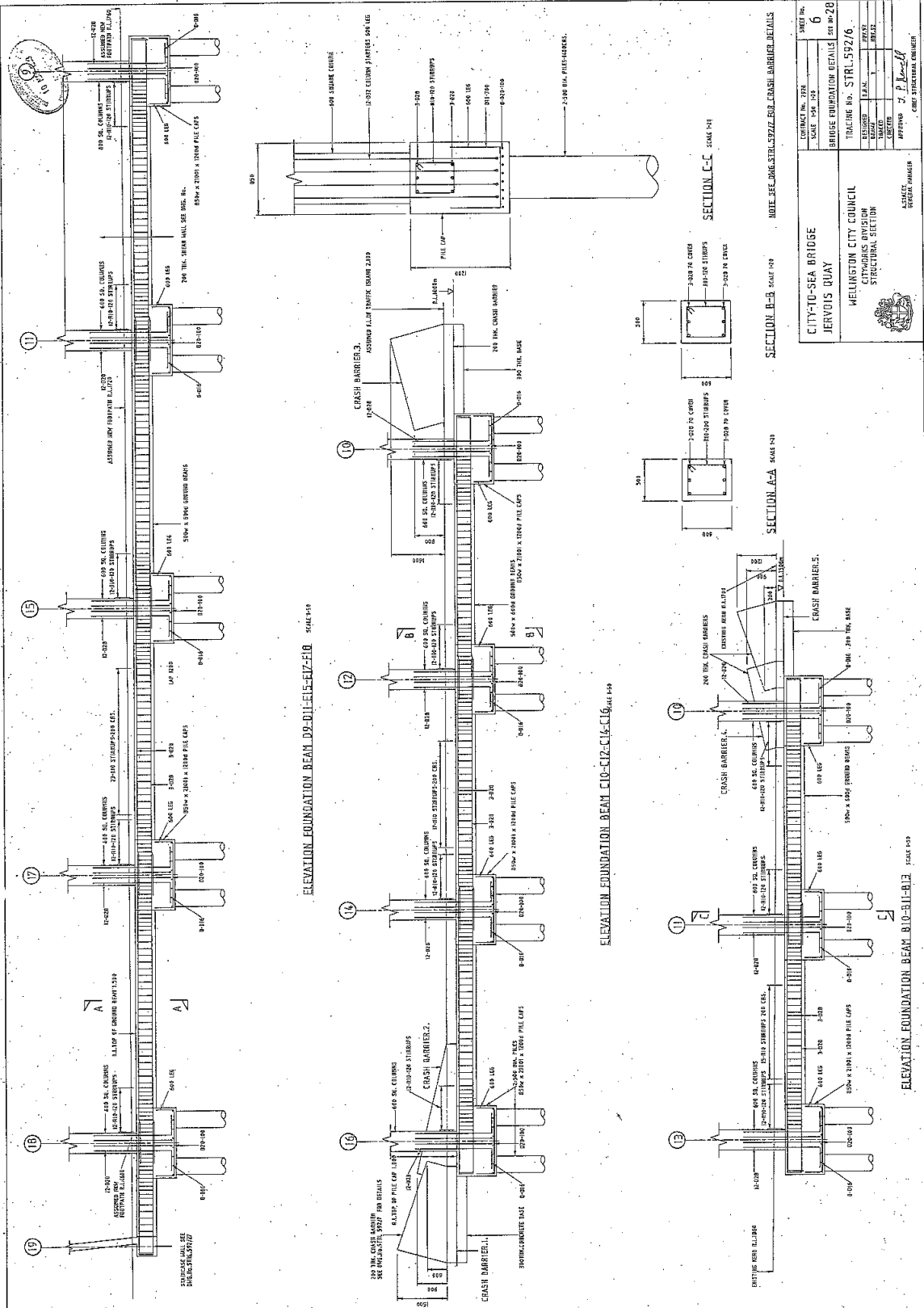
CITY - TO - SEA BRIDGE JERVOIS QUAY	CONTRACT No. 2713	SHEET No.
	SCALE 1:500	2
WELLINGTON CITY COUNCIL CITYMORNING DIVISION STRUCTURAL SECTION	BRIDGE CROSS SECTIONS	Part of 28
	TRACKING No. STRL 592 / 2	
	DESIGNED BY	
	CHECKED BY	
	APPROVED BY	J. P. [Signature]
ESTIMATE ENGINEER	22 FEB 1991	





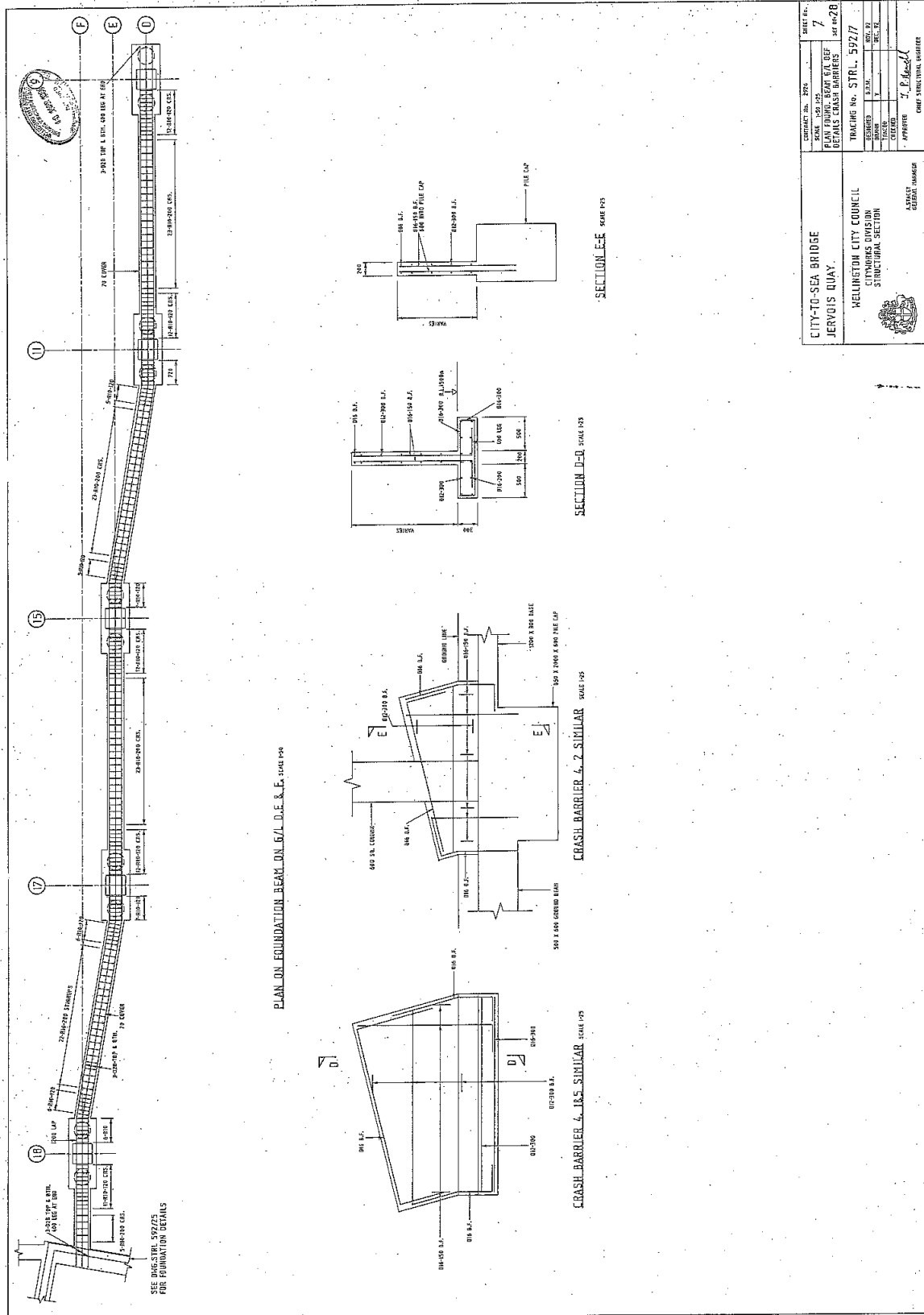
CITY-TO-SEA BRIDGE		SHEET NO. 4	
JERVOLD'S QUAY		CONTRACT NO. 7704	
WELLINGTON CITY COUNCIL		SCALE: AS SHOWN	
CITYMORNS DIVISION		PILE PLAN AND DETAILS	
STRUCTURAL SECTION		STR. 592 / 4	
DESIGNED BY: J. J. B. / J. J. B.		EST. NO. 20	
CHECKED BY: J. J. B. / J. J. B.		DATE: 1982	
APPROVED BY: J. J. B. / J. J. B.		SCALE: 1:1	
DRAWN BY: J. J. B. / J. J. B.		DATE: 1982	
PROJECT MANAGER: J. J. B. / J. J. B.		SCALE: 1:1	
CITY ENGINEER: J. J. B. / J. J. B.		SCALE: 1:1	

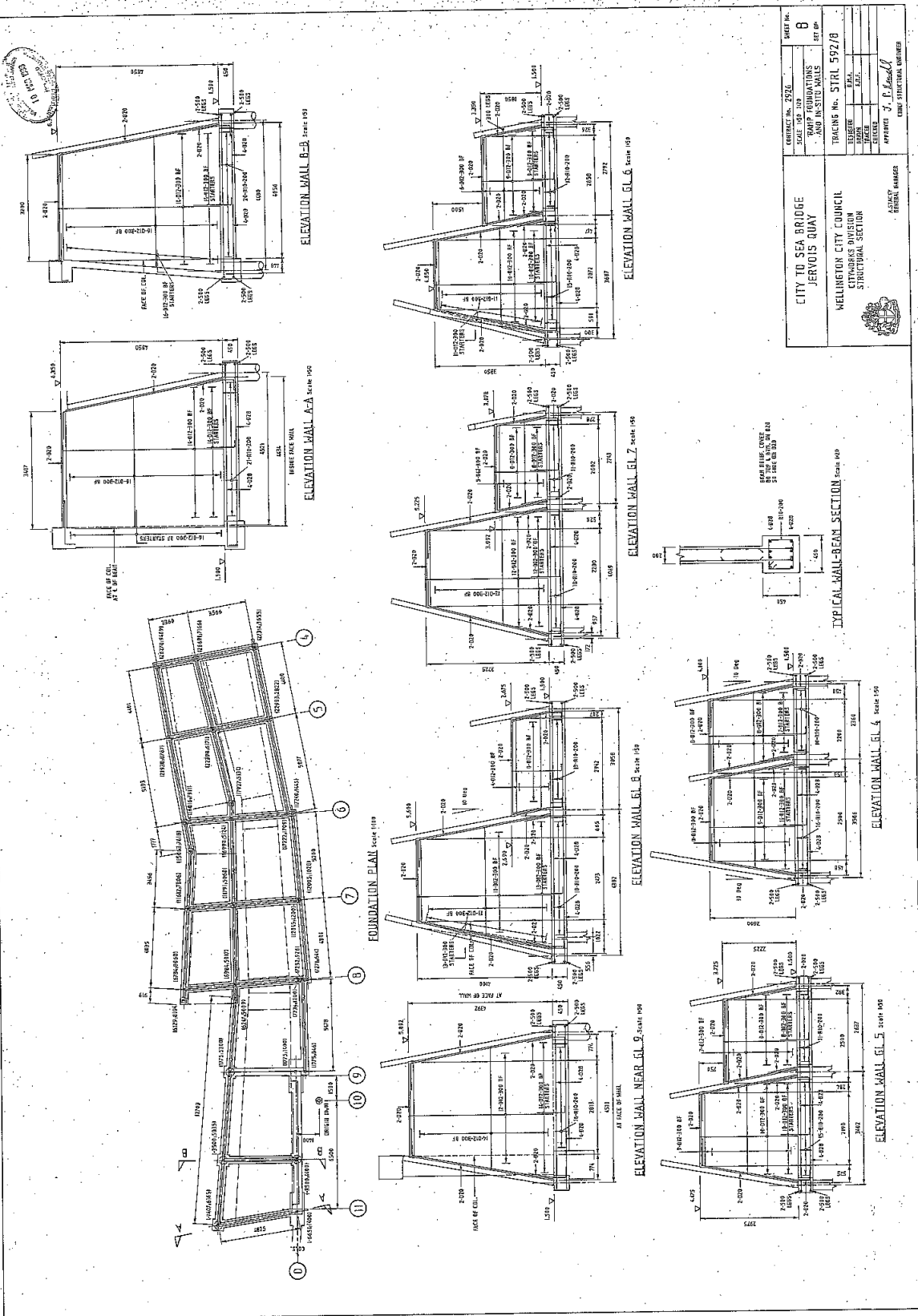


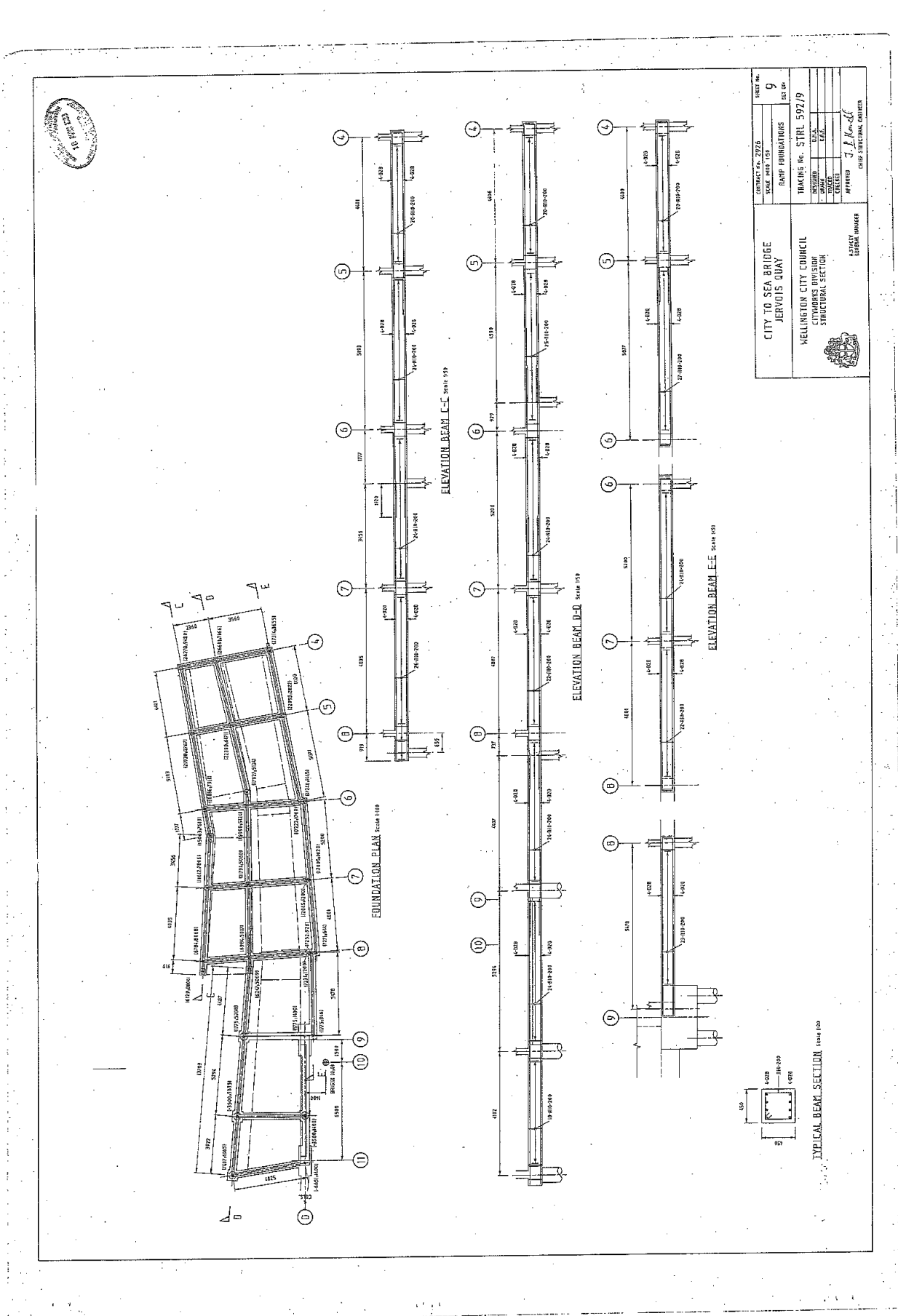


CITY-TO-SEA BRIDGE JERVIS QUAY		SHEET NO. 6	
WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION		BRIDGE FOUNDATION DETAILS SET NO. 29	
DRAWING NO. STRL-592/76		DATE 15M 12M	
DESIGNED BY	SCALE	DATE	PROJECT
CHECKED BY			
APPROVED BY			
ENGINEER NUMBER		COUNCIL STRUCTURAL ENGINEER	

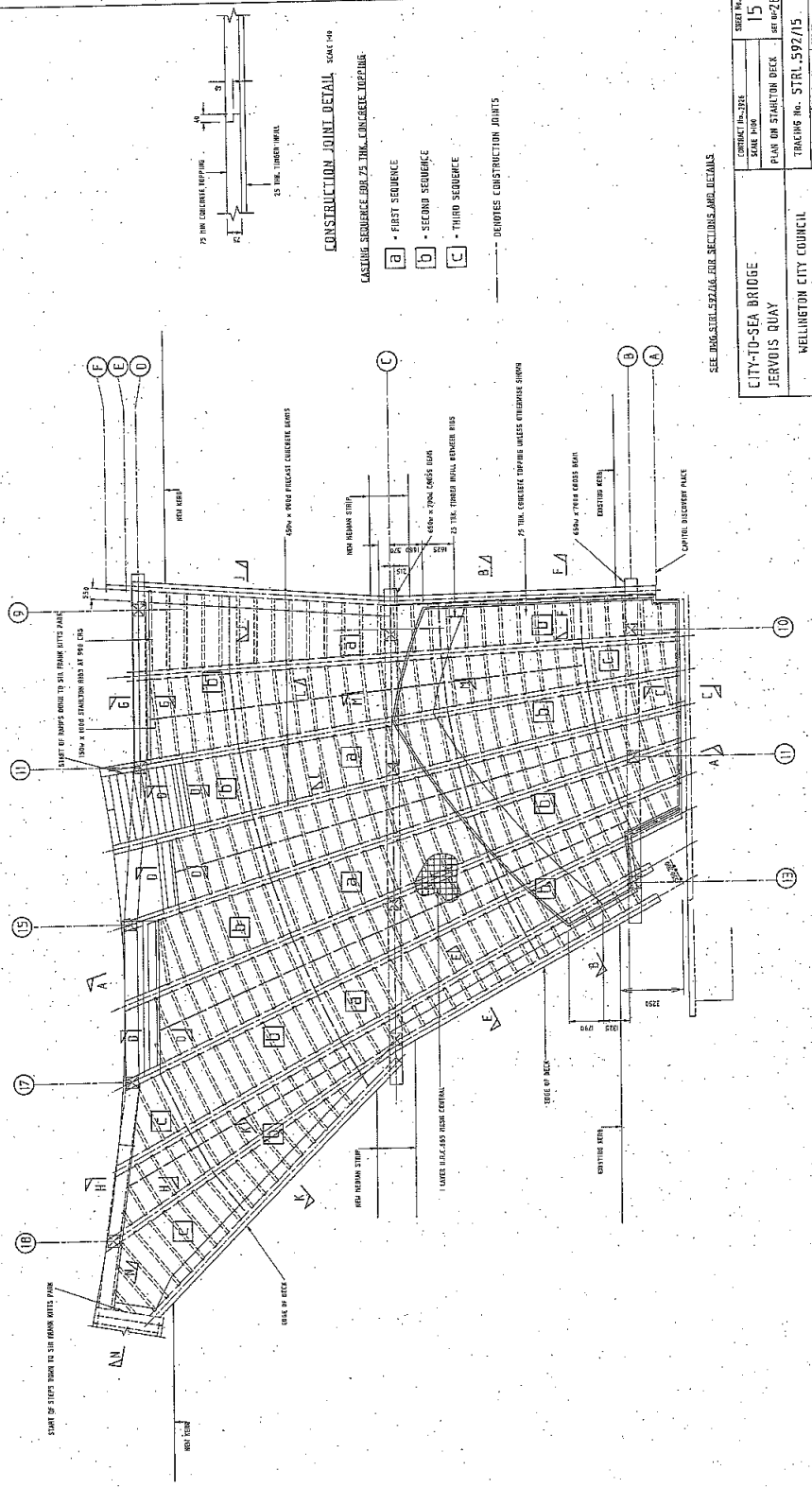
23 FEB 1993







CONTRACT NO. 2025	SHEET NO. 9
SCALE 1:10 (1:50)	DATE 20/10/24
DAMP FOUNDATIONS	
TRACKING NO. STRL 59279	
DESIGNED BY	DRAWN BY
CHECKED BY	DATE
APPROVED BY	DATE
CHIEF STRUCTURAL ENGINEER	
CITY TO SEA BRIDGE	
JERVOIS QUAY	
WELLINGTON CITY COUNCIL	
CITYWORKS DIVISION	
STRUCTURAL SECTION	
ASSET NUMBER	
APPROVED J. J. [Signature]	



CONSTRUCTION JOINT DETAIL SCALE 1:10
 CASTING SEQUENCE FOR 75 THK CONCRETE TYPING

- [a] FIRST SEQUENCE
- [b] SECOND SEQUENCE
- [c] THIRD SEQUENCE

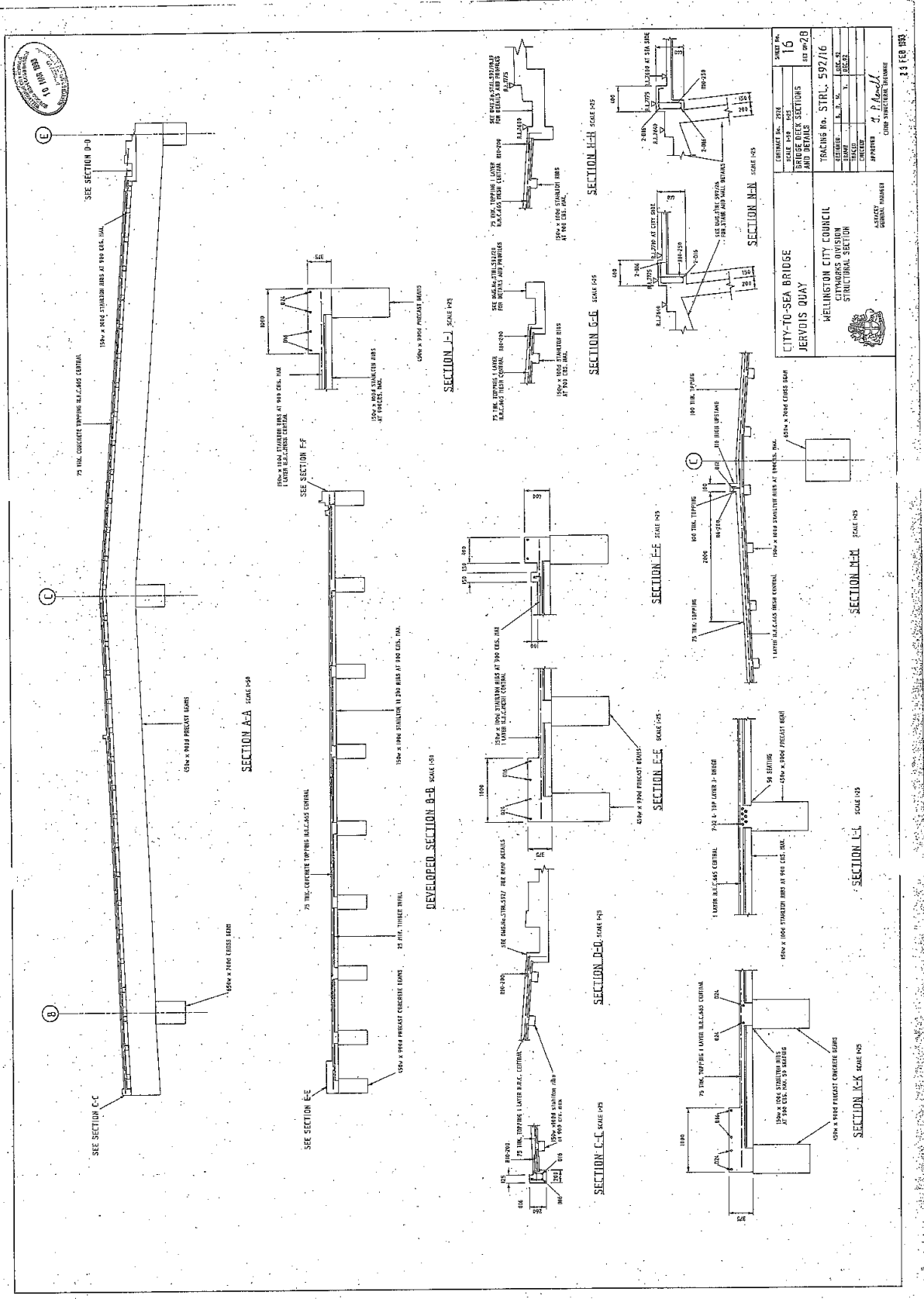
--- DENOTES CONSTRUCTION JOINTS

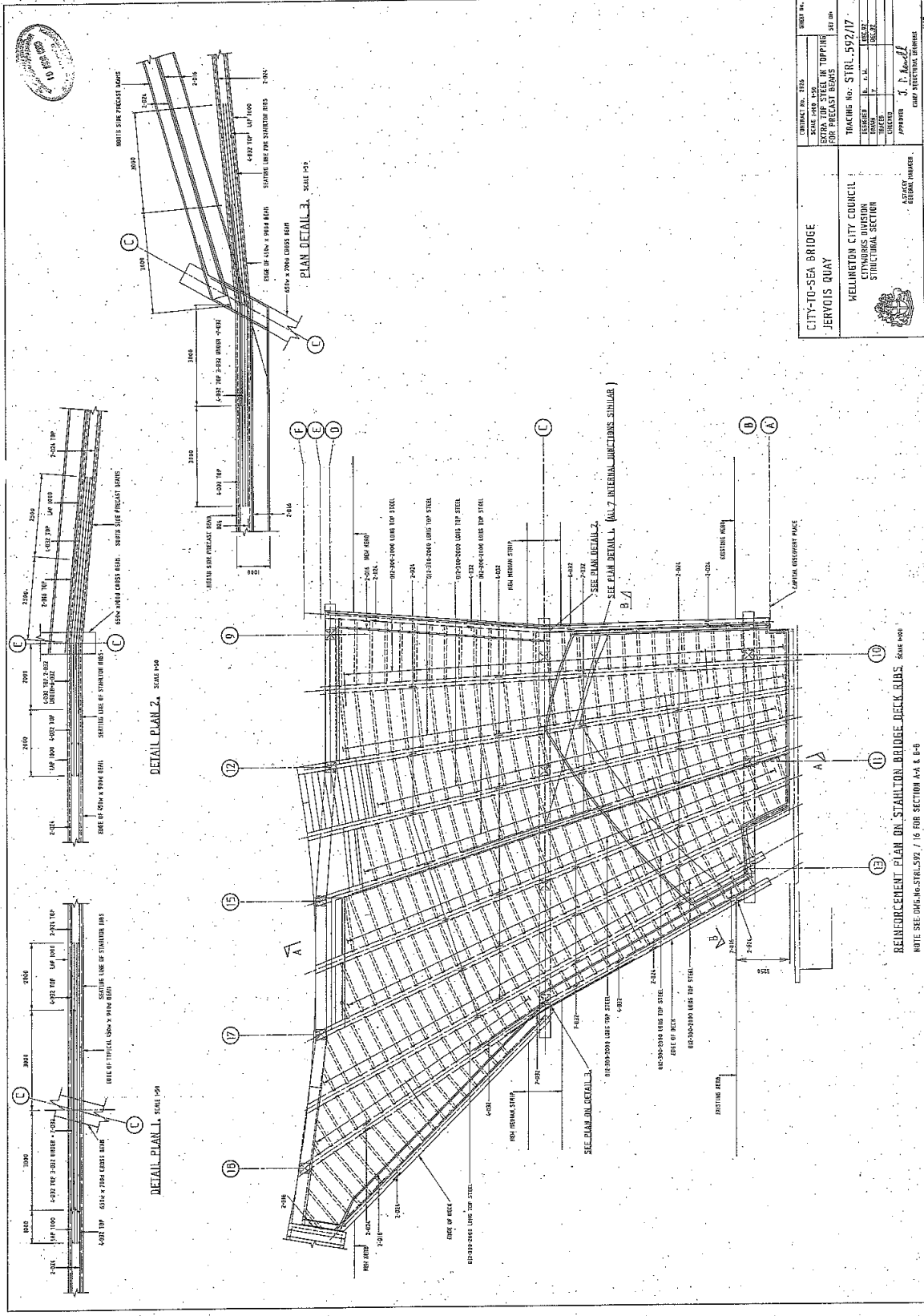
SEE DRAWINGS 22.12.16 FOR SECTIONS AND DETAILS

CONTRACT NO./TYPE	15
SCALE	AS SHOWN
PLAN OR SECTION	PLAN OF STATION DECK
DRAWING NO.	STR. 592/15
DESIGNED BY	J. P. Hensell
CHECKED BY	
DATE	18 FEB 1983
APPROVED	J. P. Hensell
CIPR FUNCTIONAL NUMBER	

CITY-TO-SEA BRIDGE
 JERVOIS QUAY
 WELLINGTON CITY COUNCIL
 CITY ENGINEER'S DIVISION
 STRUCTURAL SECTION

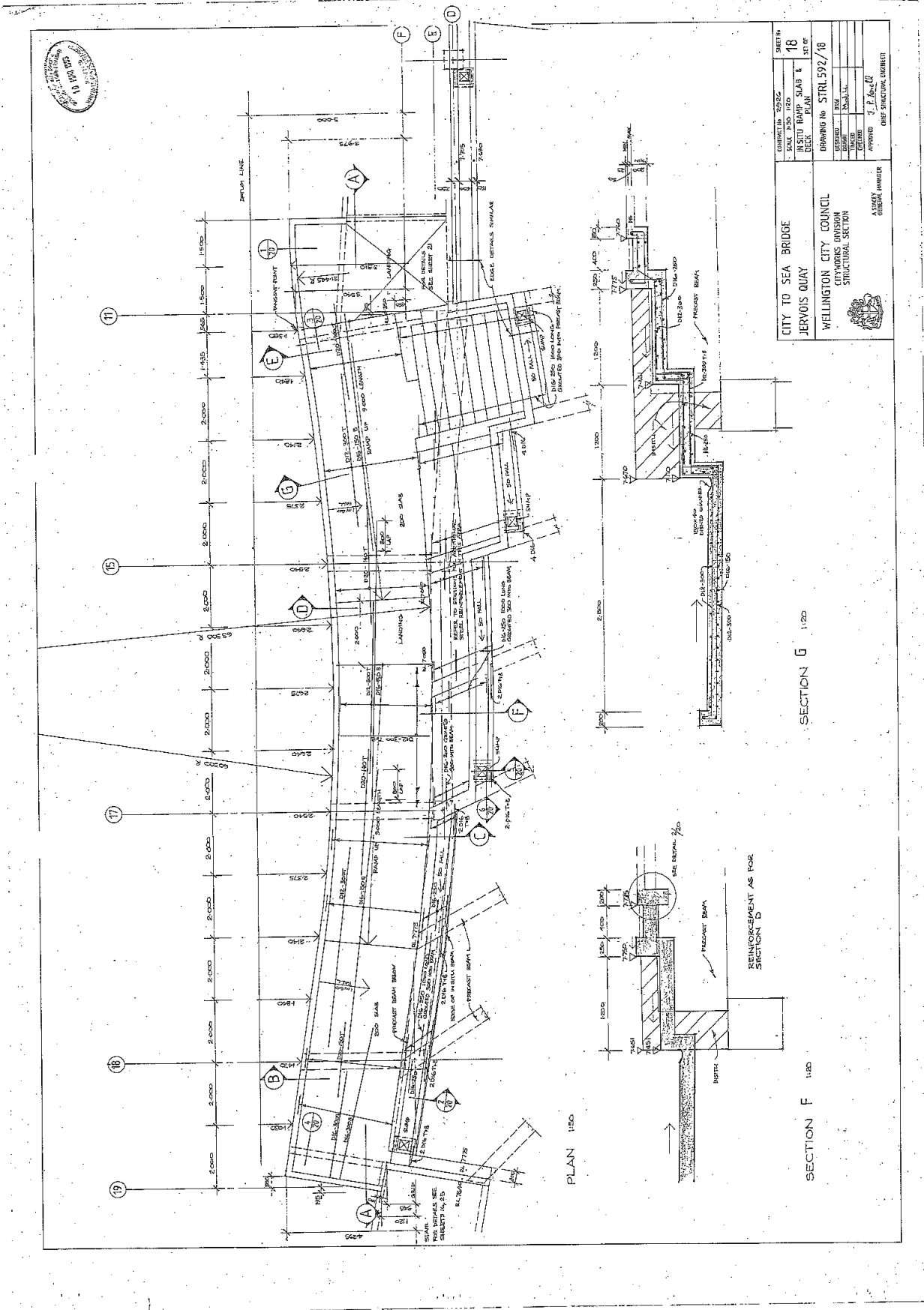
PLAN ON STATION BRIDGE DECK RIBS SCALE 1:10

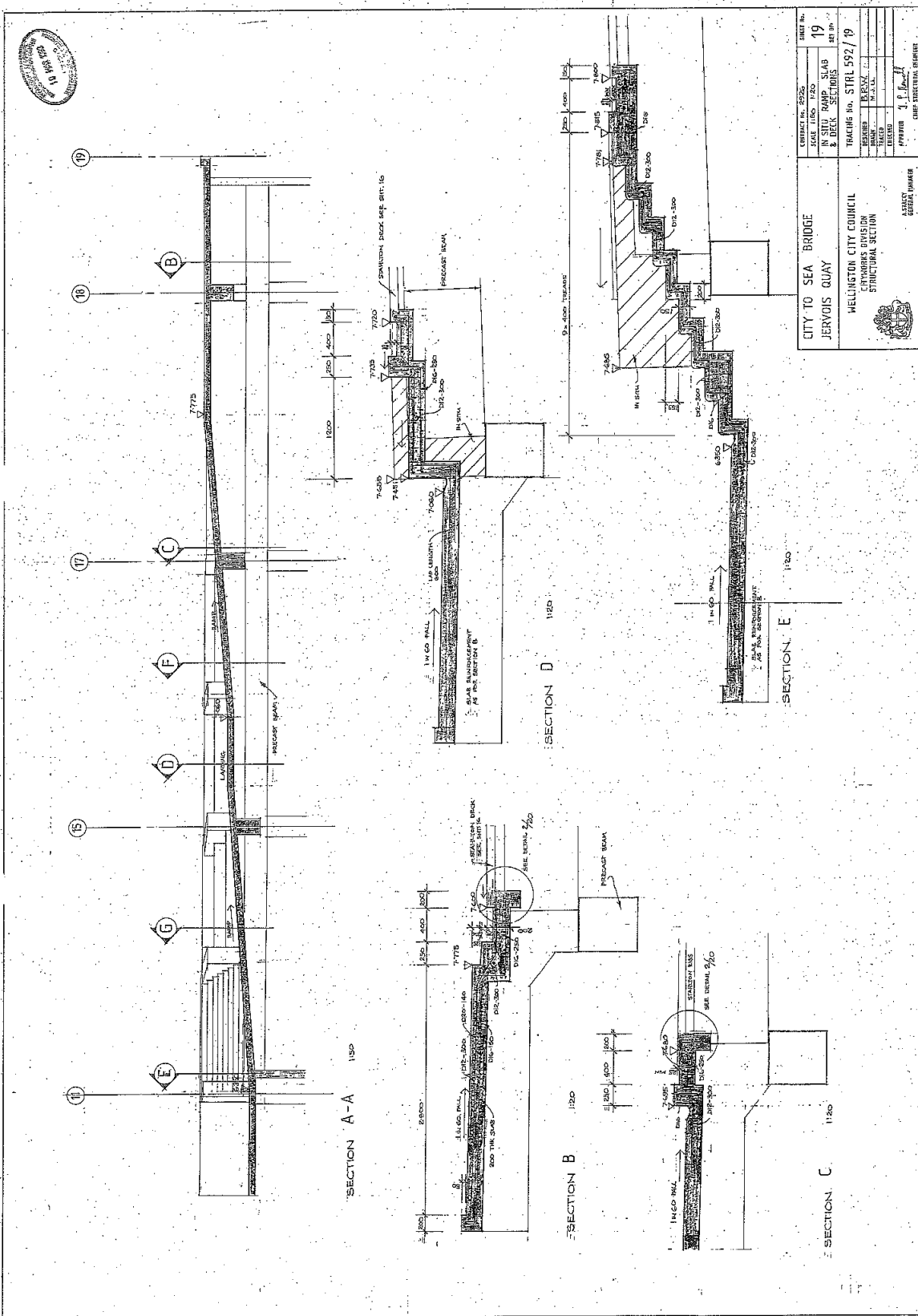




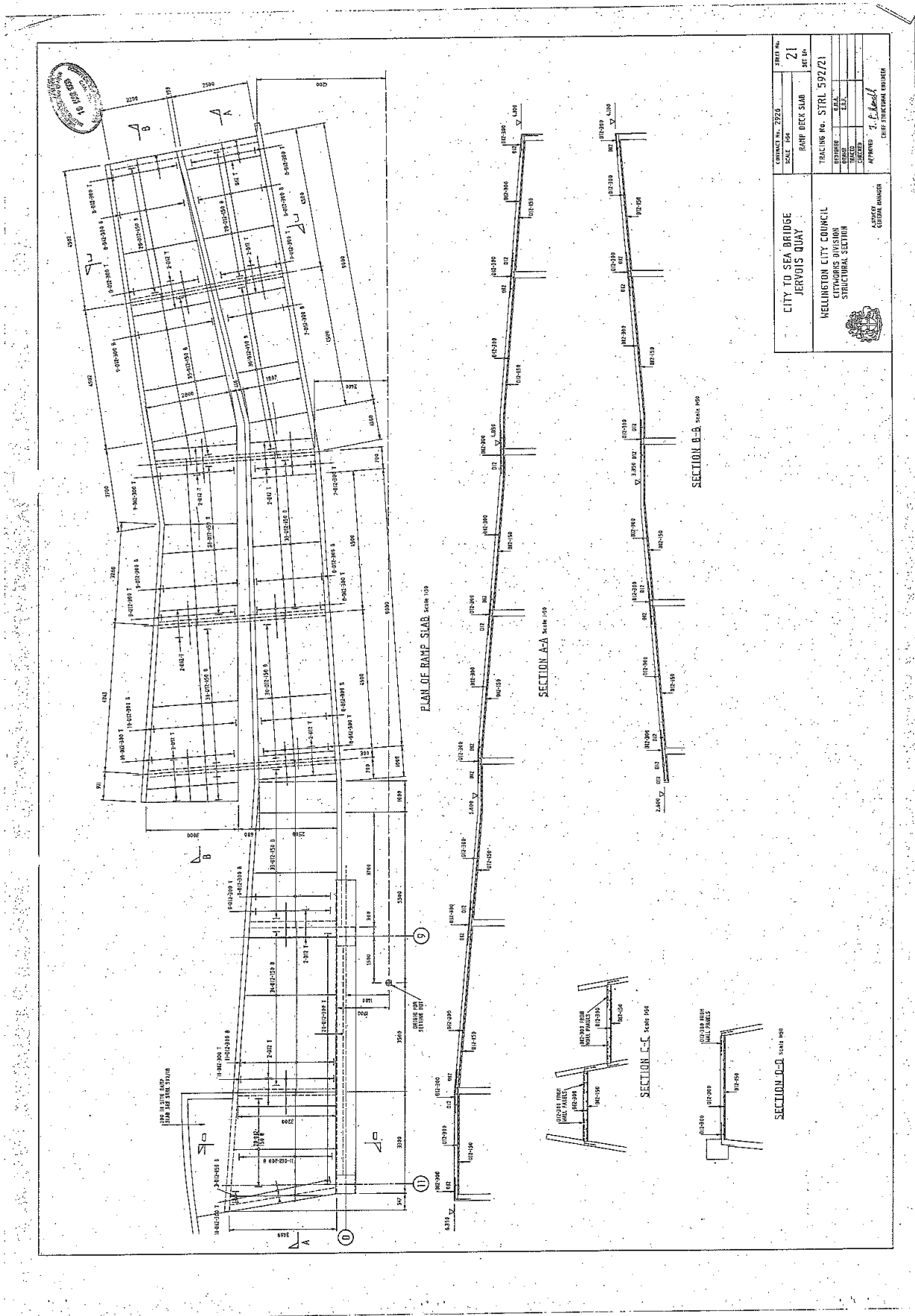
CITY-TO-SEA BRIDGE JERVOIS QUAY		CONTRACT NO. 7315	30883 P/L
		SCALE FOR THIS EXTRA TOP STEEL IN TOPPING FOR PRECAST BEAMS	3/8" = 1'
		TRACING NO. STRL-592/17	
DESIGNED BY	A. H.	CHECKED BY	
DRAWN BY		APPROVED BY	
DATE			
PROJECT GENERAL NUMBER	45750		
DESIGN NUMBER	45750		

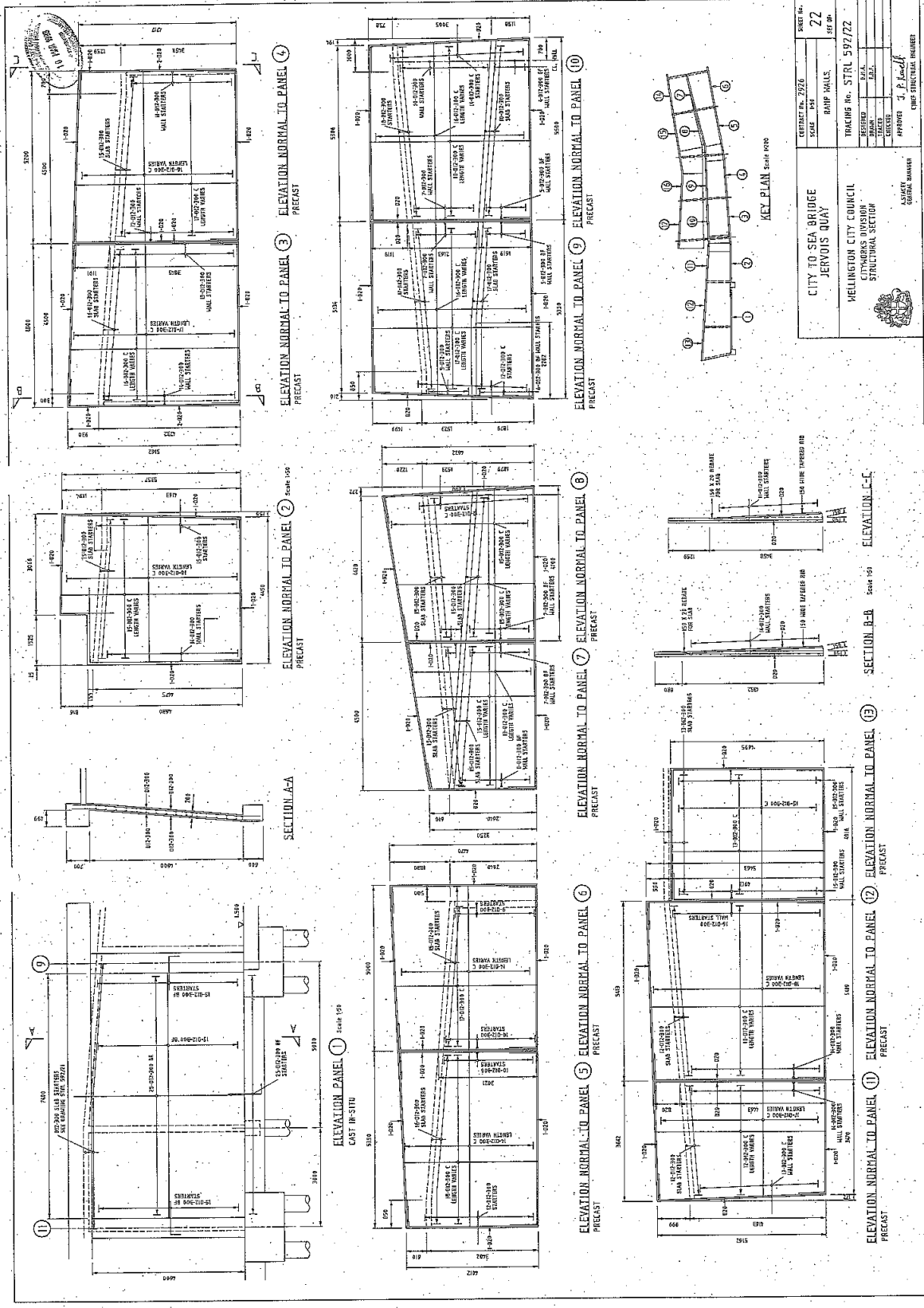
23 FEB 08

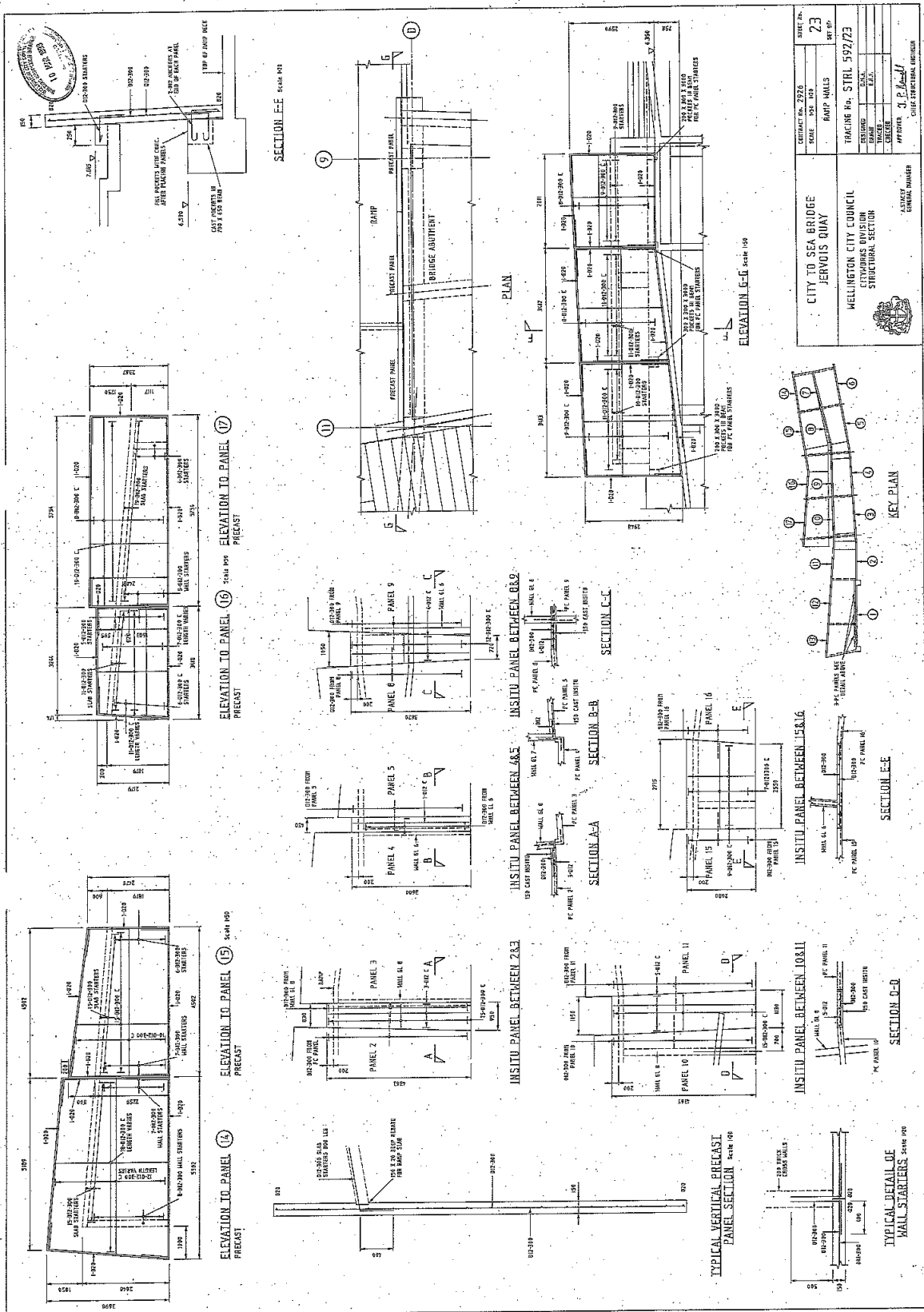




CITY TO SEA BRIDGE JERVOIS QUAY		CONTRACT NO. 2526	SHEET NO.
WELLINGTON CITY COUNCIL CIVIL ENGINEERING DIVISION STRUCTURAL SECTION		IN SITU RAMP SLAB & DECK SECTIONS	19
APPROVED: [Signature]		TRACKING NO. STRL 592/19	SET OF
DESIGNED BY: [Signature]		DATE: 12/11/19	
CHECKED BY: [Signature]			
DRAWN BY: [Signature]			
SCALE: 1:20			
APPROVED: [Signature]			
DATE: 12/11/19			
DRAWN BY: [Signature]			
CHECKED BY: [Signature]			
DESIGNED BY: [Signature]			
DATE: 12/11/19			
CONTRACT NO. 2526			
SCALE: 1:20			
TRACKING NO. STRL 592/19			
DATE: 12/11/19			
DRAWN BY: [Signature]			
CHECKED BY: [Signature]			
DESIGNED BY: [Signature]			
DATE: 12/11/19			

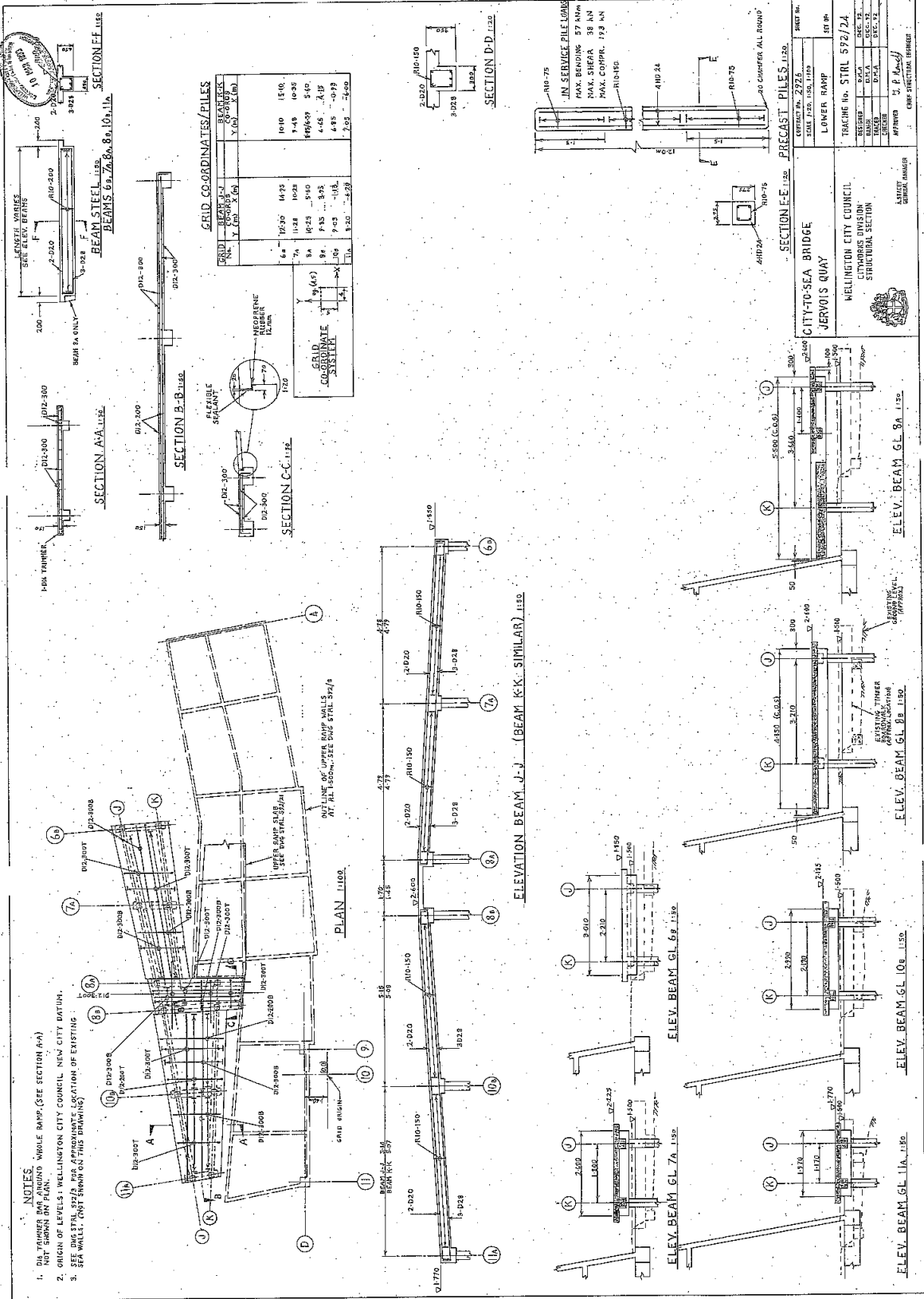


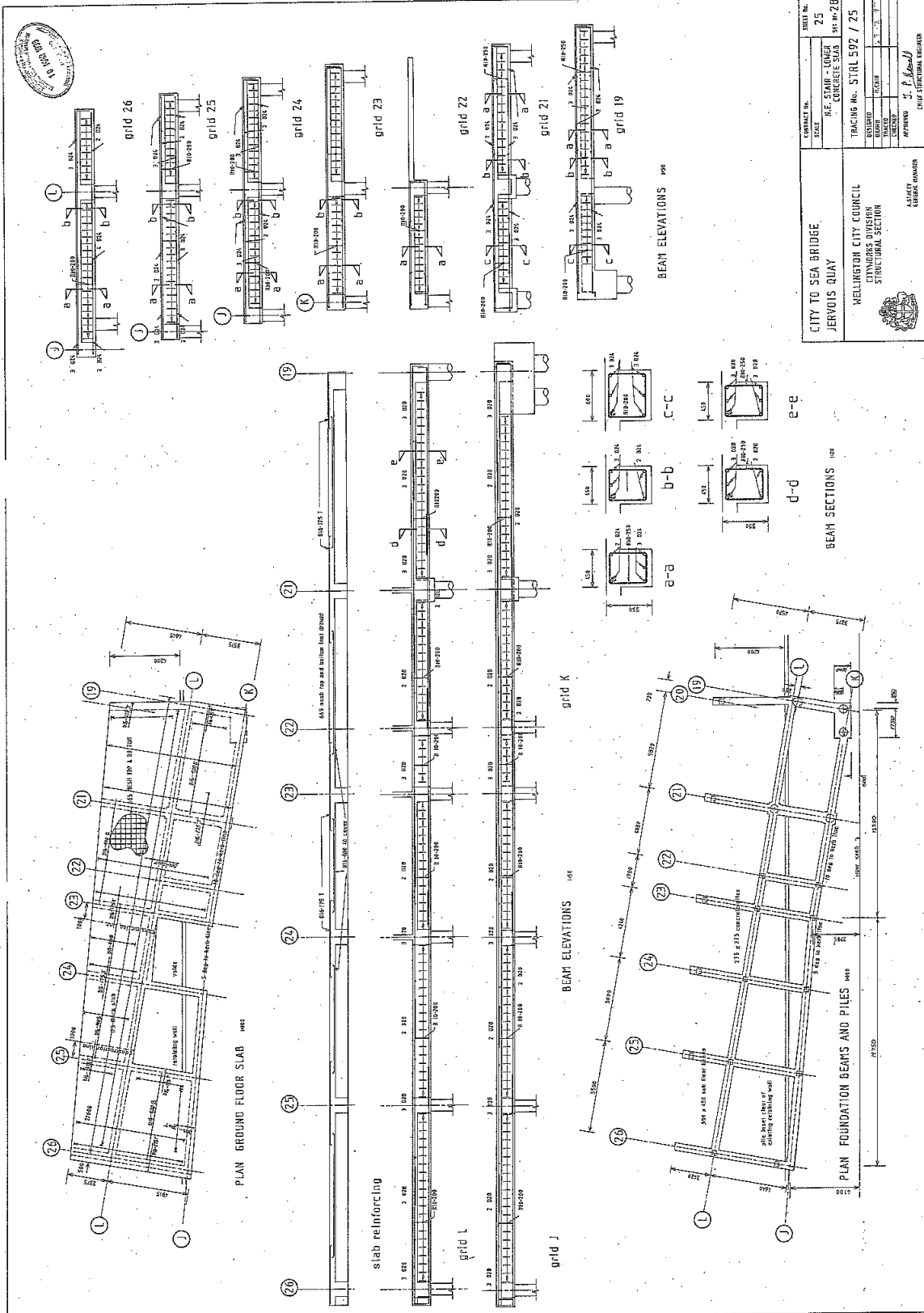


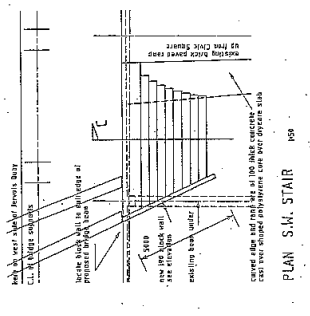
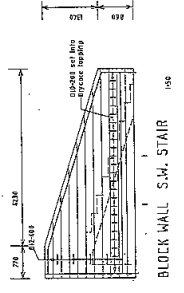
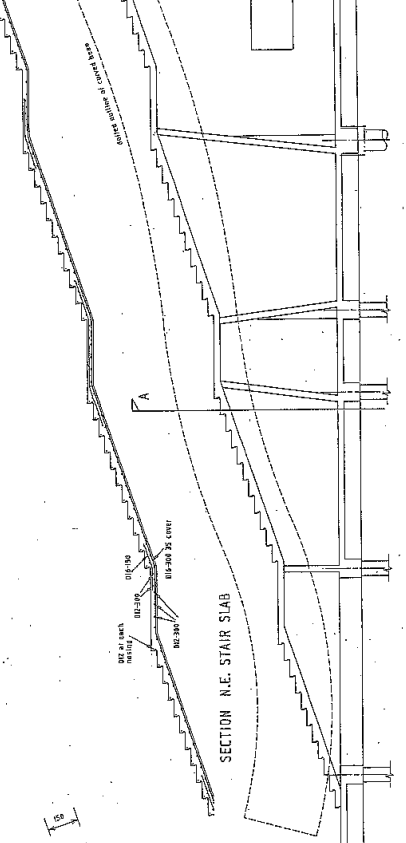
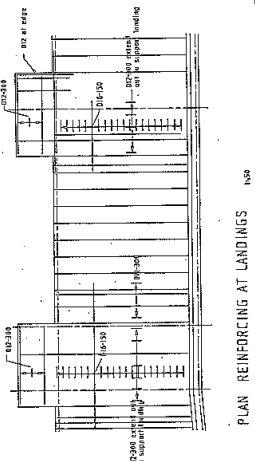
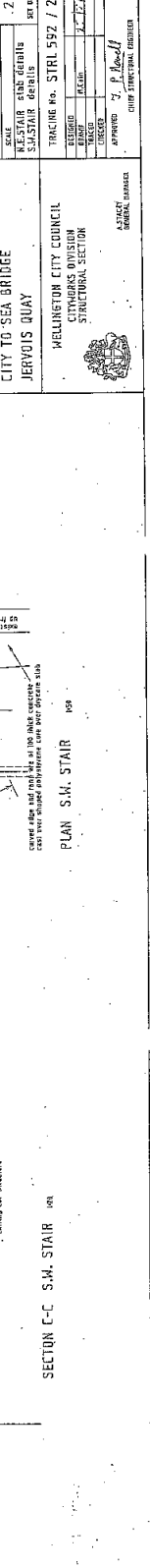
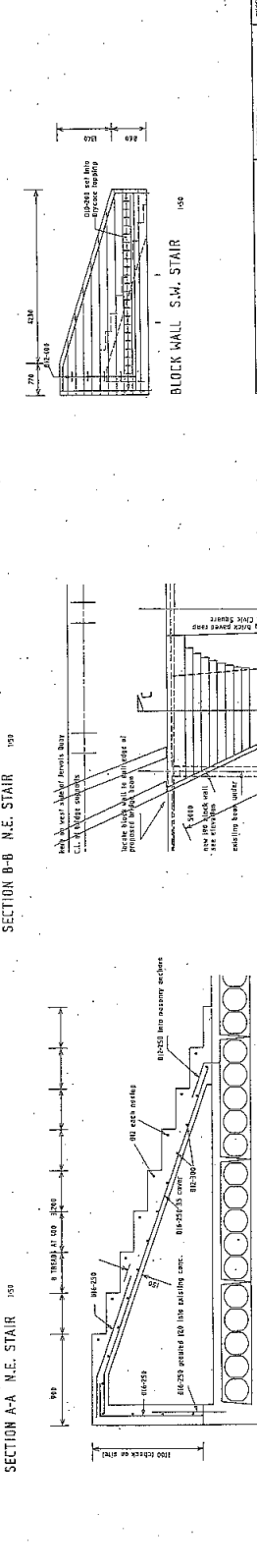
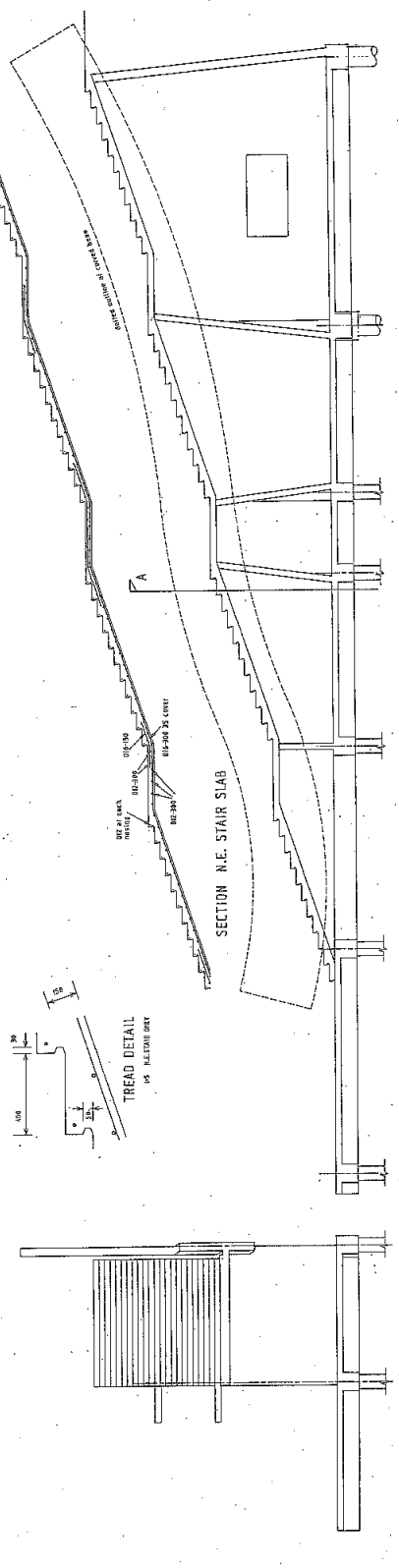
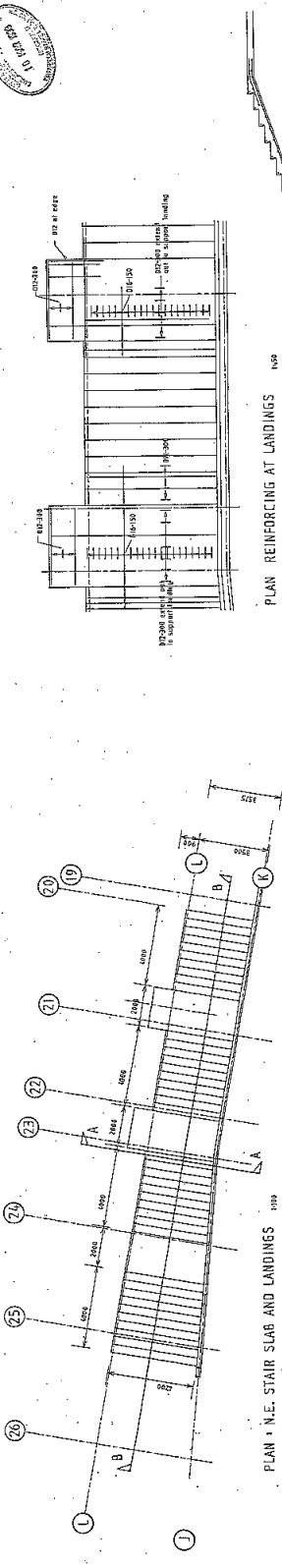


CONTRACT NO. 2328	SHEET NO. 23
SCALE 1:50	DATE 07/17
RAMP WALLS	
TRAVERE Rd. STRL 592/73	
DESIGNED BY	SCALE
DRAWN BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
CHIEF STRUCTURAL ENGINEER	

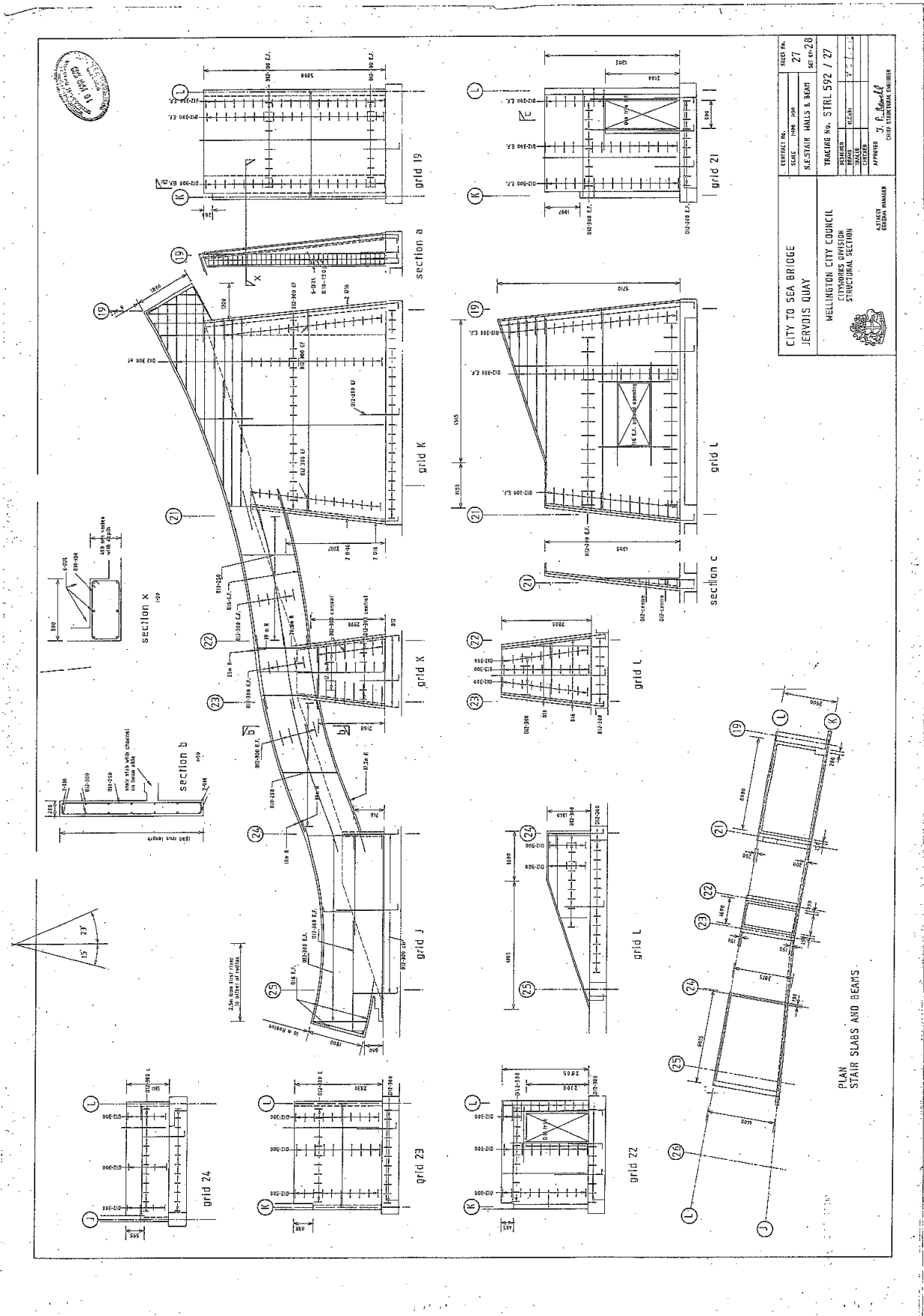
CITY TO SEA BRIDGE	PROJECT NUMBER
JERVOIS QUAY	
WELLINGTON CITY COUNCIL	
CITYMAINS DIVISION	
STRUCTURAL SECTION	

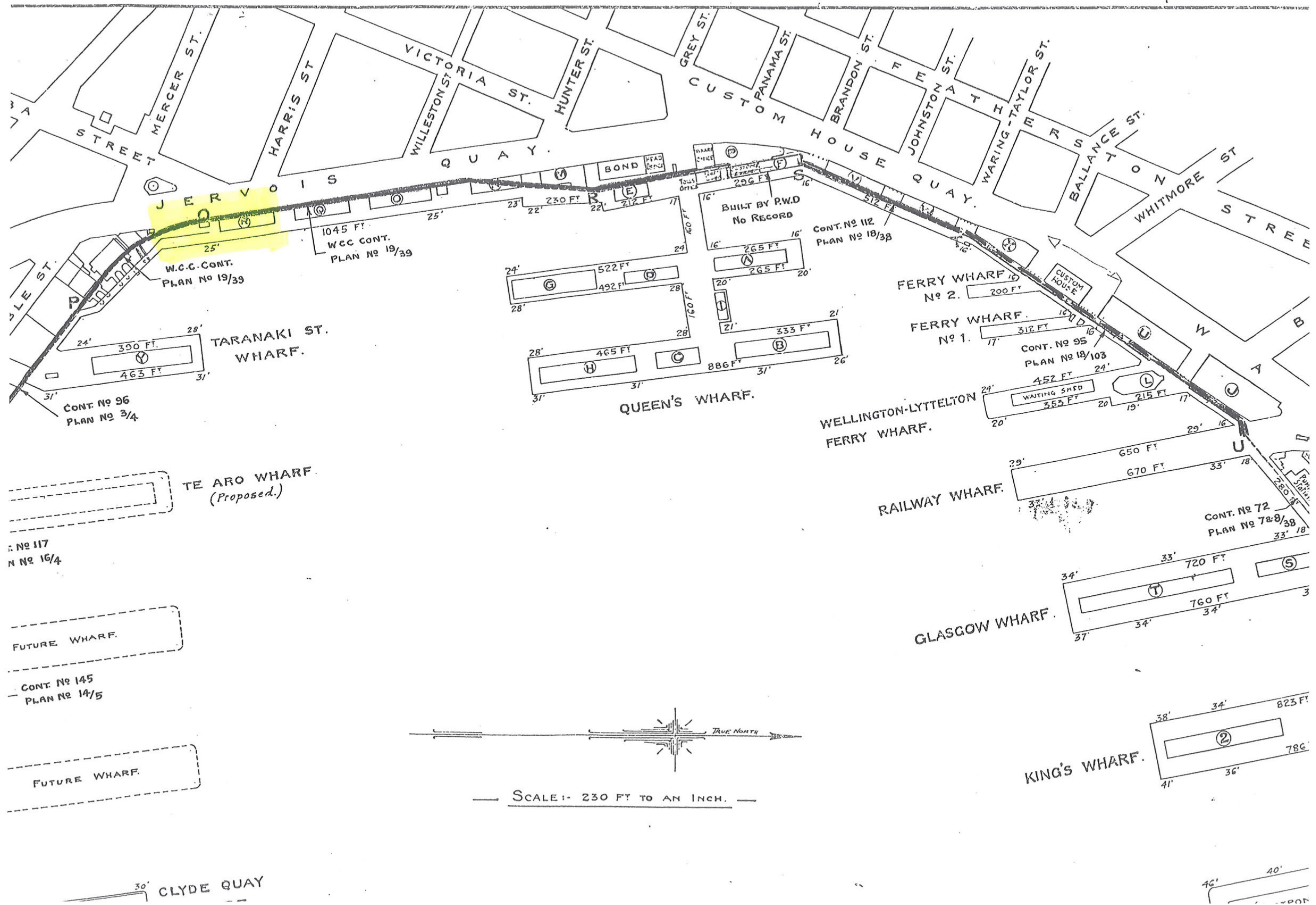


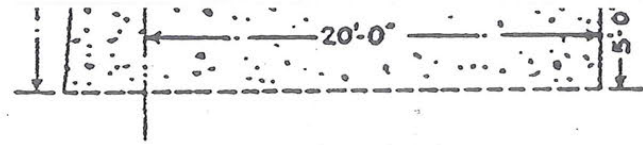




CONTRACT NO.	SHORT NO.
SCALE	DATE
SUBMITTER	DESIGNER
TRACING NO.	SET NO.
DATE	PROJECT
DRAWN BY	CHECKED BY
APPROVED BY	DATE
CITY TO SEA BRIDGE JERVOIS QUAY WELLINGTON CITY COUNCIL CIVILIANS DIVISION STRUCTURAL SECTION	
PROJECT GENERAL MANAGER APPROVED BY P. Powell CHIEF STRUCTURAL ENGINEER	







I. TO J.

CONTRACT N° 145. PLAN N° 14/5

COMPLETED ABOUT AUG. 1909.

CONCRETE: CEMENT, 2 SAND AND 5 OF GRADED SHINGLE.

FROM 4" GAUGE TO 1/4" GAUGE.



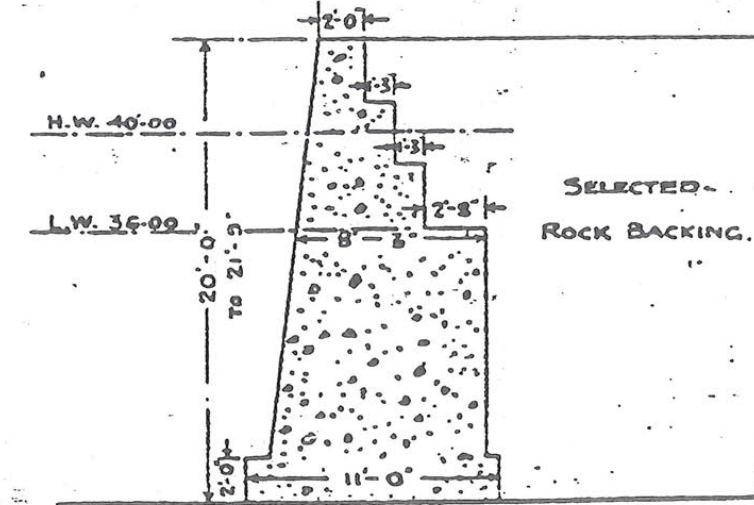
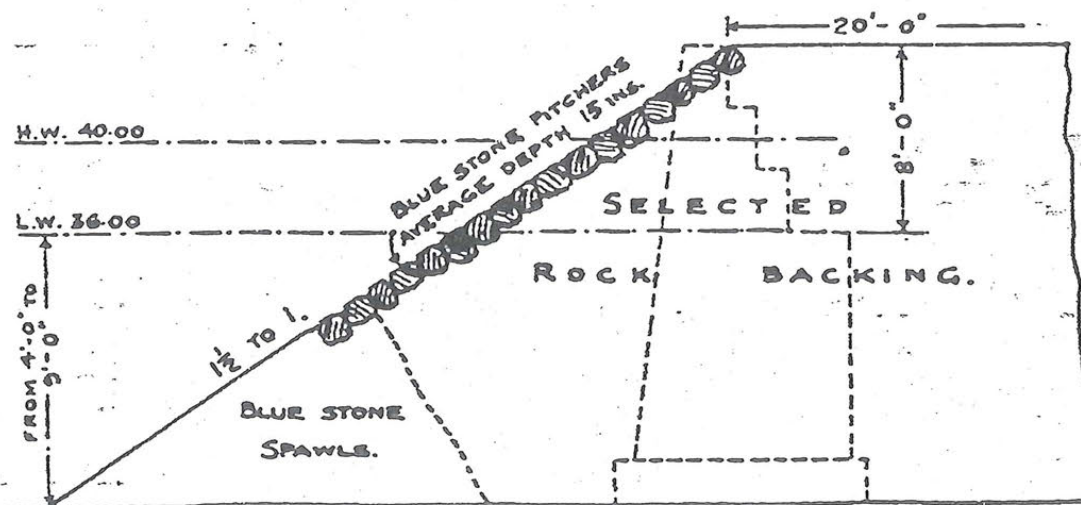
EXISTING CONCRETE SLAB.

COMPLETED ABOUT JUNE, 1912. CONCRETE: CEMENT TO 7 AGGREGATE.

J. TO K.

CONTRACT N° 164.

PLAN N° 7/6



WALLS P. TO Q. & Q. TO R. COMPLETED IN 1889; BUILT BY THE WELLINGTON CITY COUNCIL IN CONNECTION WITH TE ARO RECLAMATION N° 3. (PART OF CONTRACT.)

P. TO Q.

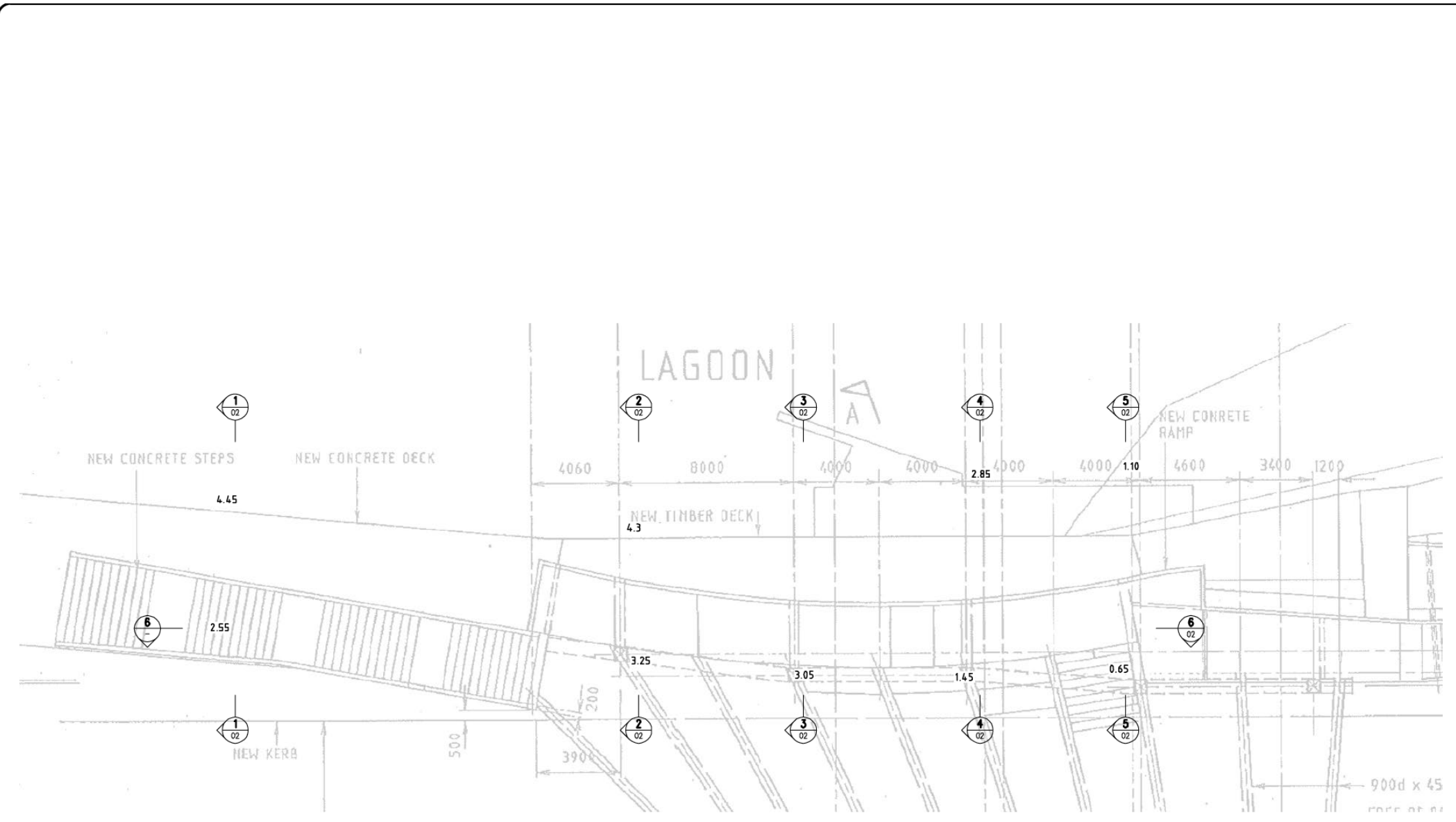
PLAN N° 19/39

Q. TO R.

SCALE: - 8 FT TO AN INCH. -

NO	REVISION	BY	DATE
A	FIRST ISSUE	TDP	19/08/10

Copyright of this drawing is vested in Spencer Holmes Ltd.
The Contractor shall verify all dimensions on site.



PLAN SHOWING MEASURED DEPTHS TO LAGOON BOTTOM
1:200 AT A3

SpencerHolmes
engineers • surveyors • planners

Level 6
PO Box 588
Phone (04) 472-2281
Email: admin@spencerholmes.co.nz

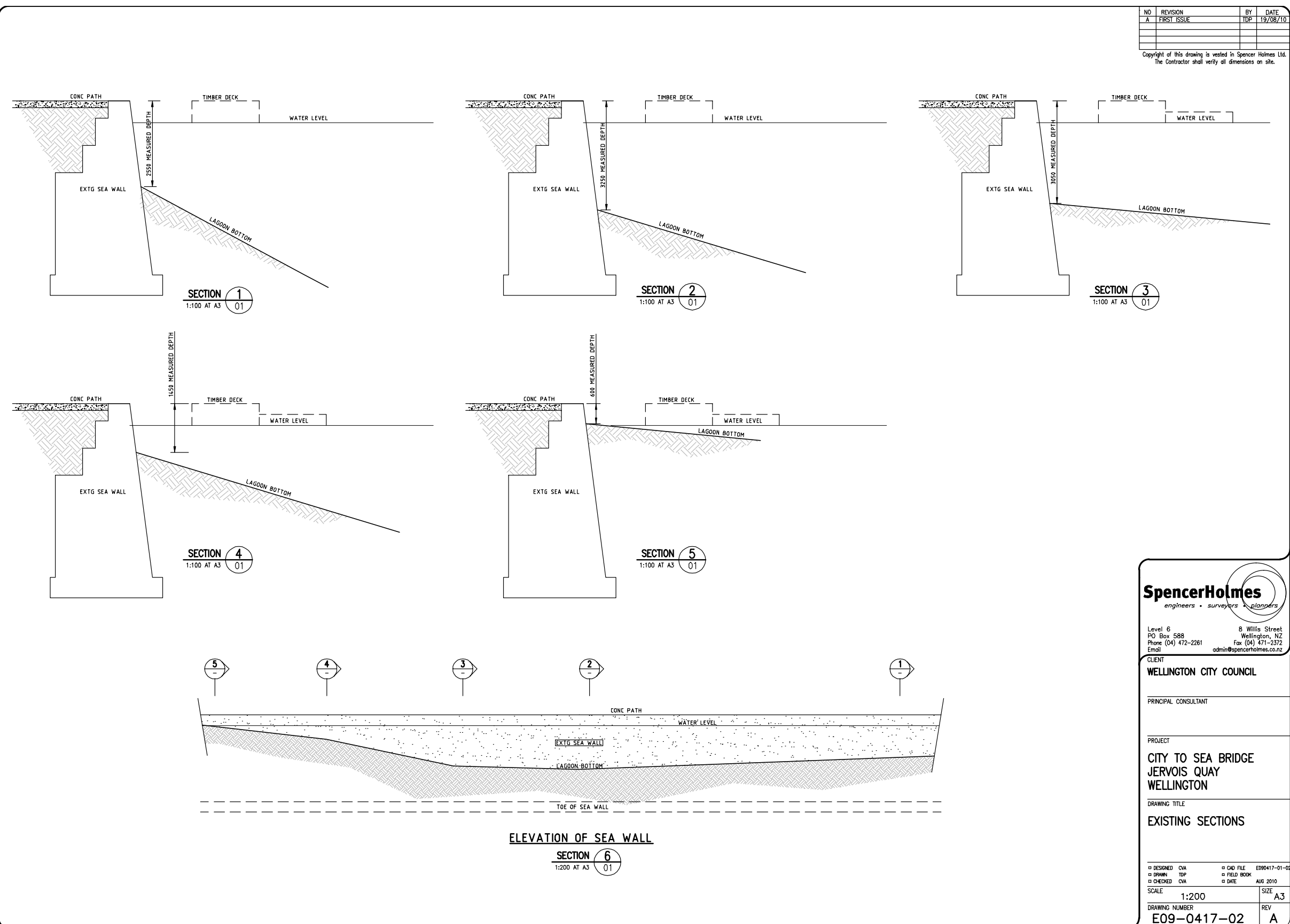
8 Willis Street
Wellington, NZ
Fax (04) 471-2372
Email: admin@spencerholmes.co.nz

CLIENT	WELLINGTON CITY COUNCIL
PRINCIPAL CONSULTANT	
PROJECT	CITY TO SEA BRIDGE JERVOIS QUAY WELLINGTON
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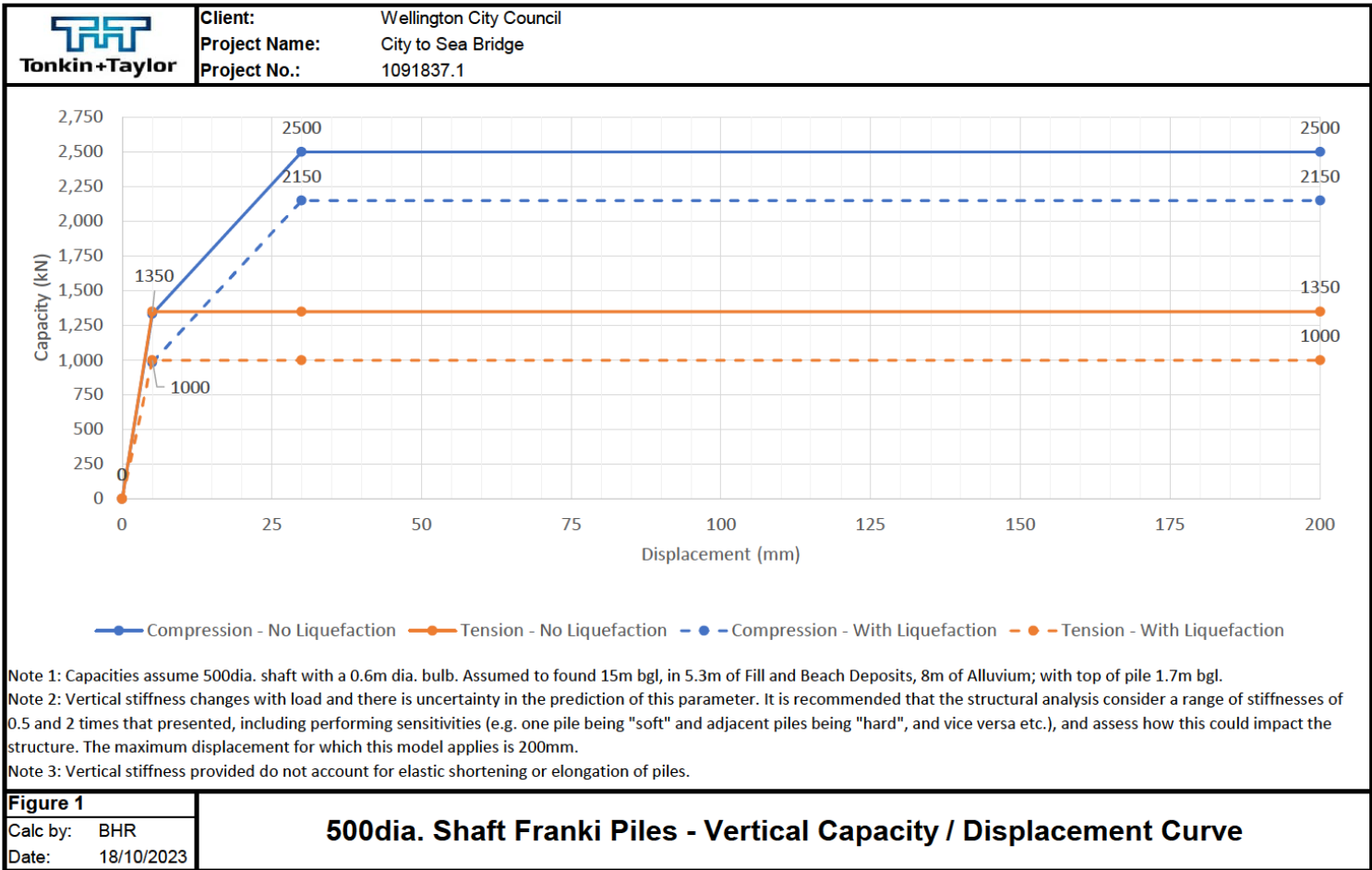
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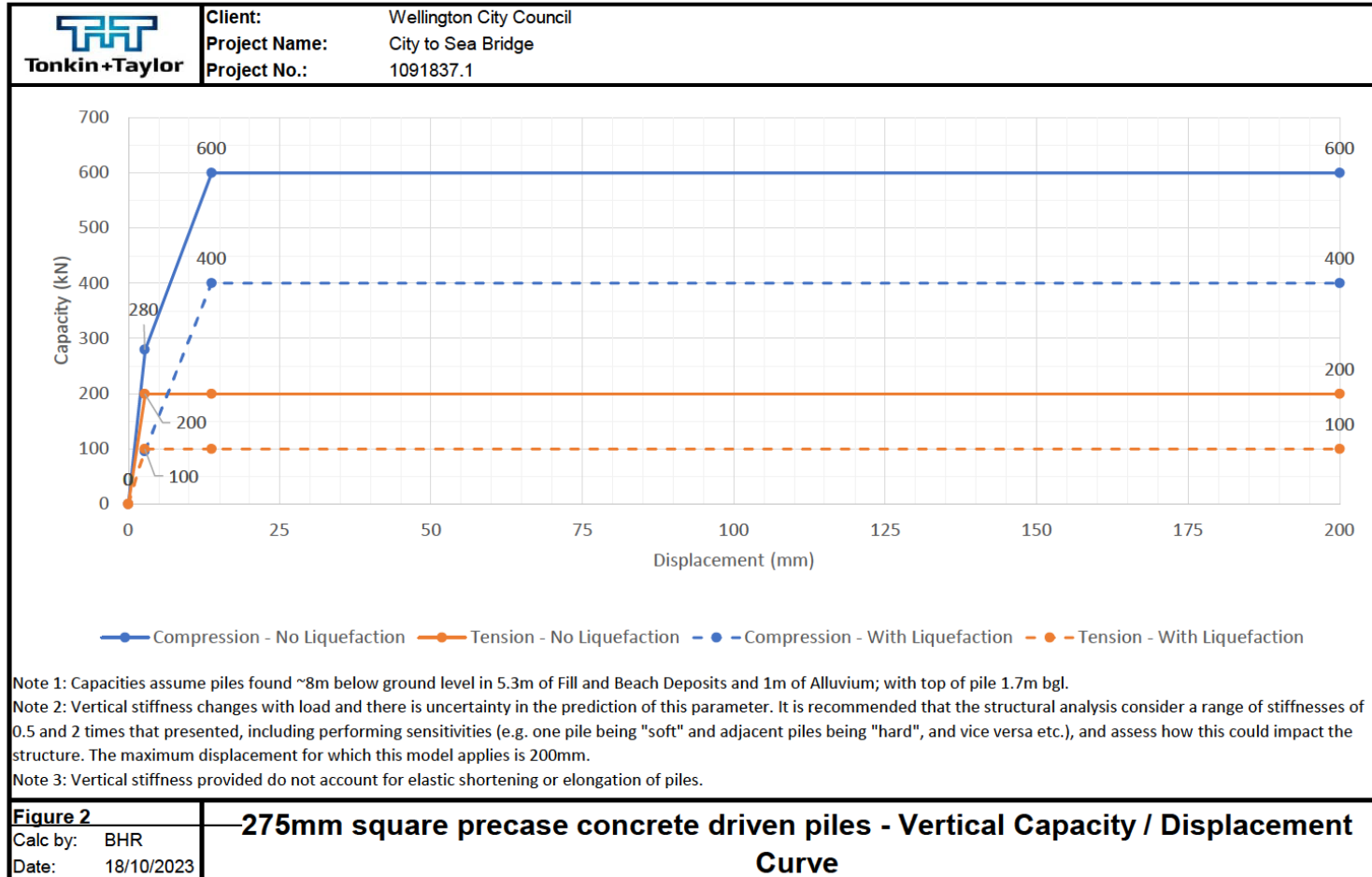
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Appendix D Geotechnical parameters

- Appendix D1: Pile vertical parameters
- Appendix D2: Lateral parameters

D1 Pile vertical parameters



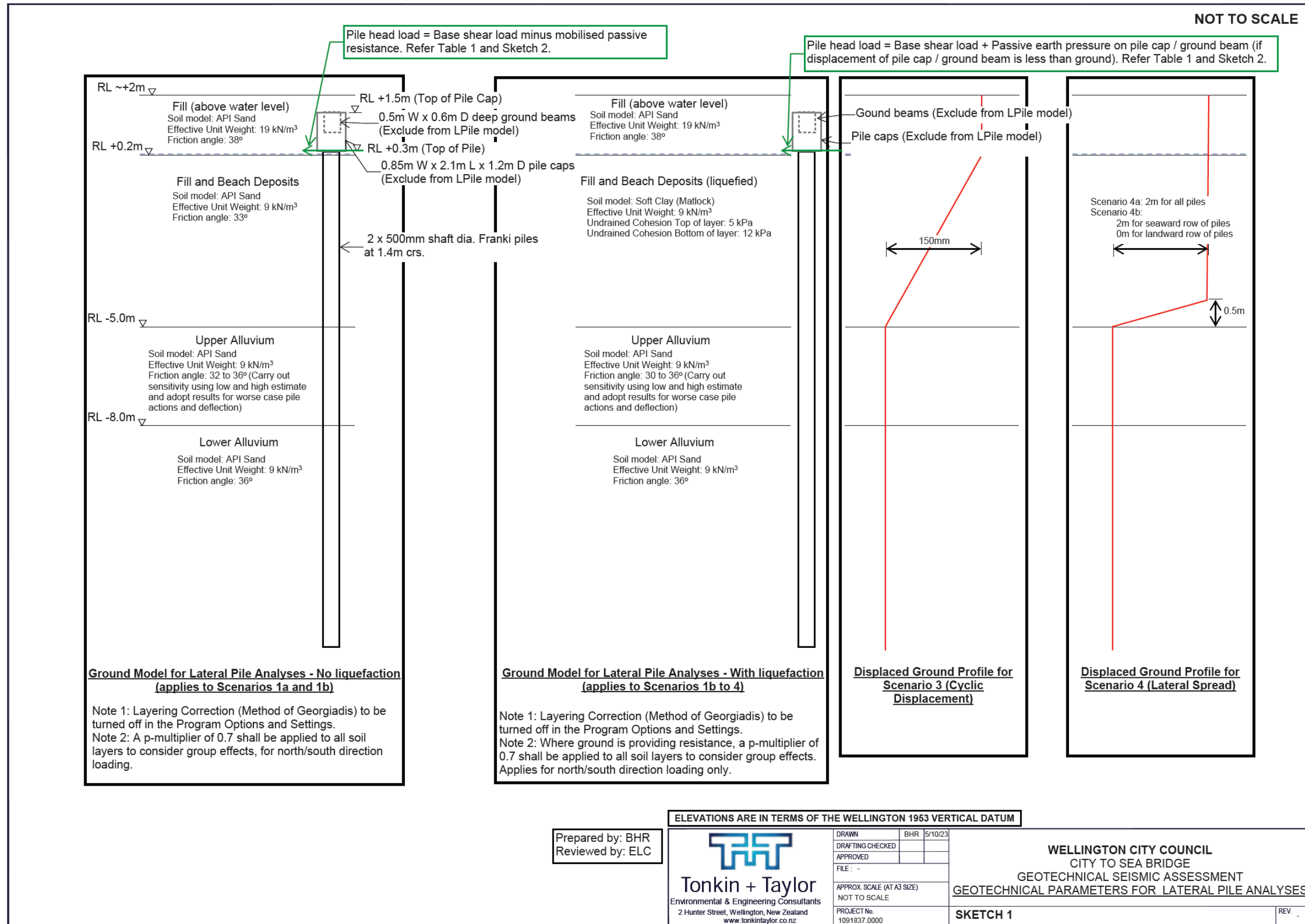


D2 Lateral parameters

Table 1: Ground lateral behaviour during earthquake

#	Scenario	Comments on Base Shear Take-out
1a	Start of earthquake. No liquefaction.	100% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (no liquefaction case). See Sketch 1. • Passive resistance of pile caps and ground beams (no liquefaction case) ⁽¹⁾. See Sketch 2.
1b	Zones of liquefaction triggered across Site. No lateral ground movement.	100% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles: Piles at one abutment/pier in liquefied conditions; other piles in non-liquefied conditions. See Sketch 1. • Passive resistance of pile caps and ground beams (pile cap / ground beam at same abutment/pier in liquefied conditions; others in non-liquefied conditions) ⁽¹⁾. See Sketch 2.
2	Liquefaction triggered. No lateral ground movement.	100% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (liquefaction only case). See Sketch 1. • Passive resistance of pile caps and ground beams (liquefied conditions) ⁽¹⁾. See Sketch 2.
3	Cyclic displacement occurs. During shaking.	80% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (liquefaction + Cyclic displacement case). See Sketch 1. • Passive resistance / load on pile caps / ground beams based on liquefied conditions. See Sketch 2. <ul style="list-style-type: none"> – Relative movement of pile caps/ground beams to the ground needs to be considered to determine if caps/beams passive pressure is contributing to base shear resistance or are additional soil loads on the structure. – If caps/beams move less than 150mm, the passive pressure is a load on the structure. – If caps/beams move more than 150mm the passive pressure contributes to base shear resistance. The caps/beam need to move 220mm to mobilise full passive resistance ⁽¹⁾.
4a	Lateral spreading occurs. Towards end of / post shaking.	25% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (liquefaction + Cyclic displacement case). See Sketch 1. • Passive load on pile caps / ground beams based on liquefied conditions. See Sketch 2.
4b	Lateral spreading occurs. Towards end of / post shaking. Differential spreading across length of bridge.	

Note 1: 100% passive mobilised at 70mm relative cap/beam to ground displacement.



NOT TO SCALE

East/West direction of loading

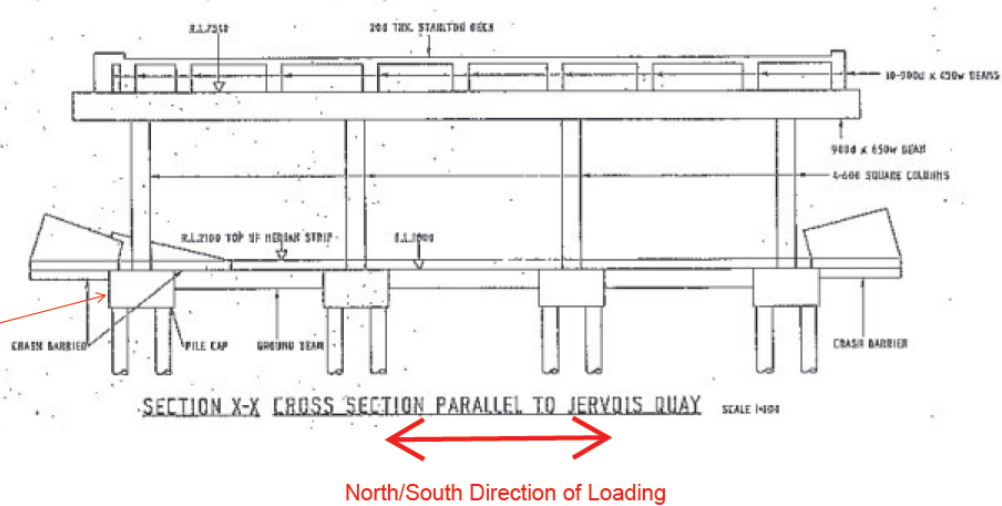
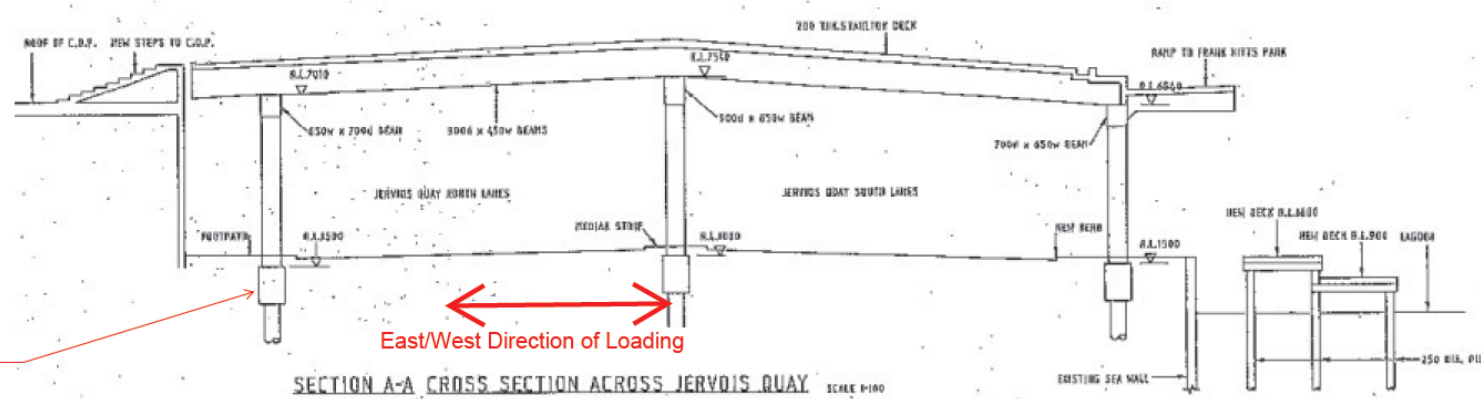
Scenario 1a and 1b: No Liquefaction Case
 Pile cap passive capacity = 170 kN/m
 Ground beam passive capacity = 55 kN/m

Scenario 1b to 4: With liquefaction case load / capacity
 Pile cap: Load / Capacity = 85 kN/m
 Ground beam: Load / Capacity = 30 kN/m

North/South direction of loading

Scenario 1a and 1b: No Liquefaction Case
 Pile cap passive capacity = 70 kN/m.

Scenario 1b to 4: With liquefaction case load / capacity
 Pile cap passive load / capacity = 35 kN/m.



Prepared by: BHR
 Reviewed by: ELC

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WELLINGTON CITY COUNCIL
 CITY TO SEA BRIDGE
 GEOTECHNICAL SEISMIC ASSESSMENT
 EARTH PRESSURES ON PILE CAPS / GROUND BEAMS

SKETCH 2

REV	
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CITY TO SEA BRIDGE

• DETAILED SEISMIC ASSESSMENT

CLIENT: WELLINGTON CITY COUNCIL
PREPARED BY: HOFFCON
DATE: 26 JUNE 2024



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REVISION HISTORY

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Approved by	[REDACTED]	[REDACTED]	26 June 2024
On behalf of Hoff Consultants Limited			

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EXECUTIVE SUMMARY

Hoff Consultants Limited (Hoffcon) have been engaged by the Wellington City Council (WCC) to undertake a seismic assessment of the City to Sea Bridge. The purpose of this assessment is to evaluate the anticipated performance of the bridge in an earthquake to assist WCC in determining the future of the structure as part of the wider Te Ngākau (Civic Square) re-development. The Hoffcon structural assessment is supported by the outputs of the Tonkin + Taylor Desktop Geotechnical Seismic Assessment.

The findings of the completed detailed seismic assessment of the City to Sea Bridge indicates an earthquake rating of 20%NBS (IL3) to *Engineering Assessments*, dated July 2017 (Engineering Assessment Guidelines).

The governing factor that has determined this rating is the step-change in the seismic response of the bridge and the surrounding ground when liquefaction is triggered. This includes phenomena such as lateral spreading and cyclic displacement of the ground, in addition to movement of the underlying seawall. However, there are other structural weaknesses that would see a rating less than 34%NBS even if liquefaction was not triggered.

Based on this outcome, the structure is a Grade D building following the Engineering Assessment Guidelines building grading scheme. Grade D buildings represent a life-safety risk to occupants comparable to 10-25 times that expected for a new building, indicating a high relative risk exposure.

The New Building Standard requires an IL3 building to have a low probability of collapse in a 1 in 1000-year "design level" earthquake (i.e., an earthquake with a probability of exceedance of approximately 5% over the assumed 50-year design life of a building).

A building with an earthquake rating less than 34%NBS fulfils one of the requirements for the Territorial Authority to consider it to be an Earthquake-prone Building (EPB) in terms of the Building Act 2004.

The City to Sea Bridge is therefore considered as an Earthquake Risk Building and also fulfils one the criteria that could categorise it as an Earthquake-prone Building by Wellington City Council.

Options for the future of the bridge include demolition, strengthening, or risk management. Hoffcon are not in a position to make a recommendation to the Wellington City Council on the direction that should be taken with regard to the future of the bridge.



1 INTRODUCTION

1.1 Background

Hoff Consultants Limited (Hoffcon) have been engaged by the Wellington City Council (WCC) to undertake a seismic assessment of the City to Sea Bridge (the bridge). The purpose of this assessment is to evaluate the anticipated performance of the bridge in an earthquake to assist WCC in determining the future of the structure as part of the wider Te Ngākau (Civic Square) re-development.

The Bridge was:

- Designed in 1992 and believed to have been constructed the following year.
- Inspected in 2009 where damage was identified to the north abutment, attributed to settlement.
- Temporary supports were installed in 2009 to address apparent distress at northern abutment which are still in place.
- A seismic assessment was completed by Spencer Holmes in 2010 which evaluated the bridge to be “15% to 25% of that required by NZS 1170.5” in the east-west direction, and “25% to 35% of that required by NZS 1170.5” in the north-south direction.
- A geotechnical report was completed by McManus Geotechnical Limited in 2010 which noted that ‘significant deformations’ would be likely in the seawall once liquefaction was triggered, which was expected in a 1/25 year earthquake. However, the seawall was likely to remain stable (not overturn).
- Strengthening work was designed by Spencer Holmes in 2010 and constructed in 2011. This introduced several structural steel elements to reduce torsional response and strengthen the diaphragm and its connections. This was noted as having “an equivalent strength level of around 40% of current code” but did not consider foundation effects.
- A structural assessment of the foundation loading and estimated performance was completed by Spencer Holmes in 2018. This concluded that the bridge would still be “at least 40%NBS”.
- A geotechnical evaluation of the seawall and foundations was issued in draft by Tonkin + Taylor in 2018. This suggested that the soil around the bridge would remain stable in earthquake shaking up to 35% to 40% of ULS_{IL3} .
- In June 2024, Tonkin + Taylor issued a letter report outlining the findings of a more in-depth desktop geotechnical seismic assessment of the bridge. This provided a more detail consideration of the ground conditions and earthquake associated geotechnical phenomena. This report re-confirmed the triggering of liquefaction at 35-40% of ULS_{IL3} .

Since the strengthening work in 2010, there have been a number of changes to the rationale for seismic assessments and revisions to seismic loading. This means that the seismic risk posed by the bridge, when assessed to modern standards is unclear.

1.2 Scope of Assessment

This assessment takes the form of a Detailed Seismic Assessment (DSA) to the current Engineering Assessment Guidelines. The assessment considered the main two-span bridge structure, along with the two abutment ramps to the north and south at the eastern abutment.

- The assessment is completed to the *Technical proposal to revise the Engineering Assessment Guidelines*, for C5 of the guidelines, and hence is **not** suitable to inform the legal determination of Earthquake-prone Building (EPB) status. However, it is the current best practice.
- The assessment focuses on the primary structure and currently does not include non-structural elements (e.g., sculptures on the bridge).
- The assessment is also based on existing geotechnical information, with supplementary geotechnical input provided by Tonkin + Taylor.

Initially, the assessment made assumptions around the foundation performance, based on the 2018 Tonkin + Taylor draft report and the foundation loading inputs from Spencer Holmes. The findings at that time suggested that the pile failure mechanism would be non-ductile, with shear failure occurring in the critical piles. As such, initial scope included only an elastic analysis of the structure with only the pile heads modelled. Subsequent analysis suggests that the failure mechanism may actually be ductile. This places a more significant focus on the pile performance. Evaluation of the piles has been undertaken in isolation, and this has allowed their behaviour to be understood under complex geotechnical conditions. However, a full, non-linear soil-structural

interaction model has not been completed as it was seen as having minimal additional benefit in evaluating the structure as a whole, when compared to the cost and time associated with such an assessment.

1.3 Regulatory Environment and Design Standards

The Earthquake-prone Building regulatory framework underwent significant changes during 2016 and 2017. This resulted in the Building (Earthquake-prone Buildings) Amendment Act 2016, the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 including the Earthquake-prone Building Methodology, and the technical guideline document The Seismic Assessment of Existing Buildings - Technical Guidelines for Engineering Assessments (Engineering Assessment Guidelines). The important aspects of this regulatory framework are summarised below.

Earthquake-prone Buildings (EPBs) are defined in Section 133AB of the Building (Earthquake-prone Buildings) Amendment Act 2016 as buildings whose ultimate capacity will be exceeded in a moderate earthquake and, if it were to collapse, would likely result in injury or death or damage to another property. A moderate earthquake is defined as approximately one-third as strong but of the same duration as the earthquake shaking assumed in the design of a new building on the same site.

The official determination of whether or not a building is earthquake-prone is the responsibility of the relevant Territorial Authority. The earthquake rating resulting from an engineering assessment is only one, albeit significant, aspect considered by the Territorial Authority in making their determination. If the Territorial Authority determines a building to be earthquake-prone, it will issue an EPB notice for the building and include it on the EPB register. The Building (Earthquake-prone Buildings) Amendment Act 2016 then defines timeframes within which the owner must carry out building work (i.e. upgrade or demolish) to ensure the building is no longer earthquake-prone. These timeframes range from 7.5 years to 35 years depending on the building type (priority or normal) and location (high, medium or low risk areas).

The Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 made significant changes to the system for identifying and remediating earthquake-prone buildings. These include:

- Providing an operational basis for identifying Earthquake-prone Buildings – the EPB methodology.
- New definitions for key terms including 'Earthquake-prone Buildings' and 'ultimate capacity'.
- A requirement to categorise Earthquake-prone Buildings in terms of their earthquake rating.
- Providing a national-based system in place of individual Earthquake-prone Building policies for each Territorial Authority.

The Engineering Assessment Guidelines document used by engineers to carry out seismic assessments is an integral part of the EPB Methodology. In addition, the New Zealand Society for Earthquake Engineering (NZSEE) defines a building with an earthquake rating less than 67%NBS as an Earthquake Risk Building (ERB) and recommends a minimum target strengthening level of 67%NBS. It is considered impractical and unaffordable to design every building to withstand the largest earthquake imaginable. Consequently, with respect to the determination of design loads for natural hazards, the New Zealand Loading Standard (NZS 1170) adopts a probabilistic approach that takes into account the exposure hazard at a given location, along with factors such as building importance. The Loading Standard may be said to adopt a risk management approach in setting the loading levels that a given building is required to withstand.

1.4 Explanatory Statement

- This report has been prepared by Hoffcon at the request of our Client and is exclusively for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Hoffcon accepts no responsibility or liability to any third party for any loss or damage whatsoever arising out of the use of or reliance on this report by that party or any party other than our Client.
- This assessment does not consider gravity or wind loading or cover services or fire safety systems.
- This assessment does not consider the large number of architectural/sculptural items on the bridge. The weight of these elements has been considered, but their seismic capacity has not been evaluated at this time.
- This assessment does not include an assessment of the structural condition or repairs that may be required.



- No geotechnical ground investigations, subsurface or slope stability assessments have been undertaken by Hoffcon. The geotechnical investigations were limited to a review of the information we have been provided about the site and general area (refer Appendix B).
- Hoffcon is not able to give any warranty or guarantee that all possible damage, defects, conditions or qualities have been identified. The work done by Hoffcon and the advice given is therefore on a reasonable endeavours basis.
- Except to the extent that Hoffcon expressly indicates in the report, no assessment has been made to determine whether or not the building complies with the building codes or other relevant codes, standards, guidelines, legislation, plans, etc.
- The assessment is based on the information available to Hoffcon at the time of the assessment and assumes the construction drawings supplied are an accurate record of the building. Further information may affect the results and conclusion of this assessment. The information used to undertake the seismic assessment is provided in Appendix A and Appendix B.



2 STRUCTURE DESCRIPTION

2.1 Location

The City to Sea Bridge crosses Jervois Quay 50m south of Harris Street in the Wellington CBD. Jervois Quay is one of the main roads within the CBD taking traffic around the harbour and is designated 'Arterial' within the ONRC¹ framework for WCC, with 45,000 vehicles passing under it each day. The bridge links the Te Ngākau Civic building and area with the Wharepo Lagoon.

2.2 Function

The primary function of the bridge is to connect pedestrian access across Jervois Quay while also providing a public space for people to enjoy.

2.3 Layout

A general layout of the bridge is provided in Figure 1. The bridge has three main components, these are:

- **The Bridge** – which crosses Jervois Quay.
- **The North Abutment** – which includes a stair and a suspended concrete slab.
- **The South Abutment** – which includes a ramp structure.

Surrounding these are separate structures that do not directly interact with the bridge structure. These include the walkway to the east which is at ground level and consists of a timber boardwalk along with an elevated concrete walkway, as well as the Capital E building to the west of the bridge, from which pedestrians are able to access the bridge.

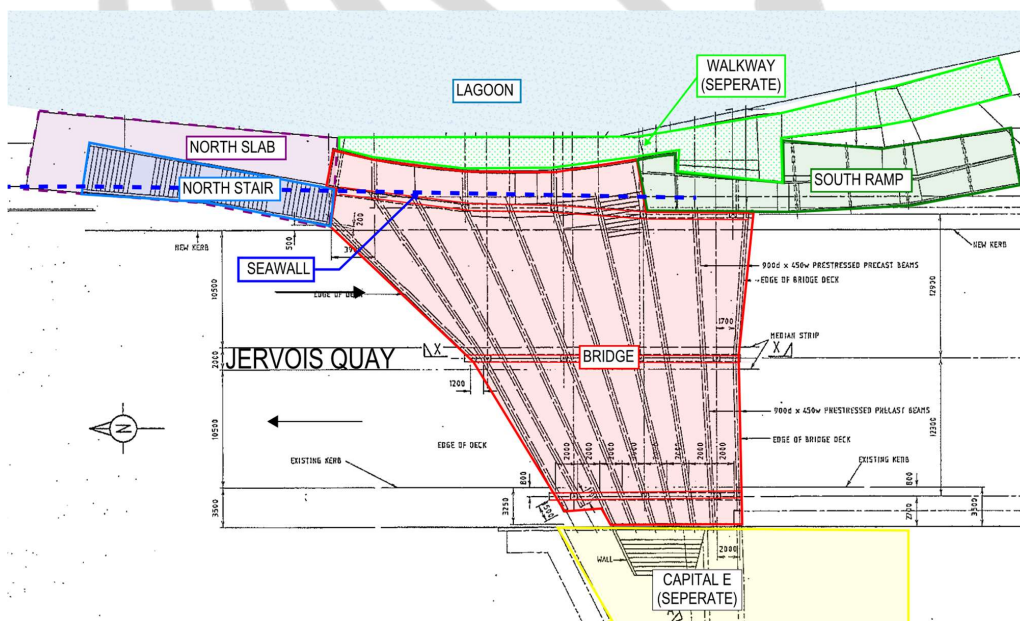


Figure 1: Layout of City to Sea Bridge and its surroundings

¹ One Network Road Classification, see <https://nzta.govt.nz/assets/Road-Efficiency-Group/docs/ONRCPMsgeneralguide.pdf>



2.4 Structural Elements

While the bridge, stair and ramp all have differing structural forms, they are all connected to one-another through the bridge slab. This linking of the three structure types and disparity between their structural behaviour has the potential to cause incompatibilities in their seismic behaviour.

2.4.1 The Bridge

The bridge is made up of 900mm deep rectangular precast concrete beams that are splayed out to match the deck footprint. The beams are reinforced concrete and without prestressing. These beams were made composite with Stahlton rib and infill in-situ deck slab that is 75mm thick with 665 reinforcing mesh placed centrally and supported on 150mm wide x 100mm deep prestressed concrete ribs. The bridge deck is supported on a reinforced concrete frame at the abutment and pier locations. The bridge foundations consist of 500mm diameter reinforced concrete bored piles with a bulb toe that are located at the abutment and pier frames.

Bridge Strengthening

The central and western pier frames have been strengthened with diagonal steel cross braces. An example from the central pier is shown in Figure 2. Steel bracing frames have also been provided between the beams to transfer transverse loads and avoid the beams overturning. Tie bars that run transverse to the main beams were provided. These are intended to assist the deck diaphragm action. A cross braced frame has been provided at the northeastern corner of the deck to assist in load transfer to the north abutment.

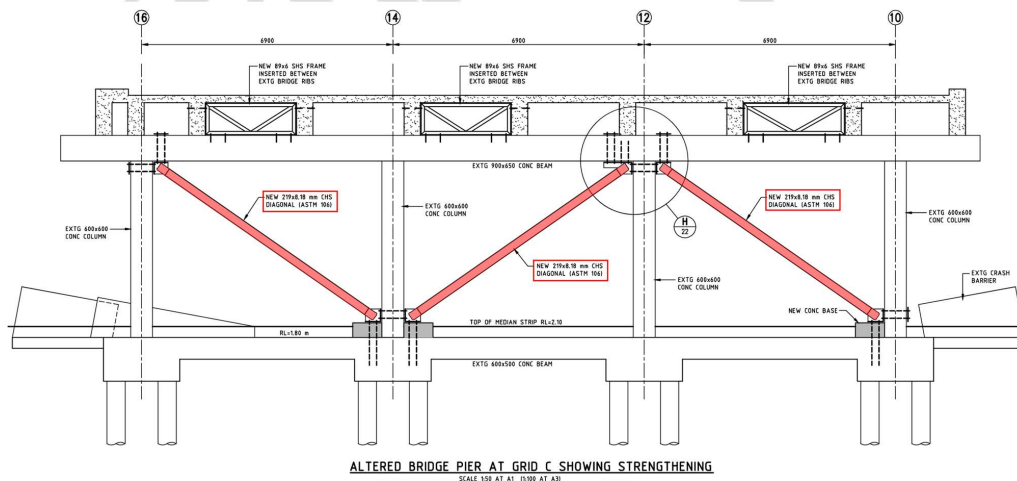


Figure 2: Diagonal cross braces installed at the west and central piers in 2011 as part of the Spencer Holmes strengthening scheme.

2.4.2 The North Abutment

The north abutment is shown in Figure 3 and consists of a reinforced concrete stair that is supported on a series of ground beams which are in turn supported on a mixture of 500mm diameter bored piles and 275mm square precast concrete piles. A 175mm thick suspended concrete slab spans between the 550mm deep x 450mm wide ground beams at ground level over the water and ties the piles together.

The pile set out shown in the design drawings requires some piles to be installed into or immediately adjacent to the existing seawall which is still in place. Spencer Holmes' strengthening report alludes to some of these piles not being installed in construction, and rather the seawall being used for vertical capacity, though details on this were unable to be confirmed.

"The seawall location is marked "approximate" on the drawings and at some stage during the construction it appears that a decision has been made to delete some of these piles and use the old seawall as support for the North abutment." – Spencer Holmes Strengthening Report, 2010



Figure 3: Photograph shown the North Abutment

2.4.3 The South Abutment

The south abutment consists primarily of an elevated ramp that is supported by inclined precast wall panels, as shown in Figure 4. Inspection of these panels suggest that they were likely prestressed, though this is not shown in the design drawings and is assumed to have been included by the contractor for ease of construction. The precast walls are supported by a series of interlinking ground beams which in turn are supported on a mixture of 500mm circular bored piles and 275mm square precast concrete piles.



Figure 4: Photo of the South Abutment ramp



3 BASIS OF ASSESSMENT

The assessment of the bridge has been completed based on the available information from WCC archives, WCC records and the work completed from past consultants. The specific documents on which this assessment is based out are outlined in this section.

3.1 Structural Information

- Design Drawings – City to Sea Bridge, WCC Structural Branch, 1992/93
- Inspection Report – Spencer Holmes, 2009
- Design of Temporary supports – Spencer Holmes, 2009
- Seismic Assessment and Strengthening Report and Drawings – Spencer Holmes, 2010
- Structural Foundation Report – Spencer Holmes, 2018.

3.2 Geotechnical Information

The geotechnical information available for site is listed below.

- **City to Sea Bridge –Soil Liquefaction - McManus Geotechnical Limited, 2010.** This noted that 'significant deformations' would be likely in the seawall once liquefaction was triggered, which was expected in a 1/25 year earthquake. However, the seawall was likely to remain stable (not overturn).
- **Geotechnical Seismic Assessment, City to Sea Bridge, Civic Square, Wellington - Tonkin + Taylor, 2018.** A geotechnical evaluation of the seawall and foundations was issued in draft form by Tonkin + Taylor in 2018. This suggested that the bridge would be geotechnically stable / unliquefied in earthquake shaking up to 35% to 40% of ULS_{IL3}".
- **City to Sea Bridge, Wellington, Desktop Geotechnical Seismic Assessment - Tonkin + Taylor, 2024.** A geotechnical evaluation of the bridge foundations, and seawall was issued by Tonkin + Taylor in 2024. This report re-confirmed the triggering of liquefaction at 35-40% of ULS_{IL3}.

3.3 General

The techniques used are generally as outlined in the guideline document *The Seismic Assessment of Existing Buildings - Technical Guidelines for Engineering Assessments, dated July 2017* (the Engineering Assessment Guidelines), but replacing Section C5 - Concrete Buildings in that document with the latest version dated 30 November 2018 (Yellow C5).

Earthquake loading is determined in accordance with NZS1170.5, though the seismic mass has been determined in accordance with the NZ Transport Agency Bridge Manual.

With the City to Sea Bridge falling outside the typical structural form for which the assessment guidelines were developed, some aspects of the assessment methodology draw from more appropriate technical references.

A further reference appropriate for the City to Sea Bridge is the NZ Transport Agency Bridge Manual (3rd Edition, Amendment 4, May 2022) which provides guidance on analysis techniques and how static and seismic earth pressures should be considered in the design of bridges. While the Bridge Manual is primarily a design standard, the theory and approach behind the design practice is appropriate for assessment applications also.

4 GEOTECHNICAL CONSIDERATIONS

4.1 2018 Geotechnical Evaluation

The bridge is located on reclaimed land that has been built out into the harbour over the past century (1889 main reclamation). This results in poorly compacted soils that are susceptible to liquefaction along with lateral spreading and cyclic displacements. The 2018 Tonkin + Taylor Geotechnical Seismic Assessment for the bridge presented a number of issues and conclusions around the geotechnical characteristics of the site. These are listed below with a brief commentary provided by Hoffcon on the potential effect on the bridge:

- ***Liquefaction is expected to be triggered in the soils at an acceleration of 0.2g (under a magnitude 7.1 earthquake). This equates to a 34%ULS_{IL3}.***

Triggering of liquefaction means that at this earthquake intensity or greater, layers of loose soil are expected to begin to behave like a fluid, providing minimal support to the foundations and upper layers of soil. Some layers of soil may be more susceptible to liquefaction than others, while others will be able to maintain their integrity under more intense shaking before liquefaction is triggered in them.

- ***Lateral spread/cyclic displacement of the soil is expected to be triggered in the soils at an acceleration of 0.25g (under a magnitude 7.1 earthquake). This equates to a 43%ULS_{IL3}.***

Lateral spreading is the phenomena where liquefied soils and the layers above it, display a tendency to flow down a gradient commonly towards a waterbody. The displacement of the soil associated with lateral spreading can be predicted to some extent and increases with the duration and intensity of earthquake. These displacements can be large and may be several meters in large events. No guidance was provided on the expected movements for ground shaking beyond the 0.25g trigger point.

Cyclic displacement of the soil occurs where soil above liquefied layers is displaced by earthquake shaking. This can have the effect of having the soil mass driving the oscillation of the bridge foundations and imposing displacements onto the liquefied soil column. No guidance was provided on the expected movements for ground shaking beyond the 0.25g trigger point.

- ***Below 40%ULS_{IL3}, lateral restraint is provided by the piles in accordance with the pile springs provided. See Section 6.1.1.***

These are the springs that are used for the structural analysis of the bridge which represent the elastic stiffness of the pile heads. These are only considered valid for earthquake intensities up to 40%ULS_{IL3}. Beyond this the anticipated liquefaction would cause the strength and stiffness of some soil layers to degrade.

- ***Below 40%ULS_{IL3}, the critical pile axial loads under the 40%NBS loading (previously provided from Spencer Holmes of 1230kN compression and 635kN of uplift on 500mm diameter piles) are less than the probable ultimate geotechnical capacity of them.***

The pile axial capacities used in the assessment are discussed in more detail in Section 4.3. We note that while the pile capacities were confirmed to be adequate for the axial loads provided by Spencer Holmes in their 2018 analysis, no probable geotechnical capacity was presented, and the capacity of the 275mm square piles were not commented on.

- ***Beyond 40%ULS_{IL3}, the seawall will undergo significant displacement beyond 40%ULS_{IL3} due to liquefaction and lateral spreading.***

The seawall acts to retain the ground that supports the bridge foundations. Displacement of this retained ground due to movement of the wall will impose soil loads onto the bridge foundations, likely reducing their capacity. The amount of wall displacement is not quantified at beyond 40%ULS_{IL3} other than it is 'significant'. Loss of support to the soil surrounding the bridge foundations has the potential to result in a significant change in the seismic response of the structure. This change is likely to be detrimental and could be significantly detrimental to the seismic performance of the bridge.

- ***Beyond 40%ULS_{IL3}, lateral spreading and cyclic displacement would result in the piles and pile caps being loaded by the non-liquefied soil 'crust'.***

Displacement of the soil surrounding the bridge foundations due to lateral spread and/or cyclic displacement has the potential to result in a significant change in the seismic response of the structure depending on the



estimated level of displacement. This change is likely to be detrimental and could be significantly detrimental to the seismic performance of the bridge.

4.2 2023 Geotechnical Evaluation

Tonkin + Taylor provided a more in-depth investigation into the anticipated geotechnical performance under earthquake loading in their Letter Report *Desktop Geotechnical Seismic Assessment, 2023*. The findings of this report repeat and expand on the findings of their earlier assessment. A summary of these findings are outlined below, with more detail provided in subsequent parts of this section:

- Liquefaction is expected to be triggered in the reclamation fill (below ground water level) and beach deposit layers at 35-40%UL_{SL3}.
- The consequences of this liquefaction are anticipated to be:
 - Lateral Spreading in the order of hundreds of millimetres to meters. This has the potential to vary in magnitude across the footprint of the structure.
 - Cyclic displacement of the liquefied soil layers (and above) of up to 150mm
 - Reduced soil strength and stiffness (liquefied behaviour)
 - Free field settlements in the order of 100-200mm with associated sand boils
 - Negative skin friction on the foundations and a reduction in vertical geotechnical capacity.
- The seawall that underlays the eastern abutment and stair, and retains Jervois Quay, is anticipated to undergo displacements in the order of hundreds on millimetres if liquefaction is triggered.

A complete copy of the T+T report is available in Appendix B.

4.3 Pile Vertical Capacity

In their 2023 reporting, Tonkin + Taylor provided the following pile capacities in Table 1.

Table 1: Geotechnical pile capacities (Tonkin + Taylor, 2023)

Scenario	500mm Dia Franki Piles	275mm Square Piles
Non-liquefied	+2,500 kN / -1,350kN (uplift)	+600 kN / -200kN (uplift)
Liquefied	+2,150 kN / -1,000kN (uplift)	400 kN / -100kN (uplift)

4.4 Soil Properties, Liquefaction, Cyclic Displacement, and Lateral Spreading.

The 2023 Tonkin + Taylor report provides soil properties, liquefaction extents, cyclic ground displacement profiles and lateral spreading ground displacement profiles to be used in assessing the bridge. Refer to Appendix B for details on these.

4.4.1 Ground Profile and Liquefaction

The ground profile used for pile analysis is outlined in Table 2 for the liquefied and non-liquefied cases. The water table was taken to be at RL+0.2m.

Table 2: Soil properties used in L-Pile Analysis (Tonkin + Taylor, 2023)

Layer Description	Non-liquefied Case Properties	Liquefied Case Properties
Fill (Above water level) RL+2.0 to +0.2m	Soil Model: API Sand Eff. Density: 19kN/m ³ Friction Angle: 38°	
Fill and Beach Deposits RL+0.2 to -5.0m	Soil Model: API Sand Eff. Density: 9kN/m ³ Friction Angle: 33°	Soil Model: Soft Clay (Matlock) Eff. Density: 9kN/m ³ Undrained Cohesion: 5kPa (top), 12kPa (bottom)
Upper Alluvium RL -5.0 to -8.0m	Soil Model: API Sand Eff. Density: 9kN/m ³ Friction Angle: 32-36°	
Lower Alluvium RL -8.0m and below	Soil Model: API Sand Density: 9kN/m ³ Friction Angle: 36°	

4.4.2 Cyclic Displacement

The cyclic displacement profile of the ground increases linearly from 0mm displacement at the bottom of the *Fill and Beach Deposits*, up to **150mm** at the top of the *Fill and Beach Deposits* layer, which it remains at until the ground surface.

4.4.3 Lateral Spreading

The lateral spreading ground displacement profile of the ground increases linearly from 0mm displacement at the bottom of the *Fill and Beach Deposits*, up to **2.0m** at 0.5m from the bottom of the *Fill and Beach Deposits* layer, which it remains at until the ground surface.

4.5 Ground Condition Scenarios

A total of six ground condition scenarios have been considered in the assessment with the intention to capture the ground behaviour as earthquake shaking progresses. These are outlined below:

- 1a: Start of Earthquake, No liquefaction. 100% of inertial earthquake loading.
- 1b: Zones of liquefaction triggered across the site. No lateral ground movement. 100% of inertial earthquake loading.
- 2: Liquefaction triggered, no ground movement. 100% of inertial earthquake loading.
- 3: Cyclic displacement occurs (liquefied). 80% of inertial earthquake loading.
- 4a: Lateral spreading occurs (towards the end of shaking or after shaking), 25% of inertial earthquake loading.
- 4b: Lateral spreading occurs (towards the end of shaking or after shaking), spreading is located only near to the seawall, 25% of inertial earthquake loading.

4.6 2023 Geotechnical Evaluation of the Seawall

Tonkin + Taylor have completed the stability assessment of the seawall and conclude the following:

- The seawall becomes unstable in an earthquake event triggering liquefaction.
- Significant displacements can be expected at 35 to 40% ULS(IL3, 2016 Module 1) shaking.



5 ASSESSMENT PARAMETERS

5.1 Loading

5.1.1 Seismic Loading

Seismic loading is determined in accordance with NZS1170.5.

Table 3: Seismic Demand Parameters

Parameter	Value
Design Life	50 years
Importance Level	IL3 (*see section 5.1.2)
Earthquake Return Period (ULS)	1/1000 years
Return Period Factor, R	R = 1.3
Seismic Subsoil Class	Class D (TONKIN + TAYLOR Report,2018)
Zone Factor, Z	0.40
Distance to Major Fault, D	1.2 km to Wellington Fault
Structural Performance Factor, S _p	1.0
Structural Ductility, μ	1.0(In elastic model) 1.0 (for damping calculations in pushover of pile groups)
Structural Period, T	T _{E-W} = 0.35s T _{N-S} = 0.25s

The structural period was determined as being less than 0.5 seconds in both directions, and so the 100%NBS elastic acceleration for this bridge is 1.56g in both directions.

5.1.2 Discussion on Importance Level

A case could be argued that the bridge need only consider a 1/500-year earthquake, taking a compliance pathway through the Waka Kotahi NZ Transport Agency Bridge Manual (NZTA Bridge Manual). This would result in a reduction in the design seismic load by 23%, and so an improvement in the assessment score by 30% (of the %NBS). However, the function of this bridge differs from a typical footbridge, and with the potential for more than 300 people to congregate on the bridge for events. When this is considered, an Importance Level of 3 (IL3) is the most appropriate categorisation.

5.1.3 Load Combination

This loading is applied in combination with the seismic weight in accordance with Load Case 5A in the NZTA Bridge Manual 'Extreme – Seismic'.

5.1.4 Seismic Weight

The seismic weight of the bridge is determined in accordance with the NZTA Bridge Manual which is defined as: *"total dead weight plus superimposed dead weight (force units) assumed to participate in seismic movements in the direction being considered"*.

This means that there is not a component of the live load on the bridge considered (other than the actual SDL) for the seismic loading as would typically be considered for a building in NZS1170.5.

5.2 Material Properties

The material properties used for assessment are the probable values. These are based on the adjusted grade values taken from the guidelines. The materials are assumed to be in accordance with the material standard in force at the time of design / construction.

5.2.1 Reinforcing Steel

Table 4: Material Properties - Reinforcing Steel

Type	Design $f_{s,y}$	Prob. $f_{s,y}$	Prob. $f_{s,u}$	Prob. ϵ_{su}	Prob. $\phi_o = f_o/f_y$
Main Bars (DXX)	300 MPa	324 MPa	475 MPa	0.15	1.25
Main Bars (HDXX)	430 MPa	464 MPa	640 MPa	0.12	1.25
Stirrups and Ties	300 MPa	324 MPa	475 MPa	0.15	1.25
665 Mesh (Cold drawn)	600 MPa	600 MPa	720 MPa	0.015	1.2
Reid Bar	500 MPa	540 MPa	680 MPa	0.10	1.25

All steel reinforcing is considered to have an elastic modulus of $E_s = 200,000$ MPa.

5.2.2 Concrete

Concrete strength values were unable to be found on the design documentation. However, values were noted by Spencer Holmes as being in the designer's calculations, and thus these are used as the design values.

Table 5: Material Properties - Concrete

Type	Design f'_c	Prob. f'_c	Prob. E_c
Precast Beams	35 MPa	52.5 MPa	34,055 MPa
In-situ Frames	35 MPa	52.5 MPa	34,055 MPa
Piles	40 MPa	60.0 MPa	36,406 MPa

All concrete elements are assumed to be 'cracked' and so their stiffness is taken as $0.5E_oI_g$.

5.2.3 Structural Steel

Table 6: Material Properties - Structural Steel

Type	Design Strength	Assessment Strength
Hollow Sections	350 MPa	385 MPa
Plate	300 MPa	345 MPa
Bolts / Threaded Rod	G8.8	G8.8

All structural steel is considered to have an elastic modulus of $E_s = 200,000$ MPa.

6 ASSESSMENT METHODOLOGY

Our methodology is briefly summarised below.

- Review of geotechnical appraisal of the soil properties and liquefaction potential at the site based on existing available information.
- Review of the available structural drawings (Design and Strengthening) to identify the main structural elements and any apparent “structural weaknesses” of the structure.
- Selection of appropriate material properties, member properties and determination of structural element probable capacities in accordance with the C5 & C6 Guidelines.
- Calculation of the expected seismic actions on the structure following the current New Zealand loading standards (NZS 1170.5).
- Development of a 3D analytical model of the bridge that accounts for appropriate mass and stiffness distributions.
- Analysis of piles under various geotechnical conditions and loading scenarios.
- Assess the connections and the capacity of discrete elements/details.
- An overall evaluation of the seismic capacity of the structure.
- Determination of the likely earthquake rating of the structure compared with an equivalent new structure at the site based on the structural weaknesses identified, our calculations, and our engineering judgment.

6.1 Structural Model

The structural analysis software package Space Gass was used to model the bridge and associated abutment structures as is shown in Figure 5. The model incorporated the pile head springs provided in the Tonkin + Taylor report in 2018. From this the elastic response of the bridge under seismic loading was able to be determined.

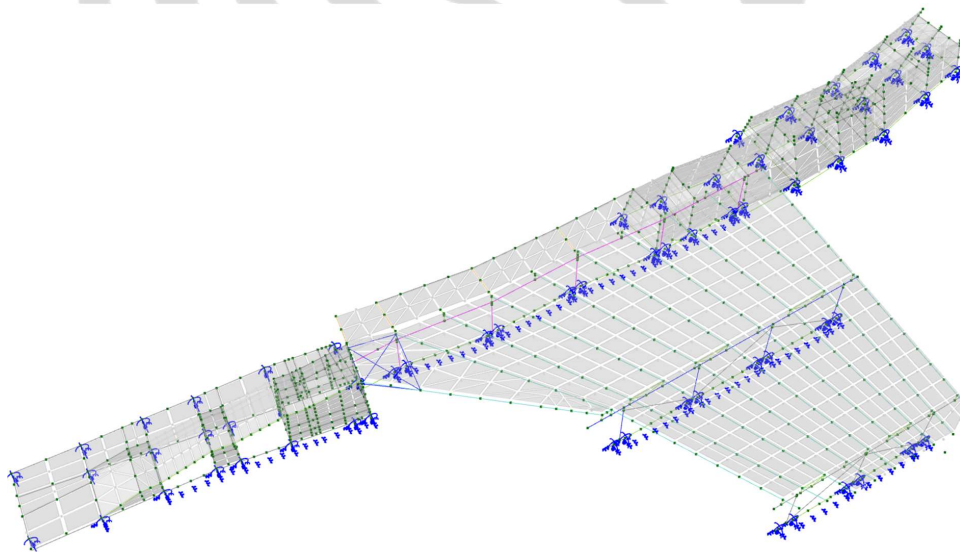


Figure 5: Space Gass Model of the City to Sea Bridge

6.1.1 Discussion on Soil Springs

Figure 6 shows the table of soil springs provided to Spencer Holmes by Tonkin + Taylor in their 2018 report and were used in the structural model of the bridge. These springs were provided for the “no liquefaction” ground condition, which is valid for ground accelerations up to 0.20g. It is also generally accepted that liquefaction and its effects develop as the earthquake progresses and are not considered concurrently with maximum earthquake inertial loading, though this may not always be the case.

Spring Stiffness Summary - City to Sea Bridge

Pile (and fixity assumption)	Lateral		Vertical
	Spring Y (kN/m) Limit Displacement, Load (mm, kN)	Spring X (kN/m) Limit Displacement, Load (mm, kN)	Spring Z (kN/m)
2x 500mm dia Fixed head - x direction Pinned head - y direction	16700 kN/m (30mm, 500kN)	70000 kN/m (10mm, 700kN)	600000 kN/m
1x 500mm dia Fixed head both directions	35000 kN/m (10mm, 350kN)	35000 kN/m (10mm, 350kN)	300000 kN/m
1x 275mm square RC Fixed head both directions	11100 kN/m (9mm, 100kN)	11100 kN/m (9mm, 100kN)	300000 kN/m

Figure 6: Table from Tonkin + Taylor - Pile Spring Email/Report to Spencer Holmes in 2018.

The pile head springs would be expected to reasonably capture the elastic behaviour of the piles and are a suitable representation of the foundation system provided they do not exceed their load/displacement limits noted. This is the case when the seismic load is low, and/or ductile mechanisms within the structure do not form within the piles. However, when plastic behaviour is anticipated this unable to be captured.

Pile head fixity

Springs are provided by Tonkin + Taylor for both ‘fixed-head’ and ‘pinned-head’ piles. The fixed head condition is appropriate where the piles are connected to stiff super-structure elements e.g., when considering piles bending in the framing direction of ground beams. The pinned head condition is appropriate where the superstructure is not able to provide any rotational restraint. For intermediate conditions, e.g., where piles tie into elements that cantilever, the pile head should be between fixed and pinned. The interaction of flexure and shear in these locations does not seem to have been accounted for. This issue affects pier and bridge abutment piles loaded in the east-west direction. The inaccuracies associated with this are not expected to be significant as the relative flexibility of the connecting elements means that they are not likely to contribute significantly to global resistance anyway.

Piles over water

We also note that the springs provided by Tonkin + Taylor do not consider the piles that are positioned over water in the lagoon. This affects the northern abutment where 1No. 500mm diameter pile (out of 5No.) and 11No. 275mm square piles (out of 15No.) are over water. The lack of soil support over the upper 2-5m will minimise the lateral stiffness of these piles significantly, to the point where they are unlikely to provide significant lateral capacity. In light of this, the lateral springs of these piles have been ignored in the assessment.

6.2 Pile Modelling

The limitations of the elastic global model for capturing the pile behaviour led to a specific analysis of the piles in isolation being undertaken. Pile modelling is undertaken within the pile analysis software package LPILE. This allows for a realistic representation of non-linear soil properties, along with a realistic representation of non-linear reinforced concrete pile properties.

The strengthening work undertaken in 2010 strengthened and significantly stiffened the above ground structure. This leads to structural deformations being primarily focused in the piles, particularly in the north-south direction. Hence, particular attention needed to be paid to the performance of these foundations.

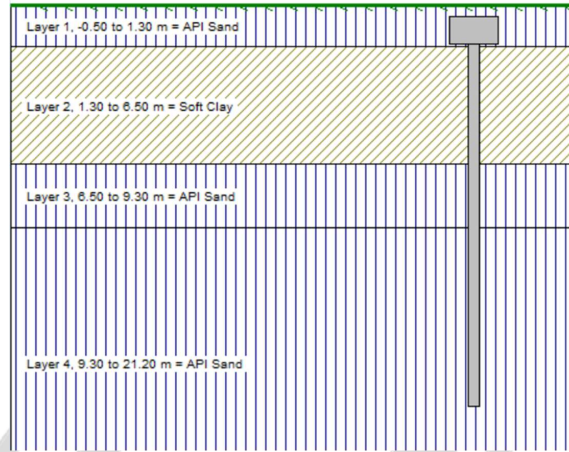


Figure 7: Screenshot of the LPILE model under liquefied conditions.

Analysis of the piles is undertaken with some assumption of the restraint provided to the pile head. Generally, this was assumed to be 'rigid' where the pile head is linked by ground beams. In reality, there will be some flexibility in the ground beams, leading to a more flexible response of the foundations than was calculated. This introduces a small level of conservatism into the approach for modelling of the piles.

6.3 Pushover Analysis of the Foundations

With the pile modelling indicating that the likely plastic mechanism would occur in the piles, and that this would be a ductile (flexural) mechanism, rather than a brittle (shear) mechanism, a simplistic pushover of the pile group was undertaken. This assumes a rigid behaviour of the structure above, and that displacements at the pile head of all piles are similar as the structure displaces. This assumption is reasonably realistic of shaking of the bridge in the north-south direction, where there are many walls and triangulated braces functioning. In the east-west it is less representative, though does give an insight into the potential behaviour of the bridge.

A non-linear pushover analysis of the entire structure may be able to capture this behaviour with greater accuracy. However, given the findings of this analysis and of the remainder of the assessment, the additional value of a more demanding assessment was determined to not be justified. It is not anticipated that this analysis would substantially change the outcomes of this assessment.

6.4 Element Analysis

6.4.1 Concrete Piles and Columns

The flexural, shear and displacement capacity of the piles, columns, walls and beams is assessed to section C5.5 of the Detailed Seismic Assessment guidelines.

6.4.2 Pile Analysis

Push over analysis of the piles was used to determine the likely failure mechanism, and to determine their displacement capacity. The displacement capacity was determined at the pile head displacement at which either; shear failure occurred, or the plastic hinge rotation capacity was exceeded. These were used to determine the pile behaviour under inertial seismic loads from the superstructure.

When cyclic displacement and lateral spreading were considered, the ground displacement profile was imposed onto the soil springs in LPILE and the level of elastic and inelastic deformation in the pile determined.

6.4.3 Pile Head Joint

A review of structural detailing at the pile heads was undertaken. This focused particularly on the piles below the ramp and stair walls, which carry the majority of seismic inertia in the east-west direction. The review found that:

- For the 275 mm square precast piles there was no evidence of specific joint reinforcement.
- For the 500 mm diameter piles, the drawings do not show evidence that the pile reinforcement is terminated with hooks. Although these bars have sufficient development length to develop the bar's strength at the pile head, they provide minimal contribution to the transfer of internal joint loads.

Based on this review the evaluation identified that the pile head joints were critical elements which govern the lateral structural capacity of the bridge, noting that this failure mode only occurs once liquefaction is triggered.

6.4.4 Steel Elements (Retrofit)

The structural steel elements that have been retrofitted to the structure in 2010 are assessed in accordance with the C6 section of the assessment guidelines for structural steel buildings.

6.5 Global Evaluation

The evaluation of the global performance of the bridge is based on the hierarchy of failure within the structure. Where elements exceed their capacity, the type of failure is reviewed to determine if it is ductile or non-ductile.

Where failure is considered ductile then the displacement capacity of the element is evaluated to determine the displacement at which it will no longer be able to provide the design resistance or have its vertical load carrying capacity compromised.

Where failure is considered non-ductile, the function of the element is evaluated. If the element is found to be critical to the vertical load carrying capacity, then this is considered to govern the global capacity. If the element is not critical to the vertical load carrying capacity then its contribution to the lateral capacity is disregarded and evaluation of the remainder of the structure is completed.



7 DETAILED SEISMIC ASSESSMENT OUTCOMES

7.1 Assessment Status

The findings of this assessment are currently in the finalised status.

7.2 Assessment Outcomes

7.2.1 Overall %NBS Rating

The assessment has been completed based on the follow scope limitations:

- The assessment is completed to the *Technical proposal to revise the Engineering Assessment Guidelines*, for C5 of the Guidelines, and hence is not suitable for the legal determination of Earthquake-prone Building status. However, it is to the current best practice.
- The assessment focuses on the primary structure and currently does not include non-structural elements.

The seismic rating score is **20%NBS_{IL3}**.

7.2.2 Seismic Grade and Relative Risk

The seismic assessment the City to Sea Bridge indicates an earthquake rating of **20%NBS (IL3)** to Engineering Assessments, dated July 2017 (Engineering Assessment Guidelines).

Based on this outcome, the structure is a **Grade D** building following the Engineering Assessment Guidelines building grading scheme. Grade D buildings represent a life-safety risk to occupants comparable to 10-25 times that expected for a new building, indicating a high relative risk exposure.

The New Building Standard requires an IL3 building to have a low probability of collapse in a 1 in 1000-year "design level" earthquake (i.e., an earthquake with a probability of exceedance of approximately 5% over the assumed 50-year design life of a building).

Table 7: Relative Earthquake Risk

Building Grade	% New Building Strength	Approximate Relative Risk to a New Building	Relative Risk Description
A+	>100%	<1	Low risk
A	80% -100%	1-2 times	Low risk
B	67% - 80%	2-5 times	Low to Medium risk
C	33% - 67%	5-10 times	Medium risk
D	20% - 33%	10-25 times	High risk
E	<20%	>25 times	Very high risk

A building with an earthquake rating less than 34%NBS fulfils one of the requirements for the Territorial Authority to consider it to be an Earthquake-prone Building (EPB) in terms of the Building Act 2004. A building rating less than 67%NBS is considered as an Earthquake Risk Building (ERB) by the New Zealand Society for Earthquake Engineering.

The City to Sea Bridge is therefore considered as an Earthquake Risk Building and also fulfils one of the criteria that could categorise it as an Earthquake-prone Building by Wellington City Council.

7.2.3 Critical Structural Weaknesses

The evaluation shows that the critical structural weaknesses are:

City to Sea Bridge – Detailed Seismic Assessment

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- Lateral Spreading on the order of hundreds of millimetres is anticipated to result in the vertical load carrying capacity of the bridge piles to become compromised. This level of lateral spreading is anticipated to occur at 35-40%ULS_{IL3} when liquefaction is triggered, and the adjacent seawall becomes unstable. This step-change in the geotechnical behaviour, and associated loss of vertical capacity introduces a 0.5 step-change factor, reducing the pile foundation to 20%ULS_{IL3}.
- The piles exhibit critical structural weaknesses in their joints with the ground beams above. The smaller 275mm square piles govern this with failure anticipated at 25%ULS_{IL3}, with the larger 500mm diameter circular piles reaching their capacity at 30%ULS_{IL3}. The critical piles are generally under the ramp and stair.

7.2.4 Element Evaluation Outcomes

A summary of the evaluation outcomes of various element types is shown in the table below.

Table 8 Summary of Results by Element

Element	N-S Direction Score	E-W Direction Score
Geotechnical Effects – Liquefaction Triggered	40%ULS _{IL3}	40%ULS _{IL3}
Geotechnical Effects – Liquefaction Structure Response (Joint Failure)	15%NBS*	10%NBS*
Geotechnical Effects – Liquefaction + Cyclic Displacement (150mm)	Pile lateral capacity reached at ~80mm cyclic displacement (Note that Joint failure occurs prior to this)	
Geotechnical Effects – Liquefaction + Lateral Displacement (Expected displacement 2.0m)	Pile vertical capacity lost at ~115mm lateral spread, Result = Step-Change in Failure => 20%NBS Pier Column displacement capacity reached at ~300mm of differential lateral spread displacement	
500mm Diameter Concrete Piles - Lateral	65%NBS (Liquefied) 100%NBS (Non-Liquefied)	50%NBS (Liquefied) 75%NBS (Non-Liquefied)
275mm Square Concrete Piles - Lateral	100%NBS (Liquefied) 100%NBS (Non-Liquefied)	100%NBS (Liquefied) 100%NBS (Non-Liquefied)
500mm Diameter Concrete Piles – Axial Geotechnical	100%NBS Compression 75%NBS uplift	
275mm Square Concrete Piles – Axial Geotechnical	100%NBS Compression 70%NBS Uplift	
500mm Dia Pile Head Joints	65%NBS	30%NBS
275mm Square Pile Head Joints	55%NBS	25%NBS
Ground Beams	100%NBS	100%NBS
Pier Frame Beams	100%NBS	100%NBS
Columns	100%NBS	100%NBS
Ramp Walls	70%NBS	90%NBS
Stair Walls	100%NBS	45%NBS
Deck Diaphragm (Topping)	100%NBS	80%NBS
Deck Diaphragm (Strengthening – Plan Brace to stair)	100%NBS	100%NBS
Deck Diaphragm (Strengthening – Ties to ramp)	80%NBS	45%NBS

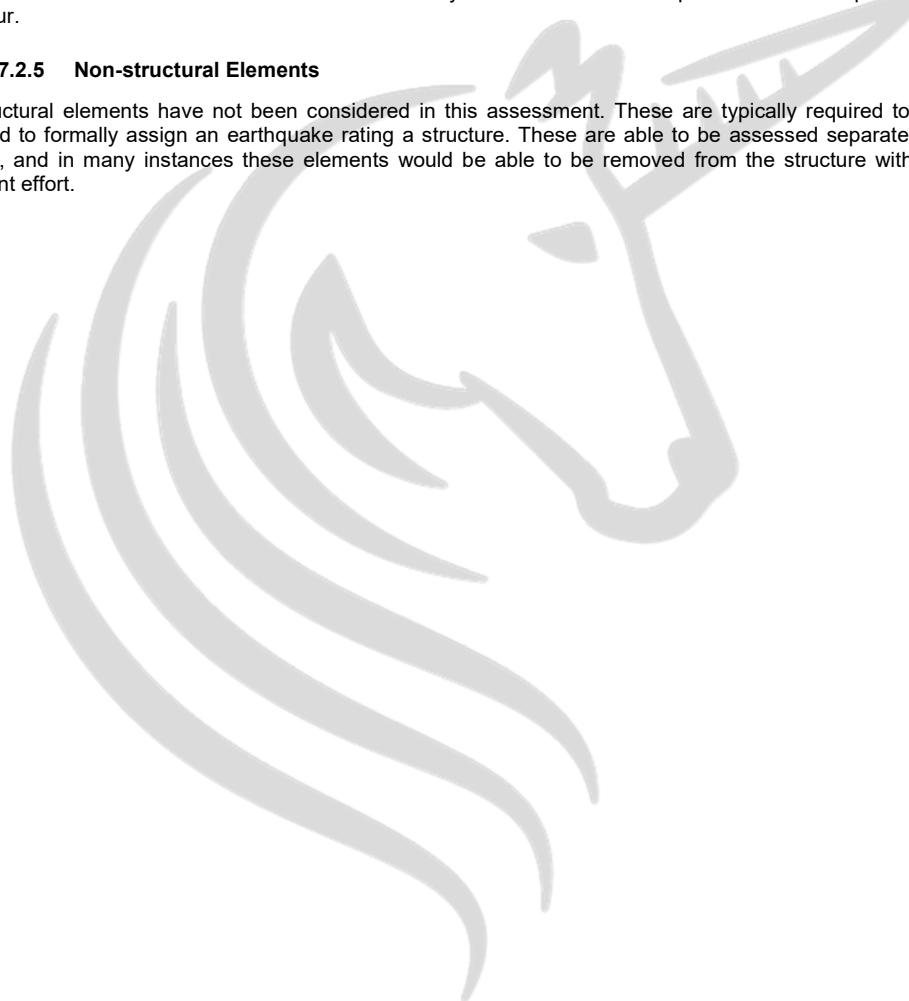


Element	N-S Direction Score	E-W Direction Score
Retrofitted Pier Diagonal Braces	80%NBS	N/A
Retrofitted Pier Frame Braces	80%NBS	N/A

*Note that the %NBS for the structural behaviour under liquefied conditions, requires liquefied conditions to be triggered which is at a %NBS_{IL3} higher than is noted for this case. Hence, this situation does not govern the score of the structure but does indicate the sensitivity of the structure to liquefaction and step-change behaviour.

7.2.5 Non-structural Elements

Non-structural elements have not been considered in this assessment. These are typically required to be assessed to formally assign an earthquake rating a structure. These are able to be assessed separately if required, and in many instances these elements would be able to be removed from the structure without significant effort.



8 RECOMMENDATIONS

The bridge has had several critical structural weaknesses identified through this assessment process. These weaknesses expose the public to a high relative risk associated with earthquake hazards. It is recommended that steps be taken by council to either; remove this risk, through demolition of the bridge, develop a strengthening scheme to achieve >67%NBS, or implement alternate risk mitigation measures.

Option 1 – Demolition

Demolition of the bridge would eliminate the earthquake risk posed by the bridge. It would also remove an asset the provides significant public utility. It would cause disruption to Jervois Quay while the demolition was taking place, but this would be relatively brief.

Option 2 – Strengthening

Strengthening of the bridge to >67%NBS would potentially involve:

- Extensive ground improvements of the immediate area around the bridge and its approaches. (Refer to geotechnical letter)
- Strengthening or replacement of the existing seawall (Refer to geotechnical letter)
- Additional foundations
- Strengthening of the existing pile head to ground beam connections under the ramp and stair (potentially elsewhere also).
- Strengthening of the diaphragm connections to the existing ramp
- Strengthening of the walls at the stairs
- Likely other locations that could now be subjected to increased loading as a result of the strengthening works.

Some of these strengthening elements would not be required if a lesser %NBS was targeted.

Development of a strengthening scheme would require extensive design work, which in turn would likely be accompanied by extensive and costly construction work. Works on the structure may be able to be staged in a way to maintain vehicle flow below the existing bridge. However, ground improvement and foundation work will likely require portions of Jervois Quay to be closed while ground works are completed, which could be for an extended period.

It should also be considered that the bridge is approximately 30 years old, leaving ~20 years remaining of its nominal design life. The strengthening works should not be expected to extend this life or reduce future maintenance requirements of the structure.

Option 3 – Risk Management

The primary purpose of Earthquake Prone Buildings system is to limit risk to life safety risk in moderate earthquakes. Recent guidance by MBIE² provides a decision-making framework for owners of buildings with low seismic assessment scores. This guidance stresses that a low score does not mean that a building must be vacated (or demolished for the case of the bridge). Instead, a Risk Assessment considering the risk to life based on expected performance can be undertaken and mitigation measures put in place. As an example, limiting stationary cars below the bridge by installing traffic lights may be an option to mitigate some of the risk associated with potential failure. This Detailed Seismic Assessment would form one of the inputs to such a Risk Assessment.

Hoffcon are not in a position to make a recommendation to the Wellington City Council on the direction that should be taken with regard to the future of the bridge.

² Seismic Risk Guidance for Buildings – Using Seismic assessments in occupancy decision making, MBIE, 2022, <https://www.building.govt.nz/assets/Uploads/getting-started/seismic-risk-guidance-for-buildings.pdf>

APPENDIX A - DRAWINGS





CITY TO SEA BRIDGE

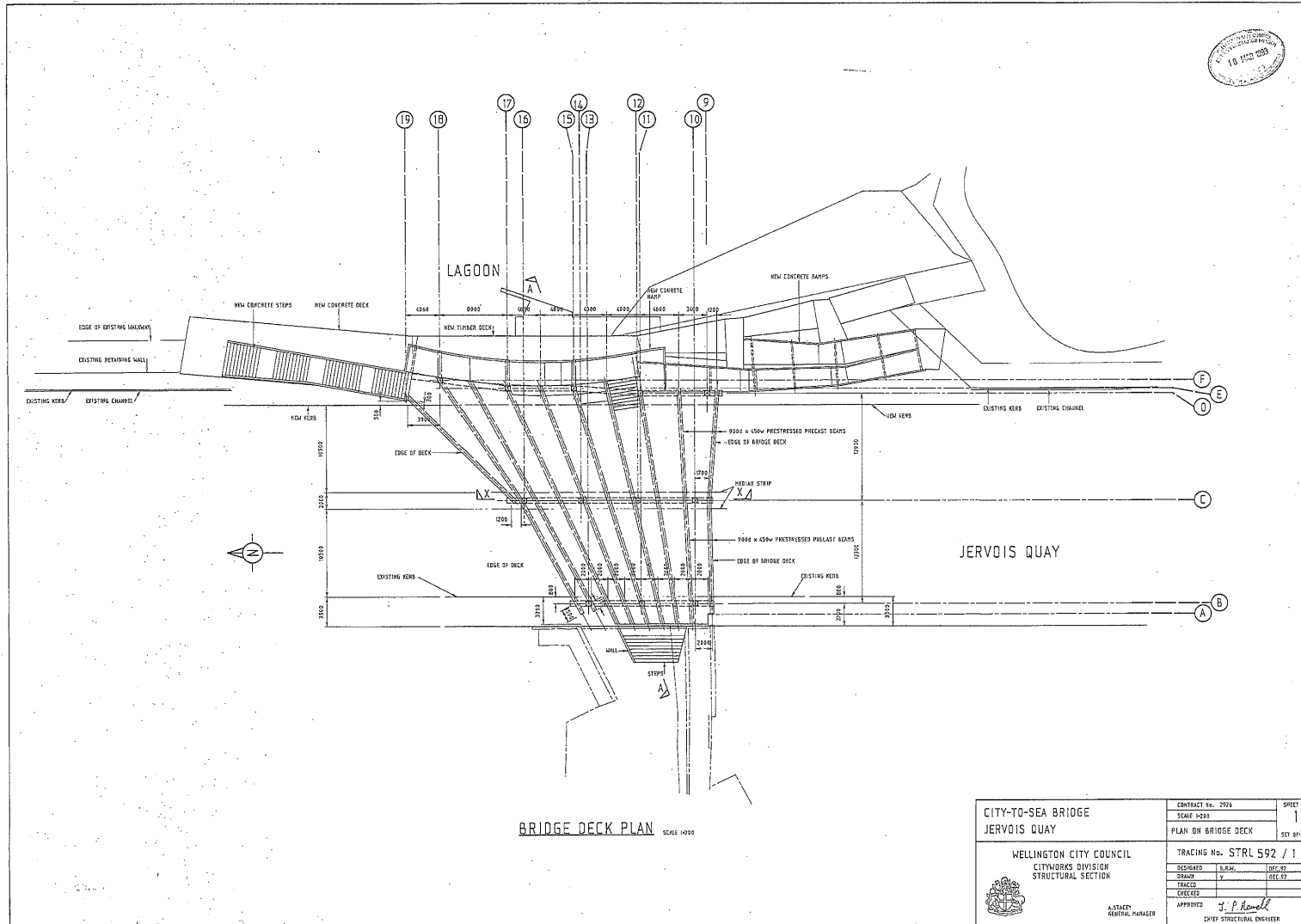
W.C.C. STRUCTURAL BRANCH

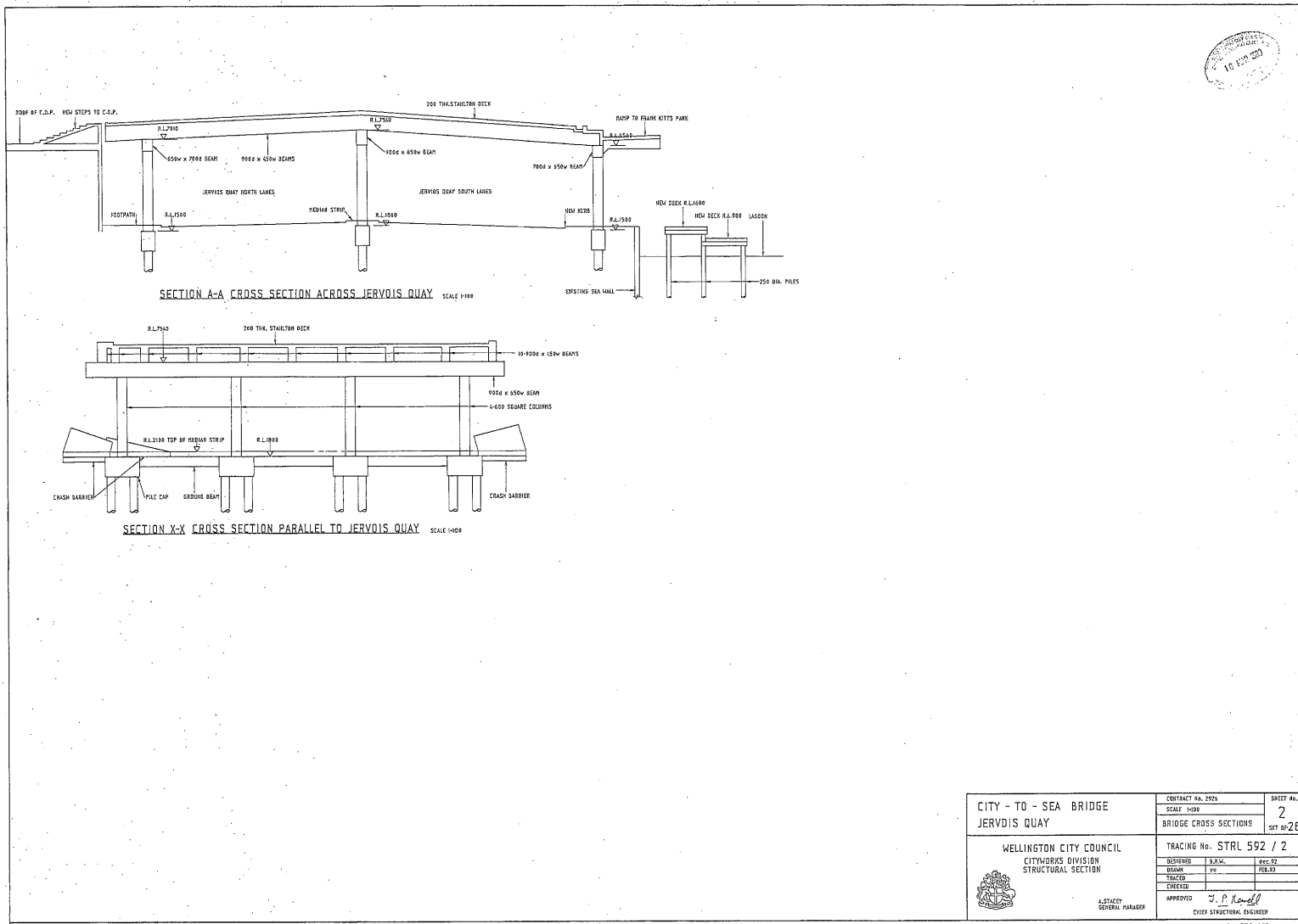
STRUCTURAL DRAWING INDEX


No.	<u>GENERAL</u>		<u>BRIDGE DECK</u>
STRL 592/1	GENERAL LAYOUT	15	DECK PLAN
2	BRIDGE SECTIONS	16	DECK SECTIONS AND DETAILS
3	DEMOLITION AND SERVICES	17	DECK REINFORCEMENT
	<u>FOUNDATIONS</u>	18	IN-SITU RAMP AND DECK
4	PILING PLAN AND DETAILS	19	IN-SITU RAMP AND DECK SECTIONS
5	BRIDGE FOUNDATION PLAN	20	IN-SITU RAMP AND DECK DETAILS
6	BRIDGE FOUNDATION DETAILS		<u>RAMP</u>
7	BRIDGE FOUNDATION DETAILS	21	RAMP DECK SLAB
8	RAMP FOUNDATIONS AND WALLS	22	RAMP WALLS
9	RAMP FOUNDATION DETAILS	23	RAMP WALLS
	<u>COLUMNS AND BEAMS</u>	24	LOWER RAMP DETAILS
10	COLUMNS AND BEAMS GRIDS B,C		<u>STAIRS</u>
11	COLUMNS AND BEAMS GRIDS D,E,F	25	NORTH STAIRS GROUND BEAMS AND LOWER DECK
12	COLUMN AND BEAM DETAILS GRIDS D,E,F	26	NORTH AND SOUTH STAIR DETAILS
13	PRECAST BEAMS I	27	NORTH STAIRS WALLS
14	PRECAST BEAMS II	28	TIMBER WALKWAY SUBSTRUCTURE

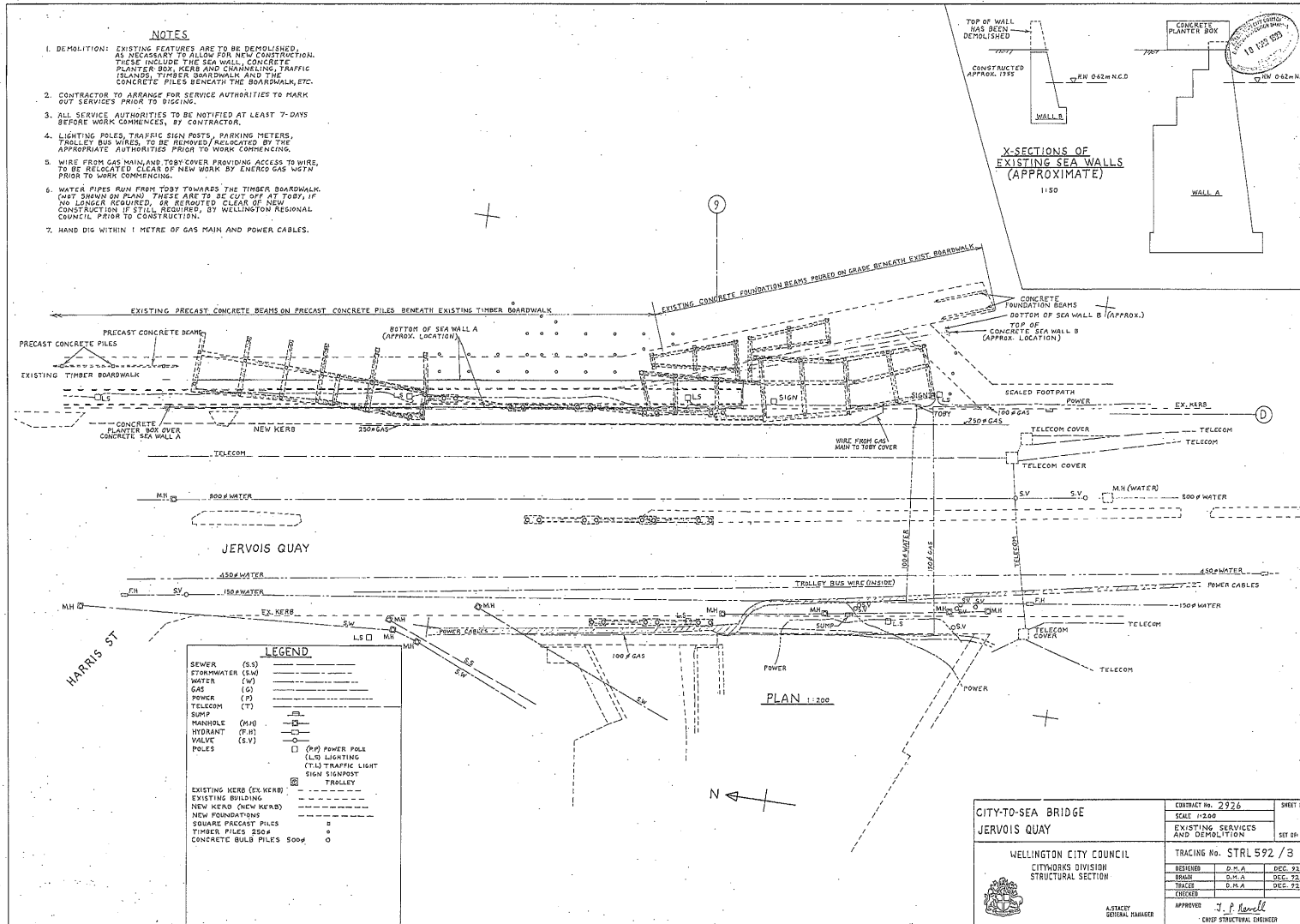
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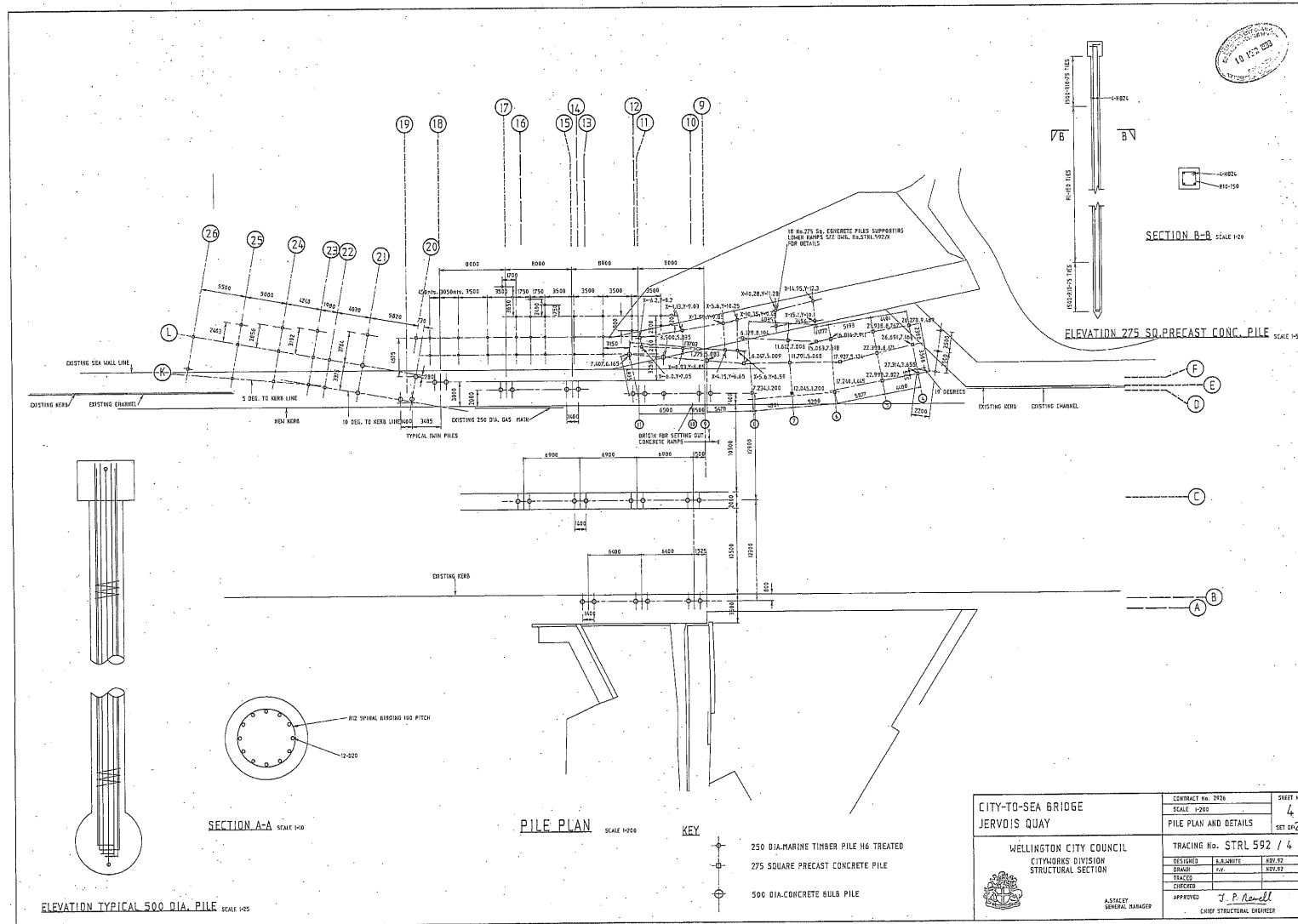
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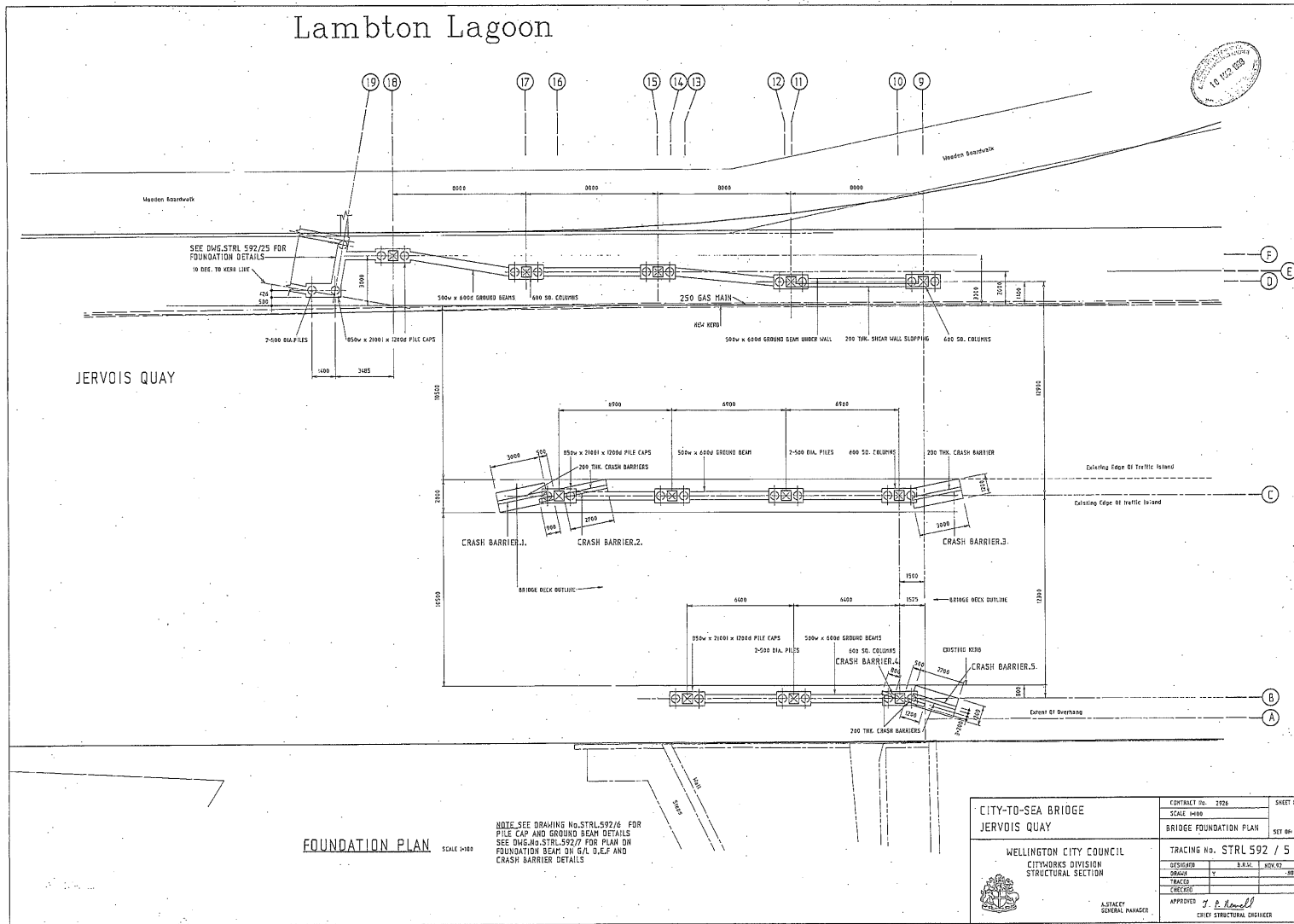


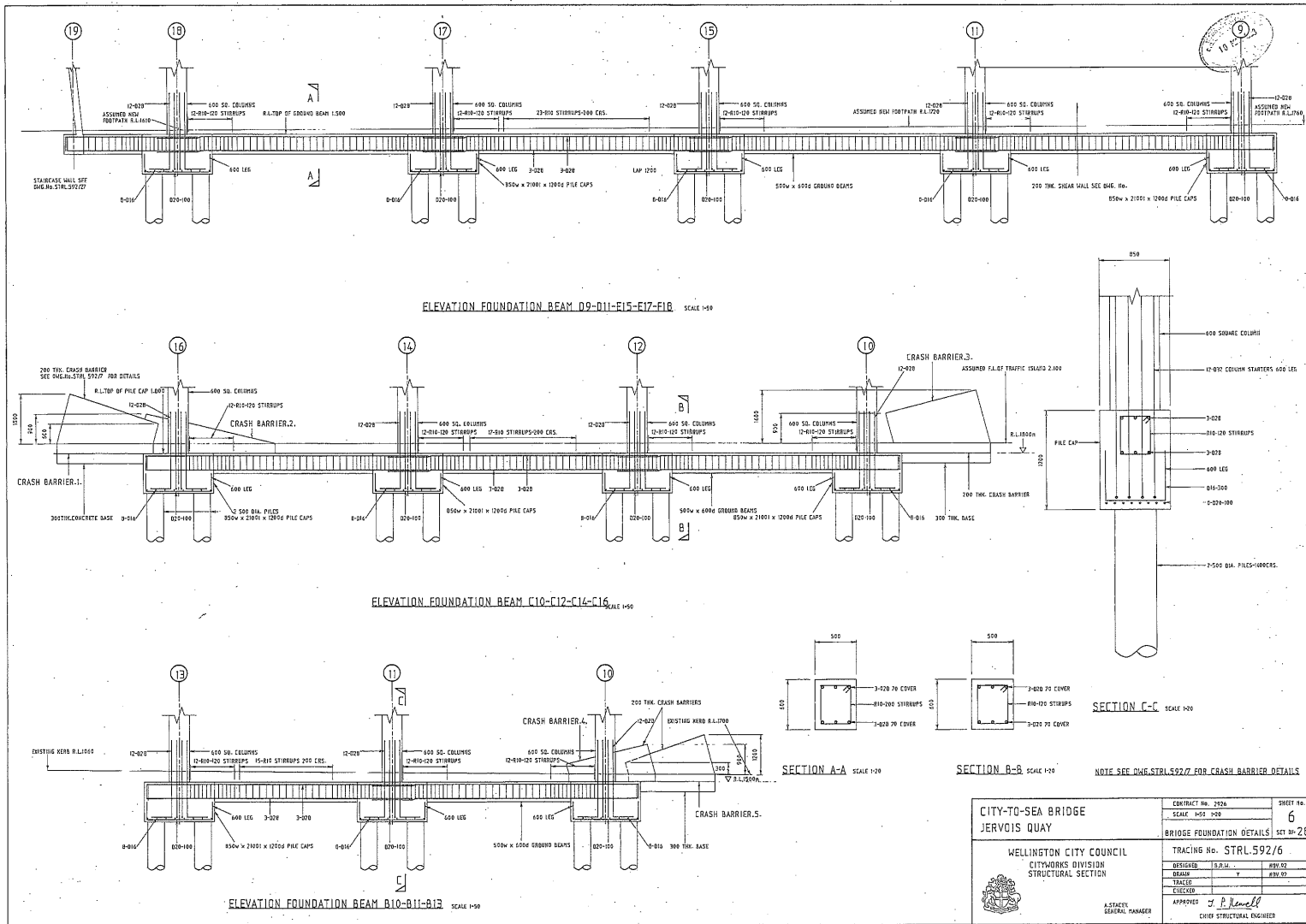
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	TRACING No. STRL 592 / 2	
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	DRAWN	Y.V. FEB 93
	CHECKED	
	APPROVED	<i>J. P. Newell</i> CHIEF STRUCTURAL ENGINEER
		22 FEB 2003






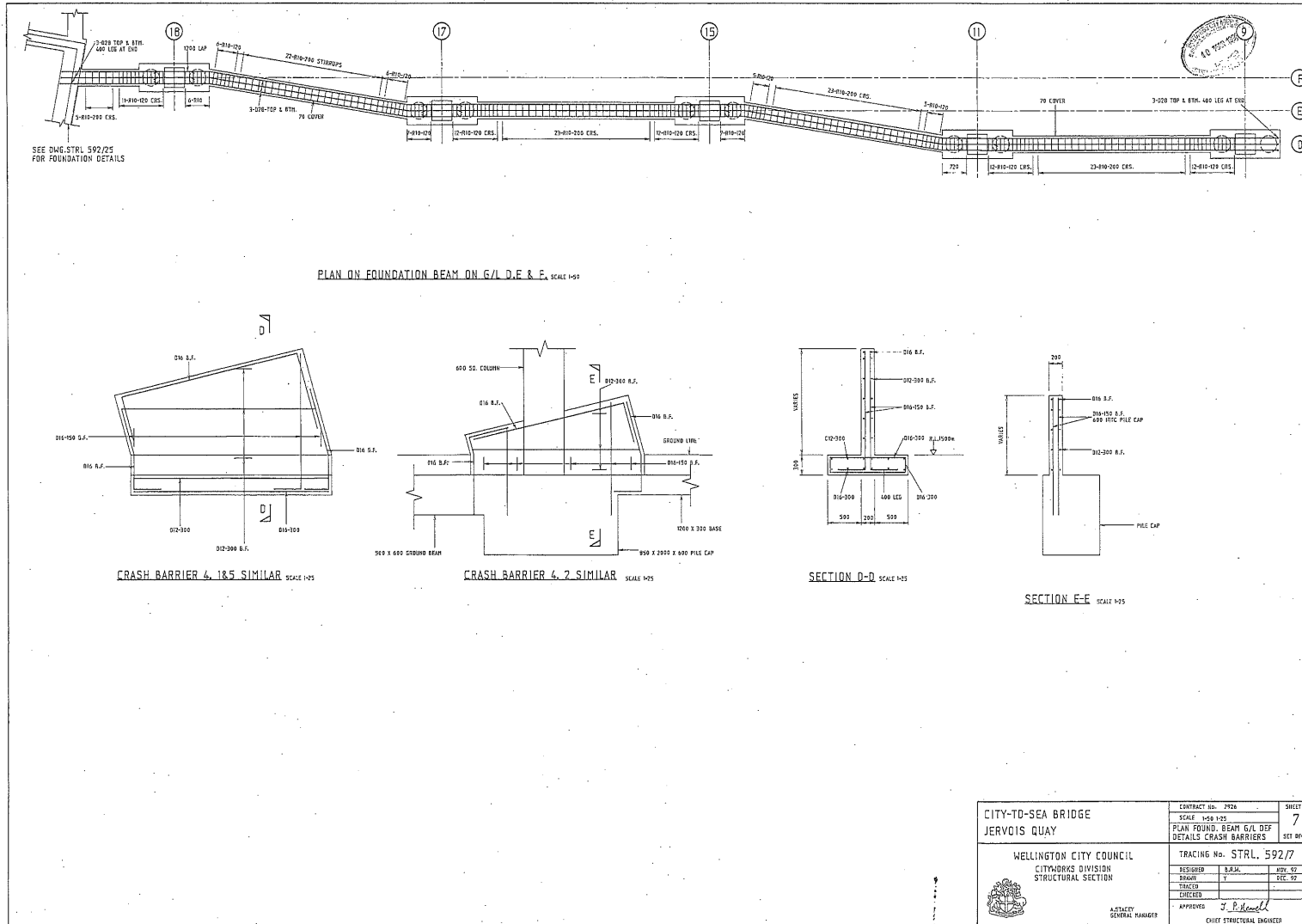
CITY-TO-SEA BRIDGE JERVOIS QUAY	CONTRACT No. 926	SHEET No.
	SCALE 1:200	4
WELLINGTON CITY COUNCIL CITY ENGINEERS DIVISION STRUCTURAL SECTION	TRACING No. STRL 592 / 4	PILE PLAN AND DETAILS
	DESIGNED K. J. WHITE	REVISED
A. J. TALLEY GENERAL MANAGER	TRACED P. W.	NOV 02
	CHECKED	
	APPROVED J. P. Rowell	CHEF STRUCTURAL ENGINEER

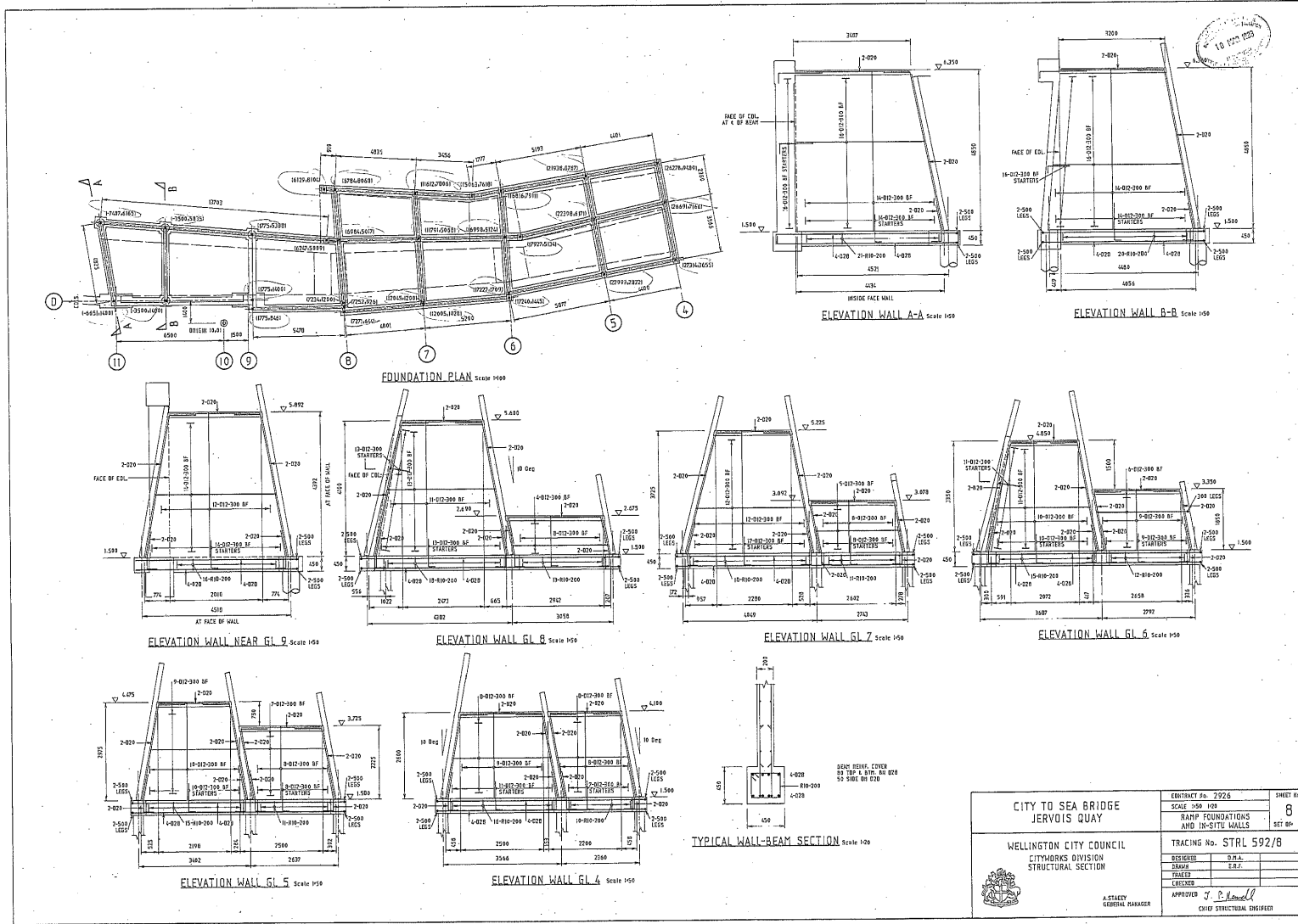





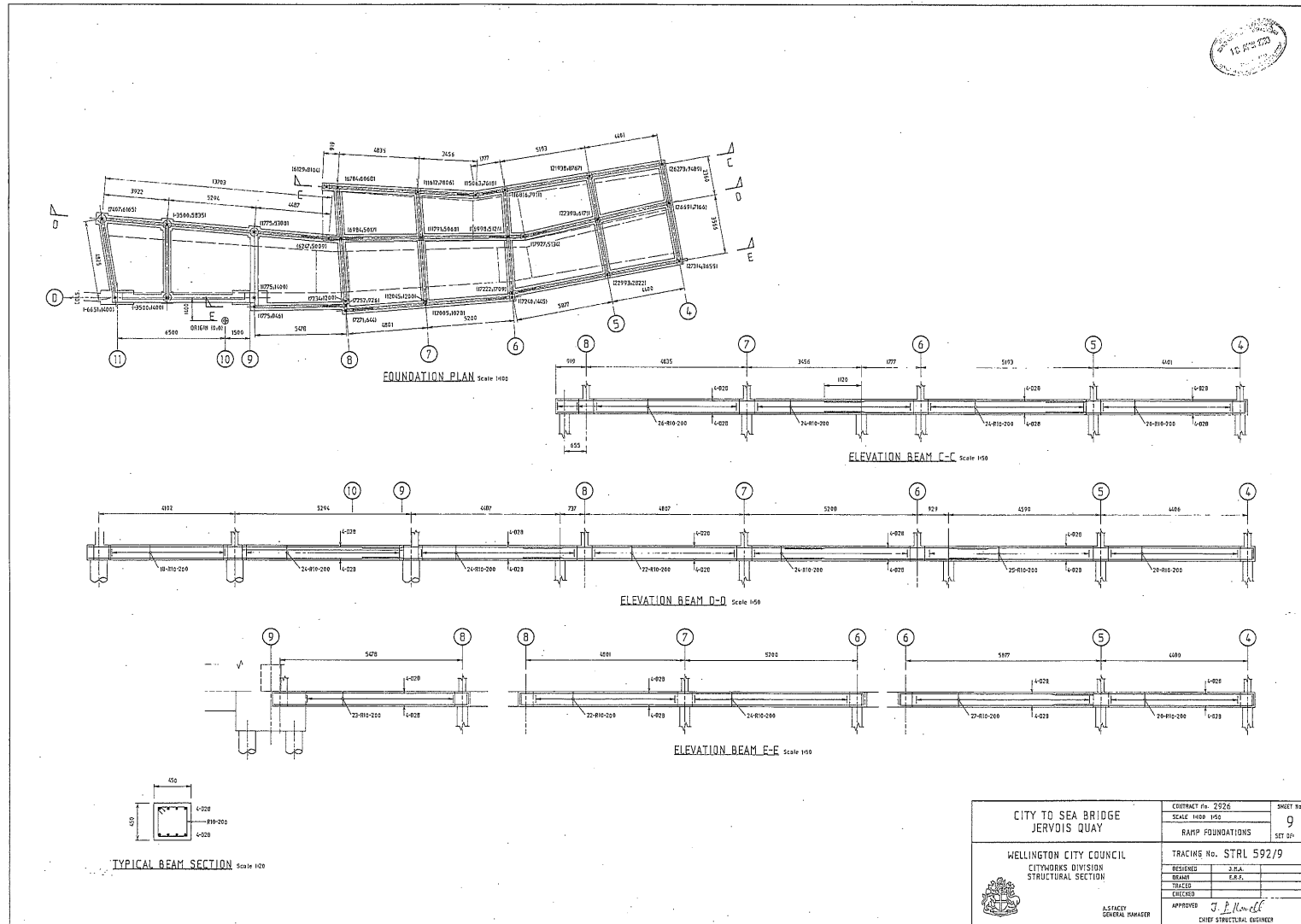
CITY-TO-SEA BRIDGE JERVOIS QUAY WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION 	CONTRACT No. 2924 SCALE: 1:50, 1:20 BRIDGE FOUNDATION DETAILS	SHEET No. 6 SET No. 2B
	TRACING No. STRL.592/6	
	APPROVED: <i>J.P. Newell</i> CHIEF STRUCTURAL ENGINEER	


23 FEB 1993

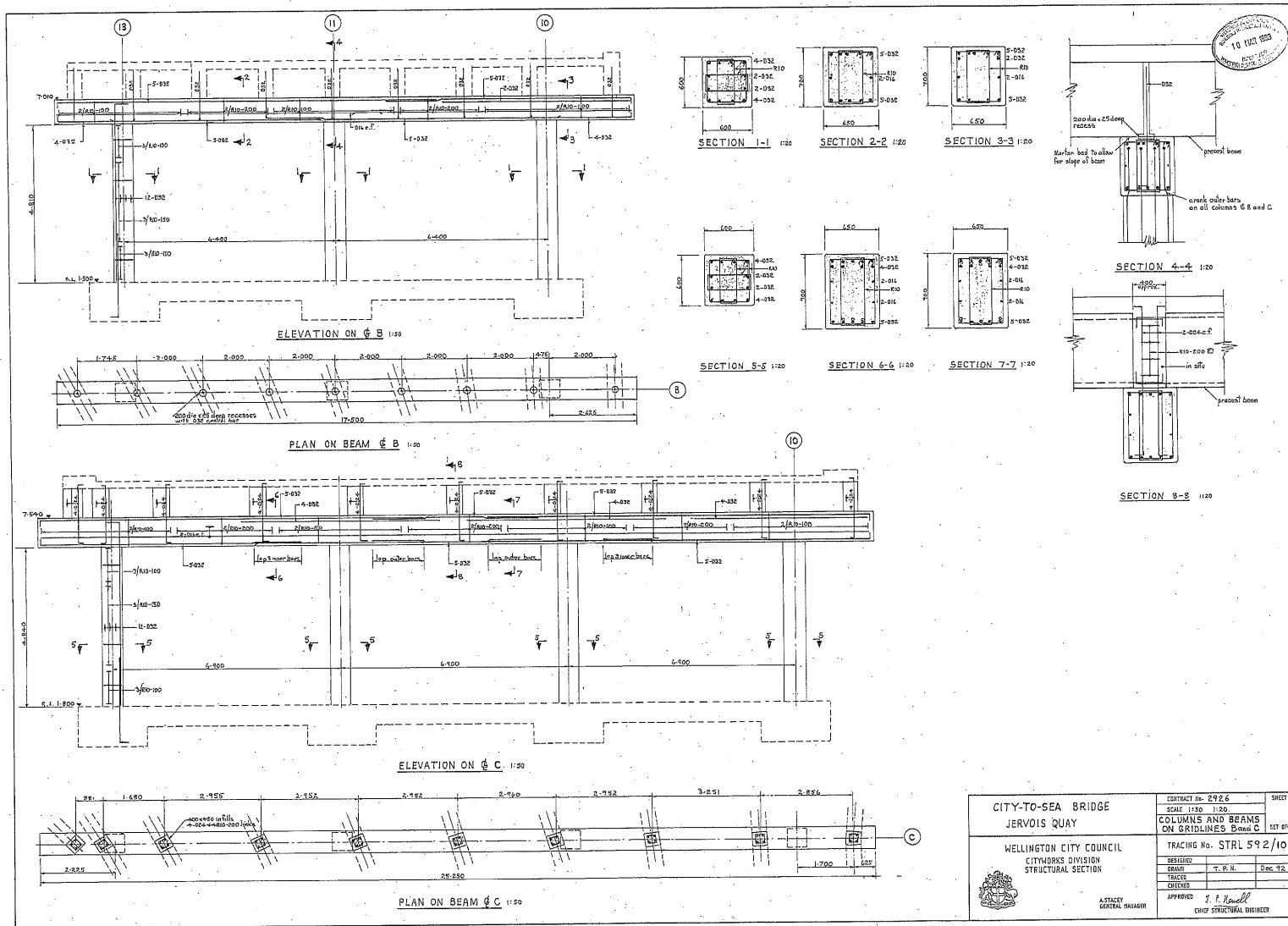





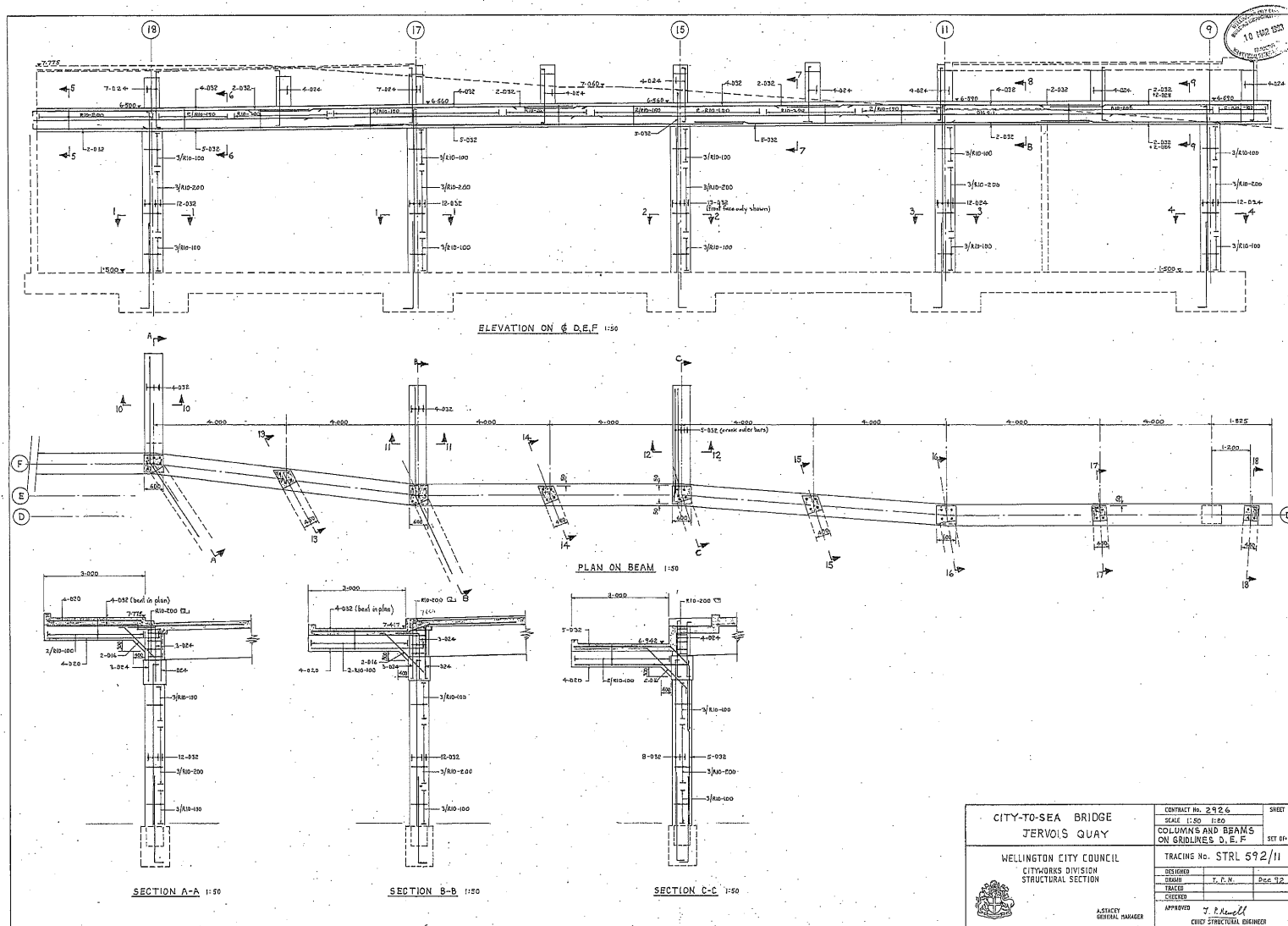
<p>CITY TO SEA BRIDGE JERVOIS QUAY</p> <p>WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION</p>  <p>A. STAEY GENERAL MANAGER</p>	<p>CONTRACT No. 2926</p> <p>SCALE 1/50 1/20</p>	<p>SHEET No. 8</p> <p>SET OF</p>
	<p>RAMP FOUNDATIONS AND IN-SITU WALLS</p>	<p>TRACING No. STRL 592/B</p>
	<p>DESIGNED BY DRAWN BY CHECKED BY</p>	<p>APPROVED BY CHIEF STRUCTURAL ENGINEER</p>
	<p>APPROVED BY CHIEF STRUCTURAL ENGINEER</p>	<p>APPROVED BY CHIEF STRUCTURAL ENGINEER</p>

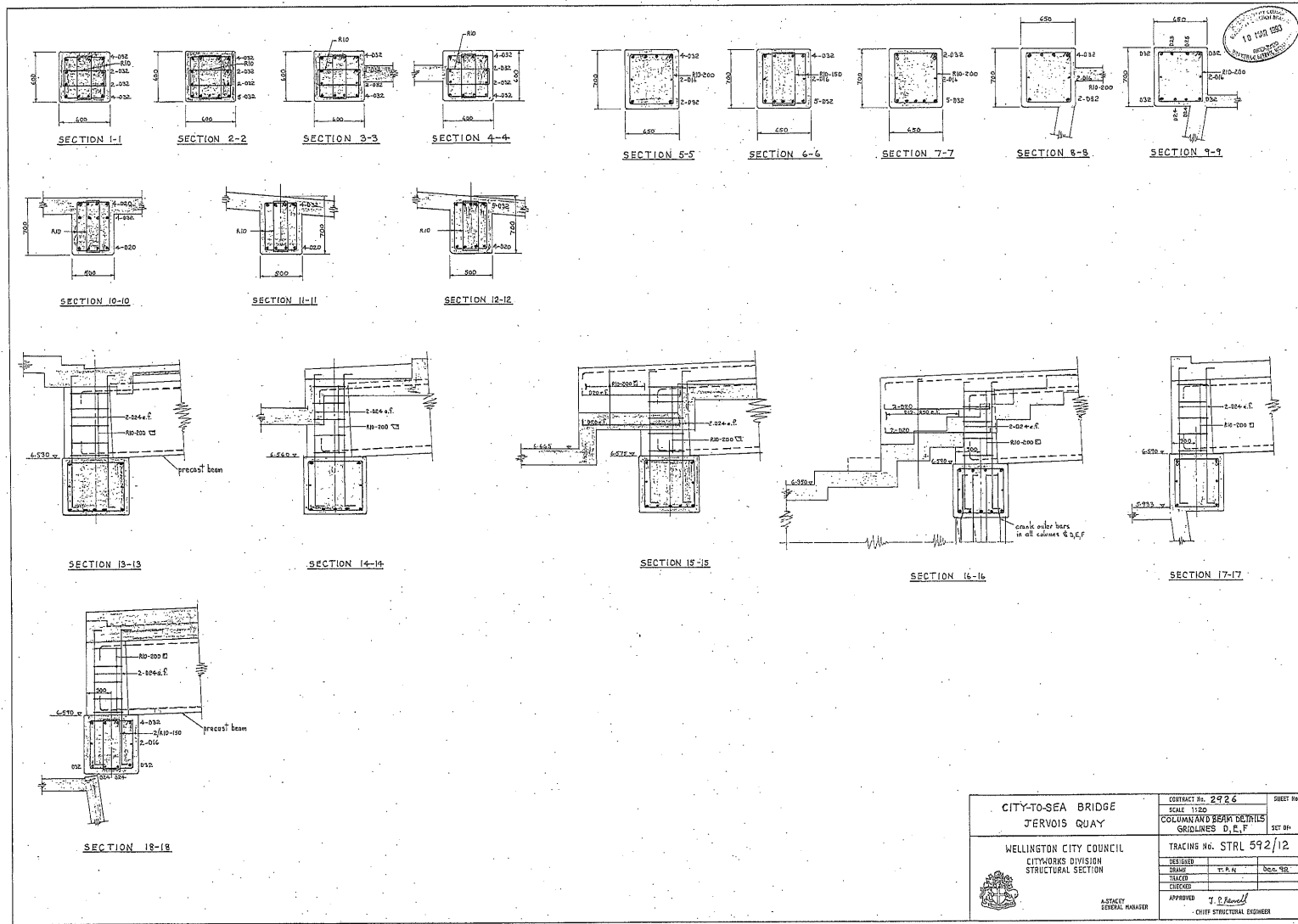


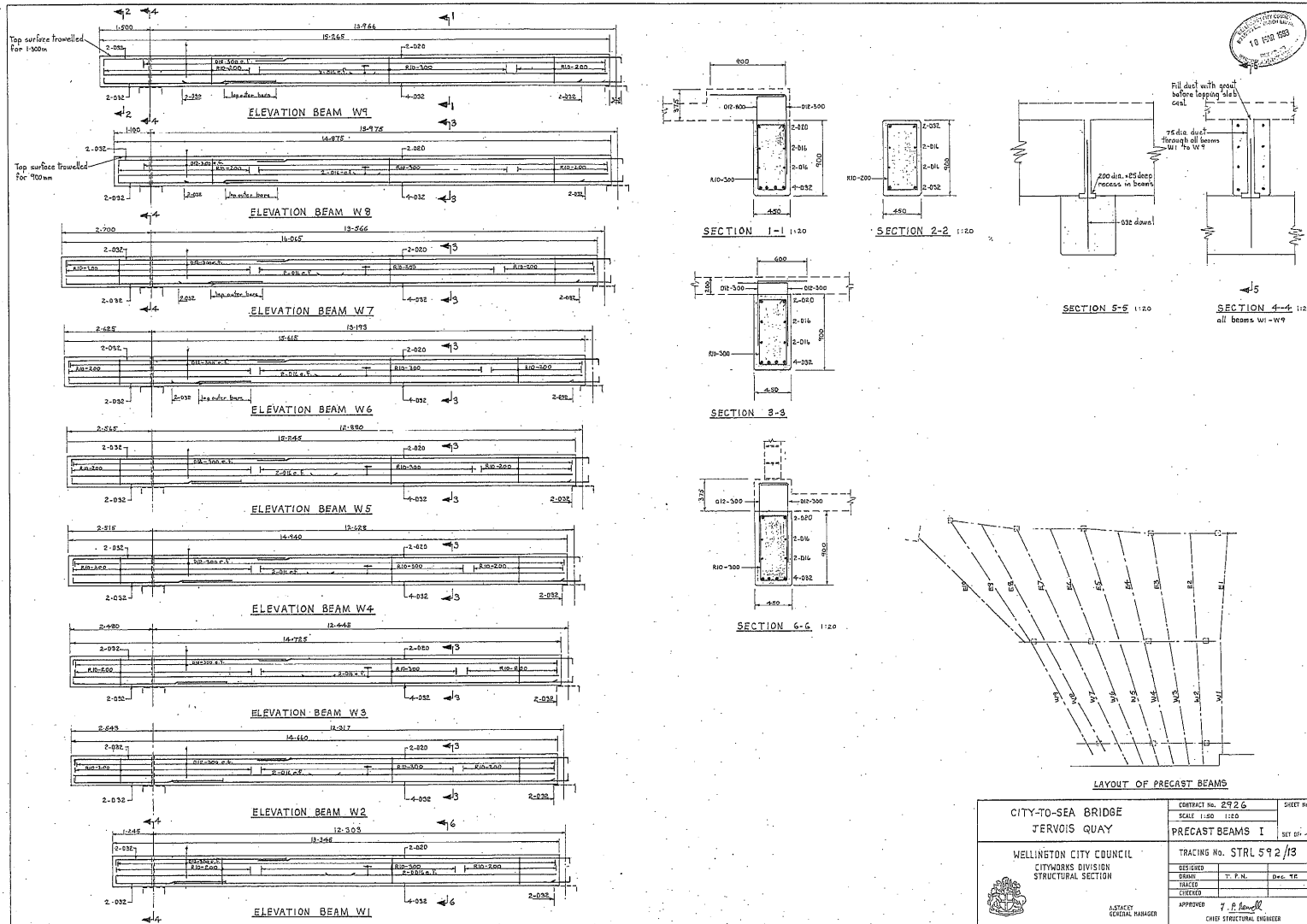
CITY TO SEA BRIDGE JERVOIS QUAY	CONTRACT No. 2526	SHEET No.
	SCALE 1:400 1:50	9
WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION	RAMP FOUNDATIONS	SET 2/1
	TRACING No. STRL 592/9	
	DESIGNED J.H.A.	
	DRAWN E.R.F.	
 <small>ALAN CROFT GENERAL MANAGER</small>	CHECKED	
	APPROVED	
	<i>J.P. Howell</i> CHIEF STRUCTURAL ENGINEER	

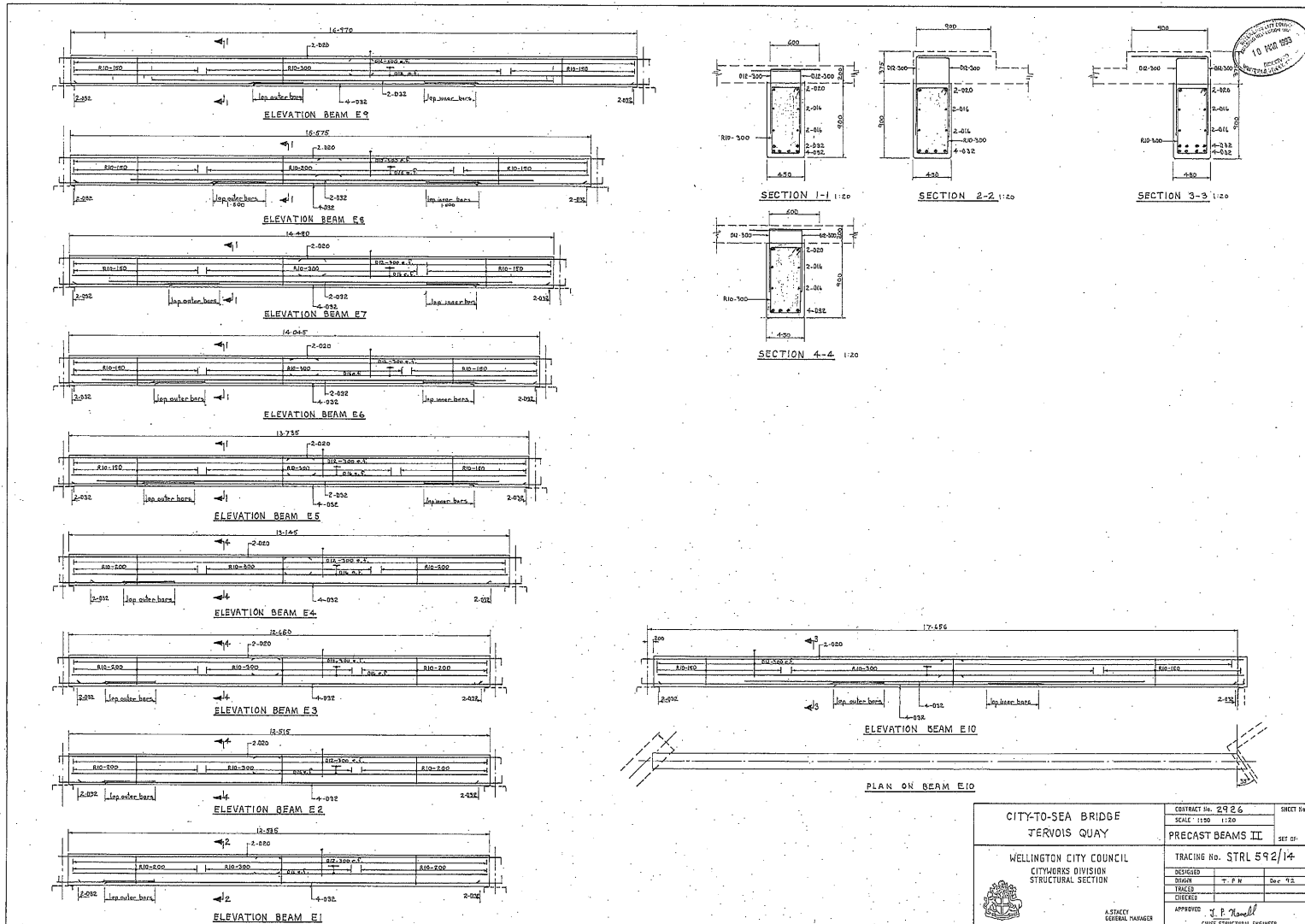



<p>CITY-TO-SEA BRIDGE JERVIS QUAY</p> <p>WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION</p> 	<p>CONTRACT No. 2926</p> <p>SCALE 1:50 1:20</p>	<p>SHEET No.</p>
	<p>COLUMNS AND BEAMS ON GRIDLINES B and C</p>	<p>SEE 811</p>
	<p>TRACING No. STRL 592/10</p>	<p>DATE</p>
	<p>DESIGNED</p>	<p>DRAWN</p>
	<p>CHECKED</p>	<p>DATE</p>
<p>ASTLEY GENERAL MANAGER</p>	<p>APPROVED</p> <p><i>J. A. Rowell</i> CHIEF STRUCTURAL ENGINEER</p>	

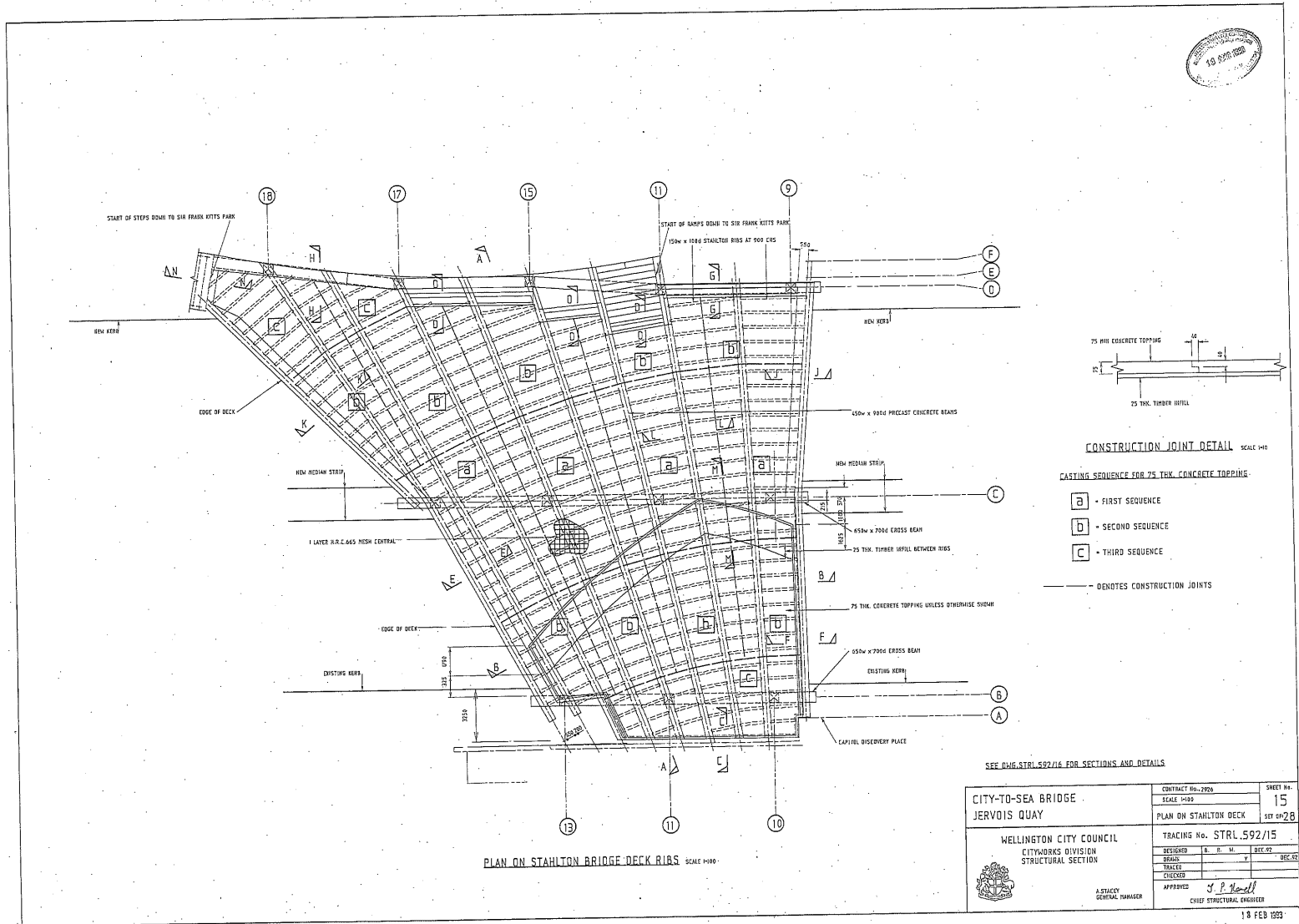


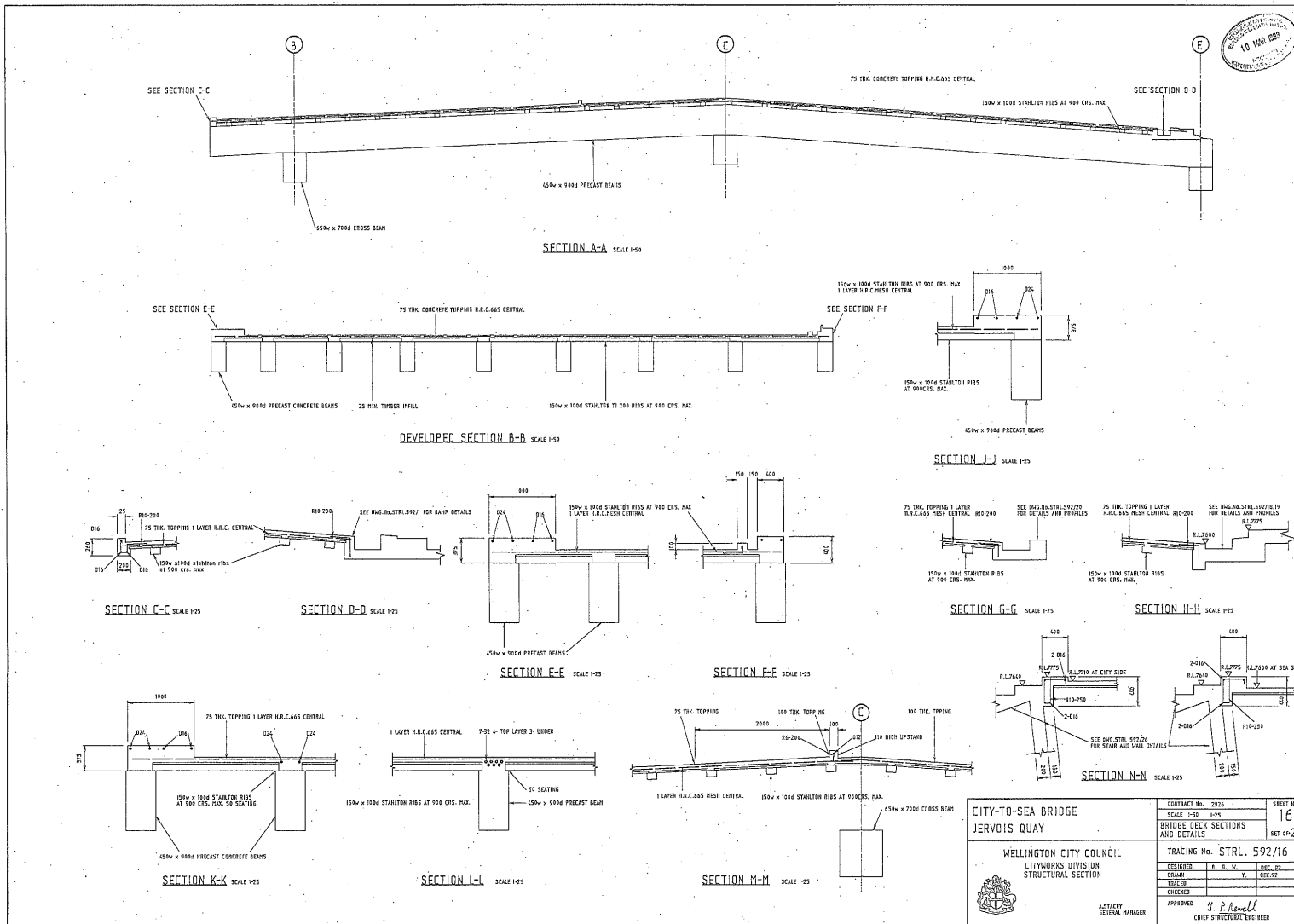






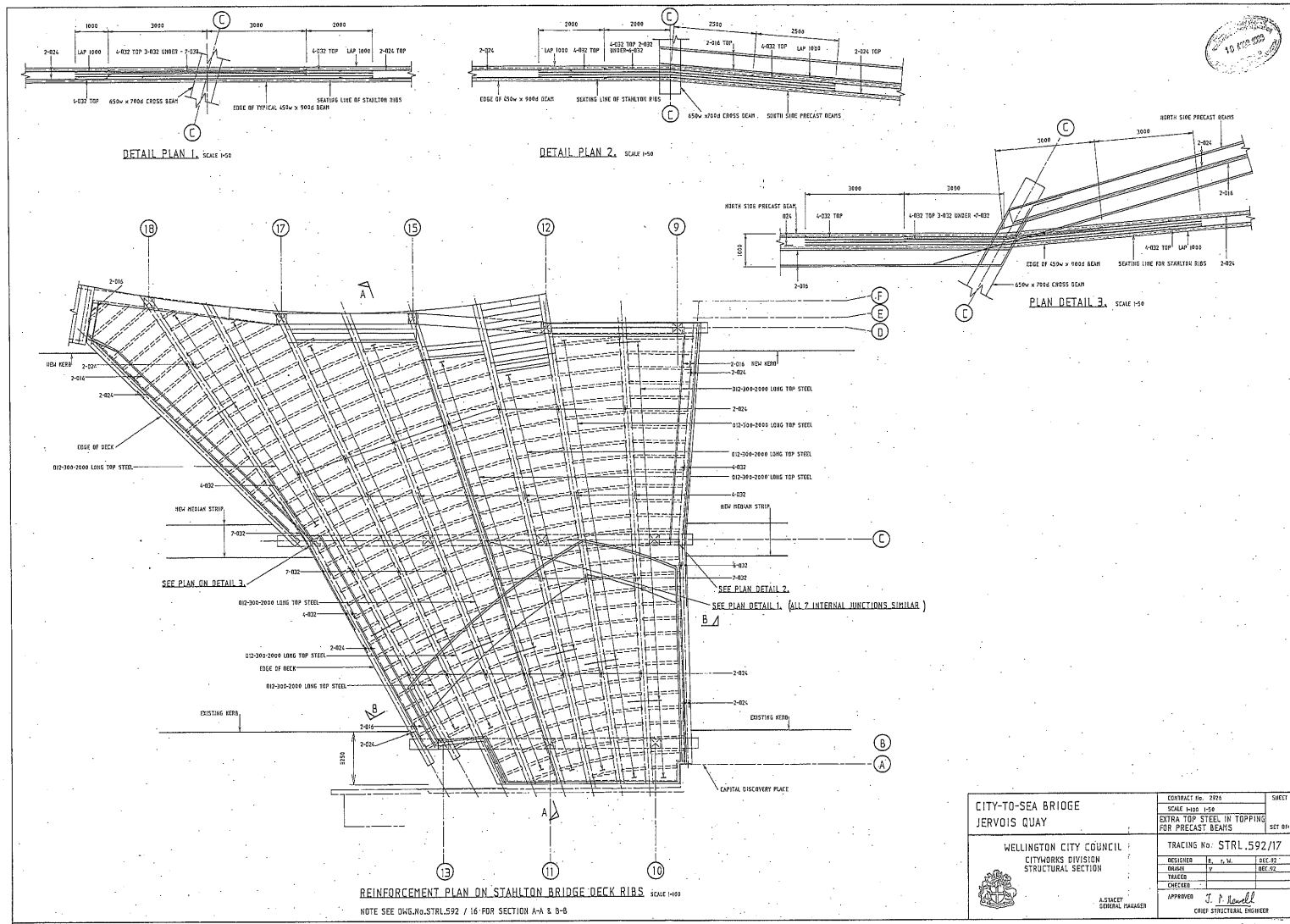
CITY-TO-SEA BRIDGE JERVOIS QUAY		CONTRACT No. 2926	SHEET No.
WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION		SCALE: 1:20 1:20	PRECAST BEAMS II
 APPROVED: J. P. Howell CHIEF STRUCTURAL ENGINEER		TRACING No. STRL 592/14	SEP 01
		DESIGNED	T. P. M.
		DRAWN	Dec '92
		CHECKED	

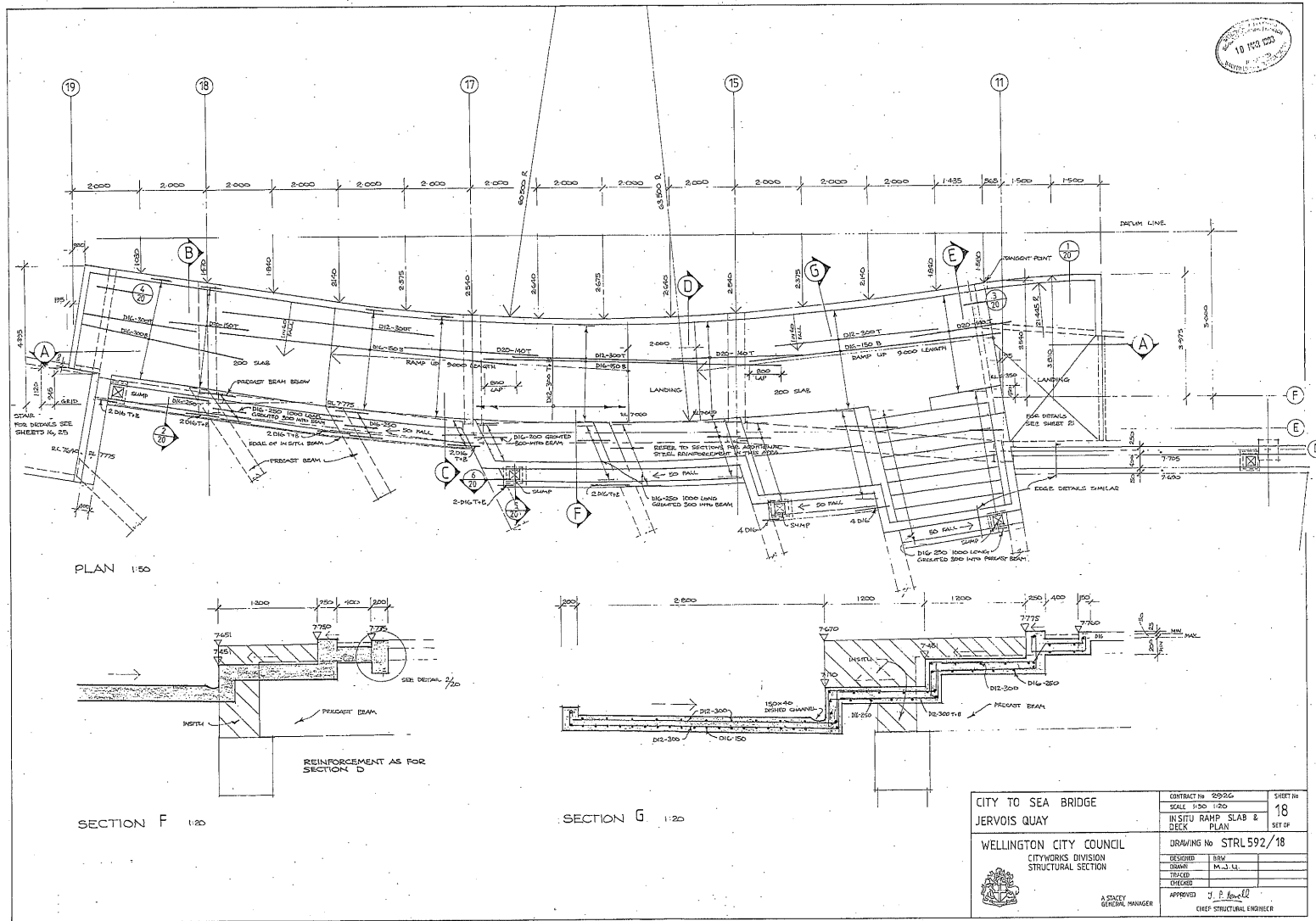


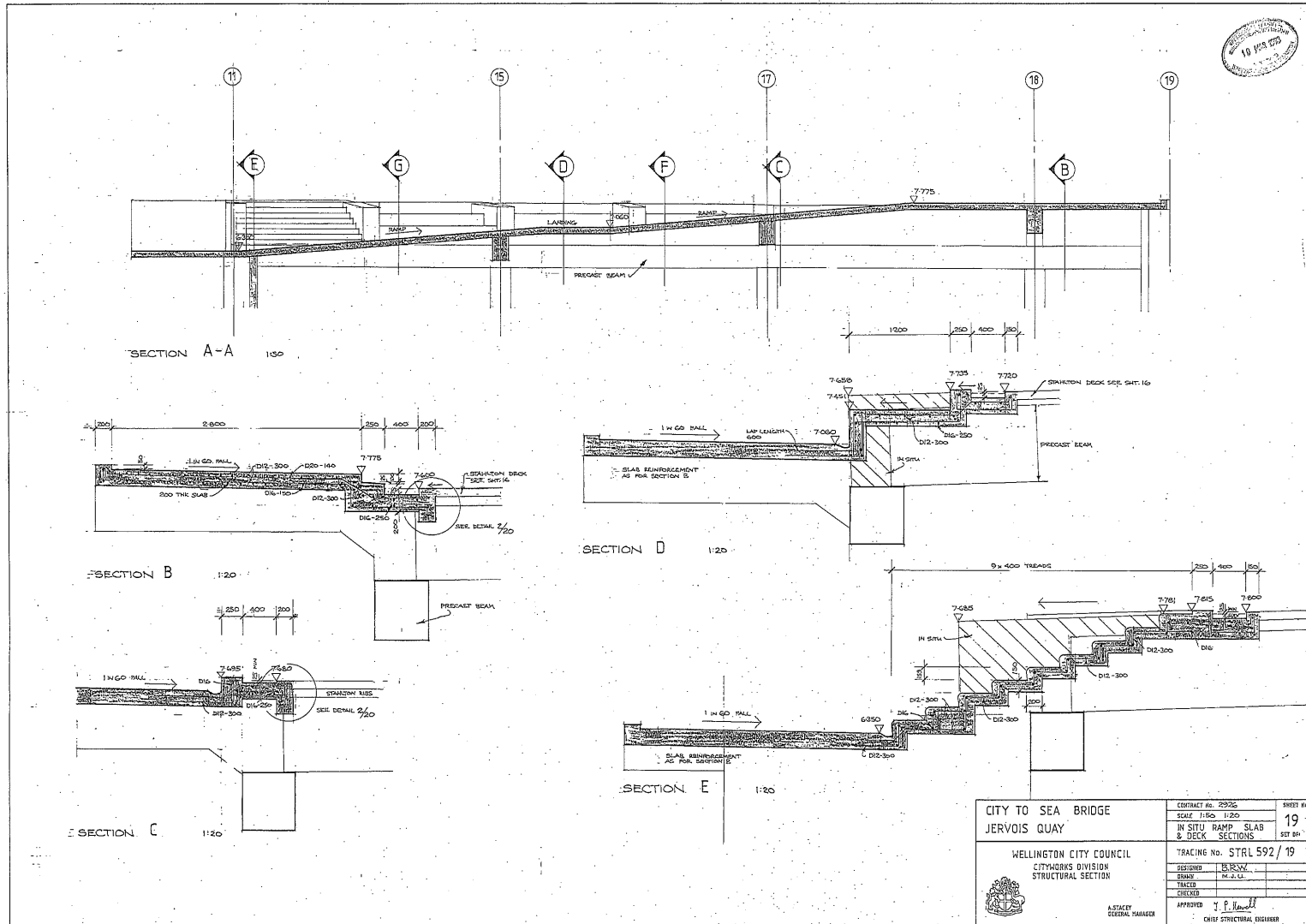


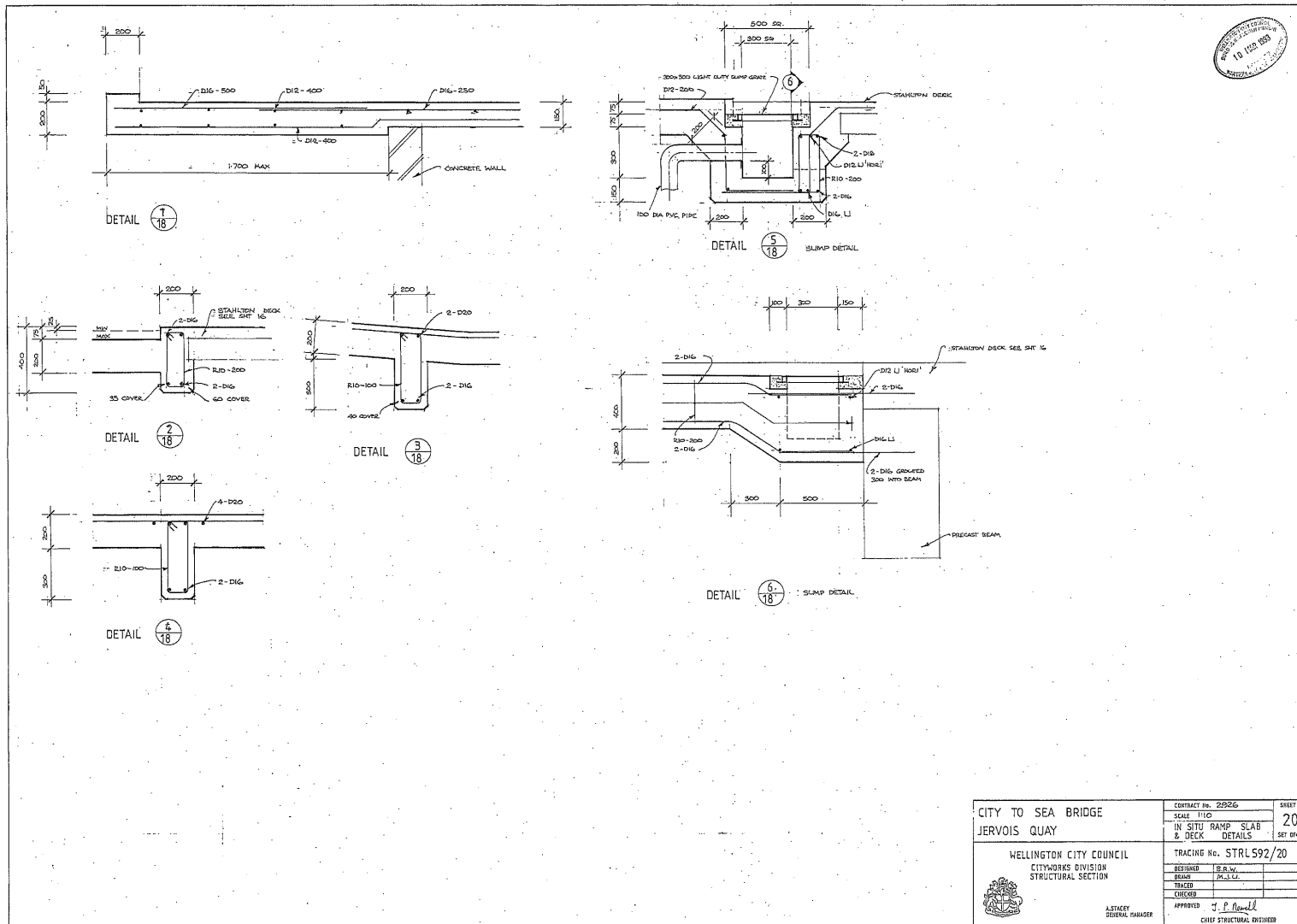
CITY-TO-SEA BRIDGE JERVOIS QUAY	CONTRACT No. 2926 SCALE 1:25	SHEET No. 16
	BRIDGE DECK SECTIONS AND DETAILS SET OF 28	
WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION	TRACING No. STRL 592/16	
DESIGNED R. R. M. DEC 87 DRAWN Y. DEC 87 TOLER CHECKED		
APPROVED J. Stacey GENERAL MANAGER	APPROVED G. P. Arnold CHIEF STRUCTURAL ENGINEER	


23 FEB 1989

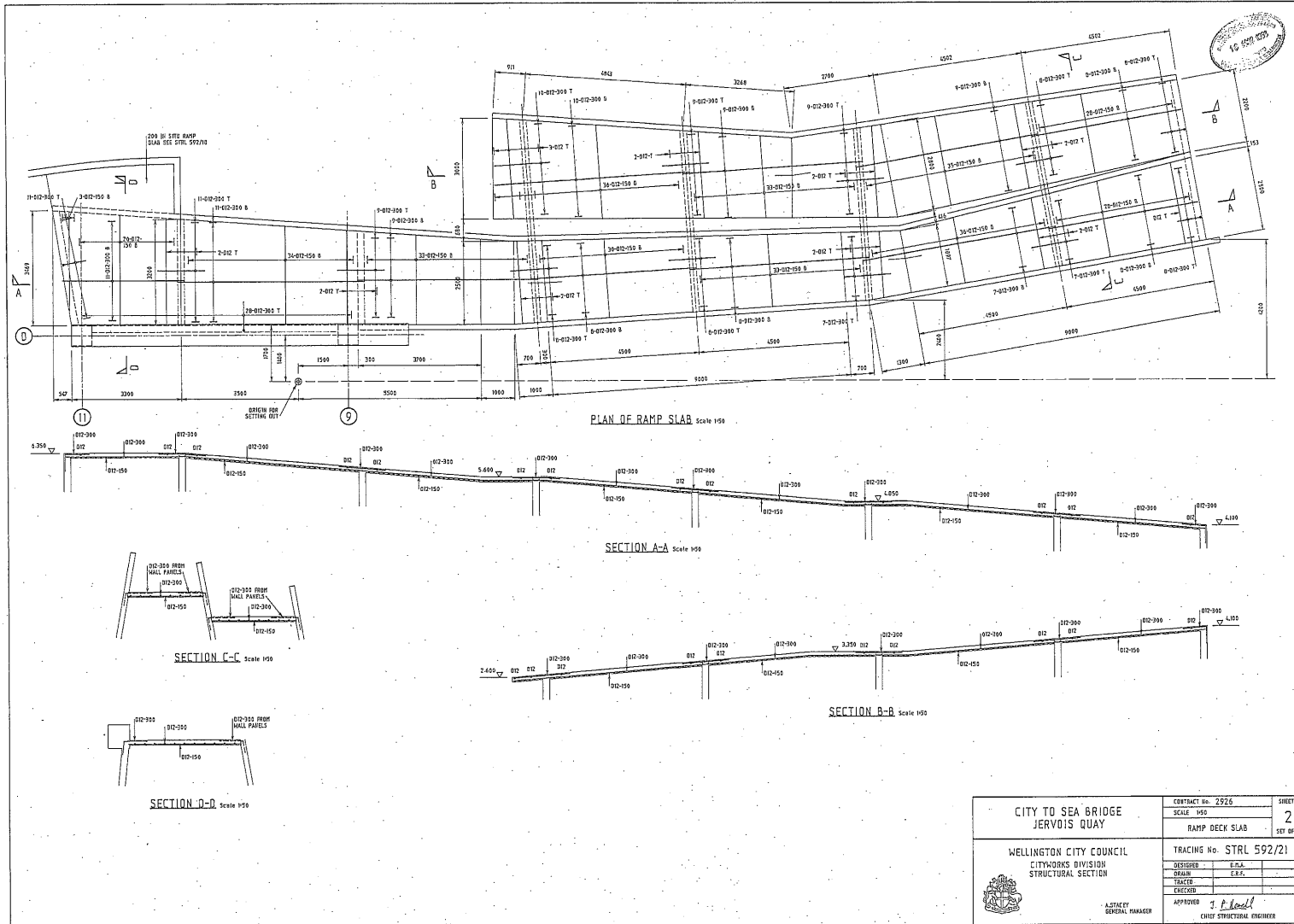


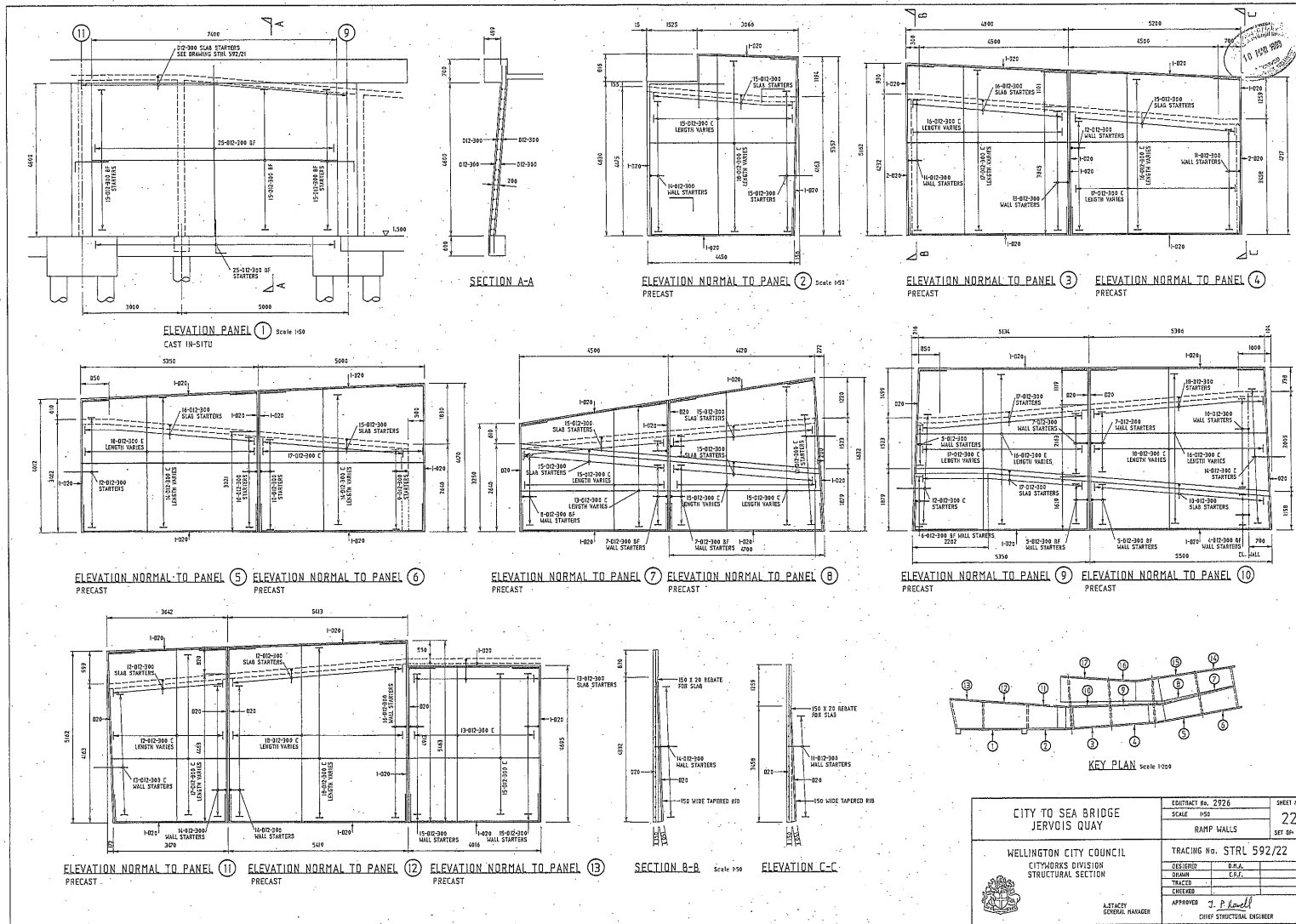




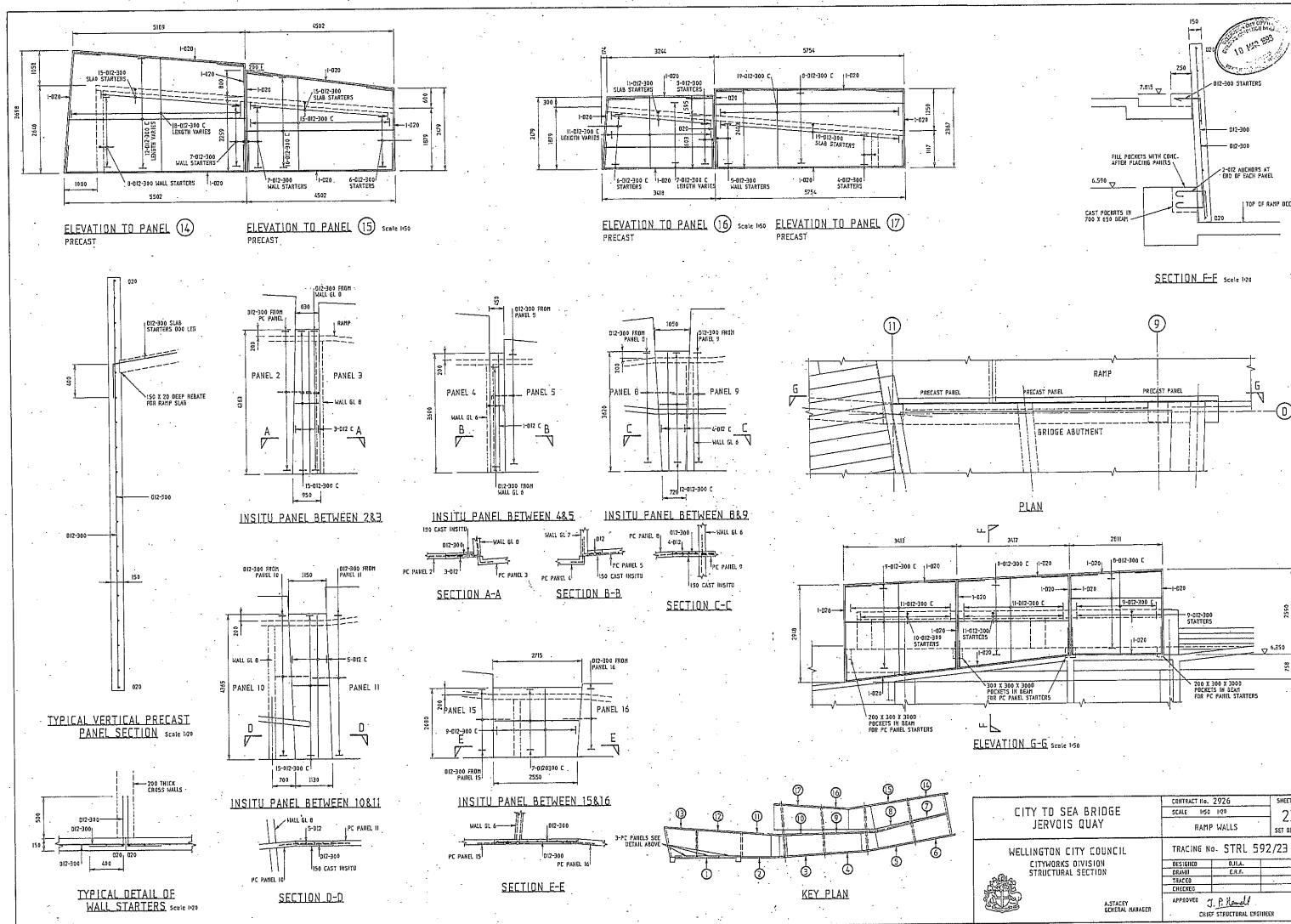


CITY TO SEA BRIDGE JERVOIS QUAY	CONTRACT No. 29926 SCALE 1:10 IN SITU RAMP SLAB & DECK DETAILS	SHEET No. 20 SET OF
	WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION	
 A. STACEY GENERAL MANAGER	TRACING No. STRLS92/20 DESIGNED B.R.W. CHECKED M.A.L. APPROVED J.P. Maxwell CHIEF STRUCTURAL ENGINEER	
	CHECKED	
	DESIGNED	
	SCALE	

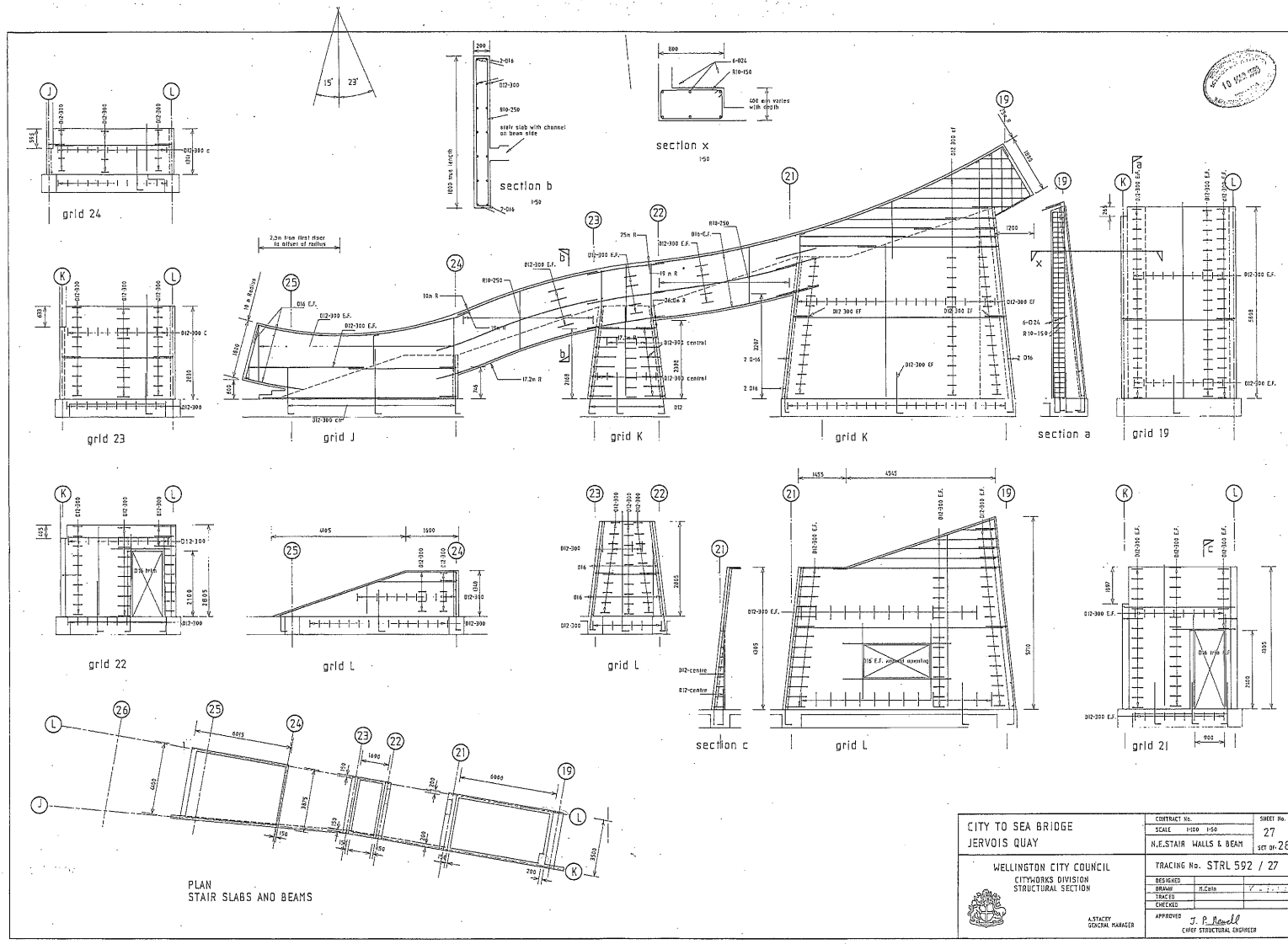





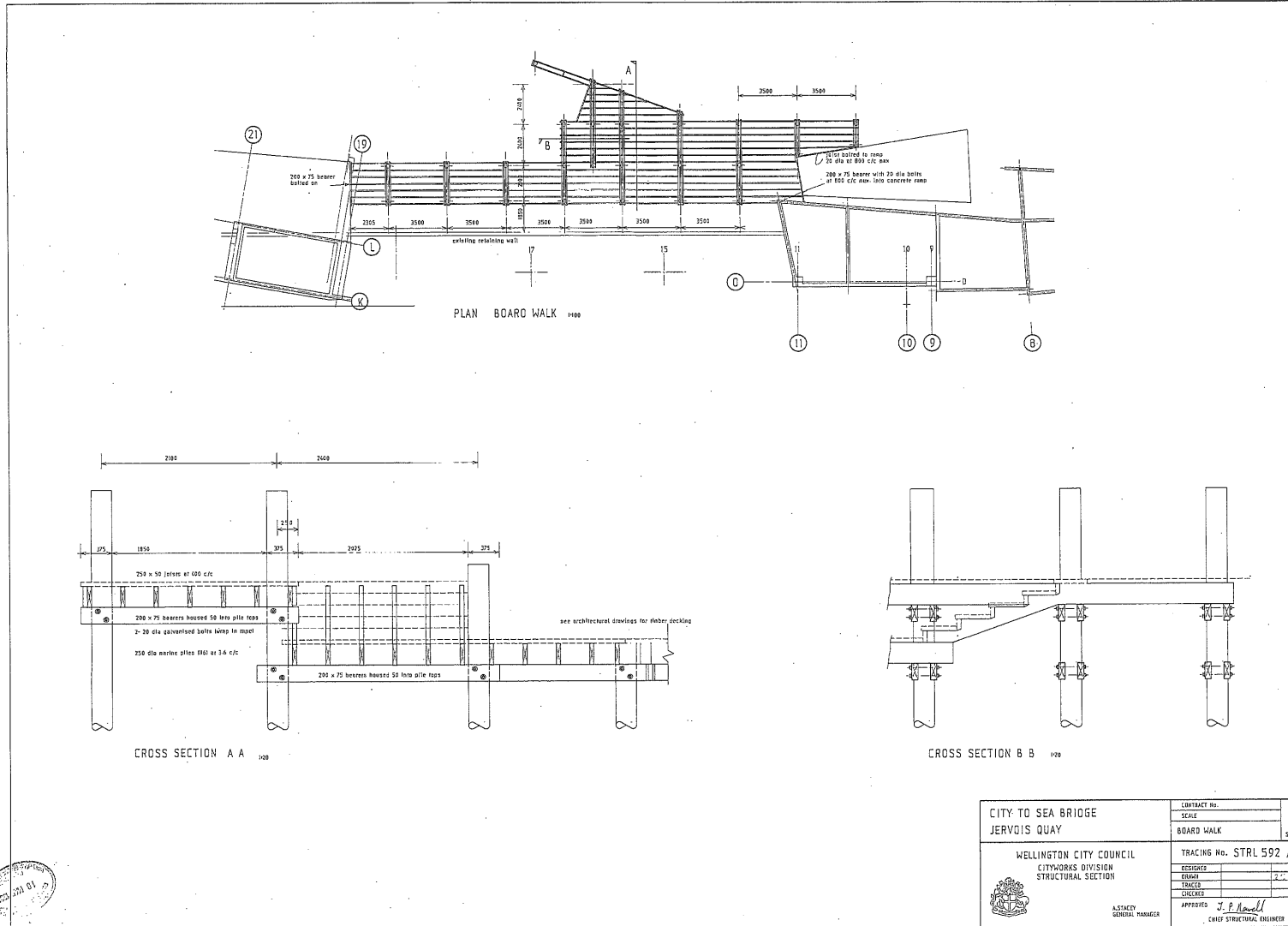
CITY TO SEA BRIDGE JERVOIS QUAY		ESTIMATE No. 2926	SHEET No.
		SCALE 1:50	22
		RAMP WALLS	SET OF
WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION		TRACING No. STRL 592/22	
DESIGNED	D.P.A.		
DRAWN	E.S.P.		
TRACED			
CHECKED			
APPROVED	<i>J. P. Howell</i>		
ASTACTY GENERAL MANAGER	CHIEF STRUCTURAL ENGINEER		



CITY TO SEA BRIDGE JERVOIS QUAY WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION	CONTRACT No. 2926 SCALE 1:50 1:10	SHEET No. 23 SET OF:
	TRACKING No. STRL 592/23 DESIGNED: D.M.A. CHECKED: C.S.L. DRAWN: ENGINEER:	APPROVED: <i>[Signature]</i> CHIEF STRUCTURAL ENGINEER



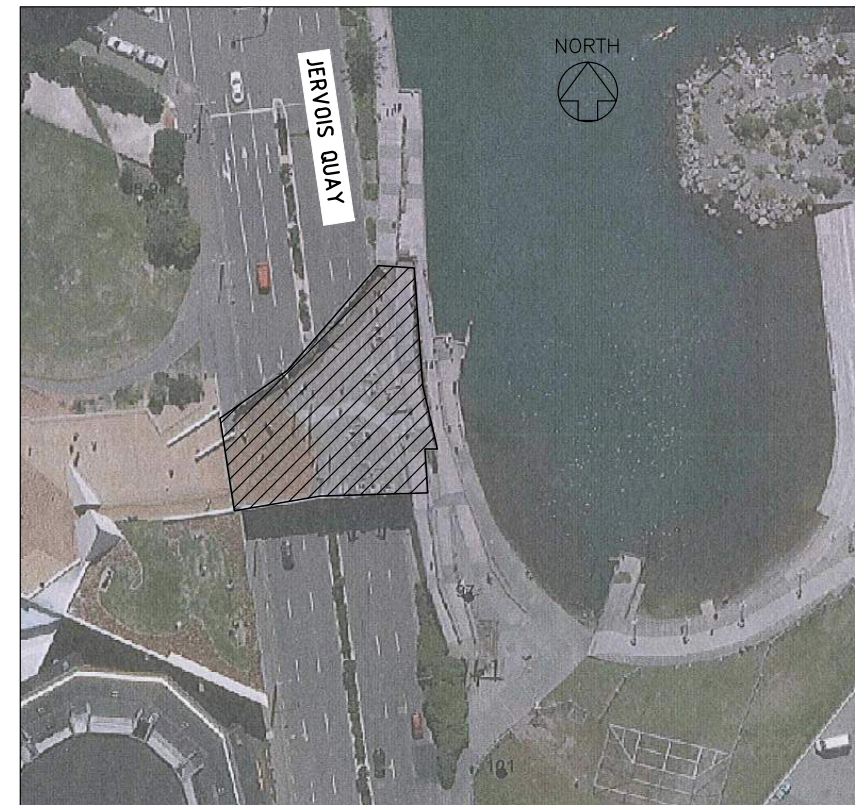
CITY TO SEA BRIDGE JERVIS QUAY	CONTRACT No.	SHR1 No.
	SCALE: 1:50	27
WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION	N.E. STAIR WALLS & BEAM	SET OF 28
	TRACING No. STL 592 / 27	
	DESIGNED	
	DRAWN	
	TRACKED	
	CHECKED	
A. STACEY GENERAL MANAGER	APPROVED	J. P. McNeill CHIEF STRUCTURAL ENGINEER



CITY TO SEA BRIDGE STRENGTHENING WORKS JERVOIS QUAY WELLINGTON

DRAWING REGISTER:

DWG:	REV:	TITLE:
E09-417-00	A	DRAWING REGISTER & LOCATION PLAN
E09-417-10	A	EXISTING BRIDGE PLAN AT DECK LEVEL
E09-417-11	A	ALTERED BRIDGE PLAN WITH STRENGTHENING WORKS
E09-417-12	A	EXISTING FOUNDATION PLAN AT JERVOIS QUAY LEVEL
E09-417-13	A	EXISTING AND ALTERED BRIDGE PIER AT GRID B WITH STRENGTHENING
E09-417-14	A	EXISTING AND ALTERED BRIDGE PIER AT GRID C WITH STRENGTHENING
E09-417-15	A	EXISTING BRIDGE PIER AT GRID 19 SHOWING DEMOLITION WORKS
E09-417-16	A	ALTERED BRIDGE PIER AT GRID 19 WITH STRENGTHENING WORKS
E09-417-20	A	STEELWORK DETAILS FOR PIER STRENGTHENING AT EXTG PIER BASE
E09-417-21	A	STEELWORK DETAILS FOR PIER STRENGTHENING AT EXTG BRIDGE BEAM
E09-417-22	A	STEELWORK DETAILS FOR PIER STRENGTHENING AT EXTG BRIDGE RIBS
E09-417-23	A	STEELWORK DETAILS FOR NEW SHS BRACING FRAME
E09-417-24	A	STEELWORK DETAILS FOR PIER BRACING FRAME AT EXTG STAIRS
E09-417-25	A	GENERAL DETAILS



LOCATION PLAN
N.T.S.

NO	REVISION	BY	DATE
A	FOR CONSENT	OSO	17/09/10

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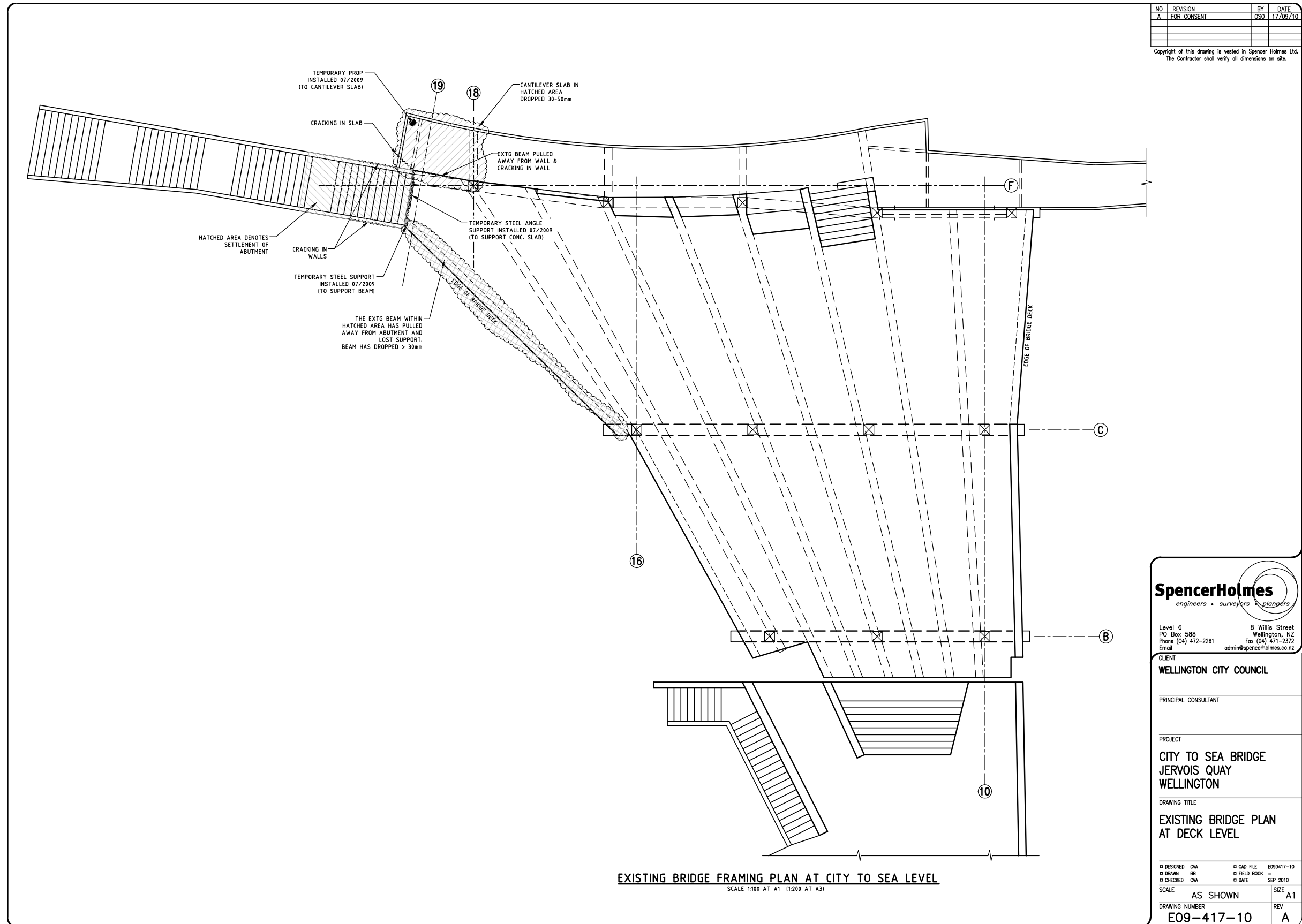
PROJECT
**CITY TO SEA BRIDGE
JERVOIS QUAY
WELLINGTON**

DRAWING TITLE
**LOCATION PLAN &
DRAWING REGISTER**

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<input type="checkbox"/> DRAWN OSO	<input type="checkbox"/> FIELD BOOK
<input type="checkbox"/> CHECKED CVA	<input type="checkbox"/> DATE AUG 2010

SCALE	1:200	SIZE	A3
DRAWING NUMBER	E09-0417-00	REV	A

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JERVOIS QUAY
WELLINGTON**

DRAWING TITLE
**EXISTING BRIDGE PLAN
AT DECK LEVEL**

DESIGNED: CIA	CAD FILE: E090417-10
DRAWN: BB	FIELD BOOK: =
CHECKED: CIA	DATE: SEP 2010

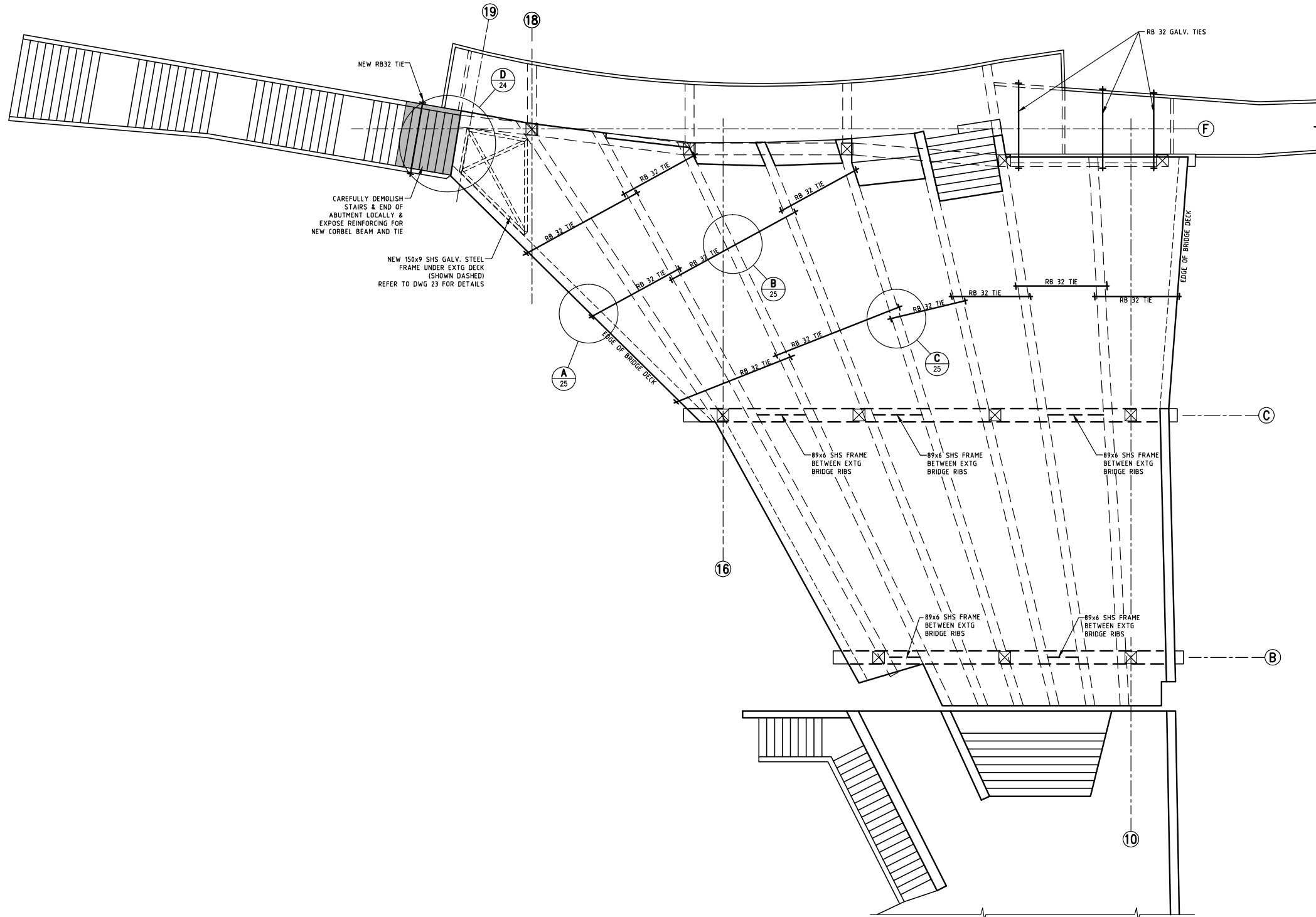
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DRAWING NUMBER: E09-417-10 REV: A

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ALTERED BRIDGE FRAMING PLAN WITH STRENGTHENING WORKS
SCALE 1:100 AT A1 (1:200 AT A3)

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WELLINGTON**

DRAWING TITLE
**ALTERED BRIDGE PLAN
WITH STRENGTHENING
WORKS**

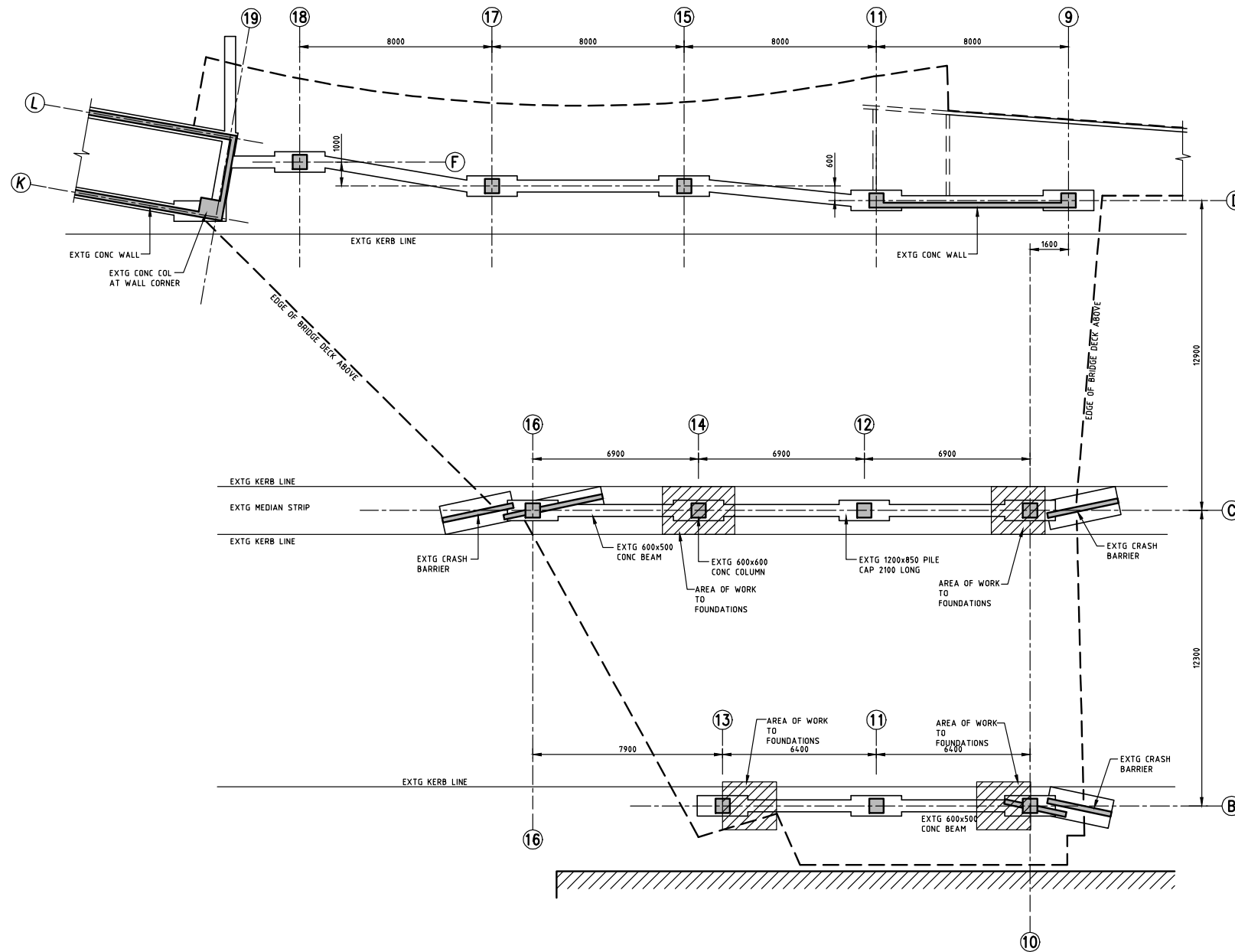
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<input type="checkbox"/> CHECKED CVA	<input type="checkbox"/> DATE SEP 2010

SCALE	AS SHOWN	SIZE	A1
DRAWING NUMBER	E09-417-11	REV	A

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NO	REVISION	BY	DATE
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EXISTING FOUNDATION PLAN AT JERVOIS QUAY LEVEL
SCALE 1:100 AT A1 (1:200 AT A3)

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WELLINGTON**

DRAWING TITLE
**EXISTING FOUNDATION PLAN
AT JERVOIS QUAY LEVEL**

DESIGNED CIA	CAD FILE E090417-12
DRAWN BB	FIELD BOOK =
CHECKED CIA	DATE SEP 2010

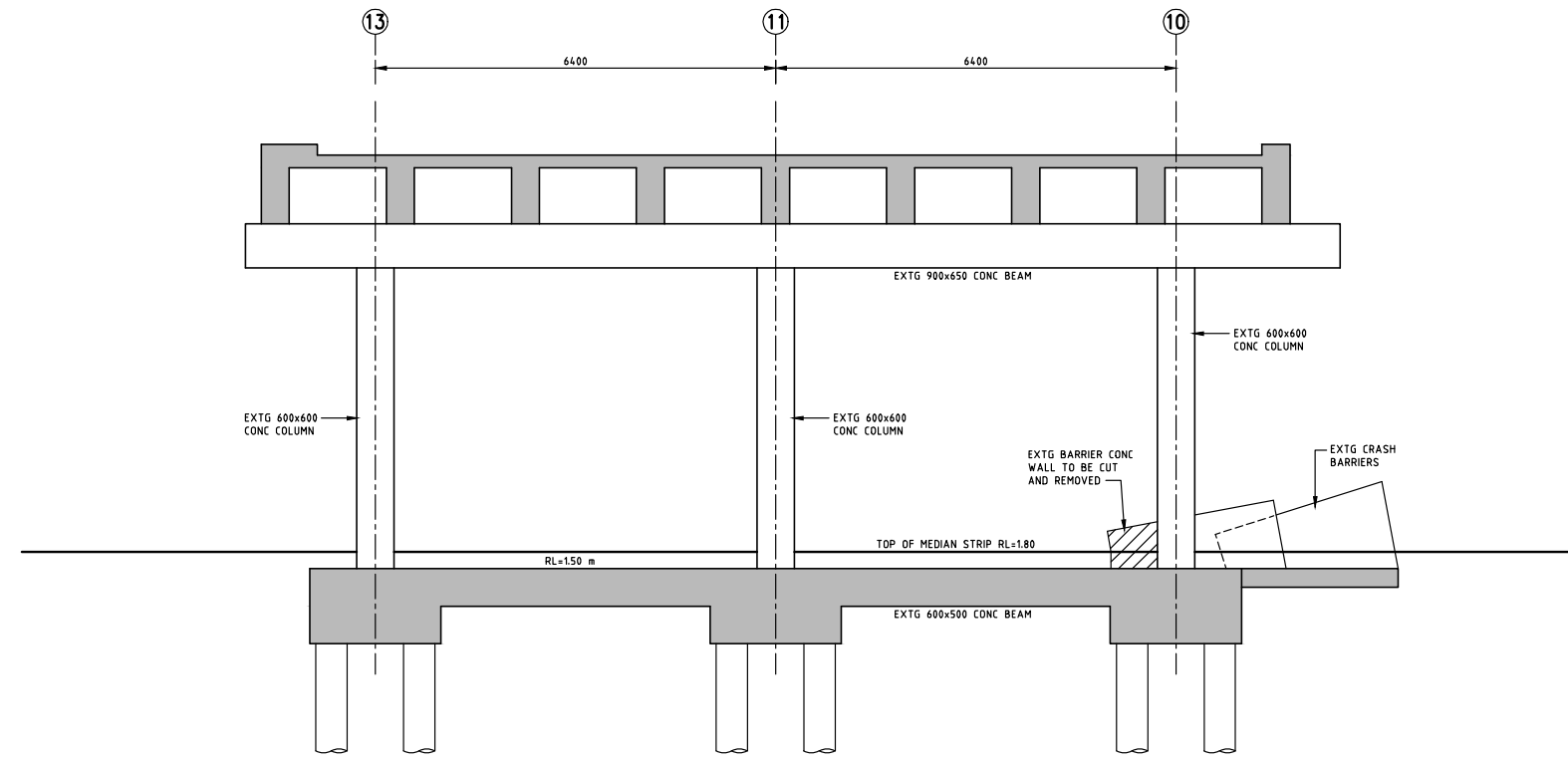
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DRAWING NUMBER E09-417-12 REV A

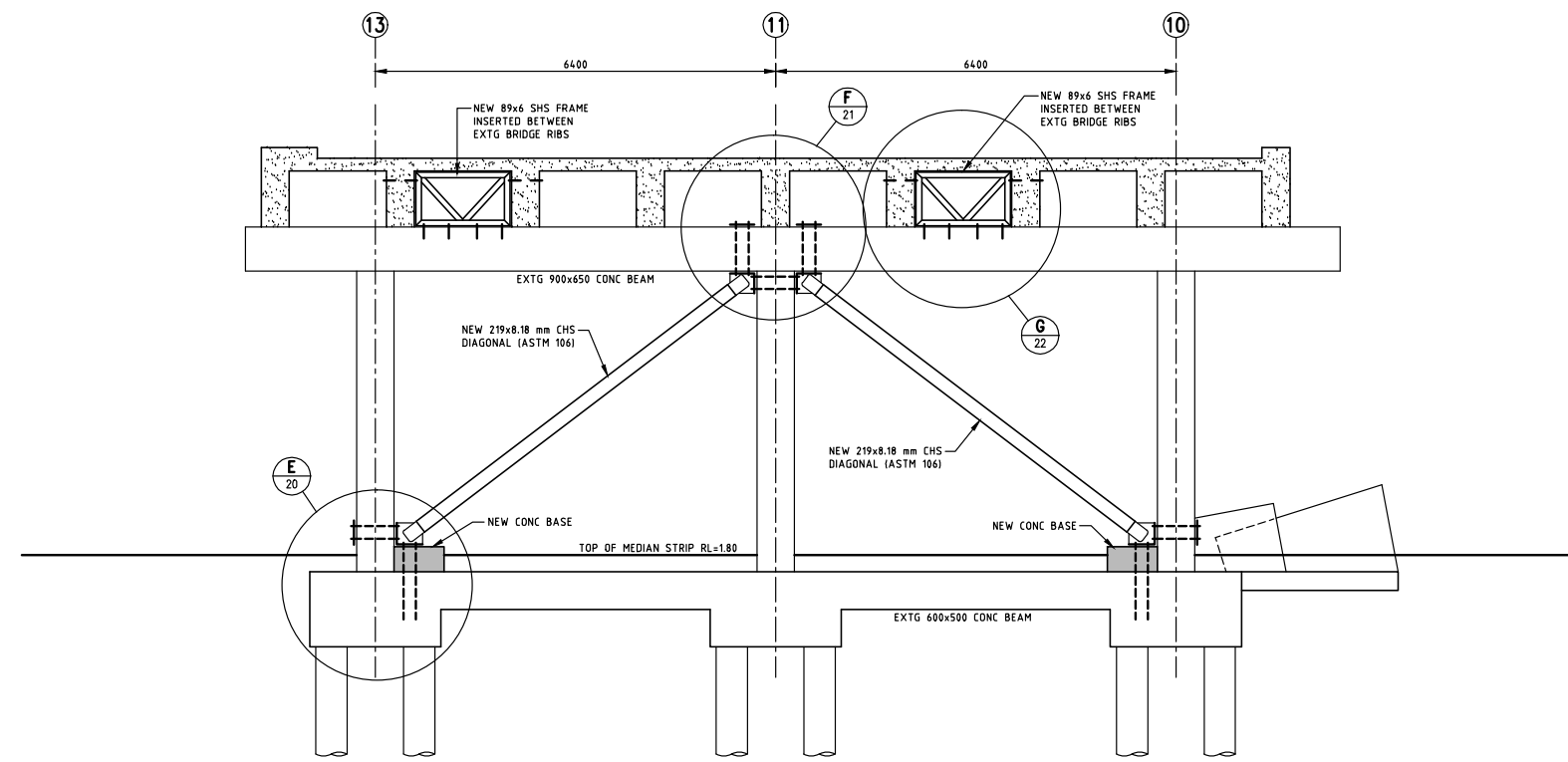
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NO	REVISION	BY	DATE
A	FOR CONSENT	OSD	17/09/10

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EXISTING BRIDGE PIER AT GRID B
SCALE 1:50 AT A1 (1:100 AT A3)



ALTERED BRIDGE PIER AT GRID B SHOWING STRENGTHENING
SCALE 1:50 AT A1 (1:100 AT A3)

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WELLINGTON**

DRAWING TITLE
**EXISTING AND ALTERED
BRIDGE PIER AT GRID B
WITH STRENGTHENING**

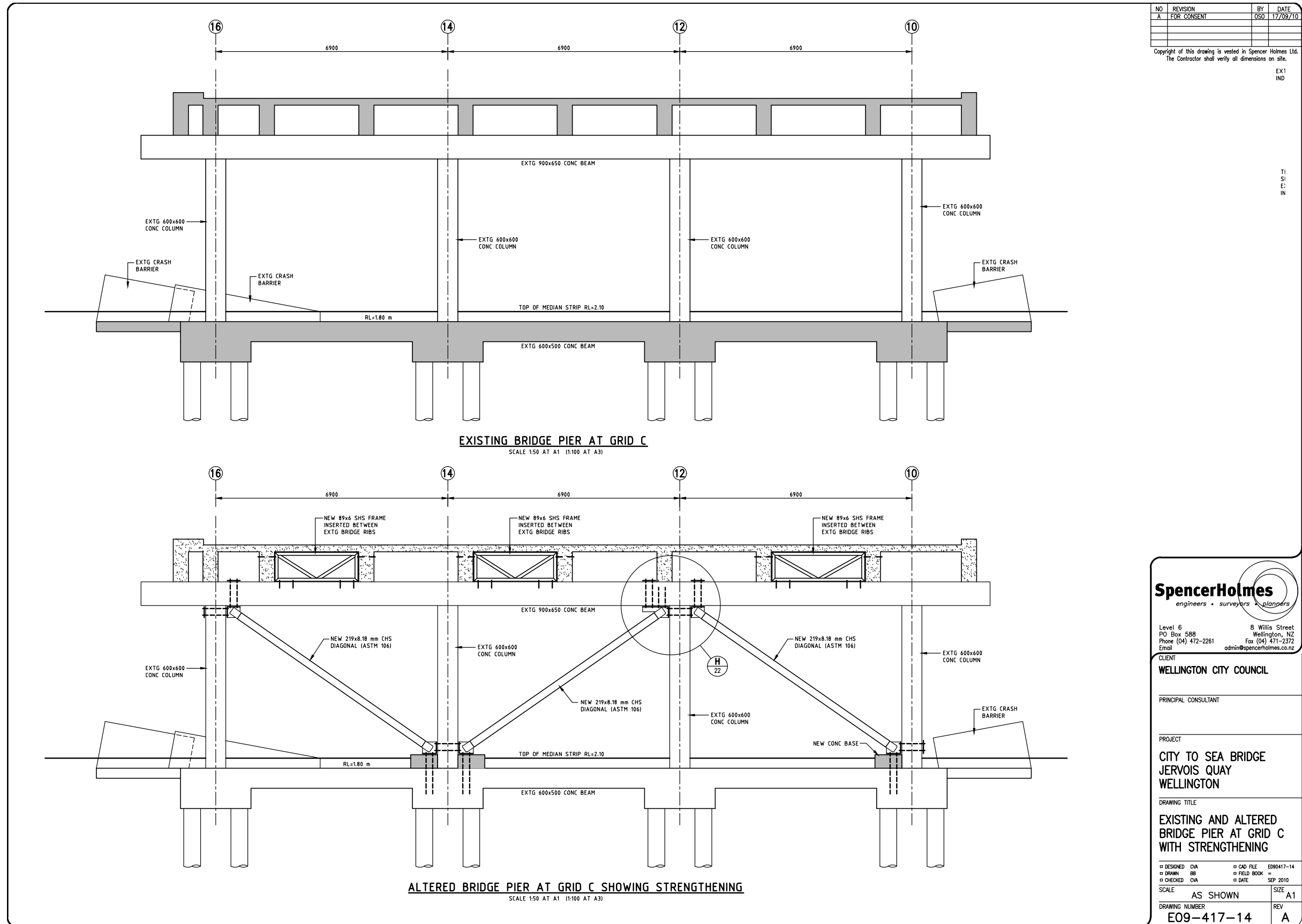
DESIGNED: CIA
DRAWN: BB
CHECKED: CIA

CAD FILE: E090417-13
FIELD BOOK: =
DATE: SEP 2010

SCALE: AS SHOWN
SIZE: A1

DRAWING NUMBER: E09-417-13
REV: A

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NO	REVISION	BY	DATE
A	FOR CONSENT	OSO	17/09/10

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WELLINGTON**

DRAWING TITLE
**EXISTING AND ALTERED
BRIDGE PIER AT GRID C
WITH STRENGTHENING**

DESIGNED: CIA
DRAWN: BB
CHECKED: CIA

CAD FILE: E090417-14
FIELD BOOK: =
DATE: SEP 2010

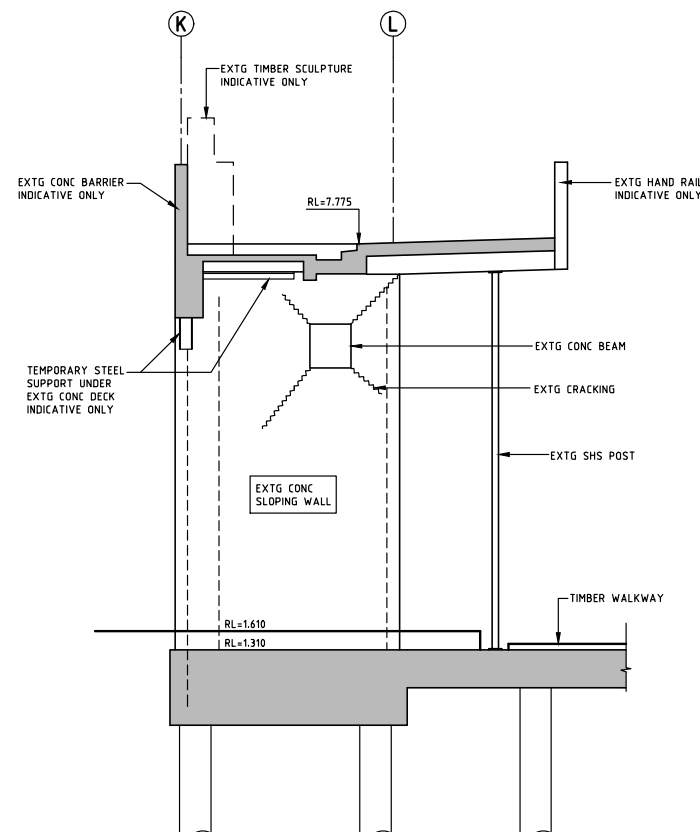
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DRAWING NUMBER: E09-417-14

SIZE: A1
REV: A

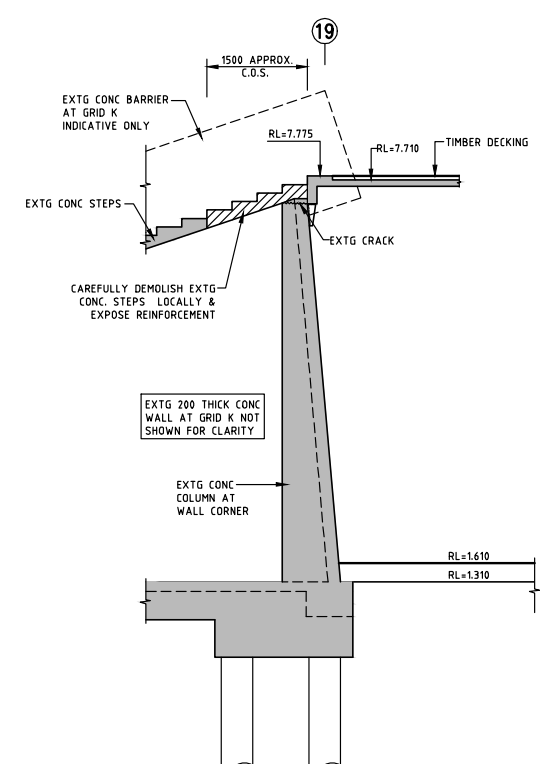
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NO	REVISION	BY	DATE
A	FOR CONSENT	OSD	17/09/10

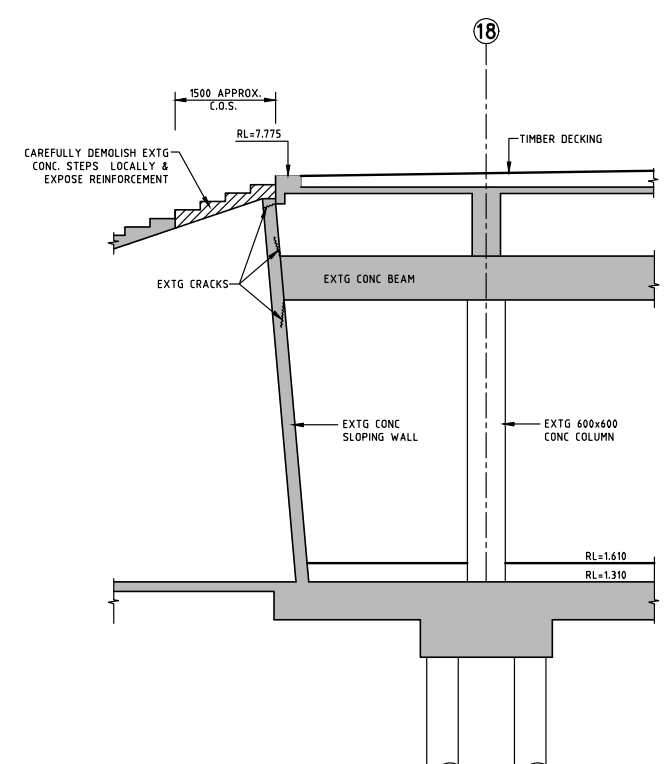
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EXISTING BRIDGE PIER AT GRID 19
SCALE 1:50 AT A1 (1:100 AT A3)



EXISTING BRIDGE PIER AT GRID K
SCALE 1:50 AT A1 (1:100 AT A3)



EXISTING BRIDGE PIER AT GRID F19-18
SCALE 1:50 AT A1 (1:100 AT A3)

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WELLINGTON**

DRAWING TITLE
**EXISTING BRIDGE PIER
AT GRID 19 SHOWING
DEMOLITION WORKS**

<input type="checkbox"/> DESIGNED CIA	<input type="checkbox"/> CAD FILE E090417-15
<input type="checkbox"/> DRAWN BB	<input type="checkbox"/> FIELD BOOK =
<input type="checkbox"/> CHECKED CIA	<input type="checkbox"/> DATE SEP 2010

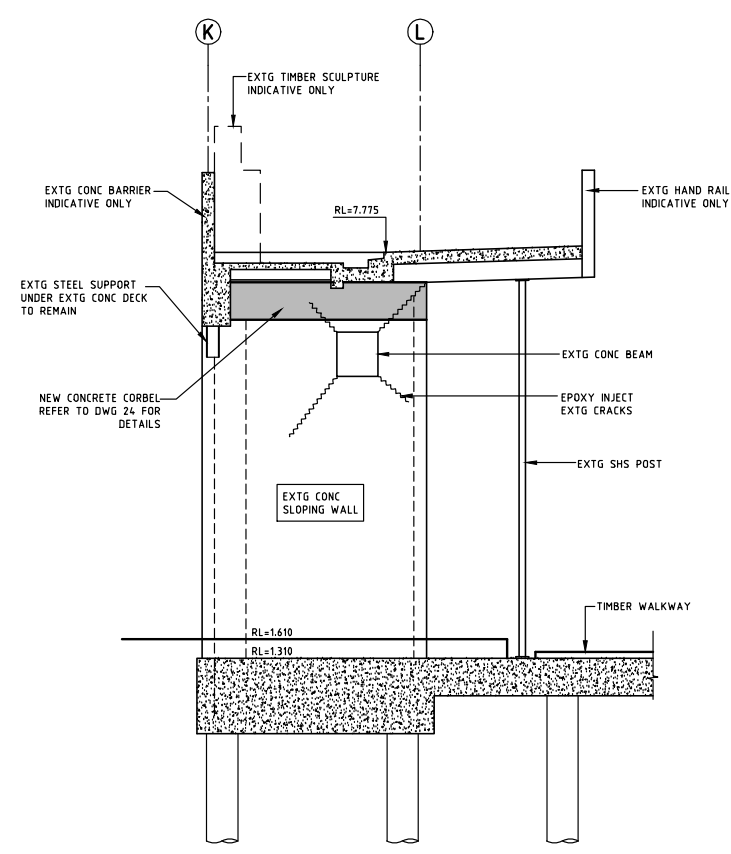
SCALE AS SHOWN SIZE A1

DRAWING NUMBER E09-417-15 REV A

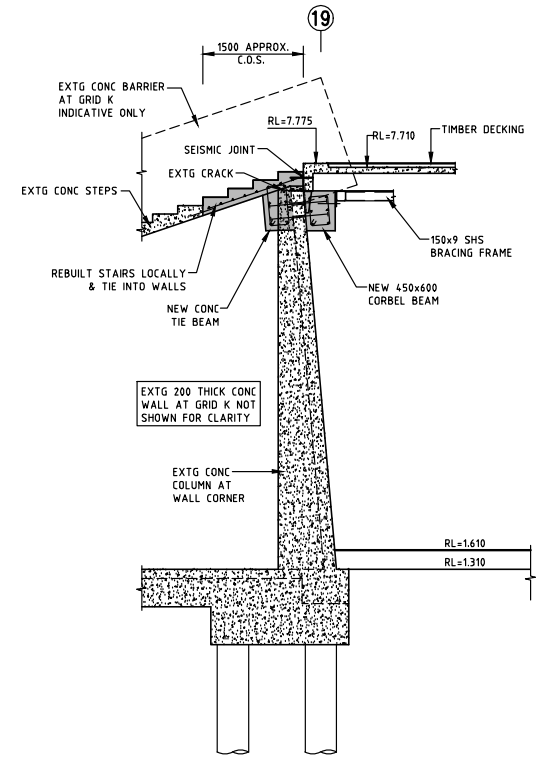
RESOURCE MANAGEMENT • LAND PLANNING • SURVEYING • STRUCTURAL • CIVIL • FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	OSD	17/09/10

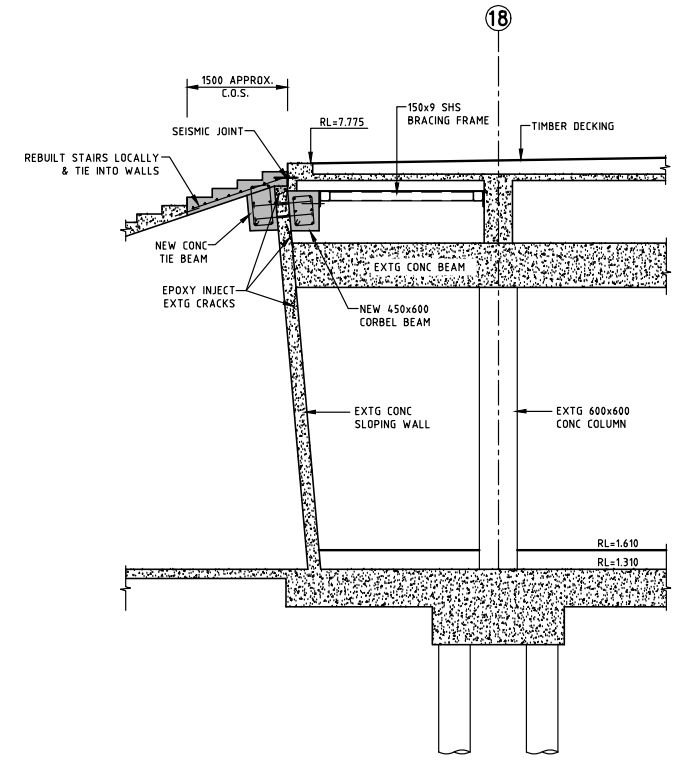
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PROPOSED BRIDGE PIER AT GRID 19
SCALE 1:50 AT A1 (1:100 AT A3)



PROPOSED BRIDGE PIER AT GRID K
SCALE 1:50 AT A1 (1:100 AT A3)



PROPOSED BRIDGE PIER AT GRID F19-18
SCALE 1:50 AT A1 (1:100 AT A3)

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JERVOIS QUAY
WELLINGTON**

DRAWING TITLE
**ALTERED BRIDGE PIER
AT GRID 19 WITH
STRENGTHENING WORKS**

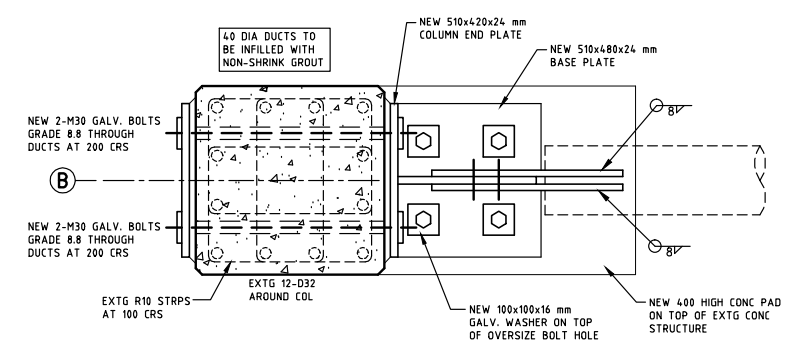
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<input type="checkbox"/> CHECKED CIA	<input type="checkbox"/> DATE SEP 2010

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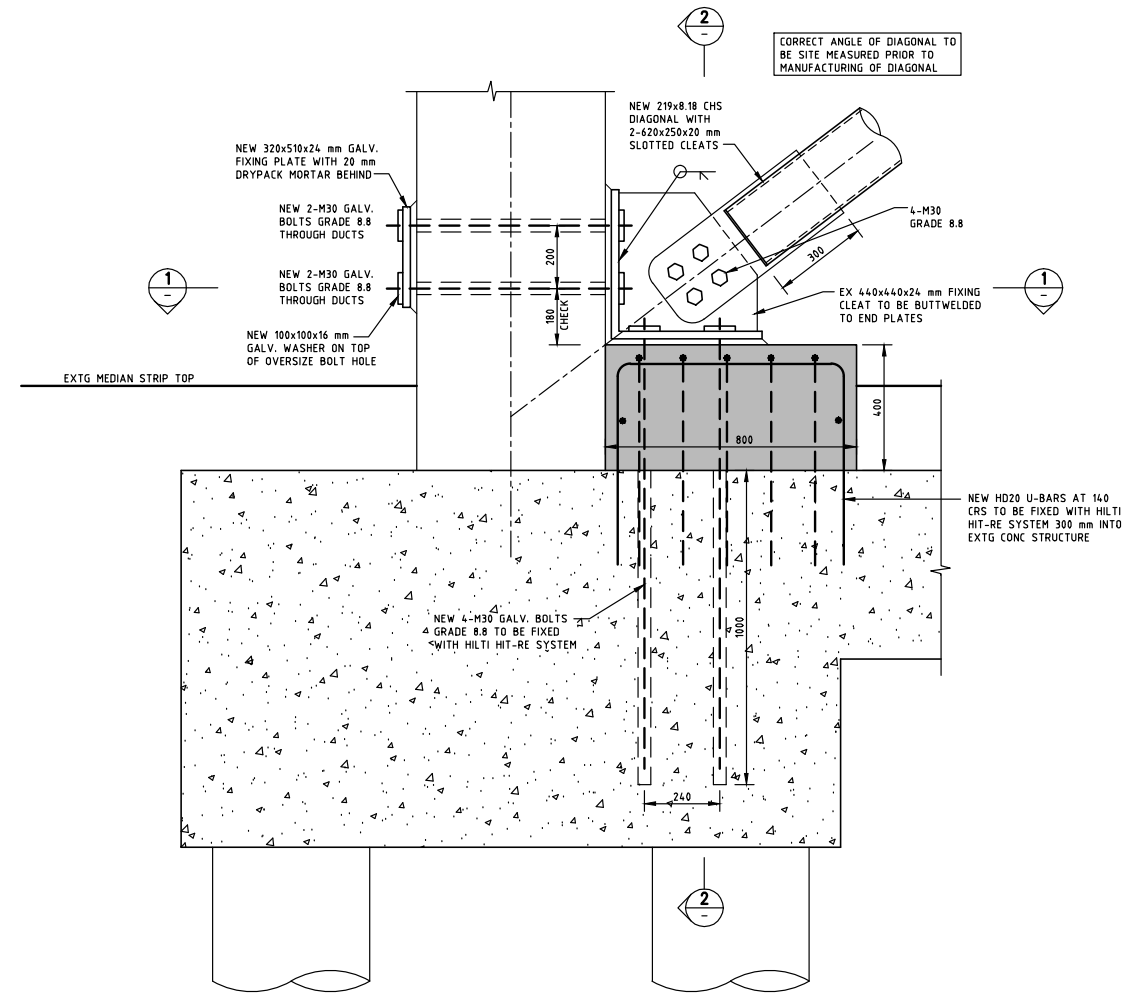
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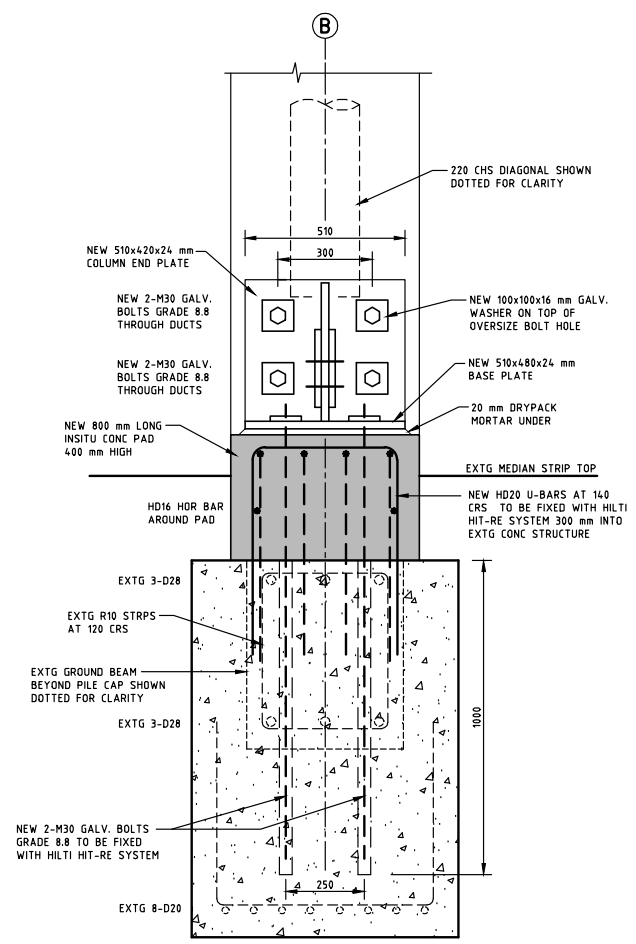
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SECTION 1
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DETAIL E
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SECTION 2
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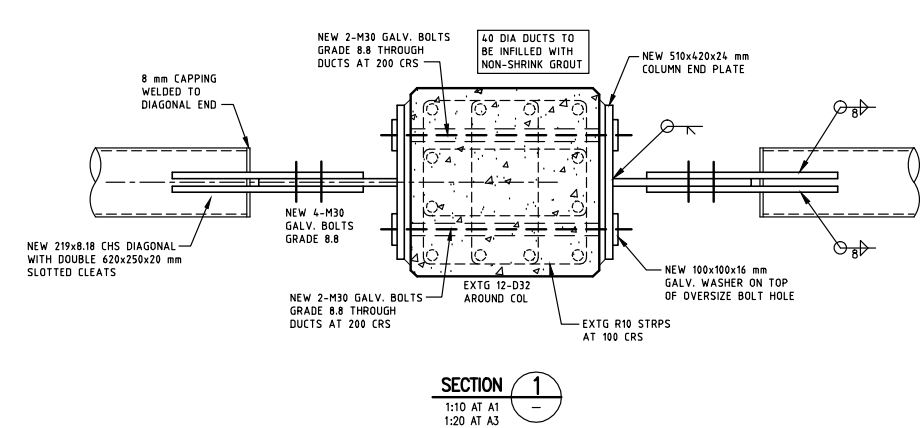
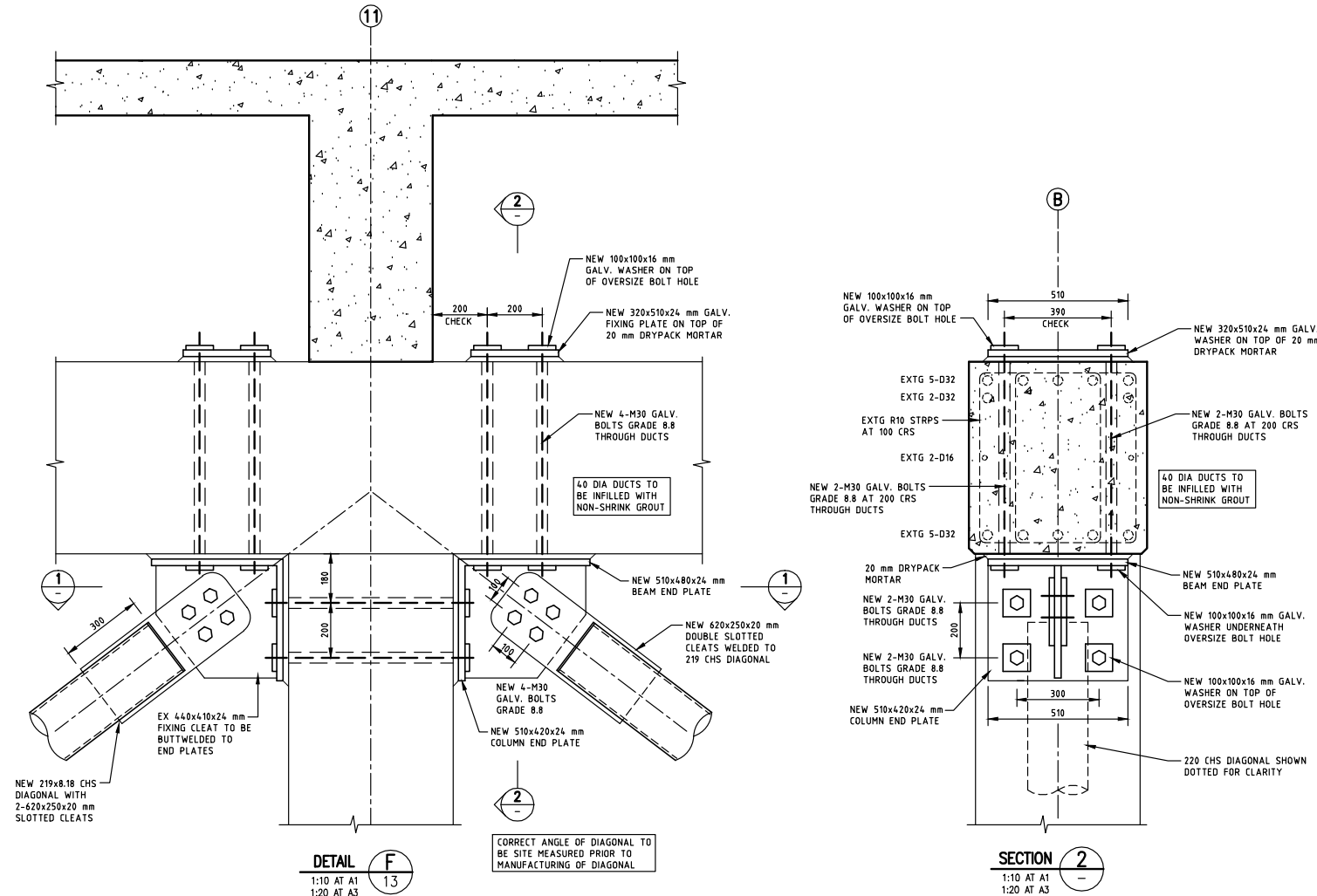
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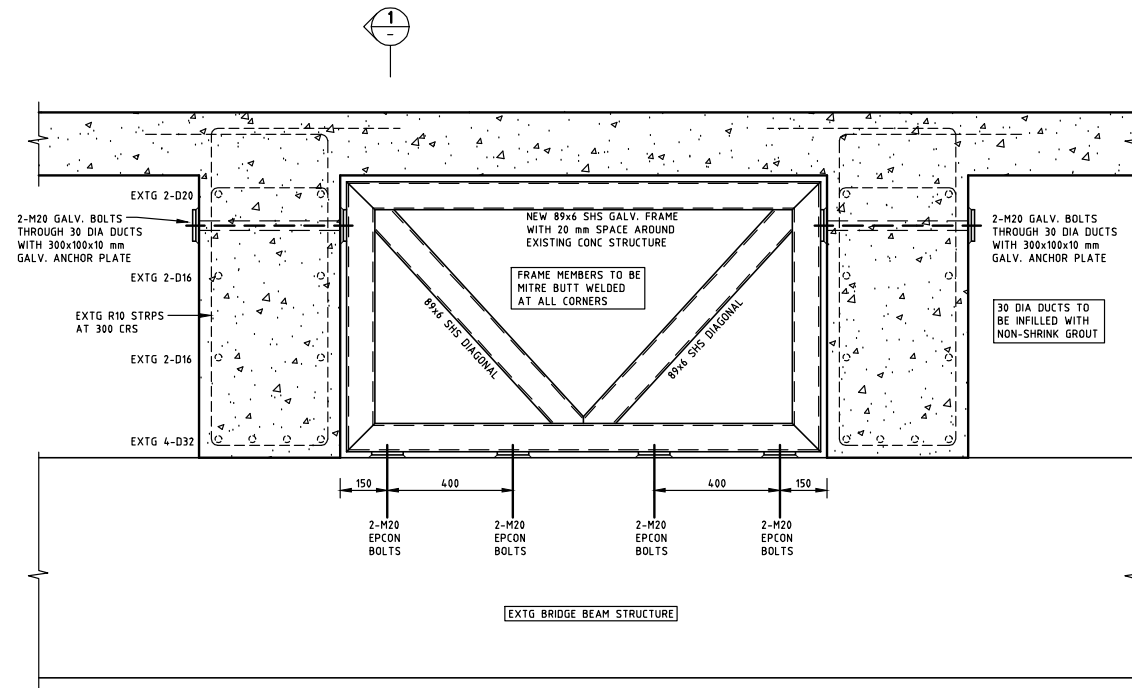
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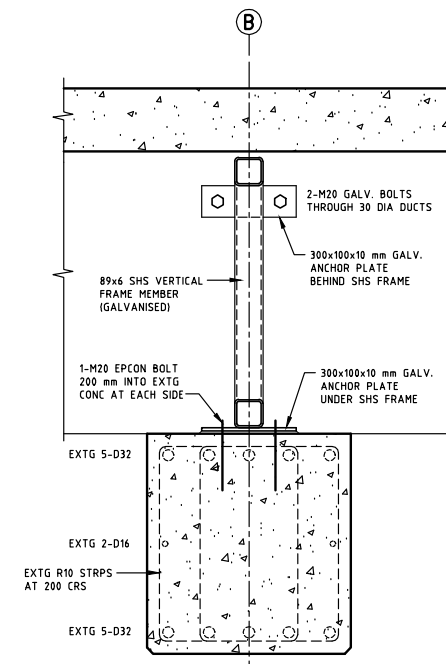
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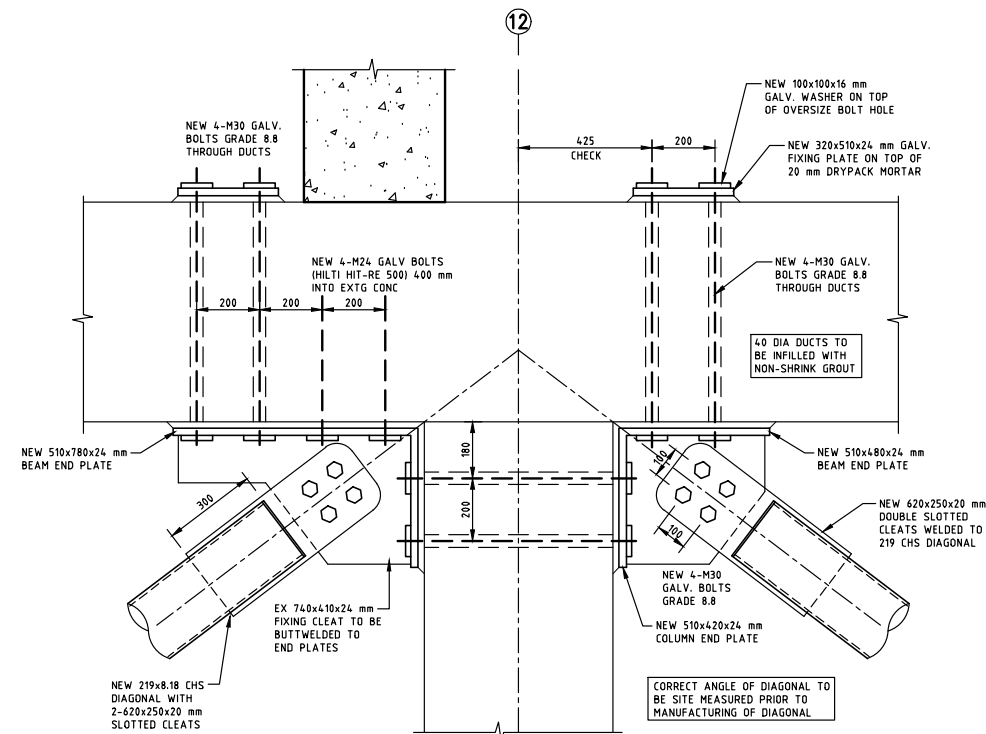
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SECTION 1
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DETAIL H
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PIER STRENGTHENING
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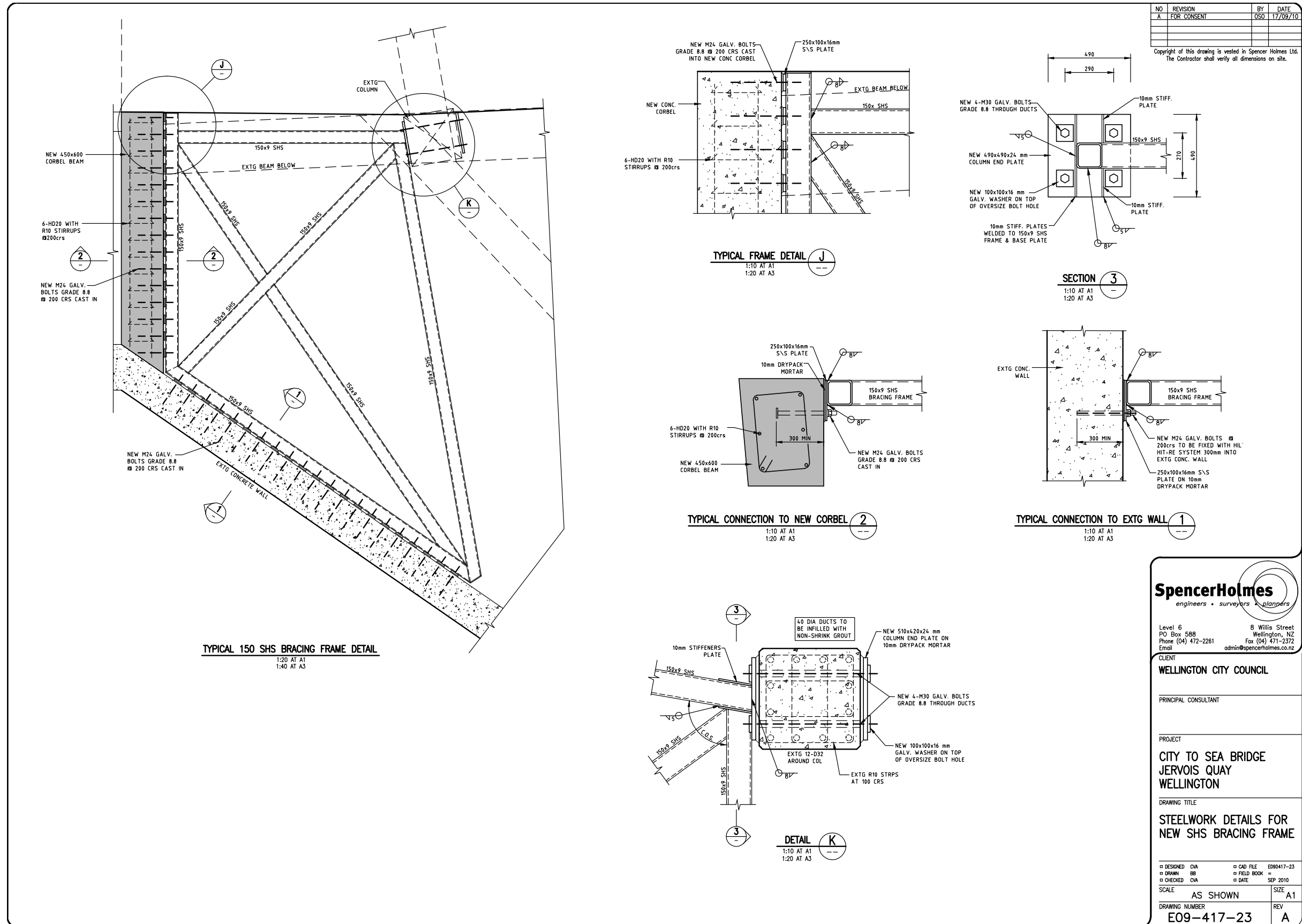
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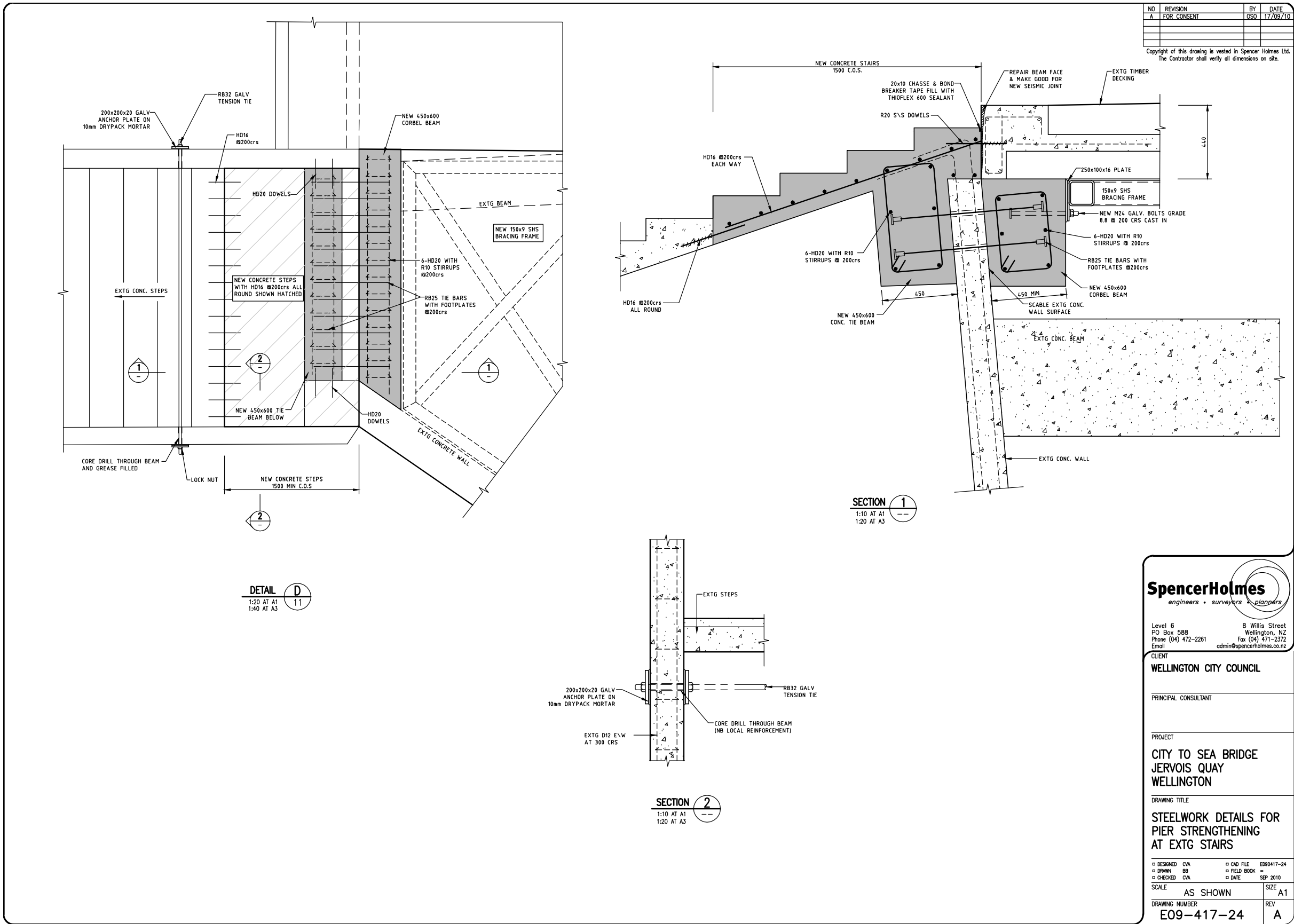
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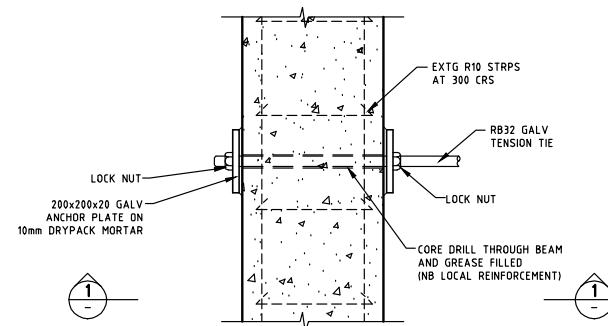
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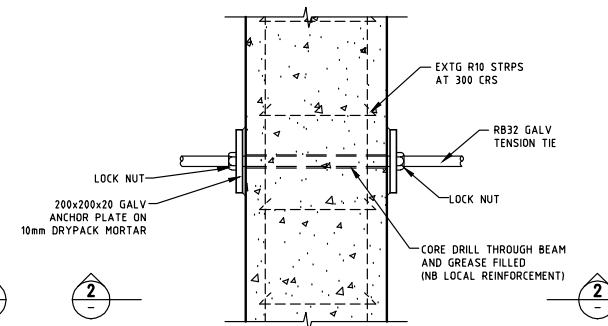
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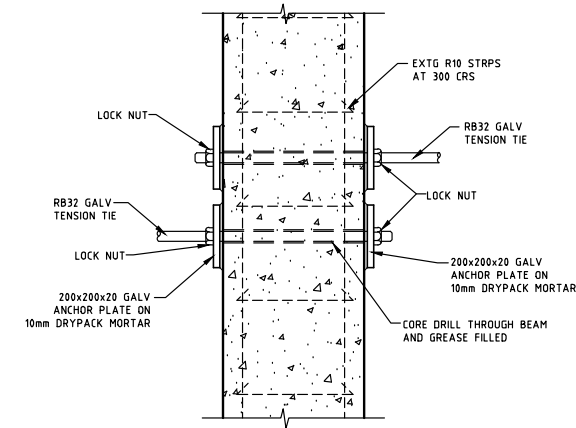
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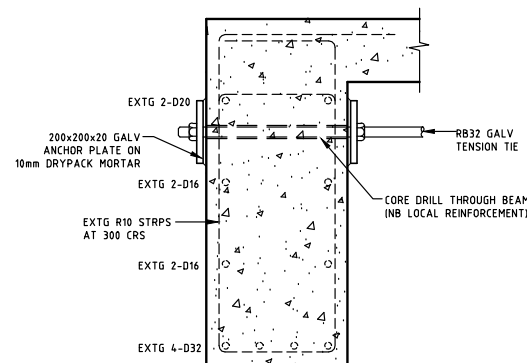
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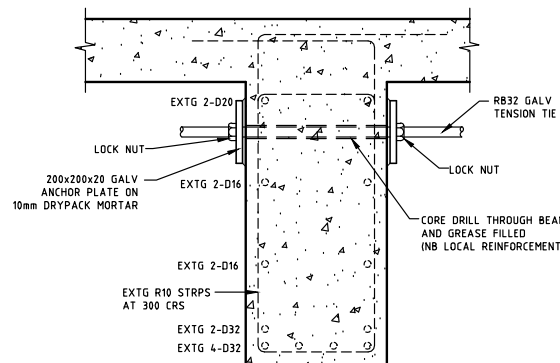
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SECTION 1
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SECTION 2
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APPENDIX B - GEOTECHNICAL REPORTING





24 June 2024
Job No: 1091837.1000

Wellington City Council
PO BOX 2199
WELLINGTON 6140

Attention: Farzad Zamani

Dear Farzad

City to Sea Bridge, Wellington
Desktop Geotechnical Seismic Assessment

1 Introduction

This report presents a desktop geotechnical seismic assessment for the City to Sea Bridge as input to the Detailed Seismic Assessment (DSA) being undertaken by the project structural engineer, Hoff Consultants Ltd (HoffCon). The study was undertaken by Tonkin & Taylor Ltd (T+T) at the request of Wellington City Council in accordance with Variation Order VO1 dated 5 October 2023 (T+T Ref: 1091837.1000).

T+T has previously undertaken a geotechnical seismic assessment of the structure in 2018. To enable assessment of %NBS (New Building Standard), HoffCon require further geotechnical parameters to assess the behaviour of the structure pre-liquefaction and after liquefaction is triggered. In particular, the post liquefaction assessment is required to understand if a “step change” occurs in accordance with the Assessment Guidelines, which could affect the % NBS rating. This letter supersedes our report dated 24 October 2018 (T+T Ref. 1007825.001).

The scope and objectives of the desktop study consisted of:

- Review work undertaken in 2018 and meet with HoffCon and agree the geotechnical issues which could influence the DSA and the geotechnical parameters required as input to the DSA.
- Review and update ground model based on any new available geotechnical information available since the 2018 assessment.
- Review the site’s potential for liquefaction and liquefaction trigger.
- Assess geotechnical consequences to the structure from liquefaction.
- Assess and provide HoffCon geotechnical vertical capacity and stiffness of pile foundations.
- Provide geotechnical parameters to HoffCon to allow them to carry out lateral pile analyses using LPILE software.
- Liaise with HoffCon during their application of the geotechnical parameters to the DSA.
- Preparation of this desktop report presenting the conclusions of the study.

This geotechnical assessment has been undertaken generally in line with Section C4: Geotechnical Considerations, The Seismic Assessment of Existing Buildings Guideline¹ July 2017. In accordance with that guideline this assessment is focused on geotechnical aspects which could influence the behaviour of the structure with respect to life safety. Serviceability aspects are not considered.

The conclusions presented in the report are based on readily available data reviewed as part of a desktop study. Conclusions developed based on the information in this report are to be discussed with the geotechnical engineer before finalising those conclusions. This is to allow the opportunity to confirm that the information has been applied as intended and to challenge any parameters which prove to be critical. If it is determined that further investigations, assessment or modifications of the existing foundations are required, then the concept design for these works should be developed in consultation with a geotechnical engineer.

Information presented in this report is not intended for the design of building foundation modifications.

2 Review of available information

2.1 Site description

Conclusion	Information reviewed
<ul style="list-style-type: none"> Refer Figure A.1 (site plan), in Appendix A. The site is located at Jervois Quay, Wellington. The City to Sea Bridge is a pedestrian bridge over Jervois Quay, and connects Te Ngakau Civic Precinct and Wellington waterfront. The eastern bridge abutment is founded adjacent to an approximately 6m high mass concrete seawall which retains the reclamation edge at this location adjacent to the man-made Whairepo Lagoon. 	<ul style="list-style-type: none"> Wellington City Council, City to Sea Bridge Drawings (December 1992) Historic Seawall Drawings Spencer Holmes Drawings, City to Sea Bridge, Plan and Sections (August 2010) Above Drawings attached in Appendix C.

¹ The Seismic Assessment of Existing Buildings Guideline - Part C (Detailed Seismic Assessment), Section C4: Geotechnical Considerations. July 2017. View online at: [The Seismic Assessment of Existing Buildings Guideline](#).

2.2 Ground and groundwater conditions

Conclusion	Information reviewed
<ul style="list-style-type: none"> • Refer Figure 1 for a cross section. • Available geotechnical investigation data near the site comprises: <ul style="list-style-type: none"> – City to Sea Bridge 1993 investigations (BH-A1 to BH-A3) – One 1988 borehole at Capital E (CSD-B9) • Geotechnical information (boreholes and CPTs) within the vicinity of the site (approximately 100m) listed below has been used in the assessment, refer Appendix B. <ul style="list-style-type: none"> – 6 No. Cone penetration tests (CPT) at 260 Wakefield Street. – 2 No. Boreholes at 260 Wakefield Street. • The inferred soil profile is summarised below and in Figure 1. <ul style="list-style-type: none"> – 1889 Reclamation Fill: Silty, sandy gravel fill, from ground surface (~RL +2m). Fill compacted above groundwater table and is medium dense to dense. Below groundwater table Fill is loose. – Beach Deposits: Loose to medium dense sand with shells. From ~RL -3m. – Alluvium: Typically silty sandy gravel with occasional lenses of sandy silt. Gravel in upper part of layer is medium dense to dense. Becomes dense to very dense with depth. Silt in upper part of layer is typically firm to stiff. Stiff to very stiff at depth. From ~RL-5m. – Bedrock: Greywacke sandstone and siltstone. Approximately 40 to 60m bgl. • Groundwater levels from historical boreholes nearby the site indicate the groundwater level varies between approximately RL -0.2m and RL +1m. The average groundwater level is RL+0.4m, however a lower groundwater level is more critical for this assessment. Therefore, a groundwater level of RL +0.2m has been adopted in this assessment. 	<ul style="list-style-type: none"> • Kaiser, A.E., et. al., 2019. Updated 3D Basin model and NZS 1170.5 subsoil class and site period maps for the Wellington CBD: Project 2017-GNS-03-NHRP. GNS Science consultancy report 2019/01. • New Zealand Geotechnical Database • Levels are in terms of Wellington 1953 Vertical Datum

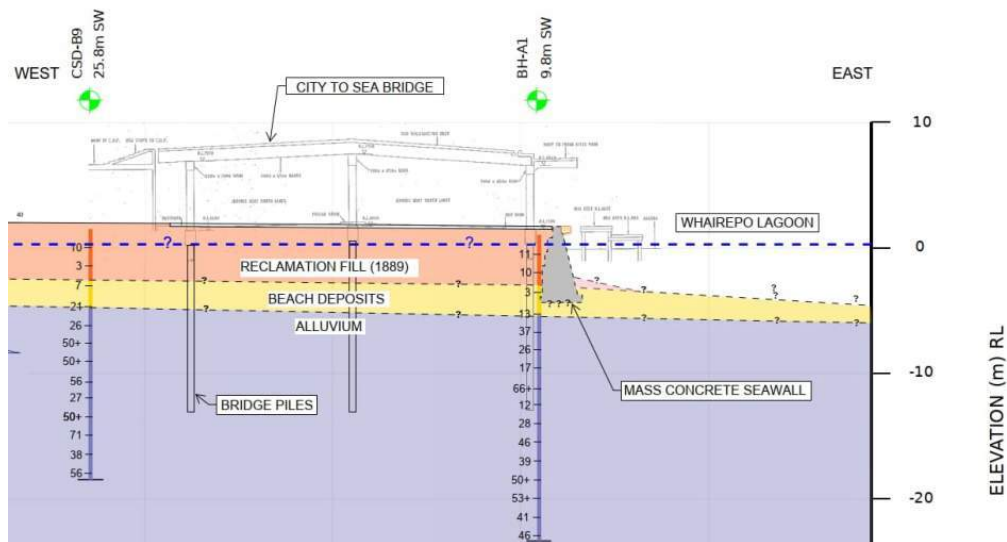


Figure 1: Cross Section

2.3 Active Faults

Conclusion	Information reviewed
<ul style="list-style-type: none"> No active or inactive faults are mapped beneath the site. The Wellington Fault lies approximately 1.5km northwest from the site. The Wellington Fault is included in Table 3.6 of NZS 1170.5:2004 as a major fault requiring near fault factors when assessing structural design actions. There are numerous other active and inactive faults mapped nearby in Wellington city. Bathymetric survey of the Wellington Harbour identified the active Aotea Fault. The Aotea Fault is inferred to project onshore and extend southward beneath Te Aro. Although the precise onshore location is currently inferred, the alignment of the fault is approximately 650m east of the site. The inferred location is poorly constrained and for this reason GNS has only published the offshore fault alignment. The Aotea Fault is not considered a major fault according to NZS 1170.5:2004. 	<ul style="list-style-type: none"> GNS Online database of active faults NZS1170.5: 2004 Section 3.1.3 and Table 3.6

2.4 Previous earthquakes

Conclusion	Information reviewed
<p>The following recent earthquakes were felt at the site:</p> <p> Kaikoura Earthquake (14 November 2016 at 12:02am) Magnitude: M_L 7.8 Intensity felt at site PGA 0.16g recorded at Frank Kitts Park (FKPP).</p> <p> Cook Strait Earthquake (21 July 2013 at 5:09pm) Magnitude: M_L 6.5 Intensity felt at site PGA 0.12g recorded at Frank Kitts Park (FKPP).</p> <p> Lake Grassmere Earthquake (16 August 2013 at 2:31pm) Magnitude: M_L 6.6 Intensity felt at site PGA 0.11g recorded at Frank Kitts Park (FKPP).</p> <p>There is no known evidence of ground damage at the site as a consequence of these earthquakes.</p>	<p>Earthquake magnitude source of data: http://geonet.org.nz/</p> <p>Ground damage source data: Tonkin + Taylor observations</p>

2.5 Existing building foundations

Conclusion	Information reviewed
<ul style="list-style-type: none"> Bridge abutments and piers are supported on 500mm shaft diameter Franki piles. Bulb diameter unknown, assumed to be 600mm dia. in this assessment. The specification indicates piles are expected to be founded 14 to 16m bgl. This assessment assumes piles are founded 15m bgl. Columns are supported by 2 pile groups with a 1.2m deep pile cap. Pile caps are tied together with a 0.6m deep ground beam in one direction (parallel to Jervois Quay). Abutment ramps are supported on 275mm square precast reinforced concrete driven piles. This assessment assumes piles found ~8m bgl (1m embedment into Alluvium as these lightly loaded piles is likely to achieve the required set with 1m embedment into dense soils). Top of ground beams -RL +1.5m. Top of piles -RL+0.3m. 	<ul style="list-style-type: none"> Wellington City Council, City to Sea Bridge Drawings (December 1992) (selected drawings in Appendix C).

3 Earthquake shaking hazard

3.1 Seismic site subsoil class

Conclusion	Information reviewed
<ul style="list-style-type: none"> Site subsoil class is assessed to be near the boundary between Class C and D. In the absence of site-specific information to inform the subsoil class, the following is considered prudent for this assessment: <ul style="list-style-type: none"> Subsoil Class C – Shallow soil sites for the geotechnical assessment. Subsoil Class D – Deep soil sites for the structural assessment. 	<ul style="list-style-type: none"> Refer Section 2.2. NZS1170.5:2004 Kaiser, A.E., et. al., 2019. <i>Updated 3D Basin model and NZS 1170.5 subsoil class and site period maps for the Wellington CBD: Project 2017-GNS-03-NHRP</i>. GNS Science consultancy report 2019/01.

3.2 Ground shaking hazard

In accordance with guidance published on the MBIE website ([Module 1: Overview of the geotechnical guidelines | Building Performance](#)), ground shaking hazard to be considered in geotechnical assessment and any associated calculation of %NBS has been assessed based on Module 1² (Version 0, 2016). The conclusions are presented in Table 3.1.

Module 1 has been updated and published as Module 1³ (Version 1, 2021). In accordance with MBIE guidance this update is to be applied in geotechnical design of new structures but not in a DSA of existing structures. The shaking hazard based on Module 1 (Version 1, 2021) is included in Table 3.1 for comparison only.

In October 2022, GNS Science released the revised National Seismic Hazard Model (NSHM)⁴. This represents the latest scientific knowledge of earthquake hazard in New Zealand and is an important factor for understanding and managing earthquake risk in the built environment.

Updates to Building Code compliance documents for design of new structures (including update of Module 1³(Version 1, 2021)) are expected to be released between 2023 and 2025. Those updates will be informed by the NSHM. It is not known if these updates will be applied in any way to the assessment of existing buildings and calculation of %NBS.

Table 3.1 includes the likelihood of various levels of earthquake shaking as indicated by the NSHM. This likelihood is provided to inform an understanding of seismic risk and does not influence the calculation of %NBS.

² MBIE/NZGS. Earthquake Geotechnical Engineering Practise, Module 1 (Version 0, 2016): Overview of the Guidelines, Section 5, Method 1.

³ MBIE/NZGS. Earthquake Geotechnical Engineering Practise, Module 1 (Version 1, 2021): Overview of the Guidelines, Section 5, Method 1.

⁴ <https://nshm.gns.cri.nz/>

Table 3.1: Shaking hazard for geotechnical assessment and design

Case	NZS1170.5:2004 limit state	PGA (g)	Magnitude	Approximate likelihood based on NSHM 2022
Assessment of existing buildings Module 1 (Version 0, 2016) [adopted for this assessment]	ULS(IL3)	0.59	M_{eff} 7.1	20% In the next 50 years
Design of new buildings Module 1 (Version 1, 2021)	ULS(IL3)	0.91	M_w 7.7	8% In the next 50 years

Note:

Building design life	50 years – as advised by DTC.
Building importance level	IL3 (NZS 1170.0:2004, Table 3.2) – as advised by HoffCon / WCC.
Subsoil class	C (shallow soil) – refer Section 3.1 Relevant to Module 1 (Version 0, 2016) only.
VS30	Approximately 250m/s inferred from published Vs30 maps by Semmens et al (2010) and Kaiser et al (2019). Relevant to NSHM only.

In this report ground shaking is expressed as a %ULS(IL3) shaking relative to Module 1 (Version 0 2016).

The Kaikoura M7.8 earthquake recorded a PGA of The PGA of 0.16g at Frank Kitts Park (see Section 2.4) was magnitude weighted to a $M_w = 7.1$ in accordance with the procedure of Idriss and Boulanger (2014)⁵. This yields a PGA of 0.18g at $M_w = 7.1$. As a comparison, this indicates that the intensity of shaking felt as a result of that event was approximately 30% ULS(IL3) shaking.

4 Liquefaction assessment

4.1 Liquefaction potential

Liquefaction only occurs in some soils. Liquefaction susceptible soils are typically saturated, non-cohesive and loose or medium dense. Soils which are susceptible to liquefaction require a certain level of earthquake shaking (trigger) to cause them to liquefy. Denser soils require more intense and/or longer duration of shaking (higher trigger) than less dense soil.

The liquefaction susceptibility and trigger for each soil layer has been assessed by the method proposed by Idriss and Boulanger (2014)⁶. The conclusions are summarised in Table 4.1. Refer 2.2 for further details of each layer.

⁵ Boulanger, R.W and Idriss, I.M., 2014. CPT and SPT based liquefaction triggering procedures." Report No. UCD/CGM-14/01, Center for Geotechnical Modeling, Department of Civil and Environmental Engineering, University of California, Davis, CA, 134 pp.

⁶ Boulanger, R.W and Idriss, I.M., 2014. CPT and SPT based liquefaction triggering procedures." Report No. UCD/CGM-14/01, Center for Geotechnical Modeling, Department of Civil and Environmental Engineering, University of California, Davis, CA, 134 pp.

Table 4.1: Liquefaction potential

Layer No.	Description	Conclusion
1	Reclamation Fill	<ul style="list-style-type: none"> Above groundwater (crust layer): Not susceptible to liquefaction. Below groundwater level: Widespread liquefaction triggered at $-0.2g$ M7.1 to $0.25g$, M7.1 (~35% to ~40% ULS(IL3)). Refer Table 4.2.
2	Beach Deposits	<ul style="list-style-type: none"> Widespread liquefaction triggered at $-0.2g$ M7.1 to $0.25g$, M7.1 (~35% to ~40% ULS(IL3)). Refer Table 4.2.
3	Alluvium	<ul style="list-style-type: none"> This layer generally comprises dense to very dense silty sandy gravel. Because of its dense nature liquefaction of this material is not expected at 100%ULS(IL2) shaking. Liquefaction of pockets within upper part of layer (medium dense sand and low plasticity silt) is possible at $-0.3g$ to $0.4g$, M7.1 (~50% to 70% ULS(IL3)).
4	Bedrock	<ul style="list-style-type: none"> Not susceptible to liquefaction.

4.2 Liquefaction consequences

Considering the potential for liquefaction described in Section 4.1, consequences of liquefaction at the site and for the existing building have been identified as listed in Table 4.2.

Table 4.2: Liquefaction consequences

ID	Consequence	Comments
1	Lateral spread	<ul style="list-style-type: none"> Can be expected to be large (100's mm to metres) towards Whairepo lagoon (see Section 6 for seawall stability conclusions).
2	Cyclic displacement	<ul style="list-style-type: none"> Of the order of 150mm. This is displacement (in any direction) of the crust relative to the top of the Alluvium.
3	Reduced soil strength and stiffness	<ul style="list-style-type: none"> Foundations in or near liquefied soils will result in loss or substantial reduction in vertical and lateral support to foundations.
4	Free field settlement	<ul style="list-style-type: none"> Of the order of 100 to 200mm estimated in an earthquake triggering liquefaction.
5	Sand boils	<ul style="list-style-type: none"> Possible as thickness of crust is $\leq 2m$. Ground settlement (in addition to free field settlement) is likely as a result of sand boils.
6	Negative skin friction on deep foundations	<ul style="list-style-type: none"> Liquefaction induced free field settlement can cause down-drag (NSF) on pile foundations. NSF loads have not been assessed here as other load scenarios are more critical to the structure.

5 Geotechnical issues identified

Key geotechnical issues that may affect the structure's seismic performance are listed in Table 5.1. Geotechnical parameters to assess these issues are presented in Section 6.

Table 5.1: Geotechnical issues identified

ID	Issue	Comments
1	Seawall instability (resulting in large lateral ground deformations / lateral spread impacting bridge foundations)	Refer Section 6 for seawall stability conclusions.
2	Limited uplift and compression capacity of piles, and differential soil stiffness between piles.	Refer Section 7.1.
3	Kinematic soil loads on foundations from cyclic displacement and lateral spread	Refer Section 7.2.
4	Differential lateral spread (lateral stretch) across the bridge	Refer Section 7.2.
5	Limited resistance to resist base shear	Refer Section 7.2.

6 Seawall stability

HoffCon have advised that the bridge loses gravity support at a lateral spread ground displacement of 115mm. A stability assessment of the seawall has been carried. Conclusions relevant to the bridge are summarised below:

- The seawall becomes unstable (sliding and rotation) in an earthquake event triggering widespread liquefaction. This assessment assumes that the seawall is founded on non-liquefiable soils which is unconservative. However, the calculations already indicated that the seawall is unable to resist the earth pressures from the retained liquefied soils. Liquefaction of founding soils will yield worse results.
- Large displacements of the retained soils of the order of 100's mm or even metres can be expected when the seawall becomes unstable. This lateral displacement is very likely to exceed the 115mm tolerance indicated by HoffCon.

7 Assessment of existing foundations

In line with Section C4 of the Assessment Guidelines, the capacities presented in this section do not need to be reduced by a strength reduction factor.

If the parameters presented in this section prove to be critical to the assessment, HoffCon is to discuss this with T+T, to allow review.

7.1 Vertical capacity of piles

The vertical load displacement behaviour of the existing concrete piles may be modelled as elastic – plastic as outlined in Figure 1 and Figure 2 in Appendix D1.

7.2 Lateral aspects

Liquefaction-induced lateral ground movements (cyclic displacement and lateral spread) is possible in an earthquake where widespread liquefaction is triggered. Four scenarios should be considered to represent the ground behaviour during different stages of an earthquake. These scenarios are described in Table 1 in Appendix D2.

Lateral capacity to resist base shear may be taken as a combination of the following:

- a Lateral resistance of piles:

- Geotechnical parameters to allow HoffCon to carry out lateral pile analyses using LPile software are provided in Sketch 1 of Appendix D2. This includes soil parameters and displaced ground profiles for the cyclic displacement and lateral spread scenarios.
- b Passive resistance of ground beams and pile caps:
 - Refer Sketch 2 in Appendix D2.

8 Step Change

Hoffcon to assess if the geotechnical parameters provided result in a severe structural weakness in accordance with the Guidelines. If so, a step change factor of 2 may be required to be applied to the %NBS score.

9 Potential Geotechnical Strengthening Options

From discussions with HoffCon, we understand the following:

- Scenario 1 – No liquefaction: Structure loses gravity support at approx. 25 to 30% NBS (pile head joint failure)
- Scenario 3 – Cyclic displacement: Pile lateral capacity reached at approx. 80mm cyclic displacement.
- Scenario 4 – Lateral spread: Pile vertical capacity lost at approx. 115mm lateral spread displacement.

Considering the above, the following possible options can be considered for further development:

- To provide foundations offering reliable lateral and vertical support to structure:
 - Re-found structure with large diameter bored piles capable of resisting liquefaction induced kinematic soil loads and structure inertia loads.
 - Ground improvement (e.g. CFA/jet grout lattice cells) to mitigate liquefaction at Bridge site.
- Seawall strengthening to reduce lateral spread ground displacements and provide foundations to resist remaining kinematic and structural loads and associated displacements:
 - New foundations could comprise micro piles with steel casing extending into Alluvium.
 - Seawall strengthening could comprise (extents of treatment dependent on the performance of the new foundations):
 - o New large diameter bored pile wall adjacent existing seawall; or
 - o Excavation of liquefiable material at base of lagoon and partial infilling of the lagoon.

10 Further work

If strengthening is proposed, further analyses and development of the strengthening concepts in conjunction with HoffCon would be required.

11 Applicability

This report has been prepared for the exclusive use of our client Wellington City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Recommendations and opinions in this report are based on data from discrete investigation locations. The nature and continuity of subsoil away from these locations are inferred but it must be appreciated that actual conditions could vary from the assumed model.

Tonkin & Taylor Ltd

Report prepared by:

[Redacted]

[Redacted]

Senior Geotechnical Engineer

Reviewed and authorised for Tonkin & Taylor Ltd by:

[Redacted]

[Redacted]

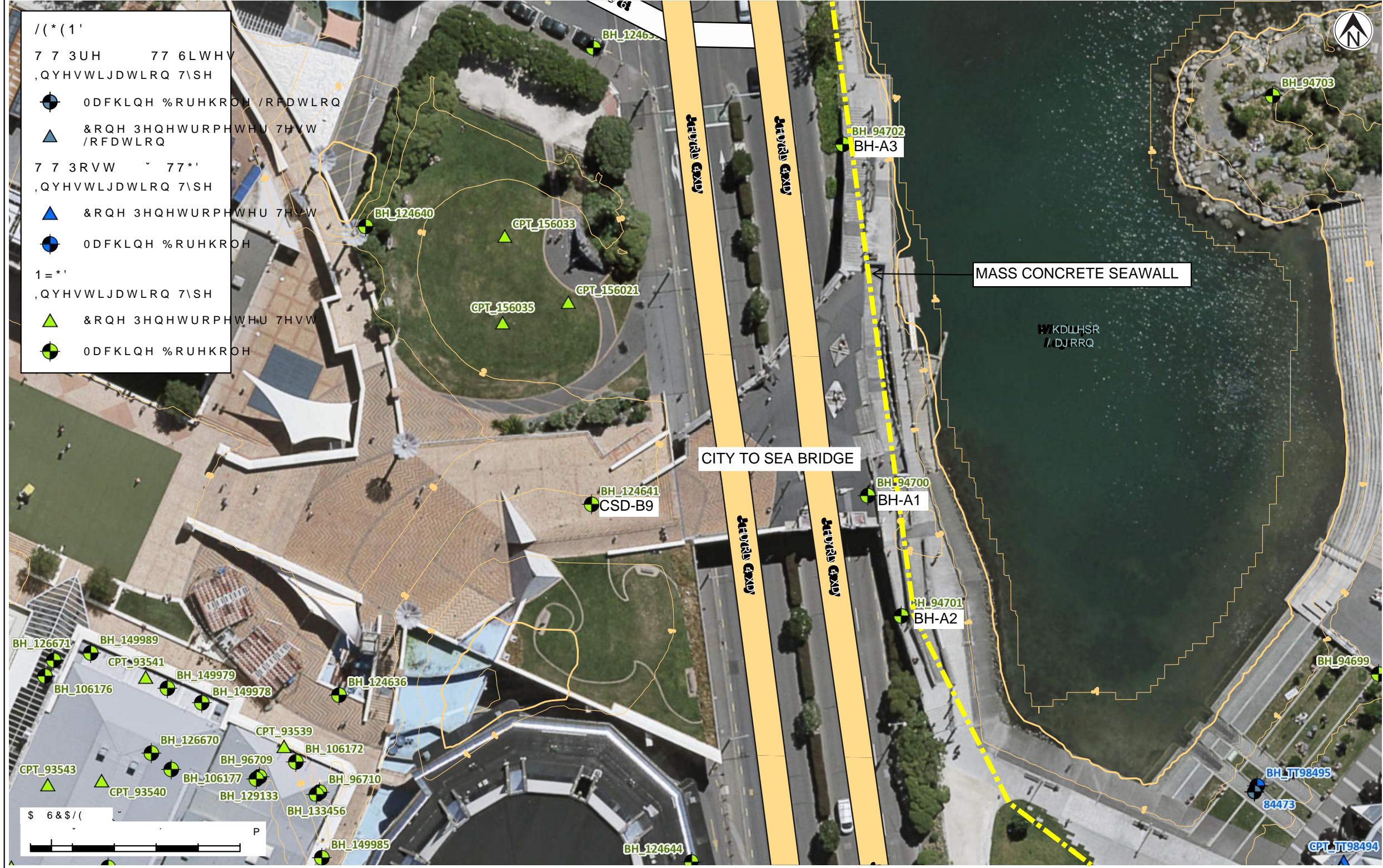
Project Director

24-Jun-24

p:\1091837\1091837.1000\workingmaterial\7. report\20231117_t+t_city to sea bridge_report_v0 final.docx

Appendix A Figures

- Figure 1: Site plan



Tonkin+Taylor
 Exceptional thinking together www.tonkintaylor.co.nz

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12&\$7,21 3/\$1 \$33529(' '\$7(&+(&.(6&\$(\$),* 1R),*85(\$ 5(9

Appendix B Geotechnical investigation data

SOURCE: NZGD BH_94700

T82774-A1

04/05/99 15:54 64 4 5269948
 04/05/1999 16:12 64-4-5269948

GRIFFITHS DRILLING

PAGE 02

GRIFFITHS DRILLING CO. LTD.

Client: Wellington City Council

Telephone 268-943 Upper Hutt
 P.O. Box 40422, Upper Hutt.

INVESTIGATION DRILLING RECORD

SITE: Proposed Foot Bridge Aorea Lagoon

HOLE No: 1

DATE: 6-1-93

WATER LEVEL: Fluctuates between 0.85m & 1.85m.

Depth Metres	MS	Description
.20	[Pattern]	Firm grey sandy gravel fill.
.30	[Pattern]	Concrete, possibly old road or path.
2.60	[Pattern]	Firm brown and orange brown silty sandy gravel fill.
4.00	[Pattern]	Loose brown and orange brown silty sandy gravel fill.
6.40	[Pattern]	Loose dark grey coarse sand with shells.
7.00	[Pattern]	Moderately dense bluey grey silty sandy gravels
8.40	[Pattern]	Moderately dense brown, orange brown and grey mottled, slightly silty sandy gravel.
9.40	[Pattern]	Moderately dense bluey grey silty sandy gravel.
9.80	[Pattern]	Firm bluey grey sandy silt.
10.40	[Pattern]	Firm brownish grey silt.
11.20	[Pattern]	Firm grey silt.
11.60	[Pattern]	Firm brown silt.
	[Pattern]	Dense blue grey mottled

Depth Metres	MS	Description
14.70	[Pattern]	Firm grey sandy silt.
15.00	[Pattern]	Moderately dense bluey grey silty sandy grav
16.00	[Pattern]	Moderately dense bluey grey silt.
17.50	[Pattern]	Dense bluey grey mott silty sandy gravels.
18.10	[Pattern]	Moderately dense brown sandy silt.
22.00	[Pattern]	Dense bluey grey silt sandy gravels.
24.42	[Pattern]	Dense bluey grey sand silt.

S.P.T. TESTS

Depth	N
1.50	= 11 6/4/7
3.00	= 10 4/7/3 *
4.50	= 3 2/1/2 *
6.00	= 13 4/7/6 *
7.50	= 37 14/17/20
9.00	= 26 11/15/11
10.50	= 17 5/8/9
12.00	= 66+ 18/26/40 for 100mm
13.50	= 12 3/8/4
15.00	= 28 6/12/16
16.50	= 46 8/16/30
18.00	= 39 8/16/23
19.50	= 50+ 41 for 150mm
21.00	= 53+ 53 for 150mm
22.50	= 41 16/19/22
24.00	= 46 11/19/27

Lost Sample *

7 metres casing used

Bore completed to 24.

GRIFFITHS DRILLING CO. LTD.

Telephone 269-943 Upper Hutt
 P.O. Box 40422, Upper Hutt.

Client: Wellington City Council

INVESTIGATION DRILLING RECORD

SITE: Proposed Foot Bridge Aotea Lagoon

HOLE No: 2

DATE: 11-1-93

WATER LEVEL: Fluctuates between 0.85m & 1.85m.

Depth Metres	MS	Description
.30		Firm grey sandy fill.
2.70		Firm brown and orange mottled silty sandy gravel fill.
4.60		Loose brown, orange and grey silty sandy gravel fill.
4.85		Loose dark grey coarse sand with shells.
5.00		Soft brown, grey and greenish brown silt.
6.50		Loose dark grey coarse sand with shells.
9.50		Moderately dense greenish bluey silty sandy gravel
10.00		Firm greyish brown silt.
11.80		Firm grey silt.
11.90		Firm brown silt.
13.20		Dense bluey grey Slightly silty sandy gravel.
13.40		Firm brown silt.
14.50		Dense bluey grey Slightly silty sandy gravel.

Depth Metres	MS	Description
15.00		Dense bluey grey slightly silty silt sandy gravel.
15.90		Moderately dense brown and bluey grey sand silt.
18.10		Dense brown and grey slightly silty sand gravel.
18.40		Firm brown and grey sandy silt.
19.65		Dense bluey grey slightly silty sand gravel.

S.P.T. TESTS

1.50	=	18	5/7/11
3.00	=	11	6/6/5
4.50	=	6	4/3/3 *
6.00	=	8	1/1/7
7.50	=	36	15/17/19
9.00	=	27	13/14/13
10.50	=	21	5/9/12
12.00	=	79	17/31/48
13.50	=	92	27/42/50 for 80mm
15.00	=	33	22/14/19
16.50	=	57	28/57 for 150mm
18.00	=	26	12/14/12
19.50	=	51	51 for 150mm

Lost Sample *

Casing used 7metres
 Bore completed to 19

SOURCE: NZGD BH_94702

T82774-A3

04/05/99 15:55 64 4 5269948
 04/05/1999 16:12 64-4-5269948

GRIFFITHS DRILLING

T82774-A3

PAGE 04

GRIFFITHS DRILLING CO. LTD.

Telephone 269-943 Upper Hutt
 P.O. Box 40422, Upper Hutt.

Client: Wellington City Council

INVESTIGATION DRILLING RECORD

SITE: Proposed Footbridge Aotea Lagoon

HOLE No: 3

DATE: 12-1-93

WATER LEVEL: Fluctuates between 0.85m & 1.85m.

Depth Metres	MS	Description
.05		Concrete tarseal.
.25		Firm brown silty fill.
.40		Concrete.
5.40		Firm brown and grey silty sandy gravel fill.
6.60		Loose soft bluey grey gravelly sandy silt.
6.90		Loose dark grey coarse sand with shells and some gravel.
8.20		Firm bluey grey mottled silty sandy gravels.
11.80		Firm bluey grey sandy silt.
12.00		Loose bluey grey silty sandy gravel.
13.20		Firm greyish brown silt with vegetation.
14.20		Dense bluey grey silty sandy gravel.
14.30		Firm brownish grey silt.
14.60		Dense bluey grey silty sandy gravels.

Depth Metres	MS	Description
15.50		Firm brownish bluey silty gravelly sand.
16.30		Moderately dense bluey grey silty sandy gra
17.00		Firm brown and grey mottled gravelly sil
21.15		Dense bluey grey sil sandy gravel.

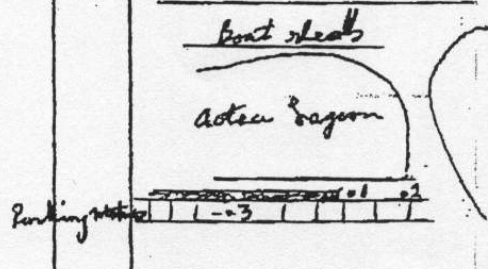
S.P.T. TESTS

Depth (m)	Blows
1.50	= N
3.00	= 6/8/6 14
4.50	= 3/5/3 8 *
6.00	= 3/3/7 10
7.50	= 1/1/1 2 *
9.00	= 3/7/13 20
10.50	= 4/5/8 13
12.00	= 4/7/9 16
13.50	= 4/6/8 14
15.00	= 25/53 for 150mm SPT
16.50	= 7/9/11 20*
18.00	= 14/10/10 20
19.50	= 23/45 for 150mm SPT
21.00	= 16/24/41 65
	= 43 for 150mm SPT

Lost Sample *

Casing used 7 metre

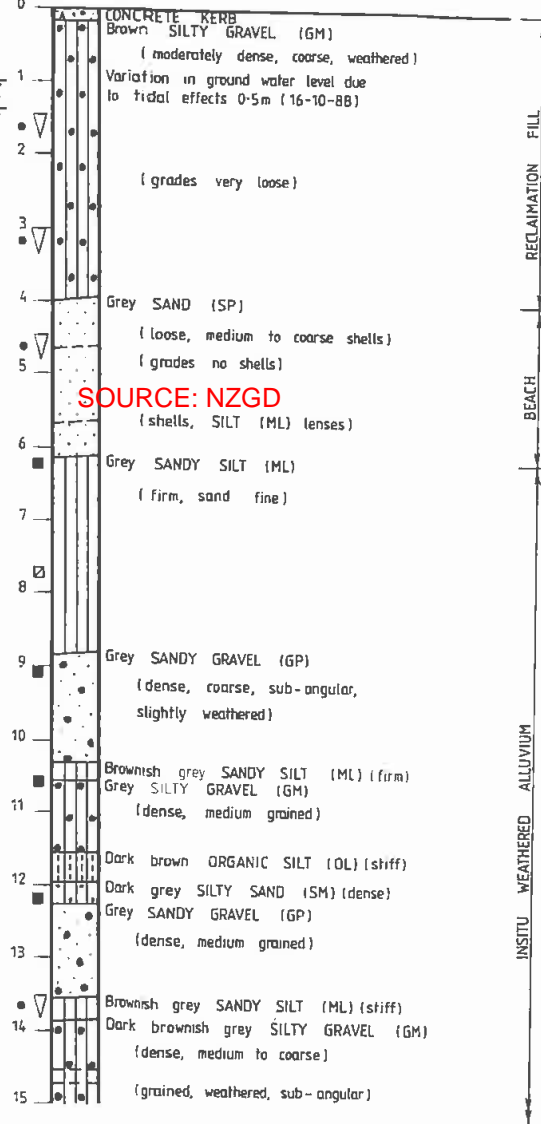
Bore completed to 21



JOB NO. 150285 CLIENT: H.C.C. LOCATION: Hoar's St. Wellington BY: J.E.P. CHECKED:

	TYPE OF TEST	TEST SURCHARGE PRESSURE kPa	SHEAR STRENGTH kPa	NATURAL WATER CONTENT %	DRY DENSITY kg/m ³	PENETRATION RESISTANCE
				11.5		N = 10
				16.9		N = 3
				24.1		N = 7
	DS	50	55	19.4	1750	S = 21
	DS	100	100	19.4	1750	
	DS	150	114	20.5	1750	
						S = 26
				12.7	1940	S = 41/150
				17.6	1810	S = 32/150
	DS	100	111	26.6	1500	S = 56
	DS	180	131	32.6	1350	
	DS	262	194	33.4	1350	
				19.0		N = 27

BORE 9 BH_124641
 DATE DRILLED 15-8-88
 GROUND SURFACE ELEVATION +1.5 METRES
 DATUM: CITY DATUM



SOURCE: NZGD

ABBREVIATIONS AND SYMBOLS	
■ Undisturbed sample recovered in split barrel, 60mm ID ring lined sampler	● Disturbed observation sample
⊠ Undisturbed sample attempted, but missed in recovery	▼ Observed ground water level
▽ Standard Penetration Test (SPT), performed in general accordance with standard ASTM: D1586-67.	DS Direct shear test
▼ Standard Penetration Test (SPT) performed with solid nose	TR Triaxial shear test
S 60mm ID ring lined barrel driven by a SPT hammer	UC Unconfined compression test
N Standard Penetration Test driven by a SPT hammer.	VS Vane shear test
50/285 Number of blows with SPT hammer and penetration (mm) of sampler for penetration less than 300mm	d drained
I insitu pressuremeter test showing depth through which the test was carried out.	u undrained
■ Groundwater piezometer showing depth at which the collection head has been sealed.	c consolidated
▨ Depth over which coring has been attempted. The hatched zone indicates the core recovered.	T90 One dimensional oedometer test with loading at 90 percent of consolidation.
	T20min. One dimensional oedometer test, loading at 20 minute intervals
	T24 hr. One dimensional oedometer test, loading at 24 hour intervals

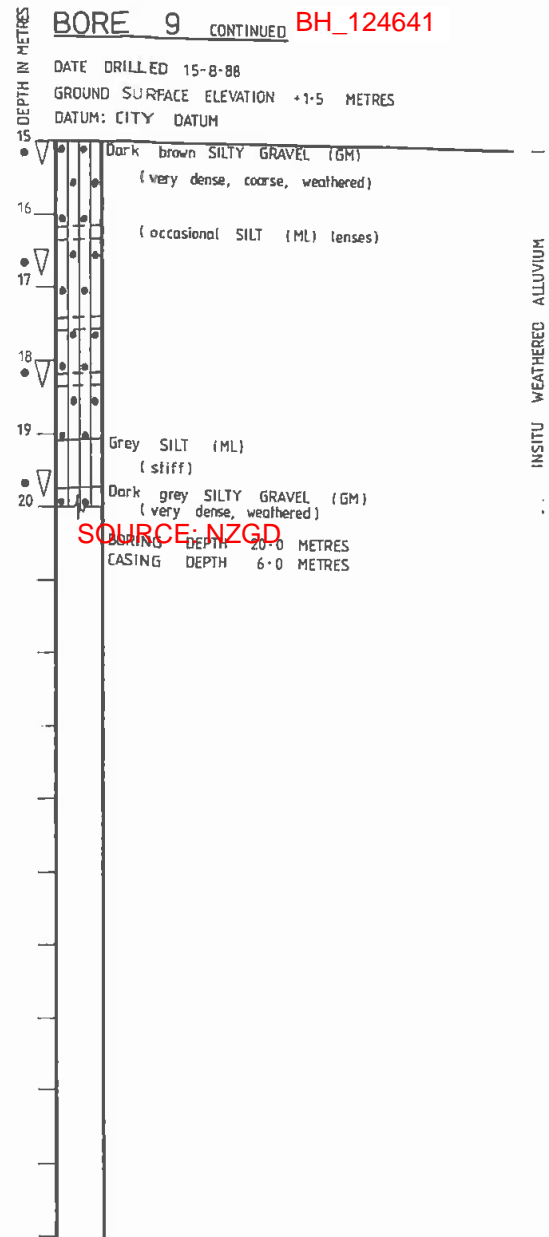
BORE LOG

Brickell Moss Ltd
 PLATE 2I

BH_TT134524

JOB NO. 52665 CLIENT: HCC LOCATION: Horrocks St., Wellington BY: J.E.P. CHECKED: _____

TYPE OF TEST	TEST SURCHARGE PRESSURE kPa	SHEAR STRENGTH kPa	NATURAL WATER CONTENT %	DRY DENSITY kg/m ³	PENETRATION RESISTANCE
			11.3		N = 40 / 150
			13.4		N = 71
			12.4		N = 38
			13.8		N = 56



ABBREVIATIONS AND SYMBOLS

■ Undisturbed sample recovered in split barrel, 60mm ID. ring lined sampler	● Disturbed observation sample
☐ Undisturbed sample attempted, but missed in recovery.	▼ Observed ground water level
▽ Standard Penetration Test (SPT), performed in general accordance with standard ASTM D1586-67.	DS Direct shear test
▼ Standard Penetration Test (SPT) performed with solid nose	TR Triaxial shear test
S 60mm ID ring lined barrel driven by a SPT hammer.	UC Unconfined compression test
N Standard Penetration Test driven by a SPT hammer.	VS Vane shear test
50/285 Number of blows with SPT hammer and penetration (mm) of sampler for penetration less than 300mm.	d drained
I Insitu piezometer test showing depth through which the test was carried out	u undrained
■ Groundwater piezometer showing depth at which the collection head has been sealed.	c consolidated
▨ Depth over which coring has been attempted. The hatched zone indicates the core recovered.	T90 One dimensional oedometer test with loading at 90 percent of consolidation
	T20min One dimensional oedometer test, loading at 20 minute intervals
	T24hr One dimensional oedometer test, loading at 24 hour intervals

BORE LOG



BH_TT134524

Appendix C Existing foundation and seawall
drawings



CITY TO SEA BRIDGE

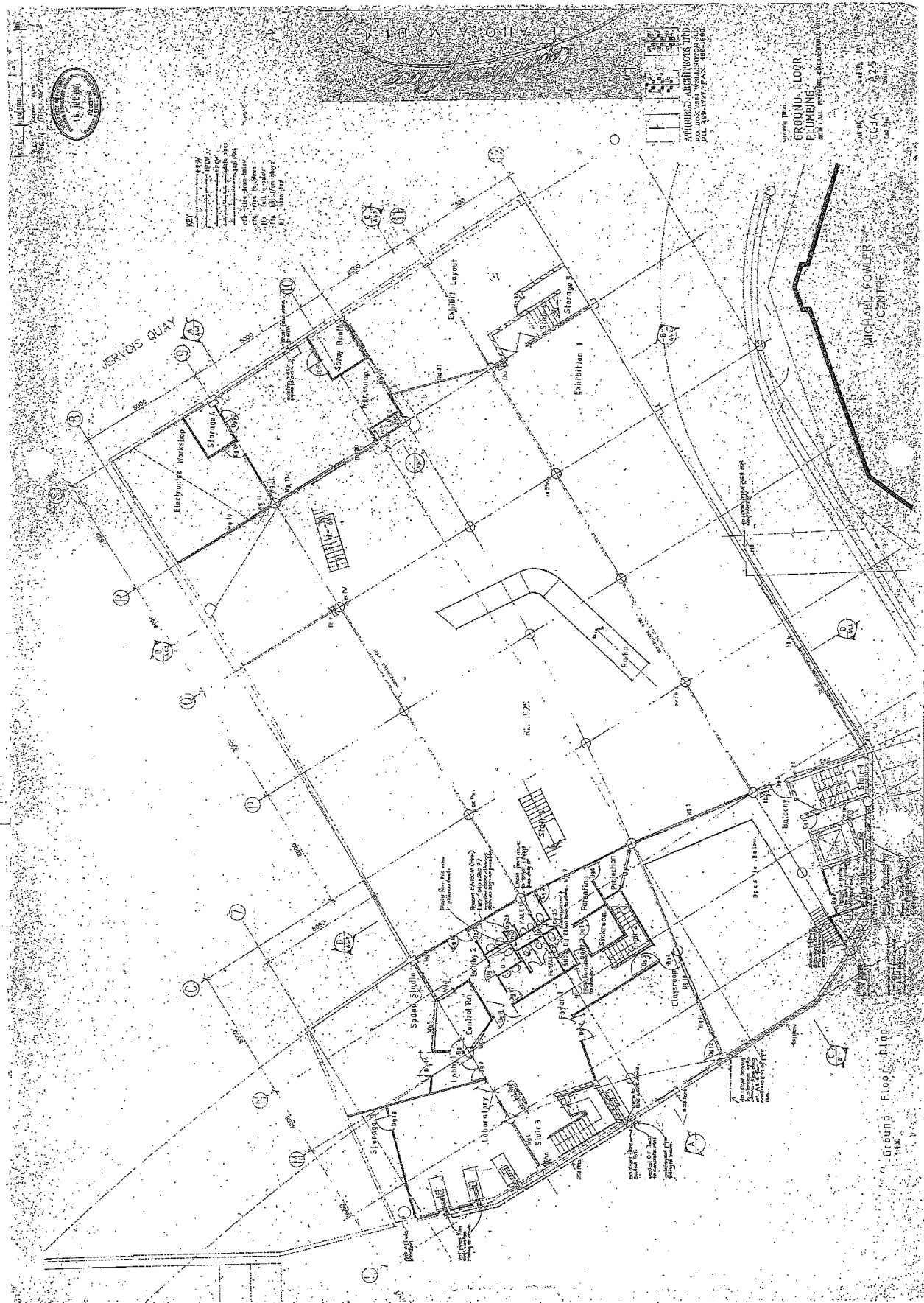
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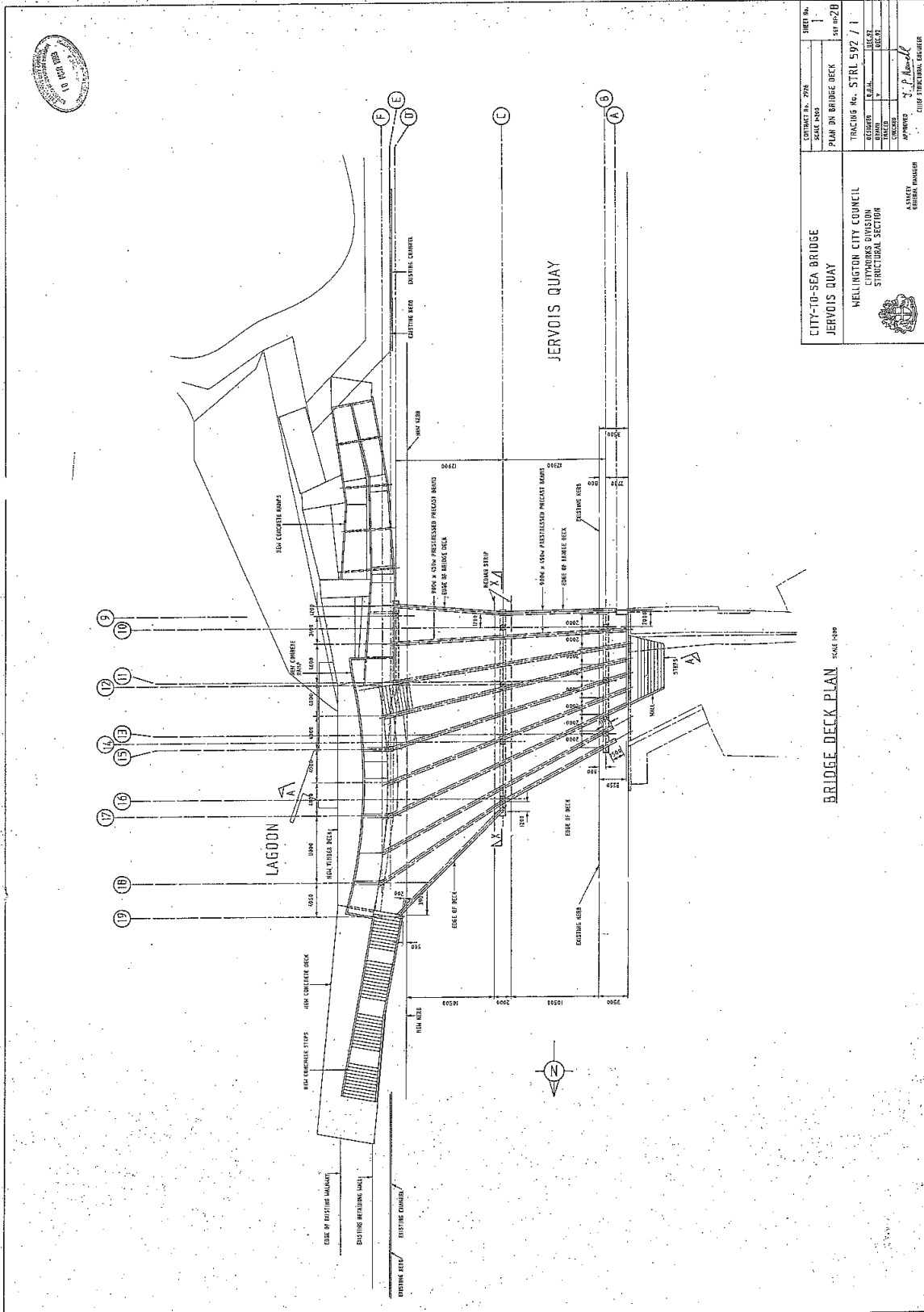
STRUCTURAL DRAWING INDEX

No.	GENERAL	BRIDGE DECK
1	GENERAL LAYOUT	15 DECK PLAN
2	BRIDGE SECTIONS	16 DECK SECTIONS AND DETAILS
3	DEMOLITION AND SERVICES	17 DECK REINFORCEMENT
	FOUNDATIONS	18 IN-SITU RAMP AND DECK
		19 IN-SITU RAMP AND DECK SECTIONS
		20 IN-SITU RAMP AND DECK DETAILS
		RAMP
4	PIILING PLAN AND DETAILS	21 RAMP DECK SLAB
5	BRIDGE FOUNDATION PLAN	22 RAMP WALLS
6	BRIDGE FOUNDATION DETAILS	23 RAMP WALLS
7	BRIDGE FOUNDATION DETAILS	24 LOWER RAMP DETAILS
8	RAMP FOUNDATIONS AND WALLS	STAIRS
9	RAMP FOUNDATION DETAILS	25 NORTH STAIRS GROUND BEAMS AND LOWER DECK
	COLUMNS AND BEAMS	26 NORTH AND SOUTH STAIR DETAILS
		27 NORTH STAIRS WALLS
		28 TIMBER WALKWAY SUBSTRUCTURE
10	COLUMNS AND BEAMS GRIDS R.C	
11	COLUMNS AND BEAMS GRIDS D.E.F	
12	COLUMN AND BEAM DETAILS GRIDS D.E.F	
13	PRECAST BEAMS I	
14	PRECAST BEAMS II	

CONTRACT No. 2926

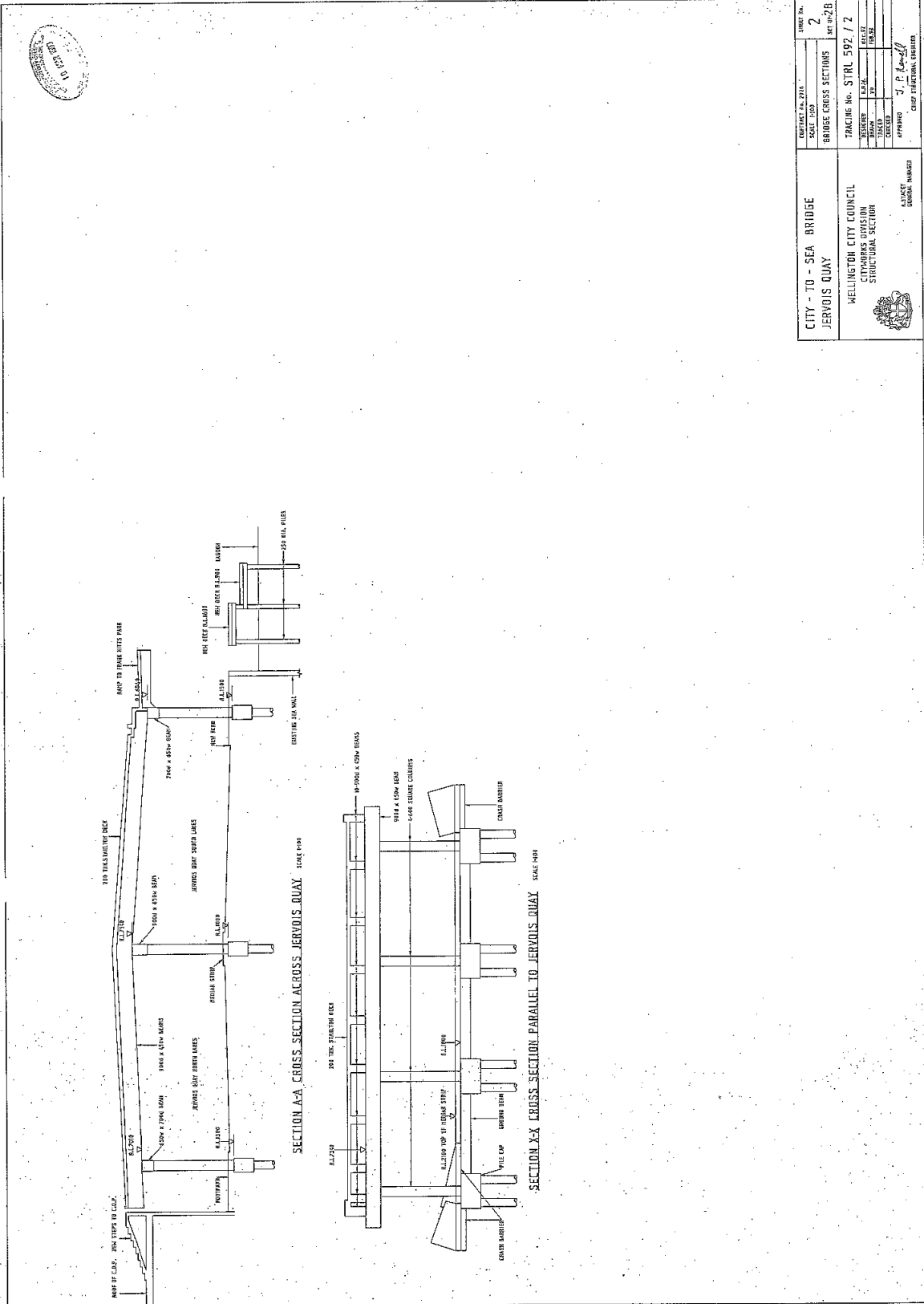
SET No.



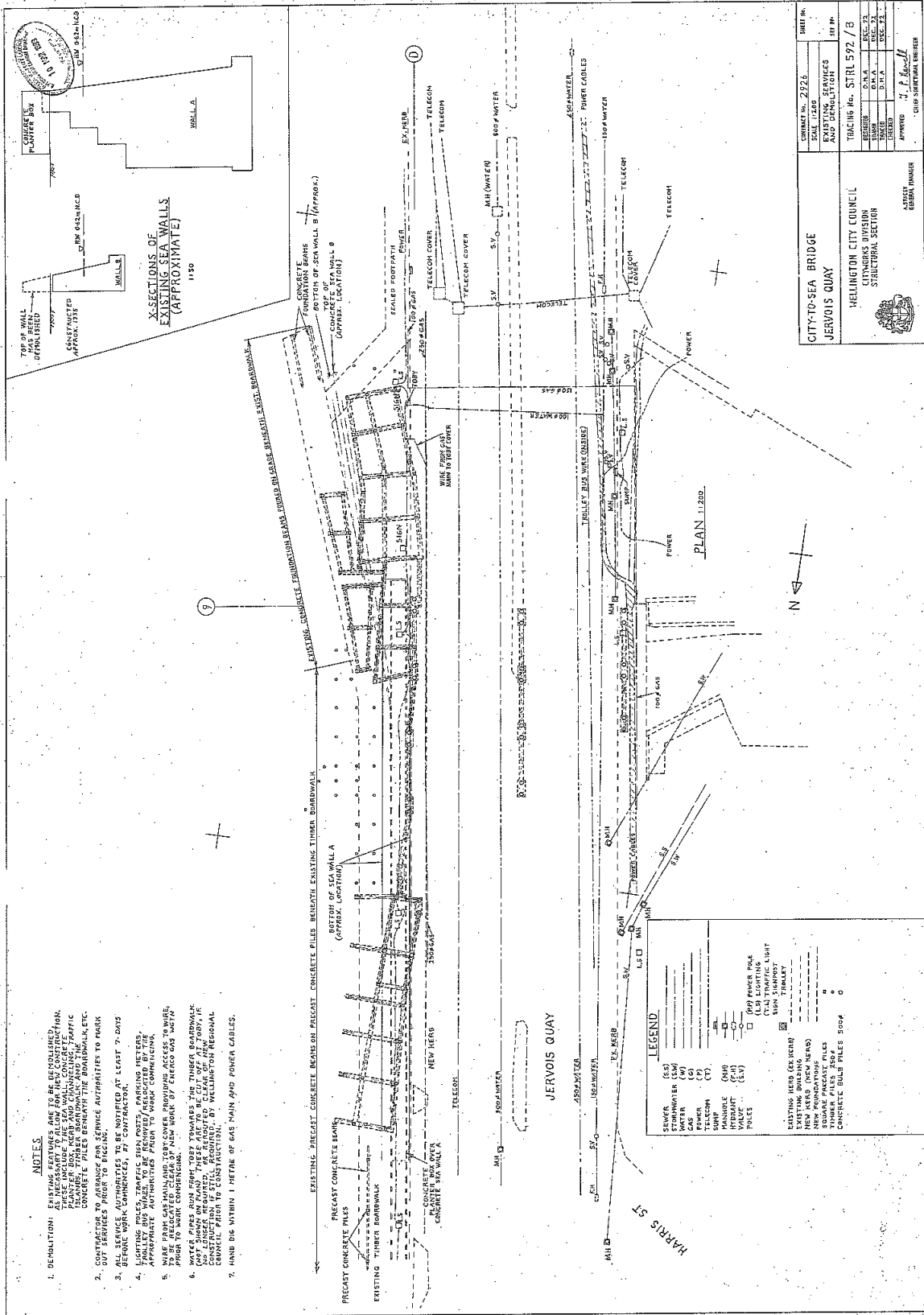


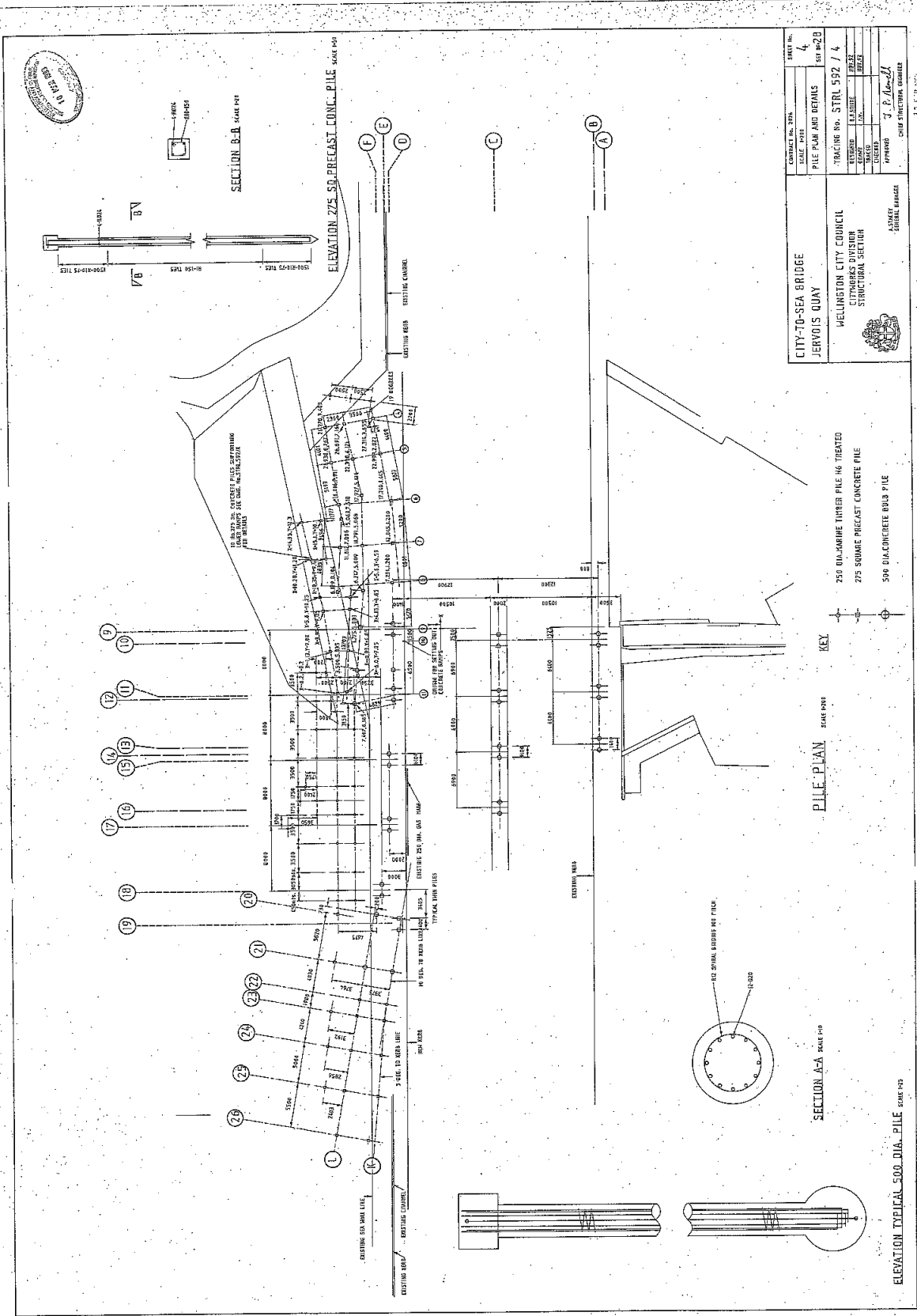
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		SCALE USED	1:100 m=20
		TRACING No. STRL 592 / 1	
		DESIGNED	BY
		CHECKED	BY
		APPROVED	BY
		DATE	24 FEB 2023

BRIDGE DECK PLAN SCALE 1:100

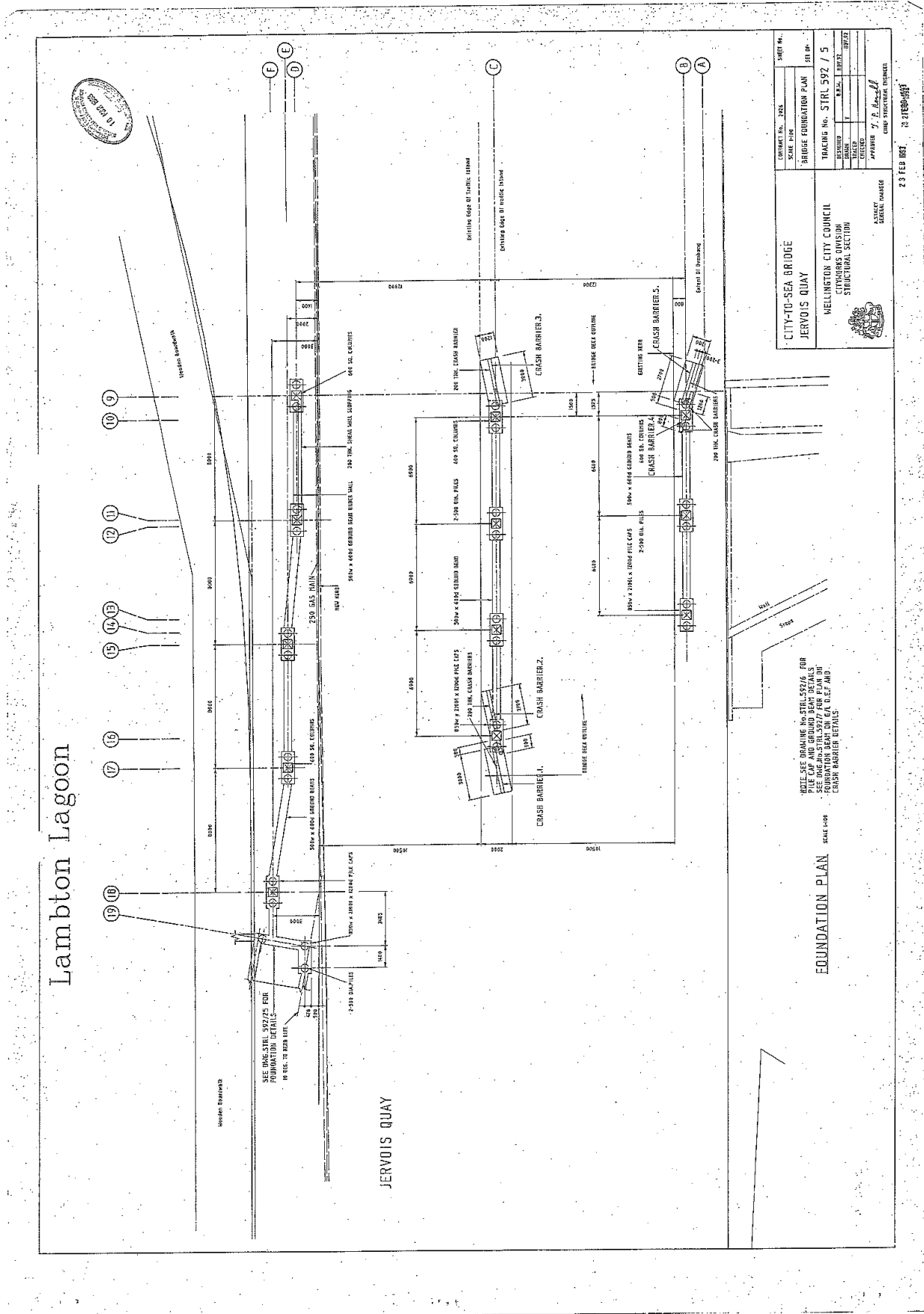


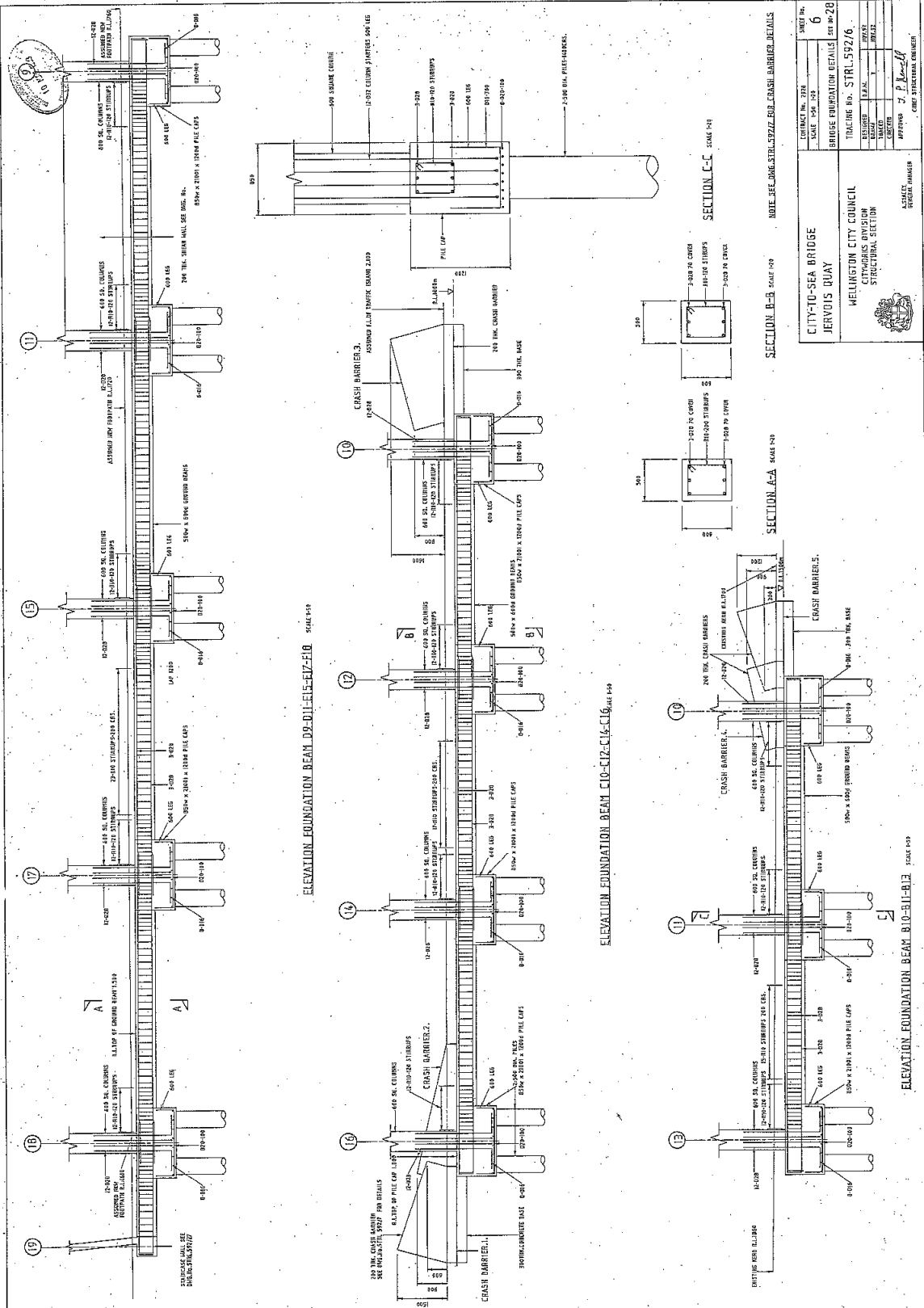
CITY - TO - SEA BRIDGE		STREET No.	2
JERVOIS QUAY		BRIDGE CROSS SECTIONS	1st of 28
WELLINGTON CITY COUNCIL		TRACKING No.	STR. 592 / 2
CITY ENGINEERING DIVISION		DESIGNED BY	
STRUCTURAL SECTION		CHECKED BY	
APPROVED BY		DATE	
J. P. [Signature]		22 FEB 1991	
CHIEF ENGINEER			





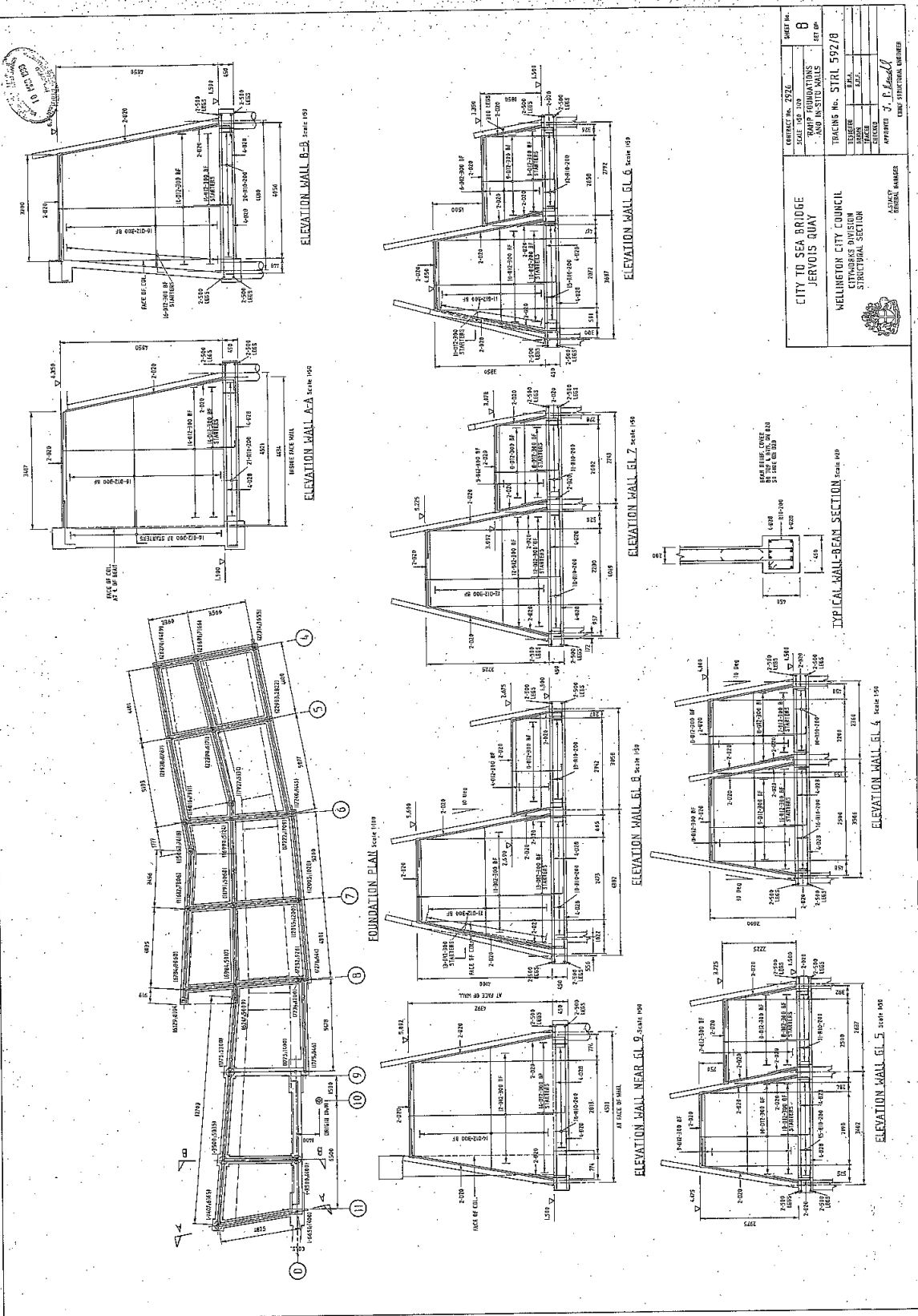
CITY-TO-SEA BRIDGE		SHEET NO.	4
JERVOLD'S QUAY		CONTRACT NO. 2776	4
WELLINGTON CITY COUNCIL		SCALE	1/8" = 1'-0"
CITYMORNS DIVISION		PILE PLAN AND DETAILS	
STRUCTURAL SECTION		STR. 592 / 4	
DESIGNED BY		DATE	19/02/20
CHECKED BY		DATE	19/02/20
APPROVED BY		DATE	19/02/20
CITY ENGINEER		CITY ENGINEER	



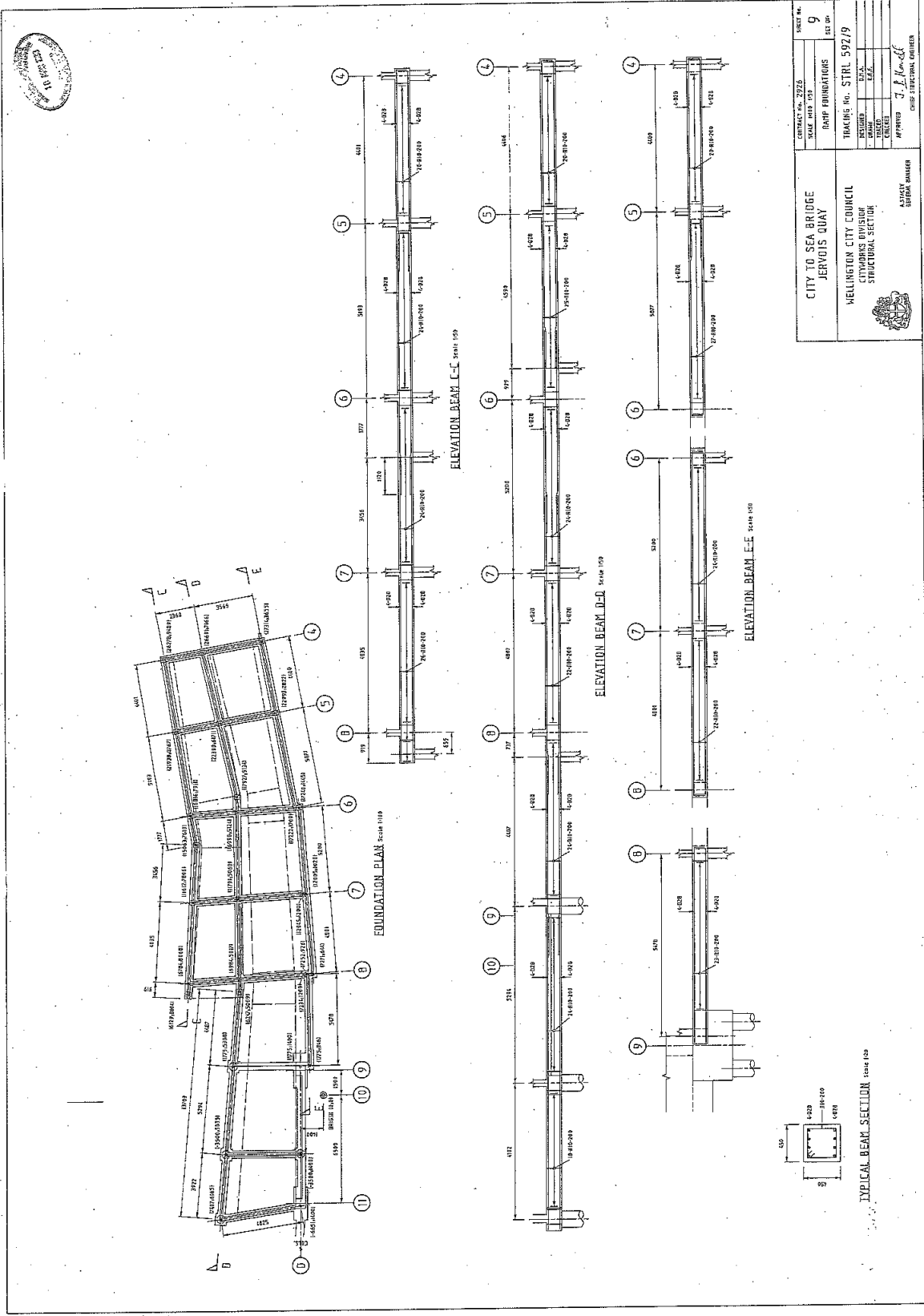


CITY-TO-SEA BRIDGE		PROJECT NO.	5927/16
JERVOIS QUAY		SCALE	1/8" = 1'-0"
HELLMUTH OTTENBROS & ASSOCIATES		BRIDGE FOUNDATION DETAILS	SET NO. 29
STRUCTURAL SECTION		TRACING NO.	STR-5927/6
DESIGNED BY	J.P.A.	CHECKED BY	J.P.A.
DRAWN BY	J.P.A.	DATE	1/22/63
APPROVED BY	J.P. Keefe	ENGINEER	
APPROVED BY	J.P. Keefe	CITY STRUCTURAL ENGINEER	

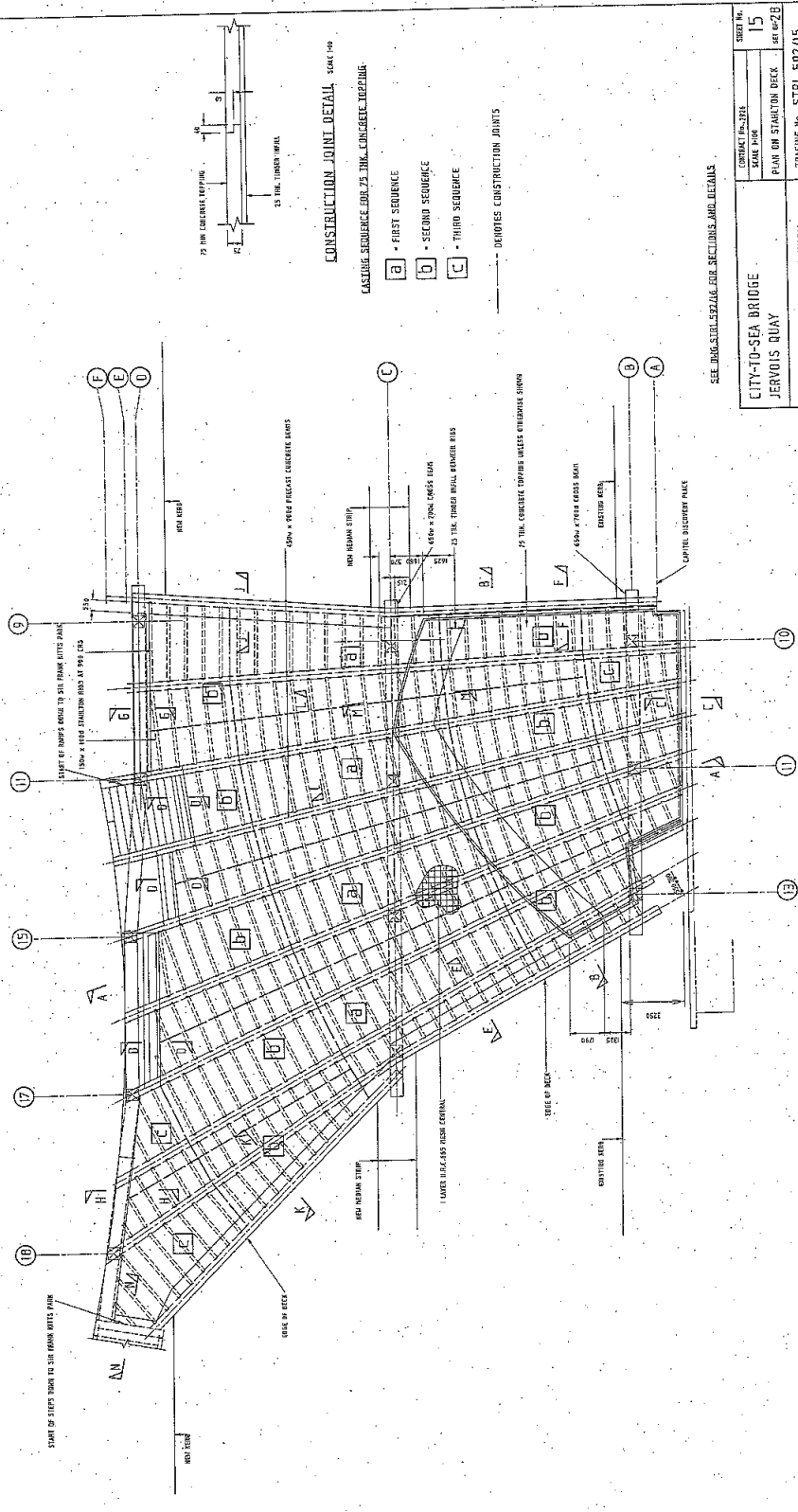
23 FEB 1963



CITY TO SEA BRIDGE JERVOIS QUAY		CONTRACT No. 2725	SHEET No. 8
WELLINGTON CITY COUNCIL CIVILWORKS DIVISION STRUCTURAL SECTION		SCALE FOR FOUNDATIONS AND IN-SITU WALLS SET UP	TRAVERSING No. STRL 592/B
DESIGNED BY	DATE	APPROVED BY	DATE
CHECKED BY			
DRAWN BY			
SCALE			
APPROVED: J. E. Powell		CIVIL STRUCTURAL ENGINEER	



CONTRACT No. 2225	SHEET No. 9
SCALE 1:10 1:50	DATE 20
RAMP FOUNDATIONS	
TRACKING No. STRL 59279	
DESIGNED BY	D.P.A.
CHECKED BY	W.P.
APPROVED <i>J.P. [Signature]</i>	
CHIEF STRUCTURAL ENGINEER	
CITY TO SEA BRIDGE JERVOIS QUAY WELLINGTON CITY COUNCIL CITYWORKS DIVISION STRUCTURAL SECTION	
ASSESSOR SUPERVISOR	



PLAN ON STATION BRIDGE DECK RIBS (SEE PLAN 100)

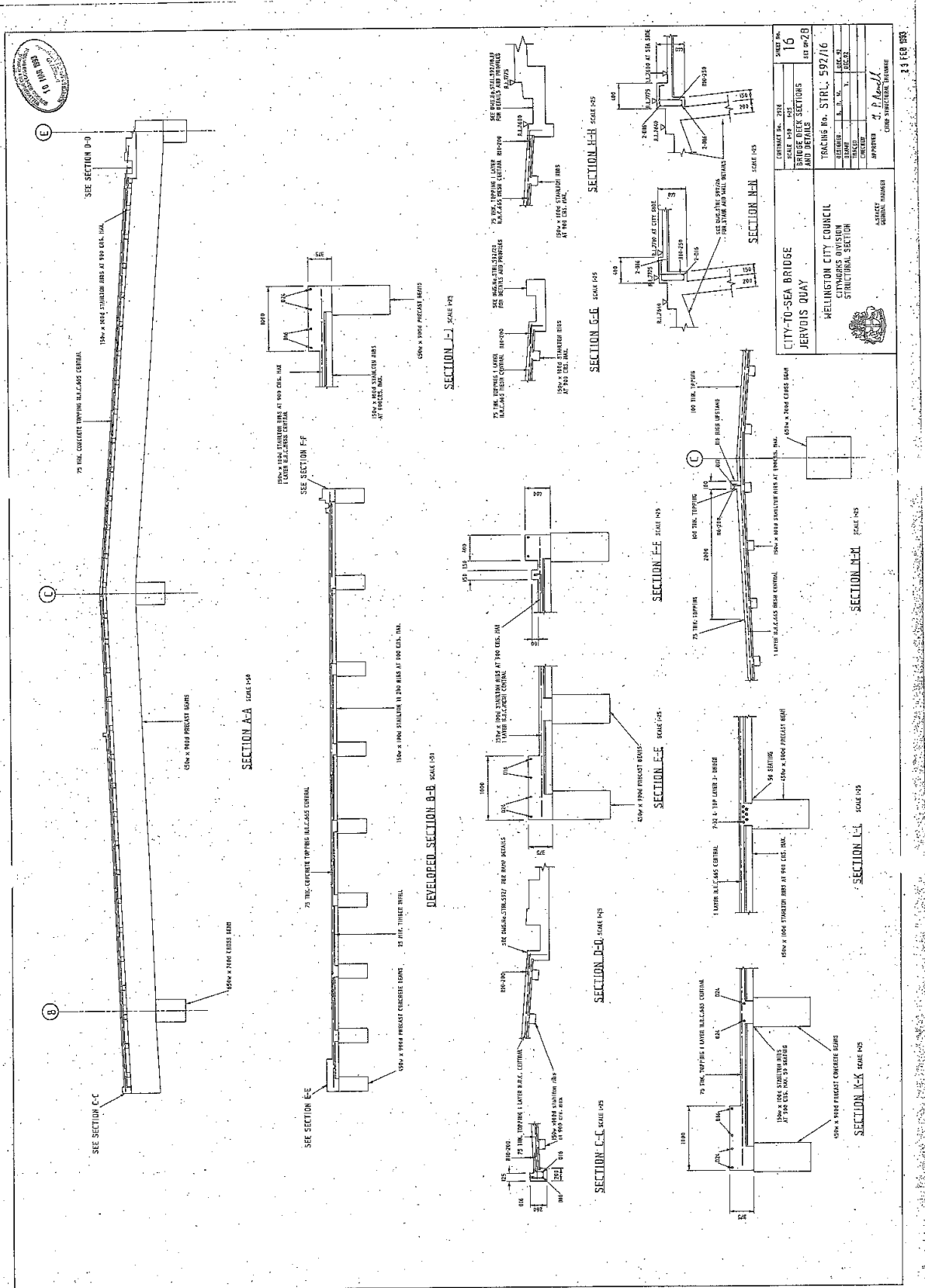
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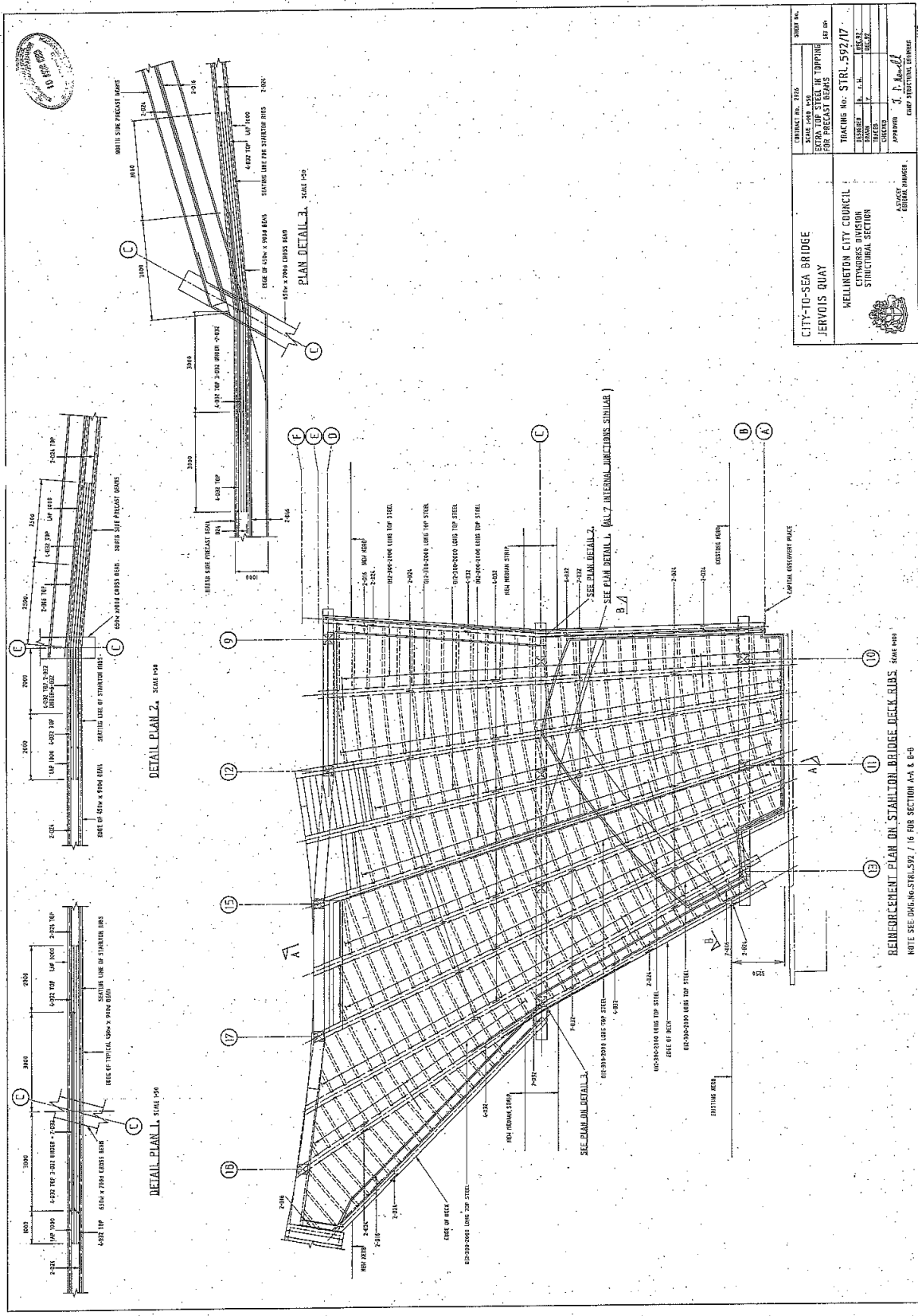
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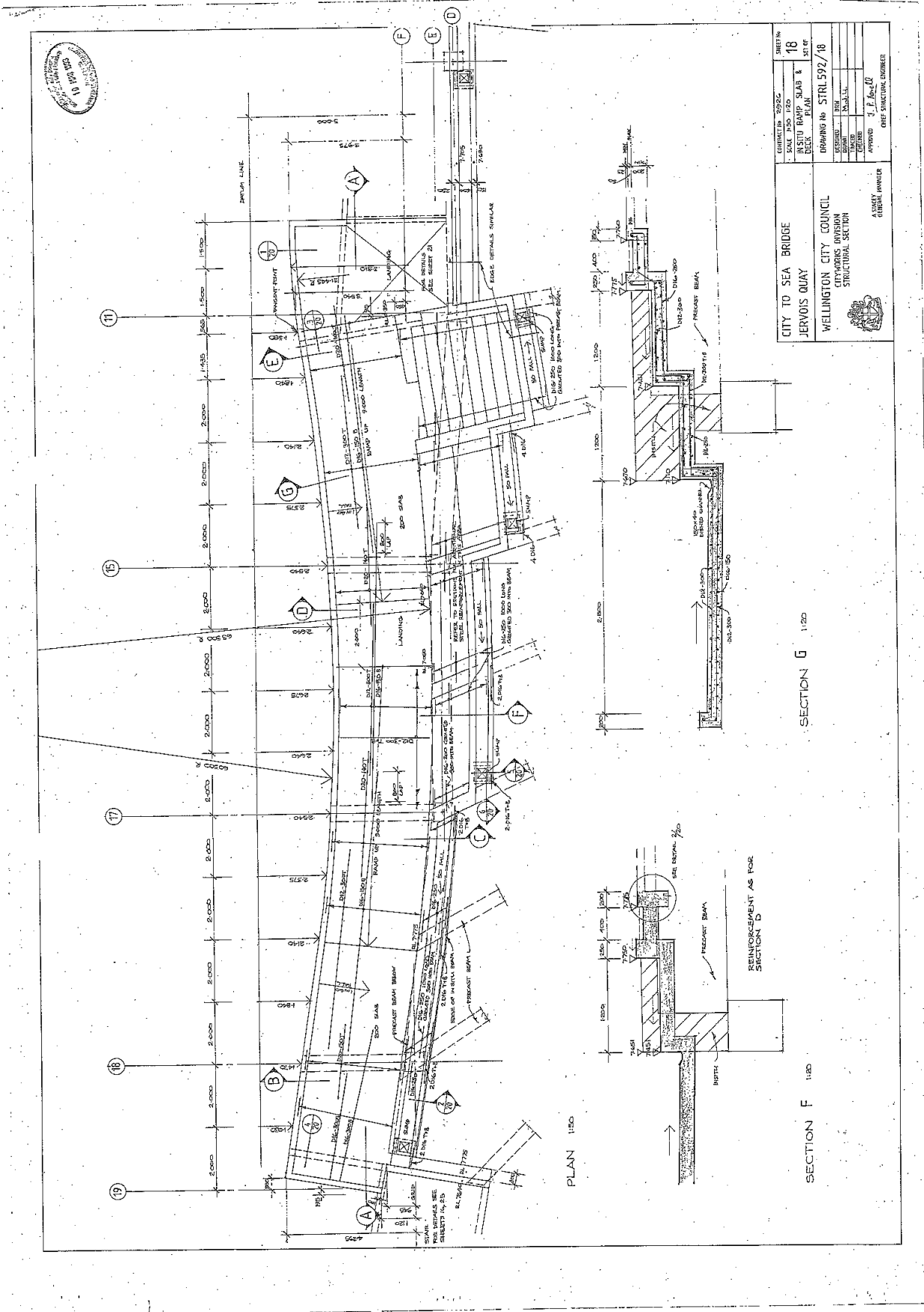
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TRACING NO. STRL-592/17	3088A.00
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PROJECT	3088A.00
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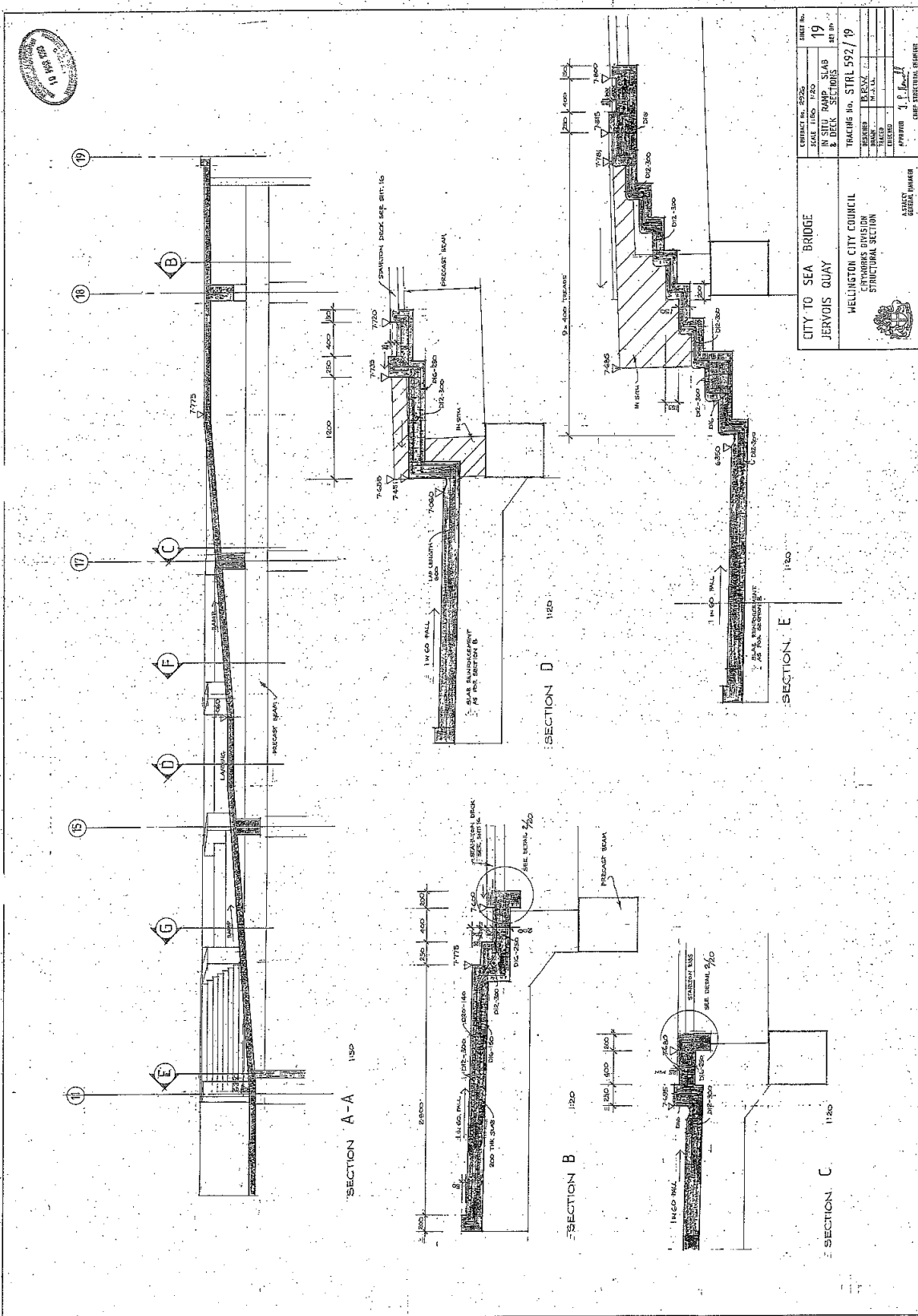
CITY-TO-SEA BRIDGE
JERVIS QUAY

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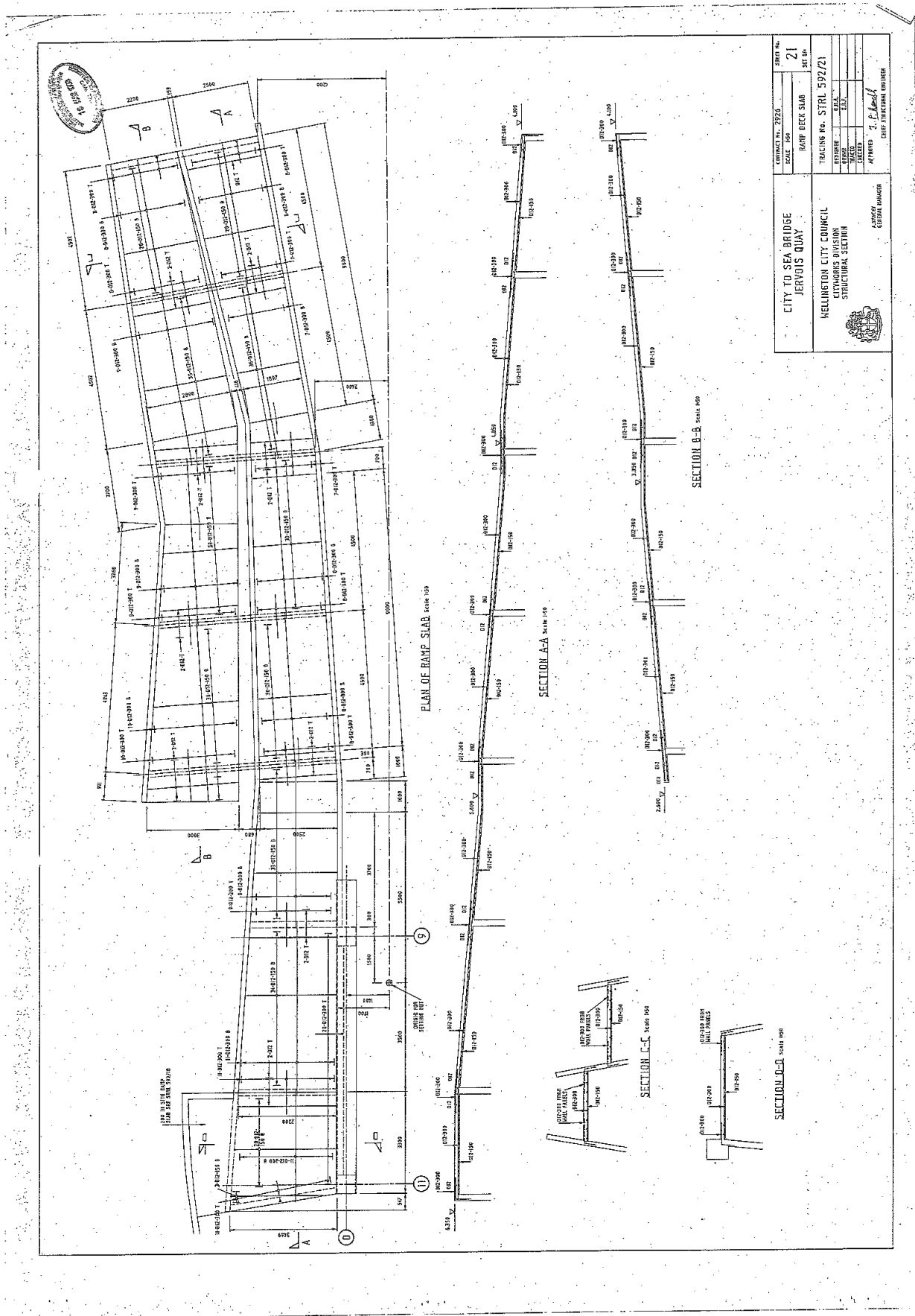
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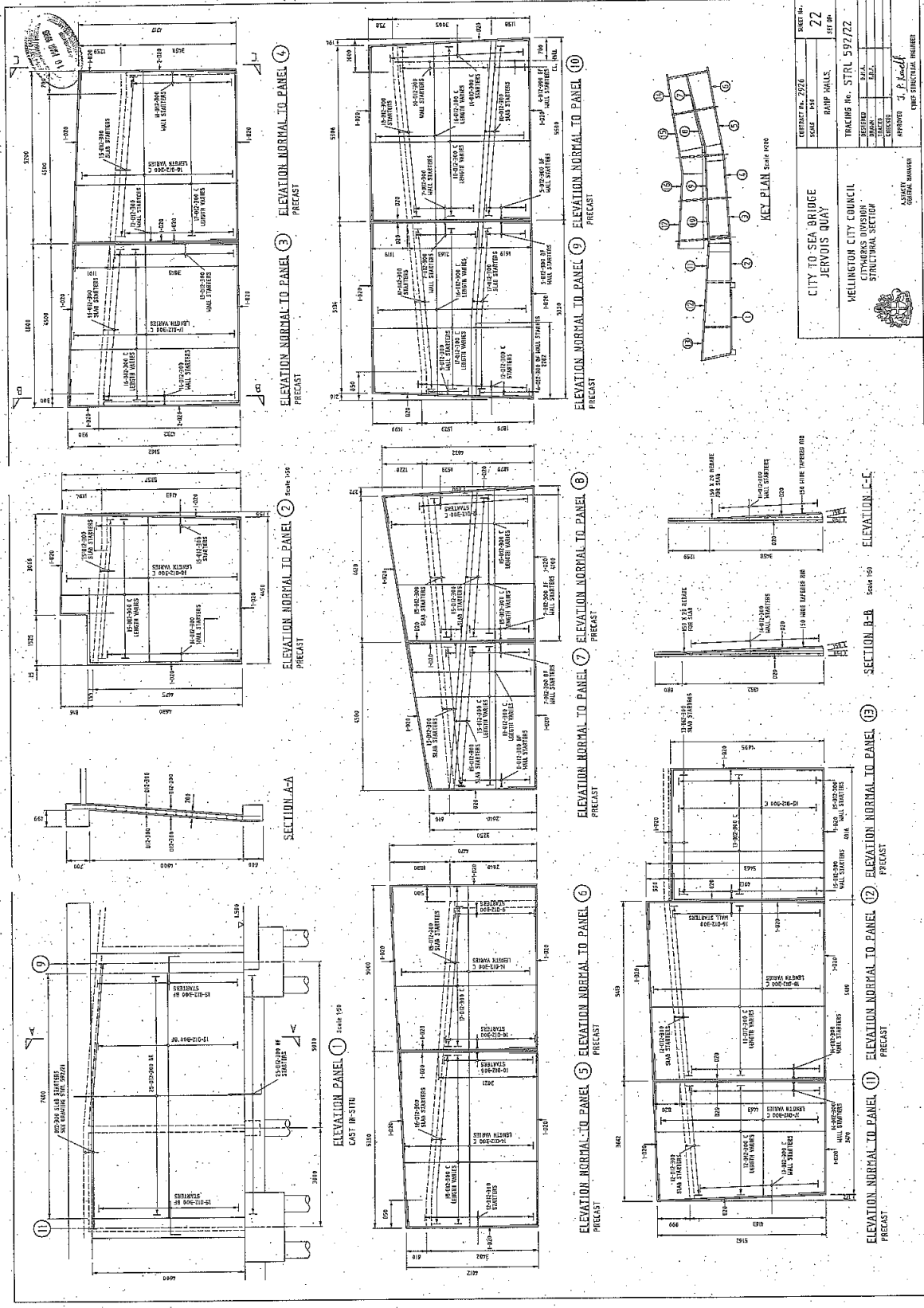
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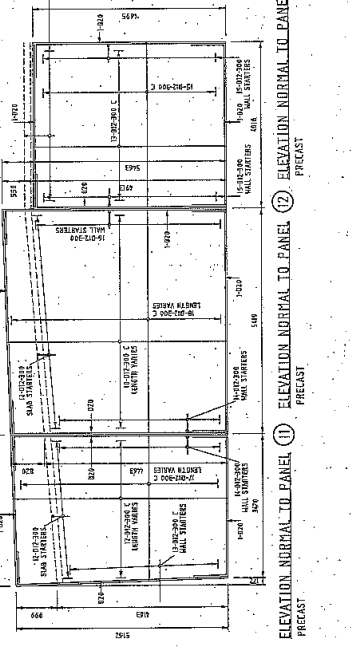
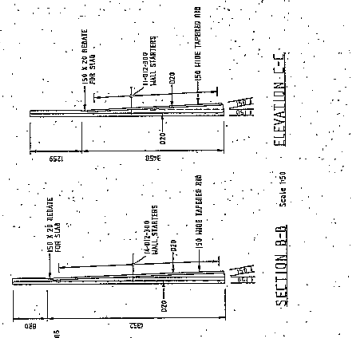
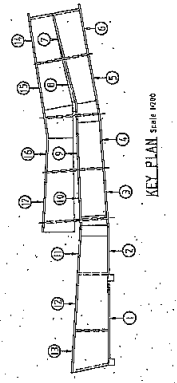


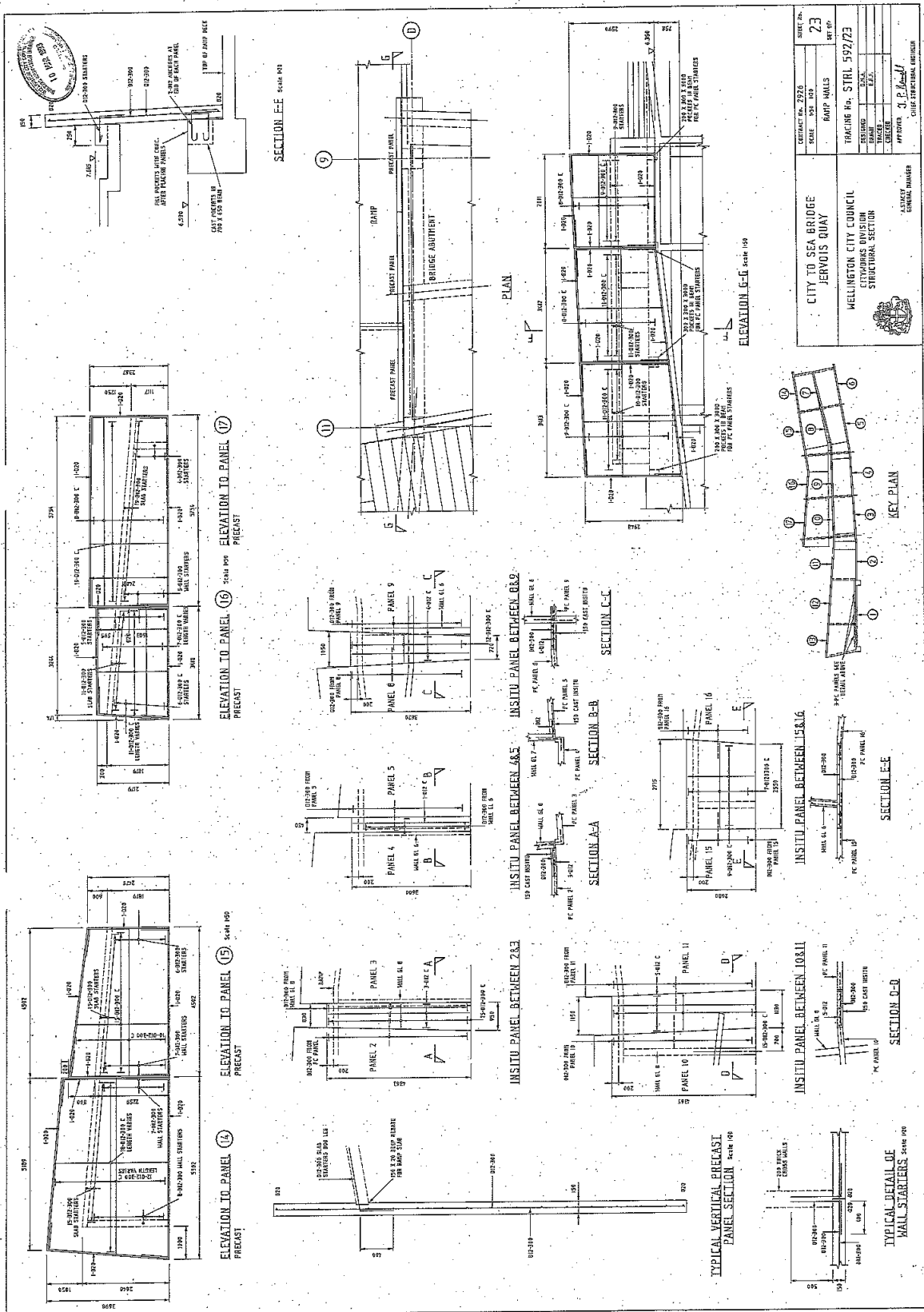
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WELLINGTON CITY COUNCIL		IN SITU RAMP SLAB & DECK SECTIONS	SET OF
CIVIL ENGINEERING DIVISION		TRACKING NO. STRL 592/19	
STRUCTURAL SECTION		DRAWN BY B. S. J.	
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		APPROVED BY J. P.	
		DATE 10/10/19	
		ENGINEER G. J. O'CONNELL	

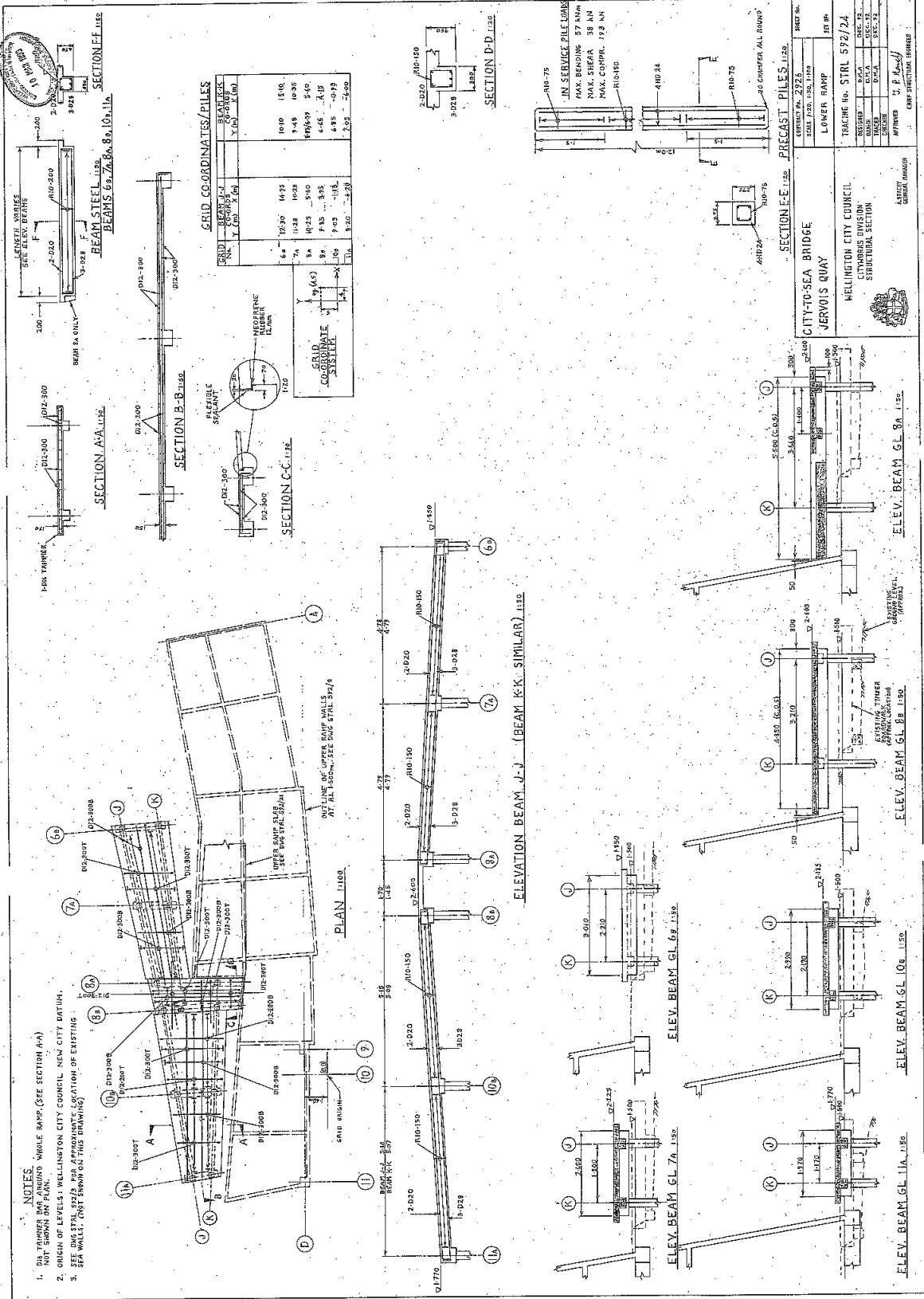


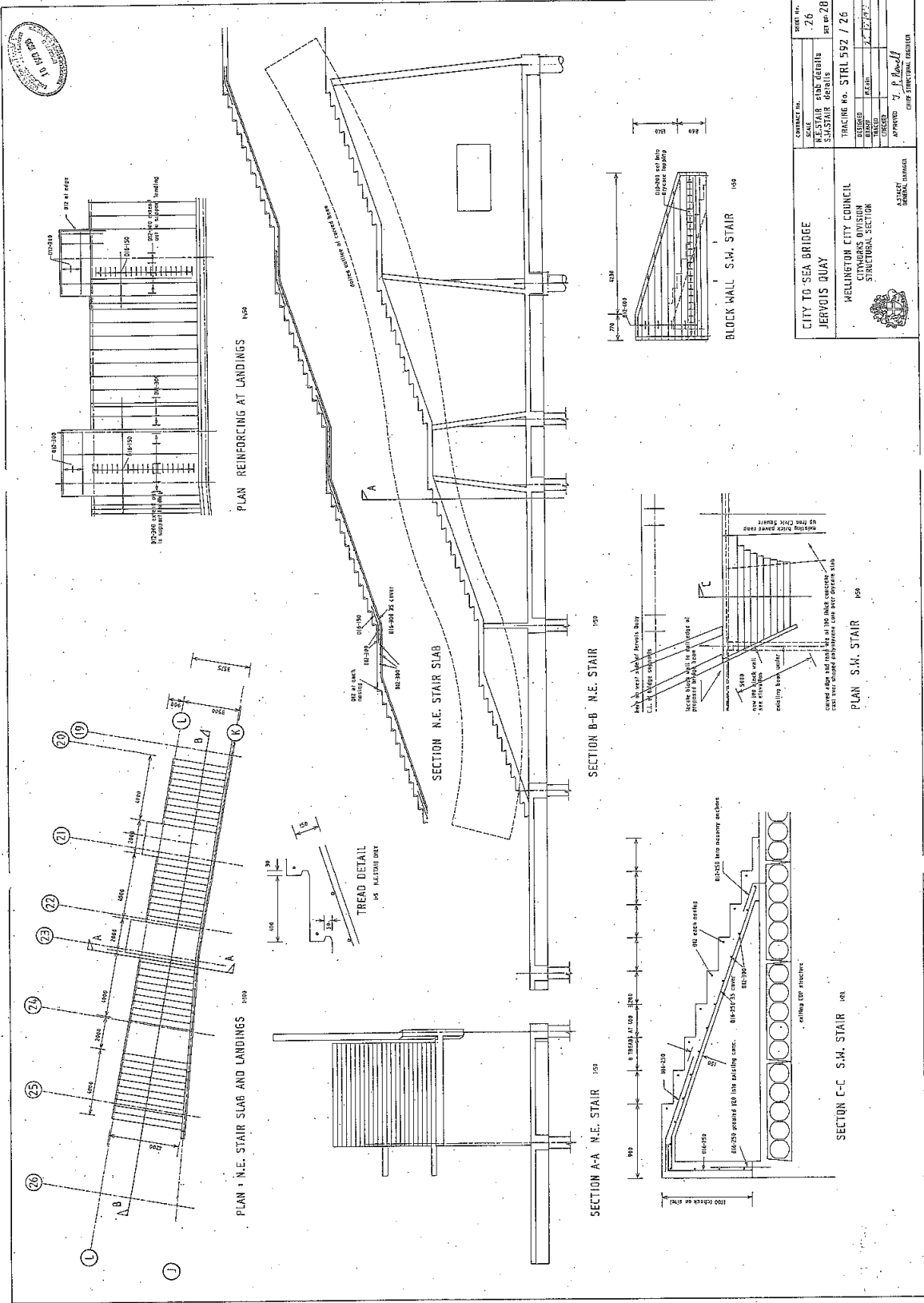


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		CHECKED: S.A.L.	DATE:
		DATE:	DATE:

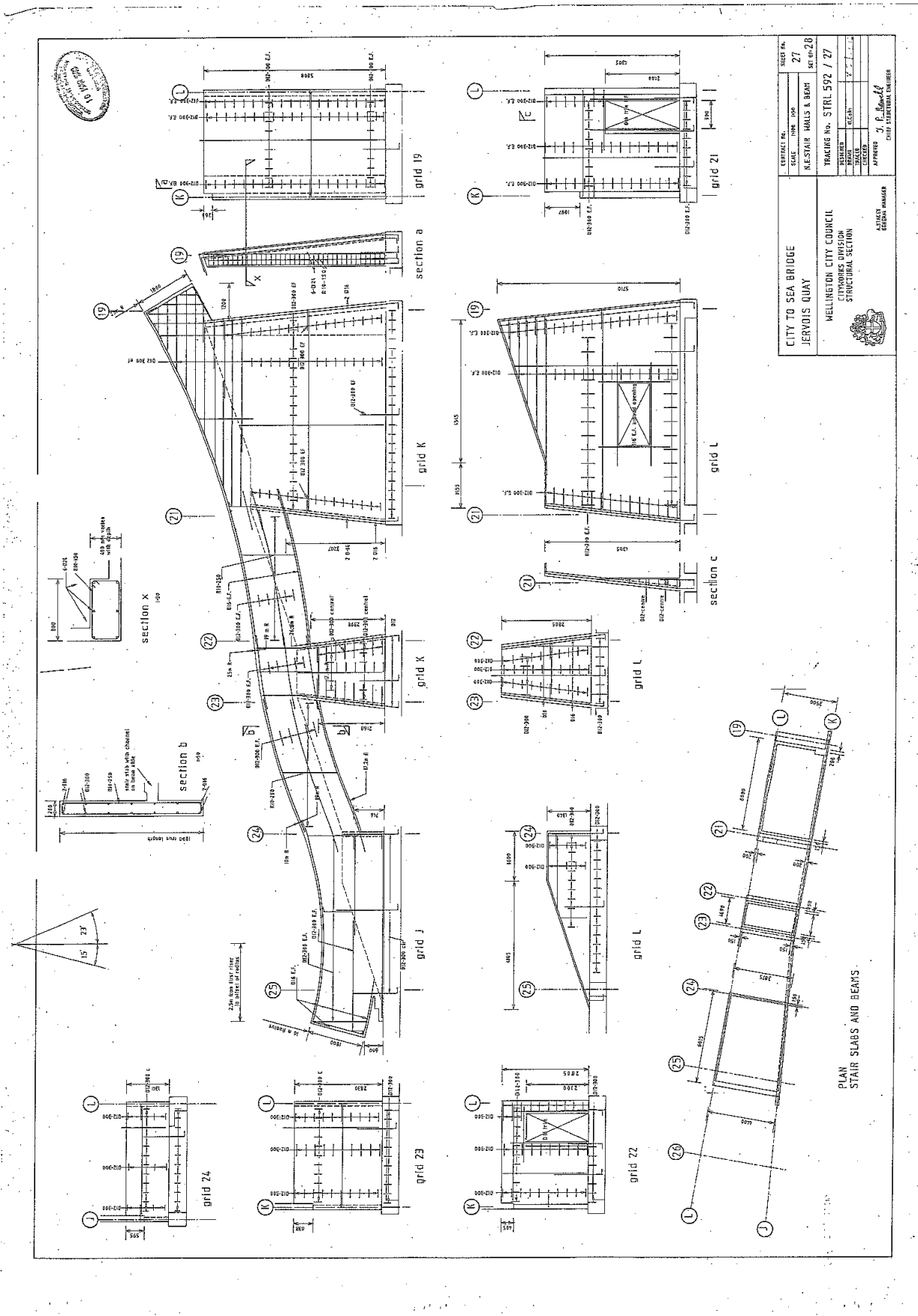


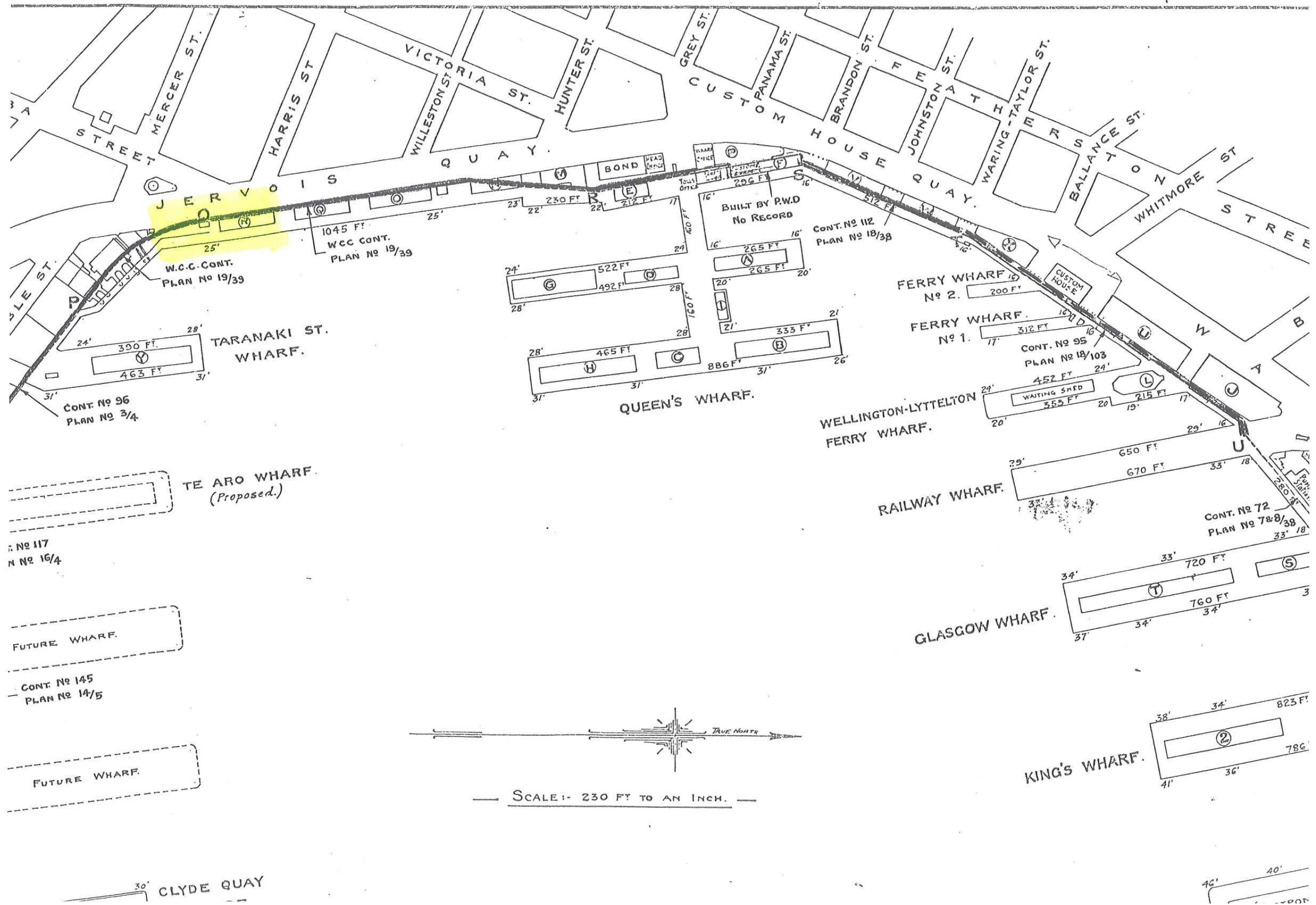


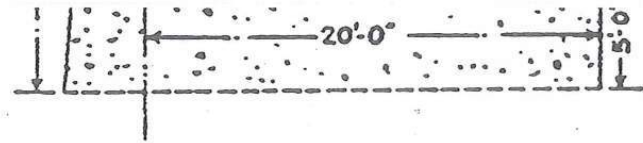




CONTRACT No.	SECT. No.
CITY TO SEA BRIDGE	26
JERVIS QUAY	28
WELLINGTON CITY COUNCIL	
CIVIL ENGINEER	
STRUCTURAL SECTION	
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DESIGNED BY	DATE
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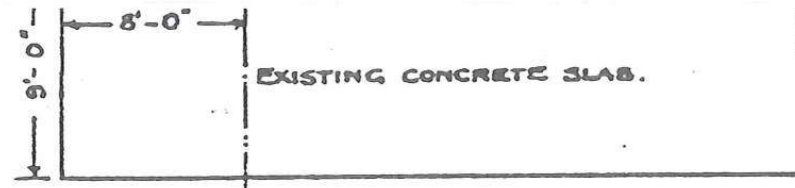
I. TO J.

CONTRACT N° 145. PLAN N° 14/5

COMPLETED ABOUT AUG. 1909.

CONCRETE: CEMENT, 2 SAND AND 5 OF GRADED SHINGLE.

FROM 4" GAUGE TO 1/4" GAUGE.



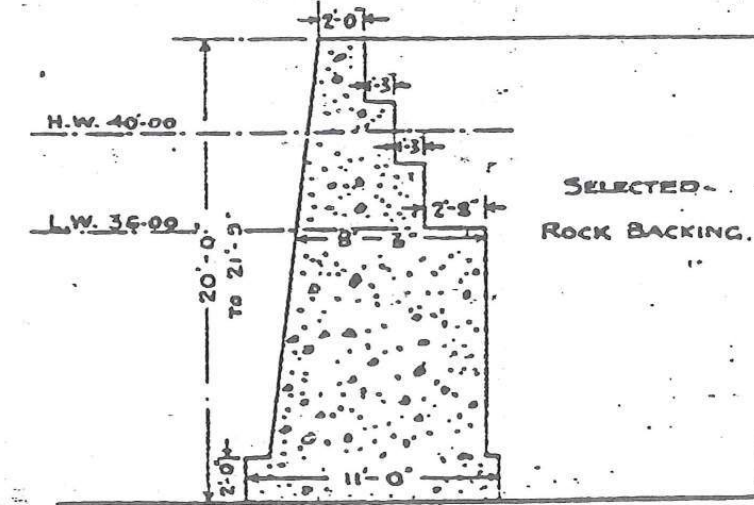
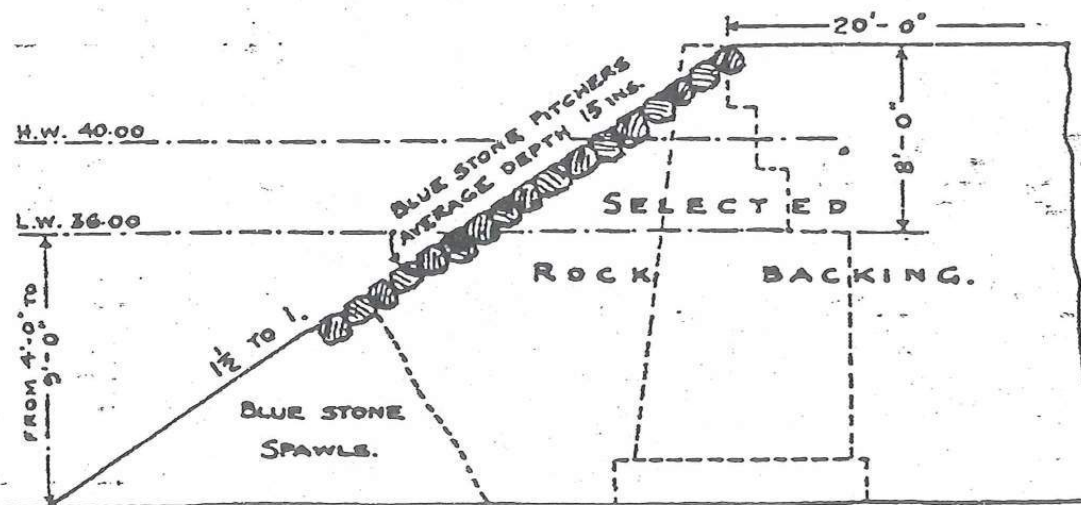
EXISTING CONCRETE SLAB.

COMPLETED ABOUT JUNE, 1912. CONCRETE: CEMENT TO 7 AGGREGATE.

J. TO K.

CONTRACT N° 164.

PLAN N° 7/6



WALLS P. TO Q. & Q. TO R. COMPLETED IN 1889; BUILT BY THE WELLINGTON CITY COUNCIL IN CONNECTION WITH TE ARO RECLAMATION N° 3. (PART OF CONTRACT.)

P. TO Q.

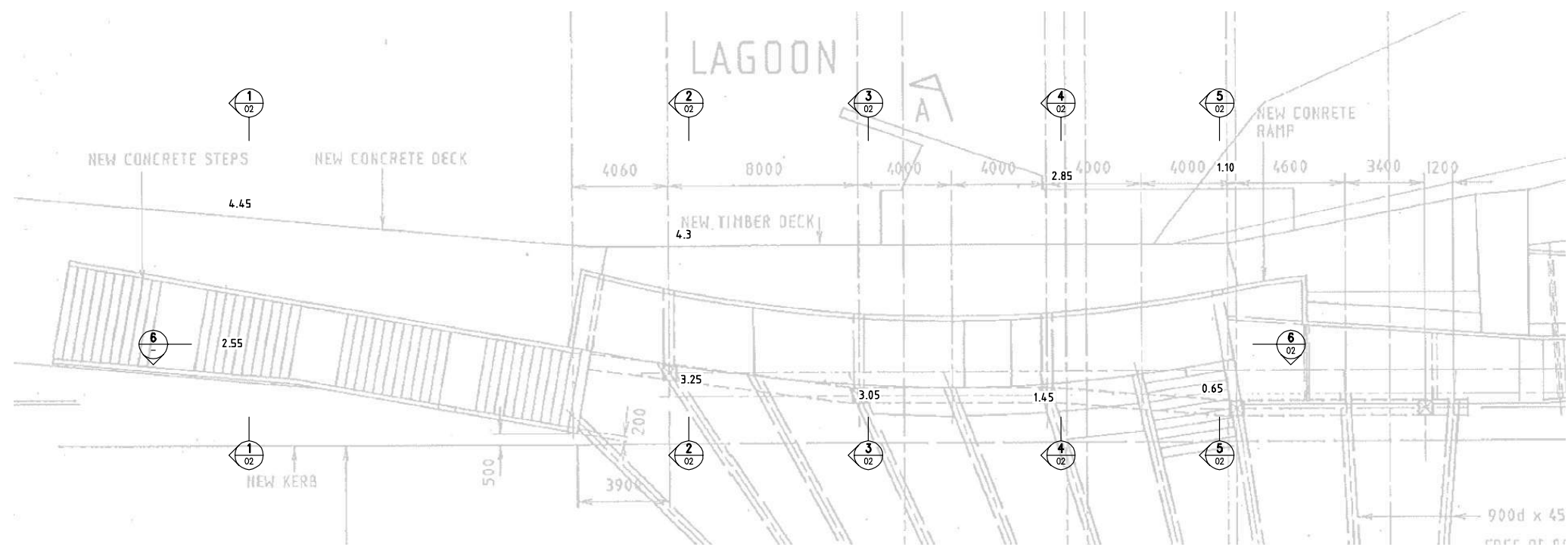
PLAN N° 19/39

Q. TO R.

SCALE: - 8 FT TO AN INCH. -

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PLAN SHOWING MEASURED DEPTHS TO LAGOON BOTTOM
1:200 AT A3

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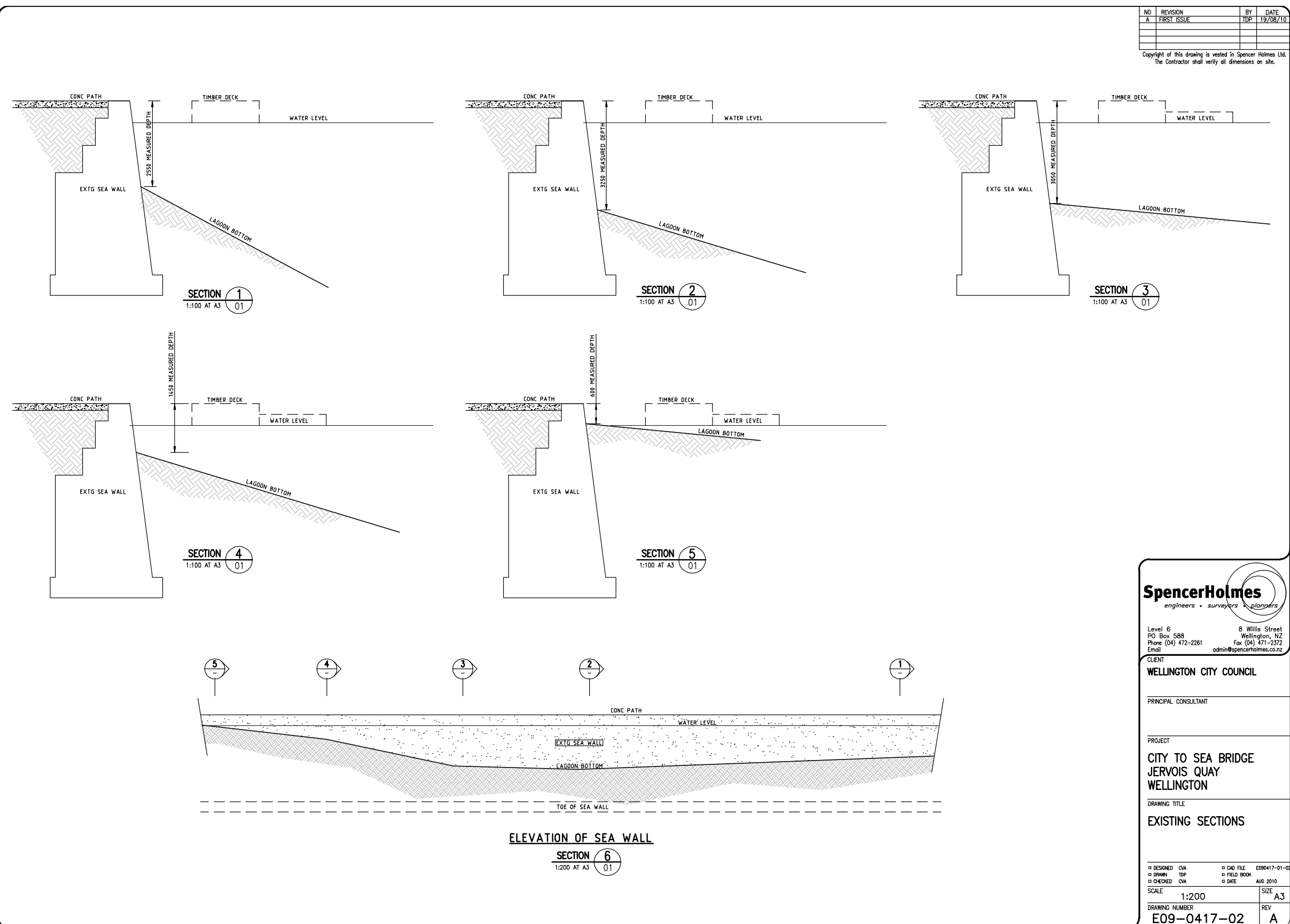
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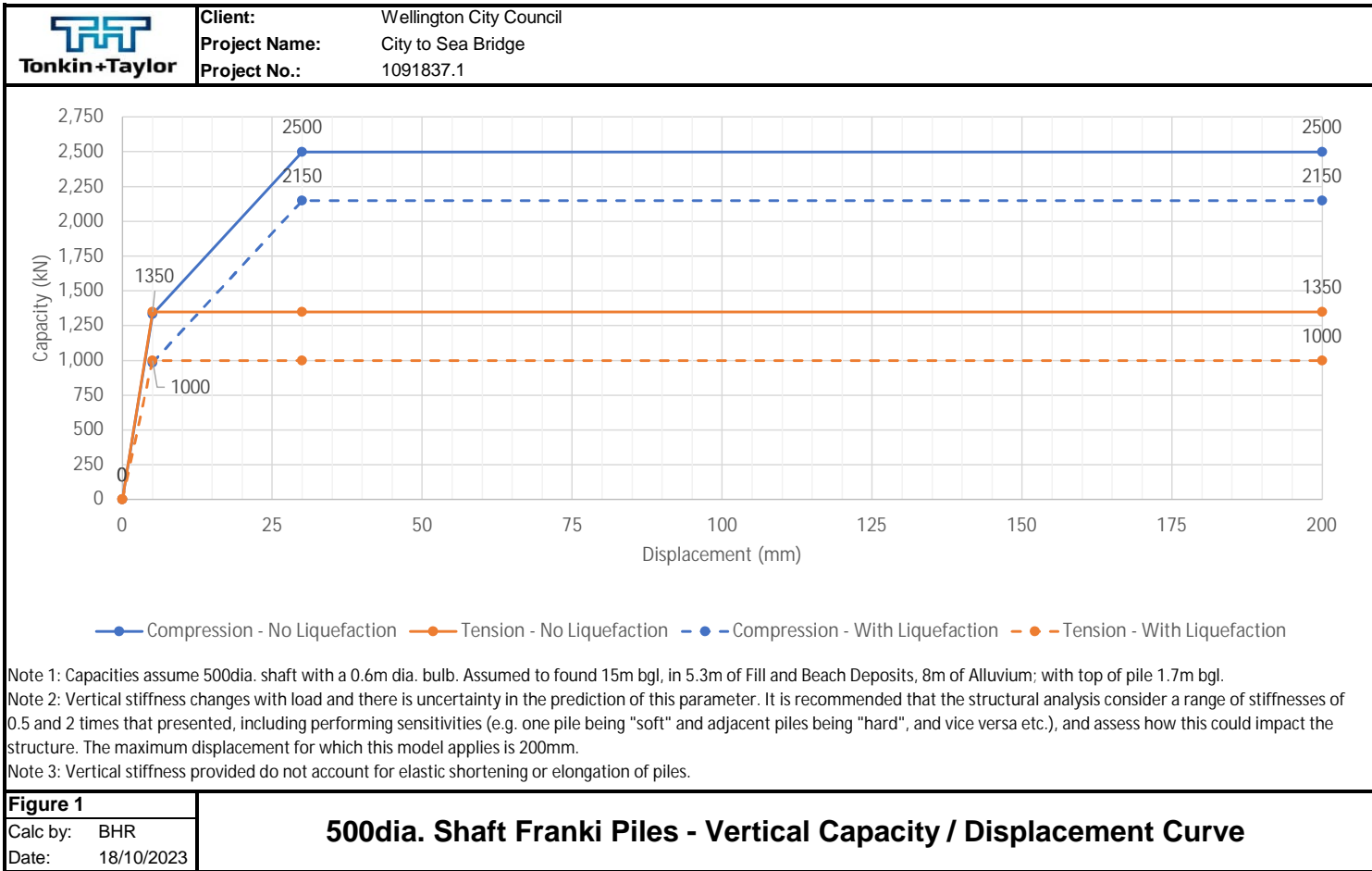
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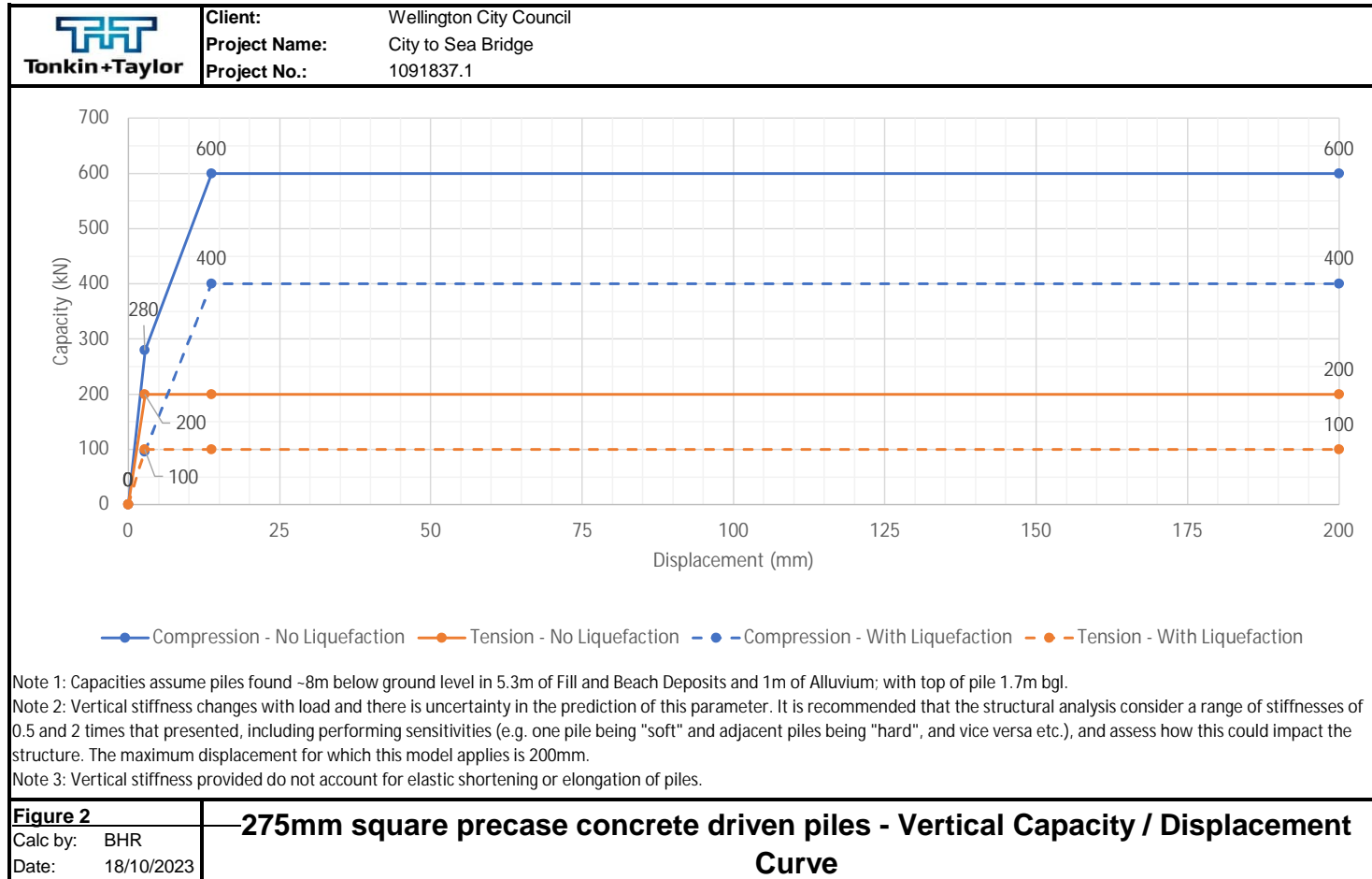
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Appendix D Geotechnical parameters

- Appendix D1: Pile vertical parameters
- Appendix D2: Lateral parameters

D1 Pile vertical parameters



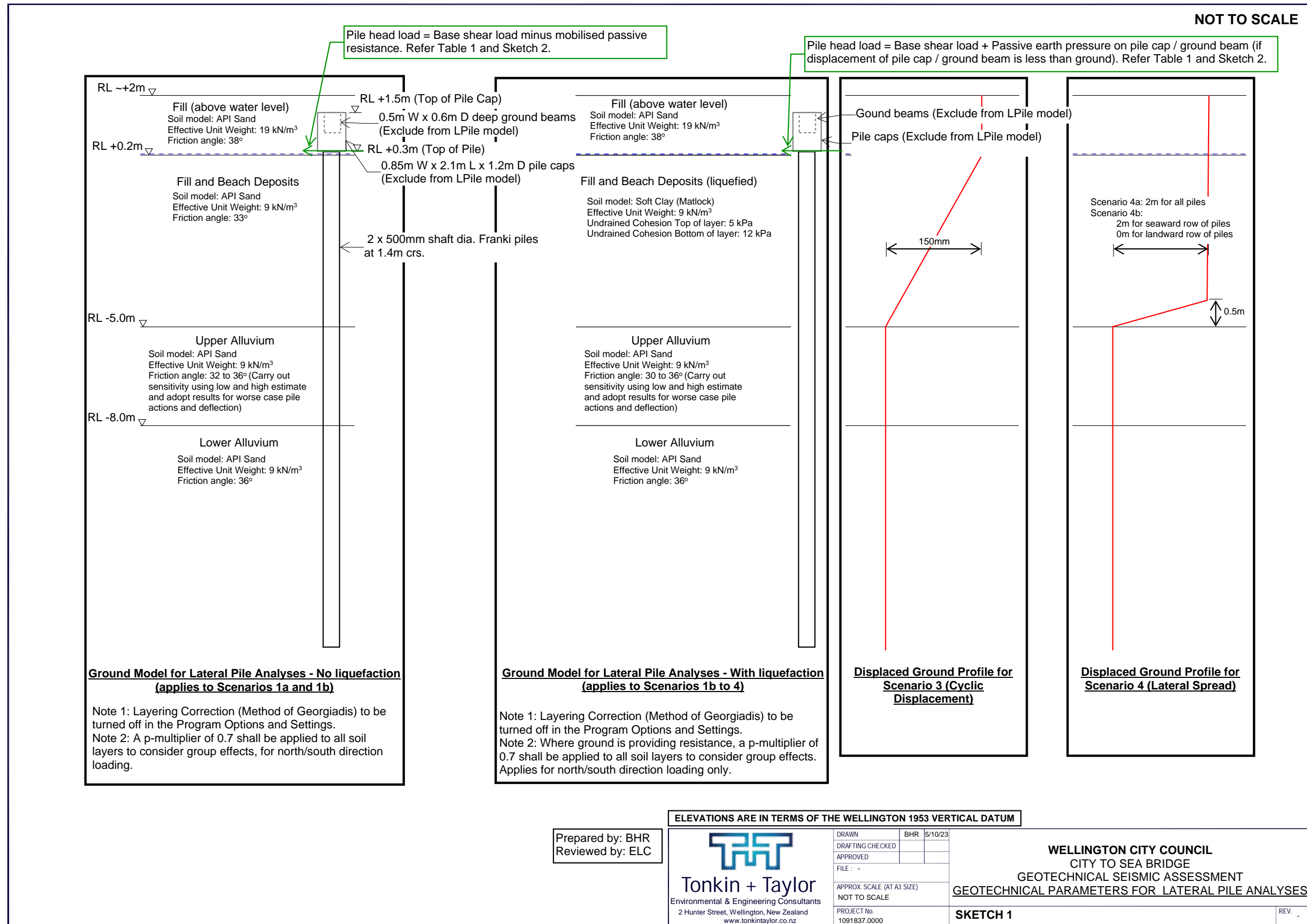


D2 Lateral parameters

Table 1: Ground lateral behaviour during earthquake

#	Scenario	Comments on Base Shear Take-out
1a	Start of earthquake. No liquefaction.	100% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (no liquefaction case). See Sketch 1. • Passive resistance of pile caps and ground beams (no liquefaction case) ⁽¹⁾. See Sketch 2.
1b	Zones of liquefaction triggered across Site. No lateral ground movement.	100% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles: Piles at one abutment/pier in liquefied conditions; other piles in non-liquefied conditions. See Sketch 1. • Passive resistance of pile caps and ground beams (pile cap / ground beam at same abutment/pier in liquefied conditions; others in non-liquefied conditions) ⁽¹⁾. See Sketch 2.
2	Liquefaction triggered. No lateral ground movement.	100% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (liquefaction only case). See Sketch 1. • Passive resistance of pile caps and ground beams (liquefied conditions) ⁽¹⁾. See Sketch 2.
3	Cyclic displacement occurs. During shaking.	80% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (liquefaction + Cyclic displacement case). See Sketch 1. • Passive resistance / load on pile caps / ground beams based on liquefied conditions. See Sketch 2. <ul style="list-style-type: none"> – Relative movement of pile caps/ground beams to the ground needs to be considered to determine if caps/beams passive pressure is contributing to base shear resistance or are additional soil loads on the structure. – If caps/beams move less than 150mm, the passive pressure is a load on the structure. – If caps/beams move more than 150mm the passive pressure contributes to base shear resistance. The caps/beam need to move 220mm to mobilise full passive resistance ⁽¹⁾.
4a	Lateral spreading occurs. Towards end of / post shaking.	25% base shear resisted by: <ul style="list-style-type: none"> • Lateral capacity of piles (liquefaction + Cyclic displacement case). See Sketch 1. • Passive load on pile caps / ground beams based on liquefied conditions. See Sketch 2.
4b	Lateral spreading occurs. Towards end of / post shaking. Differential spreading across length of bridge.	

Note 1: 100% passive mobilised at 70mm relative cap/beam to ground displacement.



NOT TO SCALE

East/West direction of loading

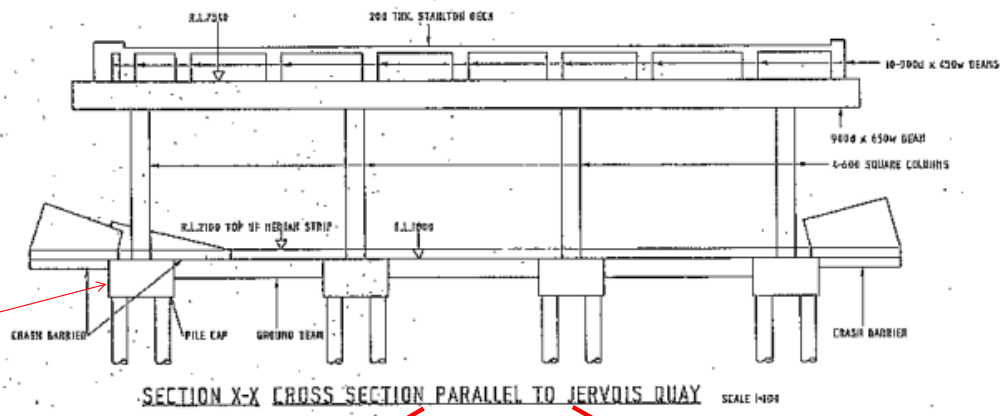
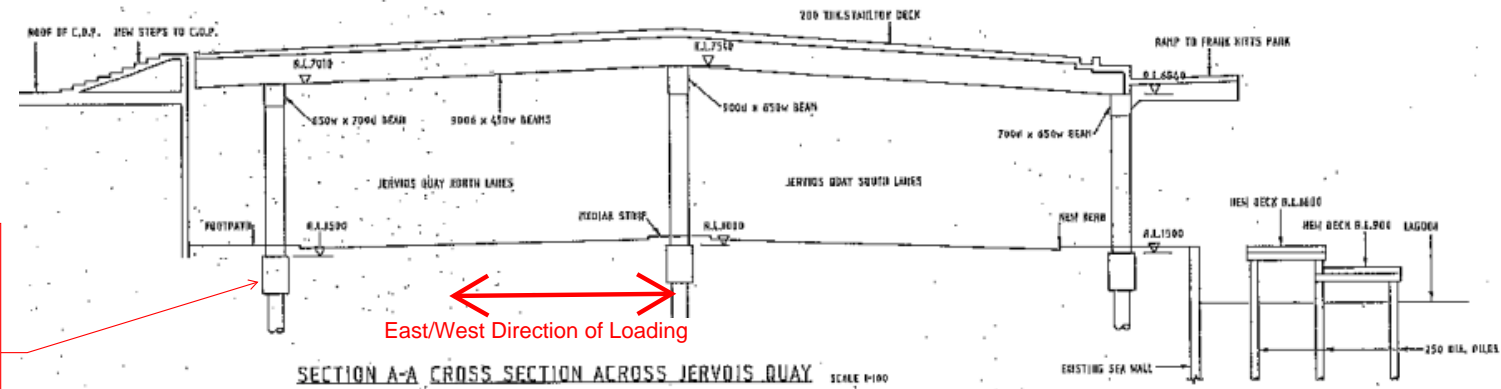
Scenario 1a and 1b: No Liquefaction Case
 Pile cap passive capacity = 170 kN/m
 Ground beam passive capacity = 55 kN/m

Scenario 1b to 4: With liquefaction case load / capacity
 Pile cap: Load / Capacity = 85 kN/m
 Ground beam: Load / Capacity = 30 kN/m

North/South direction of loading

Scenario 1a and 1b: No Liquefaction Case
 Pile cap passive capacity = 70 kN/m.

Scenario 1b to 4: With liquefaction case load / capacity
 Pile cap passive load / capacity = 35 kN/m.



Prepared by: BHR
 Reviewed by: ELC

ELEVATIONS ARE IN TERMS OF THE WELLINGTON 1953 VERTICAL DATUM

 Tonkin + Taylor Environmental & Engineering Consultants 2 Hunter Street, Wellington, New Zealand www.tonkintaylor.co.nz	DRAWN	BHR	5/10/23
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PROJECT No.	1091837.0000		

WELLINGTON CITY COUNCIL
 CITY TO SEA BRIDGE
 GEOTECHNICAL SEISMIC ASSESSMENT
 EARTH PRESSURES ON PILE CAPS / GROUND BEAMS

SKETCH 2

REV.

Te Ngākau – Capital E Building

Partial Demolition and Detailed Seismic Assessment

Wellington City Council

Reference: 525125

Revision: A

2024-02-16



Document control record

Document prepared by:

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Structural Engineer		Principal	

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Appendices

Appendix A

Assessment Summary

Appendix B

Definitions

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Assessment Inputs

Appendix D

Partial Demolition Schematics

Appendix E

Geotechnical Parameters and Correspondence

Appendix F

Seismic Upgrade Sketches

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- Figure 1: Capital E Approximate Demolition Extent
- Figure 2: Aerial view of the Capital E Building
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DRAFT

Executive Summary

Background and Overview

A Detailed Seismic Assessment (DSA) for Capital E was completed in 2012 by Holmes Consulting Group (Holmes) with a further review undertaken in 2018 by Holmes. The 2012 report rated the building at 20-25%NBS(IL3) and the building was subsequently designated as 'earthquake prone' by Wellington City Council in accordance with the Building Act 2004. Wellington City Council have a deadline of January 2027 to complete seismic work to remediate the Capital E building. Aurecon understand that the building is considered uneconomic to strengthen.

The Capital E building is a two-storey reinforced concrete building with a timber framed mezzanine level and a basement level over part of its footprint. The basement links to the Te Ngākau Civic Square carpark with access from both Harris Street and Jervois Quay behind the Michael Fowler Centre. The roof of the building supports part of Te Ngākau Civic Square and is used as an access to the City to Sea Bridge.

Aurecon have been engaged by Wellington City Council (WCC) to provide a high-level review into the feasibility of removing the upper two levels of the Capital E building, whilst retaining the basement for continued use. The extent of demolition is generally indicated in Figure 1. Full schematics of the proposed demolition extent are provided in Appendix D. The review includes the identification of strengthening and enabling works required to facilitate the basement retention. This report provides a summary of the following:

- A series of demolition schematics outlining the proposed extent of the partial demolition.
- A Detailed Seismic Assessment of the retained/remaining basement structure without considering the demolished Capital E building (above grade).
- Concept options for the seismic upgrade of the retained basement.



Figure 1: Capital E Approximate Demolition Extent

Scope and Basis of Assessment

The basement DSA was generally completed in accordance with *The Seismic Assessment of Existing Buildings – Technical Guidelines for Engineering Assessments*, dated July 2017 (**Red Book**), including the updated Section C5 – Concrete Buildings – Proposed Revision to the Engineering Assessment Guidelines, dated November 2018 (the **Yellow Chapter**). These are collectively noted as the **Guidelines**.

The basement is considered to be an **Importance Level 3 (IL3)** structure, located on a **Site Subsoil Class C** site as defined by NZS 1170.5:2004. As advised by Torkin&Taylor, the site's classification is close to the boundary between class C and D. For the purpose of this assessment, a conservative approach has been

taken, opting for **Site Subsoil Class C**, which entails higher Peak Ground Acceleration (PGA) and short period demands for the structural evaluation.

Tonkin+Taylor Geotechnical Desktop Analysis

This Detailed Seismic Assessment has been completed based on geotechnical advice provided by Tonkin + Taylor. Physical ground investigations are currently being undertaken on the site to verify the geotechnical parameters. Tonkin + Taylor have proposed to issue a geotechnical report following incorporation of these investigation results into their assessment. Following receipt of this report Aurecon will discuss the implications of any unexpected findings with Wellington City Council to advise any impacts on the conclusions of this DSA.

Pertinent correspondence and key geotechnical parameters provided by Tonkin+Taylor have been appended to this report (Appendix E) for ease of reference. The geotechnical loading parameters provided by Tonkin+Taylor govern the structural element scores and the ultimate DSA seismic rating. The DSA outcome is geotechnically dominated.

Per Tonkin+Taylor's analysis, liquefaction and cyclic displacement (lateral ground lurch) in the basement area are possible in earthquake shaking > 34%NBS(IL3). The %NBS scores and structural rating are reported herein against 34%NBS(IL3) per the Tonkin+Taylor advice. With the onset of liquefaction, the structure will be subjected to significant retaining pressures, liquefaction induced heave uplift and ultimately lateral spread demands. Heave loading is likely to exceed the pile tension (hold down) capacity. This will result in large, uncontrolled vertical and lateral displacements of the basement.

Liquefaction-induced "heave" pressure has been identified as a critical parameter. This is an uplift pressure that occurs beneath the basement following liquefaction. Under the heave case the pile capacity is exceeded. Following pile failure, the basement structure can move freely with the surrounding liquefied ground. The 'box' is expected to move both vertically (upwards) and horizontally in an uncontrolled manner. In isolation pile failure and basement displacement is not considered a life safety issue. However, the uplift of the piles will cause differential deformations that could lead to significant damage, loss of gravity support, and in the worst-case failure of the Hollowcore units.

At the time of writing this report Tonkin+Taylor have proposed additional geotechnical investigations to confirm the extent (depth) of the expected heave pressures. A reduction in the liquefaction heave demand is unlikely to result in an adjustment to the earthquake rating, as brittle diaphragm behaviour will govern the structural response. A reduction or elimination of liquefaction induced heave will however significantly minimise the seismic upgrade interventions required to achieve >35%NBS(IL3).

Results Summary

The seismic rating of a structure is generally limited by the lowest scoring element; therefore, the structure achieves an earthquake rating of **20%NBS(IL3)** in accordance with the **Yellow Chapter** (The Guidelines). This rating of **20%NBS** is based on the Critical Structural Weakness (**CSW**) of Hollowcore failure under significant displacement following pile and diaphragm failure. The structure also contains other distinct elements that are classified as structural weaknesses (**SW**).

A **SW** is an aspect of the building structure and/or the foundation soils that scores less than 100 %NBS and a **CSW** is the lowest scoring structural weakness.

Table 1 below presents a summary of the results based on the **Guidelines**.

Table 1: Summary of Elements - %NBS scores

Building Element	%NBS(IL3)	Commentary
Retaining Walls In-Plane (lateral system)	100%	The in-plane capacities of the retaining walls, which provide the basement lateral system, are sufficient to score >100%NBS(IL3)
Block walls (out-of-plane)	100%	The block walls have capacity to resist 100%ULS out-of-plane inertia loads spanning simply supported between floor levels. These walls are considered stand-alone walls.
Retaining Walls Out-of-Plane	30%	The retaining walls have capacity to resist 30% of the Case 1 geotechnical pressures (without liquefaction). Given that the retaining wall failure would lead to loss of support for the Hollowcore floor, retaining walls are scoring 30%NBS(IL3) We note that the score is based on specific areas and not necessarily representative of all the retaining walls.
Ground Floor Diaphragm	20%	The cold drawn ground floor diaphragm reinforcement can resist 20% of the liquefaction and inertia demands (Case 3). The liquefaction trigger has been reported by T+T as >34%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to this element due to the significant life safety hazard of diaphragm failure for occupants within the basement and on the above plaza. In accordance with Table A8.1 of the Guidelines the score has been rounded to 20%NBS(IL3)
Piles (Vertical)	35%	The piles have capacity to resist 20% of the liquefaction induced 110kPa heave tension demands. This is limited by the geotechnical tension capacity of the piles (1050kN). As the trigger for liquefaction and ground lurch has been reported by T+T as >34%NBS(IL3) the piles have been assigned a 35%NBS(IL3) score under a vertical liquefaction induced heave loading scenario.
Piles (Horizontal)	35%	The piles have capacity to resist 40% of the Case 3 lateral geotechnical loading. As the trigger for liquefaction and ground lurch has been reported by T+T as >34%NBS(IL3) the piles have been assigned a 35%NBS(IL3) score under the horizontal loading scenario.
Basement Slab	35%	The basement slab has capacity to resist 35% of the liquefaction induced 110kPa heave pressure. This is limited by the flexural capacity. As the trigger for liquefaction and ground lurch has been reported by T+T as >34%NBS(IL3) the basement slab has been assigned a 35%NBS(IL3) score.
Precast Hollowcore Floor Units	20%	The basement piles cannot accommodate the liquefaction induced heave demands reported by T+T of 110kPa. Under the heave demands the piles will uplift. The uplift of the piles will cause differential deformations to the hollowcore that could lead to significant damage, loss of gravity support, and in the worst-case failure of the Hollowcore units. The liquefaction trigger has been reported by T+T as >34%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to this element due to the significant life safety hazard of Hollowcore failure for occupants within the basement and on the above plaza. In accordance with Table A8.1 of the Guidelines the score has been rounded to 20%NBS(IL3)

This assessment does not address secondary structural and non-structural elements (overhead services and plant and equipment etc) except where explicitly stated. The findings and conclusions made in this

assessment are subject to the terms and limitations as contained in the Explanatory Note (Section 9) of this report.

Recommendations

The structure's seismic performance is very much dependent on the soil's behaviour (onset of liquefaction, heave, lateral spread), therefore we recommend:

- Sufficient ground investigations should be completed to confirm the assumptions underpinning Tonkin + Taylor's geotechnical recommendations. The Tonkin + Taylor report should subsequently be updated.
- A geotechnical peer review should be carried out to provide an additional level of certainty on the geotechnical parameters used within this seismic assessment.
- Any revisions to the geotechnical parameters should be reviewed by Aurecon so that this report can be updated accordingly.
- Structural peer review is also recommended but should follow the resolution of the geotechnical review.

Retrofit options are presented in detail in Section 6 of this report and are further documented in the sketches given in Appendix F.

The liquefaction and lateral spread demands are considered a geotechnical "step change" at 34 %NBS(IL3). This means that there is a sudden and almost instantaneous increase in the loads and displacement demands on the structure. Structural elements that cannot accommodate the full step change in demand score 35%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to particularly brittle elements that present unreliable performance and a significant life safety hazard (In accordance with Table A8.1 of the Guidelines the score for such elements has been rounded to 20%NBS(IL3). For this reason, retrofit option ratings 'jump' from (20/35)%NBS(IL3) to 100%NBS(IL3) and there are no options on the continuum between.

The seismic upgrade option presented in Appendix F recommends seismic retrofit of the Hollowcore flooring and the diaphragm to achieve a seismic rating of 35%NBS(IL3) with respect to life safety. It should be noted that the structure may still displace significantly following a seismic event due to heave, earth pressures and lateral spread. The upgrade proposed will address life safety issues only and will not preserve the functionality of the basement.

1 Introduction

1.1 Background

Aurecon have been engaged by Wellington City Council (WCC) to complete a Detailed Seismic Assessment (DSA) and for the Te Ngākau Capital E building basement. The assessment focuses on the proposed remaining basement structure which will be retained following partial demolition of Capital E.

The DSA focuses on life safety issues as the primary objective. This means that the earthquake rating is based primarily on life safety considerations rather than damage to the building or its contents unless this might lead to damage to adjacent property. The earthquake element scores assigned are, therefore, not reflective of serviceability performance.

This report presents the findings of Aurecon's detailed seismic assessment (DSA) which has been completed in accordance with the recommendations and loading parameters in the Tonkin+Taylor geotechnical advice (Appendix E). This report provides an assessment of the building's expected seismic capacity, highlights the key risks and presents recommendations for seismic improvements.

1.2 Terminology and Key Definitions

See below for key terminology and key definitions as defined by the **Red Book**. Refer to Appendix B for additional definitions.

- **%NBS (New Building Standard):** The ratio of the ultimate capacity of a building as a whole or of an individual member/element and the ULS shaking demand for a similar new building on the same site, expressed as a percentage. Intended to reflect the expected seismic performance of a building relative to the minimum life safety standard required for a similar new building on the same site by Clause B1 of the New Zealand Building Code.
- **Design level/ULS earthquake:** Design level earthquake or loading is taken to be the seismic load level corresponding to the ULS seismic load for the building at the site as defined by NZS 1170.5:2004
- **Ductile/ductility:** Describes the ability of a structure to sustain its load carrying capacity and dissipate energy when it is subjected to cyclic inelastic displacements during an earthquake.
- **Liquefaction:** Describes the process which causes soil to behave more like a liquid than a solid during an earthquake having a minimal stiffness and strength in any direction
- **Heave:** The uplift pressure induced to the base of the structure due to liquefaction
- **Structural weakness (SW):** An aspect of the building structure and/or the foundation soils that scores less than 100%NBS.
- **Critical structural weakness (CSW):** The lowest scoring structural weakness determined from a DSA.

1.3 Building Description

1.3.1 Site Description

The Capital E building is surrounded by several buildings that make up Te Ngākau Civic Square including City Gallery and the Civic Square Basement located to the West of the building, the Wellington Town Hall to the South and City to Sea bridge to the East.

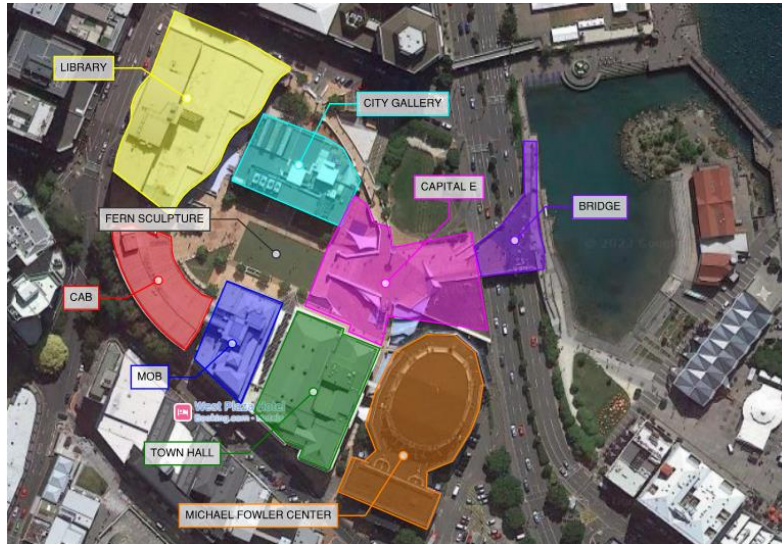


Figure 2: Aerial view of the Capital E Building

1.3.2 Building Structure

The Capital E building is a two-storey reinforced concrete building with a basement level over part of its footprint (shown in blue colour in Figure 3). The basement links to the Te Ngākau Civic Square Carpark with access from both Harris Street and Jervois Quay behind Michael Flower Centre. The roof of the building supports part of the Te Ngākau Civic Square and is used as an access to the City to Sea Bridge. WCC have requested that Aurecon review the feasibility of removing the upper two levels of the capital E building (shown in grey colour in Figure 3). The basement is to be retained for continued use (shown in blue colour in Figure 3). For ease of reference in this report, the basement in blue colour will be referred to as the *loading dock* basement.

The ground floor of the loading dock is supported by precast 320mm thick Hollowcore floor units with a 75 mm thick, 665 mesh reinforced concrete topping. The floor units are supported by internal concrete beams and perimeter concrete retaining walls.

The lateral resistance is provided by the retaining walls which act as shear walls in-plane. These walls run along the perimeter of the loading dock and are either 250 mm or 300 mm thick (Figure 4).

The foundation is comprised of a 300mm thick in-situ concrete slab founded on bored belled piles (0.6 m diameter shaft and 1.2 m diameter bell) located under the columns and retaining walls.

The current use of Te Ngākau Civic Square as a place for public assembly, and its high importance and value to the public dictates an Importance Level 3 (IL3) classification. This is consistent with previous assessments and WCC's historical consideration for the site. The basement is considered to be located on a Site Subsoil Class C site as defined by NZS 1170.5:2004. As advised by Torkin&Taylor, the site's classification is close to the boundary between class C and D. For the purpose of this assessment, a conservative approach has been taken, opting for Site Subsoil Class C, which entails higher Peak Ground Acceleration (PGA) and short period demands for the structural evaluation.

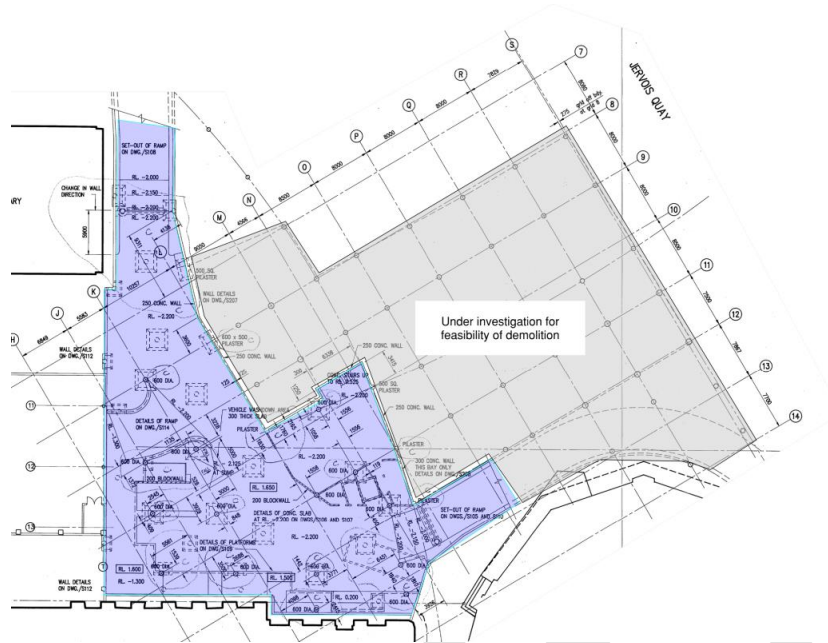


Figure 3: Plan view of different parts of Capital E building

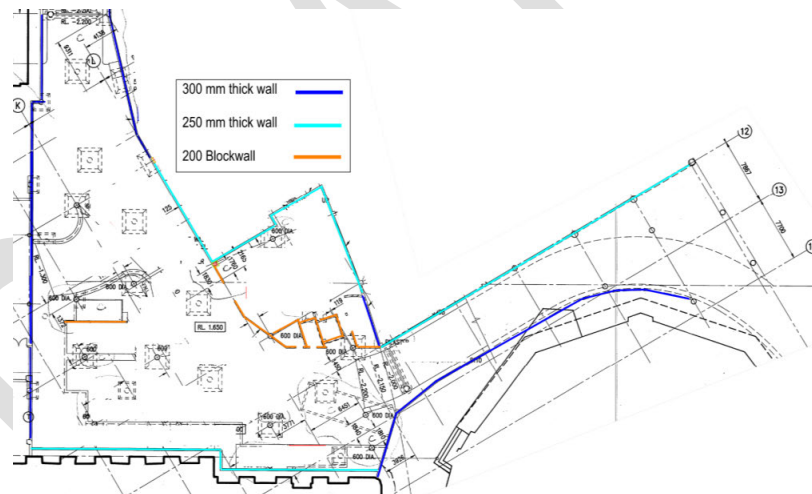


Figure 4: Plan view of wall types

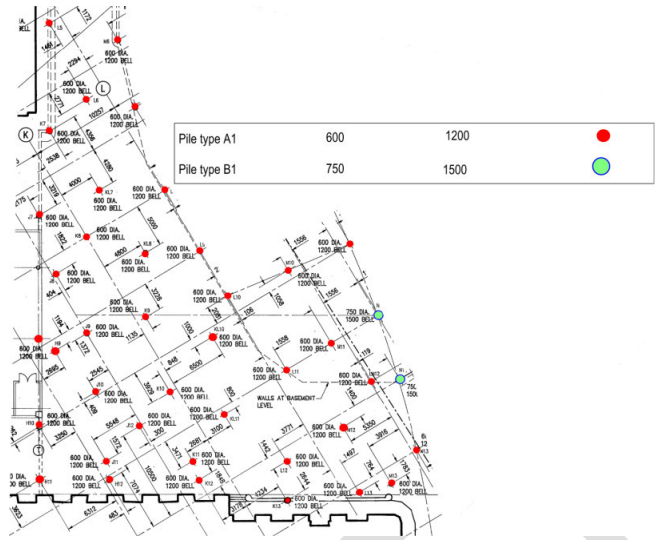


Figure 5: Plan view of pile types

2 Assessed Seismic Risk

The results of the DSA assess the structure's earthquake rating to be **20%NBS(IL3)** in accordance with the **Yellow Chapter**. This rating is based on the Critical Structural Weakness (**CSW**) of Hollowcore failure under significant displacement following pile failure. The structure also contains other distinct elements that are classified as structural weaknesses (elements that score less than 100%NBS).

Therefore, this is a Grade D building following the NZSEE grading scheme. This may classify the building as earthquake prone in accordance with the New Zealand Building Act, subject to the Territorial Authority review. A grade D building imposes a risk 10 to 25 times greater than a new building.

Table 2: Relative seismic risk

Seismic Grade	%NBS(IL2)	Approx. risk relative to a similar new building	Relative life-safety risk description
A+	>100	<1	low risk
A	80 to 100	1 to 2 times	low risk
B	67 to 80	2 to 5 times	low to medium risk
C	33 to 67	5 to 10 times	medium risk
D	20 to 33	10 to 25 times	high risk
E	<20	more than 25 times	very high risk

3 Structural System Description

3.1 Primary Lateral Load Resisting System

3.1.1 Vertical Lateral Resisting Elements

The lateral resistance is provided by the retaining walls which act as shear walls in their longitudinal (in-plane) direction. These walls run along the perimeter of the loading dock and are either 250 mm or 300 mm thick. These walls are typically doubly reinforced (two-layers of reinforcement). Figure 6 and Figure 7 show typical detailing of the walls.

Additionally, the piles located underneath the shear walls form part of the lateral resisting system. These are discussed in Sections 3.3 and 4.2.7.

In Cases 1 to 4 of the Tonkin+Taylor geotechnical loading (refer to Section 4.2.7), the basement shear walls span out-of-plane to transfer the imposed passive/active soil pressures.

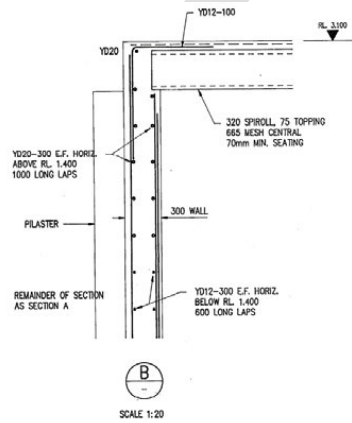


Figure 6: Typical reinforcement detail for the 300mm walls

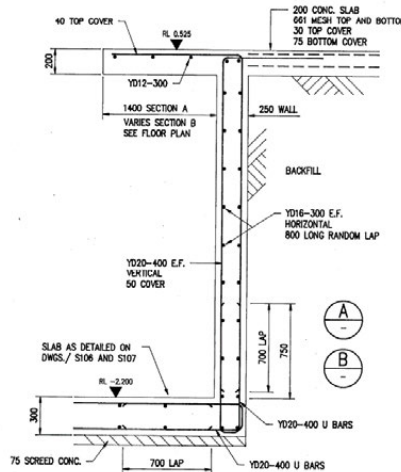


Figure 7: Typical reinforcement detail for the 250mm walls

The piles under retaining walls are typically reinforced with 12-D20, 12-D24, 16-D20 or 16-D24 while the internal piles are typically 12-D20, 12-D24 or 16-D24. The plan in Figure 12 shows the distribution of piles under the shear walls and the internal basement slab.

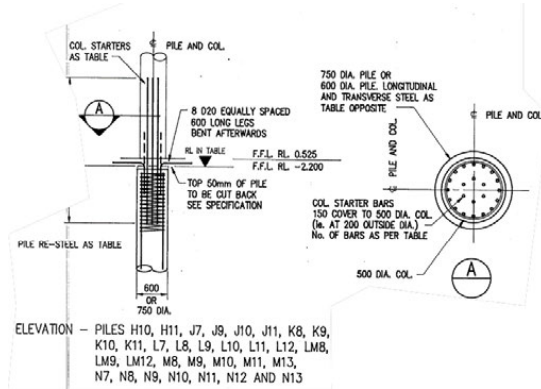


Figure 10: Typical detail of the piles

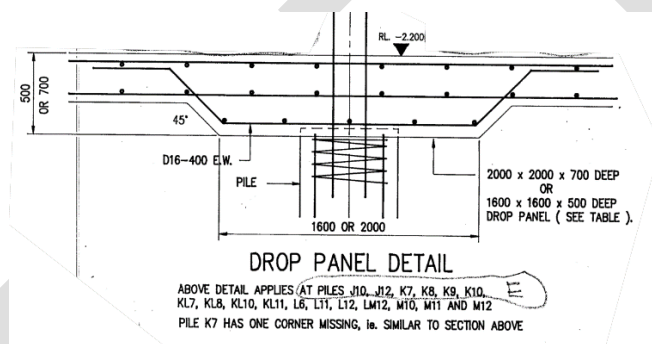


Figure 11: Typical detail of the piles' drop panel

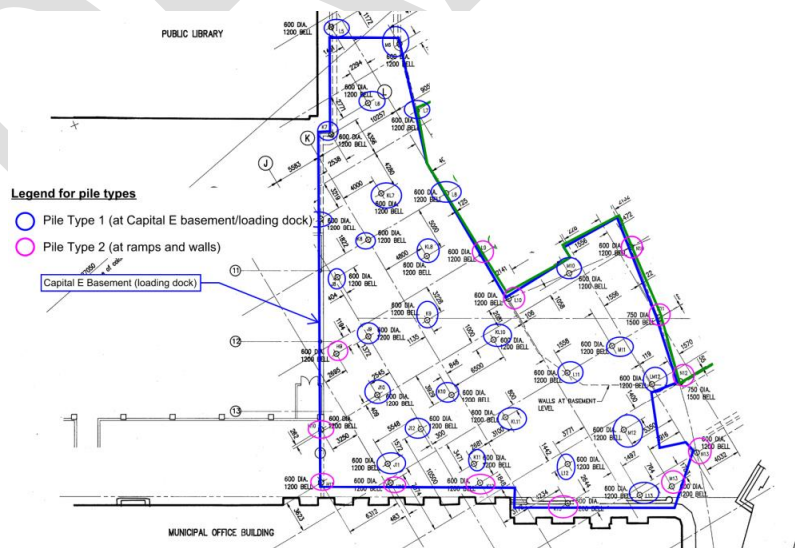


Figure 12: Plan of piles under retaining walls and within the internal basement slab

4 Assessment Methodology

4.1 Assessment Outline

The DSA was generally completed in accordance with *The Seismic Assessment of Existing Buildings – Technical Guidelines for Engineering Assessments*, dated July 2017 (**Red Book**), including the updated *Section C5 – Concrete Buildings – Proposed Revision to the Engineering Assessment Guidelines*, dated November 2018 (the **Yellow Chapter**). These are collectively noted as the **Guidelines**.

The detailed seismic assessment includes the collation and review of existing structural and geotechnical information including drawings and existing seismic assessment reports. A geotechnical seismic desktop assessment has been completed by Tonkin+Taylor and they have provided recommendations for geotechnical parameters and seismic demands (Appendix E). Based on the latest industry guidance and scientific knowledge Tonkin+Taylor have provided geotechnical advice on the liquefaction potential and geotechnical consequences for the site.

The following provides an overview of the Detailed Seismic Assessment scope and assumptions.

- Review of the existing assessment reports available for the structure.
- Development of a 3D model of the existing structure based on information gained by review of the drawings along with our knowledge of detailing typically used for structures of this era.
- Seismic demands were applied in accordance with load Cases 1 to 4 as defined by Tonkin+Taylor.
- Assessment of the structural elements and sub-systems to determine the likely failure mechanisms. Specifically, these include:
 - Out-of-Plane flexural assessment of the retaining walls for load Cases 1 to 4 as defined by Tonkin+Taylor.
 - Heave/uplift pressure assessment on the basement slab and piles based on a 110kPa uplift pressure across the basement footprint. This is as defined by Tonkin+Taylor.
 - Lateral load capacity of the basement “box” structure based on adopting the Case 1 to 4 load patterns (Tonkin+Taylor) and allowing for pile flexural hinging.
 - Assessment of the diaphragm to transfer the out of balance geotechnical forces (Tonkin+Taylor) and floor inertia
 - In-plane assessment of the retaining walls.
 - Assessment of Hollowcore failure mechanisms based on:
 - Case 1-4 analysis drift displacements
 - Uncontrolled relative vertical deformations following pile failure due to liquefaction induced heave demands.

4.2 Basis of Assessment

4.2.1 General

The detailed seismic assessment (DSA) was completed in accordance with the **Red Book** and the **Yellow Chapter**.

4.2.2 Importance Level

The current use of Te Ngākau Civic Square as a place for public assembly and its high importance and value to the public dictates an **Importance Level 3 (IL3)** classification for the structure. This is consistent with previous assessments and WCC’s historical consideration for the site. A design life of 50 years (NZ Building

Code) gives a return period factor 'R' of 1.3 in accordance with NZS1170.5 Earthquake Actions – New Zealand.

4.2.3 Site and subsoil class

Based on the geotechnical recommendations provided by Tonkin+Taylor, the site's classification is close to the boundary between class C and D. For the purpose of this assessment, Aurecon have considered a conservative approach, opting for **Site Subsoil Class C**, which entails higher Peak Ground Acceleration (PGA) and short period demands for the structural evaluation. Geotechnical hazards such as cyclic displacement, liquefaction and lateral spread are considered in the assessment in accordance with the Tonkin+Taylor recommendations and loading parameters.

4.2.4 Hazard Zone Factor

The hazard zone factor Z determines the "seismic risk" area in accordance with NZS1170.5. There are different hazard zone factors depending on the building location. In accordance with NZS1170.5, we have used a hazard factor of **Z=0.40** for Wellington.

4.2.5 Near-Fault Factor

The near-fault factor, $N(T,D)$ was determined in accordance with NZS1170.5. The site is located approximately 1.35km from the nearest fault. This requires that the maximum near-fault factor $N_{max}(T)$ is adopted based on the buildings effective period of $T (<1.5s)$. The near-fault factor used in the assessment was $N(T,D) = N_{max}(T) = 1$.

4.2.6 Reference Documentation

The following documentation has been referenced in the preparation of this report.

- Existing structural drawings by Holmes Consulting Group, Dated June 1991.
- Geotechnical recommendations and communications provided by Tonkin+Taylor are summarised in Appendix E. These were supplied between December 2023 and February 2024.

4.2.7 Geotechnical Parameters

Refer to Appendix E for a summary of the Tonkin+Taylor communications and geotechnical parameters.

Retaining Wall pressures (both passive and seismic, including pre and post liquefaction conditions), lateral spread, and uplift heave actions on the basement slab have been provided by Tonkin+Taylor for this assessment. These demands have been applied to the structure.

The geotechnical demands govern the assessed scores and ratings presented in this DSA. The cases assessed can be outlined as follows.

Case 1: Start of earthquake shaking – No liquefaction

- The analysis considers both 100% of the base shear and the seismic pressure acting on the retaining walls, serving as the lateral load demand on the structure. Seismic pressures activate when the walls undergo movement away from the ground. The resistance against the mentioned lateral loads is provided by both the mobilized passive pressure of the walls (where wall moves into the ground) and the mobilized lateral capacity of the piles. Under the conditions specified, both seismic and passive pressures are considered within the context of a *No Liquefaction* scenario.

Case 2: Liquefaction triggered – No lateral ground movement, with liquefaction

- The analysis considers both 100% of the base shear and the seismic pressure acting on the retaining wall, serving as the lateral load demand on the structure. Seismic pressures activate when the walls undergo movement away from the ground. The resistance against the lateral loads is provided by both the mobilized passive pressure of the walls (where wall moves into the ground)

and the mobilized lateral capacity of the piles. Under the conditions specified, both seismic and passive pressures are considered within the context of a *With Liquefaction* scenario.

Case 3: Liquefaction with cyclic ground displacement

- The analysis incorporates only 80% of the base shear and the mobilized passive pressure on the retaining wall as the lateral load demand on the structure. In this scenario, resistance to the lateral loads is exclusively derived from the mobilized lateral capacity of the piles, with no contribution from soil resistance being taken into consideration.

Case 4: Liquefaction with lateral spreading toward Whairepo Lagoon

- The analysis incorporates 25% of base shear and the mobilized seismic pressure on the retaining wall as the lateral load demand on the structure. In this scenario, the resistance against the lateral loads is provided by the mobilized lateral capacity of the piles. It is worth noting that the resistance from soil is only provided by the soil located behind the eastern walls and below the ground water level due to lateral spreading.

Figure 13 summarizes the abovementioned geotechnical loading scenarios.

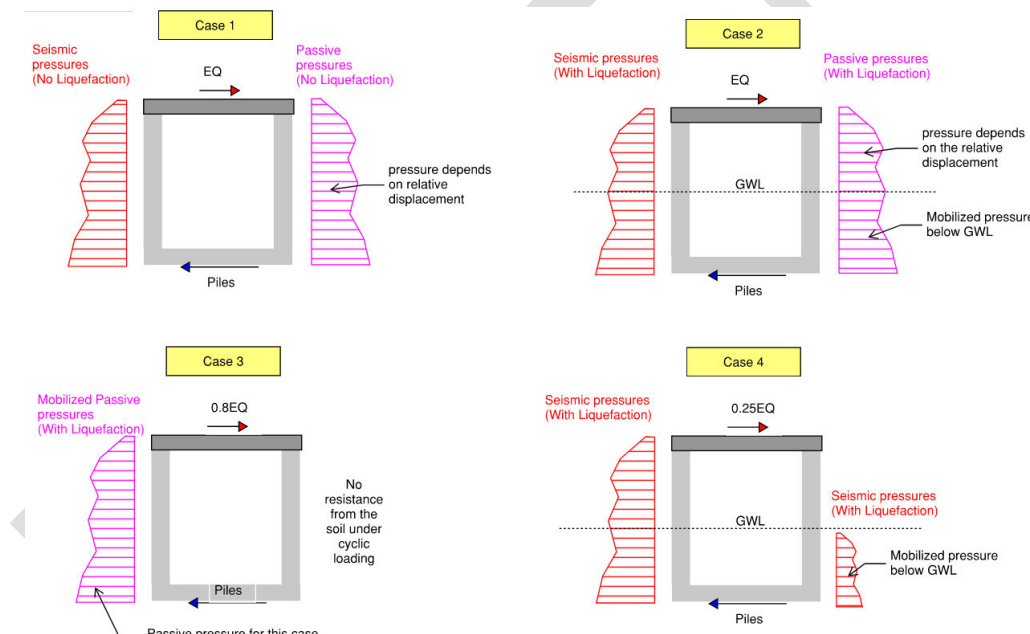


Figure 13: Summary of geotechnical loading scenarios

Dependency of the passive pressure in non-liquefiable soil on displacement

As per geotechnical report, the lateral passive earth pressure in the non-liquefiable soil is a function of displacement. In other words, different levels of displacement will mobilize and activate different percentages of the soil pressure. This relationship is graphically depicted in Figure 14 as per the geotechnical report. As can be observed, the increased displacement will correspond to a higher passive pressure acting on the retaining wall.

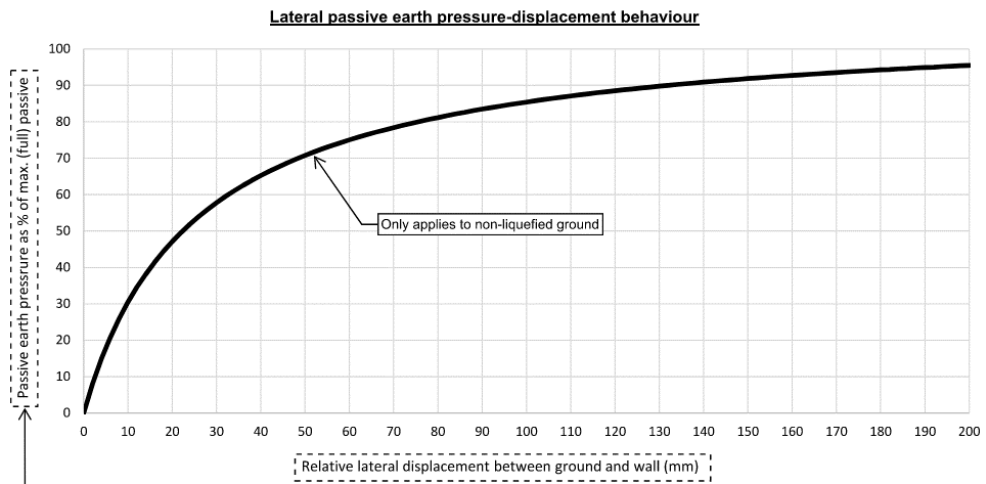


Figure 14: Lateral displacement behaviour of the non-liquefiable soil

4.3 Standards Used

The following standards and guidelines have been used in this assessment:

- AS/NZS 1170:2002 – Structural Design Actions
- NZS1170.5:2004 – Earthquake Actions – New Zealand
- NZS 3101:2006 – Concrete Structures Standard
- NZSEE Guidelines titled “Seismic Assessment of Existing Buildings, Technical Guidelines for Engineering Assessments, July 2017”
- NZSEE Guidelines titled “NZSEE Technical Proposal to Revise C5” (Yellow), November 2018”

5 Assessment Results

5.1 General

The following presents a summary of the results from the detailed seismic assessment of the Basement structure in accordance with NZSEE The Seismic Assessment of Existing Buildings (2017/2018) and the geotechnical seismic parameters provided by Tonkin+Taylor (Appendix E).

The basement is a single storey below grade, buried structure. As such its dynamic response to seismic actions is largely limited to the deformations of the ground. The application of critical demands is related to the geotechnical retaining loads, uplift basement slab heave pressures, and the triggering of liquefaction and cyclic displacement (lateral ground lurch).

Table 3: Summary of Elements - %NBS scores

Building Element	%NBS(IL3)	Commentary
Retaining Walls In-Plane (lateral system)	100%	The in-plane capacities of the retaining walls, which provide the basement lateral system, are sufficient to score >100%NBS(IL3)
Block walls (out-of-plane)	100%	The block walls have capacity to resist 100%ULS out-of-plane inertia loads spanning simply supported between floor levels. These walls are considered stand-alone walls.
Retaining Walls Out-of-Plane	30%	The retaining walls have capacity to resist 30% of the Case 1 geotechnical pressures (without liquefaction) Given that the retaining wall failure would lead to loss of support for the Hollowcore floor, retaining walls are scoring 30%NBS(IL3) We note that the score is based on specific areas and not necessarily representative of all the retaining walls.
Ground Floor Diaphragm	20%	The cold drawn ground floor diaphragm reinforcement can resist 20% of the liquefaction and inertia demands (Case 3). The liquefaction trigger has been reported by T+T as >34%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to this element due to the significant life safety hazard of diaphragm failure for occupants within the basement and on the above plaza. In accordance with Table A8.1 of the Guidelines the score has been rounded to 20%NBS(IL3)
Piles (Vertical)	35%	The piles have capacity to resist 20% of the liquefaction induced 110kPa heave tension demands. This is limited by the geotechnical tension capacity of the piles (1050kN). As the trigger for liquefaction and ground lurch has been reported by T+T as >34%NBS(IL3) the piles have been assigned a 35%NBS(IL3) score under a vertical liquefaction induced heave loading scenario.
Piles (Horizontal)	35%	The piles have capacity to resist 40% of the Case 3 lateral geotechnical loading. As the trigger for liquefaction and ground lurch has been reported by T+T as >34%NBS(IL3) the piles have been assigned a 35%NBS(IL3) score under the horizontal loading scenario.
Basement Slab	35%	The basement slab has capacity to resist 35% of the liquefaction induced 110kPa heave pressure. This is limited by the flexural capacity. As the trigger for liquefaction and ground lurch has been reported by T+T as >34%NBS(IL3) the basement slab has been assigned a 35%NBS(IL3) score.

Building Element	%NBS(IL3)	Commentary
Precast Hollowcore Floor Units	20%	<p>The basement piles cannot accommodate the liquefaction induced heave demands reported by T+T of 110kPa. Under the heave demands the piles will uplift. The uplift of the piles will cause differential deformations to the hollowcore that could lead to significant damage, loss of gravity support, and in the worst-case failure of the Hollowcore units.</p> <p>The liquefaction trigger has been reported by T+T as >34%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to this element due to the significant life safety hazard of Hollowcore failure for occupants within the basement and on the above plaza. In accordance with Table A8.1 of the Guidelines the score has been rounded to 20%NBS(IL3)</p>

5.2 Basement Structure Liquefaction Induced Heave

The basement slab has been assessed against the 110kPa liquefaction induced heave demand specified by Tonkin+Taylor. A three-dimensional model was developed to capture the load distribution through the slab and ground beams to the piles based on the relative stiffness of the elements.

A gravity load including the basement self-weight has been considered in conjunction with the heave demands. Some redistribution has also been taken into consideration for the basement slab demand derivation. It is worth noting that considering the load redistribution inherently implies that the basement slab will experience wide cracks in different regions which, itself, will lead to partial relief in the heave pressure. This effect is not pursued in this assessment. Table 4 presents the assessment results of the basement.

Table 4 Demand Capacity Ratios and %NBS Scores for the Basement under Heave Pressure (110kPa)

Structural Element	Demand	Probable Capacity	Capacity/Demand	%NBS Score
Basement Slab (hogging)	360 kNm/m	99 kNm/m	28%	35% ¹

¹: Limited redistribution allowed

The liquefaction trigger point (34%NBS) represents a geotechnical step change. Elements that cannot resist the full liquefaction induced demands are scored at the liquefaction trigger threshold.

5.3 Retaining Walls Out-of-Plane

The retaining walls have been assessed under the different geotechnical loading scenarios mentioned in Section 4.2.7. Analysis performed on the structure found that Case 1 of the geotechnical loading conditions is the critical loading scenario for the wall assessment. Under this loading case, it was observed that full passive pressure (typically the largest pressures on the walls) is required to be mobilized to resist the base shear demand. Therefore, the wall scoring is governed by Case 1, which does not involve liquefaction. The score for governing walls is reported in Table 5 while those not listed are assigned a score of 100%NBS(IL3). Refer to Figure 15 for a visual representation of the various walls.

Table 5 Demand Capacity Ratios and %NBS Scores for the Out-of-plane retaining walls

Structural Element	Demand	Probable Capacity	Capacity/Demand	%NBS Score
Western Walls section (Sec B)	359 kN.m/m	176 kN.m/m	49%	50%
Western Walls section (Sec D)	950 kN.m/m	263 kN.m/m	28%	34% ¹
Western Walls section (Sec E)	980 kN.m/m	263 kN.m/m	27%	30% ¹

¹: Limited redistribution allowed

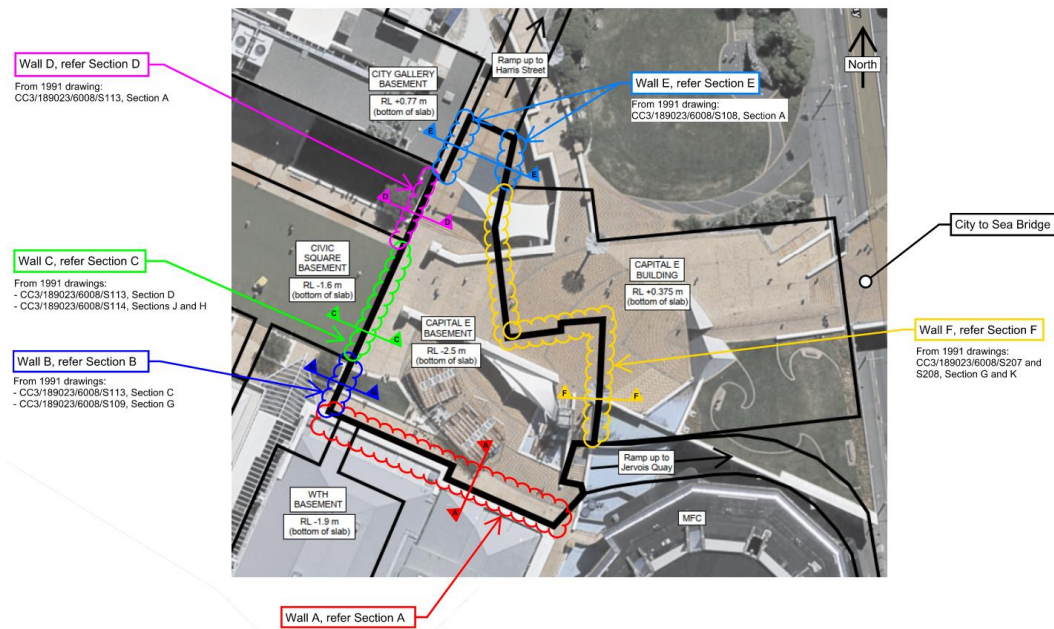


Figure 15: Different Retaining Wall sections

5.4 Piles

5.4.1 Pile Horizontal Assessment

The lateral load demands on the structure consist of the structural inertia and the soil pressures (where the wall moves away from the ground – referred to as seismic pressure). On the other hand, the resistance against lateral load demands is provided by the lateral load capacity of the piles and soil (where the walls move into the ground– referred to as passive pressure).

Figure 16 shows the outcome of the simple equilibrium check conducted on the structure to assess the sufficiency of the pile capacities to meet the demand of the unbalanced load between the structural inertia and the soil driving and resisting pressures. The equilibrium has been carried out for the different geotechnical loading scenarios (refer to Section 4.2.7).

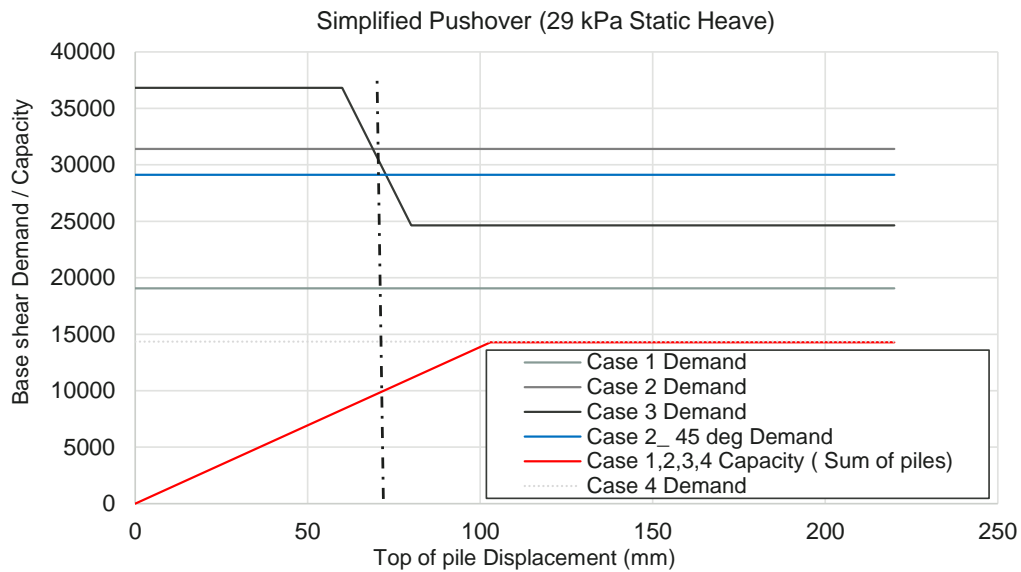


Figure 16: Sum of the Pile horizontal capacities against imbalance load

As can be observed in Figure 16, across all scenarios (Cases of 1,2, and 3), the piles exhibit insufficient horizontal capacity to take out the unbalanced shear load. This necessarily implies that despite considering both the full (100% passive soil) and pile resistance, the structural inertia and the seismic pressures cannot be fully resisted. Therefore, the %NBS score will be rated at the onset of liquefaction trigger.

Table 6 Demand Capacity Ratios and %NBS Scores for the base shear resistance

Loading Case	Demand	Probable Capacity	Capacity/Demand	%NBS Score
Case 1	19,066	14,289 kN	75%	75%
Case 2	31,409	14,289 kN	45%	45%
Case 3	24,642	14,289 kN	58%	60%
Case 4	14,349	14,289 kN	99%	100%

5.4.2 Piles vertical assessment

The piles have been assessed against the 110kPa liquefaction induced heave demand specified by Tonkin+Taylor. A three-dimensional model was developed to capture the load distribution through the slab and ground beams to the piles based on the relative stiffness of the elements.

A gravity load including the basement self-weight has been considered in conjunction with the heave demands. Some redistribution has also been taken into consideration. Table 7 presents the assessment results for the piles.

Table 7 Demand Capacity Ratios and %NBS Scores for the Piles under Heave Pressure (110kPa)

Structural Element	Demand	Probable Capacity	Capacity/Demand	%NBS Score
Piles (internal)	5942 kN	2600 kN	44%	35%
Piles (edge)	8757 kN	1050 kN	12%	35%

The liquefaction trigger point (34%NBS) represents a geotechnical step change. Elements that cannot resist the full liquefaction induced demands are scored at the liquefaction trigger threshold.

5.5 Hollowcore Floor

The Hollowcore floors have been assessed under two global displacement cases.

- Assessment based on the “box” lateral drift under the Case 1-4 load conditions. The ultimate drift demand of the box is 2.2% mainly as a result of retaining wall rotation under the soil pressure. The calculated Hollowcore drift capacity in accordance with the Guidelines is 2.4%.

The Hollowcore has been assessed for loss of seating failure, negative moment failure and positive moment failure in accordance with The Guidelines.

The governing Hollowcore failure mechanism is Loss of Support/Seating. Therefore, the Hollowcore score based on this mechanism is 55%NBS(IL3) considering the factor of safety of 2 recommended by The Guidelines.

- Assessment based on the expected uncontrolled relative uplift/vertical displacements following pile failure under the 110kPa heave pressure. The displacement in this case cannot be accurately assessed and there is a large degree of uncertainty. Under the heave demands the piles will uplift. The uplift of the piles will cause differential deformations that could lead to significant damage, loss of gravity support, and in the worst-case failure of the Hollowcore units.

The liquefaction trigger has been reported by Tonkin+Taylor as >34%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to this element due to the significant life safety hazard of Hollowcore failure to occupants on the above plaza and within the basement. In accordance with Table A8.1 of the Guidelines the score has been rounded to 20%NBS(IL3).

5.6 Diaphragm

The primary function of a diaphragm is to connect discrete vertical elements within a structure horizontally at regular intervals, facilitating the transfer of inertia forces and soil pressures to the lateral elements. The significance and behaviour of diaphragms were often underestimated until the Christchurch Earthquake in 2011, leading to common deficiencies in older structures. Moreover, the most common diaphragm reinforcing used in New Zealand until recently was non-ductile wire mesh.

In the case of this building, the diaphragm is reinforced with non-ductile mesh, which lacks the ability to stretch and redistribute load effectively across the diaphragm which is particularly undesirable in seismic conditions. The reinforced concrete topping has a thickness of 75mm.

Given the complexity of the diaphragms of the Capital E building, characterized by high irregularity, an assessment was conducted to identify the reliable and unreliable load paths within the diaphragm.

According to the assessment, it has been identified that two cantilevering sections of the diaphragm, as illustrated in Figure 17 (section 1-1 and section 2-2) lack sufficient capacity in the event of an earthquake, due to not having reliable and coherent load paths to transfer the inertia loads combined with the soil pressures. The diaphragm capacity is limited by the insufficient tensile strength of the tie elements arising from the utilization of the non-ductile mesh. Furthermore, it was found that the disconnection of these portions of the diaphragm would impose a life-safety hazard for occupants given the likelihood of collapse, due to the cantilevering retaining walls not being capable of resisting both the inertia and soil pressure

demands. (the extent of potential collapse being indicated by the shaded areas in Figure 17. Therefore the diaphragm score is limited to 20%NBS(IL3).

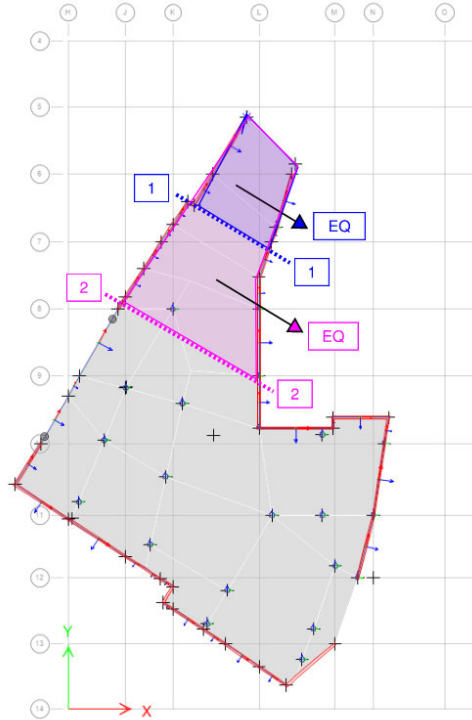


Figure 17: Critical Diaphragm Sections

5.7 Interaction with Surrounding Structures

The loading dock basement is structurally connected to the Civic Square basement to the West and is also immediately adjacent to the Town Hall on the South. The Town Hall is currently in construction with a retrofit base isolation seismic upgrade solution. We have the following recommendations with respect to these interfaces:

- We recommend that the interaction of the Civic Square basement with the Capital E basement is considered carefully in the development of any seismic upgrade schemes. The seismic rating and performance of the adjacent Civic Square basement may impact on the Capital E rating. The structures in their current state present similar levels of seismic risk and have similar deficiencies.
- We recommend that Wellington City Council confirm the following with the Town Hall design team (Holmes (structures) and Tonkin+Taylor (geotechnical)):
 - Request written confirmation that the Town Hall will not impose any load on the loading dock basement.
 - Request written confirmation of the impact of the seismic rating (%NBS) of the basement on the rating of the Town Hall (if any).

5.8 Structural Weaknesses

A structural weakness is an aspect of the building structure and/or the foundation that scores less than 100%NBS(IL3). The Critical Structural Weakness (CSW) is the lowest scoring structural weakness determined in the assessment. Based on the results of the DSA, the CSW for this building is the Hollowcore flooring and the ground floor diaphragm. This mechanism is based on inadequate pile tension capacity

causing uncontrolled displacement, and the inadequate and incoherent load path for the floor inertia and soil pressure transfer.

5.9 Severe Structural Weaknesses

A Severe Structural Weakness (SSW) is a defined structural weakness that is potentially associated with catastrophic collapse and for which the capacity may not be reliably assessed based on current knowledge.

There is one SSW identified for this building and that is the precast Hollowcore flooring

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6 Seismic Upgrade

Wellington City Council (WCC) have requested a seismic upgrade option to achieve a rating of 35%NBS(IL3). Seismic interventions to the Hollowcore, the diaphragm and the western retaining walls are required to achieve this rating. A seismic upgrade concept scheme for this option is presented in Appendix F.

The liquefaction and lateral spread demands are considered a geotechnical “step change” at 34 %NBS(IL3). This means that there is a sudden and almost instantaneous increase in the loads and displacement demands on the structure. Structural elements that cannot accommodate the full step change in demand score 35%NBS(IL3). In accordance with the Guidelines a step change factor of 2 has been applied to particularly brittle elements that present unreliable performance and a significant life safety hazard (In accordance with Table A8.1 of the Guidelines the score for such elements has been rounded to 20%NBS(IL3). For this reason, retrofit option ratings ‘jump’ from (20/35)%NBS(IL3) to 100%NBS(IL3) and there are no options on the continuum between.

A concept to achieve 100%NBS(IL3) can be developed. Based on the assessment to date this concept will likely require extensive geotechnical/foundation interventions. It is likely that there will be a significant step change in scope and cost for this option above the 35%NBS(IL3) concept. If a 100%NBS(IL3) concept is to be developed in the future, we recommend that the design development is approached as follows:

- Geotechnical site investigations should be completed to ensure that the ground conditions are well understood.
- The geotechnical advice should be updated as required based on the site investigation results.
- The structural and geotechnical engineer should work in collaboration to review if a more sophisticated analysis (ie. time history analysis capturing soil-structure interaction) could be used to refine the 100%NBS(IL3) loading demands.
- Geotechnical and structural peer reviews of the DSAs and the strengthening concept should be completed. The timing of these reviews should be staged to suit the design development.

6.1.1 35%NBS Seismic Upgrade – Concrete Overlay

A 35%NBS(IL3) seismic upgrade concept design option is presented in Appendix F. This option recommends seismic retrofit of the Hollowcore flooring, the ground floor diaphragm and the western retaining walls to achieve a seismic rating of 34%NBS(IL3) with respect to life safety. An overlay concrete slab is designed to catch the Hollowcore flooring in the event of loss of support or unit failure, designed to distribute the inertia force reliably to the shear wall and designed to provide additional support and fixity for the retaining walls.

The intent of this retrofit is to mitigate the risk of Hollowcore collapse and diaphragm failure which would cause a life safety risk to occupants on the plaza above in addition to occupants within the basement below. We note the following commentary with respect to this retrofit option.

- The Hollowcore, diaphragm and walls retrofit via concrete overlay slab is the minimum seismic risk mitigation scope that we recommend.
- This option provides the minimal seismic upgrade scope for basement retention and is likely to be the most economic solution.
- The Hollowcore retrofit could also be designed to upgrade the load carrying capacity of the plaza ‘lid’. This would provide more options for Wellington City Council with respect to events within the Civic Square by minimising live load restrictions.
- The retrofit solution will achieve 35%NBS(IL3) with respect to life safety objectives only.
- Large vertical and horizontal displacements of the ground due to liquefaction and lateral spread could cause significant damage to the basement. This option will not mitigate this damage and displacement.

- We anticipate that basement slab cracking during a seismic event may result in liquefaction ejecta entering the basement. We do not consider this outcome a significant life safety risk but may affect the functionality of the basement.

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7 Future Code Changes

7.1 Hazard Zone Factor

The hazard zone factor, Z, is used to determine the seismic risk in a particular area and hence the earthquake design demands to be considered. With the recent release of the updated New Zealand National Seismic Hazard Model (NSHM, October 2022) the current Earthquake Actions Design Standard NZS1170.5 is under revision with an interim Technical Standard TSZS1170.5, recently released for public review. Based on the latest scientific knowledge collated by GNS Science (GNS) in regard to fault locations and mechanics, subduction zone events, and ground motion predictions, the seismic risk to Wellington is understood to generally be greater than that accounted for in the current Standard.

A future increase in the equivalent hazard may lead to a future increase in the earthquake design level demands for new buildings in Wellington. It is currently the Ministry of Business, Innovation and Employment's (MBIE) position with the release of TS1170.5, that this is not used in the assessment of existing buildings and structures. These considerations are still being discussed and reviewed by industry experts and regulators with no fixed timeframe.

7.2 Basin Edge Effects

The 2016 Kaikōura earthquake exposed the concept of "basin edge effects." Basin edge effects cause amplification of ground shaking due to the presence of soft soils in the sedimentary basin and cause larger peak ground accelerations than expected. These edge effects are currently not incorporated in the Earthquake actions design code NZS 1170.5.

Basin edge effects have the potential to significantly increase the design demands for new buildings in particular locations in Wellington, and in the future potentially may increase the standard required for existing buildings to achieve 100%NBS. "Basin edge effects" are currently being discussed and reviewed by industry experts with no fixed timeframe when it will be introduced into the design standards.

7.3 Seismic Guidelines

Section C5 – Concrete Buildings – Proposed Revision to the Engineering Assessment Guidelines, dated November 2018, provides the latest engineering knowledge on aspects involved in the assessment of concrete buildings and reflects what engineers learned from the 2016 Kaikōura earthquake. However, its impact on design and feedback from industry is still being assessed before it is formally incorporated into regulation. Therefore, some aspects of the Guidelines may potentially change and hence affect the standard required for existing buildings to achieve 100%NBS.

8 Conclusions and Recommendations

8.1 Conclusion

It is the finding of this detailed seismic assessment that the seismic rating of the building (%NBS, New Building Standard) against the current design level seismic event is **20%NBS (IL3)** assessed in accordance with the guideline document “*The Seismic Assessment of Existing Buildings-Technical Guidelines for Engineering Assessments*”, dated July 2017 and subsequent amendment in November 2018 (“Technical Guidelines”). The lowest scoring structural element is the Hollowcore units due to liquefaction-induced uplift heave demands on the basement slab and piles resulting in uncontrolled displacements.

A building with an earthquake rating less than 34%NBS fulfils one of the requirements for the Territorial Authority to consider it to be an Earthquake-Prone Building (EPB) in terms of the Building Act 2004. A building rating less than 67%NBS is considered as an Earthquake Risk Building (ERB) by the New Zealand Society for Earthquake Engineering.

8.2 Recommendations

As a minimum we recommend that WCC upgrade the basement to 35%NBS(IL3) in accordance with the conceptual seismic upgrade scheme provided in Appendix F. This includes structural interventions to the Hollowcore, the ground floor diaphragm and the western retaining walls.

Prior to further design development for seismic upgrade we recommend the following:

- Geotechnical site investigations should be completed to ensure that the ground conditions are well understood.
- The geotechnical advice should be updated as required based on the site investigation results.
- The structural and geotechnical engineer should work in collaboration to review if a more sophisticated analysis (ie. time history analysis capturing soil-structure interaction) could be used to refine the loading demands.
- Geotechnical and structural peer reviews of the DSAs and the strengthening concept should be completed. The timing of these reviews should be staged to suit the design development.
- Solutions for landscaping works to the demolished portion of Capital E should be developed.
- Cost information should be obtained by a registered Quantity Surveyor.
- Review and discuss Council objectives with respect to resilience. A resilient basement seismic retrofit solution will involve significant structural and geotechnical intervention and is therefore unlikely to be economically viable.

8.2.1 Interaction with Adjacent Structures

The loading dock basement is structurally connected to the Civic Square basement to the West and is also immediately adjacent to the Town Hall on the South. We have the following recommendations with respect to these interfaces:

- We recommend that the interaction of the Civic Square basement with the Capital E basement is considered carefully in the development of any seismic upgrade schemes. The seismic rating and performance of the adjacent Civic Square basement may impact on the Capital E rating.
- We recommend that Wellington City Council confirm the following with the Town Hall design team:
 - Request written confirmation that the Town Hall will not impose any load on the loading dock basement.
 - Request written confirmation of the impact of the seismic rating (%NBS) of the basement on the rating of the Town Hall (if any).

9 Notes and Clarifications

9.1 Exclusive Use

This report has been prepared by Aurecon at the request of Wellington City Council (WCC) is exclusively for the use and reliance of the Client only and may not be used by the Client for any other purpose or by a third party for any purpose without the prior consent of Aurecon. It is not possible to make a proper assessment of this report without a clear understanding of the terms of engagement under which the report has been prepared, including the scope of the instructions and directions given to and the assumptions made by Aurecon or sub-consultants. The report is scoped in accordance with instructions given by or on behalf of Client. The report will not address issues which would need to be considered for another party if that party's particular circumstances, requirements and experience were known and, further, may make assumptions about matters of which a third party is not aware. Aurecon therefore does not assume responsibility for the use of, or reliance on, the report by any third party and the use of, or reliance on, the report by any third party is at the risk of that party.

9.2 Information Reliance

Parts of the report are provided based on information provided by the Client or third parties, including existing asset drawing records provided by the Client and other third parties. The report is provided strictly on the basis that such information is accurate, complete and adequate, except where otherwise identified during site investigation inspections. Aurecon takes no responsibility and disclaims all liability whatsoever for any loss or damage that the Client or any third party may suffer resulting from any conclusions based on information provided to Aurecon, except to the extent that Aurecon expressly indicates in the report that it has verified the information to its satisfaction.

9.3 Limits on Investigations

- This report contains a seismic assessment overview of the Te Ngākau – Capital E Building. No ancillary/secondary buildings have been assessed. Where extensions have been added to the building these may not have necessarily been assessed.
- The inspection discussed in this report was limited to a visual examination of the building assets only where safe and ready access existed at the time, and we have not undertaken any intrusive inspections or testing to verify conclusions related to the station construction, foundations, structural condition, seismic performance, and strengthening costs. This report is necessarily limited in that respect and does not address any matter that is not discoverable from such an inspection or the existing asset drawings, including any damage or defect in inaccessible places and/or latent defects. Aurecon is not able to give any warranty or guarantee that all possible damage, defects, conditions or qualities have been identified.
- This report does not address building defects. Where site inspections were undertaken, they were restricted to visual inspections with intent to determine existing building main structural elements only, or as described in the report.

This assessment does not address secondary structural and non-structural elements outside the primary structural gravity and lateral load resisting systems except where explicitly stated. Such items include but are not limited to internal fitout elements and building services.

A

Appendix A

Assessment Summary



1. Building Information

Building Name/ Description	Capital E
Street Address	Te Ngakau Civic Square, Wellington Central, Wellington
Territorial Authority	Wellington
No. of Storeys	1 storey basement partially buried in the ground
Area of Typical Floor (approx.)	~1400m ²
Year of Design (approx.)	1990
NZ Standards designed to	NZS1170, NZS3101, NZS3404
Structural System including Foundations	Lateral load resistance is provided by the retaining walls in-plane loading acting as shear walls. Lateral load resistance is provided by retaining walls resisting in bearing on the sides of the wall and out-of-balance loads resisted by piles
Does the building comprise a shared structural form or shares structural elements with any other adjacent titles?	N/A
Key features of ground profile and identified geohazards	The site subsoil classification, in terms of NZS1170.5:2004 Clause 3.1.3, is Class C. The site is susceptible to liquefaction and lateral spread risks. These are summarised in the Tonkin+Taylor desktop geotechnical report.
Previous strengthening and/ or significant alteration	N/A
Heritage Issues/ Status	N/A
Other Relevant Information	N/A

2. Assessment Information	
Consulting Practice	Aurecon NZ Ltd
<p>CPEng Responsible, including:</p> <ul style="list-style-type: none"> Name CPEng number A statement of suitable skills and experience in the seismic assessment of existing buildings 	<ul style="list-style-type: none"> █ CPEng 246747 19 years experience as a consulting structural engineer with experience in the assessment and retrofit of New Zealand buildings.
<p>Documentation reviewed, including:</p> <ul style="list-style-type: none"> date/ version of drawings/ calculations previous seismic assessments 	<ul style="list-style-type: none"> Existing structural drawings by Holmes Consulting Group, Dated December 1990. Existing high level seismic assessment report titled "Capital E – Seismic Strategy", Holmes Consulting Group, Dated 24 October 2018.
Geotechnical Report(s)	Geotechnical advice by Tonkin+Taylor (Refer to Appendix E)
Date(s) Building Inspected and extent of inspection	N/A
Description of any structural testing undertaken and results summary	N/A
Previous Assessment Reports	Holmes Seismic Strategy Nov 2018
Other Relevant Information	N/A
3. Summary of Engineering Assessment Methodology and Key Parameters Used	
Occupancy Type(s) and Importance Level	Major structure affecting crowds due to the large public gathering space above the basement.
Site Subsoil Class	C
For a DSA:	
<p>Summary of how Part C was applied, including:</p> <ul style="list-style-type: none"> the analysis methodology(s) used from C2 other sections of Part C applied 	<ul style="list-style-type: none"> Geotechnical demands applied as per Tonkin+Taylor report (Appendix E) Linear Analysis Part C5, Concrete Structures 2018
Other Relevant Information	N/A

4. Assessment Outcomes

Assessment Status (Draft or Final)	Draft
Assessed %NBS Rating	20%NBS (IL3)
Seismic Grade and Relative Risk (from Table A3.1)	Grade D - 10 to 25 times greater than a new building.

For a DSA:

Comment on the nature of Secondary Structural and Non-structural elements/ parts identified and assessed	N/A – none assessed to date
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Describe the Governing Critical Structural Weakness

- The governing critical structural weakness is the Hollowcore flooring. The foundation and in-ground structure are subject to large uncontrolled displacement demands due to geotechnical step change loading (liquefaction and lateral spread). The displacement in this case cannot be accurately assessed and there is a large degree of uncertainty. Under the heave demands the piles will uplift. The uplift of the piles will cause differential deformations that could lead to significant damage, loss of gravity support, and in the worst-case failure of the Hollowcore units.
- Diaphragm lacks sufficient capacity in the event of an earthquake due to not having reliable and coherent load paths to transfer the inertia loads combined with the soil pressures. Furthermore, it was found that the disconnection of these portions of diaphragm would impose life-safety hazard for the occupants because the disconnection could be lead to collapse. This lies in the fact that the cantilevering retaining walls (in north-west side) are not capable of resisting both the inertia of disconnected part and the soil pressures.
- Retaining wall on the northwest corner of the building lacks sufficient capacity in the event of an earthquake due to insufficient flexural capacity. Furthermore, it was found the failure of this wall would impose a life-safety hazard for the occupants as they provide the gravity support for the Hollowcore floor in this region.

If the results of this DSA are being used for earthquake prone decision purposes, and elements rating <34%NBS have been identified (including Parts):

The structural weakness is the Hollowcore flooring

Under geotechnical step change displacement the Hollowcore could fail or loose support. This represents a lie safety risk to those above the basement in addition to those occupants inside.

Recommendations

Seismic retrofit should be undertaken to increase the structure's rating to a minimum of 35%NBS(IL3). Achieving a retrofit rating higher than this may not be economically viable.

B

Appendix B

Definitions



ADRS	Acceleration-displacement response spectrum
Brittle	A brittle material or structure is one that fractures or breaks suddenly once its probable yield capacity is exceeded. A brittle structure has little tendency to deform before it fractures.
Critical structural weakness (CSW)	The lowest scoring structural weakness determined from a DSA. For an ISA all structural weaknesses are <i>potential</i> CSWs.
Damping	The value of equivalent viscous damping corresponding to the energy dissipated by the structure, or its systems and elements, during the earthquake. It is generally used in nonlinear assessment procedures. For elastic procedures, a constant 5% damping as per NZS 1170.5:2004 is used.
Design level/ULS earthquake	Design level earthquake or loading is taken to be the seismic load level corresponding to the ULS seismic load for the building at the site as defined by NZS 1170.5:2004 (refer to Section C3)
Detailed Seismic Assessment (DSA)	A seismic assessment carried out in accordance with Part C of the Yellow Chapter.
Diaphragm	A horizontal structural element (usually a suspended floor or ceiling or a braced roof structure) that is strongly connected to the vertical elements around it and that distributes earthquake lateral forces to vertical elements, such as walls, of the primary lateral system. Diaphragms can be classified as flexible or rigid.
Ductile/ductility	Describes the ability of a structure to sustain its load carrying capacity and dissipate energy when it is subjected to cyclic inelastic displacements during an earthquake
Elastic analysis	Structural analysis technique that relies on linear-elastic assumptions and maintains the use of linear stress-strain and force-displacement relationships. Implicit material nonlinearity (e.g. cracked section) and geometric nonlinearity may be included. Includes equivalent static analysis and modal response spectrum dynamic analysis.
Flexible diaphragm	<p>A diaphragm which for practical purposes is considered so flexible that it is unable to transfer the earthquake loads to shear walls even if the floors/roof are well connected to the walls. Floors and roofs constructed of timber, and/or steel bracing in a URM building, or precast concrete without reinforced concrete topping fall in this category.</p> <p>A diaphragm with a maximum horizontal deformation along its length that is greater than or equal to twice the average inter-storey drift. In a URM building a diaphragm constructed of timber and/or steel bracing.</p>
Initial Seismic Assessment (ISA)	<p>A seismic assessment carried out in accordance with Part B of the Guidelines.</p> <p>An ISA is a recommended first qualitative step in the overall assessment process.</p>
Nonlinear analysis	Structural analysis technique that incorporates the material nonlinearity (strength, stiffness and hysteretic behaviour) as part of the analysis. Includes nonlinear static (pushover) analysis and nonlinear time history dynamic analysis.
Non-structural item	An item within the building that is not considered to be part of either the primary or secondary structure. Non-structural items such as individual window glazing, ceilings, general building services and building contents are not typically included in the assessment of the building's earthquake rating.
OTM	Overtuning moment
Primary gravity structure	Portion of the main building structural system identified as carrying the gravity loads through to the ground. Also required to carry vertical earthquake induced accelerations through to the ground. May also incorporate the primary lateral structure.

Primary lateral structure	Portion of the main building structural system identified as carrying the lateral seismic loads through to the ground. May also be the primary gravity structure.
Probable capacity	The expected or estimated mean capacity (strength and deformation) of a member, an element, a structure, or foundation soils. For structural aspects this is determined using probable material strengths. For geotechnical issues the probable resistance is typically taken as the ultimate geotechnical resistance/strength that would be assumed for design.
Rigid diaphragm	A diaphragm that is not a flexible diaphragm
Secondary structure	Portion of the structure that is not part of either the primary lateral or primary gravity structure but, nevertheless, is required to transfer inertial and vertical loads for which assessment/design by a structural engineer would be expected. Includes precast walls, curtain wall framing systems, stairs and supports to significant building services items
Serviceability limit state (SLS)	Limit state as defined in AS/NZS 1170.0:2002 (or NZS 4203:1992) being the point at which the structure can no longer be used as originally intended without repair
Severe structural weakness (SSW)	A defined structural weakness that is potentially associated with catastrophic collapse and for which the capacity may not be reliably assessed based on current knowledge
Simple Lateral Mechanism Analysis (Slam)	An analysis involving the combination of simple strength to deformation representations of identified mechanisms to determine the strength to deformation (pushover) relationship for the building as a whole
Single-degree-of-freedom (SDOF)	A simple inverted pendulum system with a single mass
Structural element	Combinations of structural members that can be considered to work together. e.g. the piers and spandrels in a penetrated wall, or beams and columns in a moment resisting frame
Structural member	Individual items of a building structure, e.g. beams, columns, beam/column joints, walls, spandrels, piers
Structural sub-system	Combination of structural elements that form a recognisable means of lateral or gravity load support for a portion of the building: e.g. moment resisting frame, frame/wall. The combination of all the sub-systems creates the structural system.
Structural system	Combinations of structural elements that form a recognisable means of lateral or gravity load support, e.g. moment resisting frame, frame/wall. Also used to describe the way in which support/restraint is provided by the foundation soils.
Structural weakness (SW)	An aspect of the building structure and/or the foundation soils that scores less than 100%NBS. Note that an aspect of the building structure scoring less than 100%NBS but greater than or equal to 67%NBS is still considered to be a SW even though it is considered to represent an acceptable risk.
Ultimate limit state (seismic)	A term defined in regulations that describes the limiting capacity of a building for it to be determined to be an earthquake-prone building. This is typically taken as the probable capacity but with the additional requirement that exceeding the probable capacity must be associated with the loss of gravity support (i.e. creates a significant life safety hazard).
Ultimate limit state (ULS)	A limit state defined in the New Zealand loadings standard NZS 1170.5:2004 for the design of new buildings
XXX%NBS	The ratio of the ultimate capacity of a building as a whole or of an individual member/element and the ULS shaking demand for a similar new building on the same site, expressed as a percentage. Intended to reflect the expected seismic performance of a building relative to the minimum life safety standard required for a similar new building on the same site by Clause B1 of the New Zealand Building Code.

XXX%ULS shaking (demand)	<p>Percentage of the ULS shaking demand (loading or displacement) defined for the ULS design of a new building and/or its members/elements for the same site.</p> <p>For general assessments 100%ULS shaking demand for the structure is defined in the version of NZS 1170.5 (version current at the time of the assessment) and for the foundation soils in NZGS/MBIE Module 1 of the Geotechnical Earthquake Engineering Practice series dated March 2016.</p> <p>For engineering assessments undertaken in accordance with the EPB methodology, 100%ULS shaking demand for the structure is defined in</p> <p>NZS 1170.5:2004 and for the foundation soils in NZGS/MBIE Module 1 of the Geotechnical Earthquake Engineering Practice series dated March 2016</p> <p>(with appropriate adjustments to reflect the required use of NZS 1170.5:2004). Refer also to Section C3.</p>
--------------------------	--

C

Appendix C

Assessment Inputs



General

The building has been assumed to have an Importance Level of 3 (IL3) and a Design Life of 50 years in terms of NZS 1170.0.

Dead and Superimposed Dead Loads

The dead loads of the basement structure include the self-weight of the structural components consisting of concrete beams, concrete columns, walls and floors. The superimposed dead loads include an allowance for floor finishes, building services and other miscellaneous loads.

- Basement Carpark slab (Typically 300mm) – 7.2 kPa
- Suspended slab (Typically 300 Hollowcore with 75mm topping) – 5.6 kPa
- Fill and paving supported on Ground floor slab– 5.5 kPa
- Services – 0.5 kPa

Live Loads

The design live loads have adopted current NZS 1170.1 values with consideration of design limits as determined in the document by Spencer Holmes titled “Civic Square Loading Assessment for WCC”, dated November 2010.

The following live loads have been adopted in this assessment.

- Basement – 5.0 kPa (medium vehicle traffic areas)
- Plaza and Walkways – 4.0 kPa (max)

Hydrostatic Loads

Hydrostatic pressure on the Basement slab were considered in the original design. The following is referenced in the Holmes 2018 report as being used in the original structural design.

- Basement slab – 29.0 kPa (non-seismic hydrostatic uplift pressure)

Seismic Hazard

The seismic loads were determined in accordance with NZS 1170.5:2004 and AS/NZS1170.0:2002, with the parameters summarised in Table 8.

Table 8. Seismic Parameters for Building Assessments

Parameter	Value
Design Working Life	50 years
Importance Level	3
Return Period Factor (R)	1.3
Site Subsoil Classification	C
Hazard Factor (Z)	0.4
Near Fault Factor N(T,D) (Cl. 3.16)	1.0 (T < 1.5sec)

Structural design parameters are based on the available information for this structure. Material strengths and capacities have also been calculated based on the NZSEE recommendations.

Material Properties

Table 9. Existing Material Properties Assumed for Assessment Purposes

Item	Characteristic Strength (MPa)	Modification Factor	Probable Strength (MPa)	Location
Insitu Concrete	25 (f _c)	1.5	37.5 (f _c)	Slabs, Columns UNO
Reinforcing Steel (Mild Steel)	430 (f _y)	1.08	464 (f _y)	All reinforced concrete members UNO
Cold Drawn Mesh (665 Mesh)	-	-	600 (f _y)	Concrete topping reinforcing per (Table C5.4, Part C5 Technical Proposal 2018)

* Based on Part C5 (Technical Proposal 2018) and previous assessments.

Seismic Weight

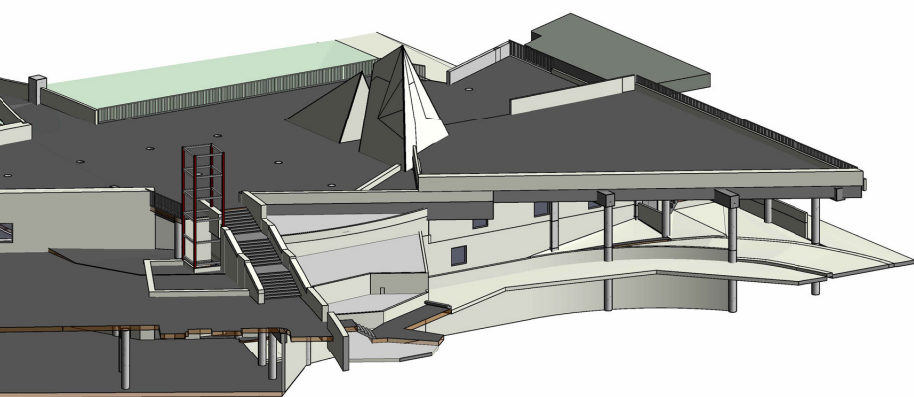
The seismic mass was calculated adopting the NZS 1170.5:2004 loading combination $W = G + \Psi_E Q_u$, where $\Psi_E = 0.3$ for non-storage type applications and $\Psi_E = 0.6$ for most other floor usages. An area reduction factor was also applied to the live load in accordance with clause 3.4.2 of AS/NZS 1170.1:2002.

D

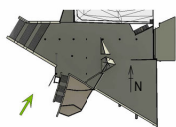
Appendix D

Partial Demolition Schematics

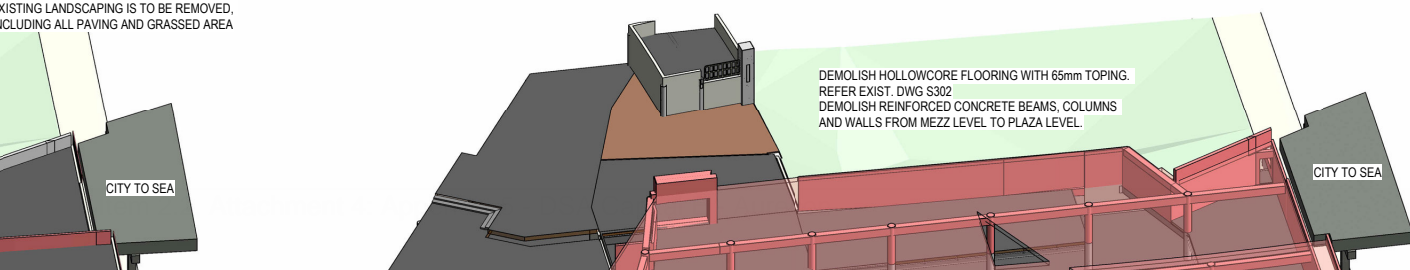




EXISTING STRUCTURE

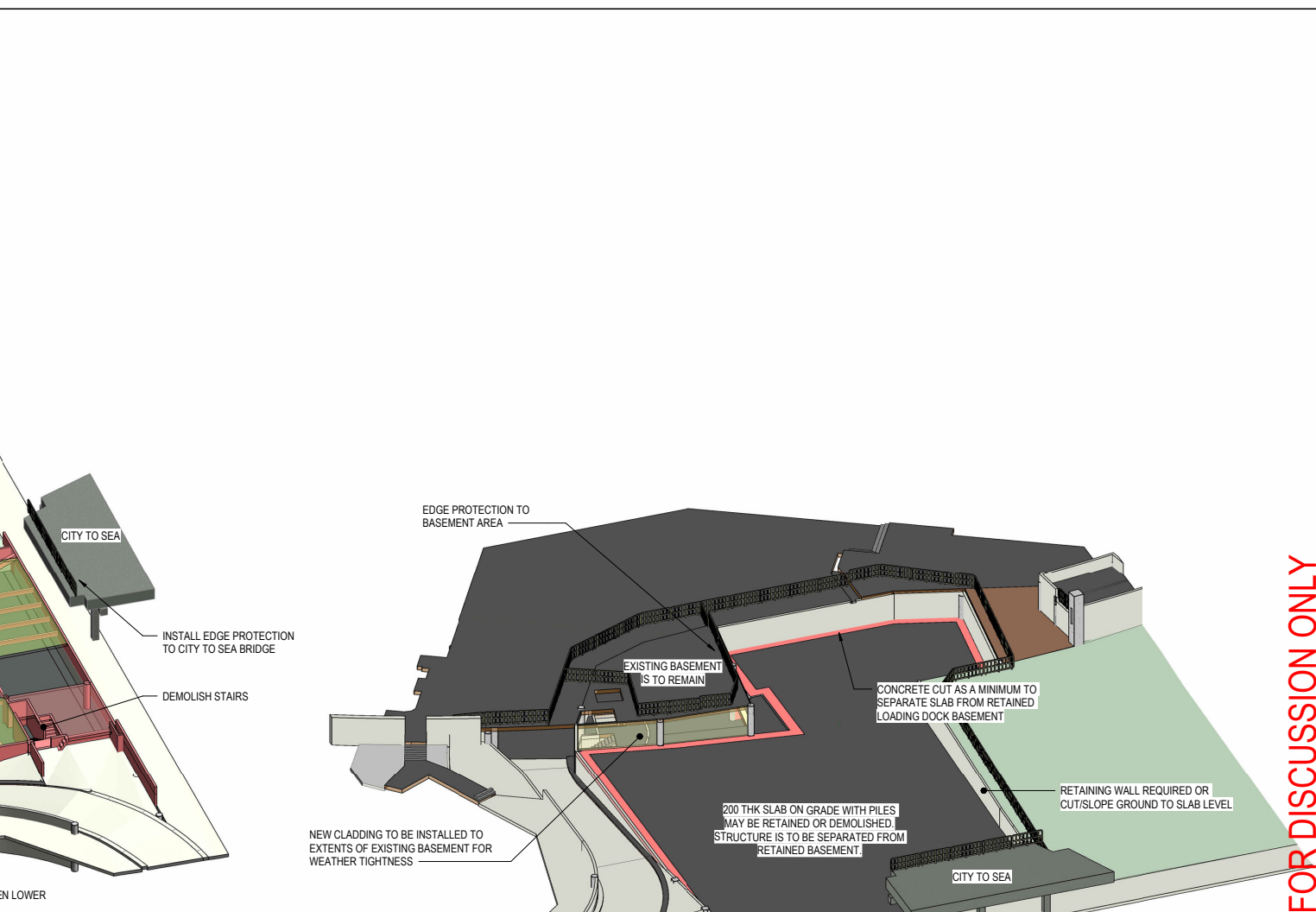


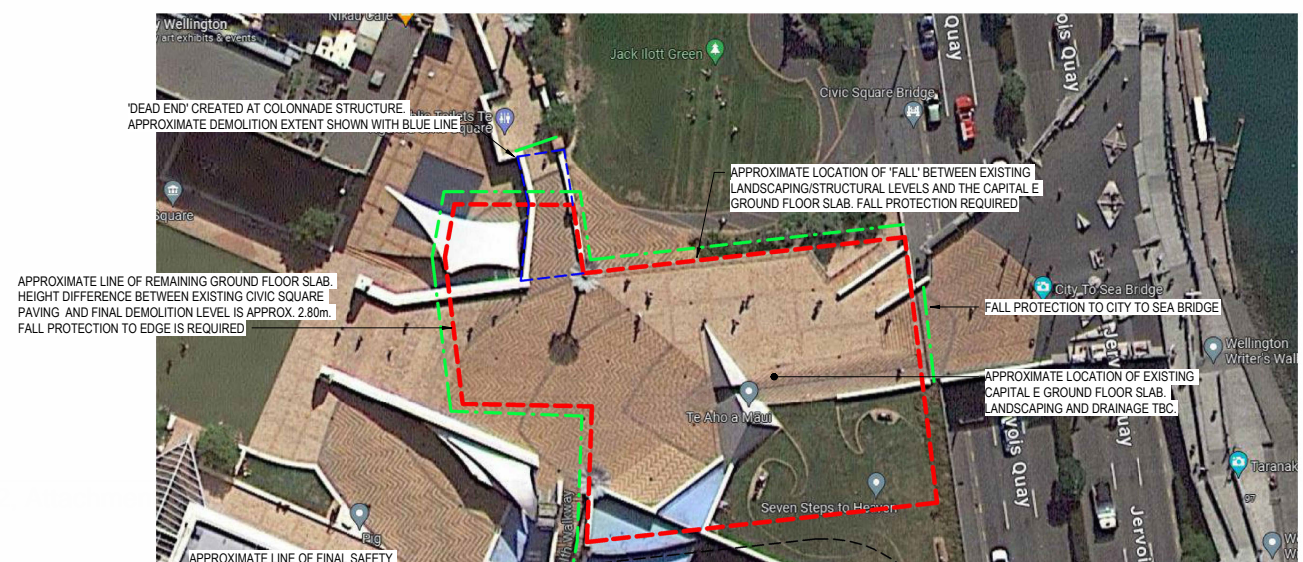
EXISTING LANDSCAPING IS TO BE REMOVED,
INCLUDING ALL PAVING AND GRASSED AREA



DEMOLISH HOLLOWCORE FLOORING WITH 65mm TOPING.
REFER EXIST. DWG S302
DEMOLISH REINFORCED CONCRETE BEAMS, COLUMNS
AND WALLS FROM MEZZ LEVEL TO PLAZA LEVEL.

FOR DISCUSSION ONLY





E

Appendix E

Geotechnical Parameters and Correspondence

à

E

Appendix E

Geotechnical Parameters and Correspondence

DRAFT

[REDACTED]

From: [REDACTED]@tonkintaylor.co.nz
Sent: Monday, 12 February 2024 1:32 pm
To: [REDACTED]
Cc: [REDACTED]
Subject: FW: Soil Class Confirmation (Capital E)

[External email] This email was sent from outside Aurecon. Do not click links or open attachments unless you were expecting the email and know that the content is safe.

Hi [REDACTED]

See below. Apologies missed you all off the list!

Thanks,

[REDACTED] | Geotechnical Engineer
T [REDACTED] M [REDACTED]

Applicability

Recommendations and opinions in this email are based on data from limited investigations. The nature and continuity of subsoil away from the test location are inferred and it must be appreciated that actual conditions could vary from the assumed model. This email has been prepared solely for the benefit of our client with respect to the particular brief given to us and data or opinions contained in it may not be used in other contexts or for any other purpose without our prior review and agreement.

From: [REDACTED]@tonkintaylor.co.nz
Sent: Thursday, February 8, 2024 11:29 AM
To: [REDACTED]@tonkintaylor.co.nz
Cc: [REDACTED]@tonkintaylor.co.nz
Subject: RE: Soil Class Confirmation (Capital E)

Hi [REDACTED]

The Capital E Loading Dock and Building is near the boundary between Class C and D.

In the absence of further testing, we consider it prudent to assume Class D for structural assessment and Class C for geotechnical.

Thanks,

[REDACTED] | Geotechnical Engineer
T [REDACTED] M [REDACTED]

Applicability

Recommendations and opinions in this email are based on data from limited investigations. The nature and continuity of subsoil away from the test location are inferred and it must be appreciated that actual conditions could vary from the assumed model. This email has been prepared solely for the benefit of our client with respect to the particular brief given to us and data or opinions contained in it may not be used in other contexts or for any other purpose without our prior review and agreement.

From: [REDACTED]@aurecongroup.com
Sent: Thursday, February 8, 2024 10:12 AM
To: [REDACTED]@tonkintaylor.co.nz; [REDACTED]@tonkintaylor.co.nz
Cc: [REDACTED]@aurecongroup.com; [REDACTED]@tonkintaylor.co.nz; [REDACTED] Riley-

[REDACTED] [@aurecongroup.com](mailto:[REDACTED]@aurecongroup.com)>

Subject: Soil Class Confirmation (Capital E)

Hi [REDACTED] and [REDACTED]

Following our discussion yesterday, would you please confirm that the soil class for Capital E building is type D.

Thanks
Cheers,

[REDACTED] BSc, MSc, PhD, MEng(NZ)
Structural Engineer, Aurecon

T [REDACTED]
[REDACTED]

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*Whakakā uā whakaaro
Kia māia, kia kaha, mahi tahi*



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E

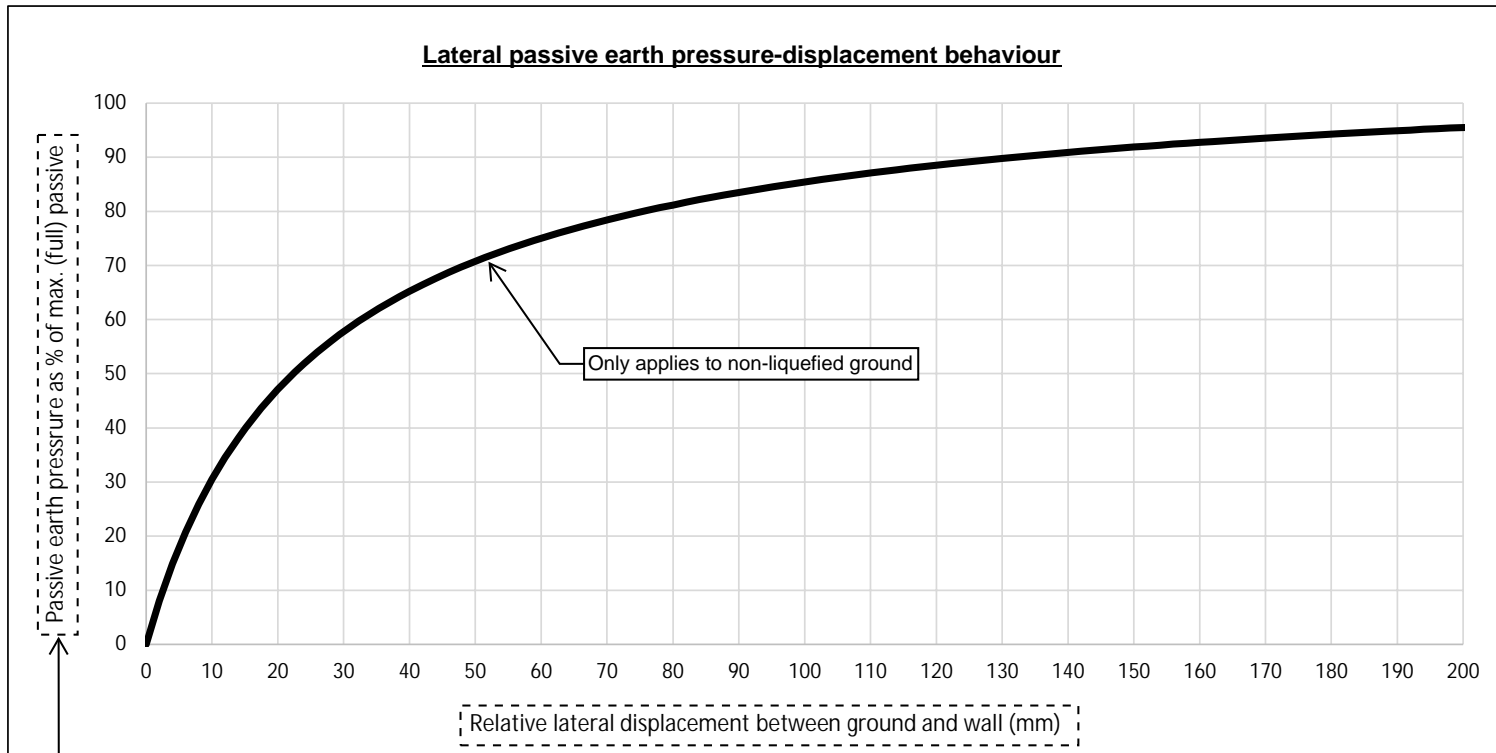
Appendix E

Geotechnical Parameters and Correspondence

DRAFT

Wellington City Council
Capital E Basement (Loading Dock) - Geotechnical Seismic Assessment
Lateral assessment of basement walls
T+T ref: 1091837
Version: 0.1 Draft.
Date: 15/12/23

Figure 1

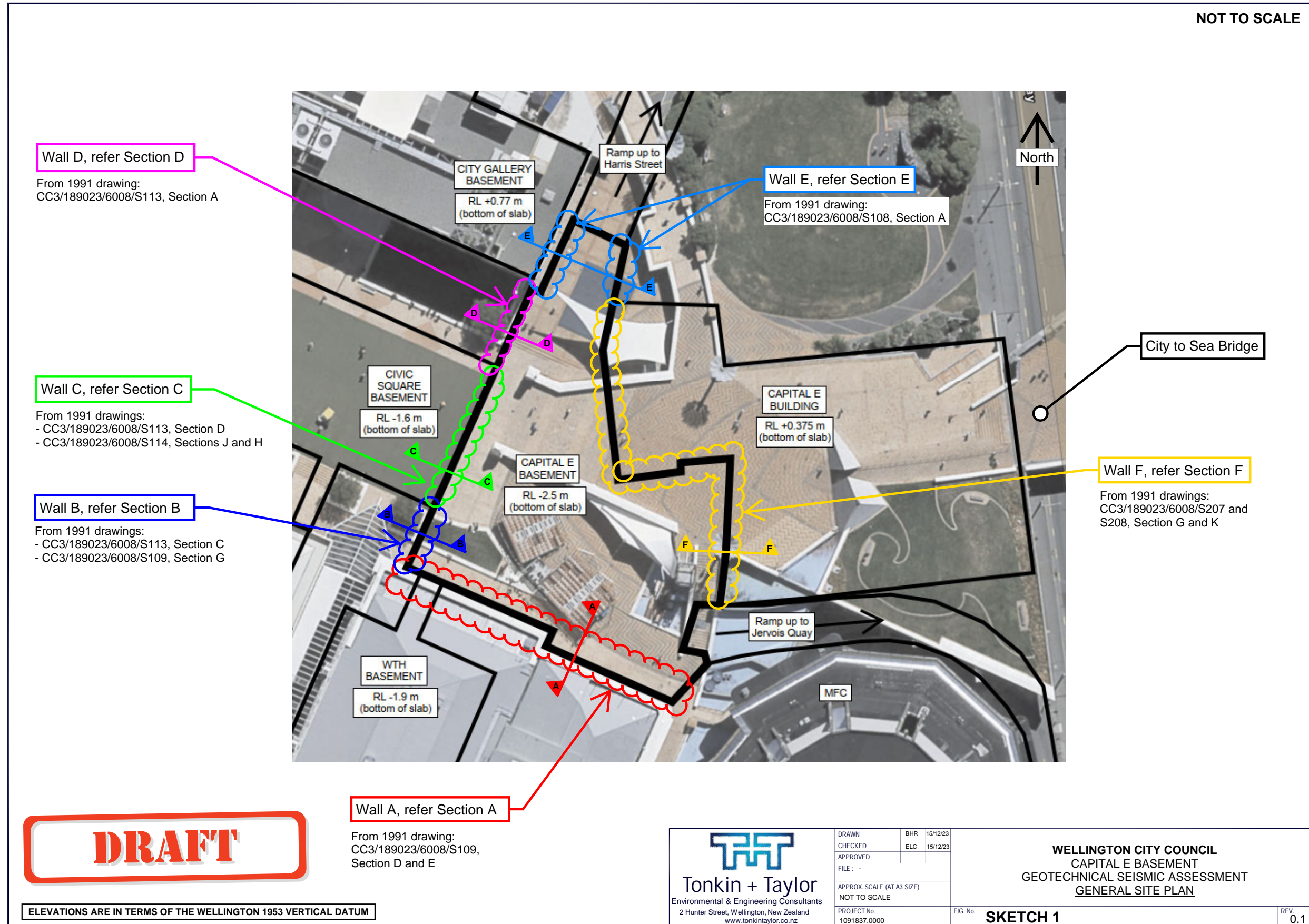


Refer Sketch 3 and Sketch 4 for max. (full) passive earth pressure estimated for different basement walls, i.e. at 100% on plot above

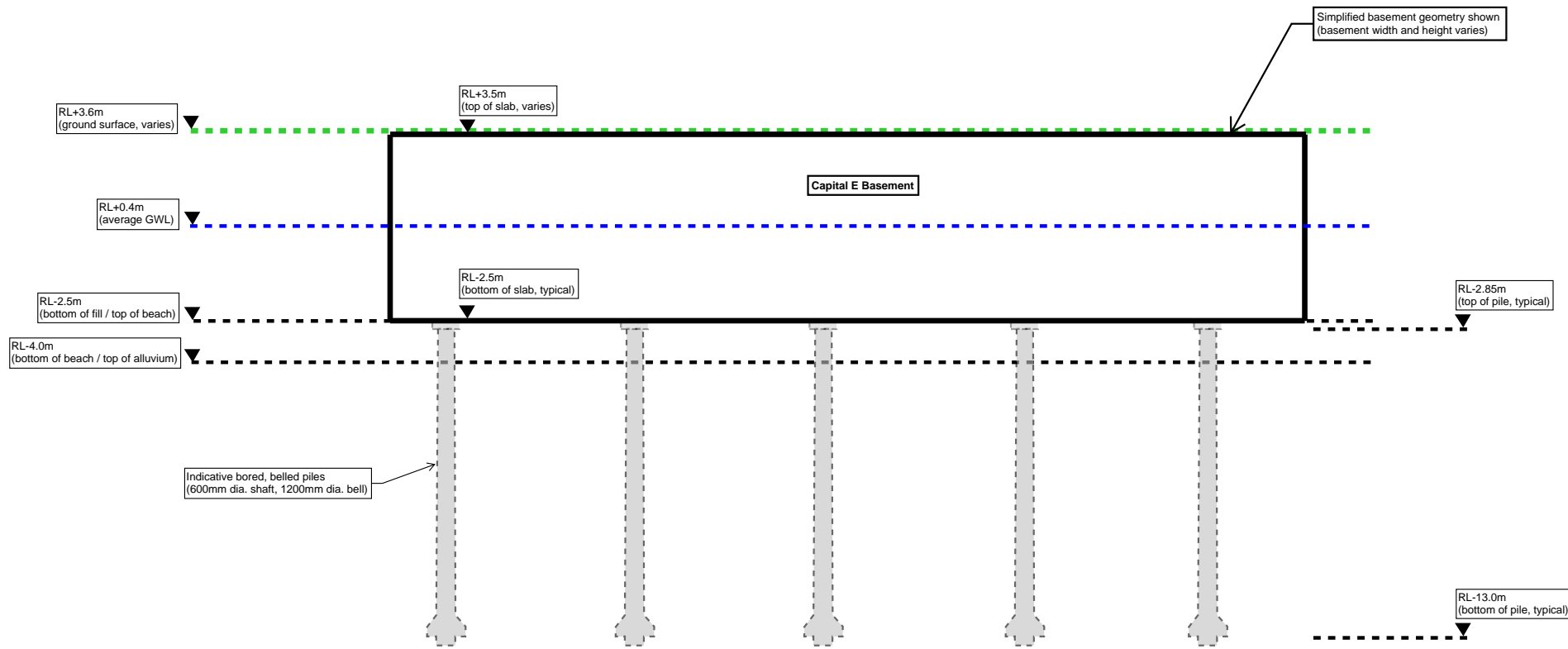
Table 1: Capital E Basement (Loading Dock) - Ground lateral behaviour during earthquake

Earthquake Case		Comments
No.	Description	
1	Start of earthquake. No liquefaction	<p>Lateral loads:</p> <ul style="list-style-type: none"> • 100% base shear. • Seismic earth pressures on walls (where wall moves away from the ground). Refer Sketch 3 (no liquefaction case). <p>Base shear resistance:</p> <ul style="list-style-type: none"> • Mobilised passive earth pressures on walls (where wall moves into the ground). Refer Sketch 3 (no liquefaction case) and Figure 1. • Mobilised lateral capacity of piles (no liquefaction case).
2	Liquefaction triggered. No lateral ground movement.	<p>Lateral loads:</p> <ul style="list-style-type: none"> • 100% base shear. • Seismic earth pressures on walls (where wall moves away from the ground). Refer Sketch 4 (liquefaction case). <p>Base shear resistance:</p> <ul style="list-style-type: none"> • Mobilised passive earth pressures on walls (where wall moves into the ground). Refer Sketch 4 (liquefaction case) and Figure 1. • Mobilised lateral capacity of piles (liquefaction case).
3	Liquefaction with cyclic (lateral) ground displacement (70mm in any direction). During shaking.	<p>Lateral loads:</p> <ul style="list-style-type: none"> • 80% base shear. • Mobilised passive earth pressures on walls (where ground moves into wall). Refer Sketch 4 (liquefaction case) and Figure 1. Passive is a load up to 70mm displacement of structure; beyond 70mm displacement seismic earth pressures to be considered. <p>Base shear resistance:</p> <ul style="list-style-type: none"> • Mobilised lateral capacity of piles (liquefaction + cyclic displacement case). • Active earth pressures from ground below groundwater level only. Refer Sketch 4 (liquefaction case). • If the whole structure is able to move more than 70mm, then mobilised passive earth pressure above groundwater level (refer Sketch 4 and Figure 1) contributes to base shear take out.
4	Liquefaction with lateral spreading toward Whairepo Lagoon. Towards end of / post shaking.	<p>Lateral loads:</p> <ul style="list-style-type: none"> • 25% base shear. • Seismic earth pressures on southern and western walls (Wall A to D and Wall E west). Refer Sketch 4 (liquefaction case) and Figure 1. <p>Base shear resistance:</p> <ul style="list-style-type: none"> • Mobilised lateral capacity of piles (liquefaction + cyclic displacement case). • Seismic earth pressures from ground below groundwater level only on eastern walls (east Wall E and F). Refer Sketch 4 (liquefaction case). If the whole structure is able to move more than 600mm, then mobilised passive earth pressure above groundwater level (refer Sketch 4 and Figure 1) contributes to base shear take out.

NOT TO SCALE



NOT TO SCALE



GENERAL CROSS-SECTION

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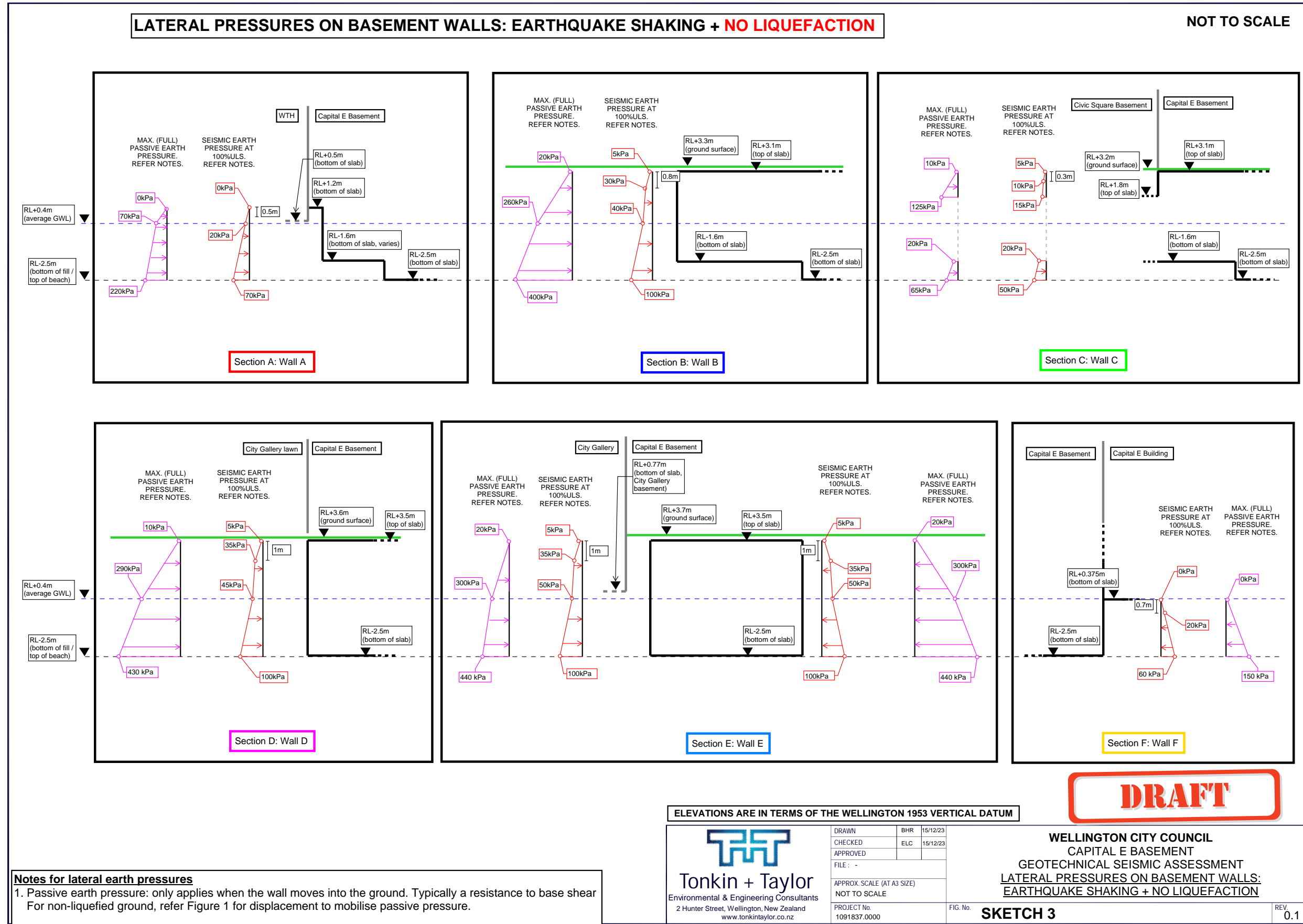
ELEVATIONS ARE IN TERMS OF THE WELLINGTON 1953 VERTICAL DATUM

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 Environmental & Engineering Consultants
 2 Hunter Street, Wellington, New Zealand
 www.tonkintaylor.co.nz

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FILE	-	
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PROJECT No.	1091837.0000	

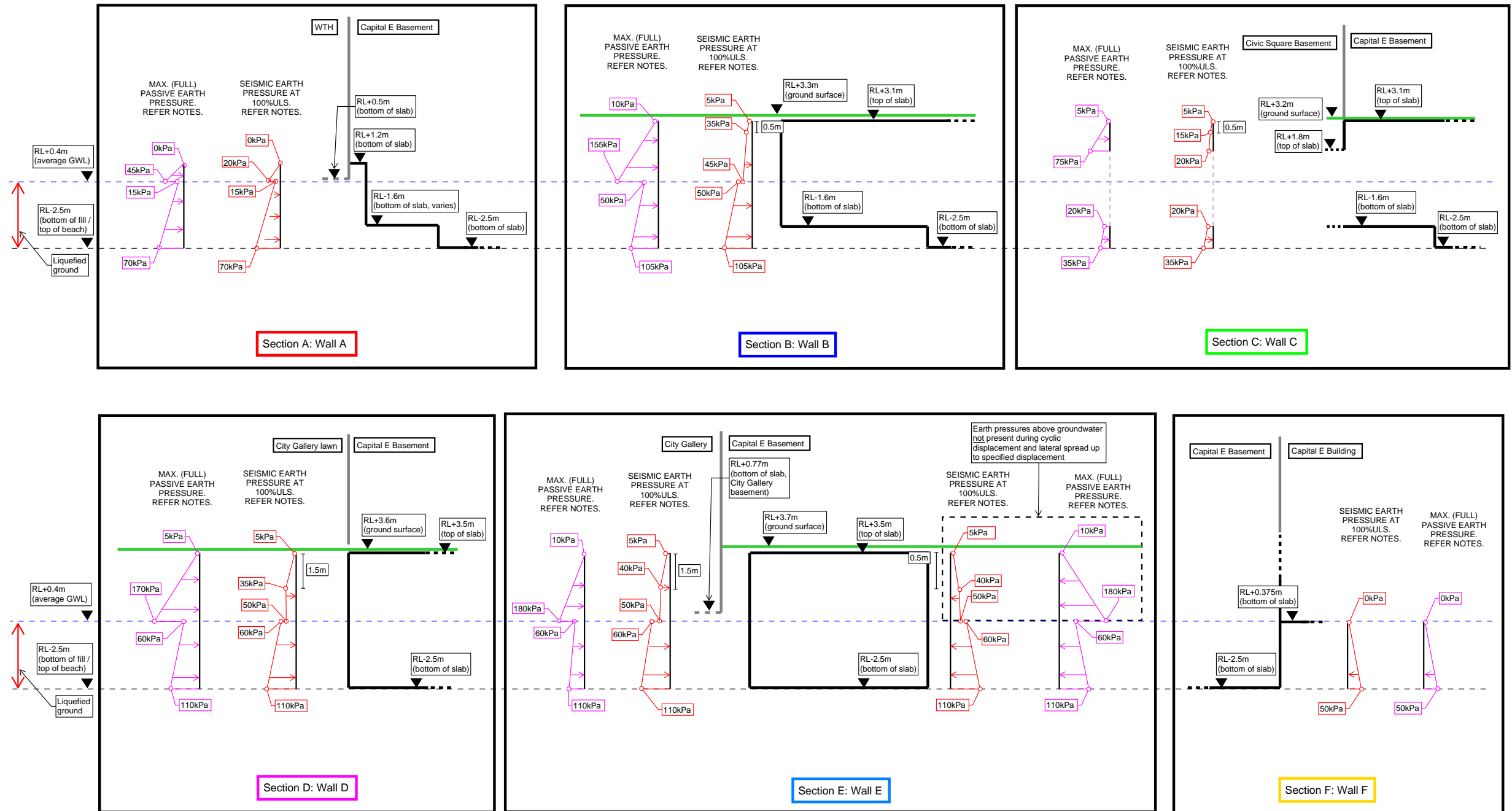
WELLINGTON CITY COUNCIL
CAPITAL E BASEMENT
GEOTECHNICAL SEISMIC ASSESSMENT
GENERAL MODEL

FIG. No.	SKETCH 2	REV.	0.1
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LATERAL PRESSURES ON BASEMENT WALLS: EARTHQUAKE SHAKING + LIQUEFACTION

NOT TO SCALE



Notes for lateral earth pressures
 1. Passive earth pressure: applies when the wall moves less than or into the ground. For non-liquefied ground, refer Figure 1 for displacement to mobilise passive pressure. For liquefied ground, earth pressure is mobilised at nil displacement ("heavy liquid").

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WELLINGTON CITY COUNCIL
CAPITAL E BASEMENT
GEOTECHNICAL SEISMIC ASSESSMENT
LATERAL PRESSURES ON BASEMENT WALLS:
EARTHQUAKE SHAKING + LIQUEFACTION

FIG. No. **SKETCH 4** REV. **0.1**

E

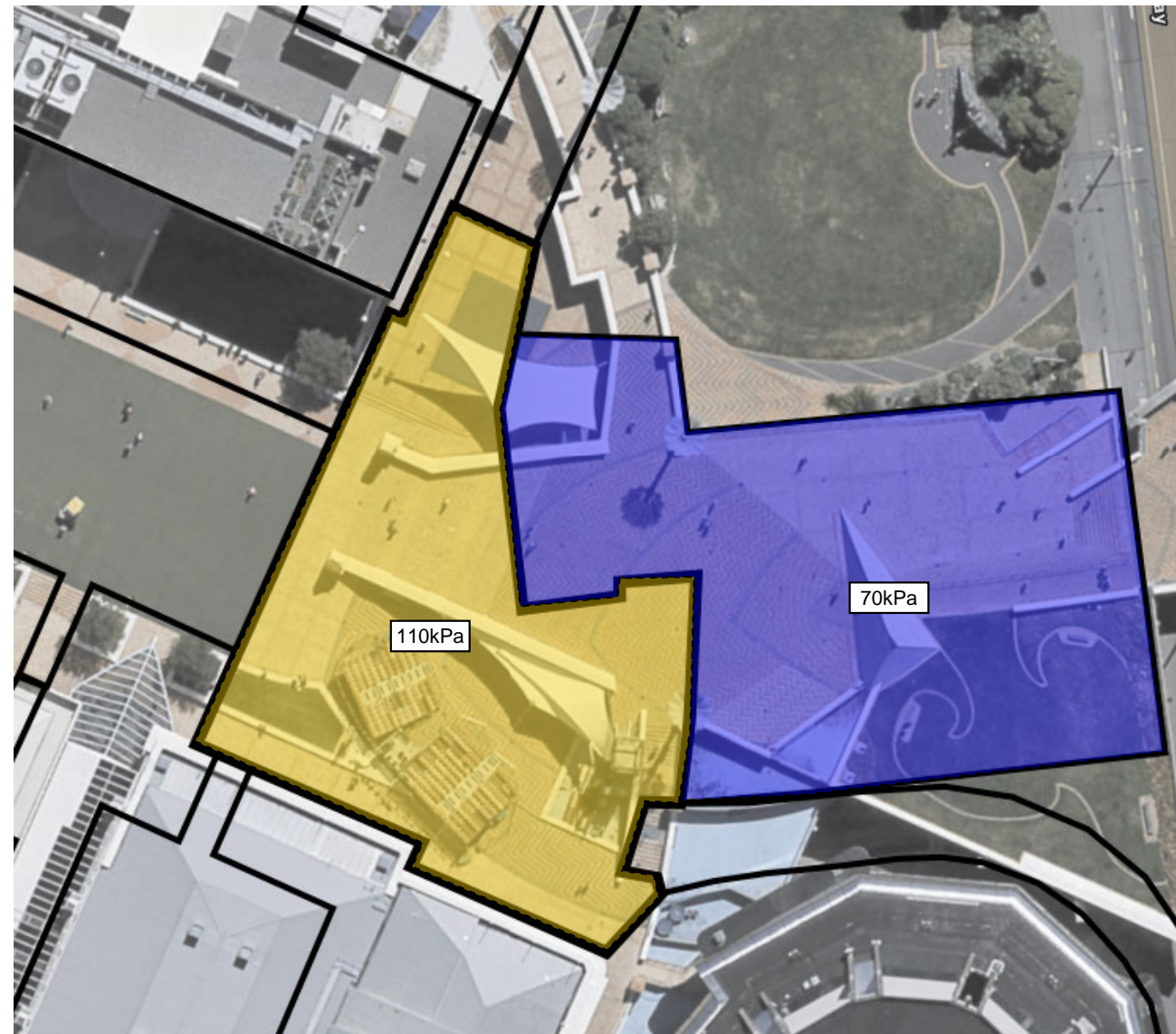
Appendix E

Geotechnical Parameters and Correspondence

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LIQUEFACTION UPLIFT (HEAVE) PRESSURE



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WELLINGTON CITY COUNCIL CAPITAL E BASEMENT GEOTECHNICAL SEISMIC ASSESSMENT SITE PLAN: LIQUEFACTION UPLIFT (HEAVE) PRESSURE ON BASEMENT SLAB	
FIG. No.	REV.

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Appendix E

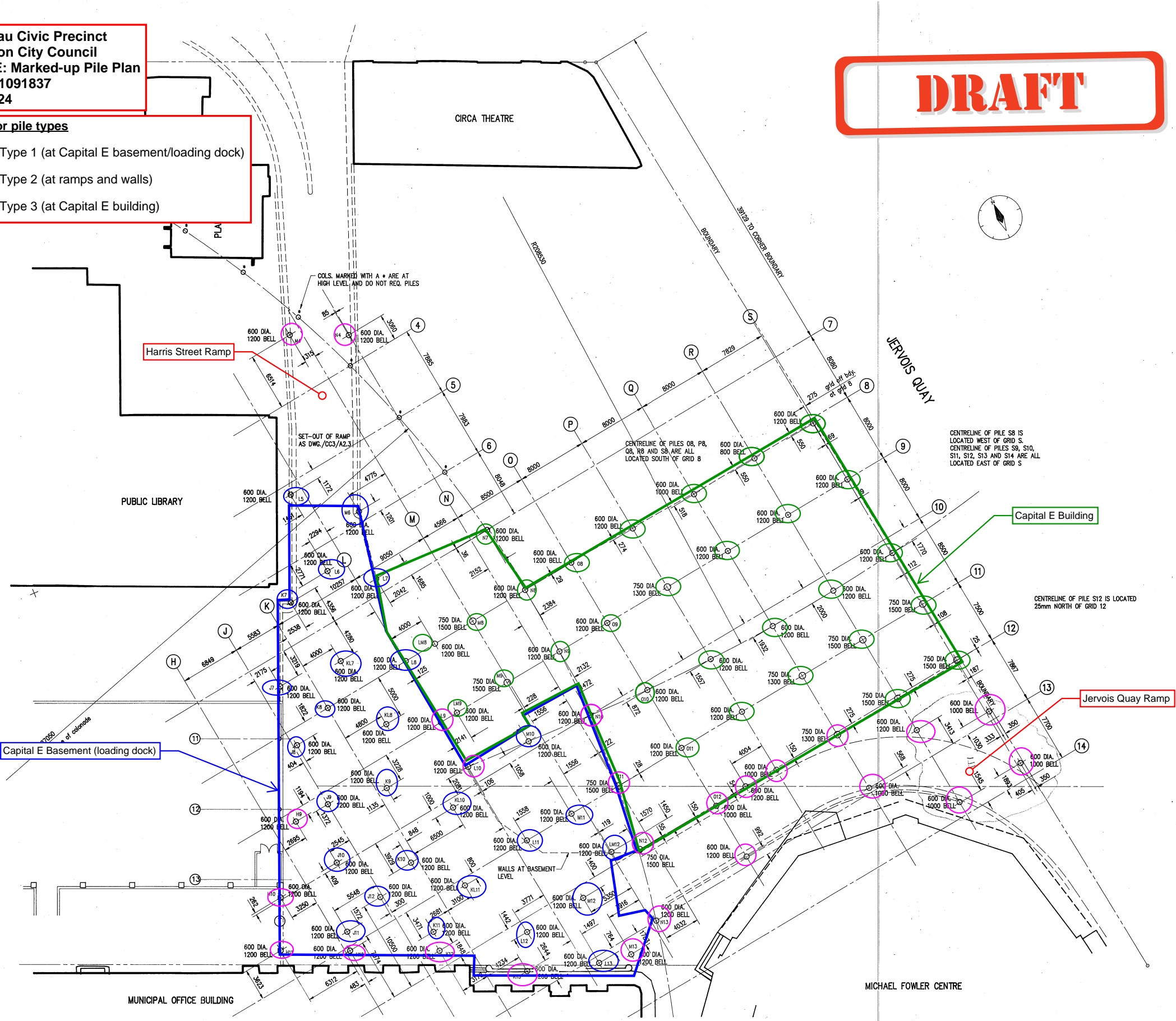
Geotechnical Parameters and Correspondence

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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Marked-up Pile Plan
T+T ref: 1091837
15/01/2024

- Legend for pile types**
- Pile Type 1 (at Capital E basement/loading dock)
 - Pile Type 2 (at ramps and walls)
 - Pile Type 3 (at Capital E building)

DRAFT



Date	Issued to:	
22/1/91	UPDATED	E
27/11/90	UPDATED	D
19/11/90	PILE POSITIONS ALTERED	C
18/11/90	CONSTRUCTION ISSUE	B
17/8/90	STAGE 1 PERMIT ISSUE	A
Date	Revision	No

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DESIGN & BUILD

WELLINGTON CIVIC CENTRE REDEVELOPMENT
CAPITAL DISCOVERY PLACE & VEHICLE SERVICE AREA

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Scale:	Approved:
1:200	<i>[Signature]</i>
Drawing Name:	
PILE LAYOUT	

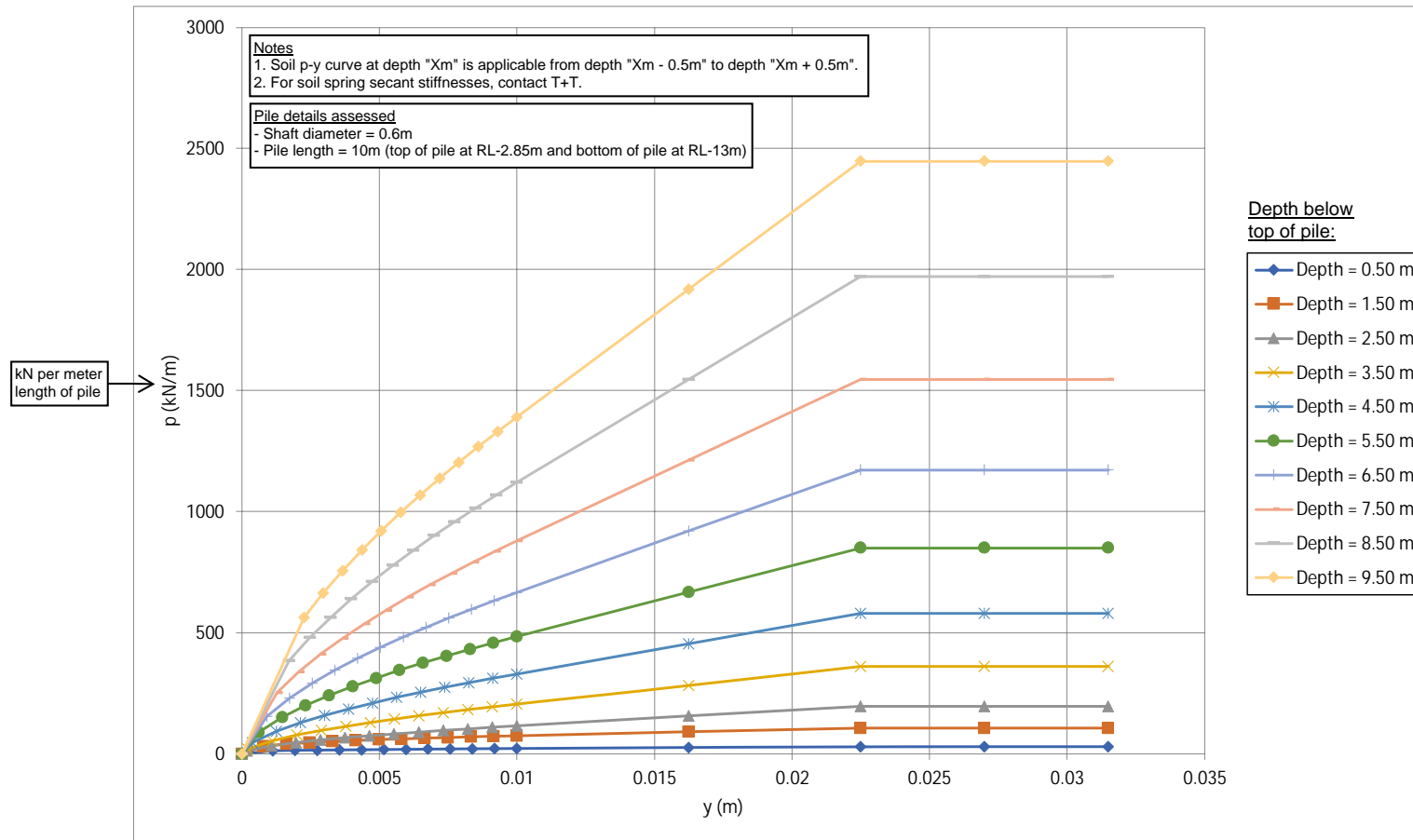
Drawing No:	Plotted:	Revision:
CC3/189023/6008/S101	09-34 22/01/91	E

Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Soil p-y curves



Prepared by: ANRO
Checked by: BHR

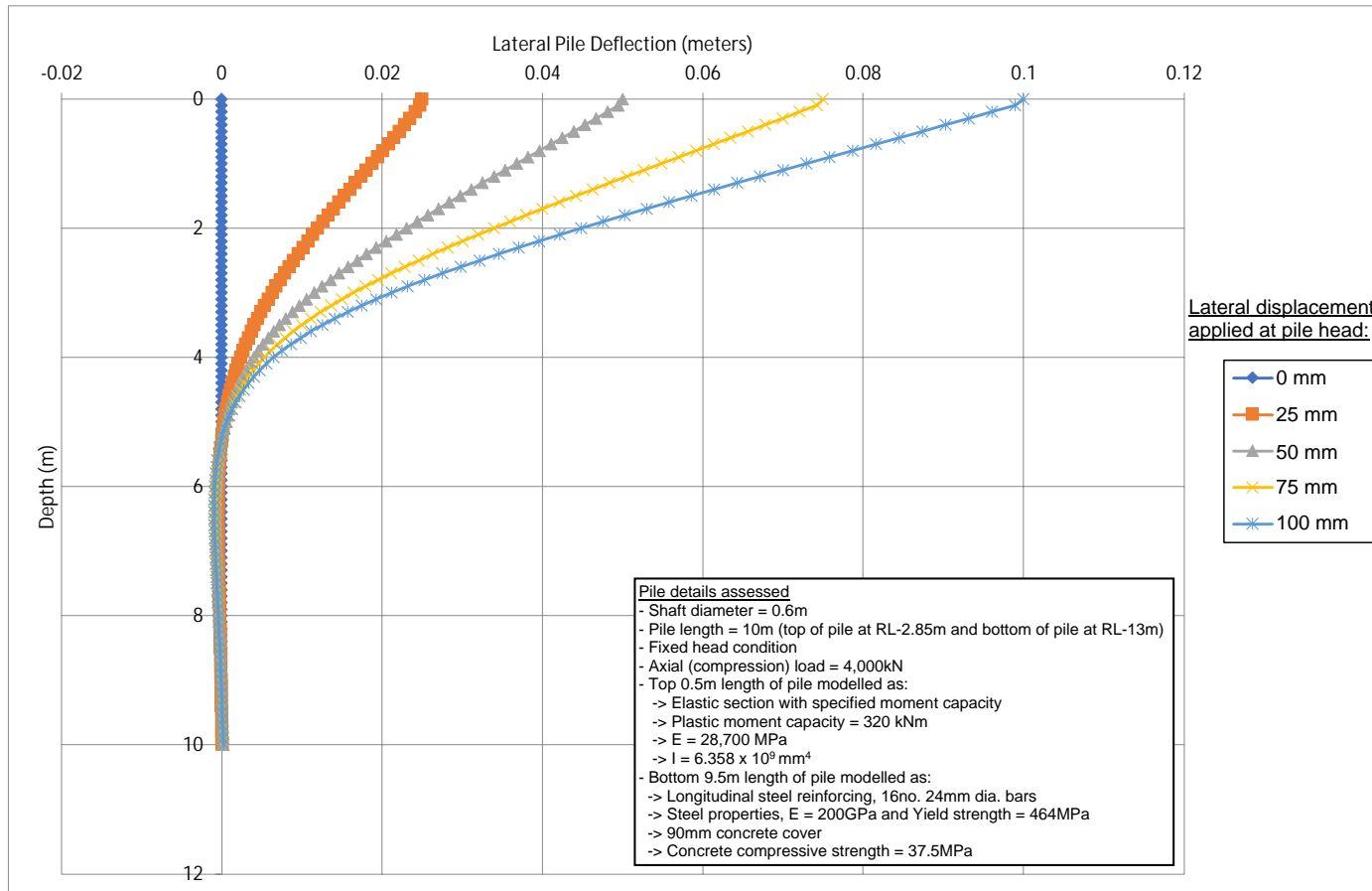
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Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



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Checked by: BHR

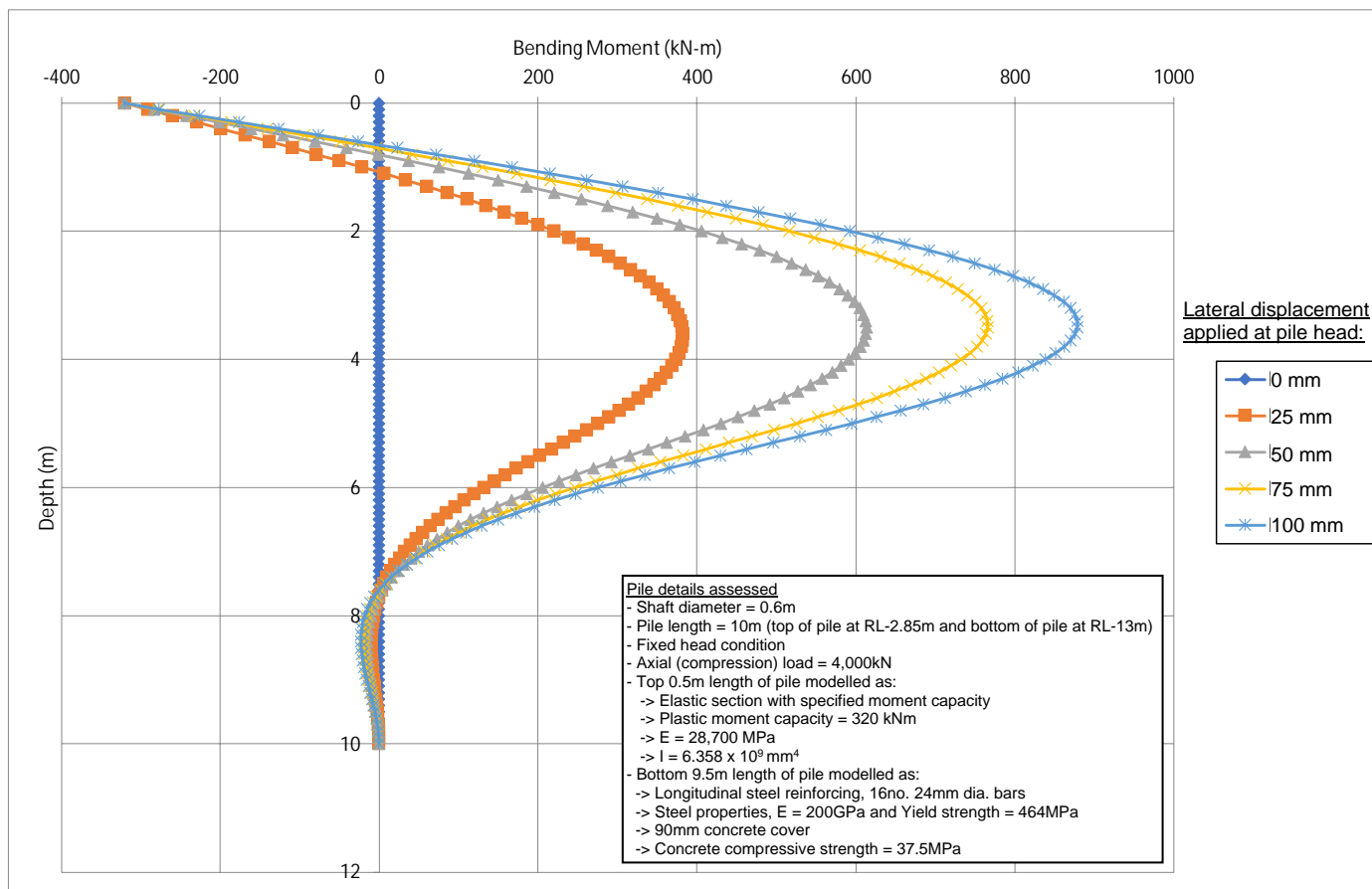
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



Prepared by: ANRO
Checked by: BHR

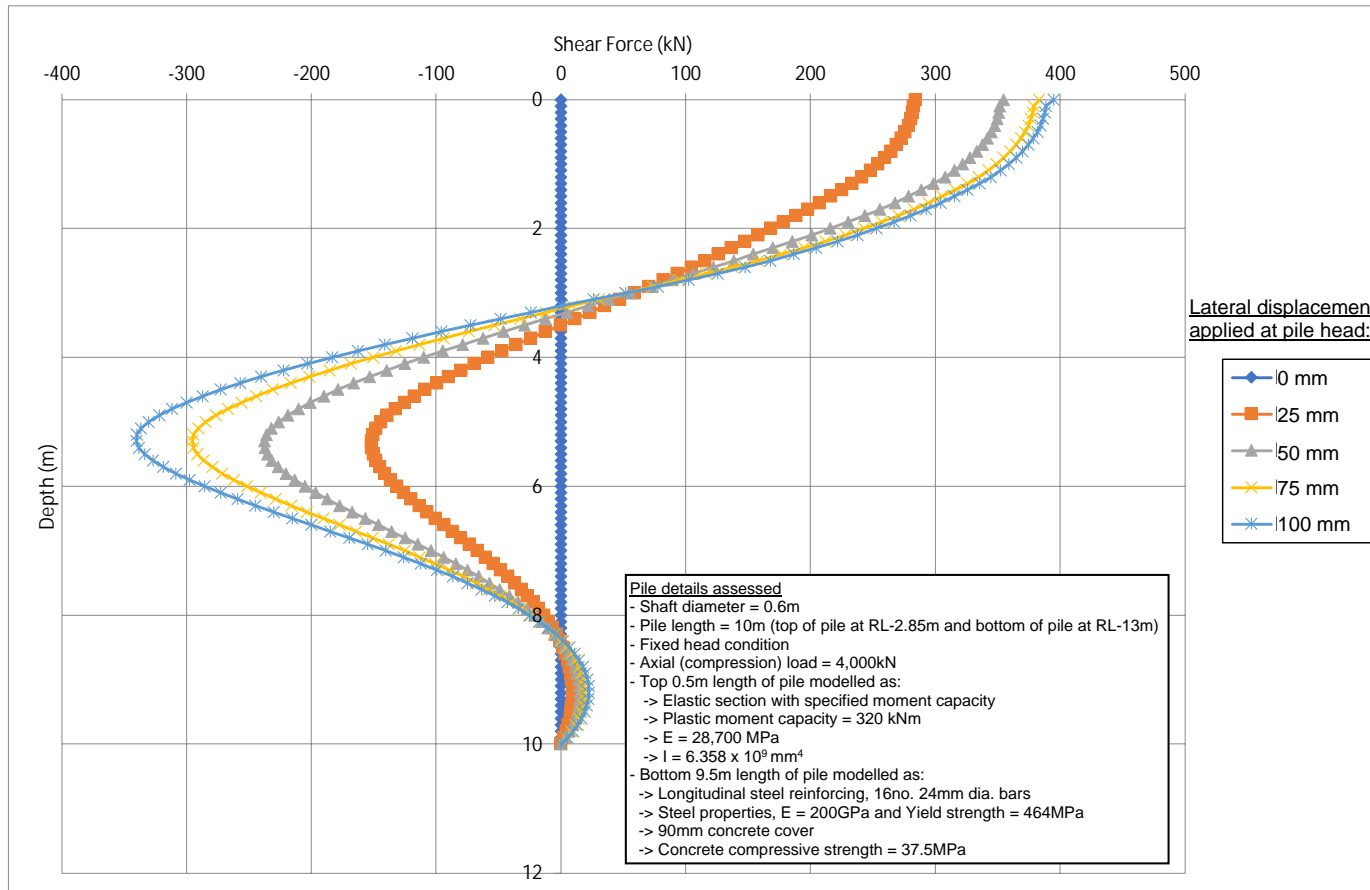
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



Prepared by: ANRO
Checked by: BHR

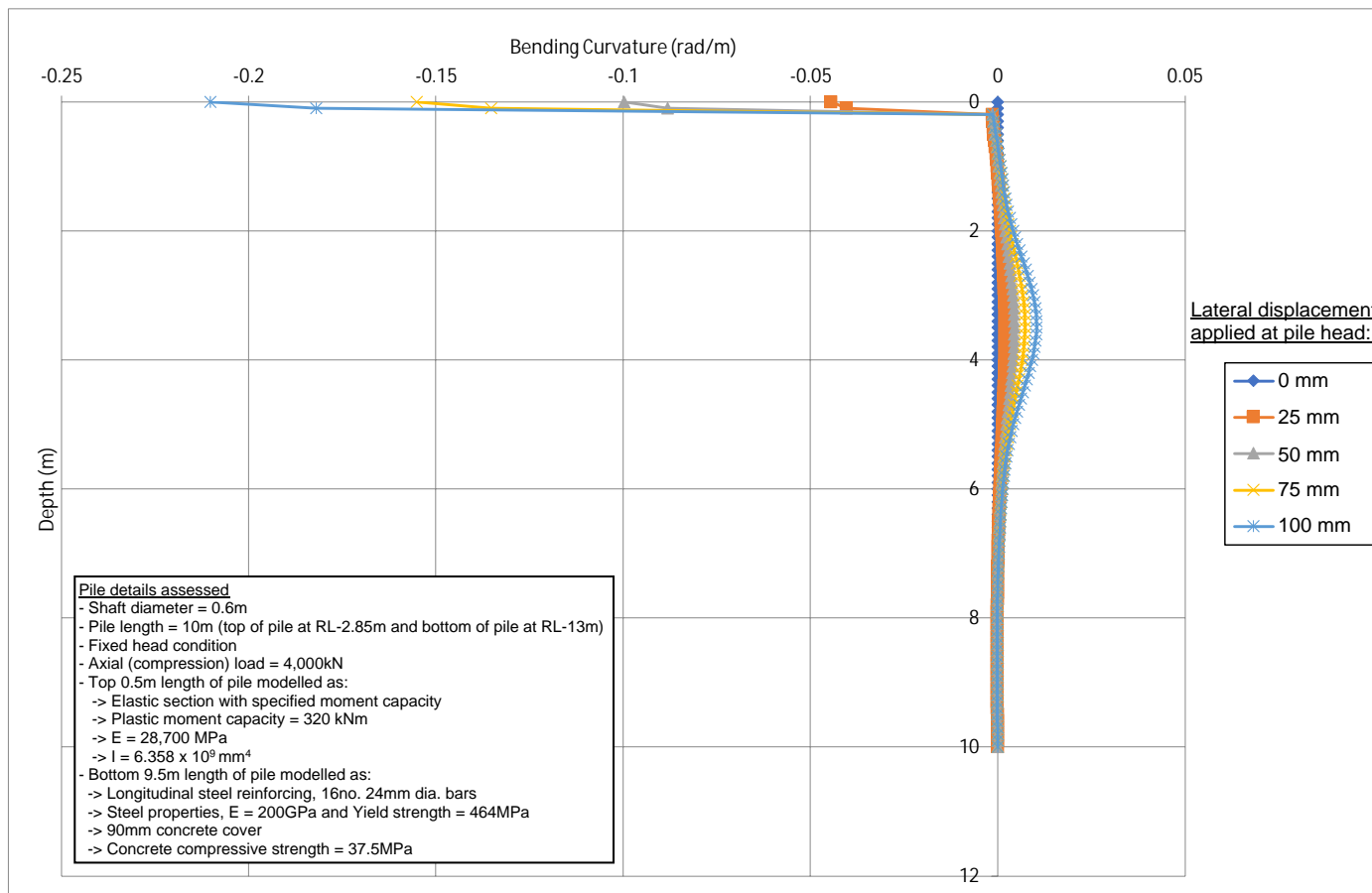
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Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



Prepared by: ANRO
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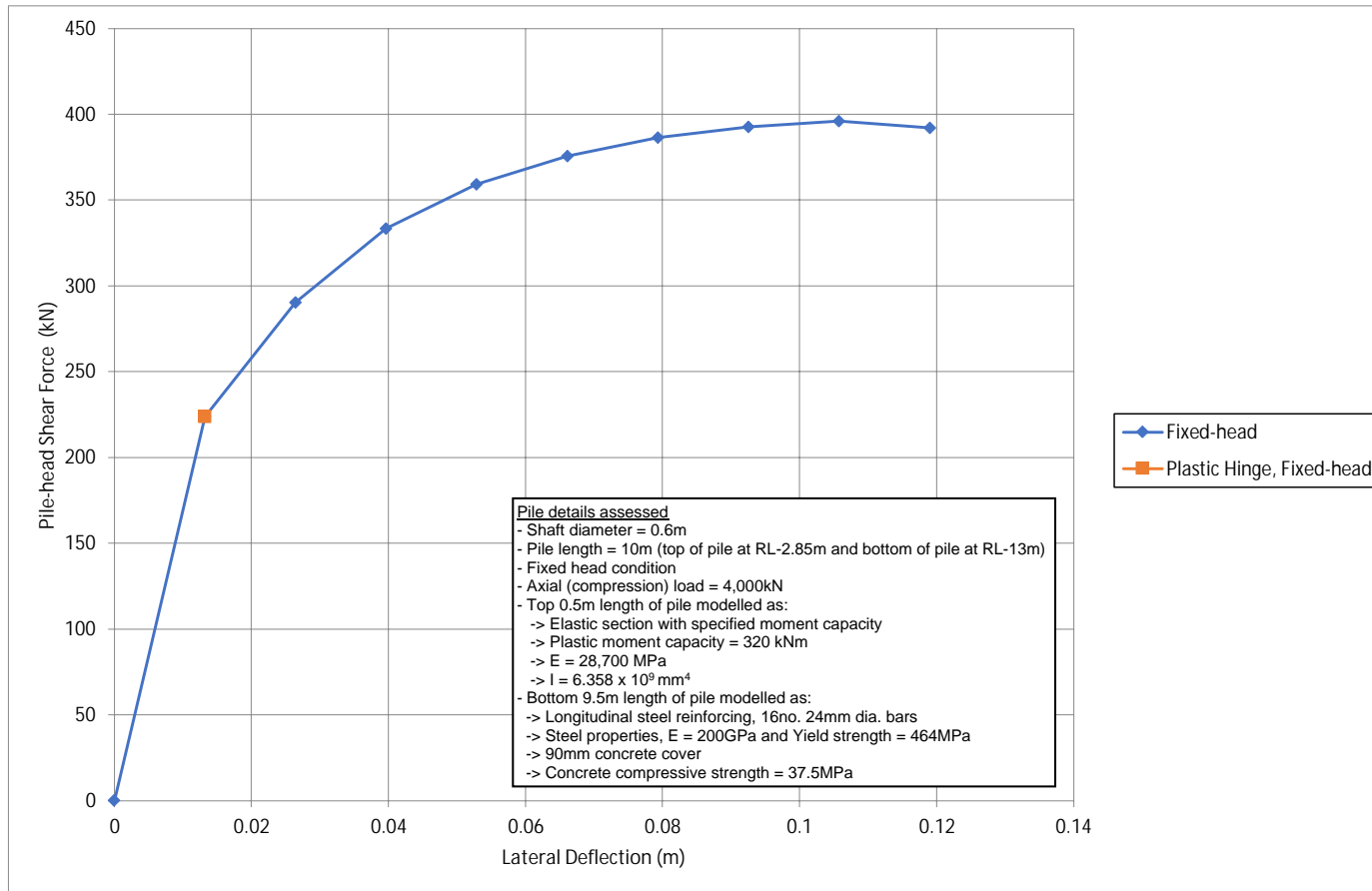
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 Wellington City Council
 Capital E: Lateral Pile Assessment
 T+T ref: 1091837
 15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



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 Checked by: BHR

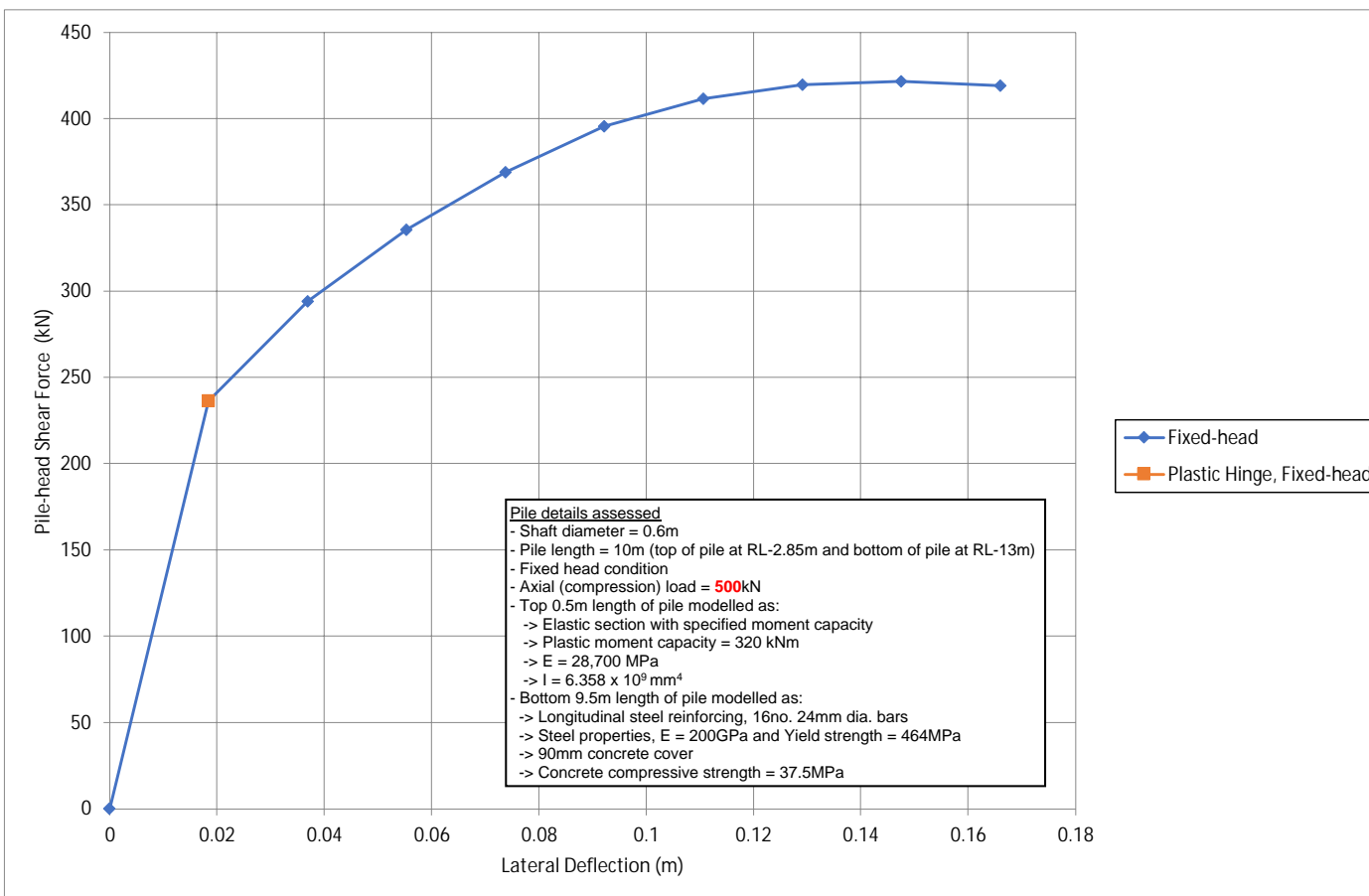
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Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



Prepared by: ANRO
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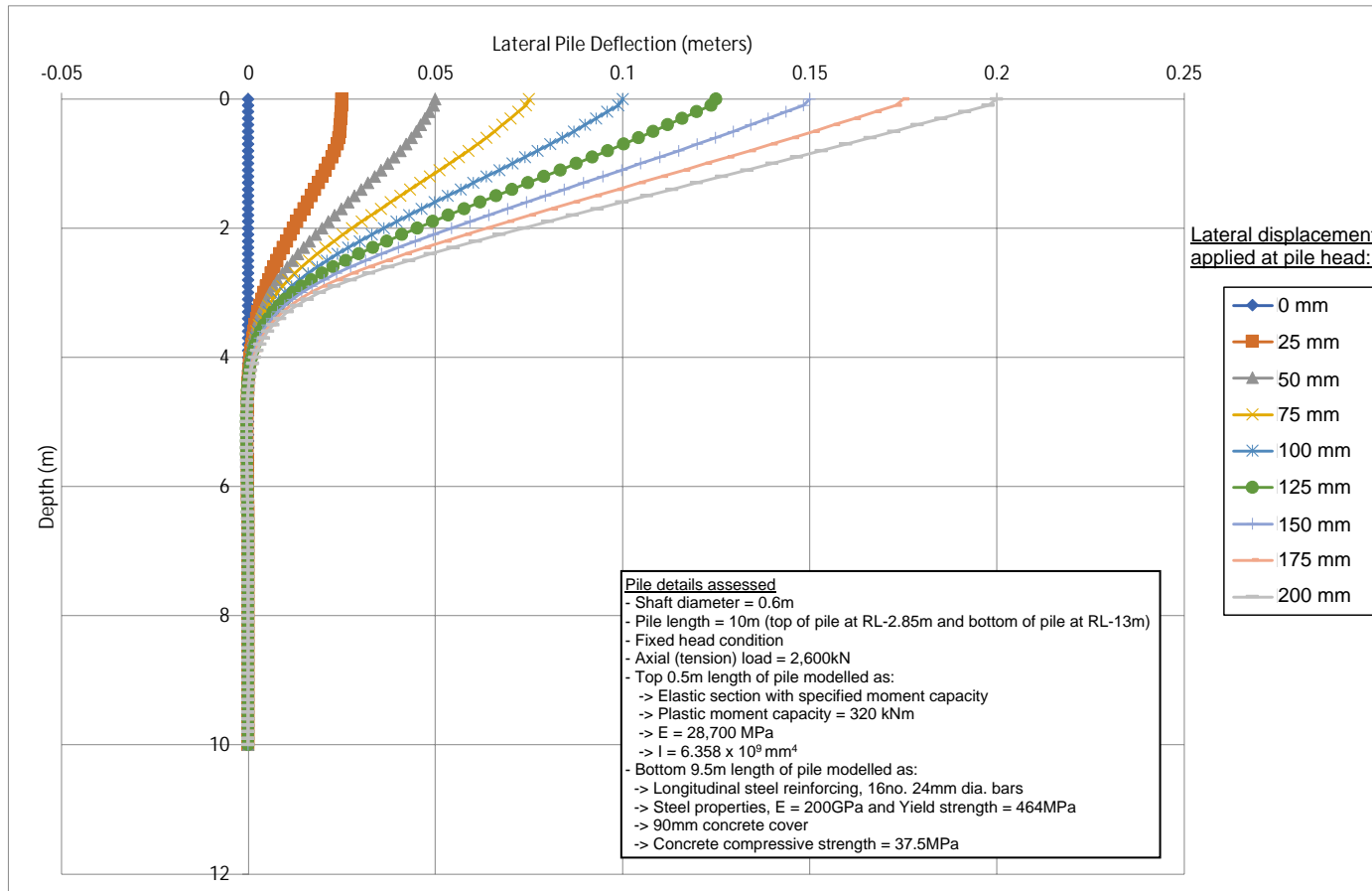
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Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Tension



Prepared by: ANRO
Checked by: BHR

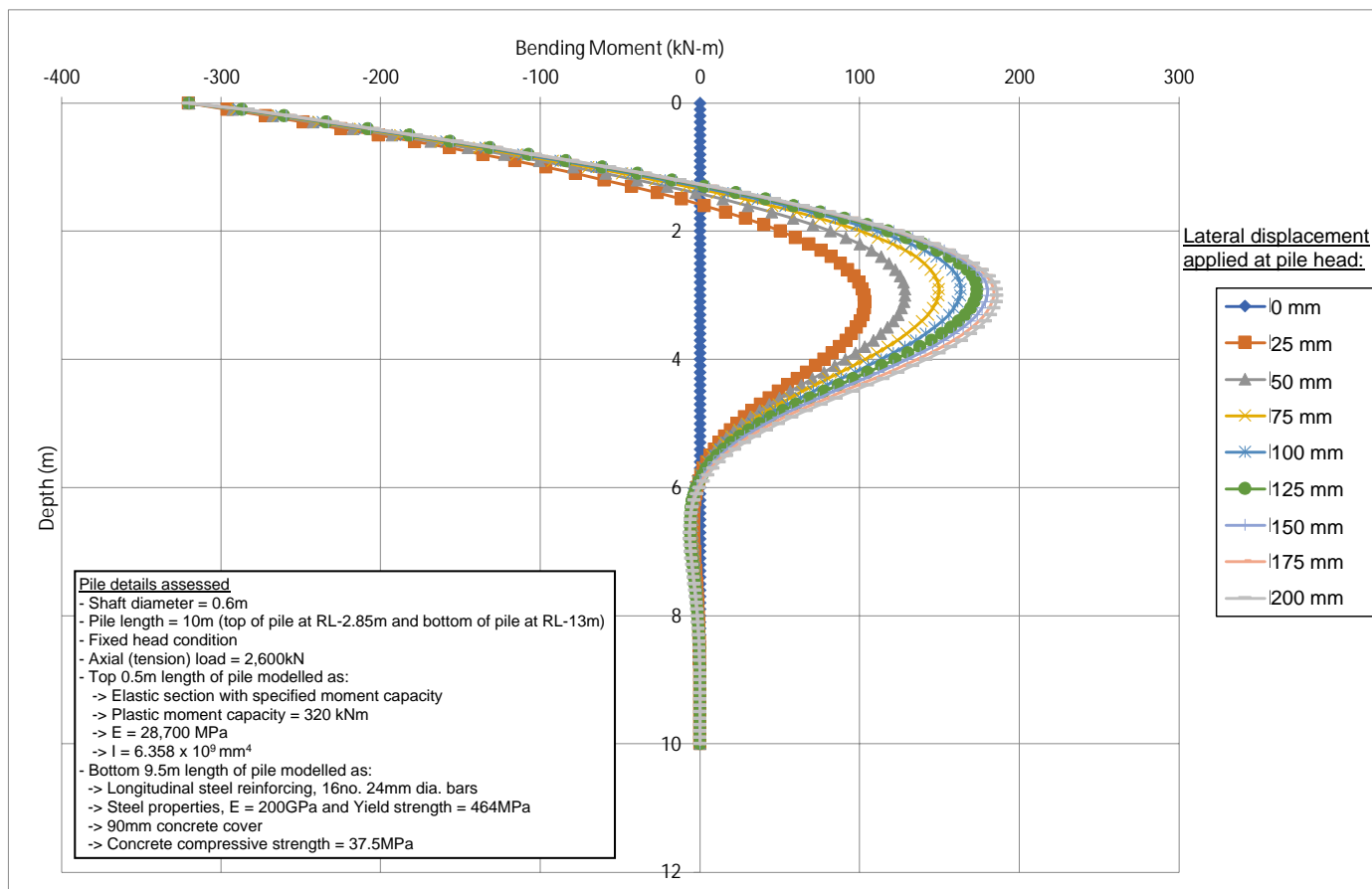
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Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Tension



Prepared by: ANRO
Checked by: BHR

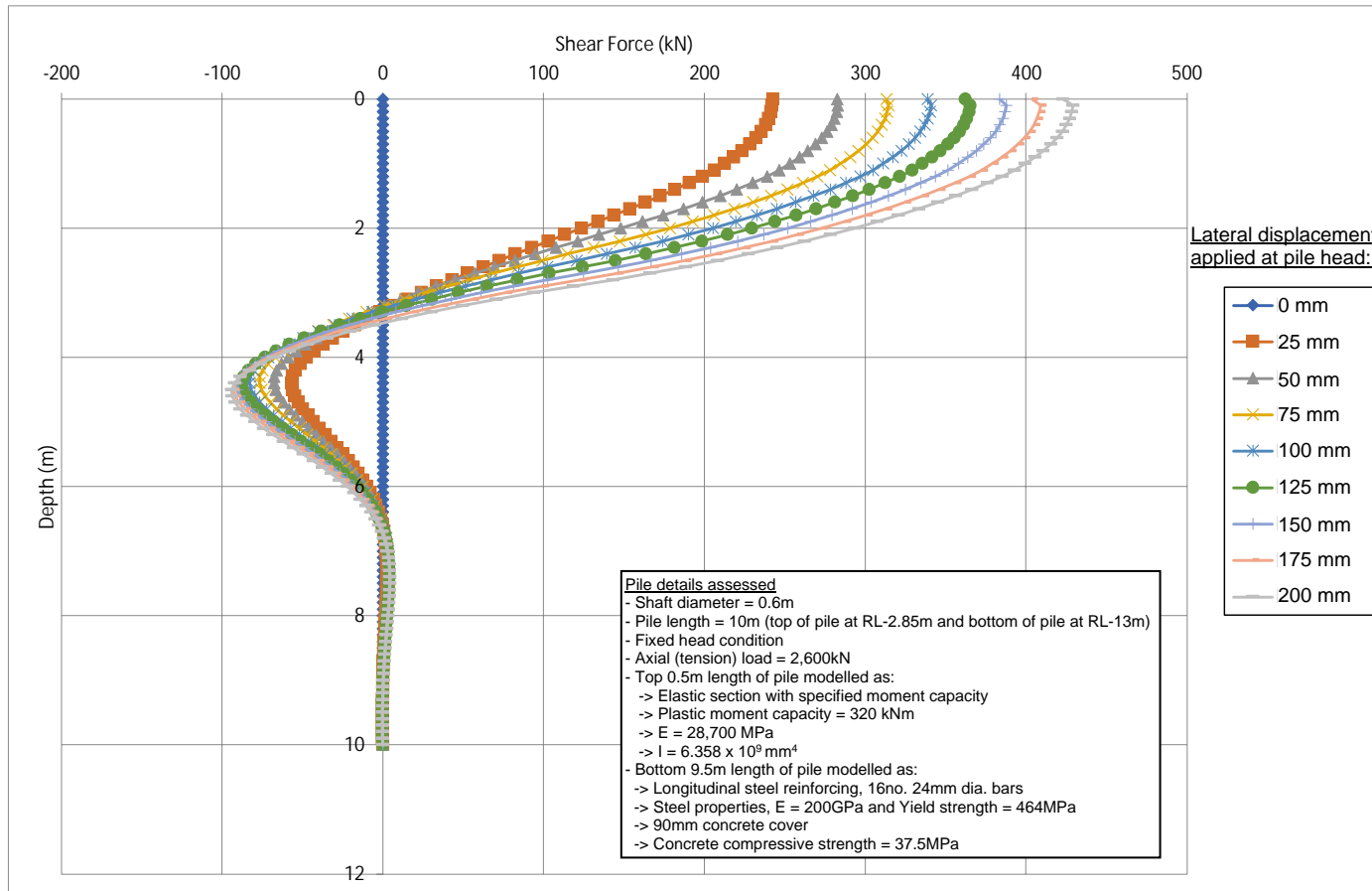
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Tension



Prepared by: ANRO
Checked by: BHR

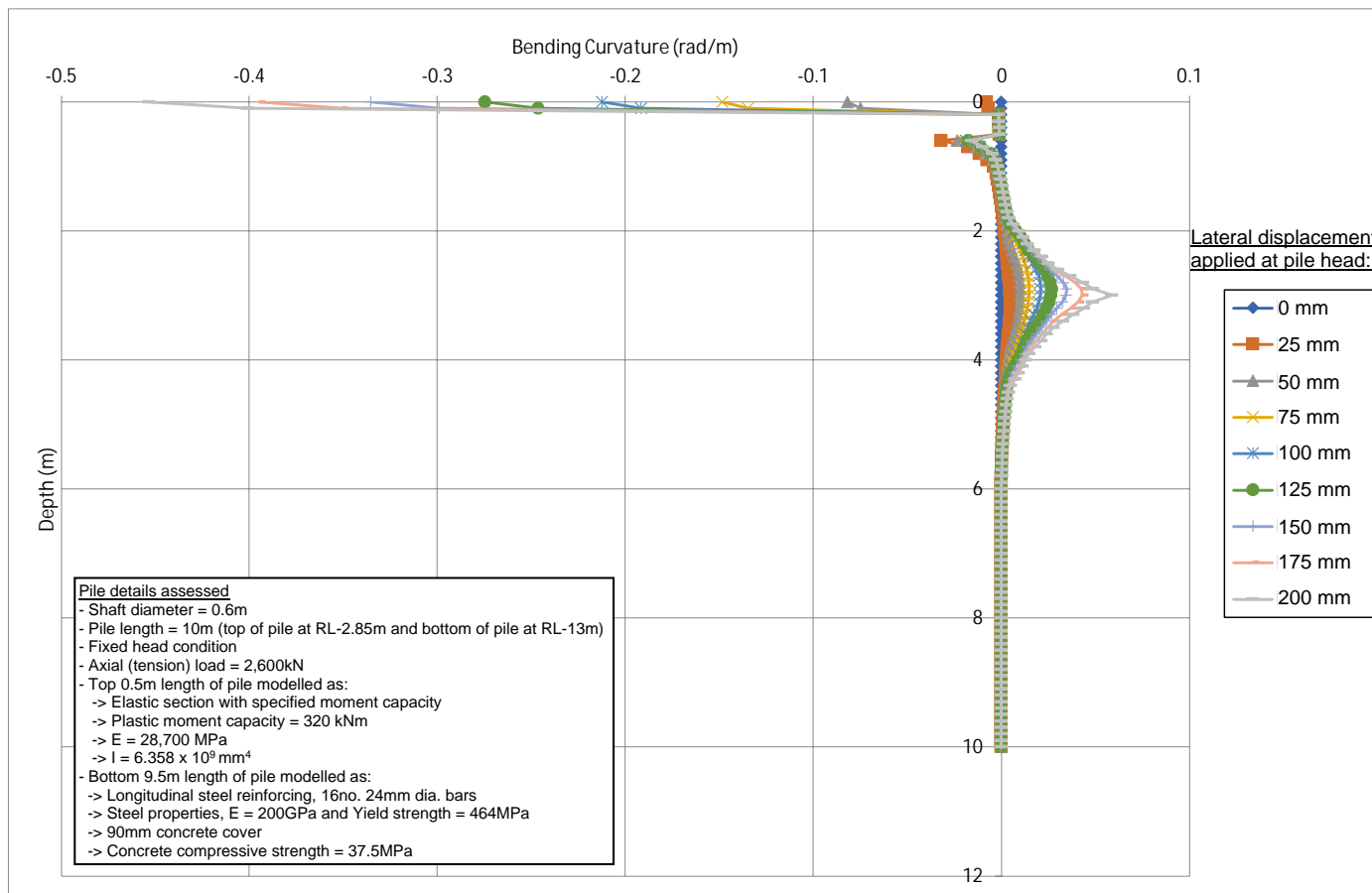
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Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Tension



Prepared by: ANRO
Checked by: BHR

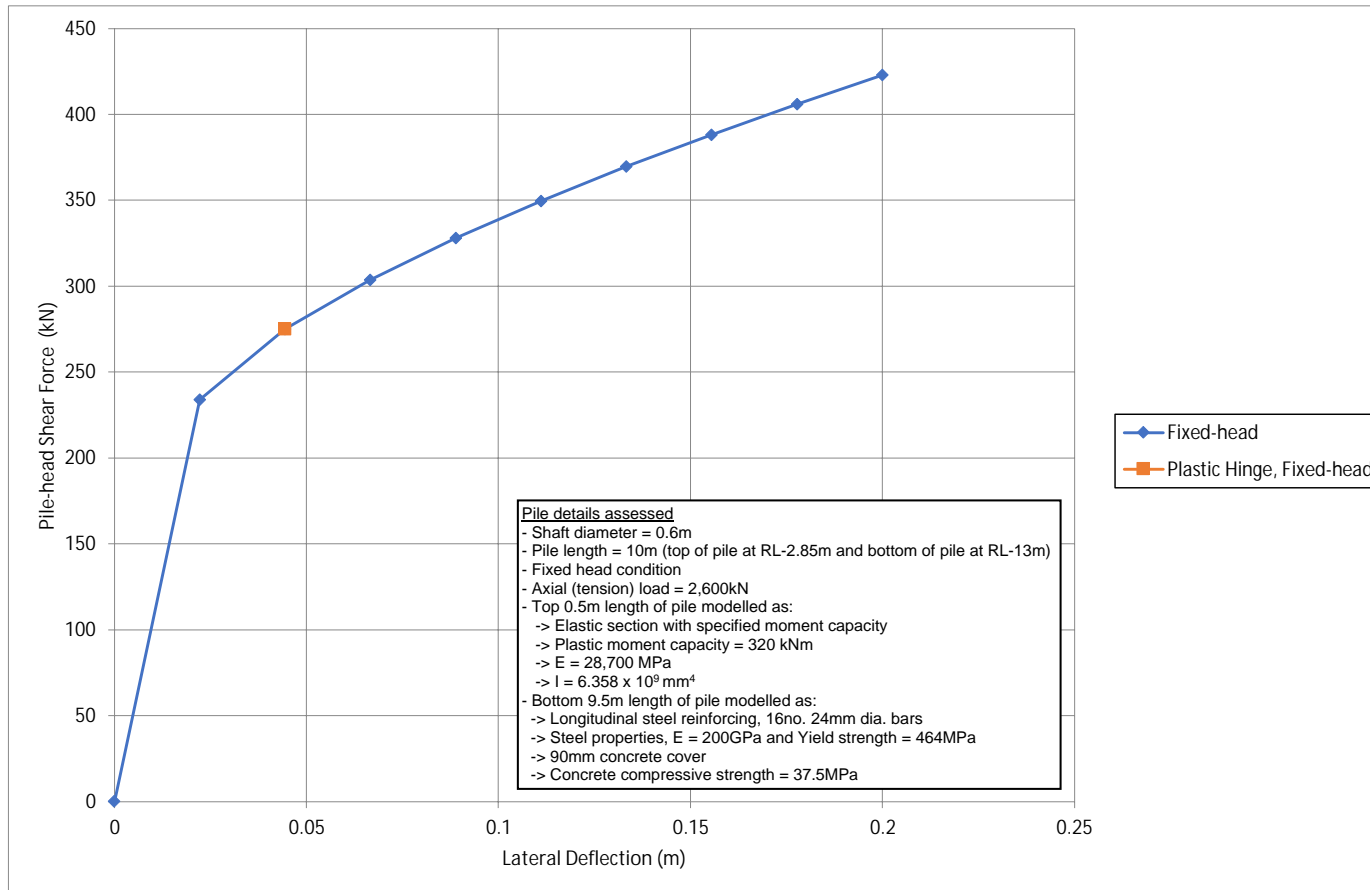
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Te Ngakau Civic Precinct
 Wellington City Council
 Capital E: Lateral Pile Assessment
 T+T ref: 1091837
 15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

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Pile Axial Load: Tension



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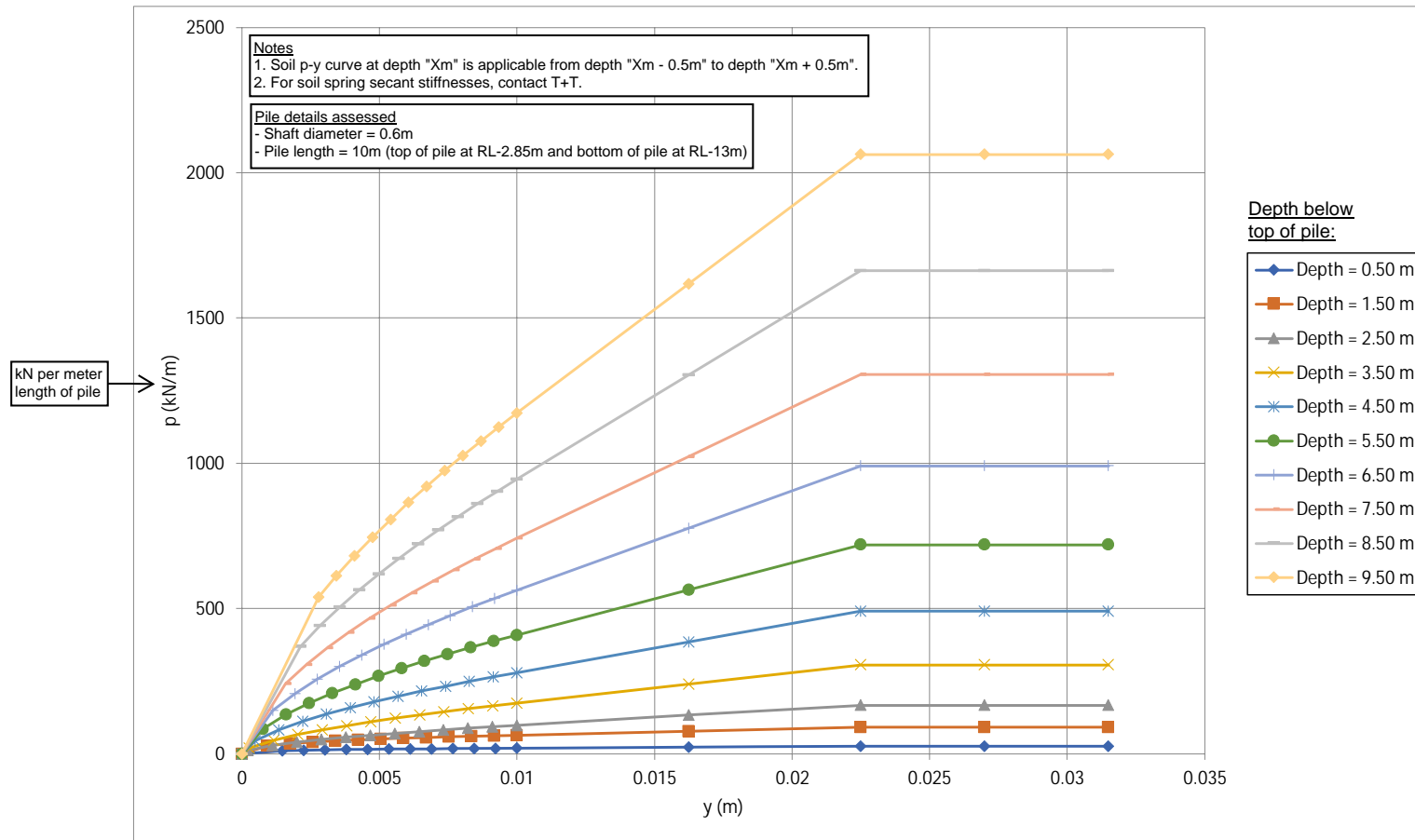
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 2, 3 & 4 (After liquefaction triggered)

Soil p-y curves



Prepared by: ANRO
Checked by: BHR

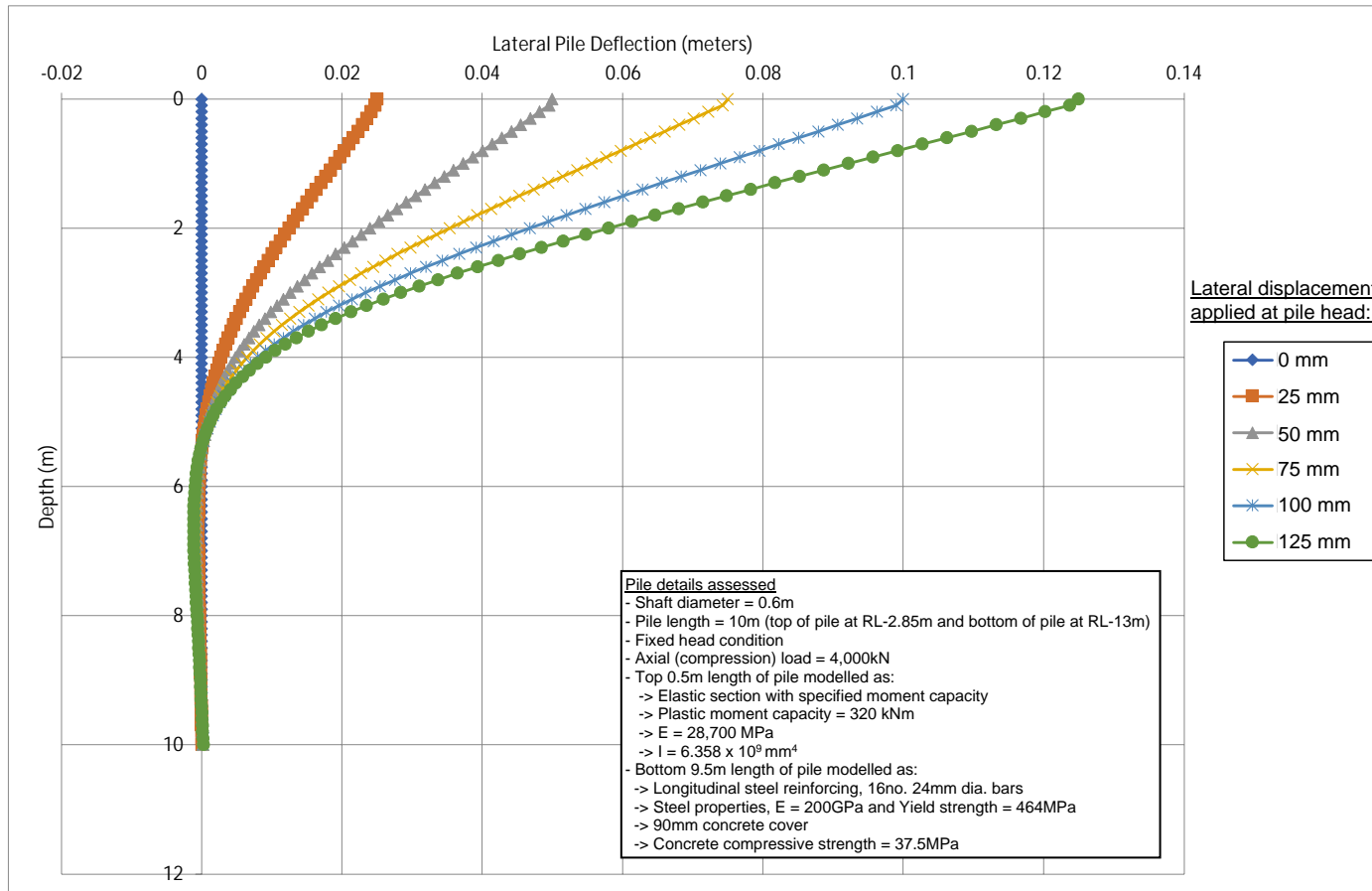
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Wellington City Council
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T+T ref: 1091837
15/01/2024

Pile Type 1 (at Capital E Basement/Loading Dock)

Geotechnical Case 2, 3 & 4 (After liquefaction triggered)

Pile Axial Load: Compression



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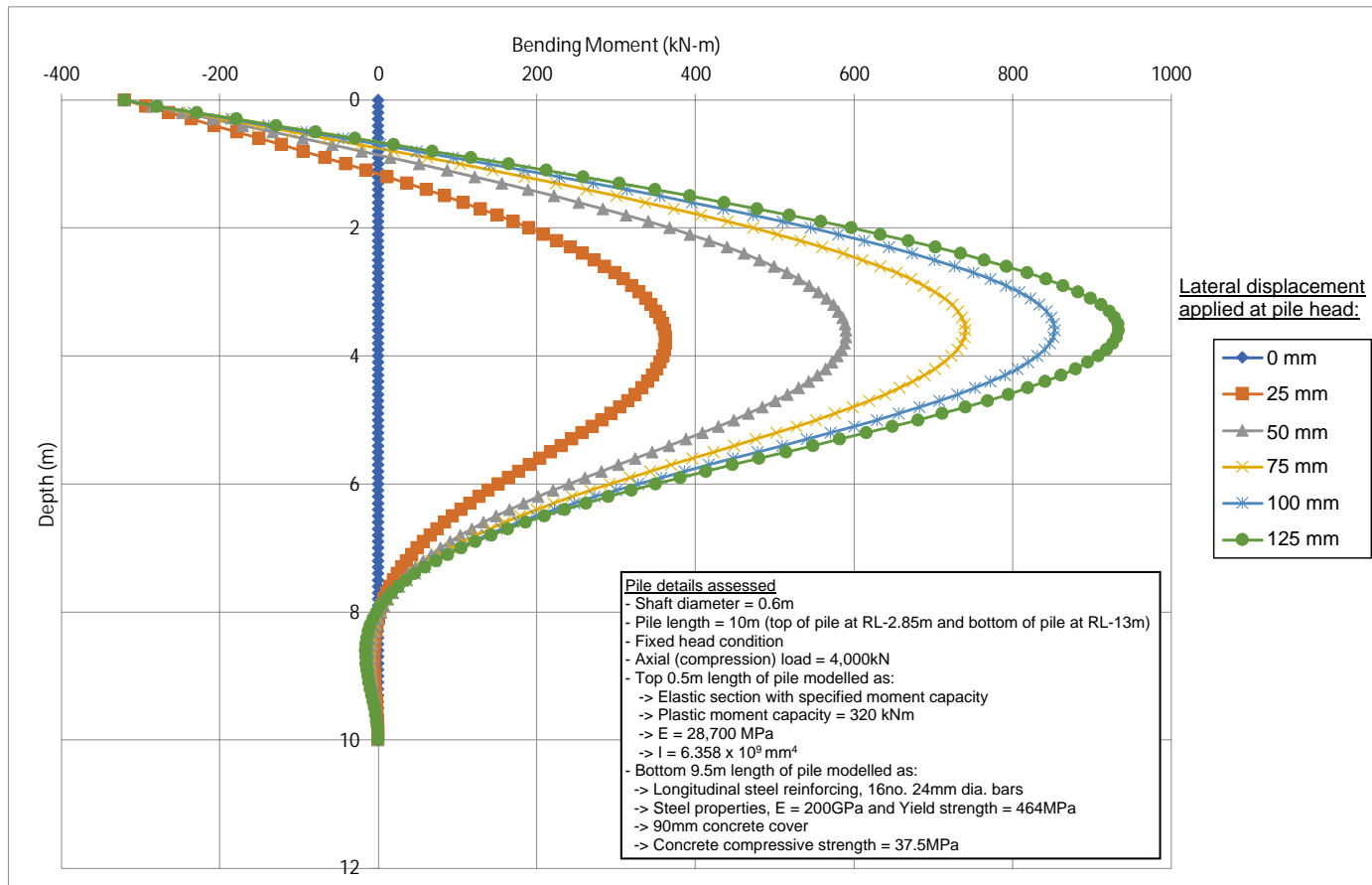
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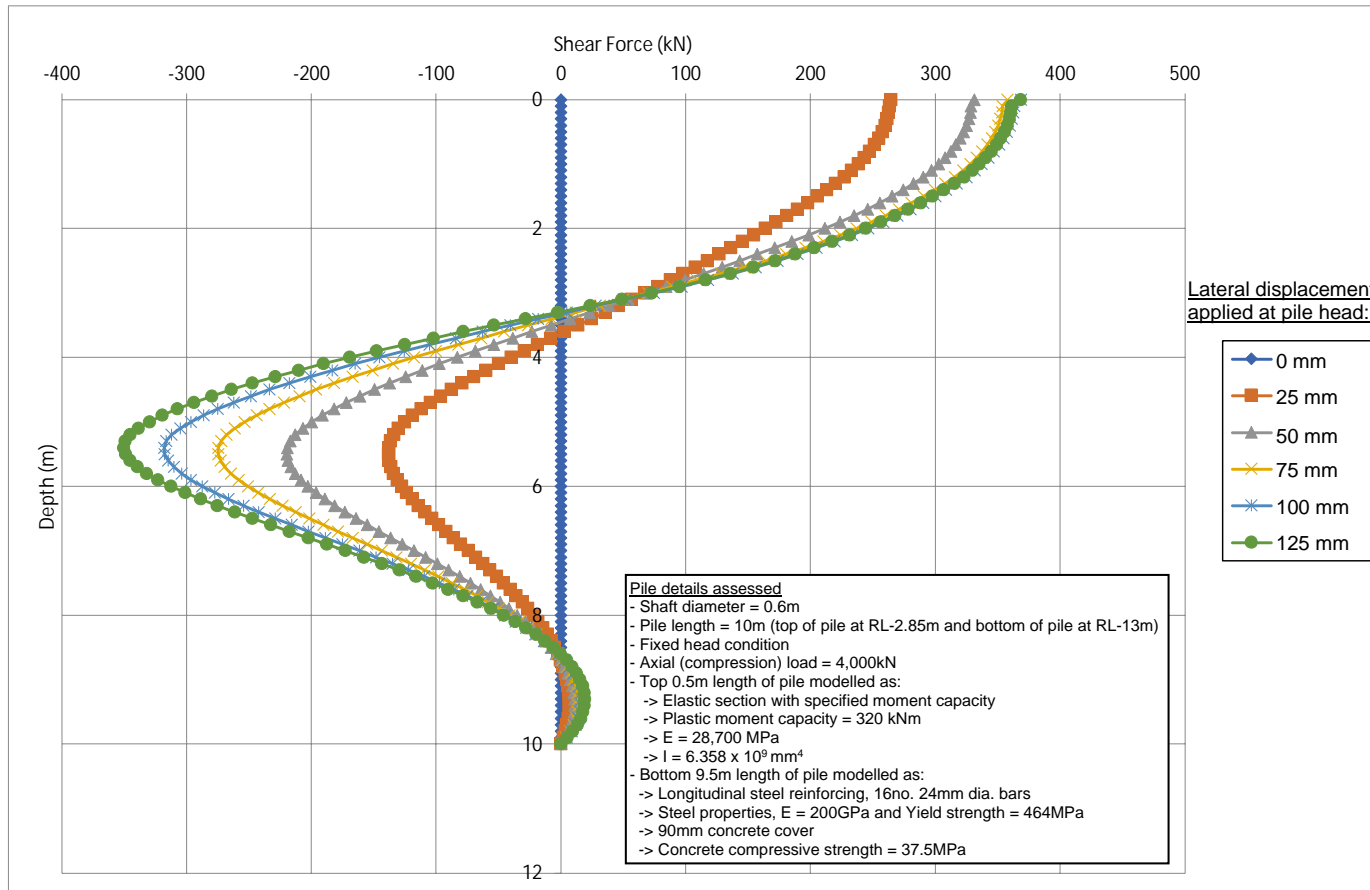
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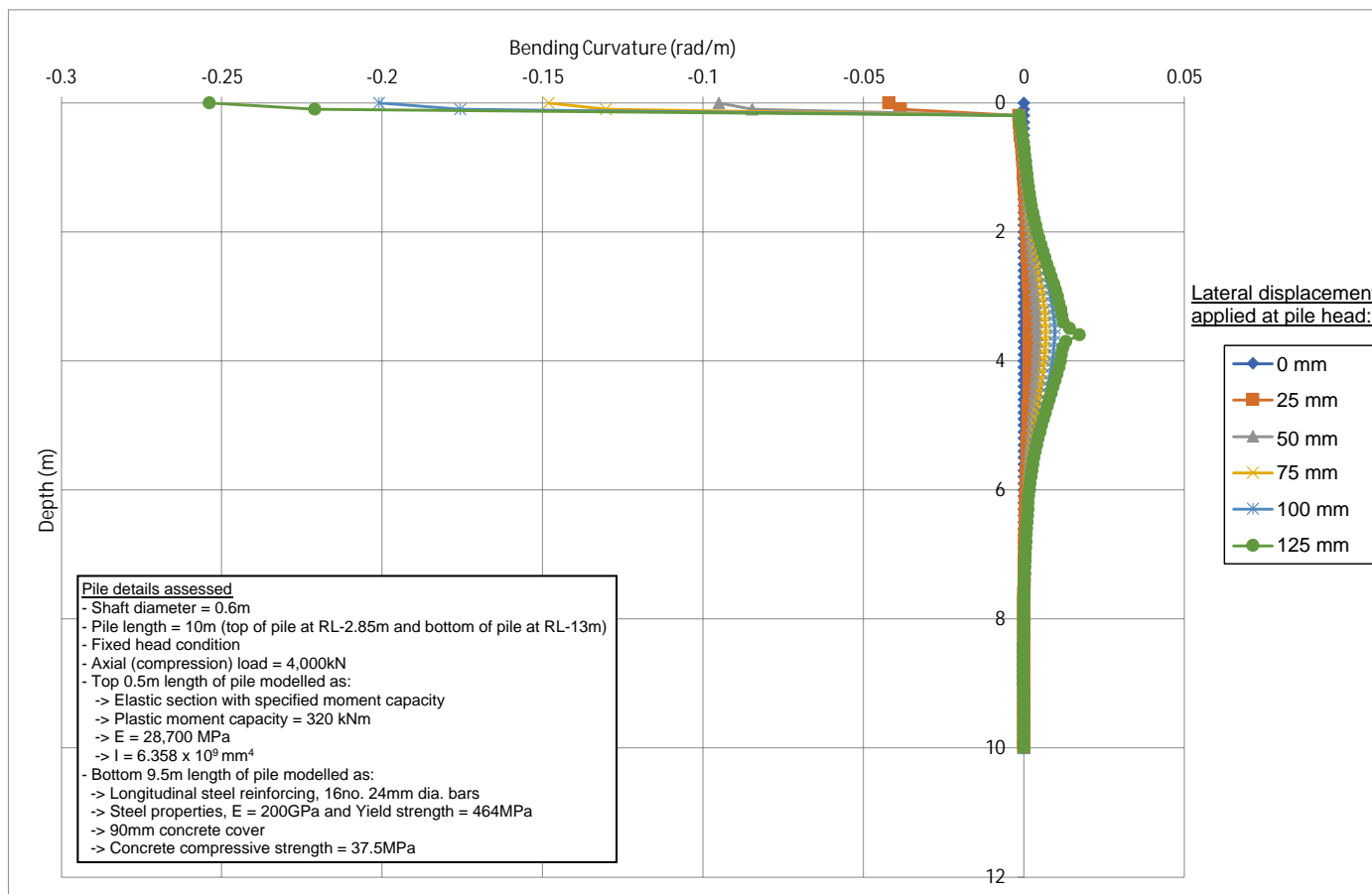
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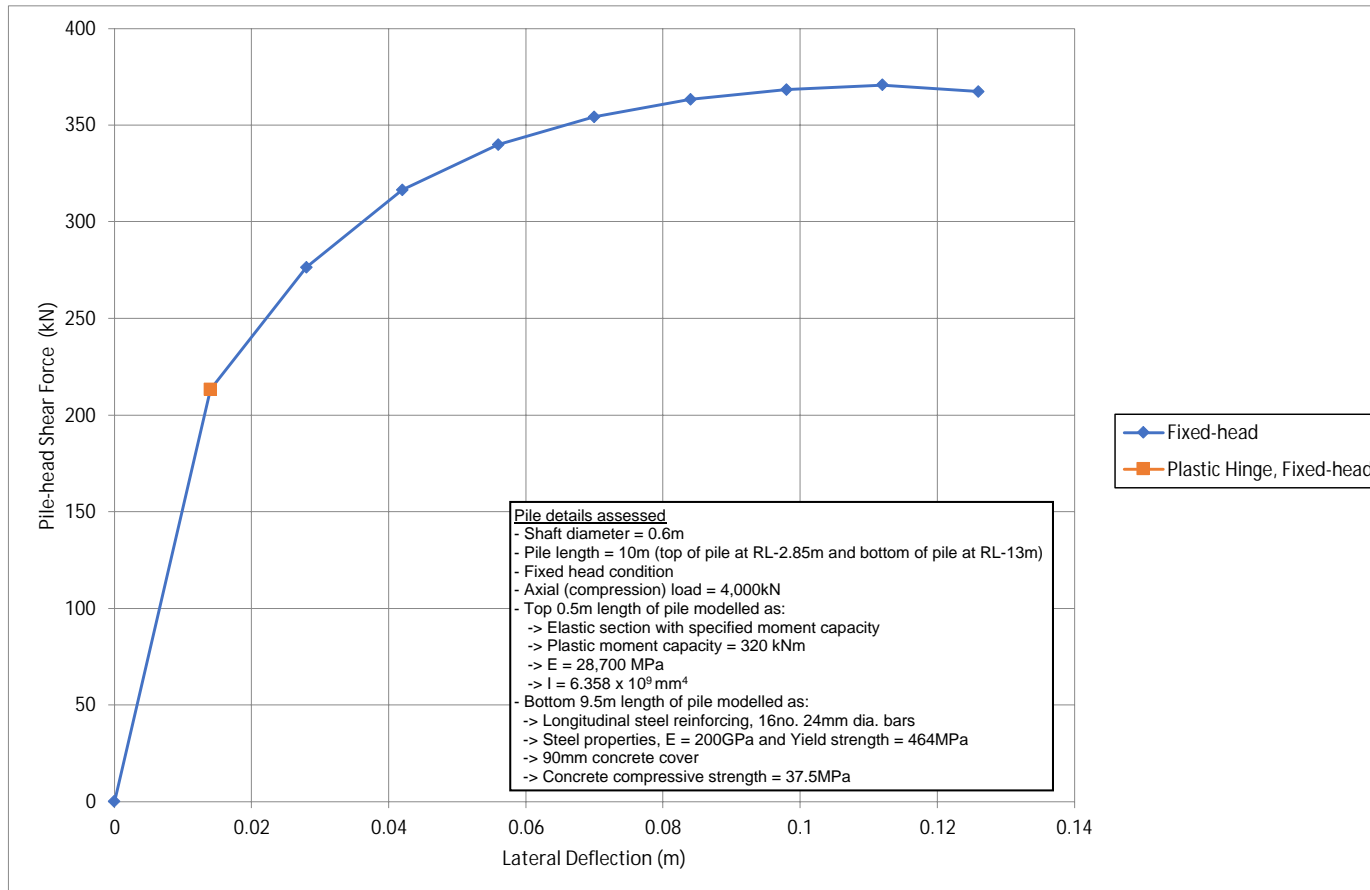
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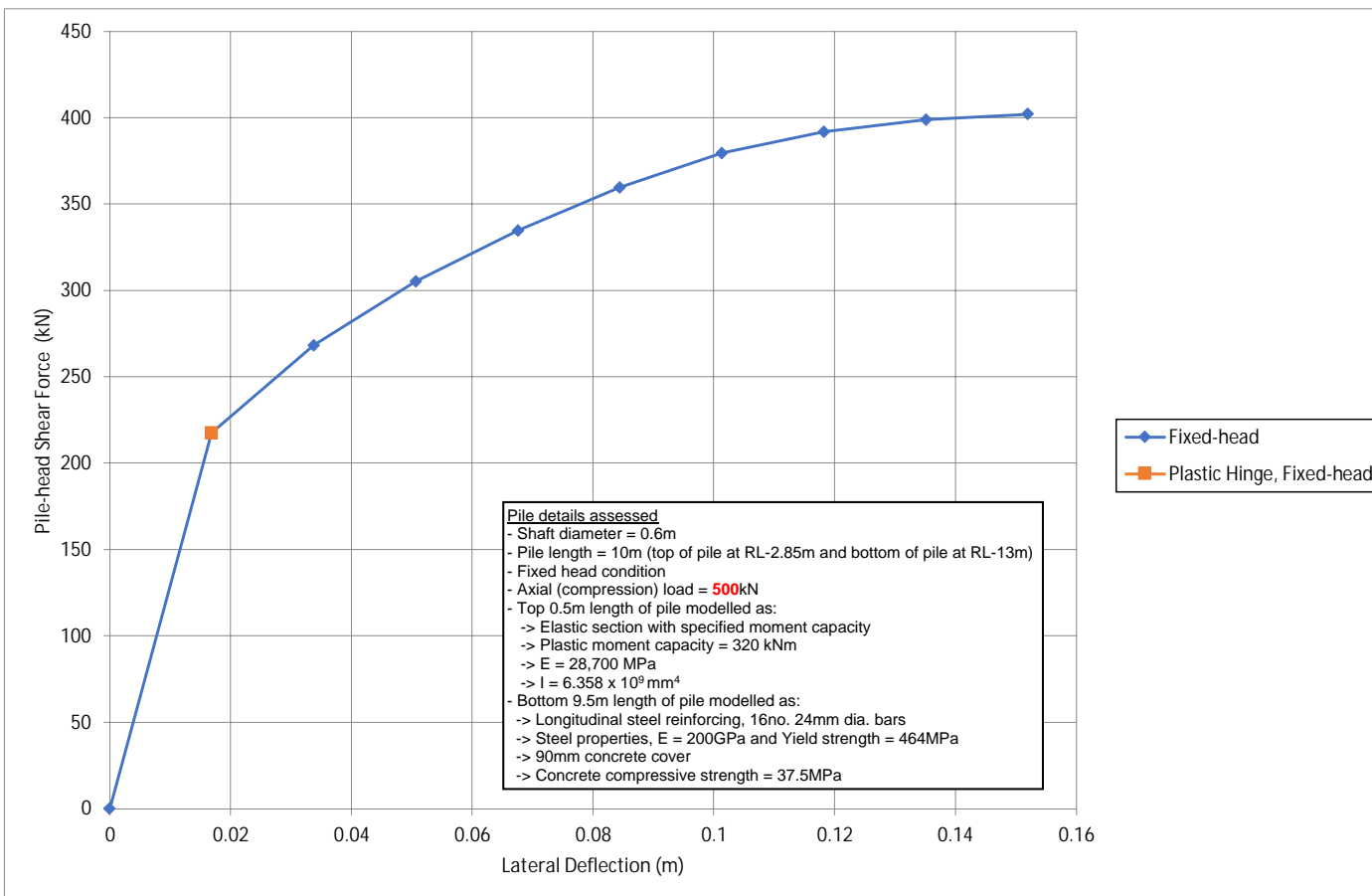
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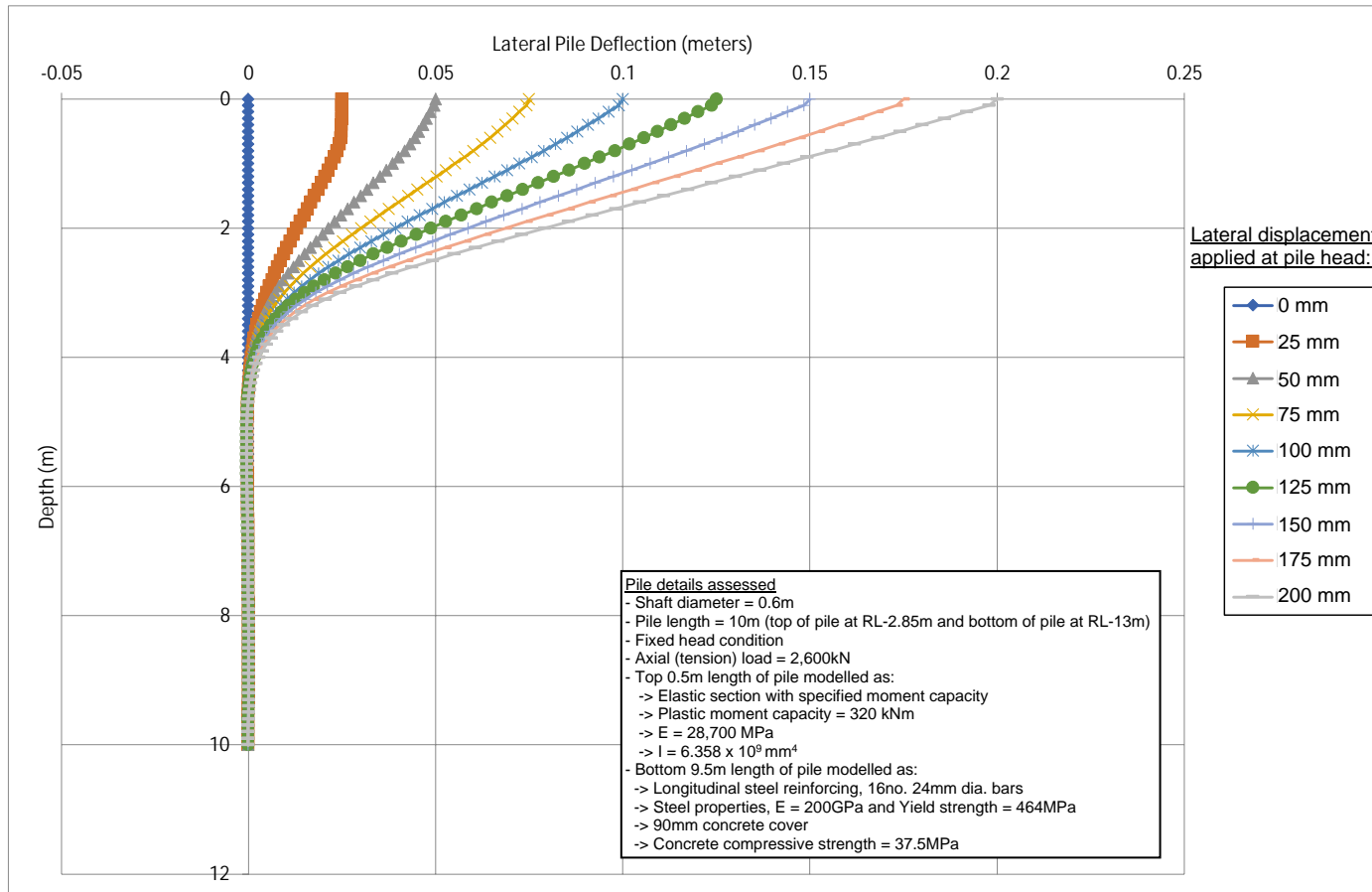
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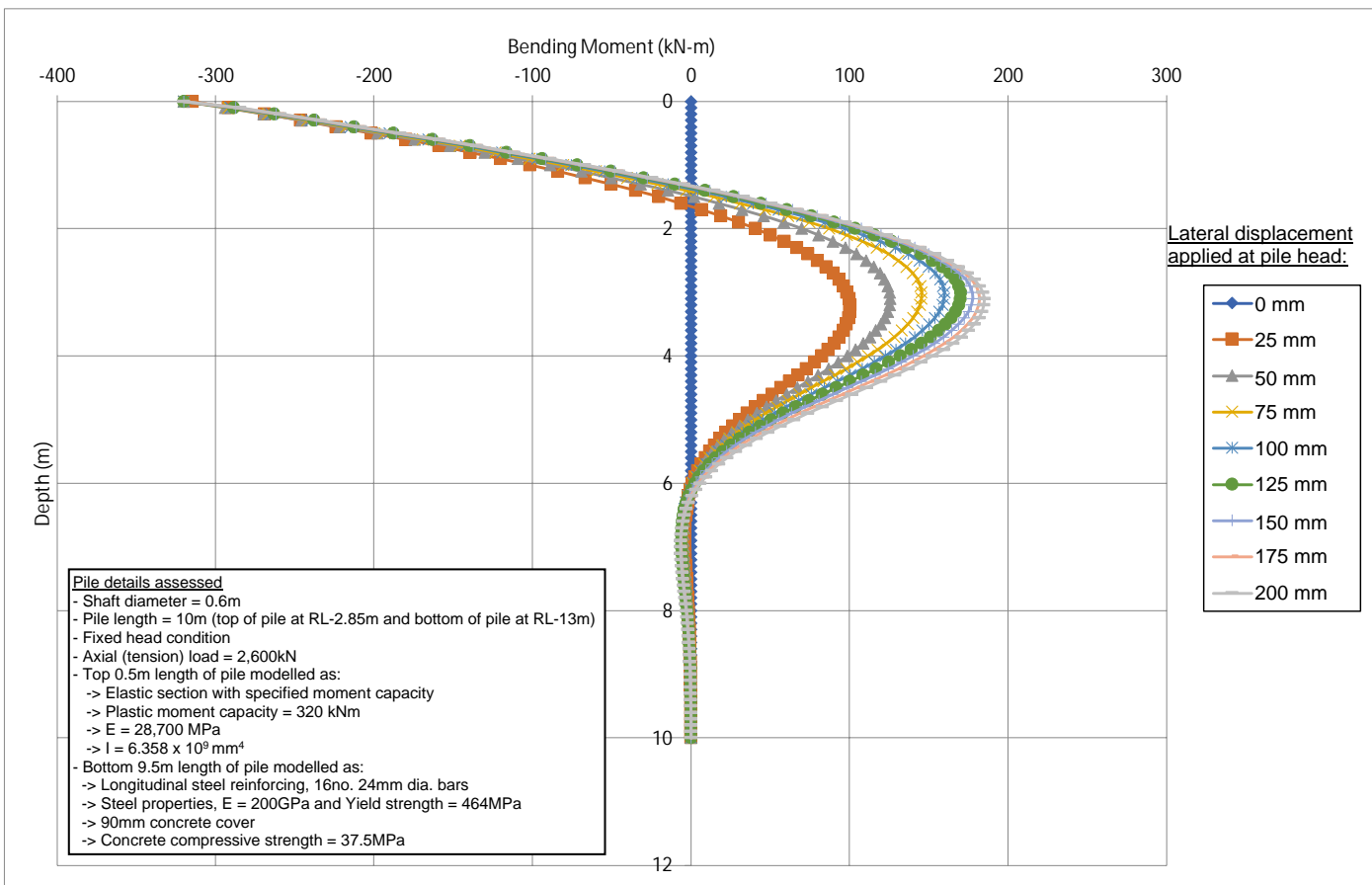
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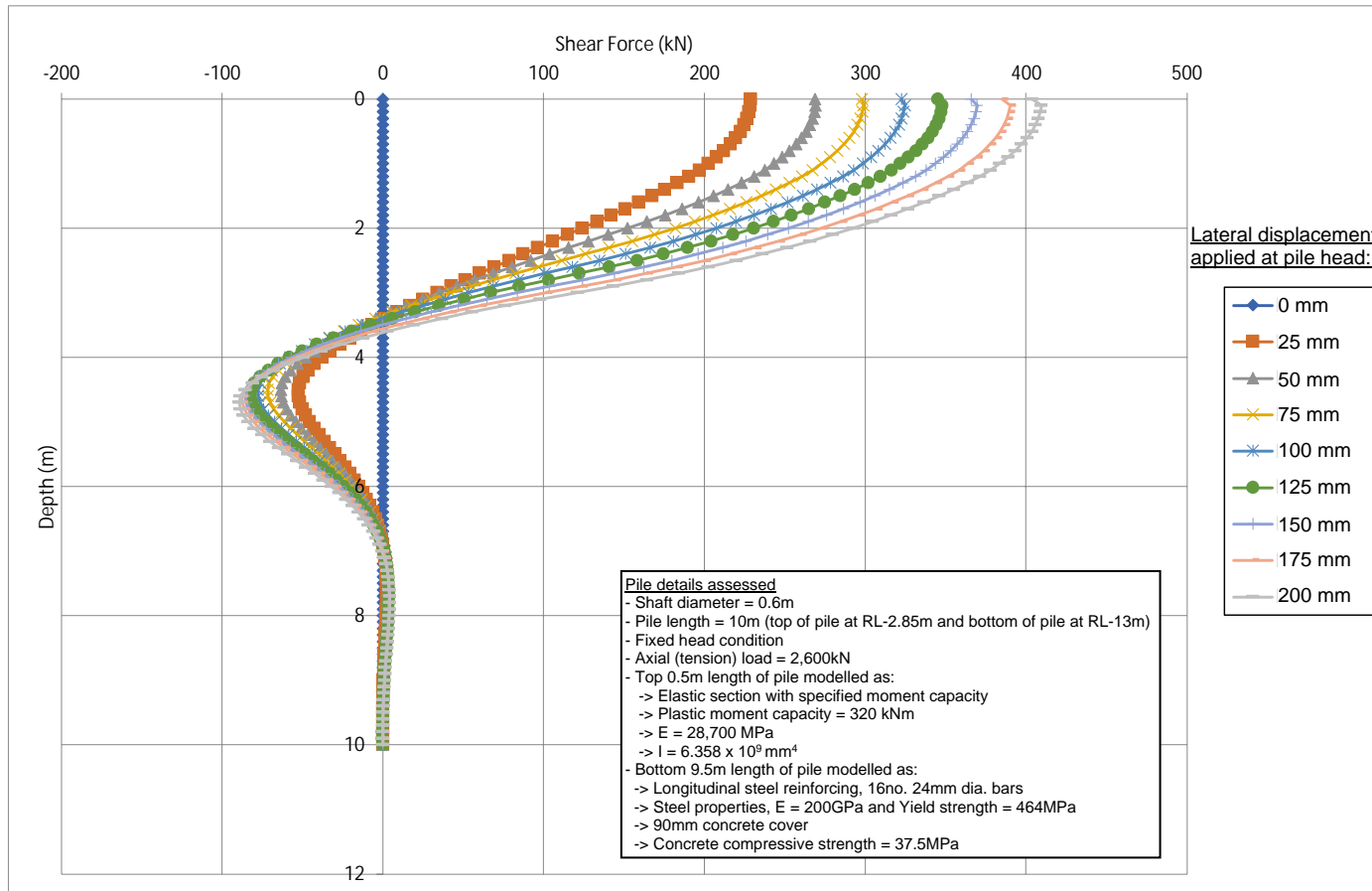
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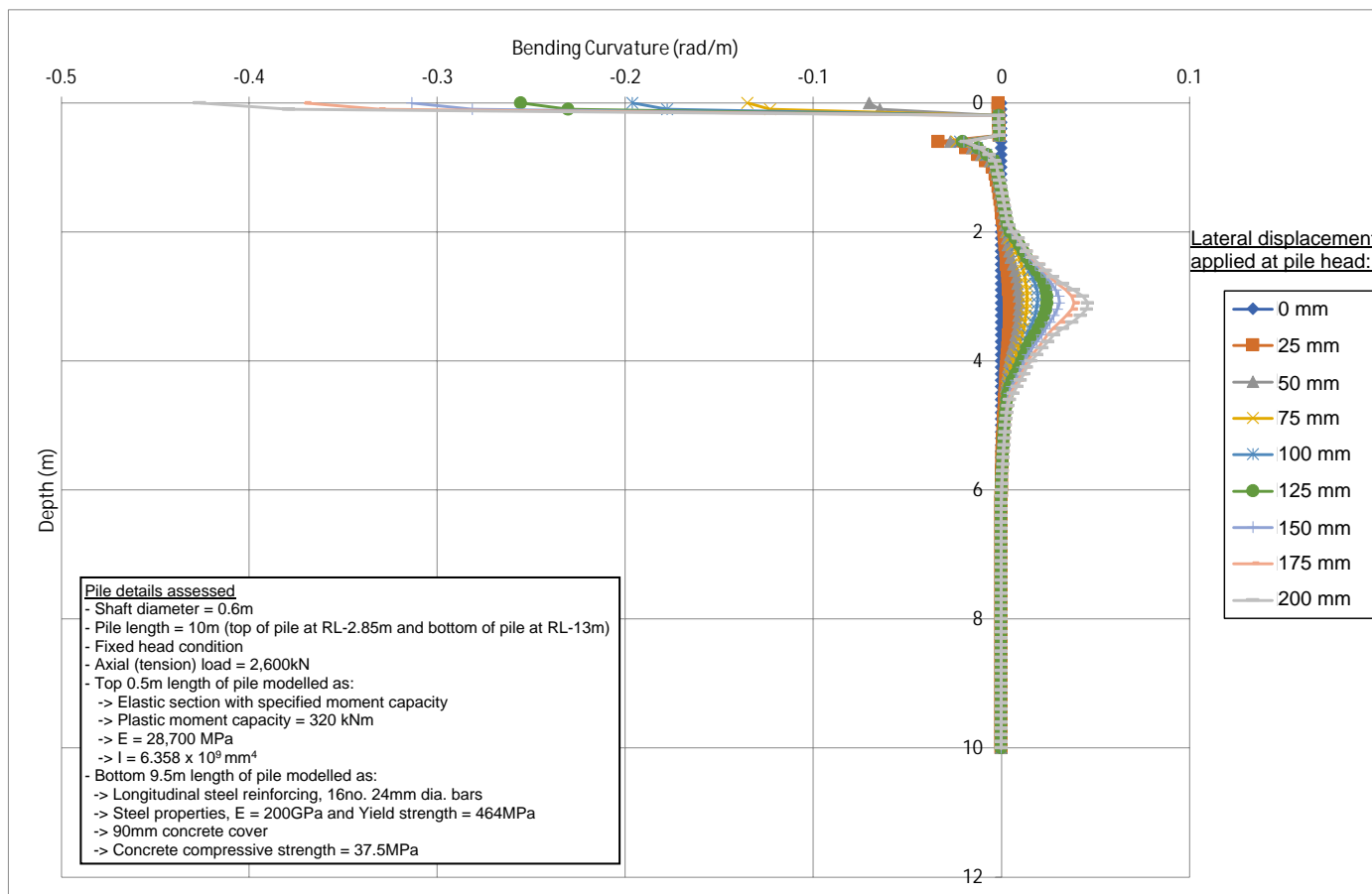
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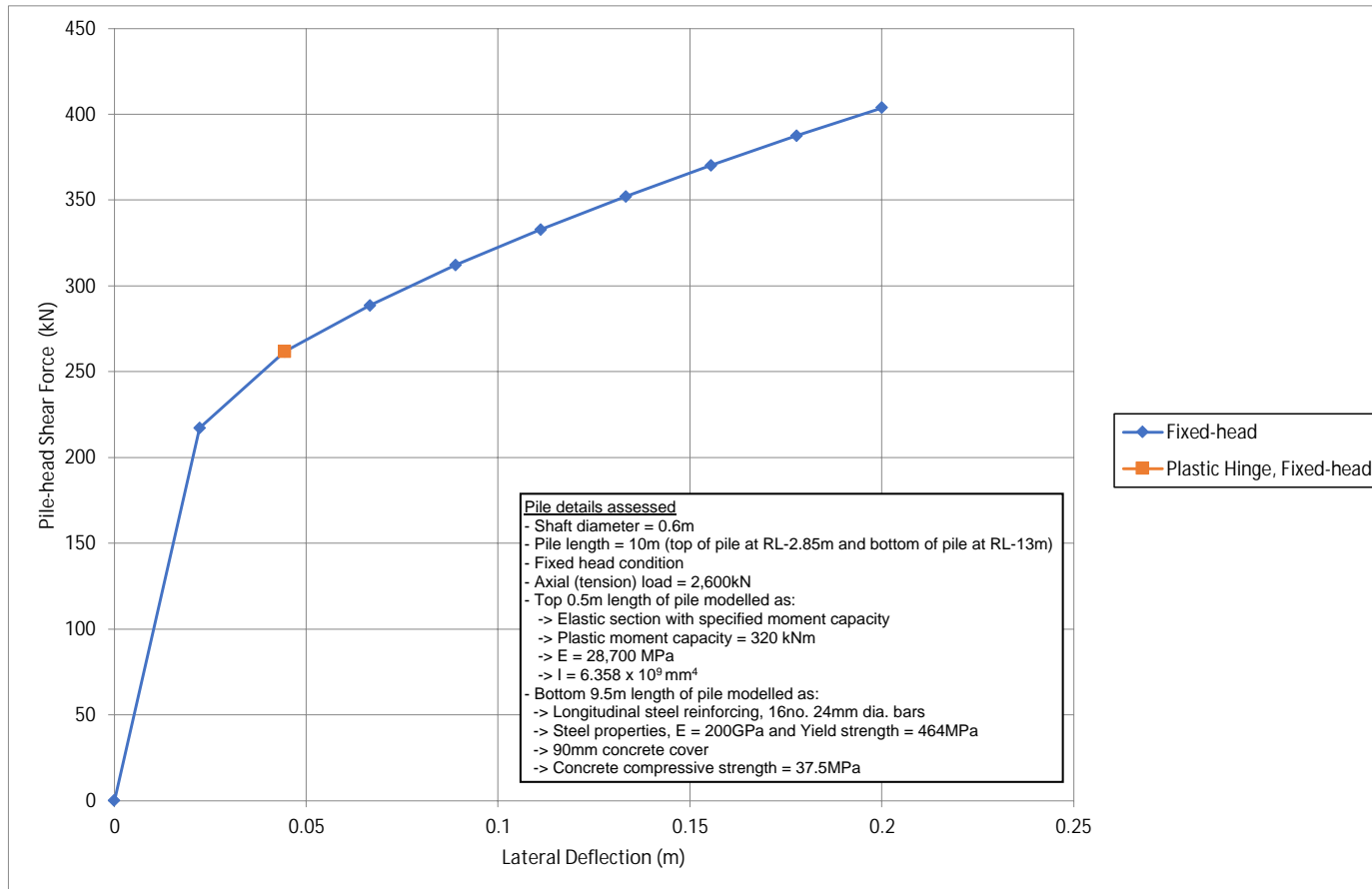
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Pile Type 2 (at ramps and walls)

Geotechnical Case 1 (No liquefaction)

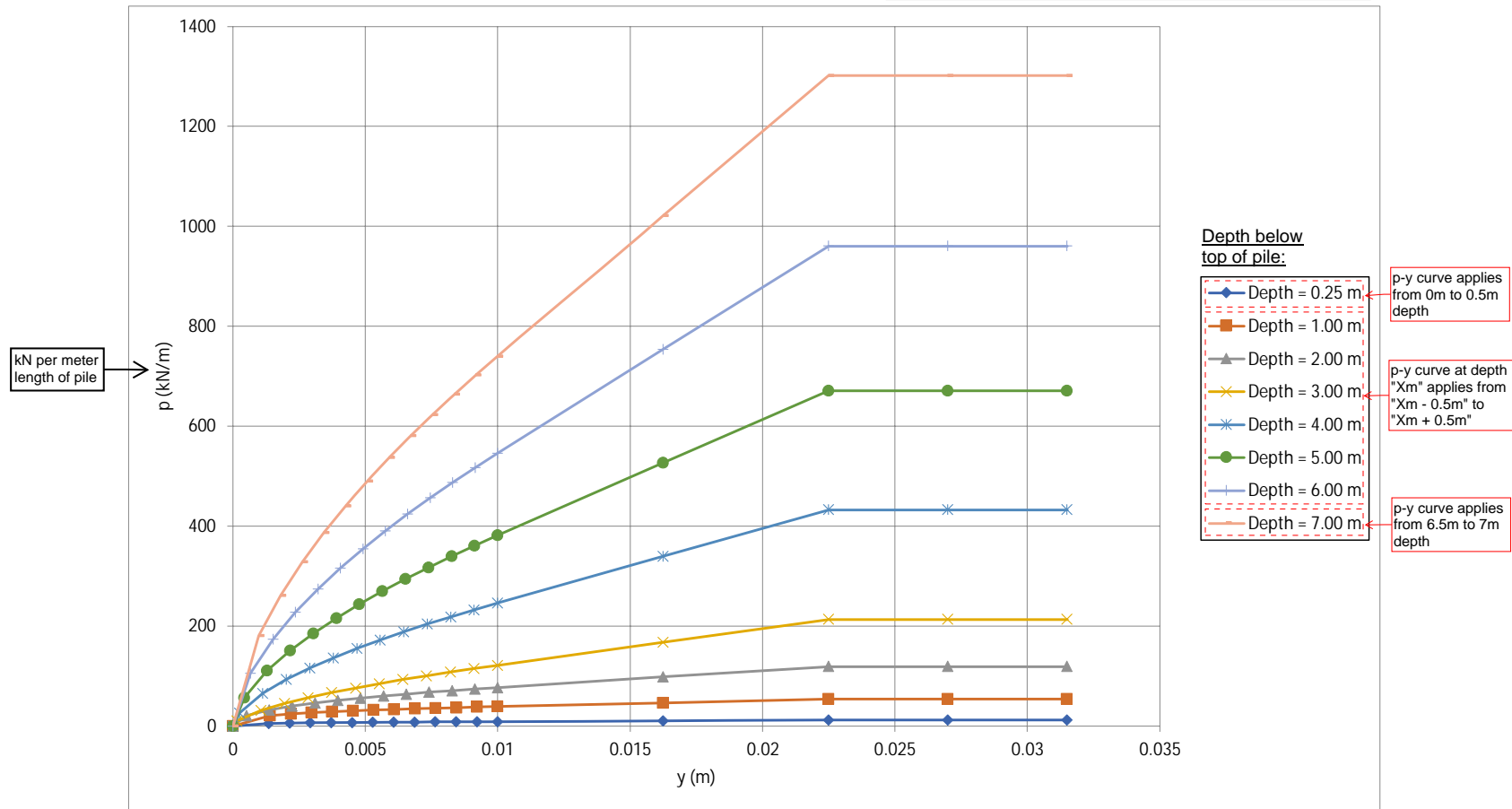
Soil p-y curves

Notes

1. For soil spring secant stiffnesses, contact T+T.

Pile details assessed

- Shaft diameter = 0.6m
- Pile length = 7m (top of pile at RL-1m and bottom of pile at RL-8m)



kN per meter length of pile

Prepared by: ANRO
Checked by: BHR

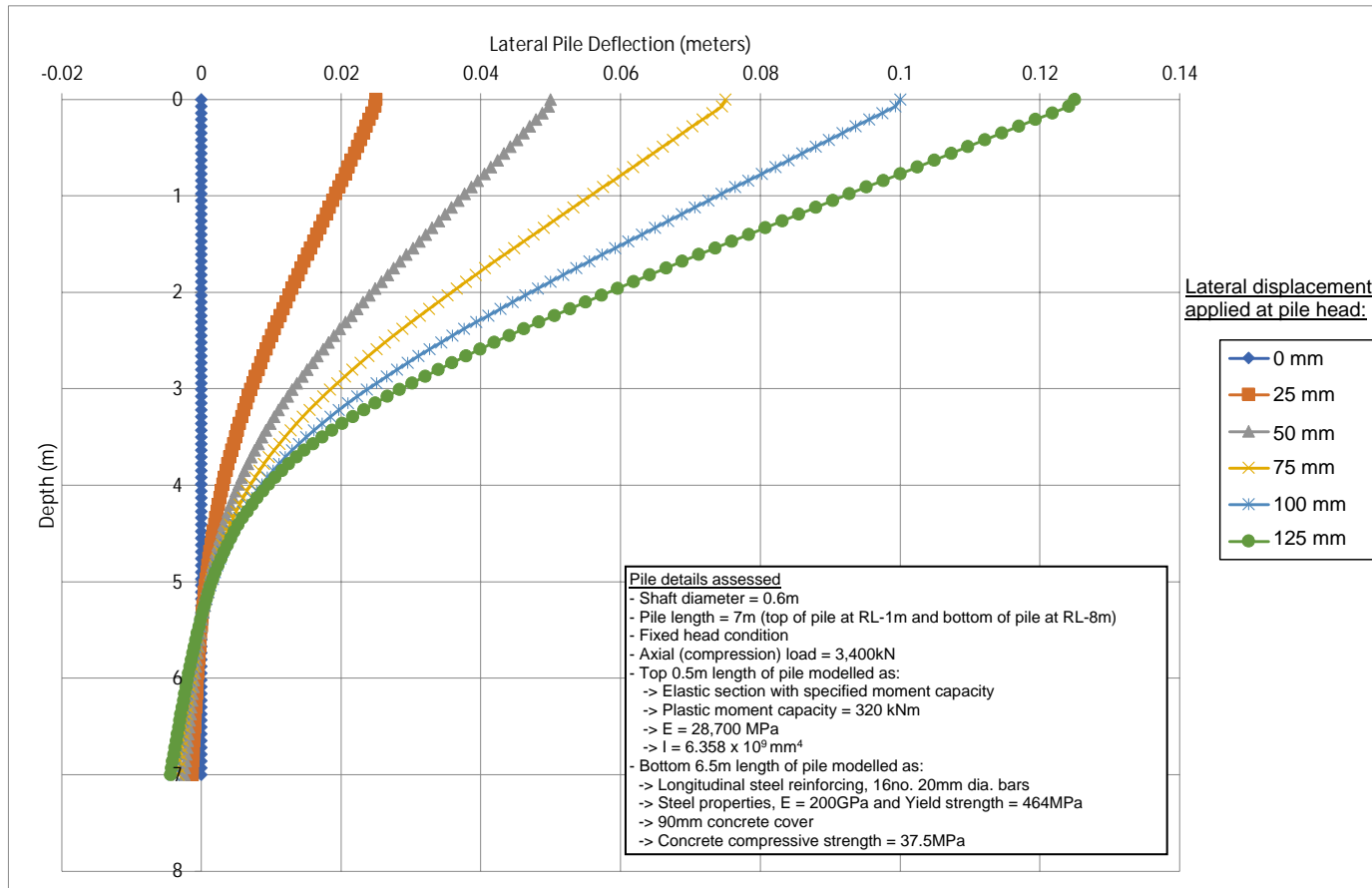
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T+T ref: 1091837
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Pile Type 2 (at ramps and walls)

Geotechnical Case 1 (No liquefaction)

Pile Axial Load: Compression



Prepared by: ANRO
Checked by: BHR

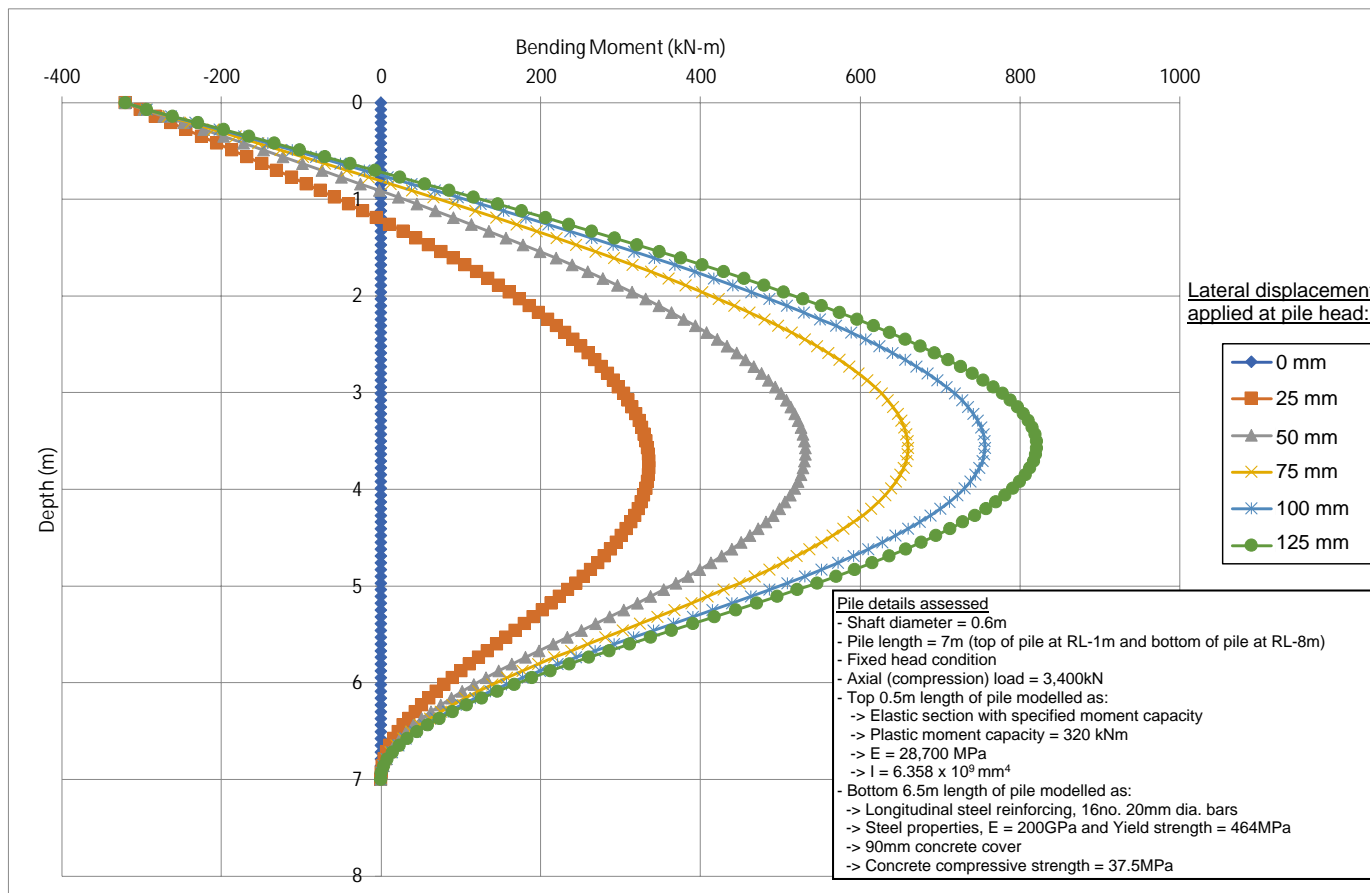
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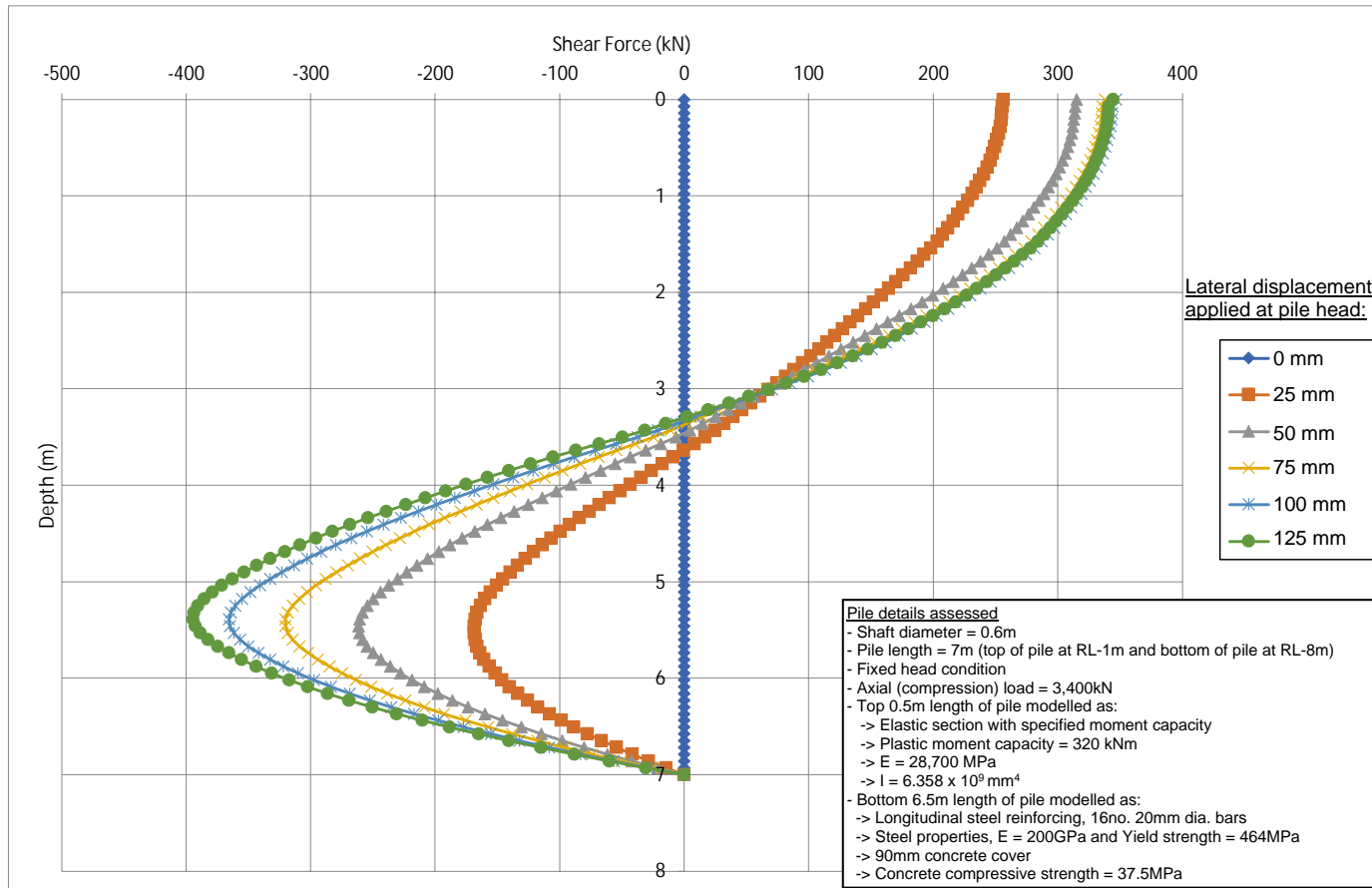
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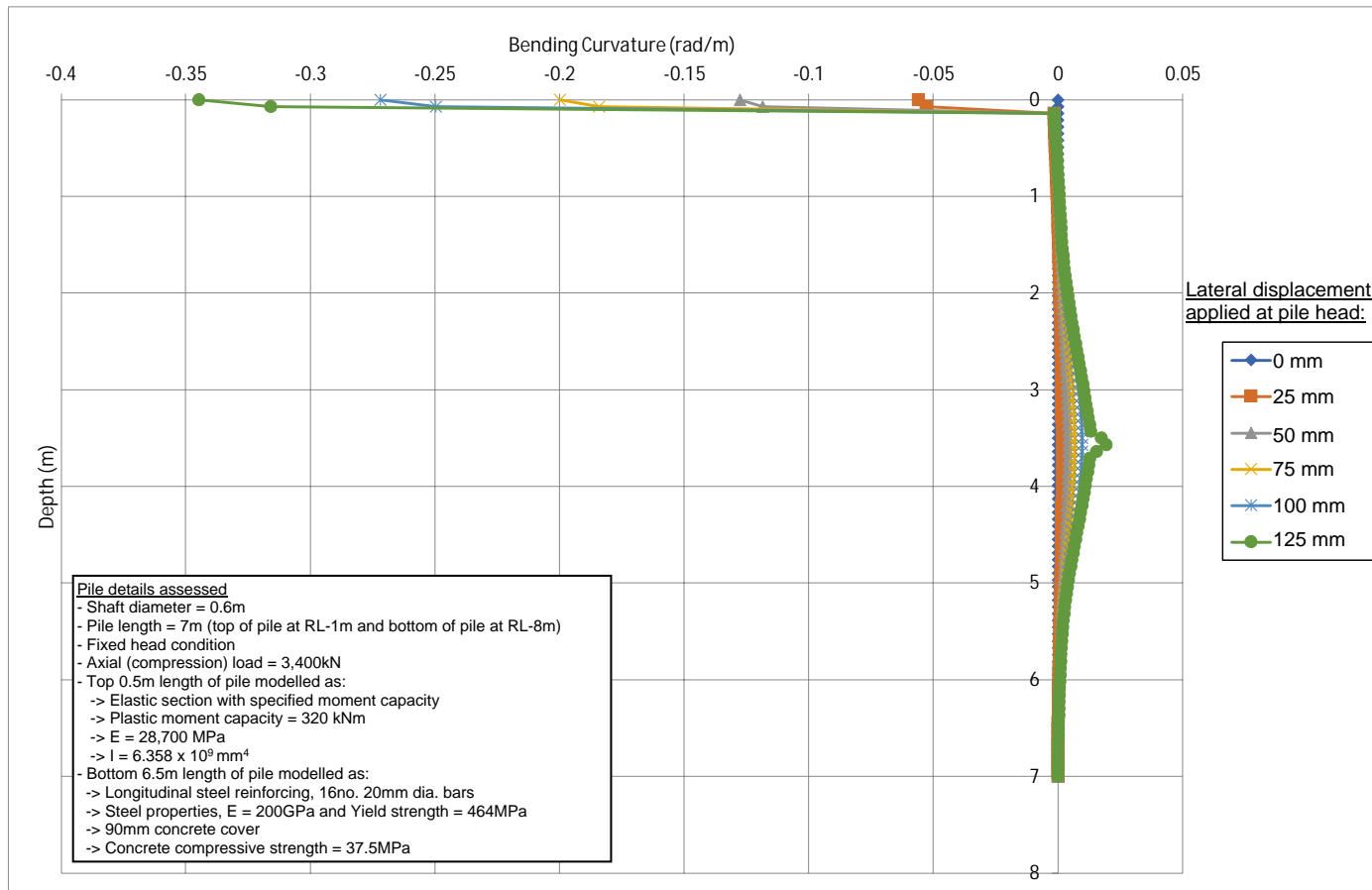
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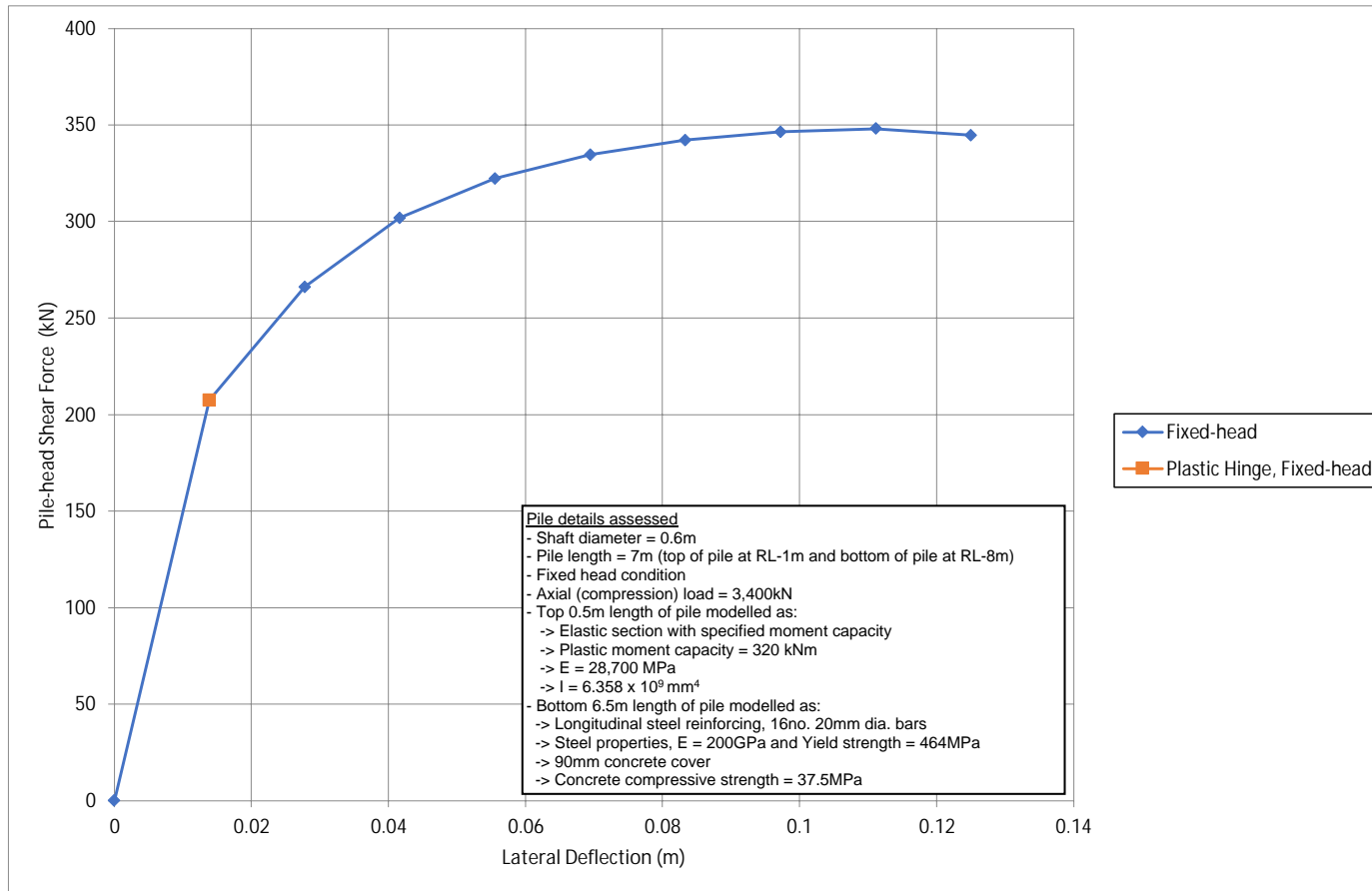
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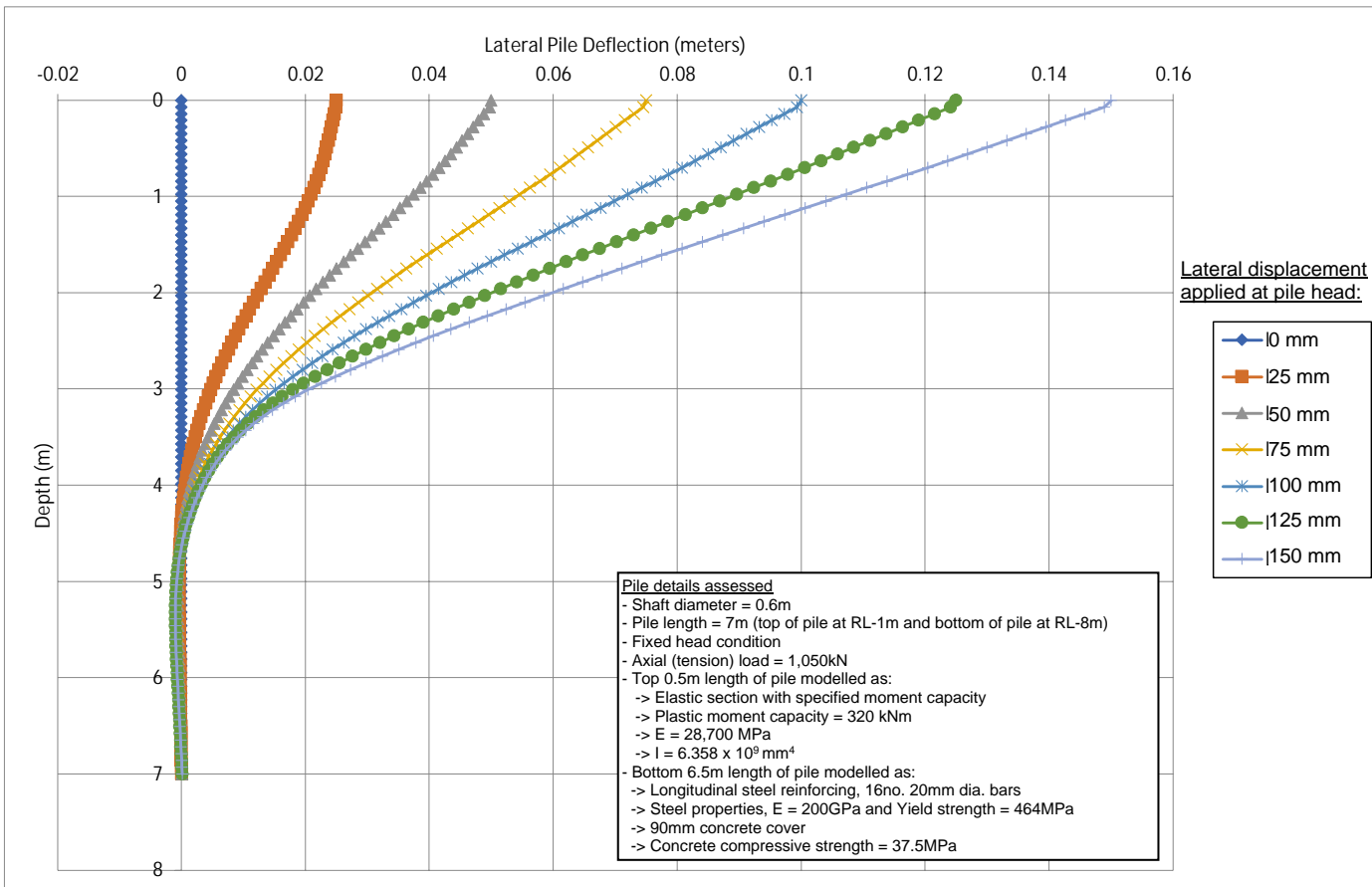
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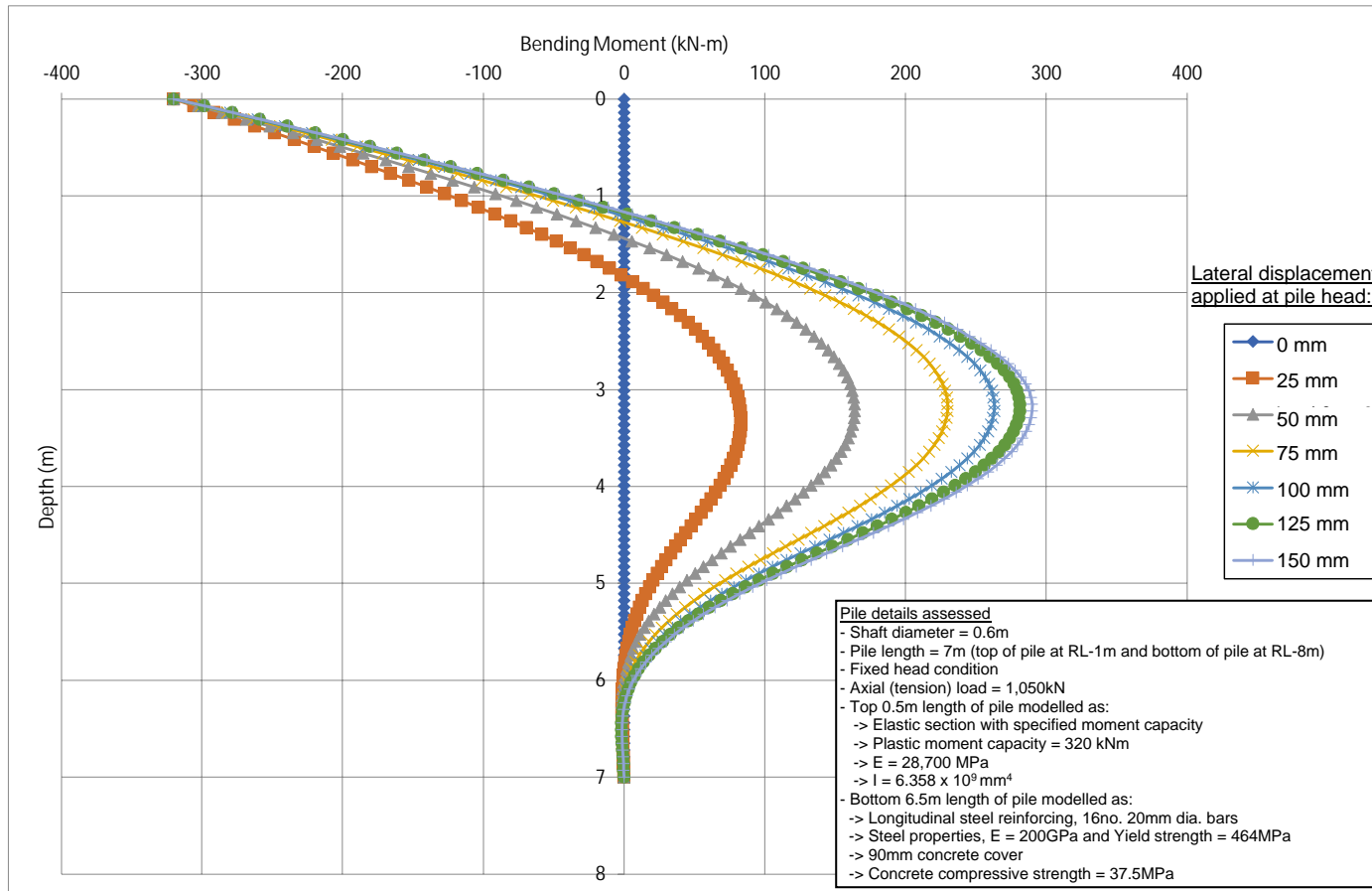
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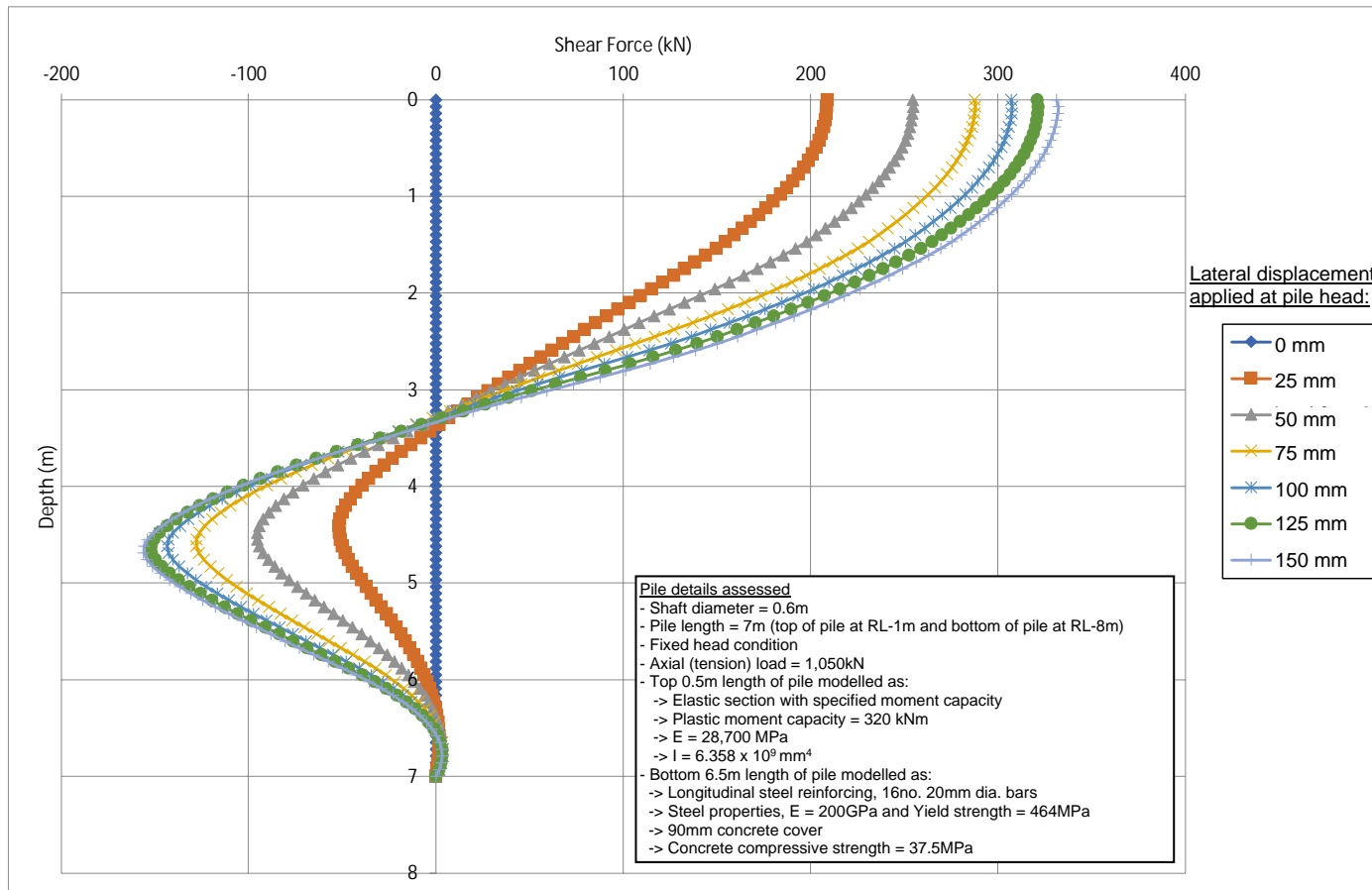
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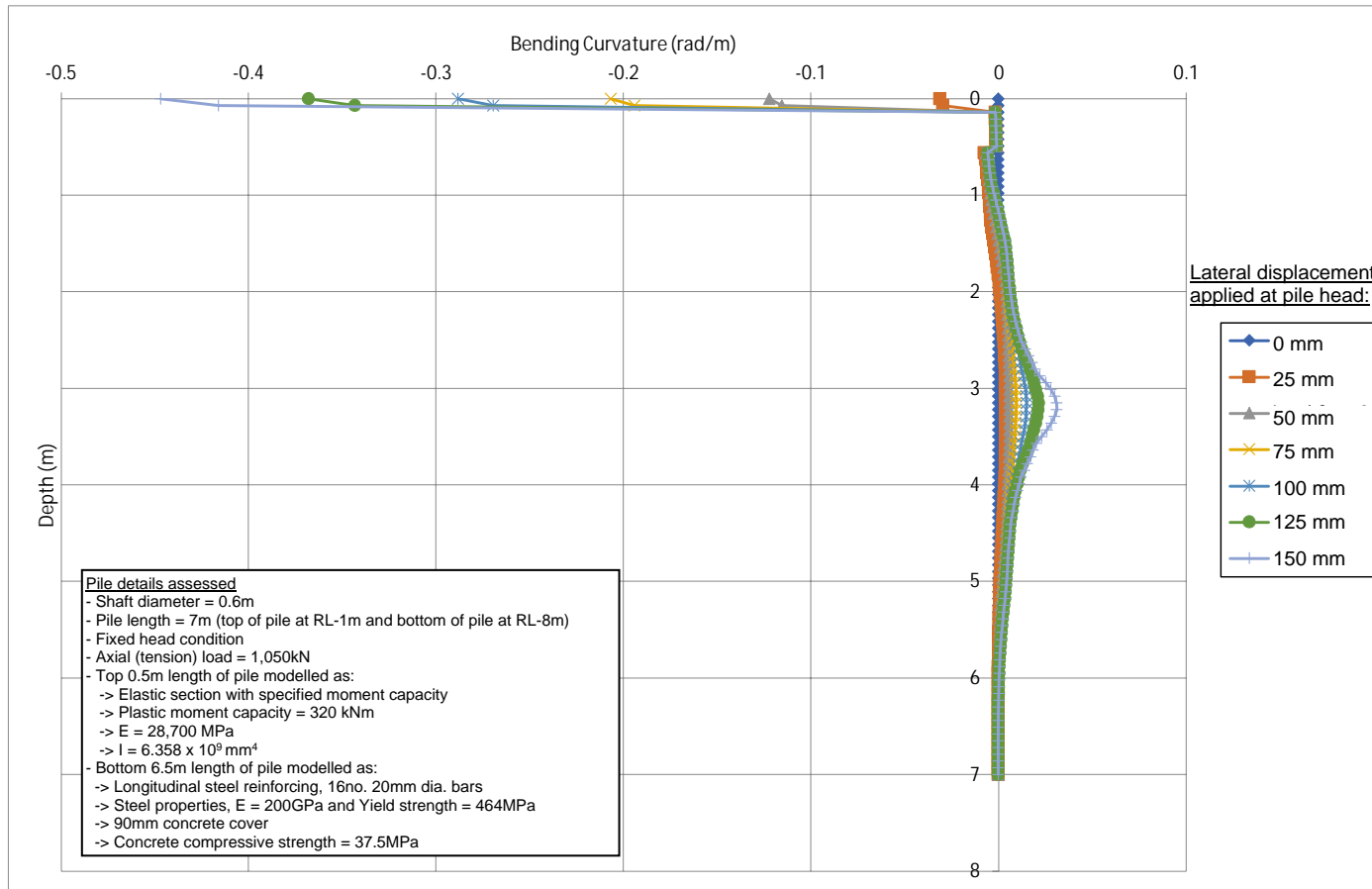
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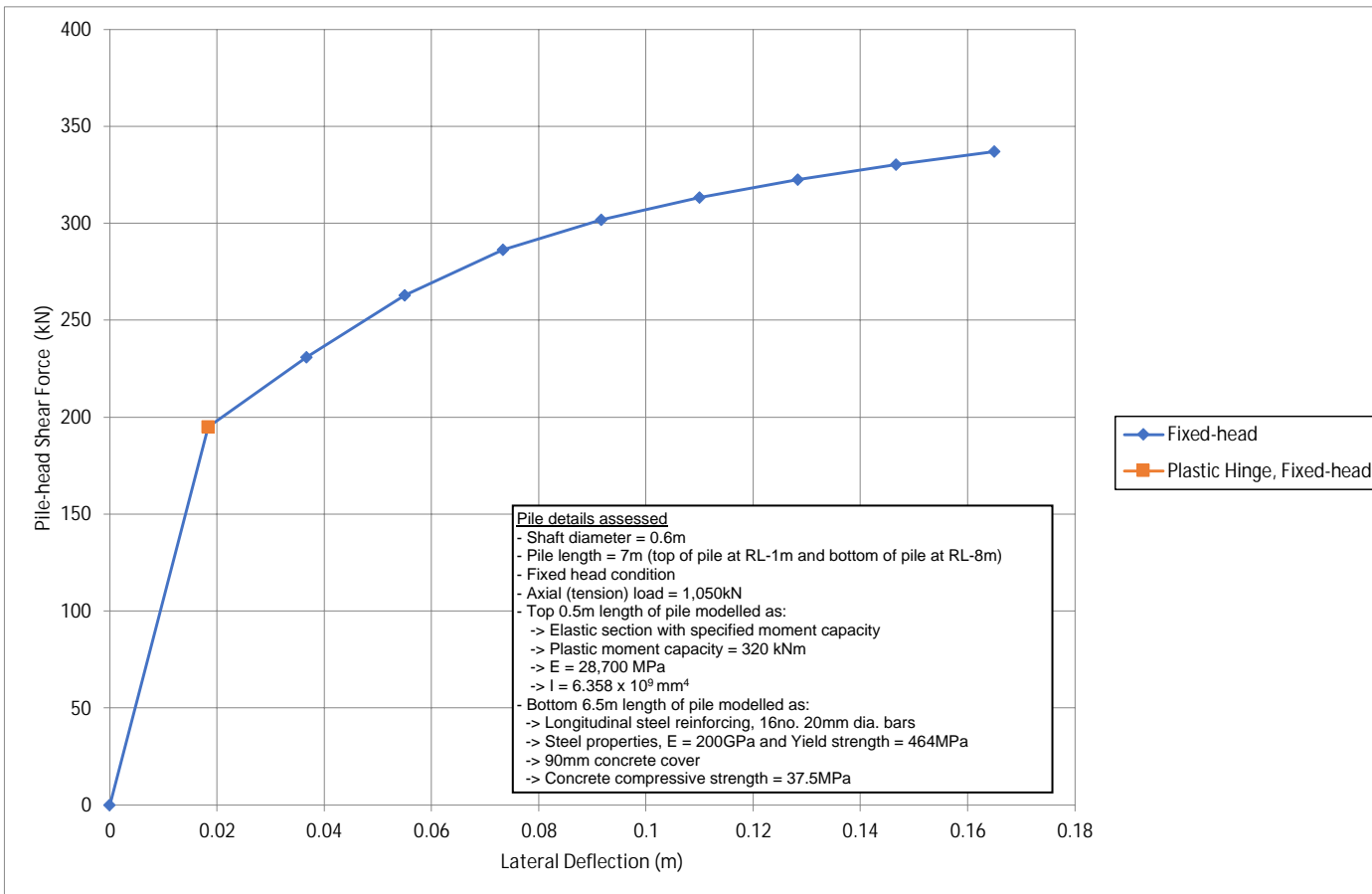
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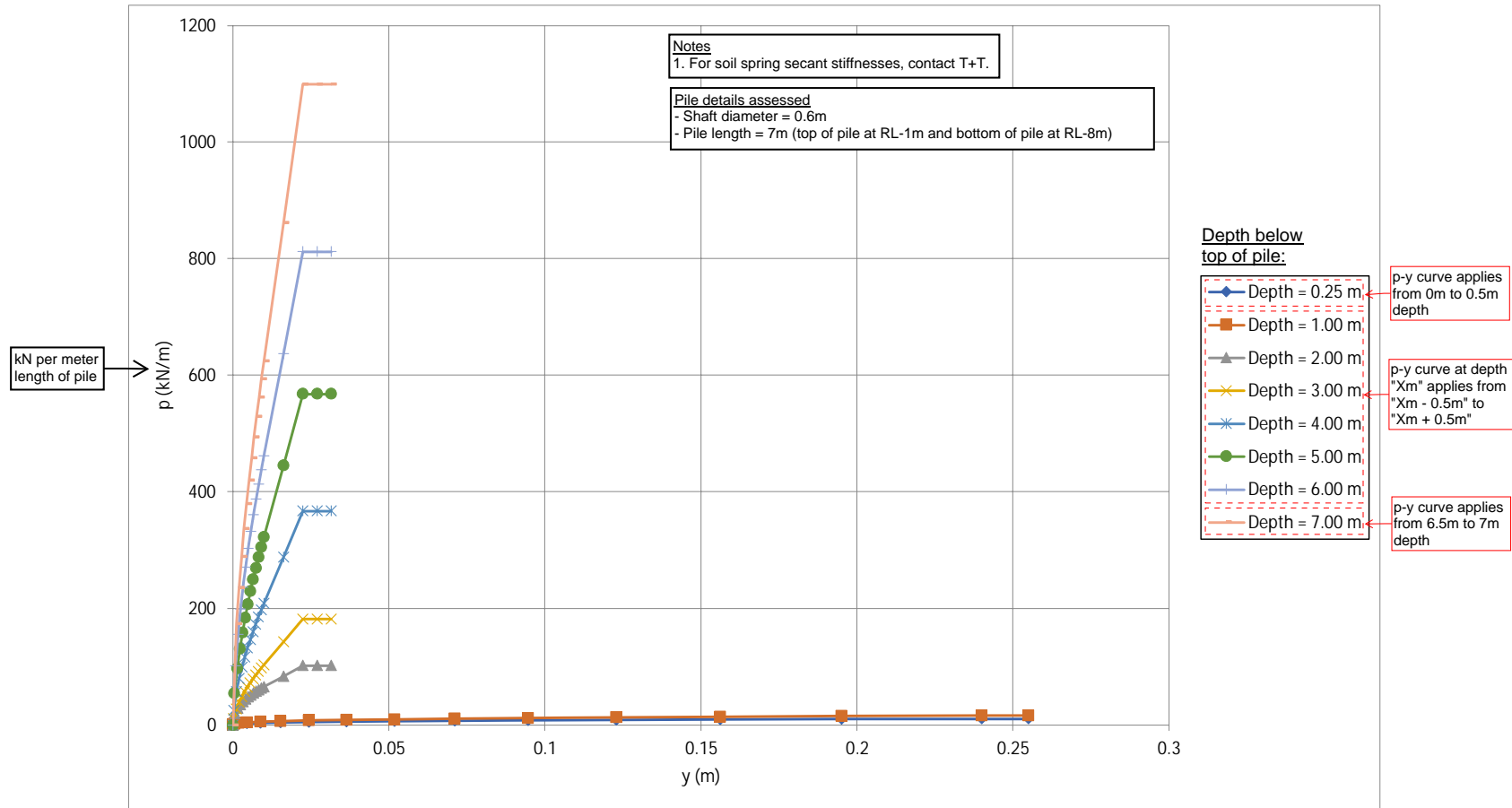
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Te Ngakau Civic Precinct
Wellington City Council
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15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 2 (Liquefaction triggered, no lateral ground movement)

Soil p-y curves



Prepared by: ANRO
Checked by: BHR

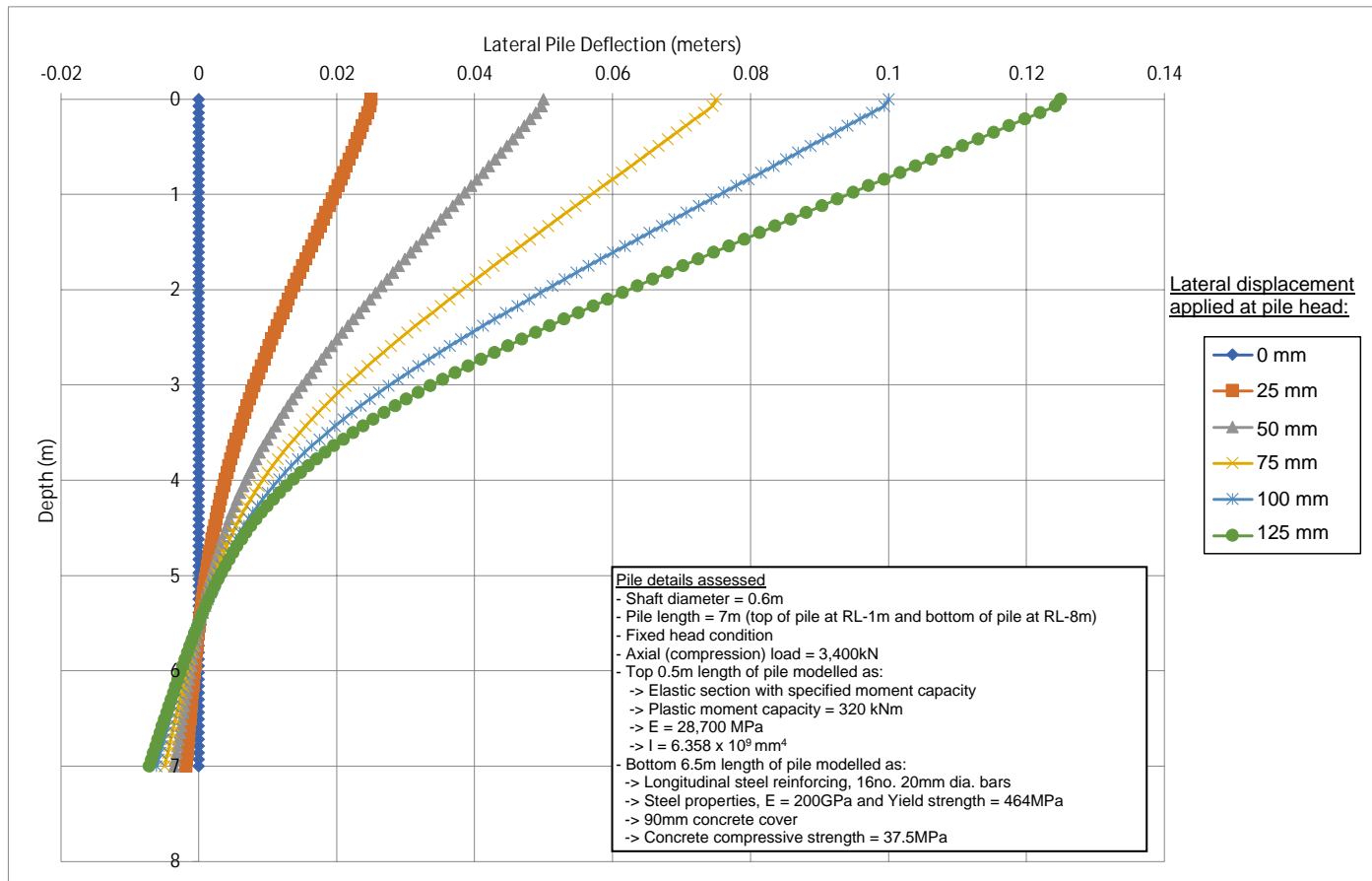
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Wellington City Council
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15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 2 (Liquefaction triggered, no lateral ground movement)

Pile Axial Load: Compression



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Checked by: BHR

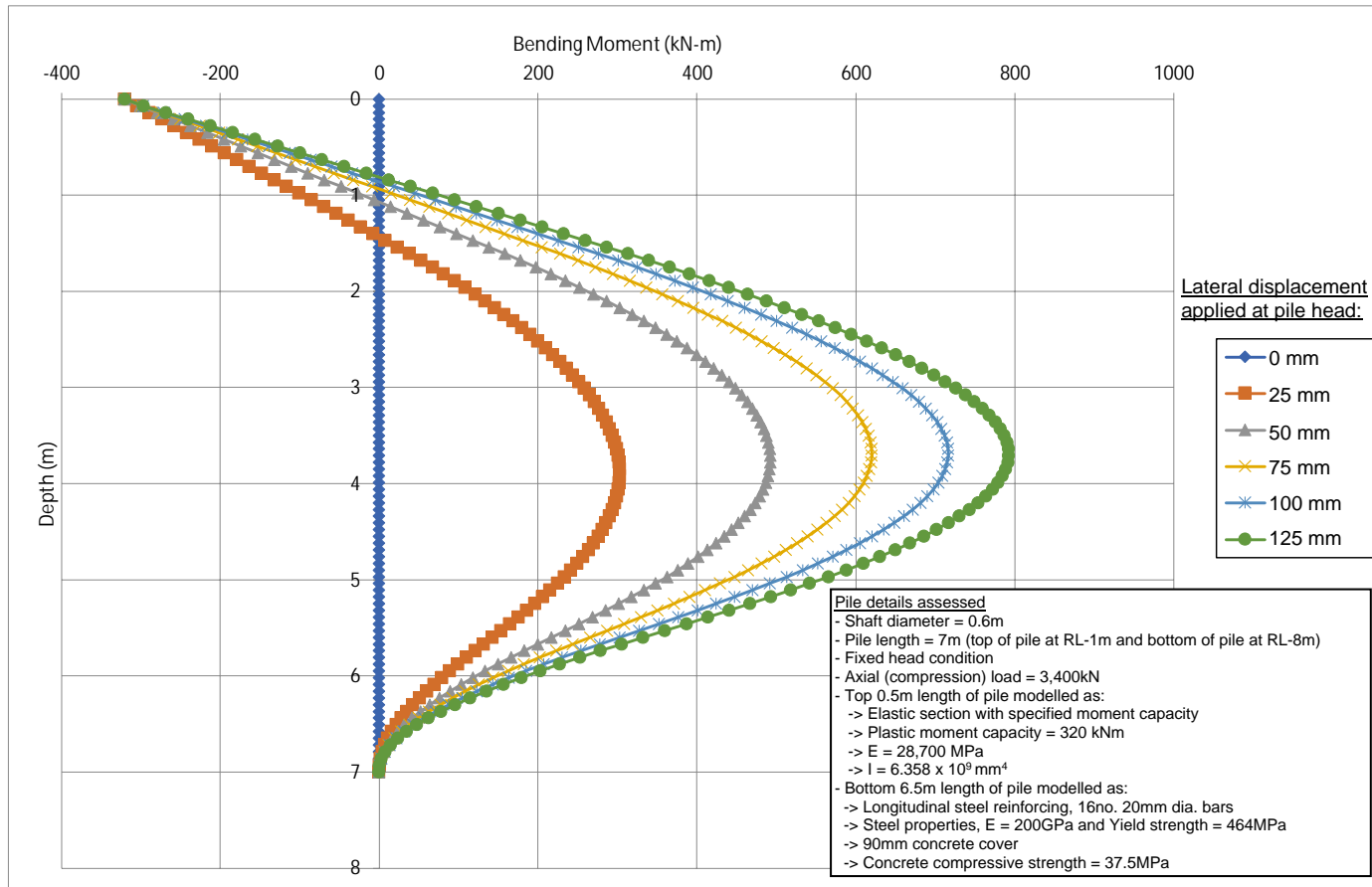
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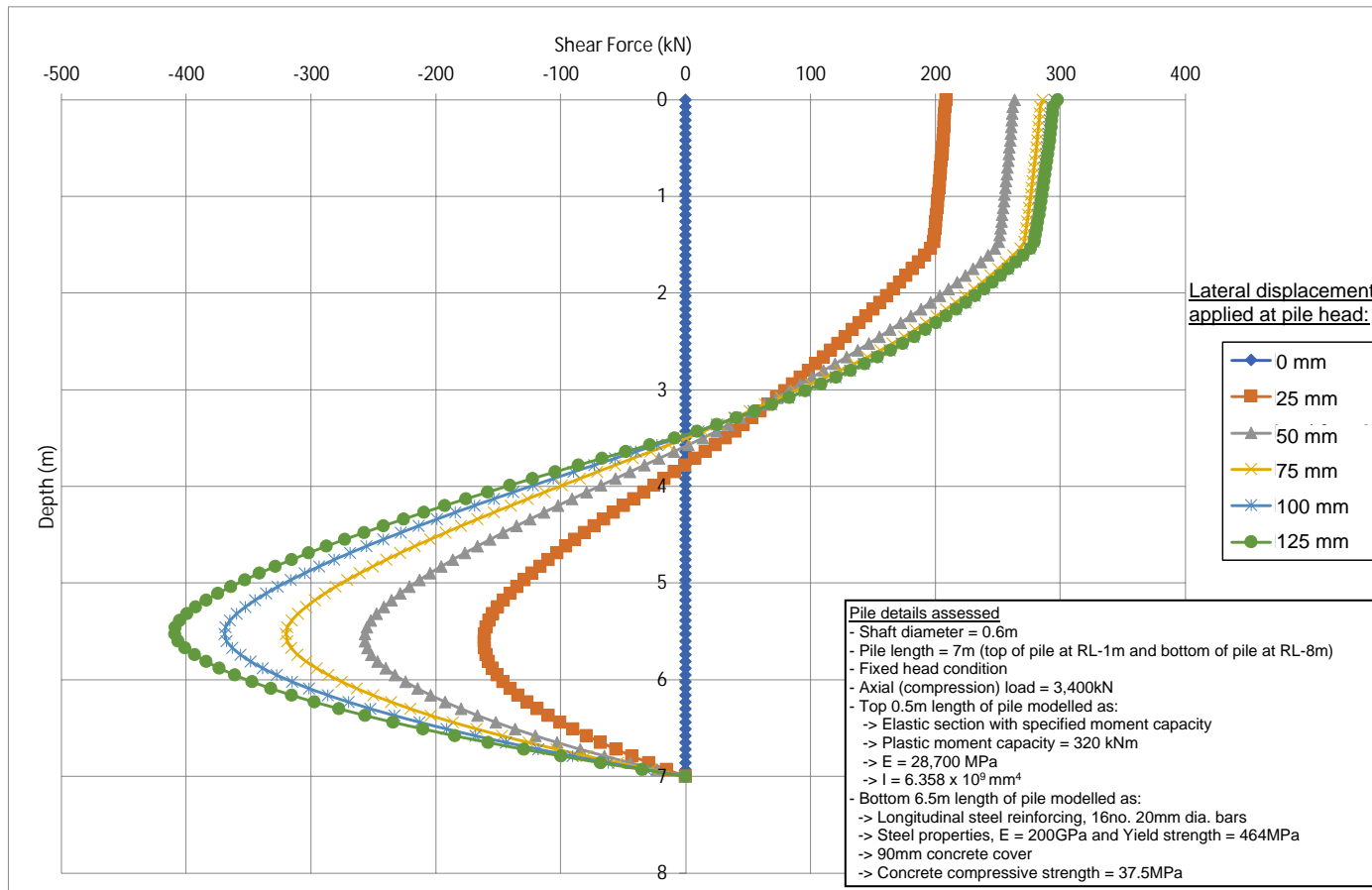
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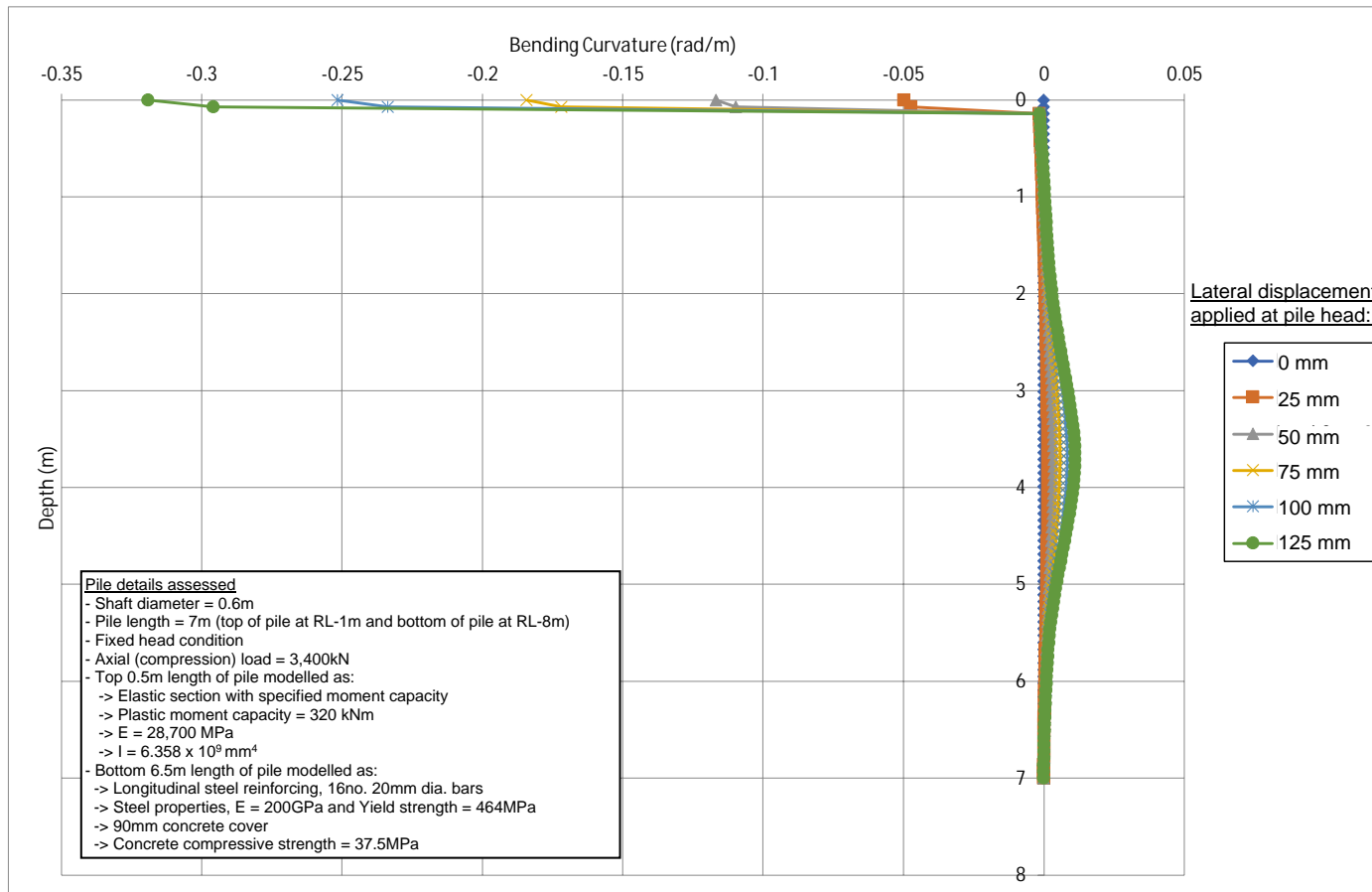
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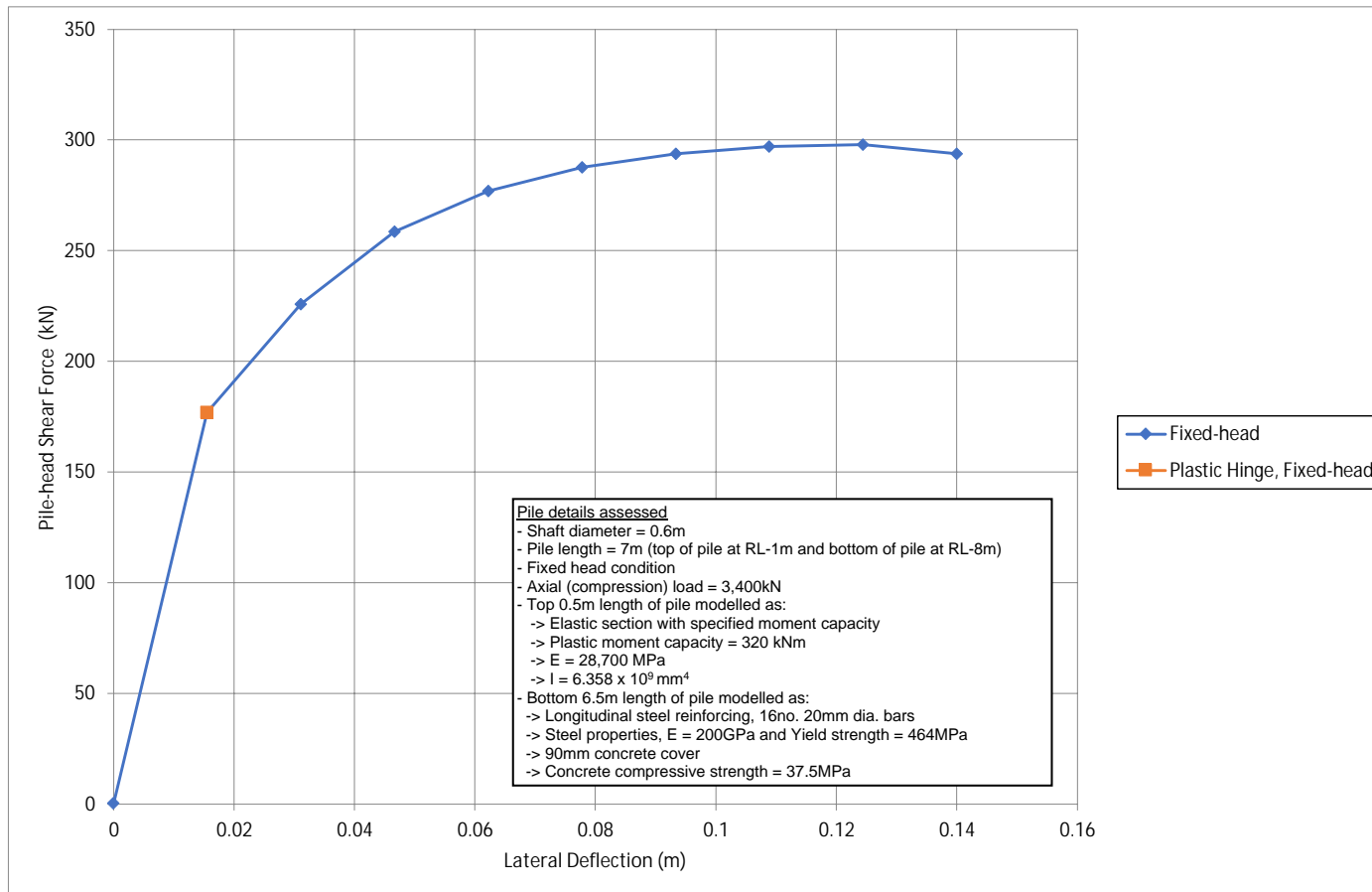
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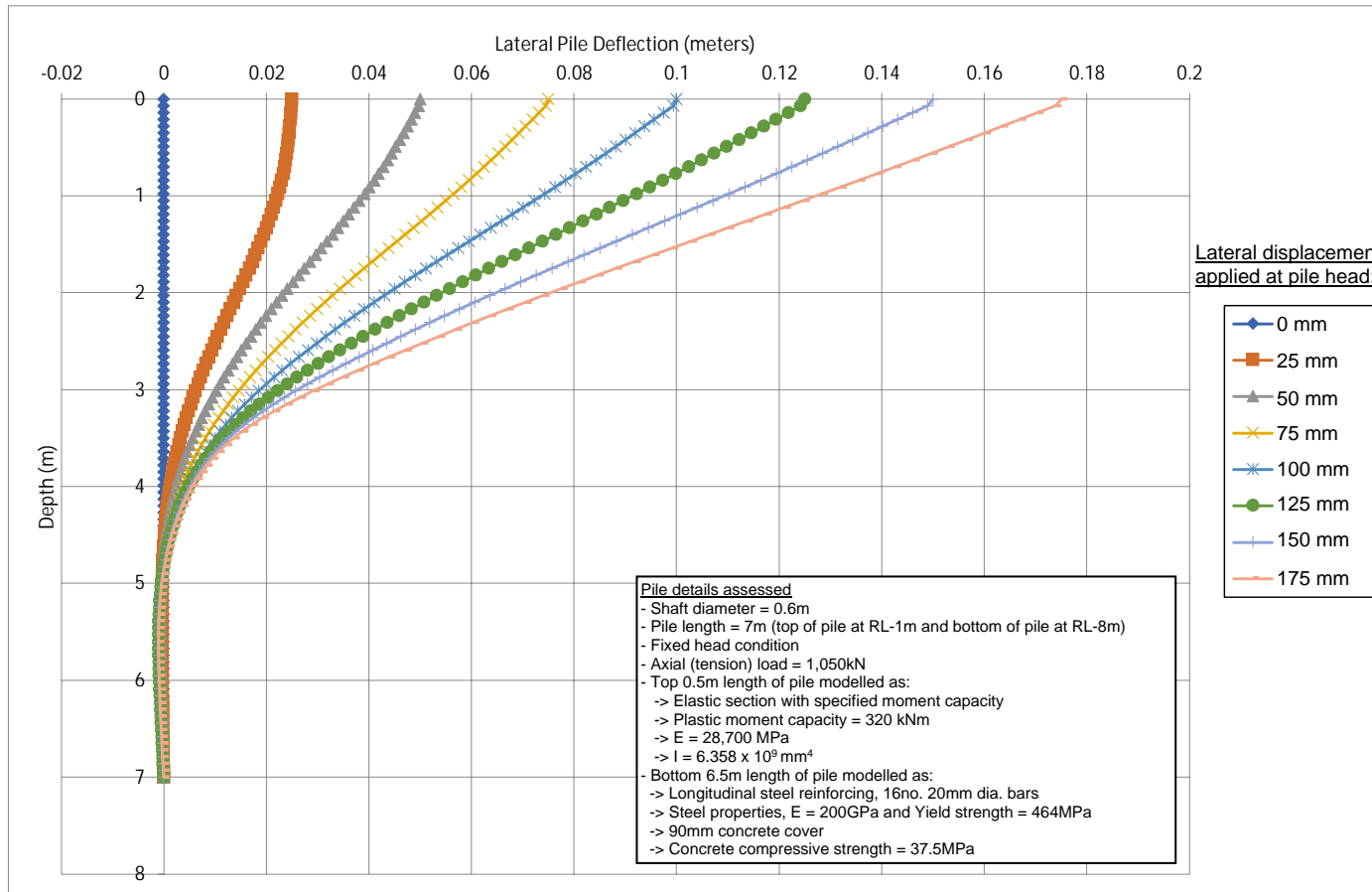
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Pile Axial Load: Tension



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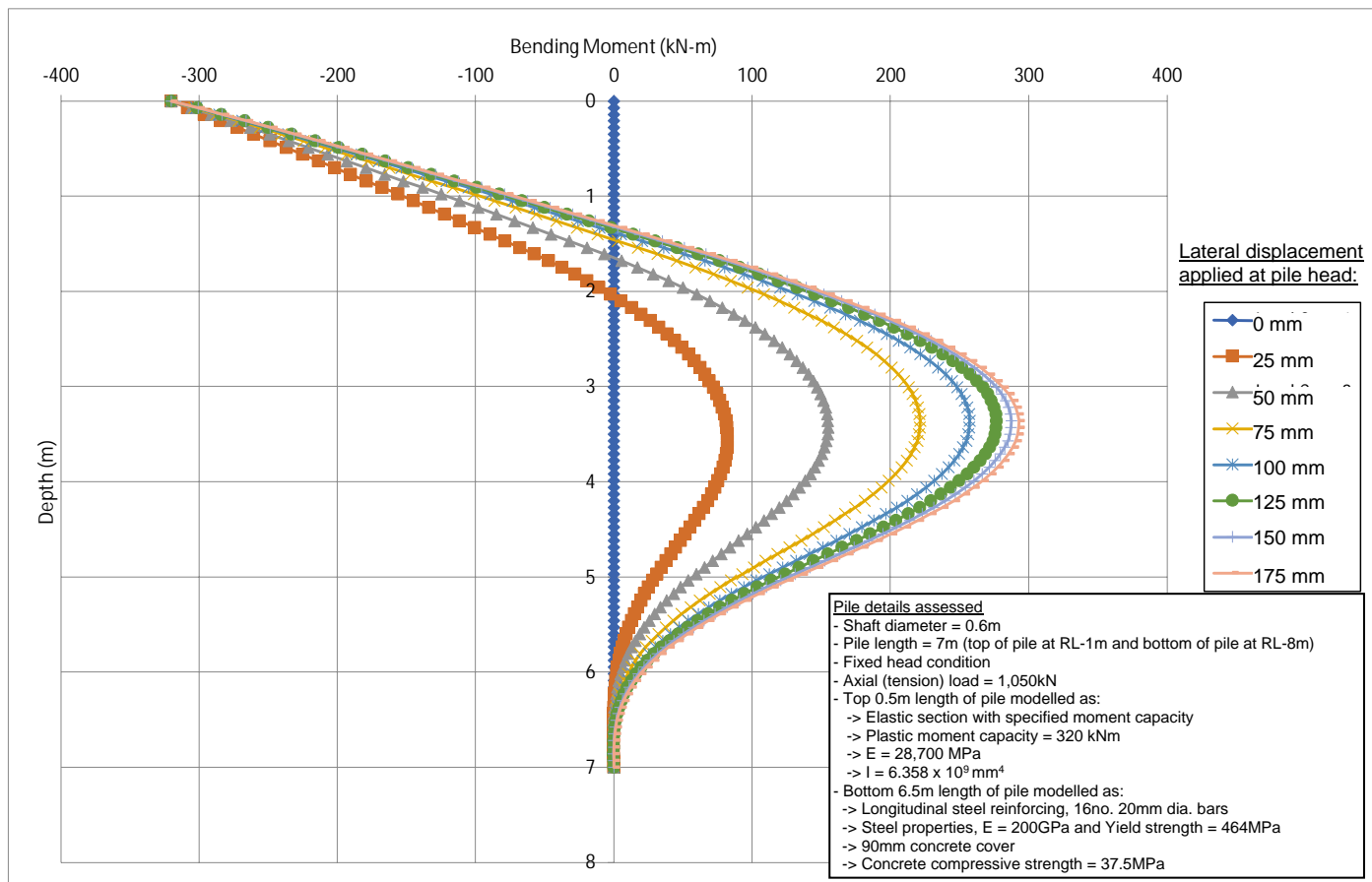
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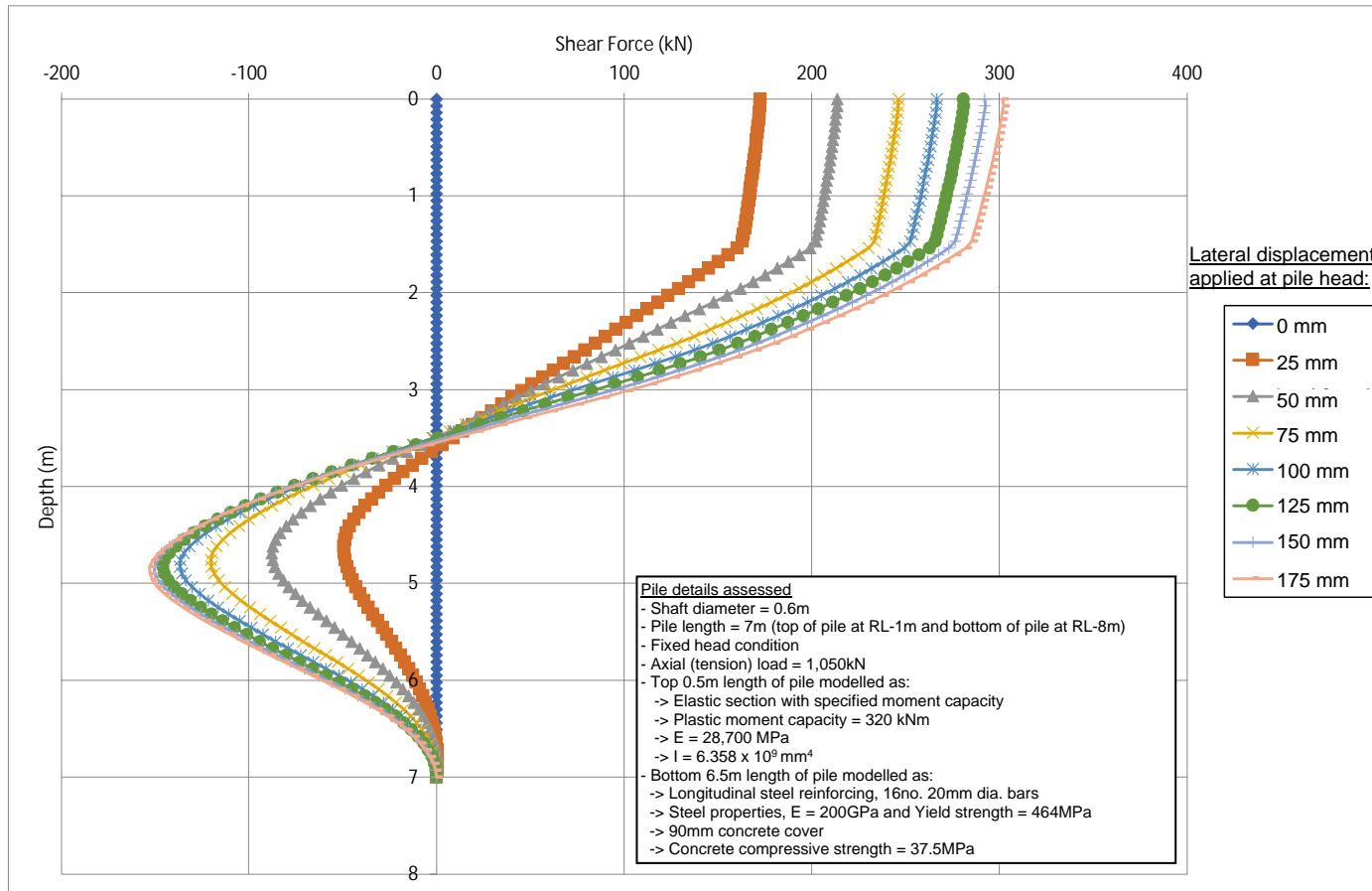
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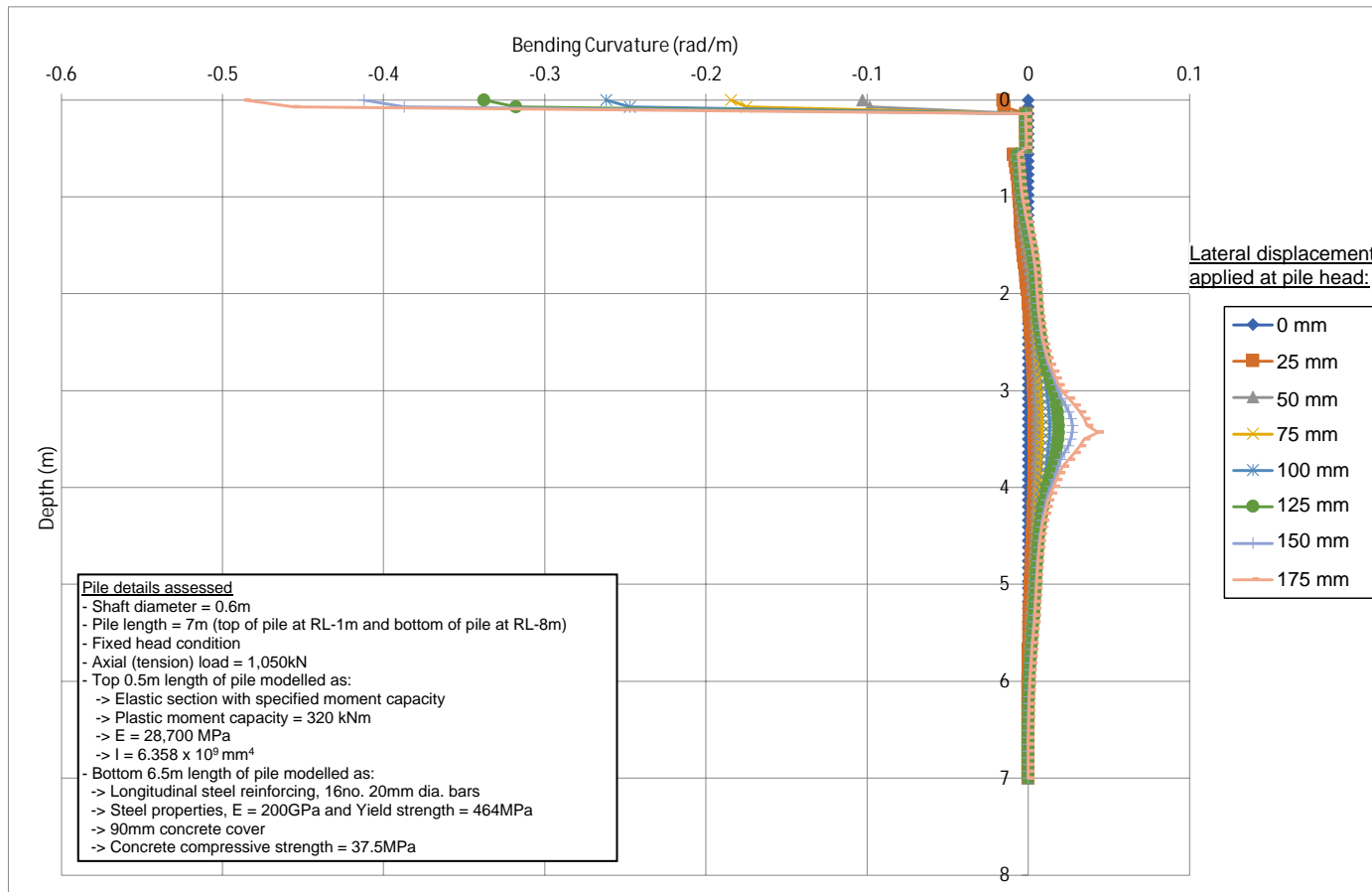
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Geotechnical Case 2 (Liquefaction triggered, no lateral ground movement)

Pile Axial Load: Tension



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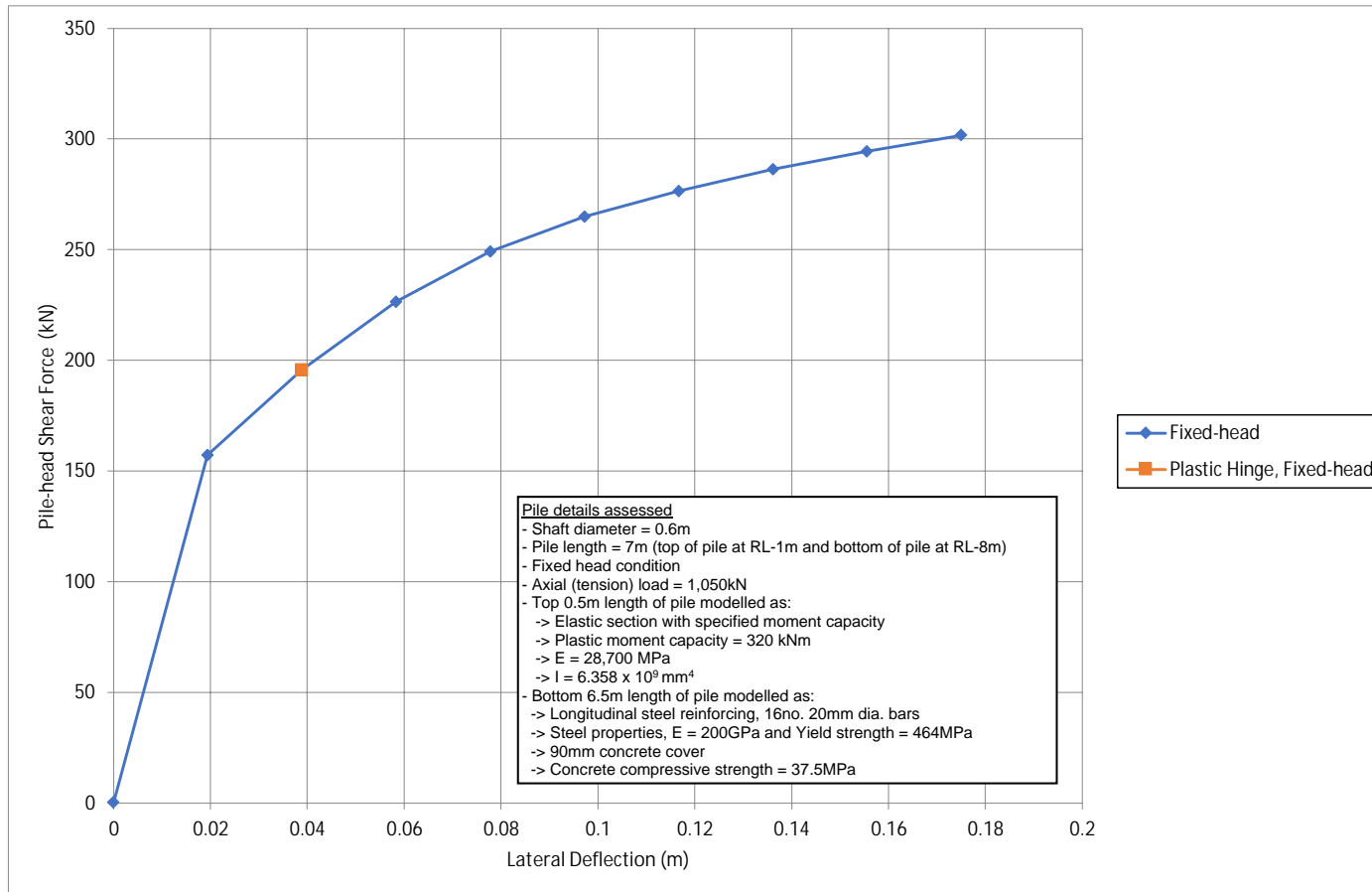
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Geotechnical Case 2 (Liquefaction triggered, no lateral ground movement)

Pile Axial Load: Tension



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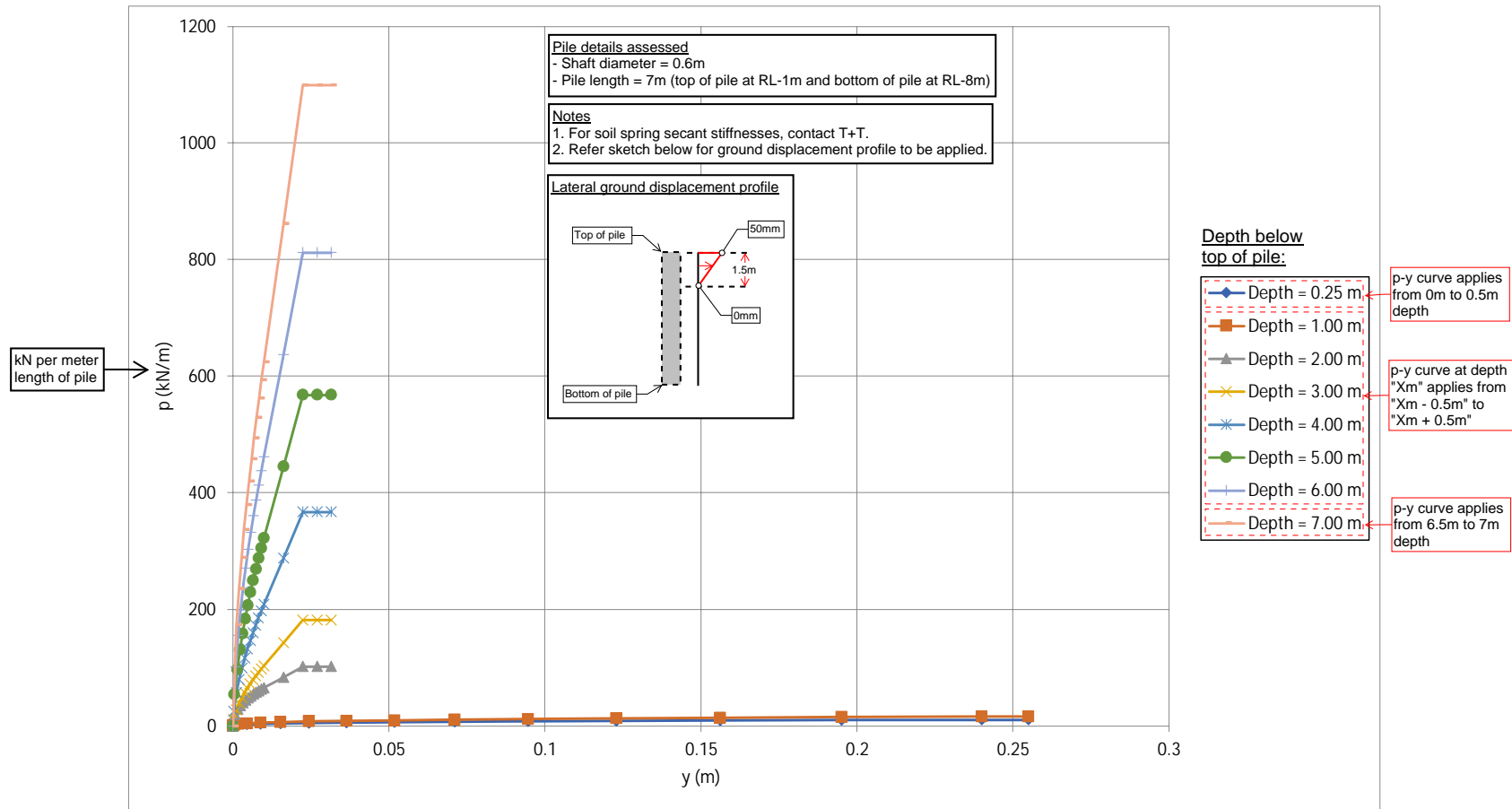
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 3 (Liquefaction with lateral cyclic ground displacement)

Soil p-y curves



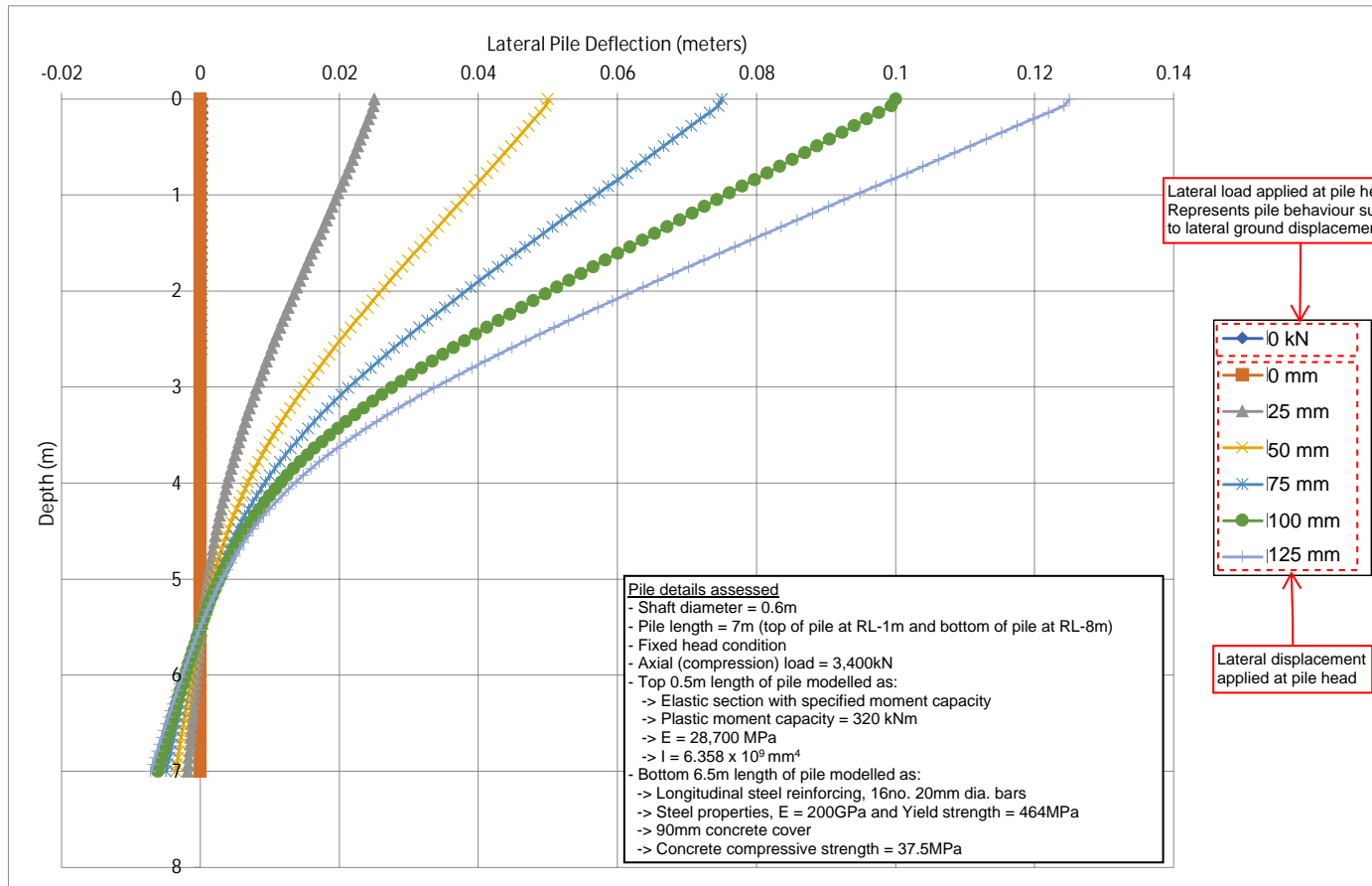
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 3 (Liquefaction with lateral cyclic ground displacement)

Pile Axial Load: Compression



Prepared by: ANRO
Checked by: BHR

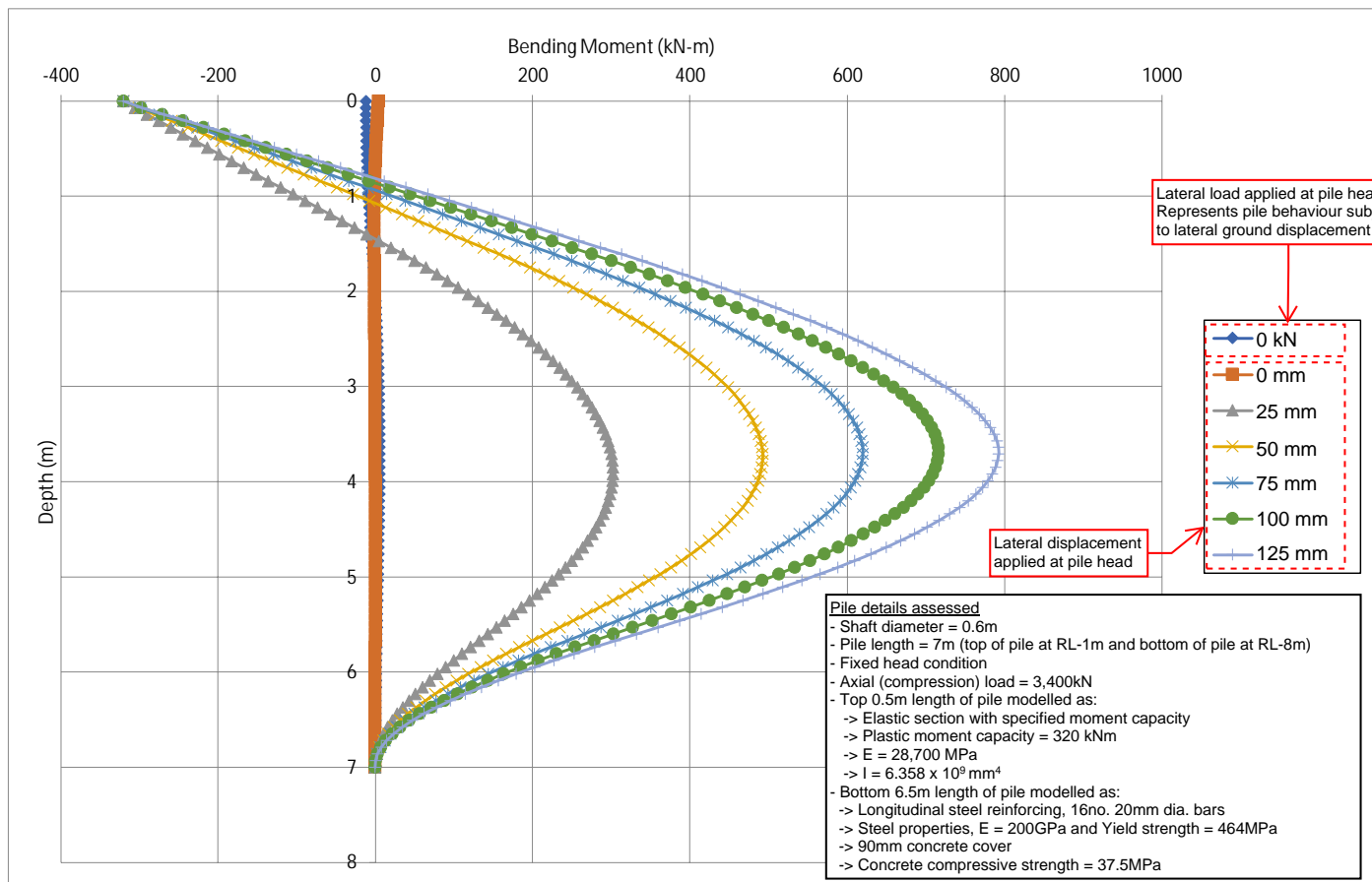
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Geotechnical Case 3 (Liquefaction with lateral cyclic ground displacement)

Pile Axial Load: Compression



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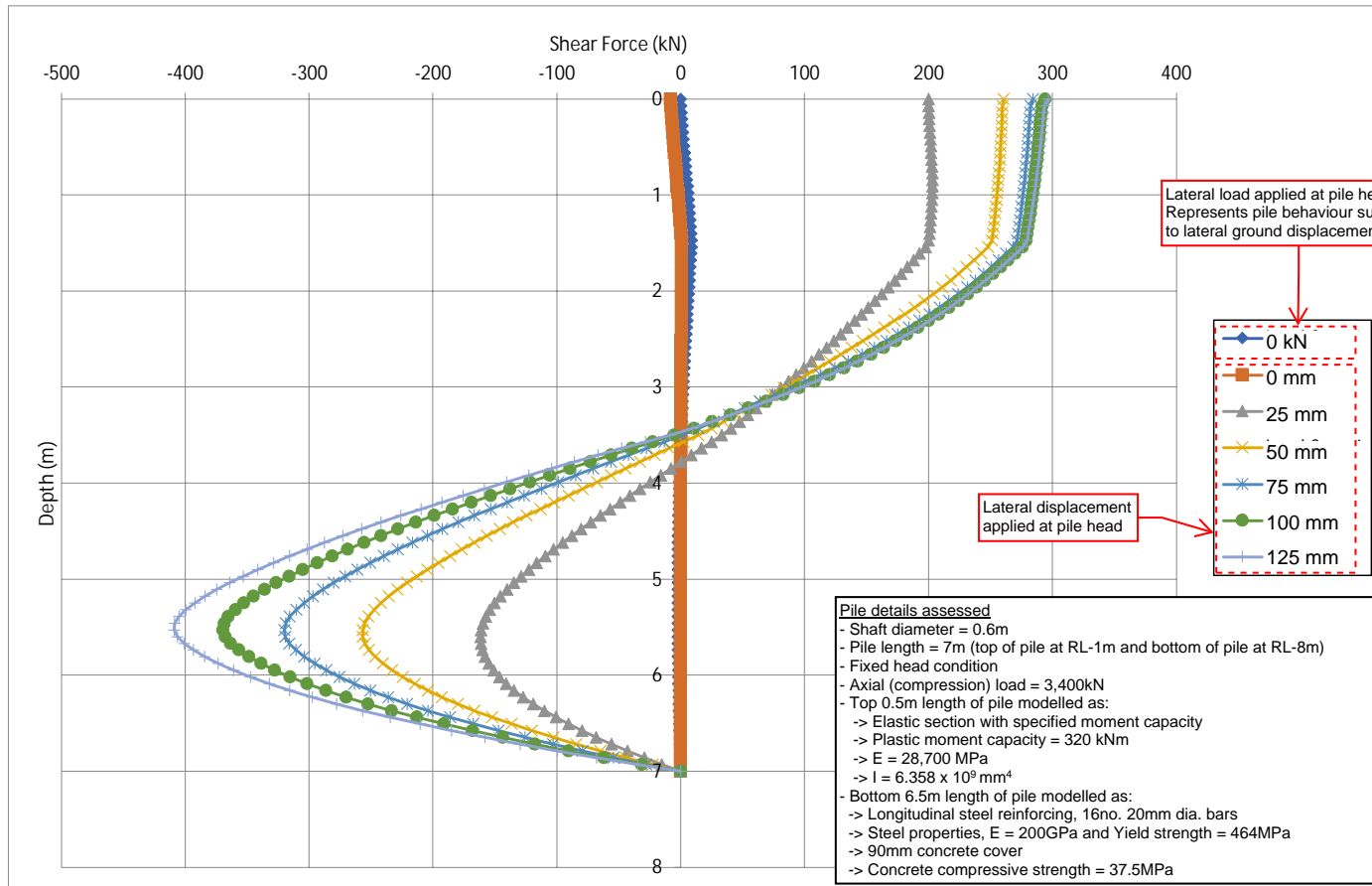
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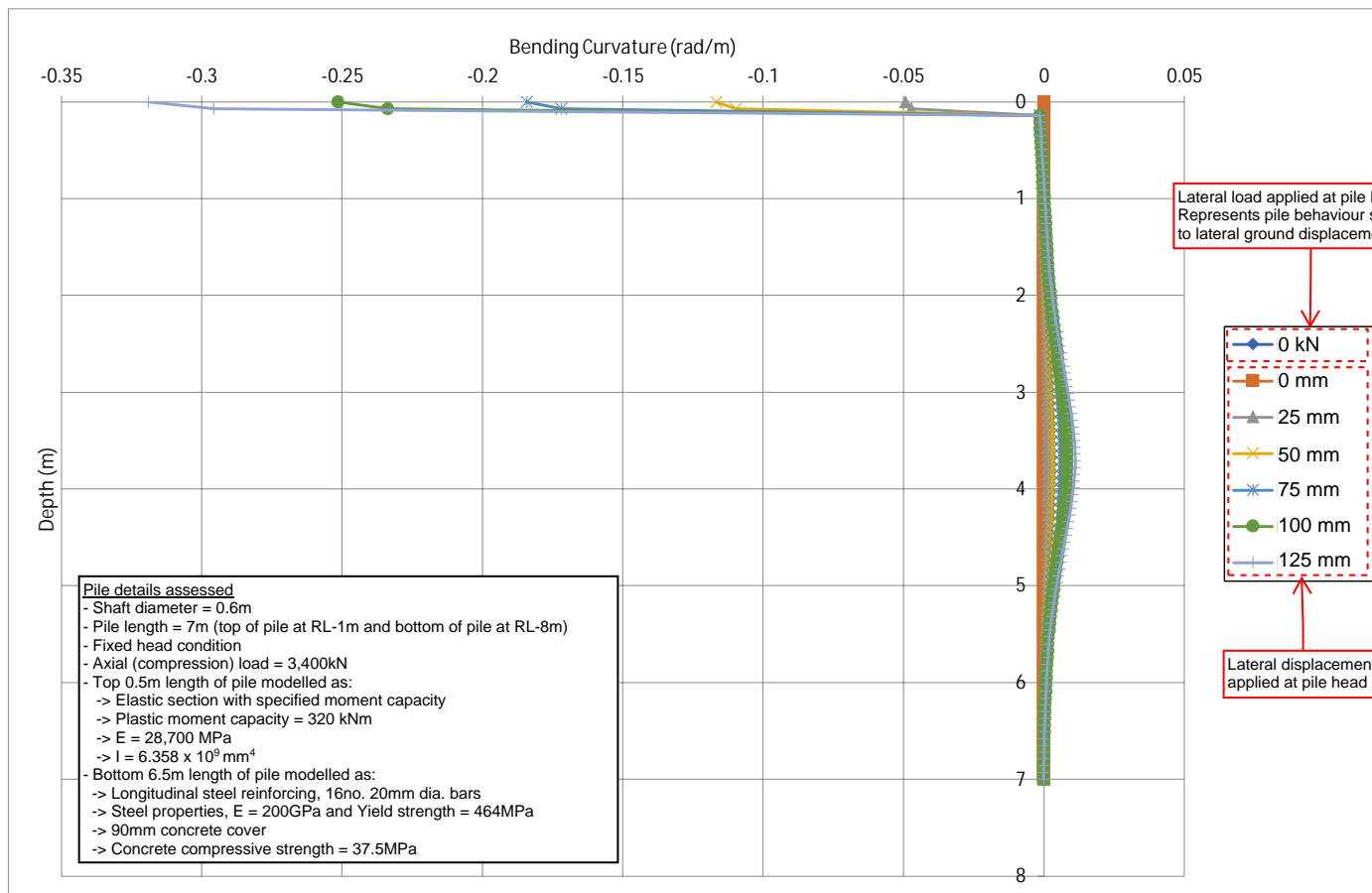
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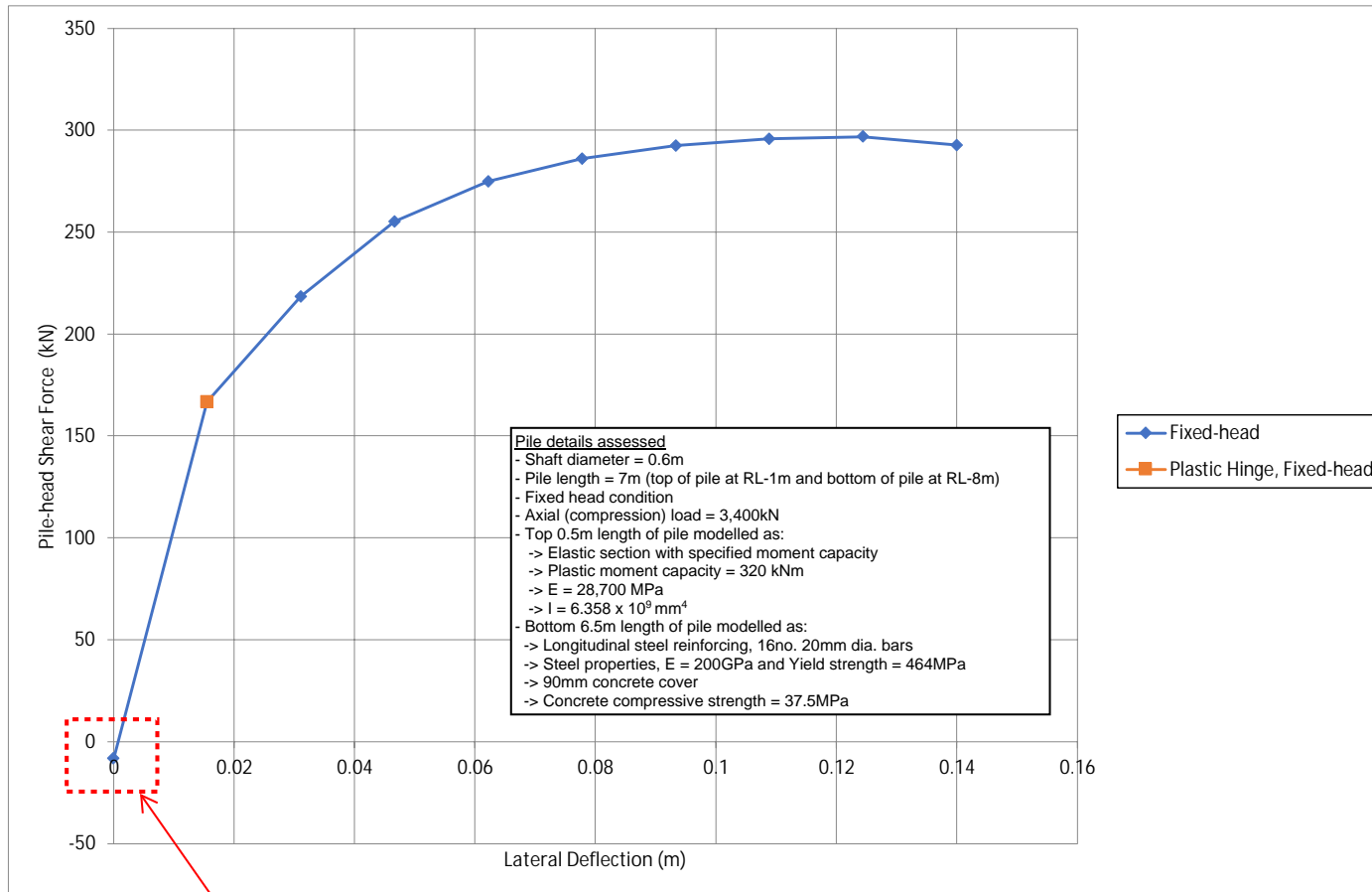
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Pile Type 2 (at ramps and walls)

Geotechnical Case 3 (Liquefaction with lateral cyclic ground displacement)

Pile Axial Load: Compression



Prepared by: ANRO
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Note 1: Force at 0mm deflection < 0kN. This represents the lateral force required to resist loads imposed lateral ground displacement, i.e. to restore the pile head back to 0mm.

Note 2: At Force = 0 kN, the deflection (mm) represents how much the pile head displaces subjected only to lateral ground displacement.

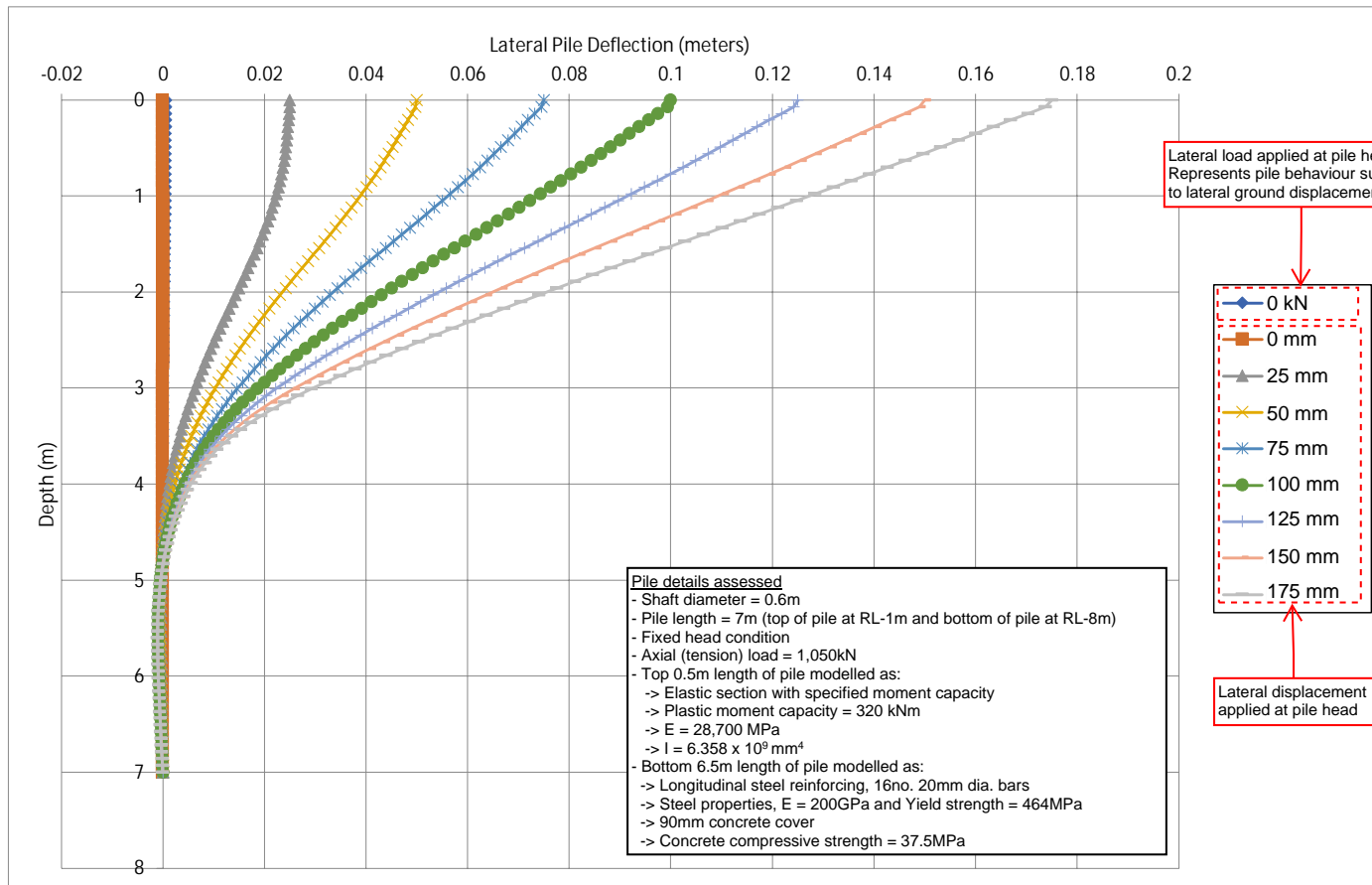
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Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 3 (Liquefaction with lateral cyclic ground displacement)

Pile Axial Load: Tension



Prepared by: ANRO
Checked by: BHR

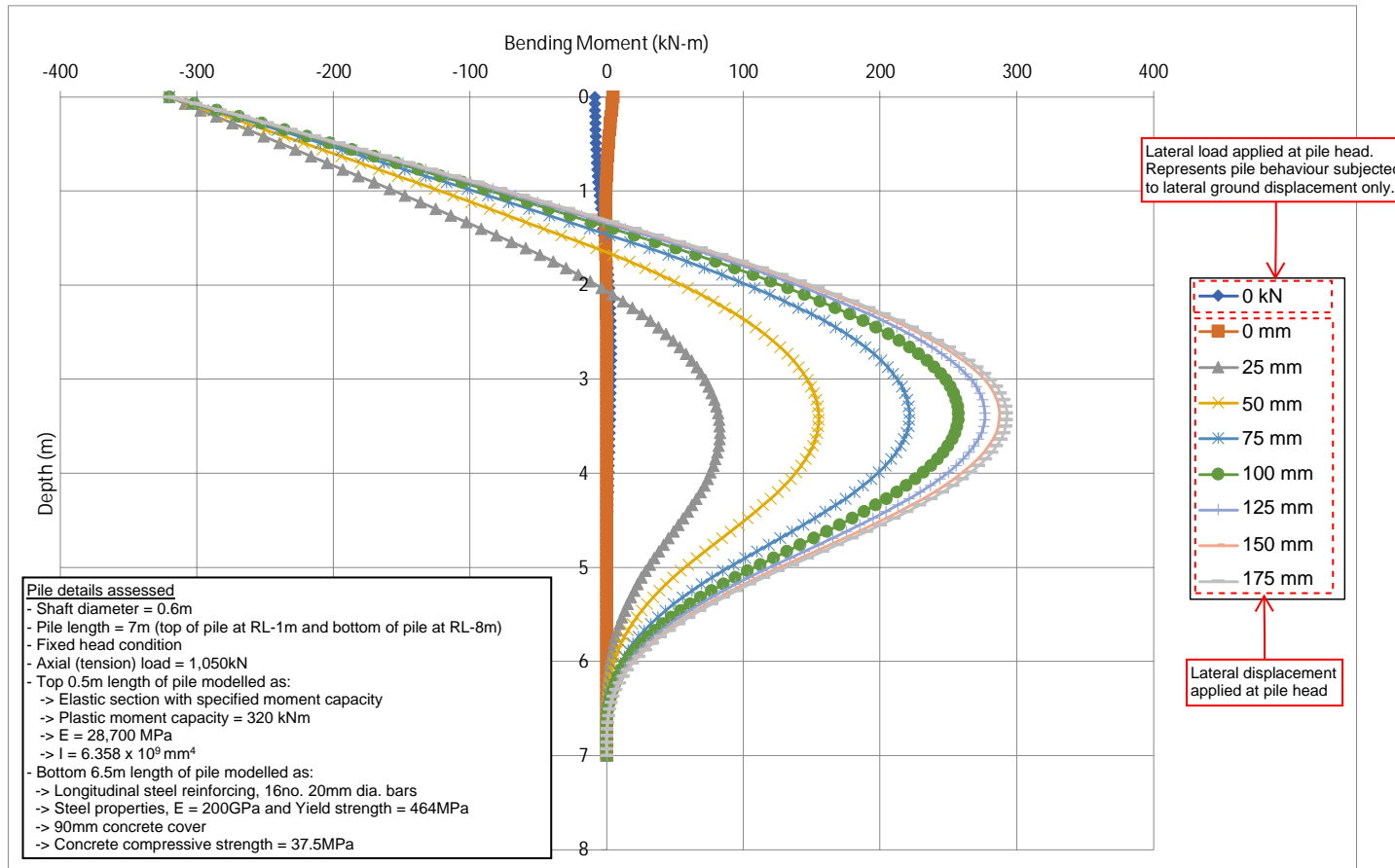
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

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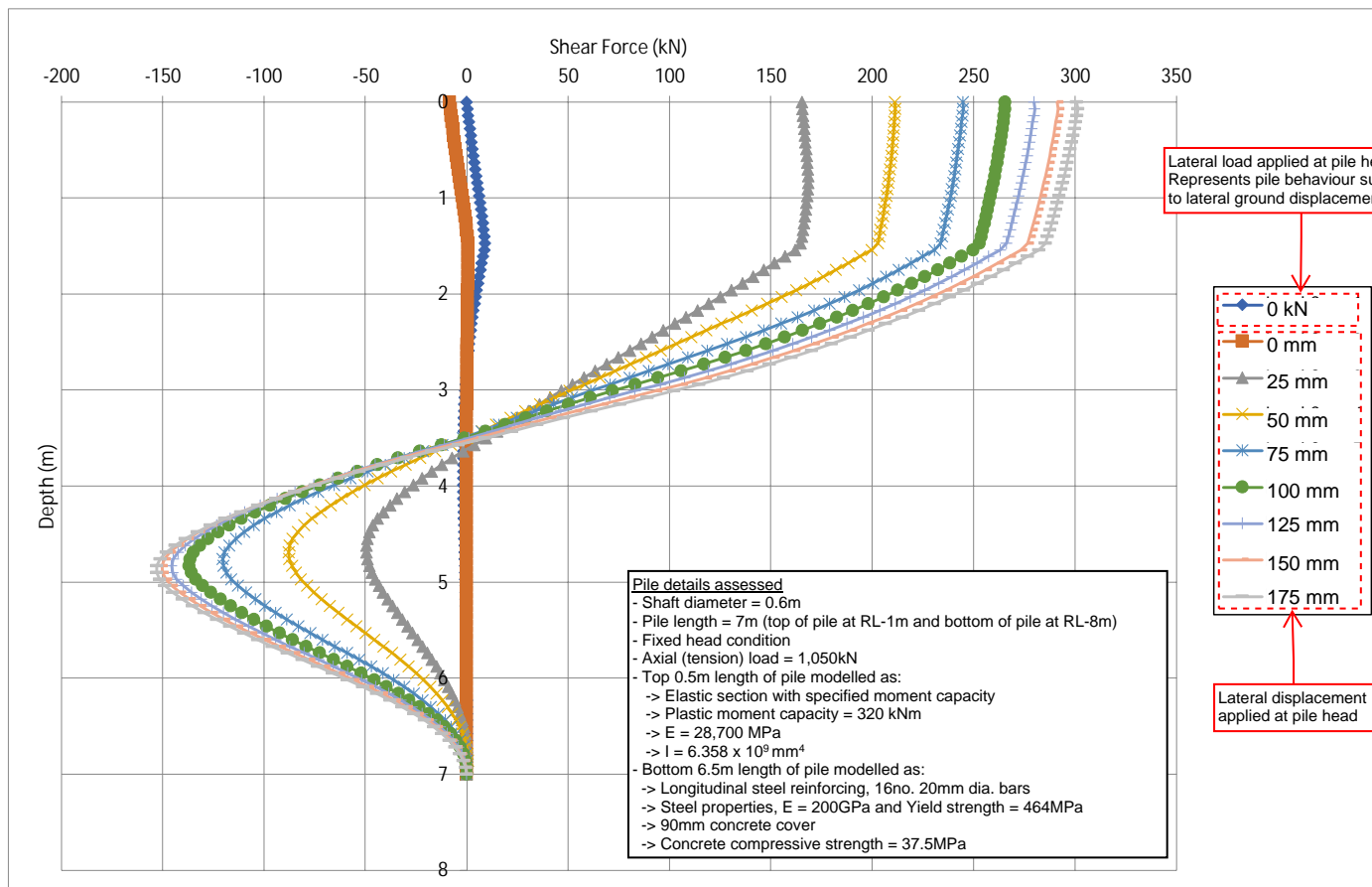
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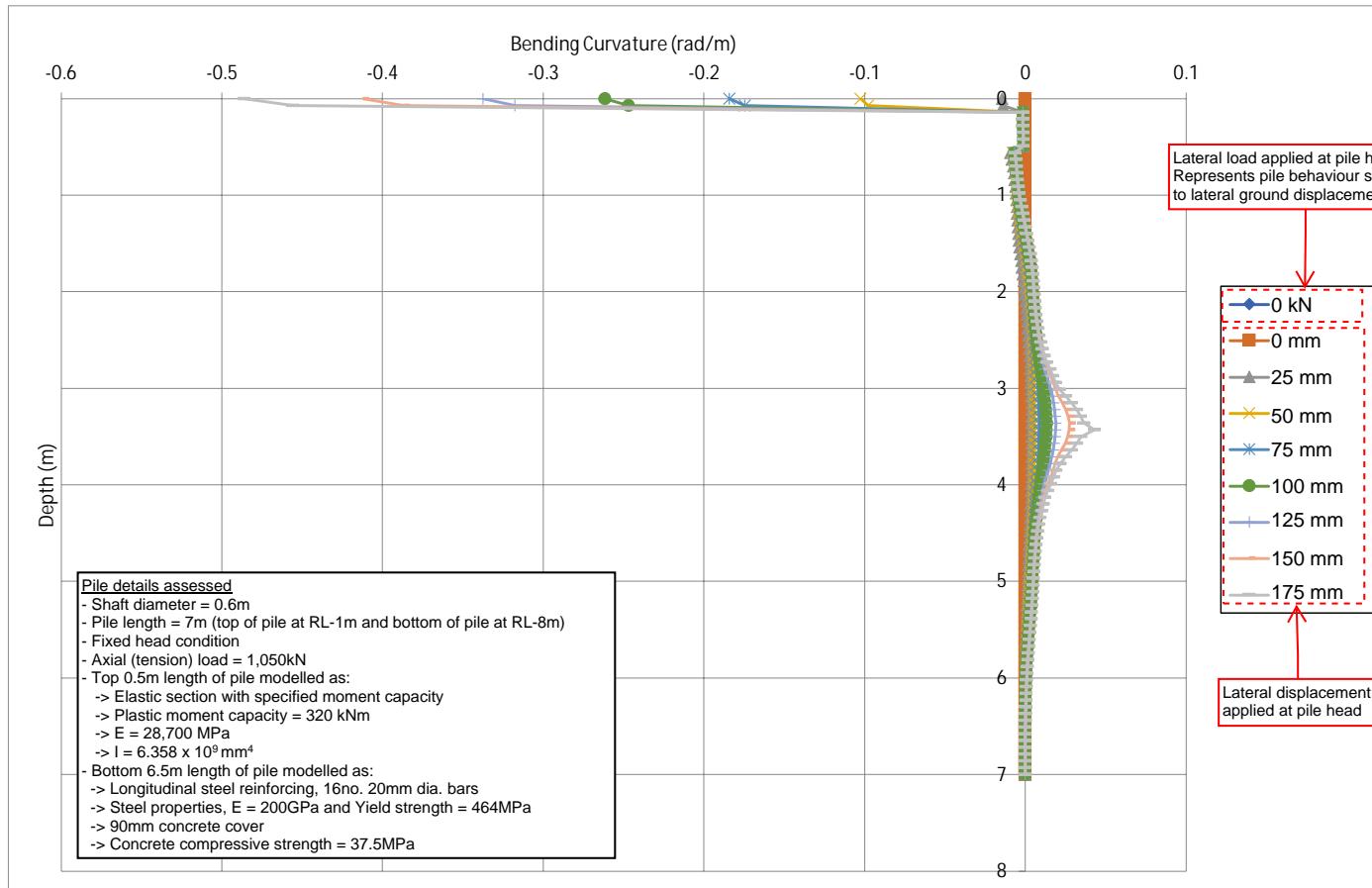
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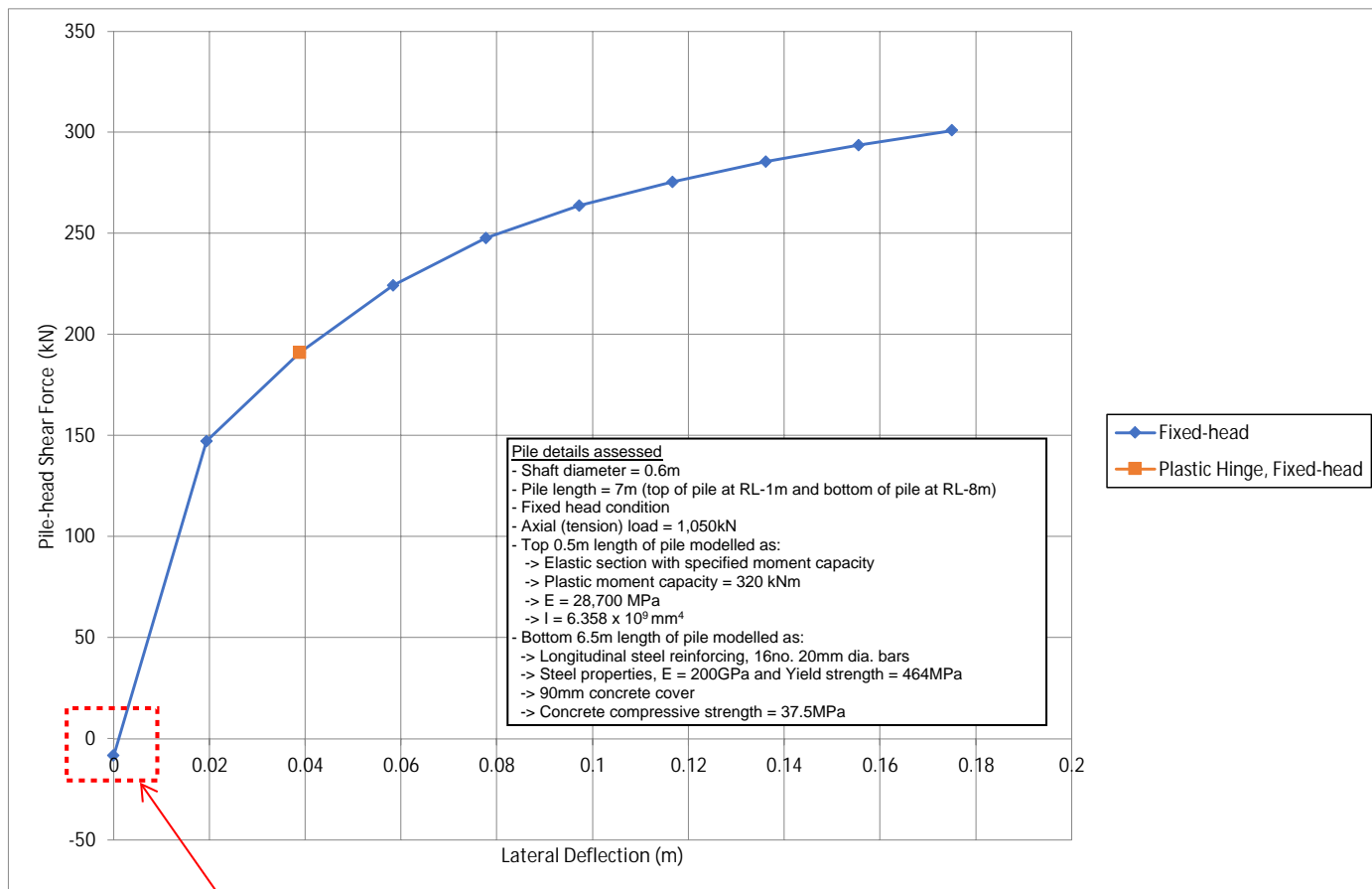
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 3 (Liquefaction with lateral cyclic ground displacement)

Pile Axial Load: Tension



Prepared by: ANRO
Checked by: BHR

Note 1: Force at 0mm deflection < 0kN. This represents the lateral force required to resist loads imposed lateral ground displacement, i.e. to restore the pile head back to 0mm.

Note 2: At Force = 0 kN, the deflection (mm) represents how much the pile head displaces subjected only to lateral ground displacement.

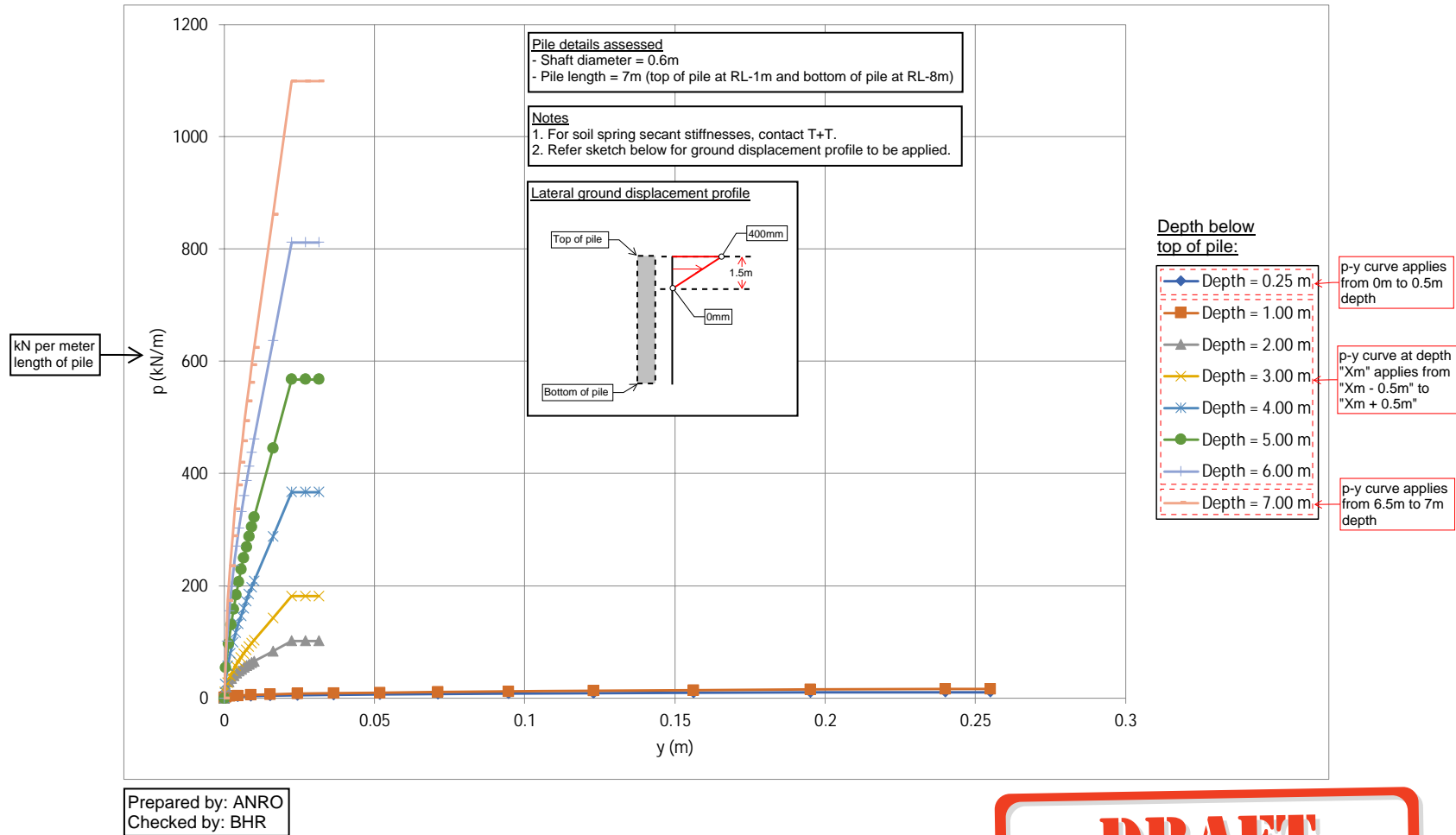
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Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

Soil p-y curves



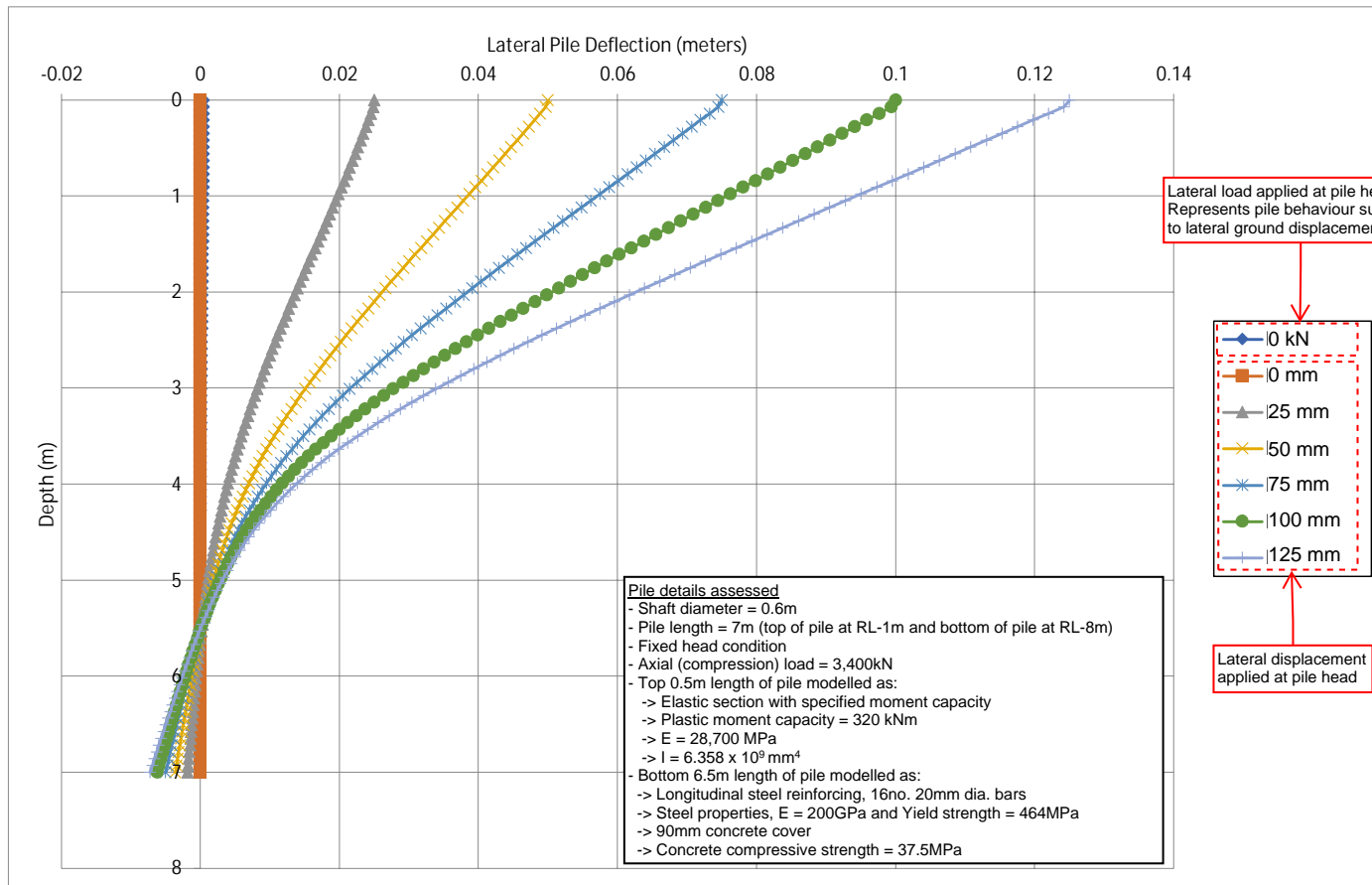
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Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

Pile Axial Load: Compression



Prepared by: ANRO
Checked by: BHR

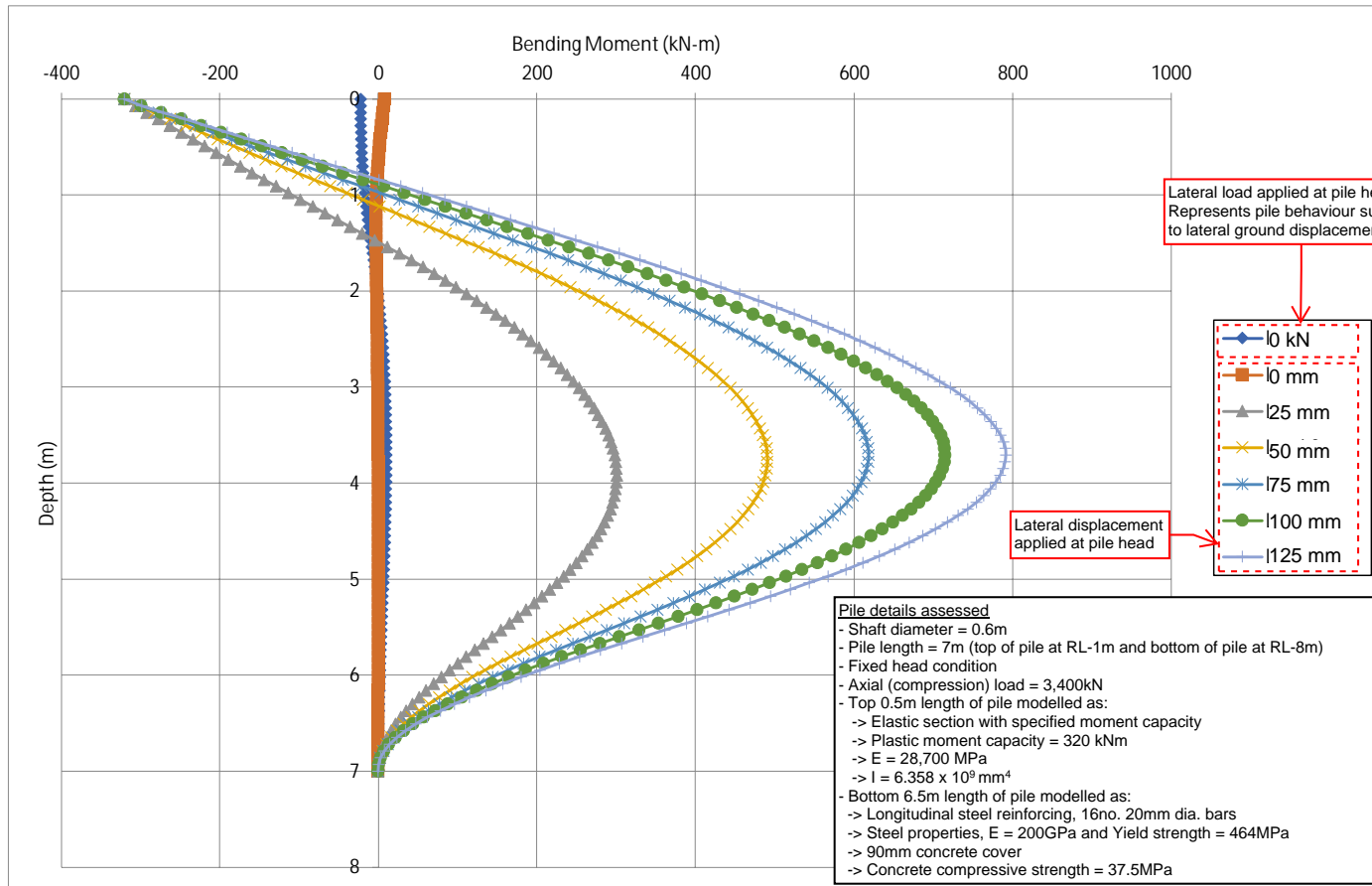
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Te Ngakau Civic Precinct
Wellington City Council
Capital E: Lateral Pile Assessment
T+T ref: 1091837
15/01/2024

Pile Type 2 (at ramps and walls)

Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

Pile Axial Load: Compression



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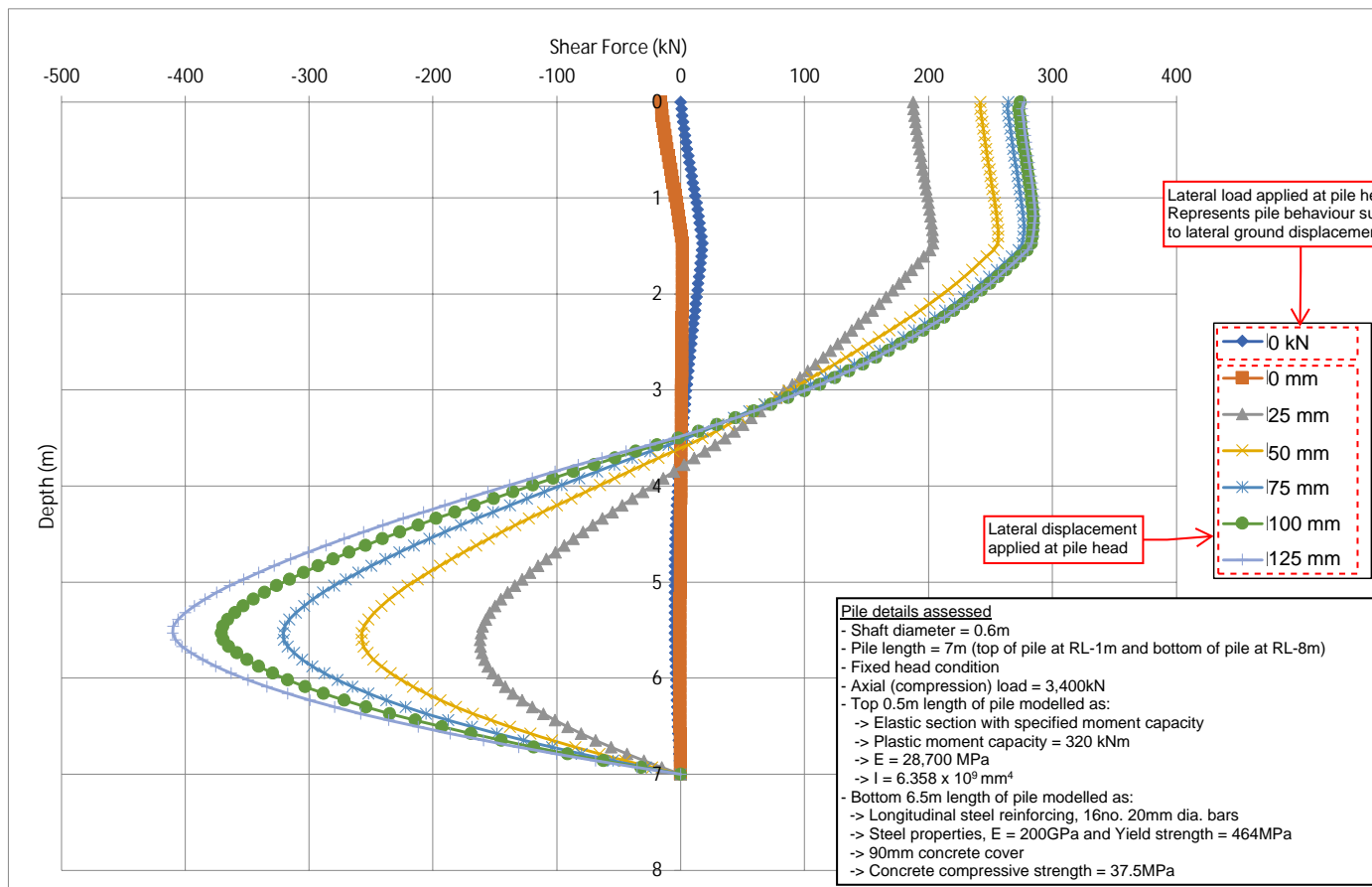
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Te Ngakau Civic Precinct
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Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

Pile Axial Load: Compression



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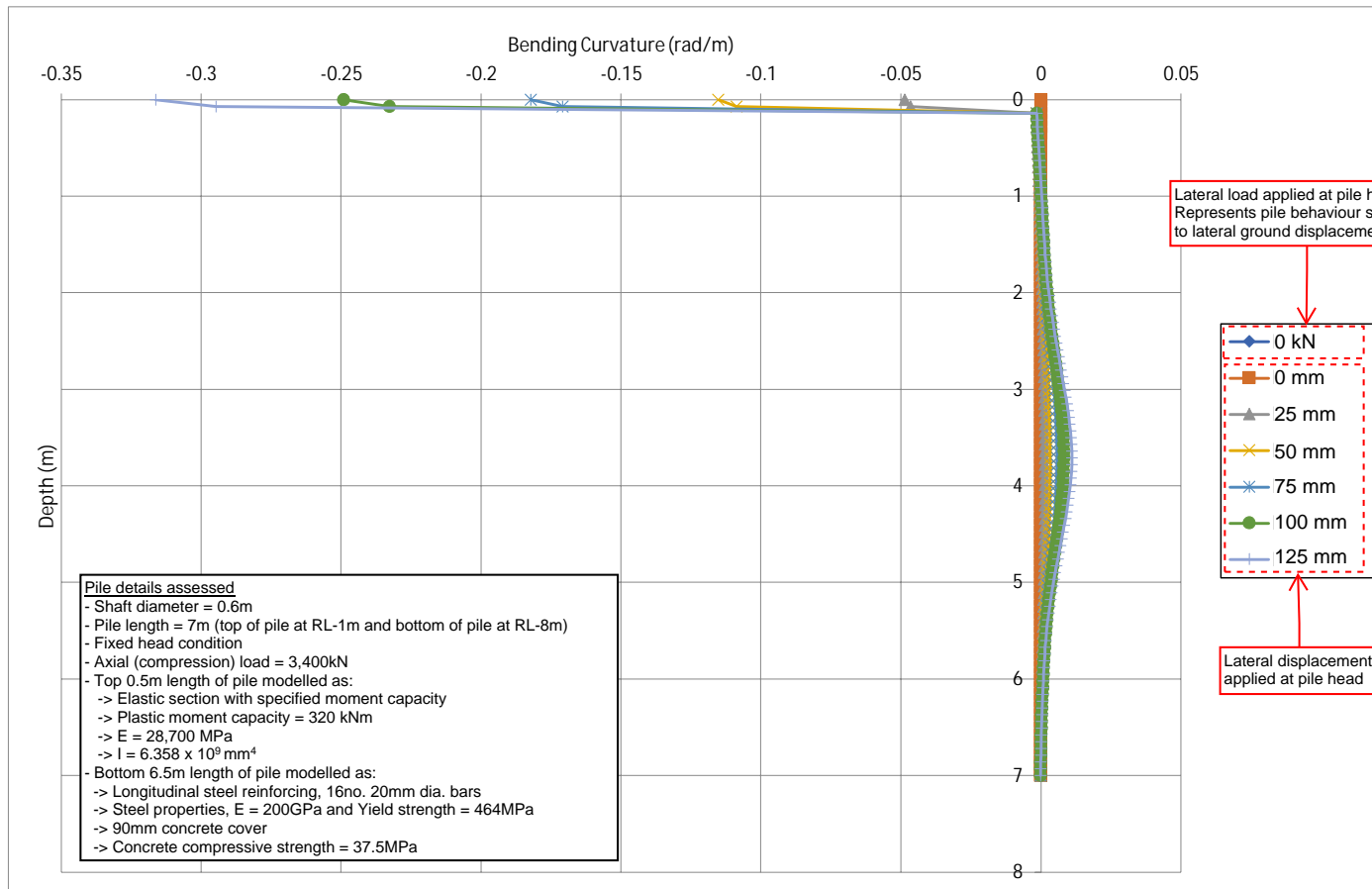
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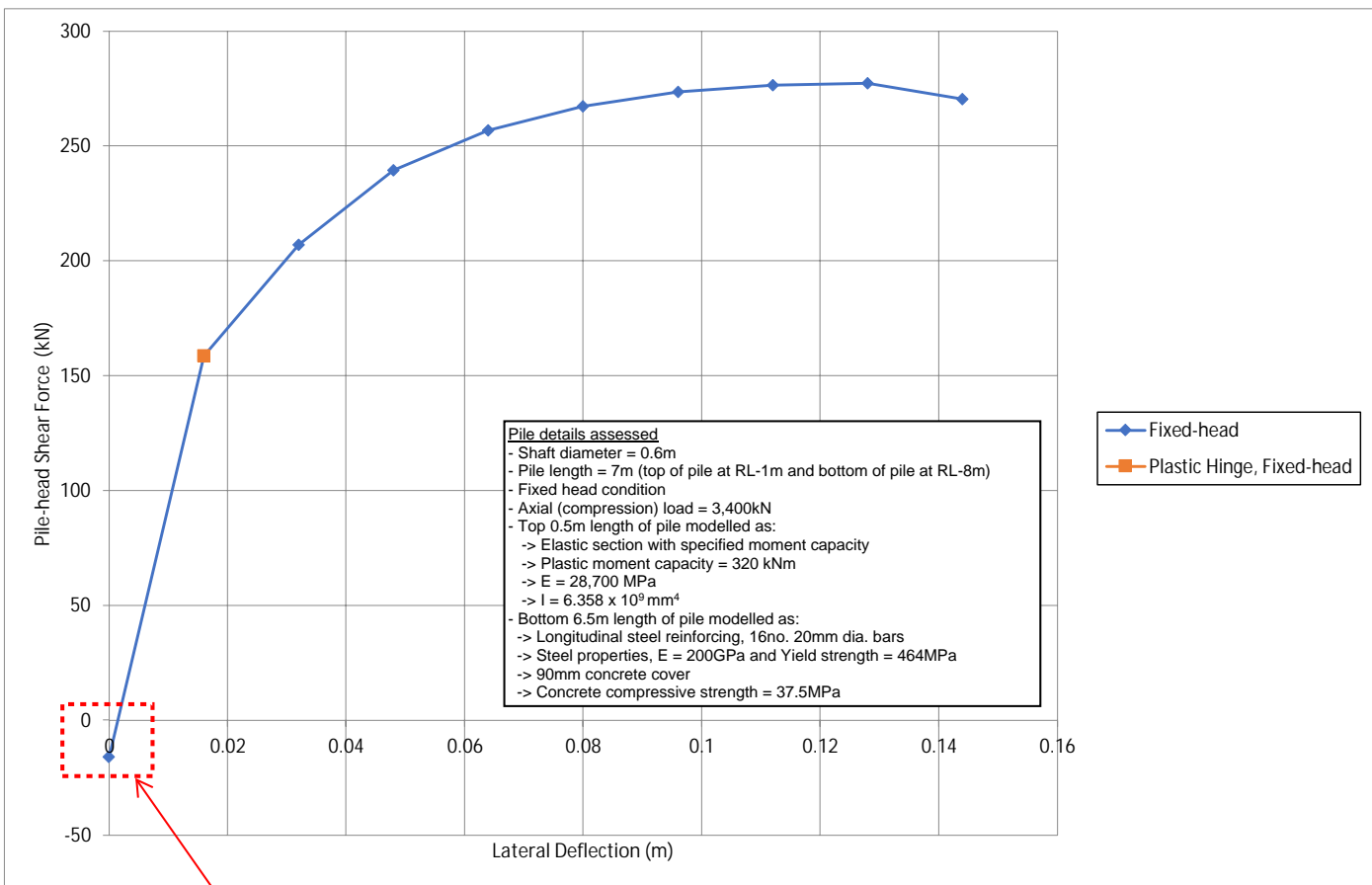
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Wellington City Council
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Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

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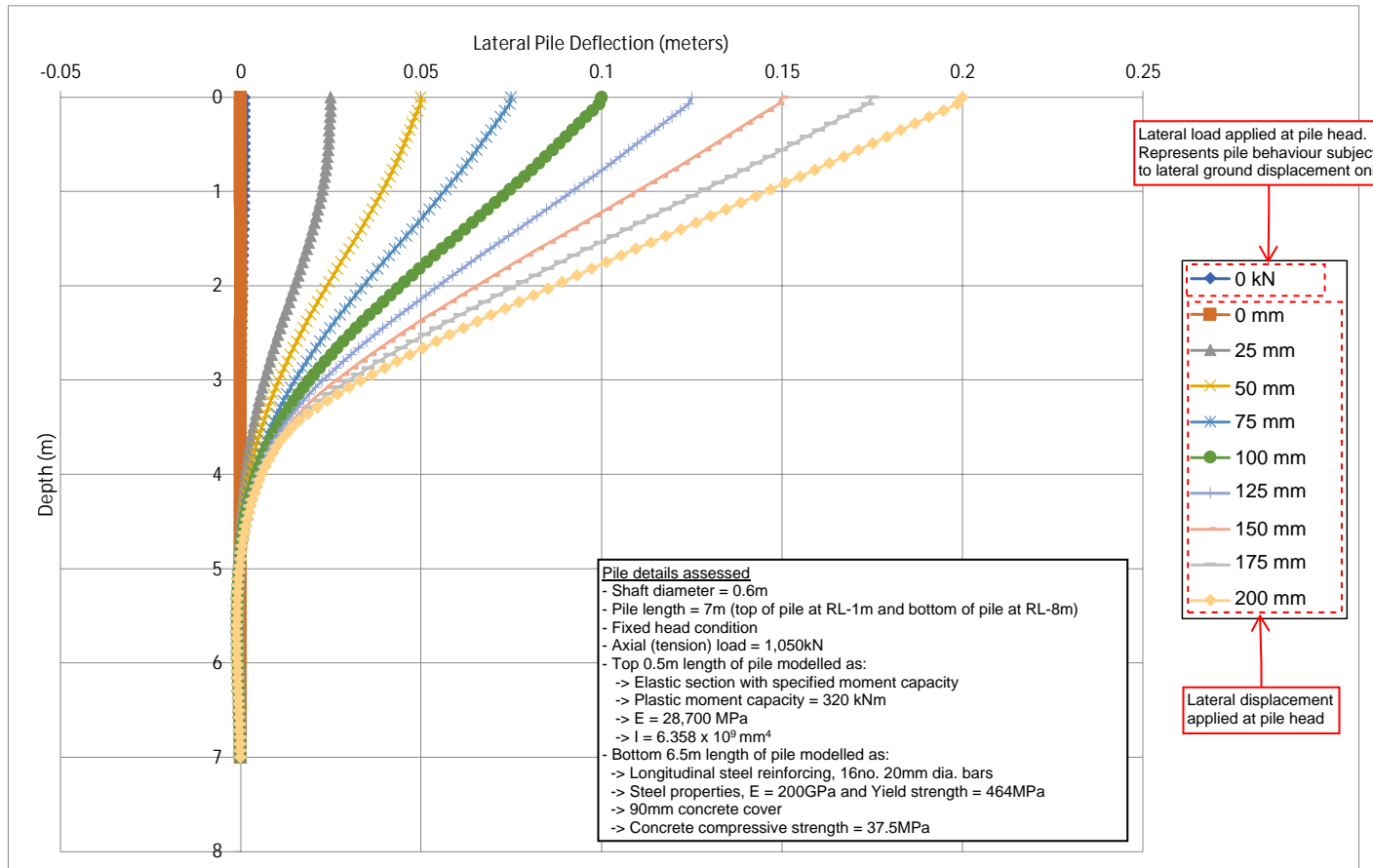
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Wellington City Council
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15/01/2024

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Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

Pile Axial Load: Tension



Prepared by: ANRO
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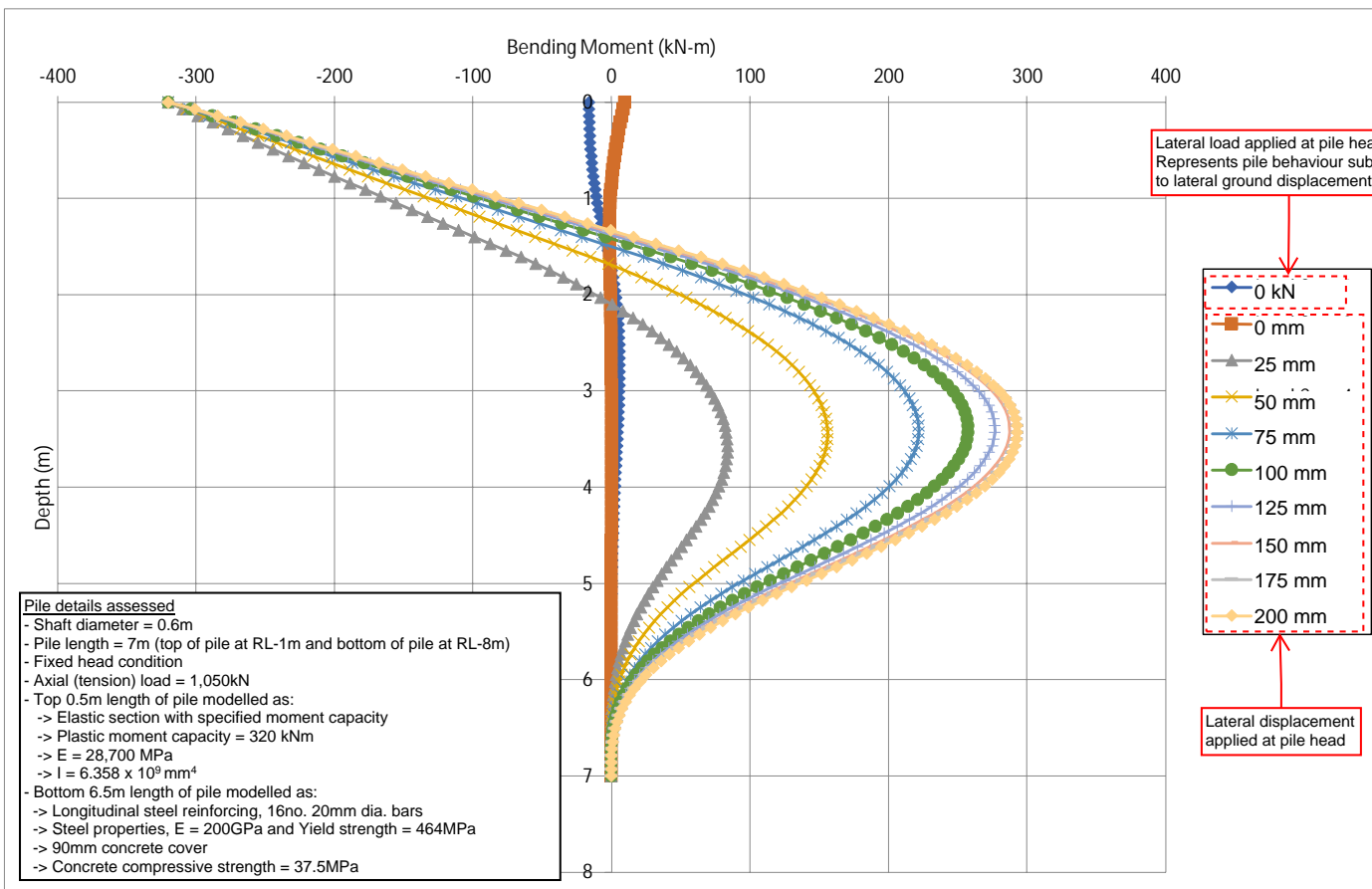
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Wellington City Council
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T+T ref: 1091837
15/01/2024

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Geotechnical Case 4 (Liquefaction with lateral spread ground displacement)

Pile Axial Load: Tension



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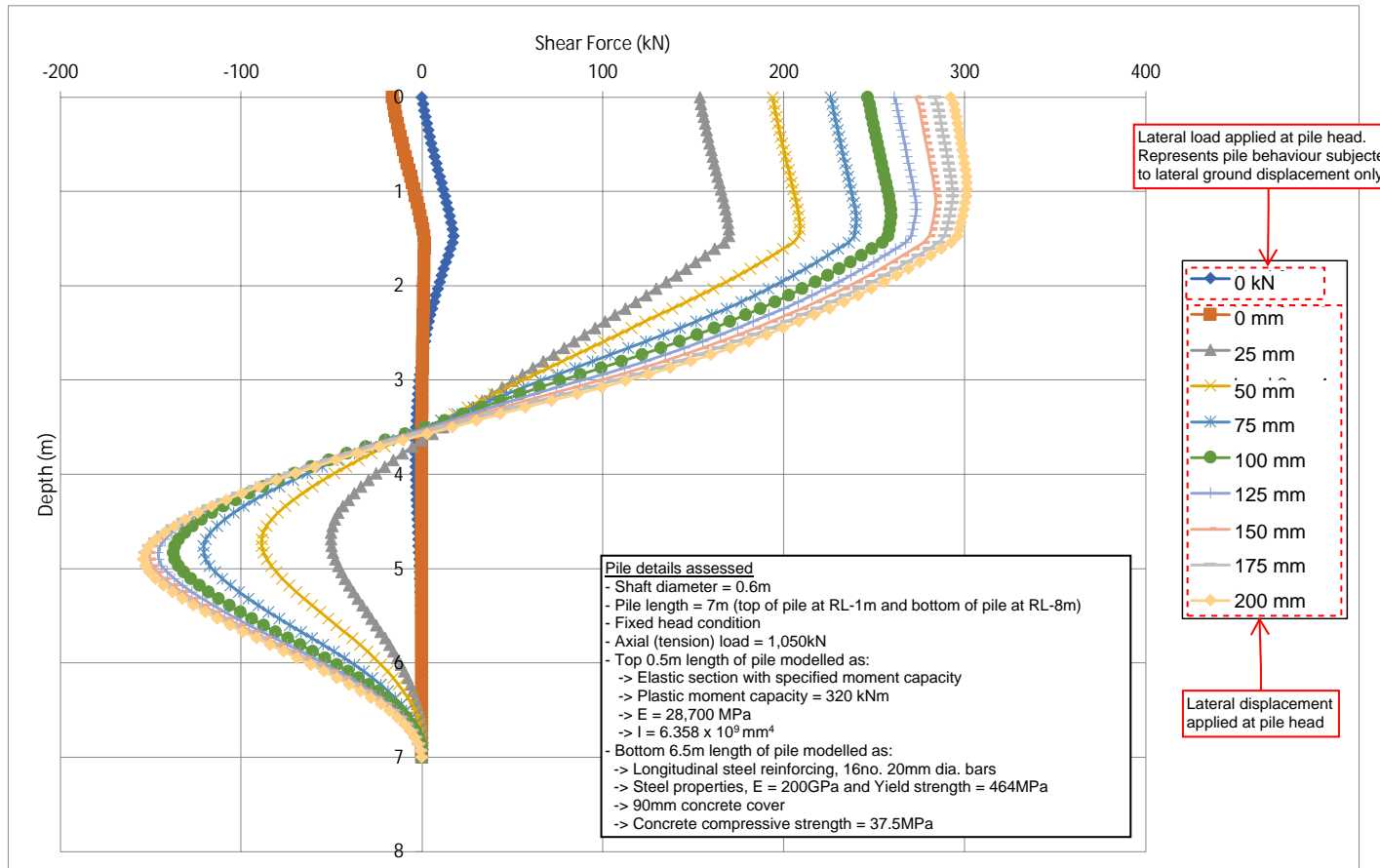
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Wellington City Council
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15/01/2024

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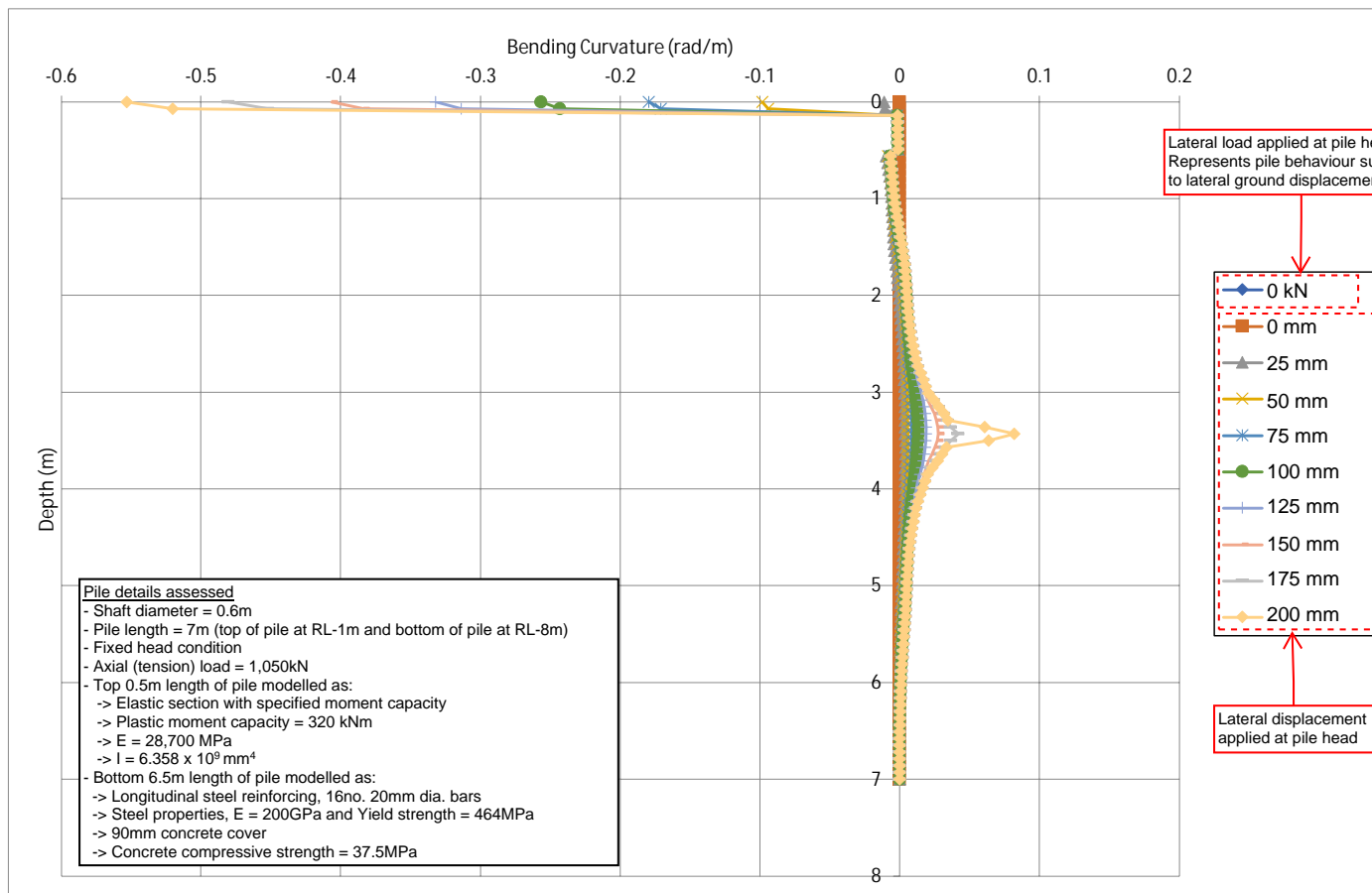
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Wellington City Council
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15/01/2024

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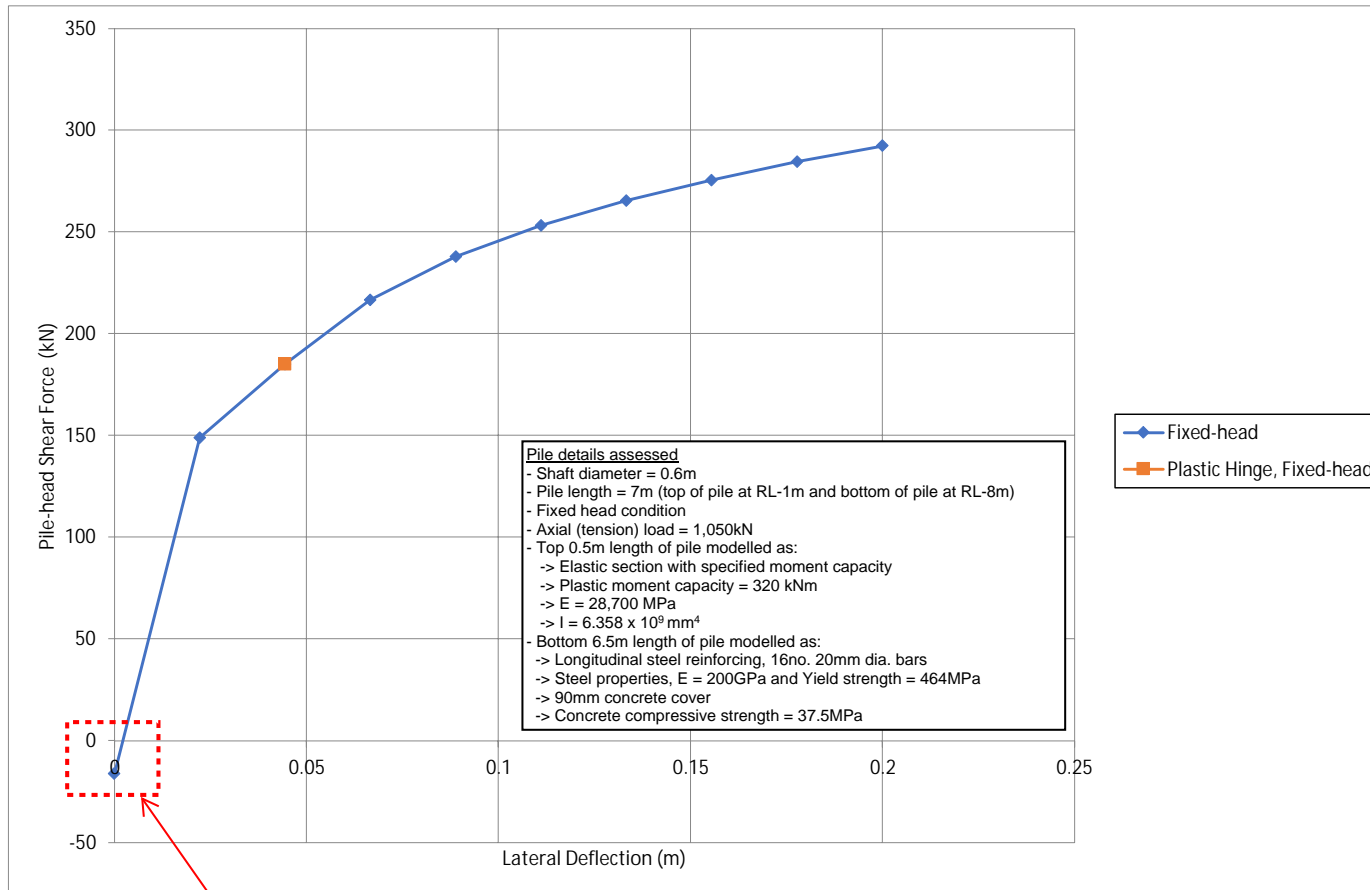
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15/01/2024

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Pile Axial Load: Tension



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E

Appendix E

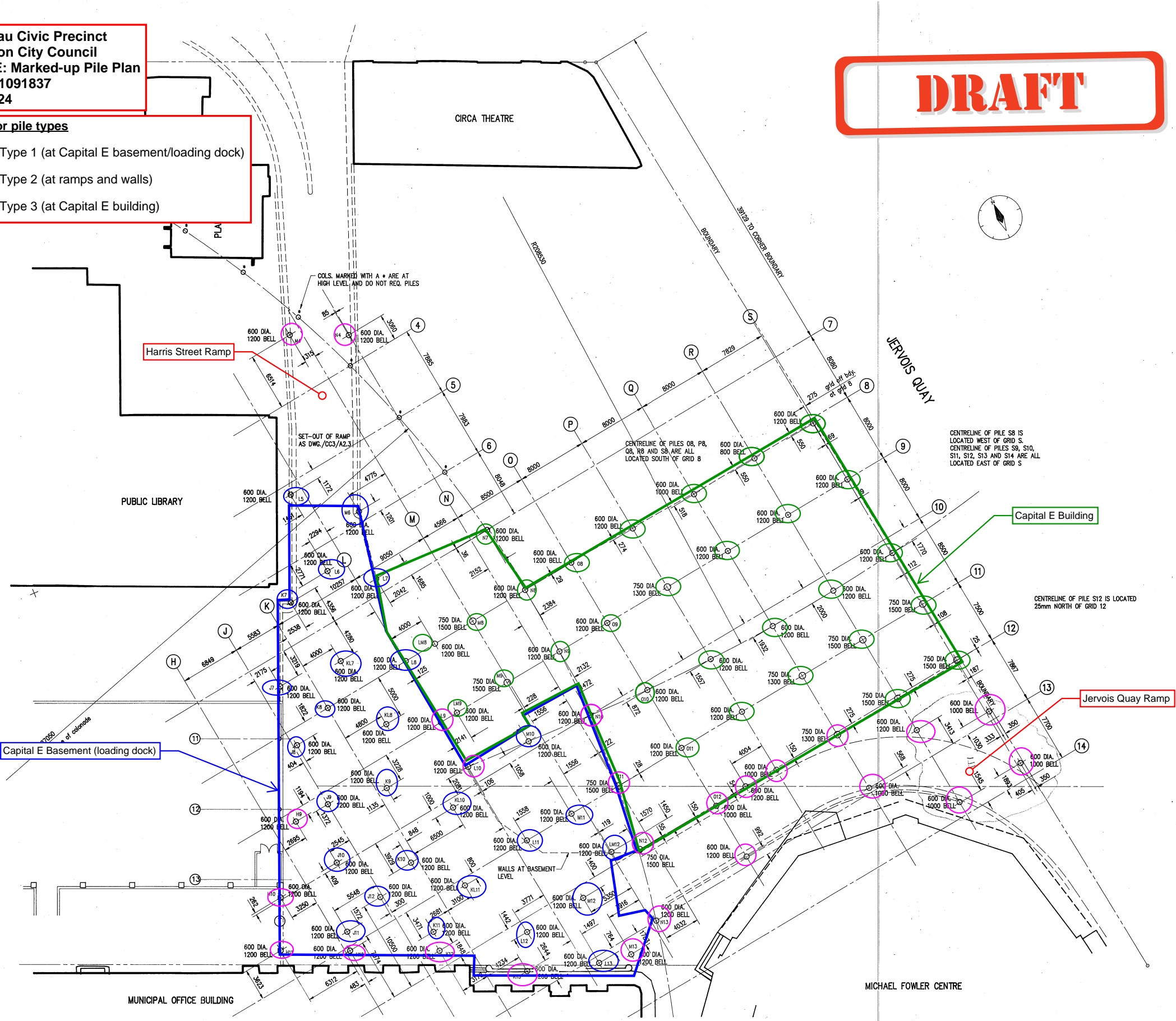
Geotechnical Parameters and Correspondence

DRAFT

Te Ngakau Civic Precinct
Wellington City Council
Capital E: Marked-up Pile Plan
T+T ref: 1091837
15/01/2024

- Legend for pile types**
- Pile Type 1 (at Capital E basement/loading dock)
 - Pile Type 2 (at ramps and walls)
 - Pile Type 3 (at Capital E building)

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Date	Issued to:	
22/1/91	UPDATED	E
27/11/90	UPDATED	D
19/11/90	PILE POSITIONS ALTERED	C
18/11/90	CONSTRUCTION ISSUE	B
17/8/90	STAGE 1 PERMIT ISSUE	A
Date	Revision	No

MORRISON COOPER LIMITED
EXPERIENCED MULTIDISCIPLINARY CONSULTANCY
Wellington - Auckland - Christchurch - Invercargill

Rankine & Hill Limited
Services Engineers
Wellington Office

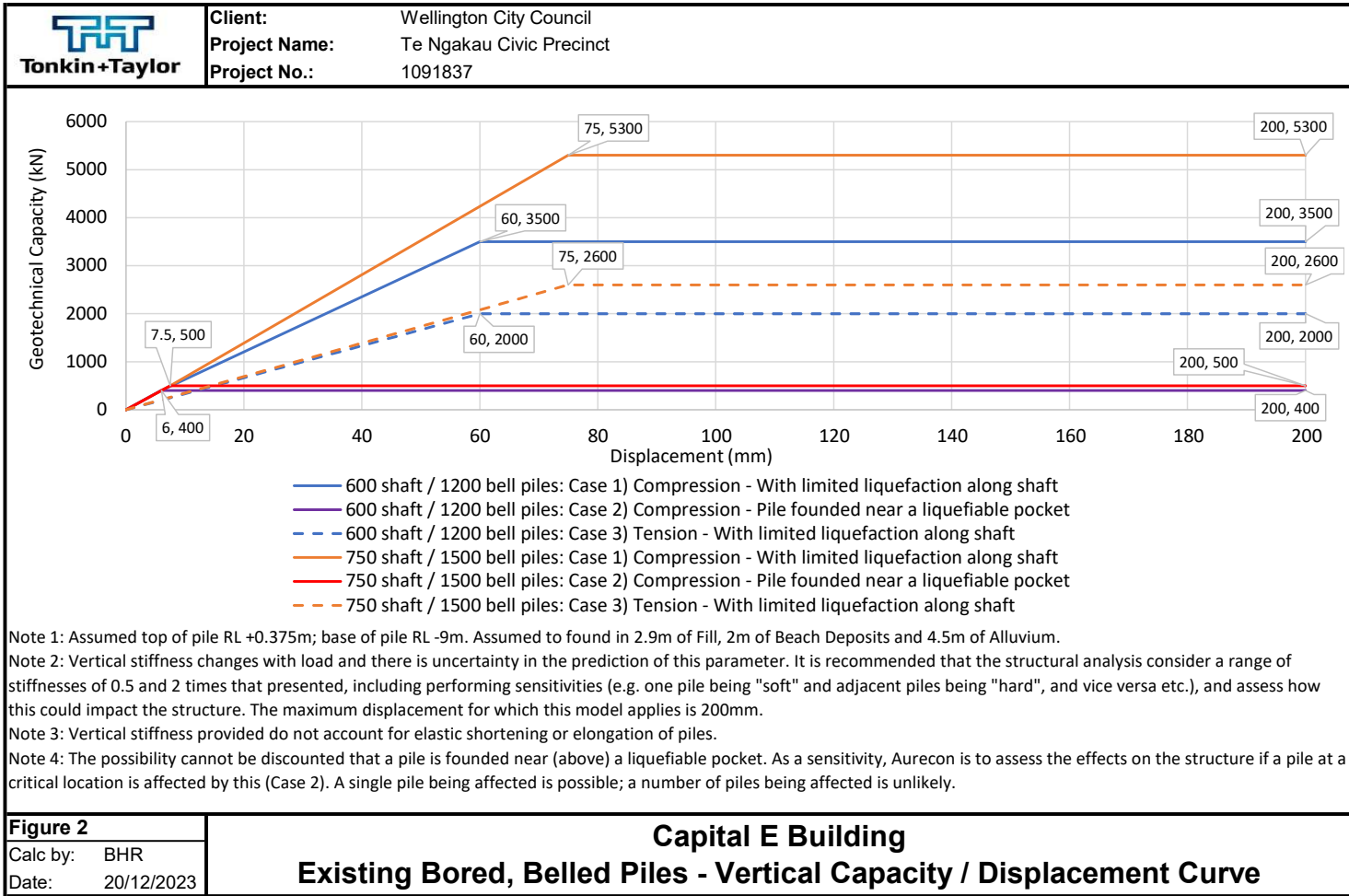
ATHFIELD ARCHITECTS LTD
PO BOX 8864, WELLINGTON.
PH: 499-0286, FAX: 799-1468.

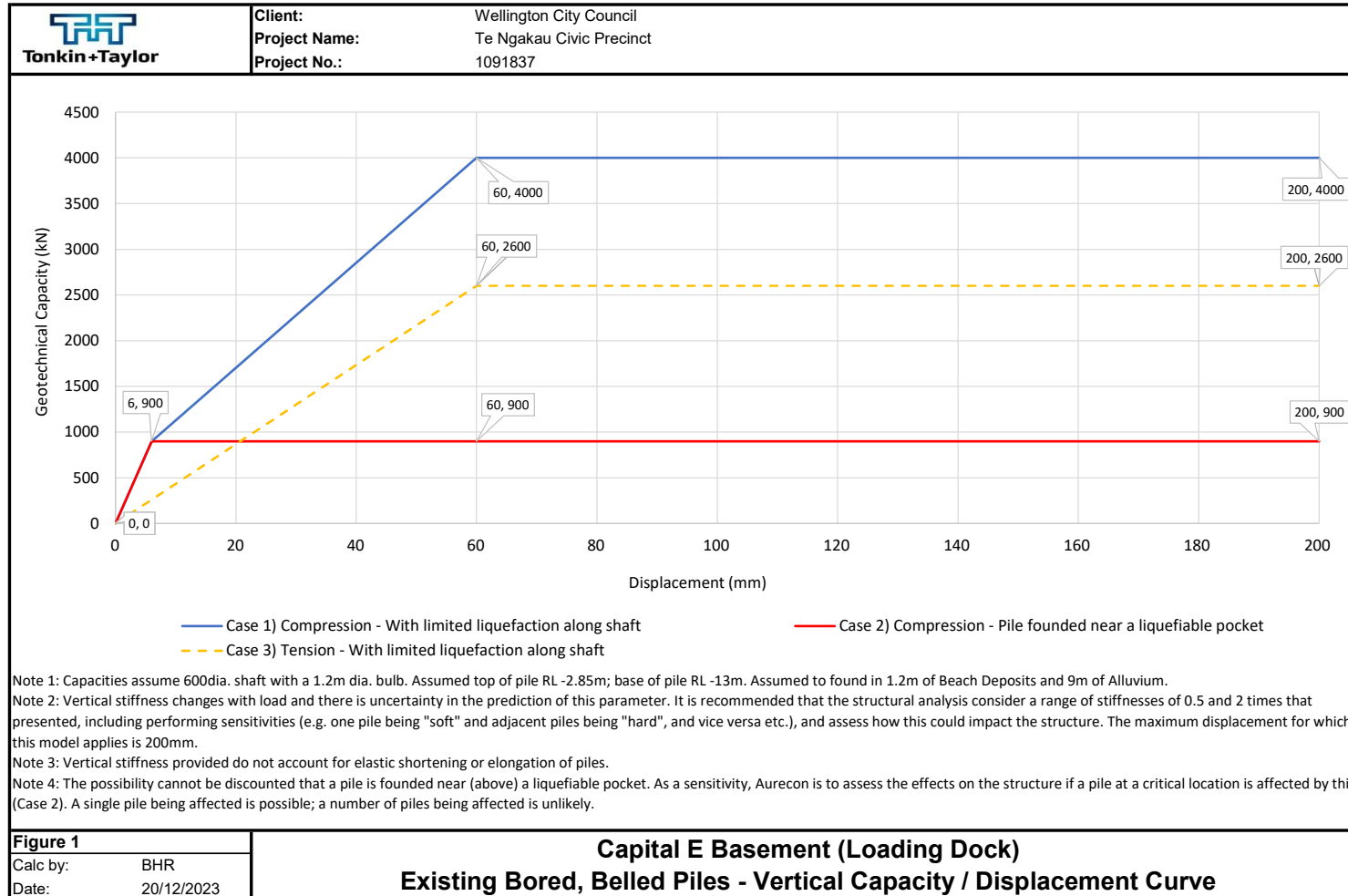
FLETCHER
Fletcher Development and Construction Limited
11 Aurora Terrace, PO Box 548, Wellington
Tel: (04) 720-3568 Fax: (04) 733-695
DESIGN & BUILD

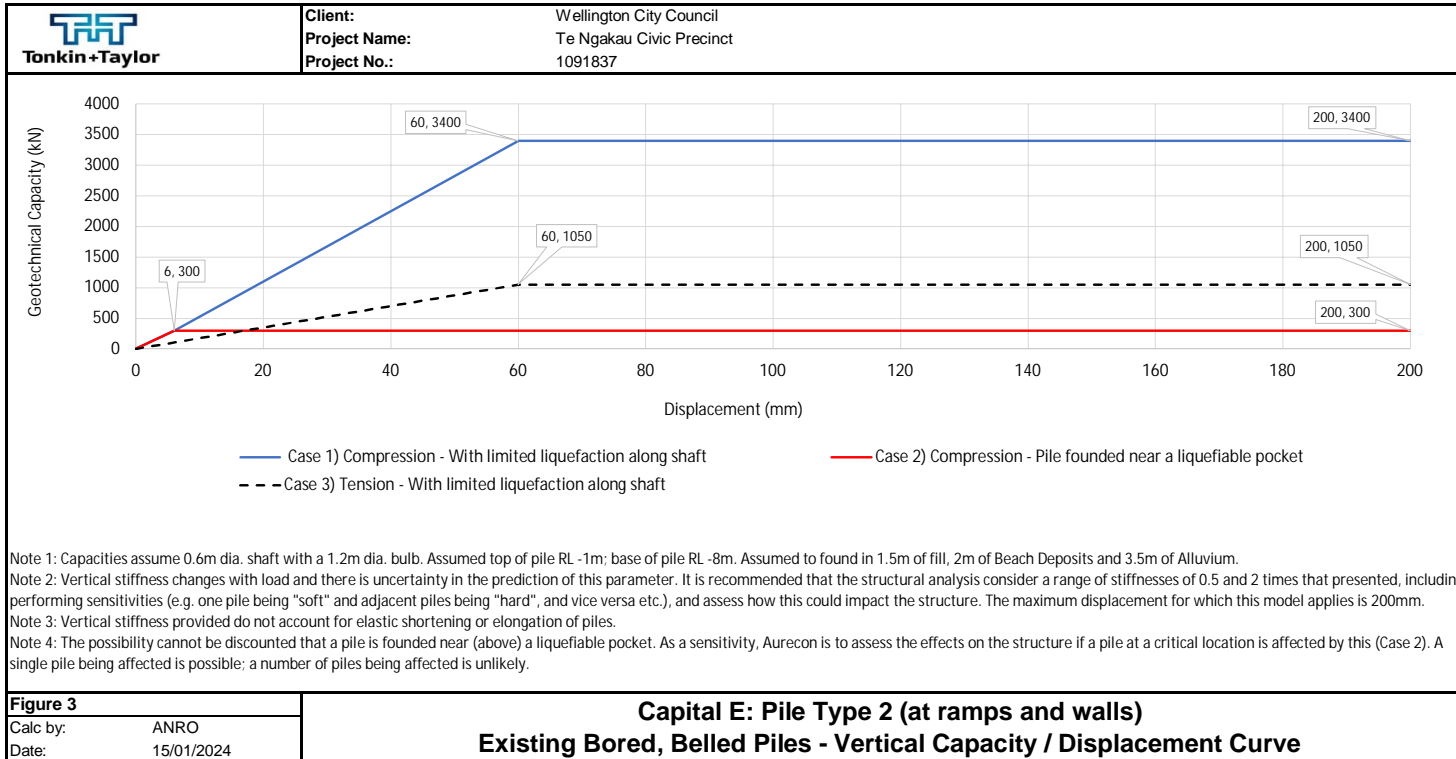
WELLINGTON CIVIC CENTRE REDEVELOPMENT
CAPITAL DISCOVERY PLACE & VEHICLE SERVICE AREA

Drawn: File: A9023T02
DGN: 08/90
Scale: 1:200
Approved: [Signature]
Drawing Name: PILE LAYOUT

Drawing No: Plotted: Revision:
09-34 22/01/91
CC3/189023/6008/S101 E







DRAFT

F

Appendix F

Seismic Upgrade Sketches



Document prepared by

Aurecon New Zealand Limited

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Sensitivity: General



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Farzad Zamani
Wellington City Council
PO Box 2199
Wellington 6140
New Zealand

27 June 2024

Dear Farzad

City to Sea Bridge Seismic Assessment Peer Review Summary

We are writing to summarise our peer review work of the structural and geotechnical aspects of seismic assessments undertaken for Wellington City Council (WCC) on the City to Sea Bridge.

The structural assessment of bridge was undertaken by Hoffcon and Tonkin & Taylor provided geotechnical engineering to inform the seismic assessment.

Scope of Review

The scope of our review consisted of the following:

- High level qualitative review of the findings of the Hoffcon structural assessment of the bridge.
- High level review of the findings of the Tonkin & Taylor geotechnical assessment for the bridge.
- Engagement with assessing consultants to understand assessment methodology and assumptions adopted.
- Detailed review of geotechnical assessment relied on by the structural engineer including an independent assessment of the geotechnical conclusions in relation to liquefaction and seawall stability.

We note our structural engineering scope did not include a detailed review of the structural assessment as it was high level and qualitative in nature. We have therefore not carried our any calculations of our own nor have we reviewed calculations carried out by Hoffcon.

City to Sea Bridge Review Findings

Based on our review of the both the geotechnical and structural assessment reports and discussions with the assessing consultants we note the following key observations:

- It appears that both the geotechnical and structural assessment of the bridge have been undertaken using appropriate methodologies as set-out in industry seismic assessment guidance.
- We agree with the Tonkin and Taylor assessment that the seawall is likely to move in the event of liquefaction of soils behind and in front of the toe of the seawall. The magnitude of the movement is difficult to quantify but we consider the order of magnitude remains significant for the bridge based on our review the structural assessment.
- Given agreement with the above point the methodology and conclusions on the structural capacity of the bridge outlined in the Hoffcon report appear reasonable. The assessment appears to have been thorough and considered a number of different load cases considering both liquefied and unliquefied soil conditions to test the impact of the various ground states.

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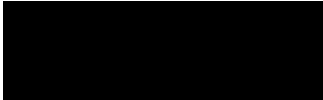
- We consider that a viable retrofit solution may be possible via the installation of a new deadman/retaining wall system within the current traffic lanes under the bridge that would reduce the displacements to a more manageable level and enable mobilisation of the central pier piles. This would likely also need to include ground improvement such as in-ground walls forming lattice cells that isolates the piles from ground movements, which could be formed by overlapping jet-grout columns down to the underlying dense alluvium. With more manageable displacements on the bridge piles, we believe the beam-column joint issue identified by Hoffcon could potentially be considered to not represent a significant life safety hazard as gravity support would be unlikely to be lost at smaller displacements. This would allow the bridge to achieve a higher rating without retrofit of the joints.

A full summary of our geotechnical review is included in the enclosed geotechnical file note if you wish to understand further detail in relation to our geotechnical review.

In summary both the geotechnical and structural assessments appear to have been carried out generally in accordance with industry guidance and the findings of the reports appear to be reasonable.

We trust this letter is satisfactory. If you have any questions, please contact the undersigned.

Yours sincerely



Technical Director - Structural Engineering

on behalf of

Beca Limited

Phone Number: 

Email: 

Encl: File Note - City to Sea Bridge DSA Review

Sensitivity: General

File Note

By: [REDACTED] **Date:** 16 April 2024
Subject: File Note - City to Sea Bridge DSA Review **Our Ref:** 3190846

1 City to Sea Bridge DSA Review

1.1 Introduction

Beca have been engaged by Wellington City Council (WCC) to review the Detailed Seismic Assessment (DSA) undertaken for the City to Sea Bridge. A structural assessment was undertaken in late 2023 by Hoff Consultants Ltd (Hoffcon). It was informed by outputs from a Desktop Geotechnical Seismic Assessment undertaken by Tonkin & Taylor Ltd (T+T). Reference has been made to the Engineering Assessment Guidelines (2017).

1.1.1 Reports provided for review

The Following reports have been provided by WCC for Beca to review:

- Hoffcon (2023) City to Sea Bridge. Detailed Seismic Assessment.
- T+T (2023) City of Sea Bridge, Wellington, Desktop Geotechnical Seismic Assessment.

T+T also provided the following information on the ground model:

- Te Ngakau Civic Precinct Geotechnical Hazard Review, Oct. 2023.

1.1.2 Summary of key findings of the DSA

Key findings of the Structural DSA were documented as follows:

- Hoffcon report that the City to Sea Bridge has an assessed seismic performance rating (%NBS, New Building Standard) of 20% NBS (IL3 structure).

“The governing factor that has determined this rating is the step-change in the seismic response of the bridge and surrounding ground when liquefaction is triggered. This includes phenomena such as lateral spreading and cyclic displacement of the ground, in addition to movement of the underlying seawall. However, there are other structural weaknesses that would see a rating less than 34% NBS even if liquefaction was not triggered.”

- A rating less than 34% NBS indicates it is an earthquake-prone building (EPB) in terms of the Building Act 2004.
- Options discussed by Hoffcon include demolition, strengthening, or risk management.

Key findings of the T+T assessment were as follows:

- Liquefaction triggering hazard:
 - Widespread liquefaction triggering of reclamation fill and beach deposits at ~ PGA of 0.2g (M 7.1) to 0.25g, approximately corresponding to 35-40% NBS.
 - Underlying Alluvium not considered to liquefy uniformly, with pockets only within the upper-part of the layer at ~ 0.3 to 0.4g, M7.1 (50 – 70% NBS).

File Note

- Liquefaction impacts:
 - Lateral spreading: Sea wall failure and movement 100's mm to metres towards Whairepo lagoon. Sea wall unstable (sliding & rotation) in an earthquake event triggering "widespread liquefaction". Unstable with retained liquefied soils and no inertia.
 - Kinematic (ground displacement) loads on piles.
 - Differential lateral spread across the bridge (lateral stretch)
 - Cyclic ground displacements: In the order of 150mm in any direction.
 - Kinematic (ground displacement) loads on piles.
 - Loss of vertical (compression and uplift) and lateral support to foundations during shaking.
 - Free field settlement in the order of 100-200mm, with additional settlement due to sand boils.
 - Negative skin friction (down drag loading) on piles post-shaking.

2 Ground Model

2.1 Soil profile

2.1.1 Available information

The relevant available geotechnical investigation information is summarised below, and as shown spatially relative to the bridge in Figure 2-1.

- Boreholes are provided along the alignment of the Sea wall / Eastern Abutment: BH-A1, BH-A2 and BH-A3. (completed in 1993)
- Borehole near the western abutment/ Capital E building (completed 1988): CSD-B9.
- Nearby CPT, north of western abutment, such as: CPT_156035, CPT_156021

2.1.2 T+T Ground Model

The T+T ground model adopted for the assessment is as shown in Figure 2-2. The main geological units are:

- Reclamation fill (placed in 1889), comprising silty/sandy GRAVEL with occasional lenses of SILT. Generally medium dense/ dense above groundwater table, and loose below groundwater table.
 - Considered susceptible to liquefaction below groundwater table.
- Beach Deposits (Holocene), loose to medium dense SAND with shells.
 - Considered susceptible to liquefaction.
- Alluvium (Pleistocene), typically silty sandy GRAVEL with lenses of sandy SILT.
- Average groundwater level +0.4m RL (varies -0.2 to +1m). A level of +0.2m has been adopted for the assessment as more critical.

Sensitivity: General

File Note



Figure 2-1: Ground Investigation location plan: Source: T+T City to Sea Bridge Geotech Report.

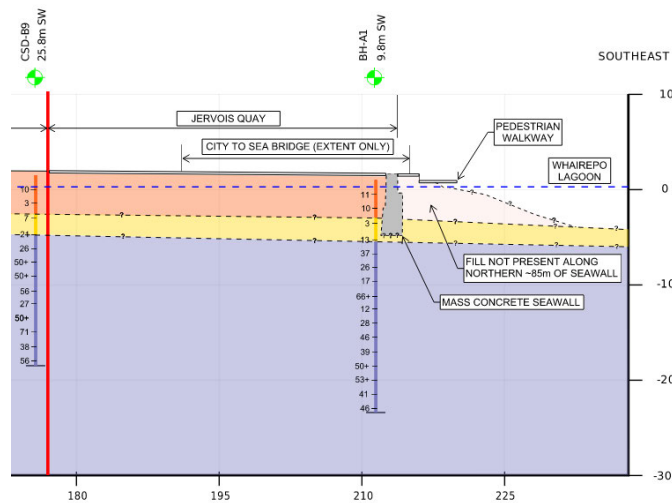


Figure 2-2: T+T Ground model excerpt.

In general, we concur with this ground model as summarised by T+T, however note comments related to the founding of the sea wall and assessed level of toe support in Section 3 below.

2.2 Shaking hazard for geotechnical assessment

The assessment of existing buildings adopts MBIE Module 1 (2016). This document provides the following parameters for geotechnical assessment:

- Site Class: C
- Importance Level 3.

File Note

- Peak Ground Acceleration: 0.59g
- Moment Magnitude: 6.7 (using the charts in MBIE Module 1, Note that Table C6.1 Bridge Manual conservatively provides M 7.1 for Wellington, which is what T+T have adopted).

We generally concur with the values T+T have adopted, while noting M7.1 is slightly conservative for the DSA when compared to the values provided in Module 1. This is not expected to have a significant impact on the assessment.

The adoption of IL3 for the assessment might be a matter of discussion, since the bridge has been assessed for importance using the Bridge Manual, not AS/NZS1170.0:2002. The Bridge Manual assesses importance level based on the assigned route priority. In terms of life safety alone, the importance level could potentially be assessed as IL2. If this were considered, the PGA for the assessment would reduce to 0.45g.

T+T refer to recent historical earthquakes, notably the M 7.8 Kaikoura (Nov. 2016) earthquake, where a PGA of 0.16g was recorded at the nearby Frank Kitts Park. They proposed normalising to M7.1 to compare to estimate a PGA of 0.18g (via magnitude scaling factor of Boulanger & Idriss (2014), presumably adopting an SPT N of ~ 15), approximately corresponding to 30% NBS (IL3) or 40% NBS (IL2).

2.3 Liquefaction triggering assessment

To check the assessed %NBS we have checked the triggering of “extensive” liquefaction in nearby boreholes. “Extensive” liquefaction is considered to result in triggering of both the saturated reclamation fills and the underlying loose marine sediments, such that the Sea Wall is no longer stable (see below assessment). This requires triggering of 3.5m of soil or more.

We have reviewed the triggering of the nearby boreholes and note that ‘extensive’ liquefaction is predicted in the reclamation fill (as well as the underlying beach alluvium) during the 2016 Kaikoura earthquake. This initially assumed the historical boreholes had an SPT hammer energy efficiency of 60%. Only minor triggering was noted to have occurred near the lagoon during the event. Adopting 70%+ resulted in a reduced extent of triggering of the reclamation fill notably in borehole BH-A3 and was therefore adopted for all subsequent assessments. This remains within the range suggested for both safety and automatic trip hammers (Idriss & Boulanger 2008).

Sensitivity: General

File Note

Table 1: Summary of liquefaction triggering assessment on relevant borehole data

Borehole	Thickness of Liquefaction in 2016 Kaikoura Earthquake [m] (PGA - 0.16g; Mw 7.8)	'Calibrated' SPT Hammer Energy [%] to prevent Extensive triggering during Kaikoura event	"Extensive" Triggering PGA [g] (Seawall instability)	"Extensive" Triggering PGA [g] (Pile Instability)	Thickness of Liquefaction in 'NBS' Earthquake (IL3) [m] (PGA - 0.59g; Mw 6.7)
BH-A1	2.1m (4 - 6.1m)	60%+	0.28g	0.26g	4.9m
BH-A2	2.8m (3.8 - 6.6m)	60%+	0.31g	0.22g	4.1m
BH-A3	1.6m (5.4 - 7.0)	70%+	0.22g	0.22g	5.1m
CSD-B9 ⁽¹⁾	3.8m (2.4 - 6.2)	70%+	0.17g	0.17g	>4.65m

⁽¹⁾ There is a lack of reliable SPT test data in CSD-B9 between the depths of 5.0m and 13.0m that can be used for assessment, which may have overall effects on the results. The results presented are based on the available information.

3 Sea Wall Stability

The stability of the gravity wall was assessed using software GEO5. The wall was assessed to be stable under static conditions in both sliding and overturning.

It is considered reasonable to expect the wall would have been founded on competent soils (i.e., medium dense to dense) that are not likely to liquefy/ flow under moderate shaking caused by the Kaikoura earthquake. A friction angle of 38 deg has been assumed for this founding soil.

We consider the toe support provided by lagoon marine sediments to be only present under static conditions. Under moderate to strong shaking this toe support may be largely lost due to liquefaction.

The wall was found to become unstable with more than 3.5m of liquefied soils in the backfill, and with liquefied soils at the toe. The PGA corresponding to this point of instability was estimated for each of the nearby boreholes and ranged from 0.22 to 0.31g due to variability in the SPT *N* values of the reclamation fills. The weakest is BH-A3 at the northern end of the bridge. An average value of 0.27g might be considered reasonable to adopt for a 'best estimate' appraisal of the triggering point for wall instability.

Large displacements are expected to occur once the wall loses stability due to liquefaction of backfill and toe soils. As a yield acceleration cannot be determined when the soils are liquefied, only empirical lateral spreading evaluation methods (based on regression analyses of case history data) are available which are highly approximate. The Youd et al. (2002) method estimates in the order of 2.7m displacement at the free face under the 100% NBS event, with a level of accuracy of 50% - 200%. This is unlikely to occur at the triggering level, however.

While higher than estimated by T+T, with step-change factoring applied, would continue to result in a %NBS score less than 34%.

File Note

4 Ground Oscillation Displacements

Ground oscillation may be estimated using the chart in Tokimatsu & Asaka (1998). Assuming cyclic shear strains of 4% in loose soils, and “extensive” triggering corresponding to more than 115mm of lateral ground displacement (corresponding to pile/ joint failure), the thickness of triggering this corresponds to is around 2.9m or more. The PGA required to initiate this amount of triggering is 0.22 to 0.26g across the three boreholes, with an average of 0.23g, or 20% NBS with step change applied (IL3) or 25% NBS (IL2).

These values broadly concur with the T+T assessment.

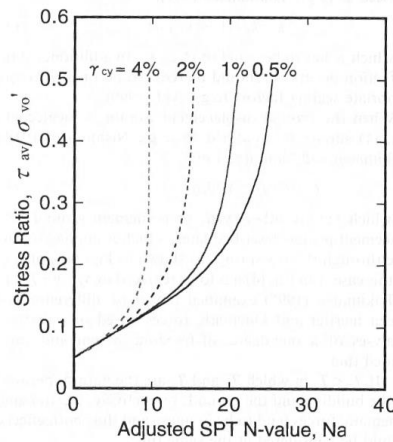


Fig. 9. Maximum cyclic shear strain during earthquakes

Figure 4-1: Cyclic ground strains as a function of Cyclic stress ratio and density of soil as determined by SPT N value. (Tokimatsu & Asaka, 1998).

5 Summary

In general, our parallel checks of the nature of the ground conditions and their likely performance during design levels of earthquake shaking concur with those of T&T. The impact of liquefaction triggering of the backfill and toe support for the gravity sea wall is significant and leads to instability without inertia applied to the wall. Once stability is lost, large displacements are expected. The accuracy of the assessed displacements when this occurs is fairly low, but the order of magnitude remains significant for the bridge. The application of step-change provisions for such a scenario in Section C4 of the Seismic Assessment Guidelines is considered appropriate.

Even were the wall to remain in place and not move laterally, cyclic ground displacements (oscillations) during shaking, due to liquefaction of the reclamation fills surrounding the piles, would be in the order noted to cause loss of gravity support for the bridge.

On the basis of this assessment, we therefore take no exceptions to the geotechnical assessment undertaken by T&T and the implications that follow to the Bridge, as documented by HoffCon.



Seismic Risk Evaluation for Wellington City Council

City to Sea Bridge Jervois Quay, Wellington



September 2024



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Kestrel Seismic Risk Evaluation for City to Sea Bridge 20240930



September 2024

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1. Introduction

Wellington City Council, as the owner of the City to Sea bridge, has sought an independent evaluation of the current seismic risk posed by the structure. The purpose of this risk evaluation is to inform their decision on continuing to allow access to and use of the bridge, and to identify any short-term risk mitigation measures to be implemented while broader planning for the strengthening or demolition of the structure is progressed.

This report summarises known seismic information on the structure, and provides a qualitative risk evaluation which assesses the current seismic risk to the users of the bridge and those exposed to it via surrounding public areas.

This risk evaluation draws upon the seismic risk guidance produced by MBIE and the 2021 BRANZ decision framework for council-owned earthquake-prone buildings, modified for risks associated with bridges and to address impacts on transport routes.

2. Overview of the Structure and Seismic Assessment

The City to Sea bridge provides a pedestrian link between Civic Square and the Whairepo Lagoon and waterfront. Access to the western (city) end of the bridge from Civic Square is via the roof of the original Capital E building.

The bridge was originally constructed in 1993 and strengthened in 2011.

A Detailed Seismic Assessment of the bridge has recently been undertaken by consulting engineers Hoff Consultants based on a geotechnical assessment from Tonkin & Taylor on behalf of Wellington City Council as owner of the structure. The seismic rating for the building has been assessed as being 20% of New Building Standard (NBS) at Importance Level 3 primarily due to the vulnerability of the foundations to the significant lateral spreading anticipated to occur to Jervois Quay. A peer review by Beca concurs with this assessment.

It is understood that there are plans to either strengthen or demolish the bridge in 2026 along with the majority of the Capital E building as part of the redevelopment of Civic Square.

3. Seismic Vulnerability

The poor ground on which the bridge is founded dictates the response of the bridge to earthquake shaking. The primary structural weakness of the structure relates to the inability of the foundation structure including the piles to resist the anticipated lateral spread of the Jervois Quay roadway out into the lagoon.

The level of earthquake shaking (return period) at which lateral spreading is likely to occur is above moderate earthquake levels, hence the life safety risk in any given year or over a 3 to 5 year period is considered low.

It is noted that the 2011 strengthening focused on the frames running parallel to the roadway. The bridge foundations do not include a tie between the elements across Jervois Quay, and so the structure is therefore also susceptible to strong ground shaking generally in the transverse (east-west) direction.

Pedestrian access to the bridge on the western side of Jervois Quay is via the roof of the earthquake-prone former Capital E building. We have reviewed the partial demolition and detailed seismic assessment report on this building by Aurecon (Revision A, 16 February 2024). While this building also has a rating of only 20%NBS (IL3), we consider it to have a lower vulnerability to earthquake shaking than the bridge due to its overall structural form and presence of perimeter walls. It is therefore more likely to withstand stronger ground shaking prior to any structural failure occurring than the bridge.

4. Regulatory Considerations

The Building Act

Section 133A(1)(g) of the Building Act 2004 excludes bridges from the scope of buildings to which the earthquake prone provisions apply. The City to Sea bridge therefore cannot be determined to be earthquake prone.

The statutory timelines for strengthening or demolishing earthquake-prone buildings do however provide a useful point of reference, noting that the Act does not preclude continuing to use and occupy earthquake-prone buildings. The time period for strengthening or demolishing buildings in Wellington, a high seismic hazard area, is 15 years from the date of issue of an Earthquake Prone Building notice. Buildings located on nominated emergency transportation thoroughfares (which include Jervois Quay) are also deemed to be Priority Buildings, with a reduced period of 7.5 years applying. This time frame provides a point of reference for the planning of strengthening or demolition for this bridge.

The Building Act defines dangerous buildings as those that pose an immediate threat to people in and around the building. The definition of a dangerous building and process for managing them is set out in section 121, and excludes consideration of vulnerability to earthquakes. Buildings are not considered dangerous buildings unless they cause immediate danger to the people in or around them in the ordinary course of events.

The Health and Safety at Work Act

The Health and Safety at Work Act 2015 establishes that building owners and employers are considered a person conducting a business or undertaking (PCBU). PCBUs must protect the health and safety of workers (and others) while providing a safe working environment as far as is reasonably practicable.

The Act does not have specific provisions that relate to seismically vulnerable buildings, but Worksafe issued a position statement¹ (last updated in June 2018) which notes that:

If a building is found to be earthquake prone, this doesn't necessarily mean that it shouldn't be occupied. The Building Act provides a period of several years for strengthening or demolition work to be undertaken. While the risk to people in or around an earthquake-prone building is greater than an equivalent new building, this doesn't typically require short-term action.

5. Scope of Risk Exposure

The nature of the current life safety risk covers both people on the bridge and those in vehicles beneath the bridge. The volume of pedestrians using the bridge to access the lagoon is currently limited due to construction works in the Civic Centre precinct. Jervois Quay is however a key arterial route, with high vehicle volumes at low speed in peak hours.

In addition to life safety concerns, failure of (or even moderate damage to) any of the bridge spans would have a severe impact on transportation within Wellington City. This would include the recovery phase as well as key response activities such as enabling access to the hospital.

¹ [Dealing with earthquake-related health and safety risks: information for PCBUs and building owners](#), July 2022, Worksafe

6. Consequence of Closure

Closure of the bridge to preclude life safety risk involves two aspects – stopping people from accessing the upper bridge level, and preventing pedestrian and vehicle access beneath the bridge.

From the first perspective of people being unable to use the bridge to access the lagoon and waterfront area, there appears to be little consequence of not allowing use of the bridge.

However preventing vehicle access beneath the bridge would have a significant impact on daily traffic flows through the city.

It is therefore concluded that closure of both aspects of the bridge would be high. The associated point is that there would be only a minor reduction of the overall risk to life if pedestrian access to the upper level of the bridge was prevented while vehicular access beneath the bridge was maintained.

7. Overall Evaluation of Risk

The primary structural weaknesses of the structure relate to unpredictable response of the bridge foundations once liquefaction and lateral spreading occurs to Jervois Quay in the vicinity of the lagoon. The nature of this vulnerability is such that structural failure is unlikely in a moderate, more frequent earthquake. Seismic shaking of close to this occurred during the Kaikoura Earthquake, and we understand that no damage was observed to the ground or structure².

Applying the BRANZ decision framework balances the life safety risk exposure against the consequences of closure. The populated framework is appended to this initial report to show how the risk elements have been evaluated.

This framework provides only a broad guide when applied to a non-habitable structure such as a bridge. The main aspect highlighted by the analysis in the Appendix is the low consequence of not allowing pedestrians to continue to use the bridge. However, the BRANZ framework does not include the impacts of failure to main transportation routes within the city. Therefore, an additional element to the framework has been added. This demonstrates that the impact of closure of the bridge, including restricting traffic below, would be high.

Therefore, the risk analysis based on the modified BRANZ decision framework results in an overall occupancy assessment that supports it being used for both pedestrian access over the bridge and pedestrian and vehicular thoroughfare beneath it during the period prior to either strengthening or demolition.

² PGA 0.16g recorded at Frank Kitts Park (FKPS).

8. Summary and Recommendations

Having regard to the likelihood and consequence aspects outlined above, it is considered that continued use of the bridge is appropriate for the limited period of time prior to either the strengthening or demolition being planned to occur in 2026.

We note the relevance of the following key messages from MBIE’s Seismic Risk Guidance:

- *In most cases, seismically vulnerable buildings can be occupied while you plan, fund and then undertake seismic remediation work; and*
- *In general, a low %NBS rating is no need for alarm or immediate action. The life safety risk is still very low.*

Seismic Risk Evaluation – City to Sea Bridge, Wellington

**Appendix: Application of the BRANZ Decision Framework - Managing earthquake-prone council buildings
City to Sea Bridge**

Step	Considerations	Information / Comments
Step 1 Building assessment and further examination of key vulnerabilities	Seismic assessment is a Detailed Seismic Assessment?	Yes – Hoff Consultants Ltd 26 June 2024
	Report status and nature of review undertaken?	Final report, with Peer Review by Beca 27 June 2024
	Have all the secondary structural and heavy non-structural elements been identified?	No secondary structural and heavy non-structural elements on bridge
	What are the structural elements of the <i>bridge</i> that score less than 34%NBS?	The piles score 15%NBS (IL3) and the pile head joints 25%NBS (IL3)
	What are the modes of failure and the area of the <i>bridge</i> that is affected?	Instability of the sea wall resulting in significant lateral spreading of the ground, which leads to loss of vertical load carrying capacity of the piles and failure of the bridge superstructure.
	Are there other seismic vulnerabilities that score above 34%NBS?	The stair walls and deck diaphragm score 45%NBS
	Is the <i>bridge</i> or any part of it identified as dangerous in terms of the Building Act?	No
	Other considerations	

Step	Considerations			Information / Comments	
<p>Step 2</p> <p>Exposure of people to building risk</p>	<p>Table 1: Life Safety Risk Exposure</p>				
		High	Moderate	Low	
	<p>Maximum number of people <i>on or beneath the bridge</i> at any time</p>	>100	10 - 100	<10	<p><u>Case 1:</u> 6 lanes each with 6 cars at peak hour with average 2 people plus a bus plus 10 people on top = above 100</p> <p><u>Case 2:</u> >100 people on bridge during Civic Square/ Lagoon event</p>
	<p>Average number of people <i>on or beneath the bridge</i> at any one time</p>	>50	5 - 50	<5	
	<p>Average user time <i>on or beneath the bridge</i> (duration of use)</p>	Over 8 hours a day	2 - 8 hours a day	<2 hours	Very short duration for each person
	<p>Average weekly usage (person-hours per week)</p>	>2,000	50 - 2,000	<50	To be estimated – probably Medium
	<p>Exposure to people outside the <i>bridge</i></p>	<p>Risk of collapse onto high-use footpath (>100 people per hours); risk of collapse onto neighbouring structure</p>	<p>Risk of collapse on to adjacent moderate use footpath (5-100 people per hour)</p>	<p>Risk to low-use footpath (<5 people per hour)</p>	<p>Limited use of footpath along western side of Jervois Quay</p>
<p>Rating = High</p>					

Seismic Risk Evaluation – City to Sea Bridge, Wellington

Table 2: Period of Exposure

		Likely period until demolition commences			
		Long	Medium	Short	
Seismic hazard zone	High	>3 years	1 - 3 years	<1 year	High seismic hazard zone.
	Medium	>6 years	2 - 6 years	<2 years	WCC are planning to either strengthen or demolish the bridge in 2026
	Low	>9 Years	3 - 9 years	<3 years	
		Category = Medium			

Step	Considerations	Information / Comments
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Table 3: Degree of exposure

Combines the results from Tables 1 and 2

Step 2 (continued)	Exposure to risk (from Table 1)	Period of exposure (from Table 2)			
		Short	Medium	Long	
	Low	I	I	II	
	Moderate	I	II	III	
	High	I	III	III	
		Rating = III			
Step 3 Risk mitigation measures	None applicable				

Step	Considerations	Information / Comments
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Table 4: Consequence of closure

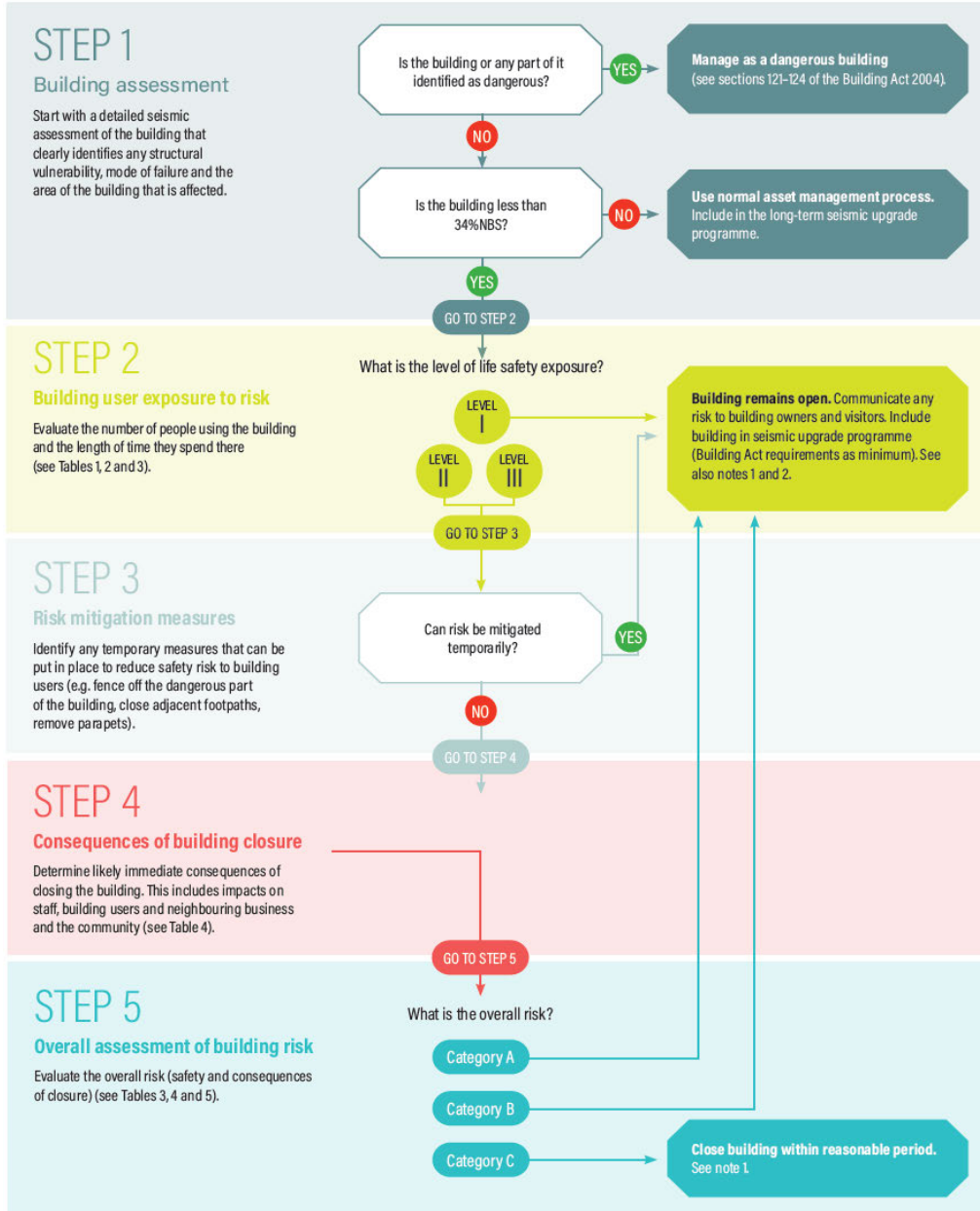
Step 4 Consequence of building closure		High	Moderate	Low	
	Ability to deliver services by other means	Service cannot be delivered through alternative means	Service can be partially delivered outside of the building	Service easily delivered through other means	Access across Jervois Quay is available by the other pedestrian footbridge and pedestrian crossing
	Impact on vulnerable communities (homeless, disabled, high needs, children, elderly)	Vulnerable community significantly impacted as they cannot be easily catered for	Vulnerable community impacted but services/ amenities can be found nearby	Limited or no vulnerable community use the building/ services	No direct impact on vulnerable community sectors
	Impact on neighbouring businesses	Neighbouring businesses significantly impacted by direct loss of customers	Neighbouring business affected by reduced foot traffic	Limited or no impact on neighbouring businesses	There are few neighbouring businesses in the immediate vicinity
	Impact on staff	Significant numbers of staff affected by closure	Some staff notably impacted by building closure	Few or no staff impacted	Assumes that no Council staff are affected
	Impact on traffic routes	Significant impact on the public and emergency services	Some impact on the public and emergency services	Limited impact on the public and emergency services	Major disruption to a key arterial route through the city
Category: High					



Seismic Risk Evaluation – City to Sea Bridge, Wellington

Step	Considerations				Information / Comments
Step 5 Overall assessment of building risk	Table 5: Overall occupancy assessment				
		<i>Consequence of closure (from Table 4)</i>			
	Degree of exposure to risk (Table 3)	High	Moderate	Low	
	II	A	B	B	Overall risk category: B – building remains open
III	B	B	C		

The BRANZ Framework



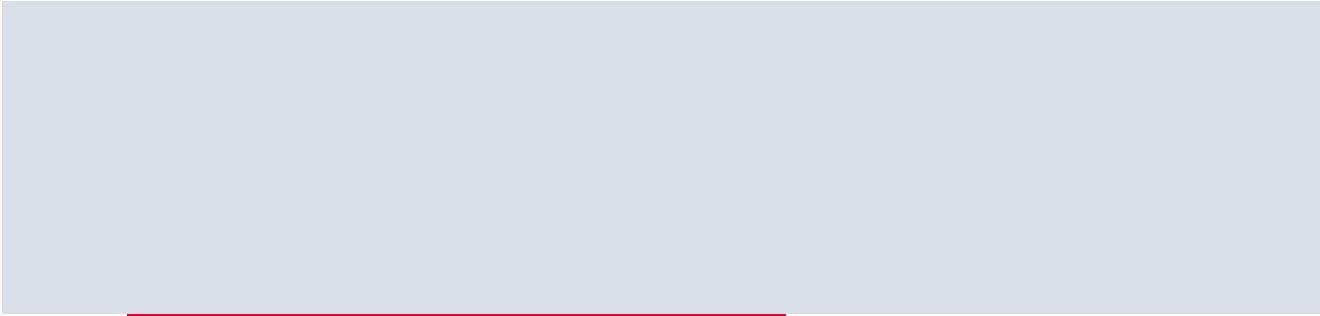
Seismic Risk Evaluation – City to Sea Bridge, Wellington

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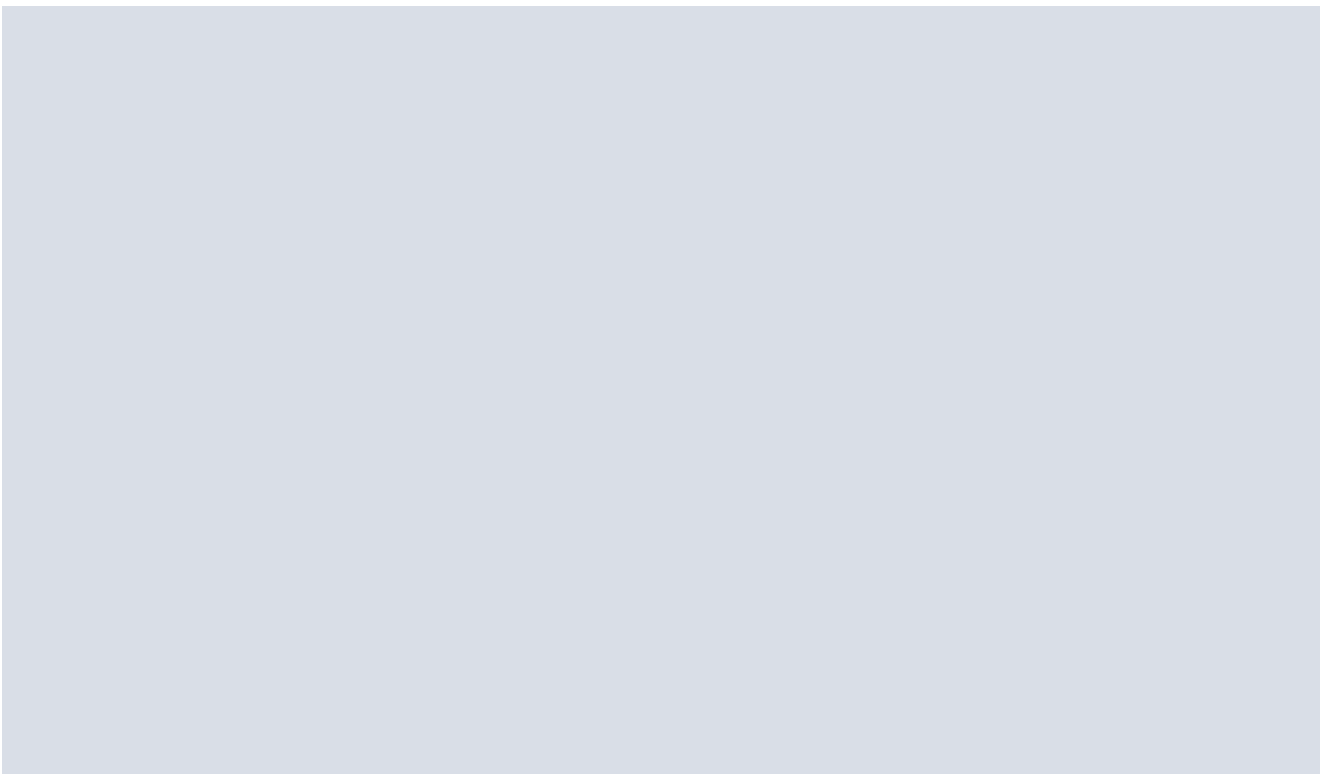
Kestrel Group
www.kestrel.co.nz





**ROUGH ORDER OF COST - DEMOLISH EXISTING BRIDGE AND
NEW PEDESTRIAN CROSSING - OCT 2024**

CITY TO SEA BRIDGE



CITY TO SEA BRIDGE

ROUGH ORDER OF COST - DEMOLISH EXISTING BRIDGE AND NEW PEDESTRIAN CROSSING - OCT 2024



PROJECT DETAILS

Basis of Estimate

This Concept Design cost estimate is based on measured quantities, historic data of similar projects and priced at rates and prices current as at October 2024, and applicable to a competitive tendered construction contract.

Our estimate has been prepared on the basis of “normal” economic considerations and in the context of “conventional” industry conditions. It is clear that the respiratory disease COVID-19, is having a significant impact Globally. Whilst the impacts are changing on a daily basis, the disease is rapidly being seen as the single most disruptive factor to affect Global population health and the worlds’economies. Our estimate makes no provision for the impacts of COVID-19. We advise that an impact on the estimate is likely, and could vary considerably depending on the extent and severity of a variety of issues, outside of our ability to control, influence or predict, extending but not limited to :

- Economy, industry and society shut down
- Border closures affecting supply of labour in particular
- Exchange rate fluctuations
- Off-shore manufacturing capacity and timing of delivery
- Local and National logistics, including delivery of materials and supplies etc.
- Availability of on-site staff to manage productivity of the works
- Availability of on-site labour to implement the works
- Availability of off-site management and administrative functions to support on-site activity

The impact on the estimate may only be in the short to medium term. However, this will be subject to ongoing monitoring.

Items Specifically Included

Construction Contingency
Design Contingency
Consultant Fees
Consent Fees
Insurances
Client Contingency

Items Specifically Excluded

Business Interruption Costs
Cultural Design Elements
Significant Works to Remediate the Existing Frank Kitts Lagoon Sea Wall
Escalation

Documents

Aurecon Preliminary Design - September 2024

CITY TO SEA BRIDGE

**ROUGH ORDER OF COST - DEMOLISH EXISTING
BRIDGE AND NEW PEDESTRIAN CROSSING - OCT
2024**



LOCATION SUMMARY

GFA: Gross Floor Area
Rates Current At October 2024

Ref	Location	GFA m ²	GFA \$/m ²	Total Cost \$
ALL	All Locations			23,600,000.00
ESTIMATED NET COST				23,600,000.00
MARGINS & ADJUSTMENTS				
	Main Contractors Preliminary & General Costs	12.0%		2,830,000.00
	Allowance for Scaffolding			Incl.
	Main Contractors Margin	6.0%		1,585,000.00
	Design Contingency	10.0%		2,800,000.00
SUBTOTAL				30,815,000.00
	Construction Contingency	10.0%		3,080,000.00
	Consultant Fees	7.5%		2,540,000.00
	Consent Fees			Excluded
	Insurances			Excluded
	Client Contingency			Excluded
	Escalation			Excluded
ESTIMATED TOTAL COST				36,435,000.00

CITY TO SEA BRIDGE

ROUGH ORDER OF COST - DEMOLISH EXISTING BRIDGE AND NEW PEDESTRIAN CROSSING - OCT 2024

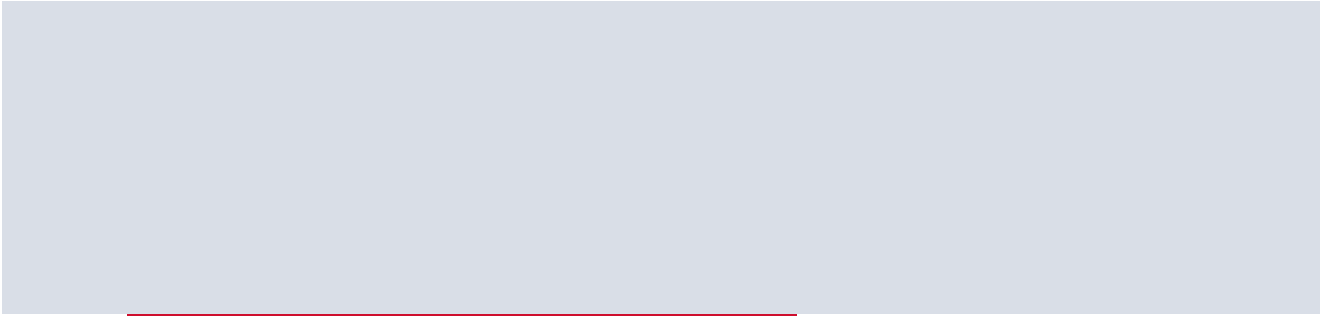


LOCATION ELEMENTS ITEM

ALL All Locations

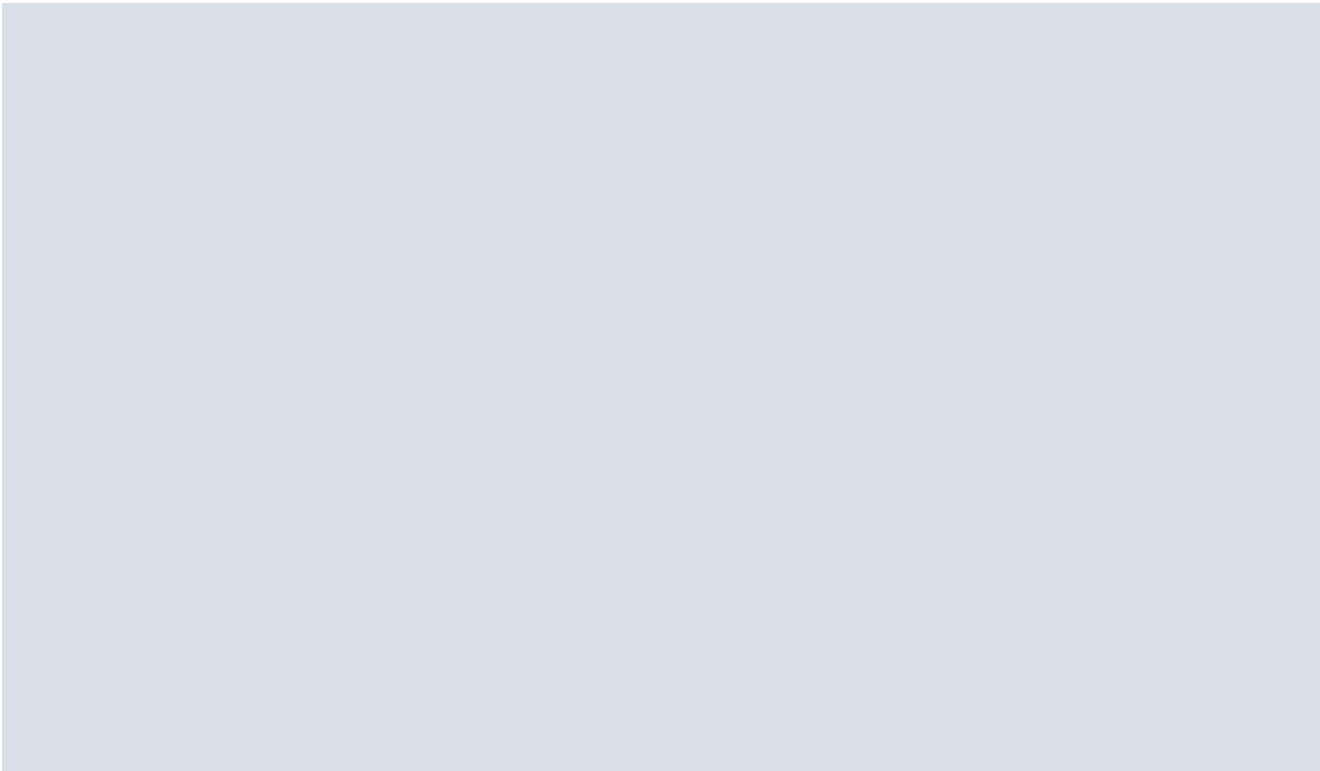
Rates Current At October 2024

Ref	Description	Unit	Qty	Rate \$	Total Cost \$
SP Site Preparation					
2	Allowance for traffic management	Item			500,000.00
3	Allowance for water management/ dewatering works	Item			100,000.00
25	Demolish Capital E complete	Item			6,000,000.00
27	Demolish existing bridge complete	Item			4,000,000.00
	SP - Site Preparation				10,600,000.00
SB Substructure					
26	New abutment on the Capital E site	Item			Excluded
	SB - Substructure				Excluded
FR Frame					
18	Loading Dock strengthening (Provisional)	Item			1,000,000.00
	FR - Frame				1,000,000.00
XW Exterior Works					
30	Landscaping and make good Capital E site (based on Area 3 similar design) (PROVISIONAL)	Item			10,000,000.00
31	New Pedestrian Crossing complete	Item			2,000,000.00
	XW - Exterior Works				12,000,000.00
ALL LOCATIONS					23,600,000.00



**ROUGH ORDER OF COST - DEMOLISH EXISTING BRIDGE, NEW
PEDESTRIAN CROSSING AND NEW BRIDGE - OCT 2024**

CITY TO SEA BRIDGE



CITY TO SEA BRIDGE

ROUGH ORDER OF COST - DEMOLISH EXISTING BRIDGE, NEW PEDESTRIAN CROSSING AND NEW BRIDGE - OCT 2024



PROJECT DETAILS

Basis of Estimate

This Concept Design cost estimate is based on measured quantities, historic data of similar projects and priced at rates and prices current as at October 2024, and applicable to a competitive tendered construction contract.

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- Border closures affecting supply of labour in particular
- Exchange rate fluctuations
- Off-shore manufacturing capacity and timing of delivery
- Local and National logistics, including delivery of materials and supplies etc.
- Availability of on-site staff to manage productivity of the works
- Availability of on-site labour to implement the works
- Availability of off-site management and administrative functions to support on-site activity

The impact on the estimate may only be in the short to medium term. However, this will be subject to ongoing monitoring.

Items Specifically Included

Construction Contingency - Conservative allowances based on unknown site conditions; and the like
Design Contingency - Conservative allowances based on current level of design
Consultant Fees
Consent Fees
Insurances
Client Contingency

Items Specifically Excluded

Business Interruption Costs
Cultural Design Elements
Significant Works to Remediate the Existing Frank Kitts Lagoon Sea Wall
Escalation

Documents

Aurecon Preliminary Design - September 2024

CITY TO SEA BRIDGE

**ROUGH ORDER OF COST - DEMOLISH EXISTING
BRIDGE, NEW PEDESTRIAN CROSSING AND NEW
BRIDGE - OCT 2024**



LOCATION SUMMARY

GFA: Gross Floor Area
Rates Current At October 2024

Ref	Location	GFA m ²	GFA \$/m ²	Total Cost \$
ALL	All Locations			28,600,000.00
ESTIMATED NET COST				28,600,000.00
MARGINS & ADJUSTMENTS				
	Main Contractors Preliminary & General Costs		14.0%	4,005,000.00
	Allowance for Scaffolding			Incl.
	Main Contractors Margin		6.0%	1,955,000.00
	Design Contingency		10.0%	3,455,000.00
SUBTOTAL				38,015,000.00
	Construction Contingency		10.0%	3,800,000.00
	Consultant Fees		10.0%	4,180,000.00
	Consent Fees		1.0%	460,000.00
	Insurances		1.0%	465,000.00
	Client Contingency		5.0%	2,345,000.00
	Escalation			Excluded
ESTIMATED TOTAL COST				49,265,000.00

CITY TO SEA BRIDGE

ROUGH ORDER OF COST - DEMOLISH EXISTING BRIDGE, NEW PEDESTRIAN CROSSING AND NEW BRIDGE - OCT 2024

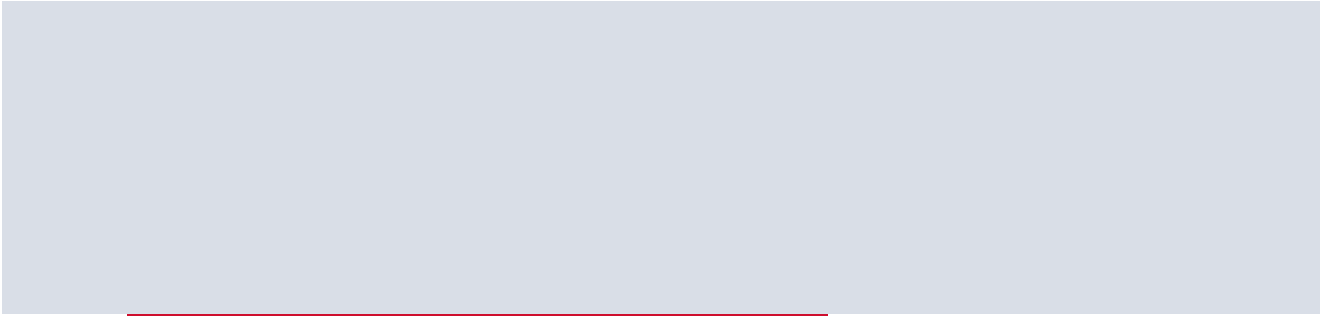


LOCATION ELEMENTS ITEM

ALL All Locations

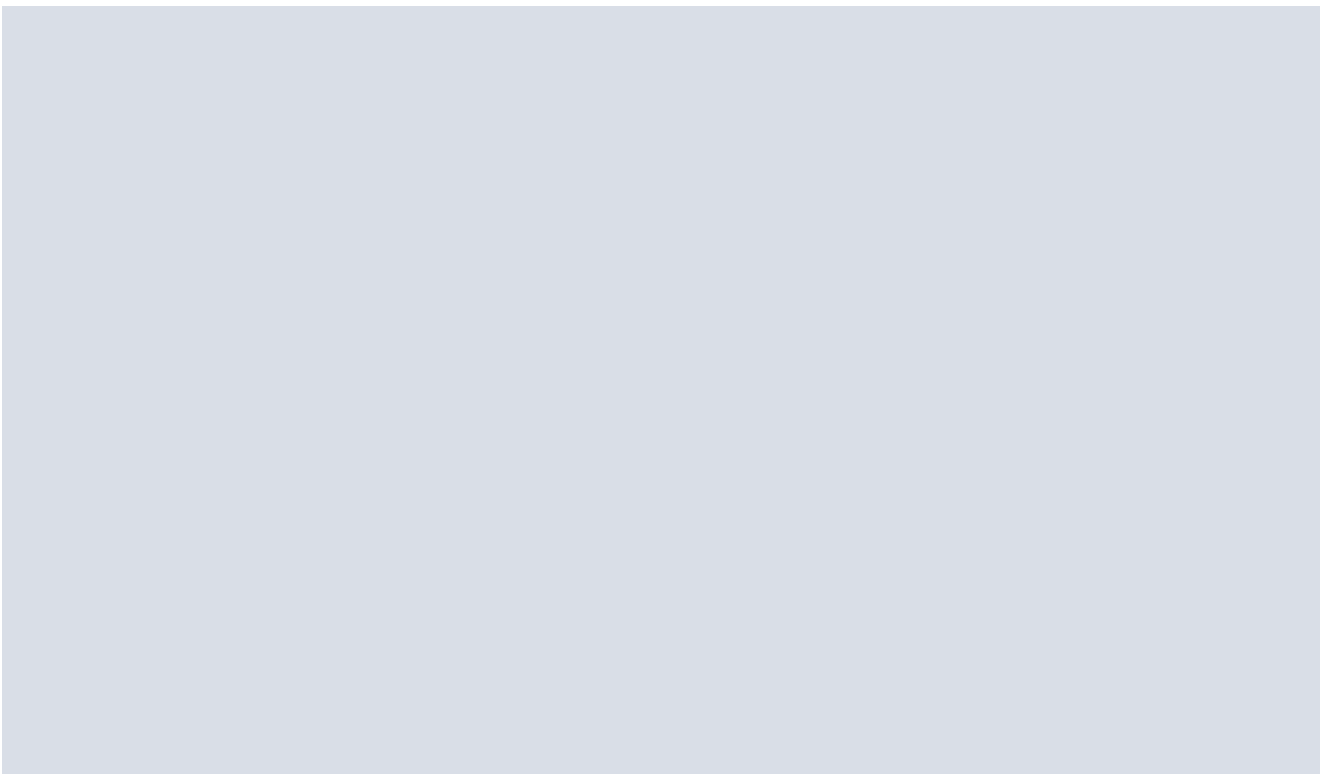
Rates Current At October 2024

Ref	Description	Unit	Qty	Rate \$	Total Cost \$
SP Site Preparation					
2	Allowance for traffic management	Item			500,000.00
3	Allowance for water management/ dewatering works	Item			100,000.00
25	Demolish Capital E complete	Item			6,000,000.00
27	Demolish existing bridge complete	Item			4,000,000.00
	SP - Site Preparation				10,600,000.00
SB Substructure					
26	New abutment on the Capital E site	Item			Excluded
	SB - Substructure				Excluded
FR Frame					
18	New Bridge complete	Item			8,000,000.00
32	Strengthening works to loading dock (Provisional)	Item			1,000,000.00
	FR - Frame				9,000,000.00
XW Exterior Works					
30	Landscaping and make good Capital E site (based on Area 3 similar design) (PROVISIONAL)	Item			7,000,000.00
31	New Pedestrian Crossing complete	Item			2,000,000.00
	XW - Exterior Works				9,000,000.00
ALL LOCATIONS					28,600,000.00



**ROUGH ORDER OF COST - BRIDGE STRENGTHENING, DEMOLISH
CAP E AND NEW ABUTMENT - OCT 2024**

CITY TO SEA BRIDGE



CITY TO SEA BRIDGE
ROUGH ORDER OF COST - BRIDGE
STRENGTHENING, DEMOLISH CAP E AND NEW
ABUTMENT - OCT 2024



PROJECT DETAILS

Basis of Estimate

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- Off-shore manufacturing capacity and timing of delivery
- Local and National logistics, including delivery of materials and supplies etc.
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- Availability of on-site labour to implement the works
- Availability of off-site management and administrative functions to support on-site activity

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Items Specifically Included

- Construction Contingency - Conservative allowances based on unknown site conditions; and the like
- Design Contingency - Conservative allowances based on current level of design
- Consultant Fees
- Consent Fees
- Insurances
- Client Contingency

Items Specifically Excluded

- Business Interruption Costs
- Cultural Design Elements
- Significant Works to Remediate the Existing Frank Kitts Lagoon Sea Wall
- Escalation

Documents

- Aurecon Preliminary Design - September 2024

CITY TO SEA BRIDGE
**ROUGH ORDER OF COST - BRIDGE
STRENGTHENING, DEMOLISH CAP E AND NEW
ABUTMENT - OCT 2024**



LOCATION SUMMARY

GFA: Gross Floor Area
Rates Current At October 2024

Ref	Location	GFA m ²	GFA \$/m ²	Total Cost \$
ALL	All Locations			31,766,500.00
ESTIMATED NET COST				31,766,500.00
MARGINS & ADJUSTMENTS				
	Main Contractors Preliminary & General Costs	20.0%		6,355,000.00
	Allowance for Scaffolding			Incl.
	Main Contractors Margin	6.0%		2,285,000.00
	Design Contingency	25.0%		10,100,000.00
SUBTOTAL				50,506,500.00
	Construction Contingency	25.0%		12,625,000.00
	Consultant Fees	15.0%		9,470,000.00
	Consent Fees	1.5%		1,090,000.00
	Insurances	1.0%		735,000.00
	Client Contingency	15.0%		11,165,000.00
	Escalation			Excluded
ESTIMATED TOTAL COST				85,591,500.00

CITY TO SEA BRIDGE
ROUGH ORDER OF COST - BRIDGE
STRENGTHENING, DEMOLISH CAP E AND NEW
ABUTMENT - OCT 2024



LOCATION ELEMENTS ITEM

ALL All Locations

Rates Current At October 2024

Ref	Description	Unit	Qty	Rate \$	Total Cost \$
SP Site Preparation					
1	Piling establishment, disestablishment, forming and removing working platform	Item			1,500,000.00
2	Allowance for traffic management	Item			500,000.00
3	Allowance for water management/ dewatering works	Item			100,000.00
4	Allowance for propping to beams which frame into northern abutment	Item			15,000.00
5	Allowance for propping to longitudinal precast beams including temporary foundations (Option 1 only)	Item			60,000.00
6	Carefully demolish northern abutment and stair	Item			15,000.00
7	Carefully demolish ramp and precast panels adjacent to southern abutment	Item			15,000.00
8	Demolish existing piers/ braces clashing with new trusses	Item			80,000.00
25	Demolish Capital E complete	Item			6,000,000.00
27	Allowance to prepare loading dock for strengthening works	Item			500,000.00
	SP - Site Preparation				8,785,000.00
SB Substructure					
9	Construct 2100mm diameter concrete pile underground at 20m pile length (REO 350kg/m3)	m	120	29,000.00	3,480,000.00
26	New abutment on the Capital E site - 7,000mm (PROVISIONAL)	Item			4,000,000.00
28	Strengthening works to loading dock (PROVISIONAL)	Item			1,000,000.00
	SB - Substructure				8,480,000.00
FR Frame					
10	Construct 1300mm cantilevered concrete pier above ground (REO 350kg/m3)	m	30	12,000.00	360,000.00
11	Construct new concrete tie beam at 1300mm D x varies width (REO 300kg/m3)	m ³	161	8,000.00	1,288,000.00
12	Option 1 - Install new steel trusses (500WC340)	kg	94,416	20.00	1,888,320.00
13	Option 1 - Allowance for connections to steel trusses	kg	28,325	20.00	566,500.00
16	Steel plate 16mm thick x 200mm	kg	1,487	20.00	29,740.00
17	Allowance for connections to steel plate	kg	447	20.00	8,940.00
18	Preload steel trusses	Item			0.00
	FR - Frame				4,141,500.00
XW Exterior Works					
19	Remove propping on site (Option 1 only)	Item			Included
20	Reinstate and make good existing northern abutment and stair	Item			30,000.00
21	Reinstate and make good existing ramp and precast panel adjacent to southern abutment	Item			30,000.00
22	Allowance for reinstatement works at the end of project	Item			300,000.00

Rough Order of Cost - Bridge Strengthening, Demolish Cap E and New Abutment - Oct 2024

5952-8 Printed 21 November 2024 2:00 pm

Page 3 of 4

**CITY TO SEA BRIDGE
ROUGH ORDER OF COST - BRIDGE
STRENGTHENING, DEMOLISH CAP E AND NEW
ABUTMENT - OCT 2024**



LOCATION ELEMENTS ITEM

ALL All Locations (continued)

Rates Current At October 2024

Ref	Description	Unit	Qty	Rate \$	Total Cost \$
30	Landscaping and make good Capital E site (based on Area 3 similar design) (PROVISIONAL)	Item			10,000,000.00
				XW - Exterior Works	10,360,000.00
ALL LOCATIONS					31,766,500.00



**LAGOON SEA WALL, LOADING DOCK & CAP E ROOF - ROUGH
ORDER OF COST - NOVEMBER 2024**

WELLINGTON CITY COUNCIL



WELLINGTON CITY COUNCIL

LAGOON SEA WALL, LOADING DOCK & CAP E ROOF - ROUGH ORDER OF COST - NOVEMBER 2024



PROJECT DETAILS

Basis of Estimate

This Concept Design cost estimate is based on measured quantities, historic data of similar projects and priced at rates and prices current as at November 2024, and applicable to a competitive tendered construction contract.

Our estimate has been prepared on the basis of “normal” economic considerations and in the context of “conventional” industry conditions. It is clear that the respiratory disease COVID-19, is having a significant impact Globally. Whilst the impacts are changing on a daily basis, the disease is rapidly being seen as the single most disruptive factor to affect Global population health and the worlds'economies. Our estimate makes no provision for the impacts of COVID-19. We advise that an impact on the estimate is likely, and could vary considerably depending on the extent and severity of a variety of issues, outside of our ability to control, influence or predict, extending but not limited to :

- Economy, industry and society shut down
- Border closures affecting supply of labour in particular
- Exchange rate fluctuations
- Off-shore manufacturing capacity and timing of delivery
- Local and National logistics, including delivery of materials and supplies etc.
- Availability of on-site staff to manage productivity of the works
- Availability of on-site labour to implement the works
- Availability of off-site management and administrative functions to support on-site activity

The impact on the estimate may only be in the short to medium term. However, this will be subject to ongoing monitoring.

Items Specifically Included

New estimate clarification

Items Specifically Excluded

Relocation Costs

Business Interruption Costs

Documents

Tonkin + Taylor Lagoon Sea Wall Design Options - November 2023

Aurecon Cap E Roof WIP 20241121

Additional Price Options

WELLINGTON CITY COUNCIL

LAGOON SEA WALL, LOADING DOCK & CAP E ROOF - ROUGH ORDER OF COST - NOVEMBER 2024



LOCATION SUMMARY

Rates Current At February 2024

Ref	Location		Total Cost \$
A	Construction Works		24,125,000.00
B	Escalation		Excluded
ESTIMATED NET COST			24,125,000.00
MARGINS & ADJUSTMENTS			
	Main Contractors Preliminary & General Costs	20.0%	4,825,000.00
	Allowance for Scaffolding		Incl.
	Main Contractors Margin	7.0%	2,026,500.00
	Design Contingency	20.0%	6,195,300.00
SUBTOTAL			37,171,800.00
	Construction Contingency	20.0%	7,434,400.00
	Consultant Fees	10.0%	4,460,600.00
	Consent Fees	1.5%	736,000.00
	Insurances	2.0%	996,100.00
	Client Contingency	5.0%	2,539,900.00
ESTIMATED TOTAL COST			53,338,800.00

WELLINGTON CITY COUNCIL

**LAGOON SEA WALL, LOADING DOCK & CAP E ROOF
- ROUGH ORDER OF COST - NOVEMBER 2024**



LOCATION ELEMENTS ITEM

A Construction Works

Rates Current At February 2024

Ref	Description	Unit	Qty	Rate \$	Total Cost \$
NA Not Applicable					
1	Option 1 - Forming site access, working compound and reinstatement at the end of project (Provisional)	Item			1,500,000.00
2	Option 1 - Remove existing soft marine deposits in front of seawall down to non-liqueflable ground (Provisional)	m ³	5,000.0	400.00	2,000,000.00
3	Option 1 - Extra value for disposing material as contaminated (Provisional)	m ³	5,000.0	350.00	1,750,000.00
4	Option 1 - Place new rockfill in front of seawall (Provisional)	m ³	16,750.0	500.00	8,375,000.00
20	Loading Dock Strengthening (Provisional)	Item			1,000,000.00
21	Cap E Roof Strengthening (Provisional)	Item			7,500,000.00
23	Bridge Foundation Ties (Provisional)	Item			500,000.00
22	Bridge Beam Upgrades (Provisional)	Item			500,000.00
24	Artwork removal/re-installation/Make Good (Provisional)	Item			1,000,000.00
NA - Not Applicable					24,125,000.00
CONSTRUCTION WORKS					24,125,000.00

WELLINGTON CITY COUNCIL

**LAGOON SEA WALL, LOADING DOCK & CAP E ROOF
- ROUGH ORDER OF COST - NOVEMBER 2024**



LOCATION ELEMENTS ITEM

B Escalation

Rates Current At February 2024

Ref	Description	Unit	Qty	Rate \$	Total Cost \$
ES	Escalation to Contract Completion				
18	Cost escalation	Item			Excluded
	ES - Escalation to Contract Completion				Excluded
ESCALATION					Excluded

NOM - ISLAND BAY LIBRARY CAR PARK

Kōrero taunaki | Summary of considerations

Purpose

1. This report to Kōrau Tūāpapa | Environment and Infrastructure Committee responds to the notice of motion moved by Councillor Abdurahman, seconded by Councillor McNulty.

Strategic alignment

2. The most relevant community outcomes, strategic approaches, and priorities for this paper include Making our city accessible and inclusive for all and revitalise the city & suburbs to support a thriving & resilient economy & support job growth.

Relevant previous decisions

3. 27 May 2021 the Annual Plan/Long-Term Plan Committee allocated \$2.5 million for the Island Bay and Berhampore town centre upgrades.
4. 10 November 2021 the Pūroro Āmua - Planning and Environment Committee resolved to progress The Parade Safety Improvements option and set a maximum budget for the project.
5. 14 December 2022 the Koata Hātepe | Regulatory Processes Committee resolved TR178-22 - Parade Safety Improvements and endorsed the Village Upgrades Design.
6. 23 November 2023 the Kōrau Mātinitini | Social, Cultural, and Economic Committee endorsed Te Awe Māpara Community Facilities Plan, which proposed investigating the opportunity to expand the Island Bay Library onto the vacant site (action F12).
7. 11 September 2024 the Koata Hātepe | Regulatory Processes Committee resolved to *'Direct officers to investigate the use of any budget left over from the Island Bay and Berhampore town centre upgrades for place-making (traffic calming) in Wadestown and/or providing parking behind the Island Bay library.'*

Significance

8. The decision is **rated low significance** in accordance with schedule 1 of the Council's Significance and Engagement Policy as it;
 - Affects a limited number of individuals, to a low degree;
 - Low impact on the Council being able to perform its role;
 - Able to be reversed;
 - Is a strong logical step from a prior decision.

Financial considerations

Nil Budgetary provision in Annual Plan / Long-term Plan Unbudgeted \$X

9. The adjacent Safety Improvements and Village Upgrades budgets were funded from LTP 2021-31 CAPEX allocations.
10. High-level rough cost estimate cost of implementation of a public carpark on the identified site and will be refined as the designed detail is progressed further. The estimates are set out in the discussion section of this report.

Risk

Low Medium High Extreme

11. There are safety concerns that have been identified which will need to be mitigated if the proposal is progressed.
12. Misalignment with our transport hierarchy priorities as this proposal establishes a precedent for other projects, whereby public expectations are created that council will provide off street parking to off-set on street parking loss for street and town centre upgrade projects.

Authors	Brennan Baxley, Senior Urban Designer Liam Farrell, T/I Public Space Delivery
Authoriser	Vida Christeller, Manager City Design Liam Hodgetts, Chief Planning Officer

Notice of Motion

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. **Agree** to convert the vacant land (former Plunket site) behind the Island Bay library into a P120 car park to support local community and businesses (including the pharmacy, medical centre, restaurants, takeaway shops, the cinema, and cafes) until its future use is decided in Te Awe Māpara action F12.
2. **Agree** to use up to half of the unused budget from the Berhampore and Island Bay beautification fund (2021 Long-Term Plan) for additional place making (temporary parking improvements) at the former Plunket site behind the Island Bay library.
3. **Note:** The land behind the Island Bay Library is owned by Wellington City Council (WCC) and currently vacant / has been used as a lot by WCC contractors working on the beautification project.
4. **Note:** The future of this site will be considered as part of Te Awe Māpara action F12 - Island Bay facility provision. This action has not been scheduled yet but will be looked at in the coming years.

Takenga mai | Background

13. The notice of motion has been received in accordance with the Council's Standing Orders (Attachment 1).
14. Standing Order 23.1 requires the notice of motion to be submitted to the Chief Executive not less than four weeks prior to the specific meeting at which it is to be considered. This notice of motion was submitted to the Chief Executive on 30 September 2024.
15. Standing Order 23.1 requires the notice of motion to be signed by at least one-third (six) of elected members. This notice of motion was signed by eight of eighteen elected members.
16. Once the notice of motion has been accepted onto the agenda of the meeting, the procedure for resolving notices of motion is set through standing orders 23.4 to 23.6.
17. The motion can only be altered by the mover with the agreement of a majority of members present at the meeting.
18. Once moved and seconded, no amendments can be proposed.
19. Action F12 of Te Awe Māpara - Community Facilities Plan, adopted in November 2023, relates to utilisation of the land behind to the Island Bay Library - *'Former Plunket building behind the library has been demolished providing opportunities for expansion.'* Action F12's intention was to enable consolidation of multiple community services in one complex and cater for growth. F12 has been identified for delivery in the short-term (short: commence investigation in years 4 to 6).

Officers' Response

Site Detail (refer Attachment 3)

20. #167 The Parade - Lot 32 Block V DP 1340 is owned and maintained by Wellington City Council.
21. The rear area of the lot, which is being discussed in this paper, is approximately 340m².

22. This lot was tenanted by Plunket. The building was demolished in early 2023 after the tenancy ceased.
23. Following demolition of the Plunket building, the vacant area was used as a site office and car park for the contractors undertaking the Village Upgrades/Safety Improvements project. This project is now complete.
24. The rating land value for 167 The Parade is \$2,140,000, which includes the vacant rear area and the area upon which the library is built.
25. Based on the above, the rear vacant area or 340 m² would have an approximate land value of ~\$0.95m, assuming that access is readily available. In accordance with WCC's Property Transaction Policy, a current market valuation from a registered valuer will be obtained if divestment of the site is desired.
26. Access to the site from The Parade is through a 3.2m - 3.5m wide laneway that flanks the northern edge of the library building.
27. A wooden and metal swing gate currently controls entry to and from the area.
28. The vacant area of the lot is surrounded by residential units in the east and to the south, and a café/bar and car mechanic to the north.

Kōrerorero | Discussion

29. The following options were looked at to inform the discussion points:
30. All options assume that the site will be developed, starting in year 4-6, as per the Te Awe Māpara plan.
31. **Option 1: Do nothing** – leave the site vacant until future development commences.
32. **Option 2: Restricted access parking** – This option would improve the gravel surface and enable use by library staff and deliveries and/or provide restricted (council permitted use only) access, e.g. staff parking for local businesses. Note an informal parking management approach would have to be agreed.
33. The above options would cost approximately \$20k-\$60k.
34. **Option 3: Public carpark** – This option would include the laying of an asphaltic concrete surface with appropriate measures to address surface runoff, address some safety issues and the installation of requirements for parking restriction enforcement, which would require a traffic resolution to create a public car park.
35. Proposed cost for rear lot and driveway based on public carpark with asphaltic concrete surface is estimated to cost approximately \$225K.
36. Officers have progressed developing a concept design and rough order costs for option 3 - a public carpark in response to the Notice of Motion.

Financial considerations:

37. At the 11 September 2024 the Koata Hātepe | Regulatory Processes Committee officers were directed to investigate the use of any budget left over from the Island Bay and Berhampore town centre upgrades for place-making (traffic calming) in Wadestown and/or providing parking behind the Island Bay library.

38. The Parade safety improvements and town centre beautification projects are complete, and the forecasted remaining budget is \$530k, made up of \$310K in the Safety Improvements project budget and \$220K in the Small Centres Beautification project budget.
39. If the committee chooses to instruct officers to plan and deliver option 3 at an estimated cost of \$225k, the remaining balance for placemaking at Wadestown village would be approximately \$305K.
40. The site is currently vacant and covered with loose gravel which requires little maintenance.
41. If the committee chooses to progress with option 2, officers identify approximately \$20k-\$60k for only providing level gravel, electronic sliding/swing gate with controlled access for library staff and local business staff, and no enforcement of parking restrictions.
42. There will also be operational costs in terms of maintenance, renewals and possibly CCTV monitoring.

Planning considerations:

43. Under the operative District Plan (2000) Centres Area Rules (Chapter 7) a resource consent will be required, as the proposal does not meet the site access and servicing standard (Standard 7.6.1.5)
44. Consent is required under Proposed District Plan's traffic rule 5. Officers note the proposal does not meet standard 7 as the parking area is proposed to have more than three carparks and the road in question is a Principal Road.

Traffic safety considerations:

45. As part of the Island Bay Village Safety Improvements TR 178-22 Resolution, P60 parking restrictions increased from 50 to 54 allocated spaces, while approximately 15 unrestricted parks were removed in the immediate vicinity of the town centre.
46. Concept sketch designs (Attachment 2) developed by a WCC roading engineer and urban designer identify approximate 9 car parks could be established on the site. Note these plans have allowed for appropriate turning radius, minimum access, and standard car park dimension requirements.
47. An initial high-level design risk assessment undertaken on pedestrian and vehicle conflicts indicates low and moderate severity of outcomes with mitigation or control measures in place.
48. This assessment showed that two cars entering/exiting the site would not be able to pass on the driveway, which creates an issue and safety risk. Of particular concern is the potential of cars reversing onto a Principal Road.
49. A road safety audit and security assessment will need to be completed and issues mitigated or risk accepted. The following traffic safety issues have also been identified.
 - The library entrance which is accessed off the driveway is heavily trafficked by pedestrians. The assessment will need to assess the increased numbers of vehicle movements could result in increased levels of conflict between vehicles and pedestrians – Annual visitor numbers are approximately 43k visitors or an average approx. 19 visitors per hour (in opening hours).

- Restricted hours and access to the parking lot may be required to ensure turnover and avoid vehicle exit and entry conflict.

Public Safety and Risks Considerations:

50. Safety concerns exist as the site is not easily visible from the road and not monitored by CCTV. This will need to be addressed as part of the design.
51. CCTV will likely be required to be installed if use as a public restricted car park following an assessment.
52. If option 2 is progressed the equipment for CCTV can be reused in other locations following disestablishment of the interim use.
53. Lighting design expected for carpark and pedestrian use will need to meet off-street carpark requirements and will most likely require multiple poles. ASNZ 1158 3-1 2020 Table 2.5.

Design considerations:

54. New drainage and connections to stormwater infrastructure will be required because of these are currently not established on the site particularly if the surface is asphalted and water is no longer able to be absorbed naturally. This will be necessary to ensure surface water does not impact neighbouring properties and/or create flooding and pooling issues.
55. Mobility parks have been considered for the parking space, however, are not recommended as there are mobility parks on street outside medical centre (approx. 30m from the library entrance).
56. The existing silver birch tree is recommended to be retained and will be included in the design.
57. The property adjacent to the northern boundary in the driveway encroaches onto the council land with a heat pump unit and a few rubbish bins. The unit, rubbish bins and two other service lids straddle the property with the boundary line. Discussions with the property owner will be necessary to ensure safe vehicle access and potential expansion of the asphalt driveway.
58. Design and delivery is expected to take approximately 6-10 months for civil/urban design, consenting, traffic resolution consultation, construction, and service connections.

Whai whakaaro ki ngā whakataunga | Considerations for decision-making

Alignment with Council's strategies and policies

59. This Notice of Motion does align with the Parking Policy Objectives supporting business wellbeing, city place-making, amenity & safety, and access for all.
60. Short stay parking (Less than 3 hours restriction) for suburban centres (shopping precincts), Council's community facility and council's off-street parking is a *High* priority in the Parking Policy.

61. A proposed car park at the rear of the lot on a main road classification is aligned the District Plan local centre zones.
62. This Notice of Motion does not align with Te Atakura First to Zero actions.
63. This Notice of Motion is directly influenced by the outcomes of the Te Awe Māpara Community Facilities Plan action F12 Island Bay Facility Provision.
64. Misalignment with our transport hierarchy priorities as this proposal establishes a precedent for other projects, whereby public expectations are created that council will provide off street parking to off-set on street parking loss for street and town centre upgrade projects.

Engagement and Consultation

65. This issue sits as the Low Significance engagement spectrum, as per the Significance and Engagement Policy.
66. This notice of motion has not needed any public consultation to date. However, public consultation will be required for the traffic resolution as part of delivery (if agreed).

Financial implications

67. The indicative cost for this car park, Option 3 is approximately \$225K including civils, drainage, asphaltic concrete, project management and construction.
68. Opex cost and BAU budgets are not included in the above figure, however added maintenance costs, enforcement, and decommissions need to be investigated and quantified.
69. The car park can be funded by either remaining capex budgets of the Safety Improvements or the Small Centres Beautification.
70. No other funding has been considered.

Legal considerations

71. The site is exclusively owned by Council in a Fee Simple Record of Title and has no encumbrances or impediments.
72. There have been recent challenges with the neighbouring business at 163 The Parade, resulting in encroachment on Council land (see paragraph 57), in particular, placement of bins and general waste and large air-con units. These types of encroachments can be remedied easily as they are movable objects but may impact on the relationship and cause un-necessary confrontation.
73. The driveway access for entry and exit is not wide enough for more than one vehicle at a time. There is no passing place, and this has the potential to cause accidents (see Risks and Mitigation below) and increase the health and safety liability for Council.

Risks and mitigations

74. The reputational risk at this stage is low given the community's interest in increasing available car parks, however the immediate neighbours and users of the library may have concerns.
75. There are potential security and safety risks with limited visibility to the rear of the lot, and this may require CCTV.

-
76. Risks and issues with pedestrian/vehicle conflict in driveway due to there only being space for one vehicle at a time has a **medium** rating with treatments in place, as it remains possible likelihood with moderate consequence (harm to an individual of community).
 77. If the committee would like officers to proceed with the design of this project, officers recommend active mitigation of the vehicle collision risk in the narrow driveway, including investigating widening the entry/exit and creating an off-street pullover area.
 78. Pending the final detail design, there may be a risk that the entrance to the library will need to undergo an assessment for potential re-design and / or additional land purchase is required (the cost of this has not been factored into the costings of option 2 or 3).
 79. According to [Wellington City Council Enterprise Risk Management Framework](#)- Council Strategic Risk, Inadequate Harm Prevention is rated **medium**- given possible likelihood of safety issues with a moderate consequence to community health and safety. This will need to be assessed through the commission of and response to a Road Safety Audit and will likely require implementing additional road, cyclists, and pedestrian safety measures.
 80. A risk and mitigation assessment on the detail design and operations according to Council's Operation Risk Framework will be developed if officers are to proceed.

Disability and accessibility impact

81. Further mobility parking considerations may be necessary.
82. Pending action from Notice of Motion, universal access principles will need to be applied through design stages.
83. Additional CPTED (Crime Prevention Through Environment Design) considerations will be reviewed.

Climate Change impact and considerations

84. Proposed car park does not contribute positively to Wellington's Zero Carbon Goal.
85. No carbon reduction/minimisation plan proposed.
86. This lot sits within a 0.10-0.25m to 0.25-0.50m flood zone. This property has been identified as possibly at risk of flooding during severe storm events (1 in 100-year Annual Return Interval + 20% Climate Change Intensity). This risk has been shown from either historic flooding records or flood modelling compiled by Wellington Water.

Communications Plan

87. Appropriate plans will be developed if the committee chooses to initiate the project with option 2 or 3.
88. A newsletter has been prepared to send out to the town centre beautification project email group to notify stakeholders regarding decisions made about this NoM.

Health and Safety Impact considered

89. Increased health and safety risks or hazards for the community and library users are expected with the proposed implementation of the car park, due to increased vehicle movements, noncompliant sightlines, and the narrowness of the driveway.
90. Design can most likely mitigate most risks by treating the space with proper solutions, however some safety issues will remain.

Ngā mahinga e whai ake nei | Next actions

91. If committee agrees to instruct officers to initiate the project and proceed with establishing a public carpark, officers will develop the design, apply for a resource consent, and undertake a traffic resolution process including public consultation.

Attachments

Attachment 1.	NoM PDF	Page 542
Attachment 2.	Draft Concept Plan	Page 543
Attachment 3.	Site Photos	Page 544

9 September 2024

Ms. Barbara McKerrow
 Chief Executive
 Wellington City Council
 113 The Terrace, Te Aro
 Wellington 6011

Absolutely Positively Wellington City Council
 Me Heke Ki Pōneke




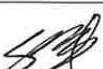
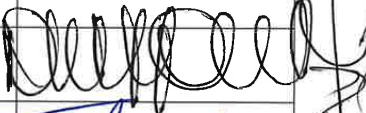

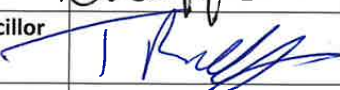

NOTICE OF MOTION

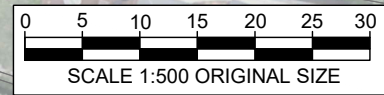
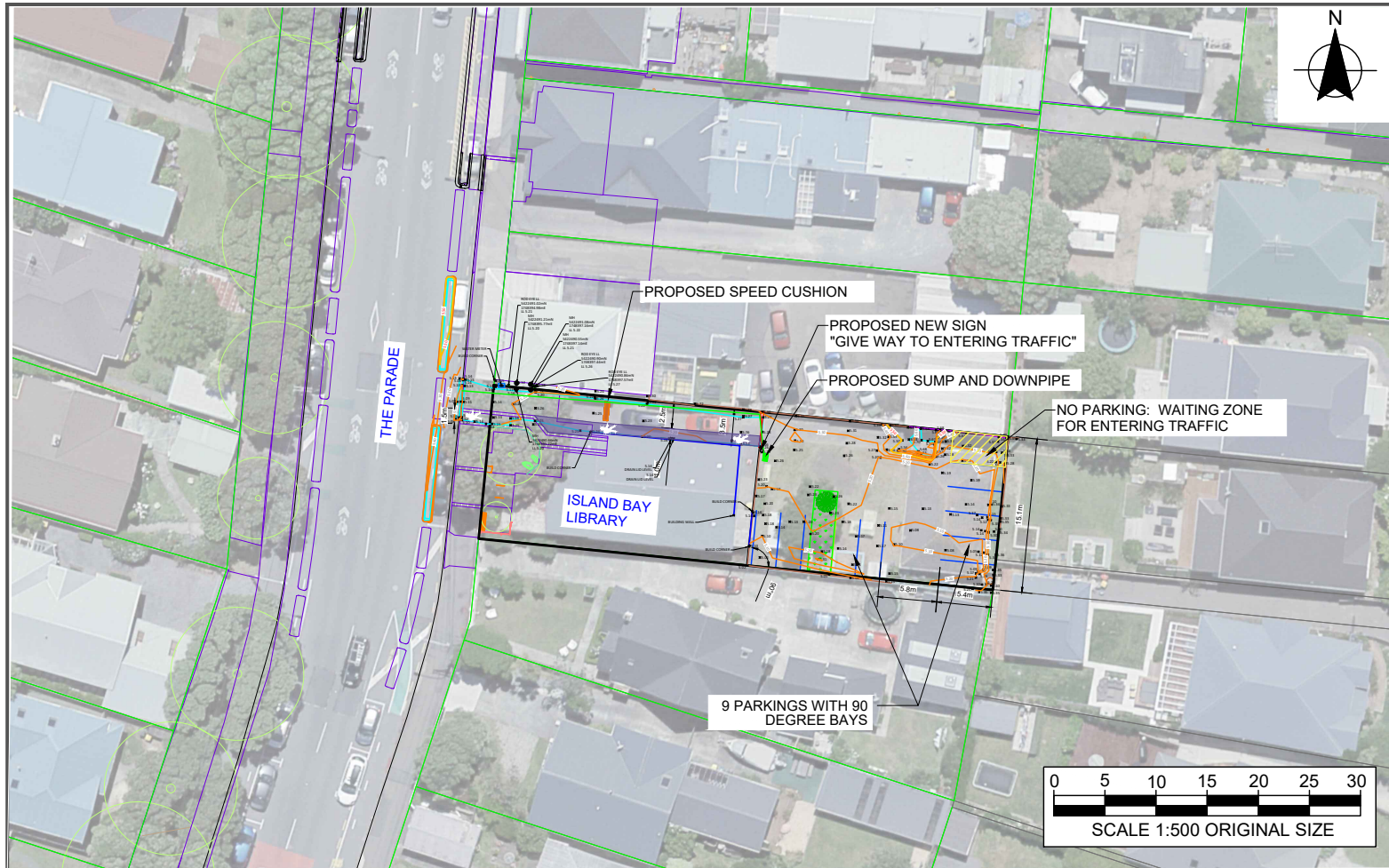
We the undersigned Wellington City Councillors formally advise that we do support the utilization of the vacant land behind the Island Bay Library for community parking, until its future use is decided in Te Awe Māpara action F12.

Do therefore present the following Notice of Motion:

Kōrau Tūāpapa | Environment and Infrastructure Committee

1. Agree to convert the vacant land (former Plunket site) behind the Island Bay library into a Proposed P120 car park to support local community and businesses (including the pharmacy, medical centre, restaurants, takeaway shops, the cinema and cafés) until its future use is decided in Te Awe Māpara action F12.
2. Agree to use up to half of the unused budget from the Berhampore and Island Bay beautification fund (2021 Long-Term Plan) for additional place making (temporary parking improvements) at the former Plunket site behind the Island Bay library.
3. Note: The land behind the Island Bay Library is owned by Wellington City Council (WCC) and currently used as a car park by WCC contractors working on the beautification project.
4. Note: The future of this site will be considered as part of Te Awe Māpara action F12 – Island Bay facility provision. This action has not been scheduled yet but will be looked at in the coming years.

Her Worship Tory Whanau, Mayor		Rebecca Matthews, Councillor	
Laurie Foon, Deputy Mayor		Geordie Rodgers, Councillor	
Diane Calvert, Councillor		Sarah Free, Councillor (Recorder)	
Ben McNulty, Councillor (Second)		Ray Chung, Councillor	
Nikau Wi Neera, Councillor		Iona Pannett, Councillor	
Nureddin Abdurahman, Councillor (Mover)		Nicola Young, Councillor	
Teri O'Neill, Councillor		Tony Randle, Councillor	
Liz Kelly, Pouwi		Holden Hohaia, Pouwi	
John Apanowicz, Councillor		Tim Brown, Councillor	



No	Revision	Drawn	Site Manager	Project Director	Date

**Absolutely Positively
Wellington City Council**
Me Heke Ki Foneke

Although the information displayed has been prepared with care and in good faith, this map is designed to be illustrative only. The council cannot guarantee the accuracy or completeness of the information and accepts no liability for any loss suffered as a result of reliance on it. Property boundary/Asset display may not be survey accurate, and can only be verified by a registered surveyor.
This map is drawn on the New Zealand Transverse Mercator projection, using New Zealand Geodetic Datum 2000
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Drawn: BB
Approved (Project Director): DD
Scale: (1:500)
Date: 13/11/2024

Designer: BB
Original Size: A4
Project: ISLAND BAY LIBRARY
NEW PARKING LAYOUT
Plan 1

Rear Lot Island Bay Library November 2024



1. View East. Access driveway from The Parade/ Library Entrance and adjacent property obstructions.



2. View West. Access driveway from rear lot, with council vegetation and property line fence.



3. View SSE - Container (rear left) removed, concrete drive remains.



4. View NNW - Rear of library, Silver Birch left centre.

HOUSING ACTION PLAN 6-MONTHLY REPORT

Kōrero taunaki | Summary of considerations

Purpose

1. This report presents the Kōrau Tūāpapa | Environment and Infrastructure Committee (Committee) with the third six-monthly Housing Action Plan 2023-25 Report Dashboard.
2. At the August 2024 Committee meeting, officers were directed to present the next Housing Action Plan 2023–2025 report in November 2024, focusing solely on the Dashboard.

Strategic alignment

3. The most relevant community outcomes, strategic approaches, and priorities for this paper include:

Relevant previous decisions

4. 21 June 2018, the City Strategy Committee approved the Wellington City Council Housing Strategy and an associated Housing Action Plan.
5. 12 March 2020, the Strategy and Policy Committee approved the Wellington City Council Housing Action Plan for the 2020-22 triennium.
6. 10 September 2020, the Strategy and Policy Committee received the Housing Action Plan 6-month Report. The Committee approved an amended Housing Action Plan due to the impact of COVID-19 and a minor amendment to the Housing Strategy to include the Wellington Housing Affordability Model.
7. 2 June 2021, the Social, Cultural and Economic Committee received the Housing Action Plan 6-month Report. The committee agreed that future reports on the Housing Action Plan include targets to increase the number of universal design / accessible units across the Council's portfolio, including Te Kāinga, to increase Wellington's accessible housing stock.
8. 24 November 2021, the Planning and Environment Committee adopted an amended Housing Action Plan 2020-22 and agreed to the proposed scope of the Housing Strategy and Action Plan update.
9. 9 June 2022, the Planning and Environment Committee received the final Housing Action Plan 6-month Report for 2020-22.
10. 8 June 2023, the Environment and Infrastructure Committee adopted the Housing Action Plan 2023-25, adding additional actions across the six priority programmes and including a further programme focusing on Rental Housing.
11. 30 November 2023, the Environment and Infrastructure Committee agreed to amend the Housing Action Plan 2023-2025 to include new timeline targets for various actions. This report also presented the first 6-monthly Action Plan report and provided advice on the Rental Inspection Service Pilot and the Warmer Kiwi Homes programme.
12. On 1 August 2024, the Planning and Environment Committee received the second Housing Action Plan six-monthly report and agreed to schedule the subsequent updates for November 2024 (dashboard only) and May 2025. The report also provided

advice on the Te Kāinga Affordable Rental Programme, Housing Regulations and Consenting support for earthquake-prone, Affordable and Public Housing.

Financial considerations

Nil Budgetary provision in Annual Plan / Long-term Plan Unbudgeted \$X

Risk

Low Medium High Extreme

Authors	Hayley Moselen, Housing Strategy Lead Paul McCorry, Manager Housing Development
Authoriser	Liam Hodgetts, Chief Planning Officer

Taunakitanga | Officers' Recommendations

Officers recommend the following motion:

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.
2. **Note** the updates included in the third six-monthly Housing Action Plan 2023-25 Report Dashboard.

Whakarāpopoto | Executive Summary

3. The Housing Action Plan 2023-25 (Action Plan) was adopted in June 2023 to put into effect the long-term outcomes and vision of the Wellington City Council's Housing Strategy (Strategy).
4. The six-monthly report on the Action Plan dashboard provides updates on the seven priority programmes within it.

Takenga mai | Background

5. Improving housing outcomes is a priority for the Council. Having the security of a safe, warm, dry, and affordable home is a crucial foundation for ensuring that individuals, families, and whānau can live well and achieve their aspirations. This supports broader community outcomes and ensures the city's full potential, and wider socio-economic aims are realised.
6. In June 2018, the Strategy was adopted unanimously and developed based on extensive engagement, consultation through the Long-term Plan 2018-2028 and recommendations from the Mayor's Housing Taskforce.
7. The Strategy has a ten-year long-term focus (2018-2028), within that the triennial Housing Action Plan sets the short to medium-term priorities and tangible actions to deliver on that Strategy.
8. The first Action Plan was approved alongside the Strategy in 2018, and the second Action Plan 2020-22 was adopted in March 2020.
9. In June 2023, the Committee adopted the Council's third Action Plan, which covers the 2023-25 Council triennium. It focuses Council efforts on seven priority programmes of work supported by strategic partnerships that help the Council deliver on the vision of 'all Wellingtonians well housed.'
10. In November 2023, the first six-monthly Action Plan report was presented to the Committee, highlighting several significant milestones achieved in the initial reporting period. Notable accomplishments included the full occupancy of the three Te Kāinga Affordable Rental Programme buildings (212 housing units) and the completion of a review assessing the effectiveness of the Council's financial investments in reducing homelessness.
11. The second six-monthly Action Plan report was originally scheduled for presentation to the Committee in June 2024 but was deferred to August due to a full agenda. When presented in August, the Action Plan report highlighted key milestones from the second reporting period. Specifically, under the Te Kainga programme, two more buildings were contracted for delivery in 2025, adding 183 affordable apartments and reaching 47.3% of the 1,000-unit target.
12. The report also outlined other Action Plan progress, including the transfer of properties to Te Toi Mahana and the allocation of \$23 million in development capital to increase housing supply. It also noted that Wellington City Mission's Te Pā Maru, with 18 supported housing units, became operational, and final decisions on the intensification aspects of the District Plan were made by the Council and the Minister.

13. As part of the August 2024 report, officers presented a newly developed dashboard to display the six-monthly Action Plan report, offering clear and comprehensive access to progress information.
14. At the August 2024 committee meeting, it was agreed that an updated Action Plan Dashboard would be presented in November 2024, and the next Action Plan report in May 2025.

Kōrerorero | Discussion

15. This is the third six-monthly report of the Action Plan for the 2023-25 triennium, presenting updates on the plan's seven priority programmes. Progress is well underway on implementing the plan's 58 actions. Some of these actions are complex and require collaboration with internal and external parties, which requires more time and consideration.
16. Some significant milestones have been achieved in this third six-monthly reporting period, these include:
 - In November 2024, a Development Agreement was executed with a preferred partner to deliver a mixed-use development in Karori, aligned with the *Four Shifts of Karori* document.
 - The Housing Pipeline Map project has progressed, with a Memorandum of Understanding (MOU) signed by all agencies and quarterly data sharing set to begin in December 2024.
 - The City Safety Strategic Leadership Group, established in June 2024, held its first hui in July 2024 to build relationships and discuss city safety trends.
 - Additionally, the first hui of the Wellington Regional Homelessness Network in September 2024 established a Terms of Reference and agreed on quarterly hui with shared hosting responsibilities.
17. The Action Plan dashboard report to December 2024 can be accessed via this link. [Housing Action Plan 6-Monthly Report - December 2024 \(Dashboard\)](#)

Ngā mahinga e whai ake nei | Next actions

18. Following the Committee meeting, the Action Plan six-monthly report dashboard will be published on the Council website. In addition, an accessible version of the Action Plan dashboard will also be published. Officers will continue proactively engaging with strategic delivery partners, ensuring a collaborative approach to delivering housing outcomes for the city.
19. In February 2025, officers will present the next scheduled Te Toi Mahana Quarterly Report to the Kōrau Tōtōpū | Long-term Plan, Finance, and Performance Committee.
20. In February 2025, officers will present the Housing Upgrade Phase 2 Programme Business Case to the Kōrau Tūāpapa | Environment and Infrastructure Committee.
21. In May 2025, the Kōrau Tūāpapa | Environment and Infrastructure Committee will make decisions on Tranche 2 of the Proposed District Plan. Tranche 2 includes:
 - Hearing Stream 6 - Special Purpose Areas and Development Areas, FUZ, Corrections, Port, Quarry, Stadium, Airport
 - Hearing Stream 7 – Rural, Open Space Zones, Hospital, Tertiary, Light, Signs, Temporary Activities

- Hearing Stream 8 – Natural and Coastal Environment
 - Hearing Stream 9 – Infrastructure (All chapters excl. INF-ECO), Transport
 - Hearing Stream 10 – Designations.
22. In May 2025, officers will present the fourth six-monthly Housing Action Plan report to the Kōrau Tūāpapa | Environment and Infrastructure Committee.

Attachments

Nil

TE ATAKURA 2024 UPDATE REPORT

Kōrero taunaki | Summary of considerations

Purpose

1. This report provides Councillors and the public with an update on progress against the *Te Atakura – First to Zero Implementation Plan* (*Implementation Plan*), through the *Te Atakura – First to Zero 2024 Update* (*2024 Update*) report.

Strategic alignment

2. The most relevant community outcomes, strategic approaches, and priorities for this paper include ‘Urban Form – A liveable and accessible, compact city’, ‘Environmental Wellbeing – A city restoring and protecting nature’, ‘Embedding climate action’, ‘Transform our transport system to move more people with fewer vehicles’, ‘Invest in sustainable, connected and accessible community and recreation facilities’, ‘Transform our waste system to enable a circular economy’ and ‘Collaborate with our communities to mitigate and adapt to climate change’.

Relevant previous decisions

3. In June 2019 the Council declared a climate and ecological emergency and adopted the [Te Atakura – First to Zero Blueprint](#).
4. In August 2020 the Council adopted the [Te Atakura – First to Zero Implementation Plan](#) to deliver on *Te Atakura – First to Zero Blueprint* commitments.
5. In May 2023 the [Climate Adaptation Community Engagement Roadmap](#) was adopted by the Council’s Kōrau Tūāpapa Environment and Infrastructure Committee.
6. In November 2023 the executive leadership team (ELT) approved the Council’s *Emissions Reduction Plan* for its operational emissions and set a 2030 reduction target of 57% reduction of 2020 Scope 1 & 2 emissions by 2030.

Financial considerations

- Nil Budgetary provision in Annual Plan / Long-term Plan Unbudgeted \$X

7. This report reflects on performance against the *Implementation Plan* to date, and as such has no financial implications.
8. Appendix 1 of the *2024 Update* outlines the actions that are budgeted for in the *2024 Long-term Plan*.

Risk

- Low Medium High Extreme

9. This report reflects on performance against the *Implementation Plan* to date, and as such is low risk.

Authors	Alison Howard, Manager Climate Change Response Hannah Lumley, Te Atakura Integration & Reporting Lead Kevin Crutchley, Senior Advisor Climate Action Strategy Mike Sammons, Climate Action Strategy Lead
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Authoriser	Liam Hodgetts, Chief Planning Officer
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Taunakitanga | Officers' Recommendations

Officers recommend the following motion:

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.
2. Note that Appendix 1 of the *2024 Update* outlines the actions from the *Implementation Plan* that have budget allocation in the *2024 Long-term Plan*.
3. Note that the city emissions inventory data for 2023/24 has not yet been confirmed by Aecom, and that publication of the *2024 Update* will follow this confirmation (expected by mid-December).

Whakarāpopoto | Executive Summary

About the report

4. The *Te Atakura – First to Zero 2024 Update* ('*2024 Update*') is a report on the progress in delivering the *Te Atakura – First to Zero Implementation Plan* ('*Implementation Plan*') that was adopted by the Council in 2020.
5. The period under review is the 2023/24 financial year (FY24). Progress is reported against key objectives, targets and principles including the commitments made in the *Te Atakura – First to Zero Blueprint* and against each action area of the *Implementation Plan*.
6. The attached document will be updated following confirmation of the city inventory data from Aecom, and the final *2024 Update* report will be published in early December 2024 on our website.

Progress on the Te Atakura key targets and objectives

7. Note that the focus of emissions reductions targets is on those produced in our city boundary (for the city target) or those that are directly under our control (Scope 1 and 2 for the Council target).
8. **Reduce city emissions by 57% between 2020 and 2030 and achieve net zero by 2050:**
 - a. City emissions have reduced by 1.5% between FY20 and FY24.
 - b. This target is science-based using the methodology developed by WWF in their One Planet City Challenge. The target is what is required for our city to contribute to the global goal of limiting global warming to 1.5 degrees. It is not a target based on modelling of existing programmes of work and policies.
9. **Reduce Council emissions (Scope 1 and 2¹) by 57% between FY21 and FY30 and achieve net zero by 2050:**
 - a. Council emissions (Scope 1 and 2) have reduced by 44% between FY21 and FY24.
10. **Increase the city's resilience** (by reducing exposure to risks or increasing our adaptive capacity):
 - a. The *District Plan* now includes a new risk-based approach to managing development across the city based on hazard and climate change risks.

¹ Scope 1 and 2 emissions include sources such as fossil fuel use (petrol, diesel, natural gas), electricity, and the methane produced at the landfill. Scope 3 emissions are from goods & services purchased by use, but produced by someone else, and are not directly under our control. We therefore set engagement targets for Scope 3 rather than reduction targets (in alignment with international best practice).

11. Deliver the Implementation Plan actions:

- a. The *Implementation Plan* is a living document rather than a fixed plan and is focussed on identifying initiatives to deliver against outcomes in each action area. Revisions to the *Implementation Plan* reflect the change in focus for climate change response funding and our changing context. It is also guided by the *2024 Long-term Plan's* strategic framework that has embedding climate action as a strategic approach and prioritises collaboration with communities on mitigation and adaptation. This has changed how we have organised the actions, and we note where actions have been renamed, completed, or discontinued to maintain consistency with prior reports.
- b. In previous long-term planning, a relatively small budget was included for adaptation planning, with significant funding allocated to enabling city-wide emissions reductions through innovation, research, and incentives. In the *2024 Long-term Plan*, funding has been refocused towards increasing the city's capacity to adapt to the impacts of climate change.
- c. As at 30 June 2024, 28 out of 37 actions were underway, ongoing or completed, and nine actions discontinued.
- d. Note the revised *Implementation Plan* has 35 actions (see Appendix 1 of the *2024 Update*).

Takenga mai | Background

12. Progress against the *Implementation Plan* is reported at a high level in the Council's quarterly and annual reports. This update is our fourth detailed report of progress.
13. The purpose of the document is to be accountable, and to support trust in the Council as an organisation that is delivering on a robust climate response strategy that is evidence based, impactful, rigorous and focused on where we have the opportunity to make a difference.
14. In previous updates we signalled our intention to conduct a review and include engagement with Tākai Here partners and the public. The timeline for this review has been extended, and it is now planned for 2026. This will be an opportunity to explore what we've learnt about effective climate action, and how we can apply those lessons to our future work.

Kōrerorero | Discussion

Addressing climate change is essential for the future of our city

15. In the update we discuss the ways in which climate change is a priority for the Council and the city, the impacts we are seeing in extreme weather, the changes we need to make as we transition to a net-zero economy, and the importance of partnership.
16. The report also emphasises that we need to stay focused on emissions reduction across our economy, as well as increasing our resilience, to avoid a world where impacts outpace our ability to adapt.

The cost pressures are significant

17. The report discusses the shift we have needed to make from a phase of innovation and high investment as funded in the *2021 Long-term Plan*, to the current context of inflation and increasing infrastructure and maintenance costs, as well as cost of living pressures and reduced central government funding.

18. While commitment to climate action remains high (79% of residents reporting that climate change impacts are already being experienced, and 82% wanting immediate action to reduce emissions), in the *2024 Long-term Plan* we have needed to focus our limited resources on the highest-impact and most cost-effective initiatives, as we work within the constraints of our current context.

We are focused on impact

19. The report outlines how the *2024 Long-term Plan* will cost-efficiently deliver on the big system shifts that matter the most and are central to the Council's mahi. Our strongest contribution to a low-carbon capital is investing in infrastructure changes to the transport and waste networks and using our city planning capabilities to enable dense urban living.
20. We have already made significant shifts. The *2024 District Plan* was finalised earlier this year, enabling housing growth in the heart of the city close to key active and public transport networks, and bringing a new risk-based approach to development that will increase our resilience over time. *Paneke Pōneke*, our bike network plan, was approved in March 2022 and we have made considerable progress in rolling out our primary network with the completion of this network planned in the next 2-3 years. In addition to enabling more housing through city planning, we have streamlined our housing approvals for our significant housing developments and also entered into direct partnerships with developers in our Te Kāinga programme that's converts commercial buildings into much needed housing and created 473 new residential spaces in the central city.
21. Our investment into the big system shifts continues in the *2024 Long-term Plan*, with investment in bus, bike and pedestrian network upgrades, the new sludge minimisation facility, and implementing kerbside collection of organic waste.

Tākai Here and Tūpiki Ora

22. The report notes that climate change is a key focus for our Tākai Here partners: Taranaki Whānui ki Te Upoko o Te Ika, e Rūnanganui o Te Āti Awa ki te Upoko o Te Ika a Māui and Te Rūnanga o Toa Rangatira. The Council is committed to establishing stronger relationships and developing our capability to support our Tākai Here partners' climate action efforts. We ensure their mātauranga (knowledge) is incorporated into our mahi, along with a te ao Māori lens to Te Atakura.
23. The report outlines areas of work in sustainable transport, climate resilient urban form, waste and wastewater, biodiverse forestry and resilient food systems, and community climate action where we have demonstrated this commitment.

Progress against targets

Reduce city emissions by 57% between 2020 and 2030 and achieve net zero by 2050

24. The 1.5% reduction against FY20 reinforces the need to stay focused on the targets. Central government has a strong policy position to support renewable electricity generation which will be helpful, there is less central government focus on sustainable transport, which will slow down the Council's efforts to support residents to meet their transport needs in low- or zero-carbon ways.

Reduce Council emissions (Scope 1 and 2) by 57% between 2020 and 2030 and achieve net zero by 2050

-
25. The decrease of 44% is positive. The *2024 Long-term Plan* has funding allocated to the projects that officers have modelled will enable the Council to reach the 2030 goal.

Increase the city's resilience

26. The 2024 *District Plan* now includes a new risk-based approach to managing development across the city based on hazard and climate change risks.
27. In June 2024 the *Wellington Regional Climate Change Impact Report*, led by Wellington City Council, was published, and forms an important foundation for the development of adaptation plans for Wellington city and the Wellington region.

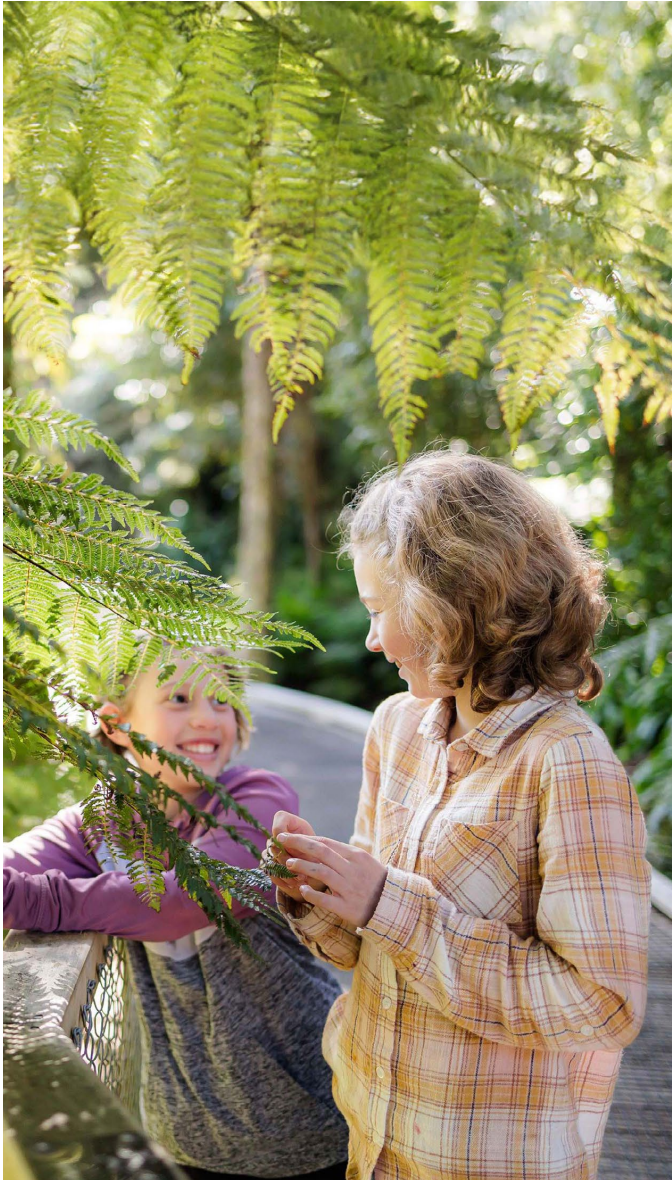
Ngā mahinga e whai ake nei | Next actions

28. The *2024 Update* will be published on our website once we have confirmation of the city emissions data from Aecom.

Attachments

Attachment 1. 2024 Te Atakura Update report

Page 557



Te Atakura First to Zero

2024 Update

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke



Te wero

Toitū te marae a Tāne
 Toitū te marae a Tangaroa
 Toitū te iwi
 Ngāi Tātou o Pōneke, me noho ngātahi
 Whāia te aratika.

Our challenge

Protect and enhance the realms of the Land and the Waters, and they will sustain and strengthen the People. People of Wellington, together we decide our way forward.

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About this report

The purpose of the *Te Atakura - First to Zero 2024 Update* is to report back on progress in delivering the *Implementation Plan* adopted by the Council in 2020.

The period under review focuses on the 2023/2024 financial year (FY24) and summarises progress to date.

Progress is reported against key objectives, targets and principles, including the commitments made in the *Te Atakura Blueprint*, the *Climate Adaptation Community Engagement Roadmap*, and against the actions of the *Implementation Plan* as well as other climate actions committed to by the Council.

This is the fourth annual update against the *Implementation Plan*, which is a living document designed to be reviewed and adjusted. In this report we have also set out our revised *Implementation Plan* for the next three years as aligned with the *2024-34 Long-term Plan (2024 LTP)*.

Revised Implementation Plan

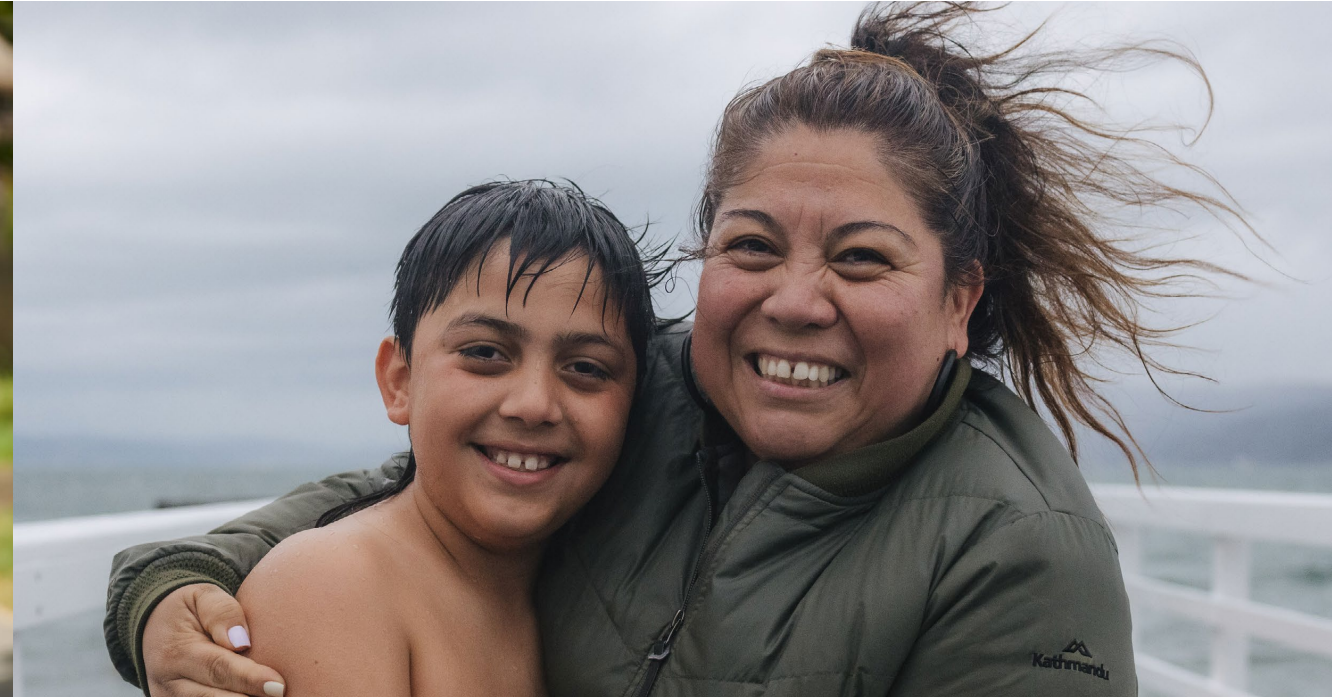
The revisions to the *Implementation Plan* reflect the change in focus for climate change response funding and our changing context. It is also guided by the *2024 LTP*'s strategic framework that has embedding climate action as a strategic approach and prioritises collaboration with communities on mitigation and adaptation. This has changed how we have organised the actions, and we note where actions have been renamed, completed or discontinued to maintain consistency with prior reports. We also highlight how we intend to share achievements and learnings with others.

In previous long-term planning, a relatively small budget was included for adaptation planning, with significant funding allocated to enabling city-wide emissions reductions through innovation, research and incentives. In the *2024 LTP*, funding has been refocused towards increasing the city's capacity to adapt to the impacts of climate change.

Wellington City Council's Climate Change Response team is always keen to hear from Wellingtonians and other interested people and organisations. Contact us at climateaction@wcc.govt.nz

Te Atakura Implementation Plan - First to Zero timeline

- April 2019**
Over 1200 Wellingtonians were involved in the *Te Atakura engagement process* to help shape the Council's approach to climate change.
- June 2019**
Wellington City Councillors declared a climate and ecological emergency and adopted the *Te Atakura Blueprint* as its climate action strategy. *Te Atakura* focuses on three objectives:
 - reducing the city's emissions to net zero by 2050, with the greatest cuts before 2030
 - reducing the Council's own emissions to net zero by 2050
 - improving Wellington's resilience.
- August 2020**
Councillors adopted the *Te Atakura Implementation Plan* to deliver on the commitments made in the *Te Atakura Blueprint*. Some initiatives were identified as contributing directly to emissions reduction in a way that could be estimated. Others were classified as 'enabling', as they create the conditions where emissions reduction outside of our direct control are more likely to occur.
- July 2021**
Funding was granted through the *2021-31 Long-term Plan (2021 LTP)* to deliver on key action areas over the next 10 years.
- September 2021**
Our *2021 Update* included a science-based target of a 57% reduction in emissions between 2020 and 2030. Modelling in this report estimated that if central and regional government policies and targets were achieved (which are inclusive of our transport and urban form initiatives), city emissions would reduce by 21%. This leaves a 36% gap to our 2030 target of 57%. The additional 'enabling' actions outlined in the *Implementation Plan* are designed to support communities and business to reduce their emissions and contribute to closing that gap.
- December 2022**
Our *2022 Update* showed good progress on the plan and highlighted the need for urgent collective climate action.
- May 2023**
The *Climate Adaptation Community Engagement Roadmap* was adopted by the Council's Kōrau Tūāpapa Environment and Infrastructure Committee. The roadmap will guide progress on action areas to adapt to the impacts of climate change.
- November 2023**
The executive leadership team (ELT) approved the Council's *Emissions Reduction Plan* for its operational emissions and set a 2030 reduction target that aligns with the city's target (57% reduction of FY21 Scope 1 & 2 emissions by FY30).
The Council also completed its first assessment to identify climate change risks and opportunities, using Aotearoa's recently published *Climate-related Disclosures* standards as guidance.
- December 2023**
Our *2023 Update* summarised progress over the first three years of the *Implementation Plan*.
- June 2024**
The *Wellington Regional Climate Change Impact Report*, led by Wellington City Council, was published and forms an important foundation for the development of adaptation plans for Wellington city and the Wellington region.



Introduction

Addressing climate change is essential for the future of our city

Responding to climate change is a priority for Wellington City Council and most Wellingtonians. Together, we want to take care of our beloved city, safeguarding our whenua for our communities and tamariki.

Climate change affects us all and exacerbates other challenges - equity, biodiversity, housing, the economy, immigration, and social justice. We already see the impacts in Wellington, from extreme weather and rising seas to increased food prices and travel costs. These impacts disproportionately affect those most vulnerable to disruption.

The positive news is we are moving in the right direction. Our city emissions are falling. We already have the lowest carbon emissions per capita in Australasia, the highest rates of public transport use, and rich biodiversity. Our relationship with our Tākaī Here partners is developing as we navigate our agreement and the implementation of our 10-year Māori strategy *Tūpiki Ora*. Yet, there is still much more mahi to be done.

Responding to climate change is no longer technical

Low-carbon, zero-carbon and solutions for resilience are well understood by researchers, and many have been implemented both here and elsewhere. But responding to the challenge of climate change is no longer technical - this is an emotional, social, and economic journey.

Economic implications are going to arrive well before sea level rise. Our economic transition is being driven by national and global policies and supply chains, along with consumers wanting low-carbon options. Increasing insurance costs are impacting homeowners, investors are looking to avoid risk, and the increasing price of fuel also contributes to this transition.

Increasing our resilience to these factors and the physical impacts of climate change will determine the wellbeing of future generations. We also need to stay focused on local, regional and global emissions reduction. Above a certain level of global warming, we risk a world where impacts will outpace our ability to adapt.

The cost pressures are significant

The first four years of implementing our climate strategy *Te Atakura - First to Zero (Te Atakura)* has been a phase of innovation and high investment.

The *2021 Long-term Plan* dedicated significant funding to deliver the *Te Atakura Implementation Plan* (the *Implementation Plan*), including debt-funded transport infrastructure, and rates-funded analysis, monitoring and evaluation, policy development, facilitation, partnerships, community funding and incentives.

It is vital we continue to deliver on the intention of *Te Atakura*. However, the context of local government has changed. Inflation has heavily impacted local government budgets nationwide. Our water network requires significant investment due to its age, historic underinvestment, and the ongoing impact of seismic issues. Central government is still developing its adaptation policy but has reduced funding for emissions reduction initiatives and infrastructure.

He Pou a Rangi Climate Change Commission recently issued their monitoring reports on the current state of climate change policy in Aotearoa, for both emissions reduction and adaptation planning. In their reports, they issue a call to all New Zealanders to “take climate action today, not the day after tomorrow”. They believe Aotearoa needs to be proactive and courageous as it tackles the challenges the country will face in the years ahead, and that all levels of central and local government must develop strong climate plans to get us on track.

Wellington City Council is committed to accelerating climate action but we require national leadership.

We continue to advocate for national policies, regulation and funding to help us meet our city emissions reduction targets and increase the city’s resilience to climate change impacts.

Wellingtonians are still strongly committed to taking climate action with 79% of residents reporting that climate change impacts are already being experienced, and 82% wanting immediate action to reduce emissions. Climate action, both reducing emissions and increasing our resilience, is also important to our Tākaī Here partners and aligns with the pae hekenga (priority waypoint) tiakino te taiao (caring for our environment) in *Tūpiki Ora*.

We continue to advocate strongly on behalf of Wellingtonians to ensure national policies, funding and regulations are in place to support our city’s response. However, in the short-term we will need to focus our limited resources on the highest-impact and most cost-effective initiatives, as we work within the constraints of our current context.

We are focused on impact

The 2024 LTP will cost-efficiently deliver on the big system shifts that matter the most and are central to the Council's mahi. Our strongest contribution to a low-carbon capital is investing in infrastructure changes to the transport and waste networks, and using our city planning capabilities to enable dense urban living.

We have already made significant shifts. The 2024 District Plan was finalised earlier this year, enabling population growth in the heart of the city close to key active and public transport networks, and bringing a new risk-based approach to development that will increase our resilience over time. *Pāneke Pōneke*, our bike network plan, was approved in March 2022. Since approval we now have about 40% of the primary network in place. In addition to enabling more housing through city planning, we have partnered with developers in our Te Kāinga programme to convert

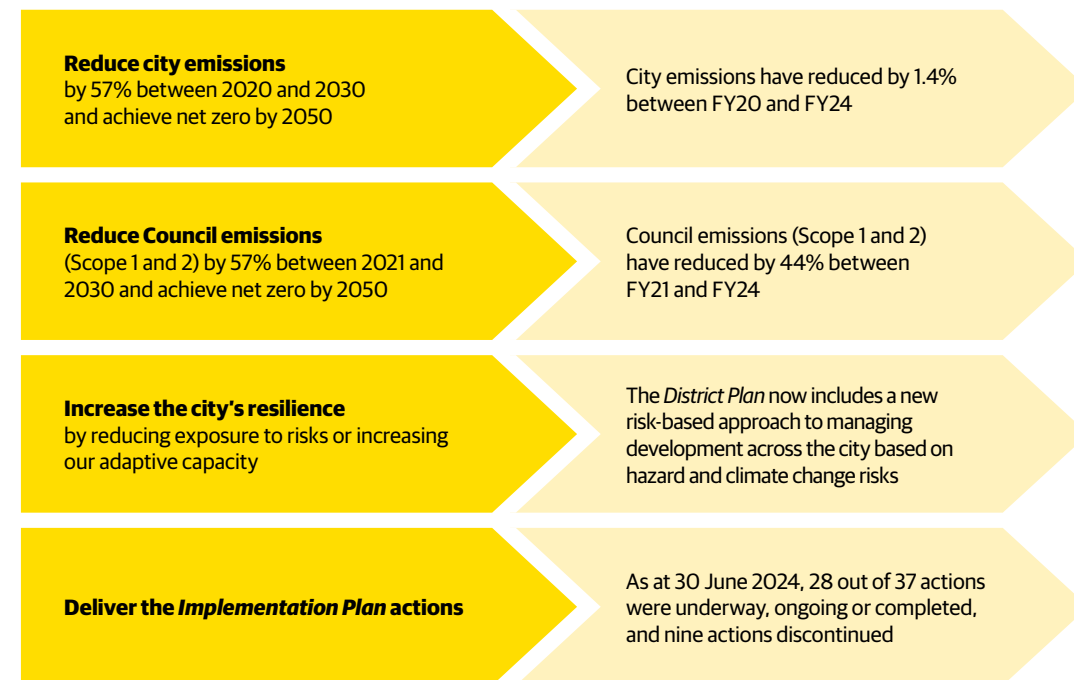
commercial buildings into much needed housing and created 473 new residential spaces in the central city.

Our investment into the big system shifts continues in the 2024 LTP, with investment in bus, bike and pedestrian network upgrades¹, the new sludge minimisation facility, and implementing kerbside collection of organic waste.

These investments are setting our residents up for success, with affordable, safe and accessible options to change how they live, work and play in Wellington.

We are also continuing to deliver a targeted, streamlined set of initiatives to maximise the use of these infrastructure changes and collaborating with communities and our Tākai Here partners on navigating the economic and physical transitions needed in our city.

Te Atakura targets



¹ Noting the National Land Transport Plan (NLTP) funding allocations differ from the assumption made in the 2024 LTP, which will have to be worked through.

Te Atakura action areas

The following actions reflect the intersections of how climate change is impacting our city, where our greatest opportunities to act lie, and what parts of the *Implementation Plan* have been prioritised for funding in the 2024 LTP.

As the *Implementation Plan* is a living document, these are an evolution of what was first proposed, reflecting what we have learnt, and how the context in which we operate has changed since the Council first declared a climate and ecological emergency in 2019.

Embedding climate action

Analysis and integration

The Council provides localised climate change data and analysis and continuously improves the integration of climate change considerations into relevant decisions.

Sustainable transport networks

The Council is the road-controlling authority, working towards a resilient transport system that moves more people with fewer vehicles. This is an area of significant investment.

Climate resilient urban form

The Council is the planning authority, enabling a compact urban form and increased resilience through district plan settings and city design.

Renewable building energy

While we have no regulatory instruments to improve the emissions intensity of buildings in Wellington, we lead by example in our own buildings and facilities, increasing energy efficiency and shifting from natural gas to renewable electricity.

Collaborating with communities

Community climate action

Building on existing relationships, the Council plays a role in supporting communities to navigate the economic and physical changes in Wellington as we transition to a zero-carbon resilient city.

Circular waste and wastewater

As the operator of the Southern Landfill and contract holder for waste and recycling services, the Council oversees key components of the waste system. We also own wastewater treatment facilities, operated by Wellington Water on our behalf. This is an area of significant investment.

Biodiverse forestry

The Council holds a significant proportion of the green space in Wellington, on the city's behalf.

Resilient food systems

While having no direct role in the city's food system, the Council recognises its importance to the city's resilience and community wellbeing.

Tākai Here and Tūpiki Ora

Climate change is a key focus for our Tākai here partners: Taranaki Whānui ki Te Upoko o Te Ika, e Rūnanganui o Te Āti Awa ki te Upoko o Te Ika a Māui and Te Rūnanga o Toa Rangatira.

Through Tākai Here, our landmark partnership agreement with these iwi, and Tūpiki Ora, the Council is committed to establishing stronger relationships and developing our capability to support our Tākai Here partners' climate action efforts. We ensure their mātauranga (knowledge) is incorporated into our mahi, along with a te ao Māori lens to Te Atakura.

The Council acknowledges the pivotal role of Tākai Here partners as kaitiaki of Te Whanganui-a-Tara. Our intent is to develop our collaboration with, support for, and learning from Tākai Here partners and hapori Māori to achieve our shared aspirations around climate change response. We are committed to continuing to support existing and new initiatives led by our Tākai Here partners and hapori Māori, and to better coordinate our internal work to align with Tūpiki Ora's priority waypoint, Tiakina te taiao (Caring for our environment) and climate change response.

We have created an internal *Māori Engagement and Partnerships Roadmap Te Ngutu Kākā* specific to climate change response. This roadmap shows how we aim to deliver on Tūpiki Ora by building strong relationships with our Tākai Here partners and hapori Māori and bringing te ao Māori thinking into our climate response mahi. The roadmap has three objectives:

- develop a clear picture of how *Te Atakura* objectives align with Tākai Here and Tūpiki Ora
- identify high-level goals the Council can work towards to reach milestones for partnership on climate change response
- provide a set of recommendations and how to achieve them for improving our Māori capability to apply that knowledge to the Council's climate change response.

Several *Te Atakura* action areas create the opportunity to deliver on Tūpiki Ora.



Sustainable transport networks

Low-carbon transport networks and urban density will help to reduce pollution and enable housing accessibility and affordability. These initiatives will support the Council to deliver on the Tūpiki Ora priority waypoints Tiakina te taiao (Caring for our environment) and He whānau toiora (Thriving and vibrant communities).

The Council has been working with iwi designers and artists to realise and contribute to Te Whakatairanga i te ao Māori (Enhancing and promoting te ao Māori). For example, the etchings along Thorndon Quay created by Taranaki Whānui cultural expression artist Len Hetet's design studio represent the six awa (streams) flowing into the harbour along Thorndon Quay and Hutt Road from pre-European times.

The Council acknowledges the pivotal role of Tākai Here partners as kaitiaki of Te Whanganui-a-Tara.



Whārikitia te Whenua

Working with partners Taranaki Whānui and Te Āti Awa on a co-design process has led to the development of Whārikitia te Whenua, the cultural design story (narrative) for *Paneke Pōneke*, the bike network. This story relates to the great tupua Whātaaitai and Ngake, who fashioned the land using seismic activity to create Te Whanganui-a-Tara, the great harbour of the ancestor Tara. For our Tākai Here partners, this is likened to the gifting of a whāriki (woven mat) laid upon the earth mother, connecting and binding us to the land and sea.

The bike network will allow our Tākai Here partners to identify and acknowledge landmarks as areas of cultural significance, and embed the mouri (life force) into these areas, using the bike network as a metaphorical thread. The blue and etched niho taniwha designs on the bike lanes and paths are cultural expressions that link the story and whāriki together.

Climate resilient urban form

The Council has worked with our Tākai Here partners on various initiatives that enable a climate resilient urban form. For example in developing and delivering the *2024 District Plan*, we continue to partner with them to implement changes and improvements. The *Coastal Reserves Management Plan* is currently being revised with our Tākai Here partners to manage our southern coastal reserves and assets. A climate resilient urban form will help us align with Tiakina te taiao (Caring for our environment) and He whānau toiora (Thriving and vibrant communities).

Circular waste and wastewater

Our Tākai Here partners have expressed strong support for reducing waste. The *Zero Waste Strategy* is aligned with Tūpiki Ora and commits to:

- endeavour to act as kaitiakitanga, protecting and enhancing the mauri (life force) of resources by working towards a circular economy approach
- engage with, empower and involve our community in changing behaviour and solutions
- apply a waste hierarchy approach, increasingly shifting our effort and focus towards enabling redesign, reduction and reuse.

Biodiverse forestry

The *Green Network Plan* aligns with Tiakina te taiao (Caring for our environment) through committing to engage with Tākai Here partners to identify, protect and explore opportunities around green/blue sites of cultural significance. It also commits to restoring appropriate flora and fauna to the central city by working in partnership with Tākai Here partners to include interpretation opportunities in green spaces.

Resilient food systems

Te Anamata Ā-Kai o Tō Tātou Tāone - Our City's Food Future is aligned to Tūpiki Ora and has adopted the kaupapa Māori *Hua Parakore* framework. One of the focus areas is for Tākai Here partners and Māori to lead kai and soil sovereignty projects across Pōneke. By investing in diverse, intergenerational, educational, and leadership projects, we support opportunities for Māori to learn about local cultural food histories and practices.

Community climate action

The Council has been working closely with our Tākai Here partners and Māori on climate action by providing funding for the development of education resources. These include stories about precolonial and ongoing relationships to whenua (land), and how they are impacted by climate change. We have also worked together on how to include Māori as an impacted community who need to be involved in decision-making on future city shaping in response to climate change. This partnership will continue to support Tiakina te taiao (Caring for our environment) through the plans and resources being developed for citywide adaptation.

The Council has been working closely with our Tākai Here partners and Māori on climate action.



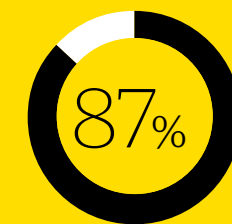
Haere Whakamua - Strathmore Park residents in partnership with EkeRua ReBicycle

The Climate and Sustainability Fund has supported community projects like *Haere Whakamua* to build awareness and capacity for climate action in local communities. Led by Strathmore Park residents and supported by EkeRua ReBicycle, this project is building knowledge, connections, wellbeing, and skills for Māori whānau in Strathmore Park. The community has hosted zero waste hāngi and cooking classes that divert food from landfill. They have also set up a bike repair workshop at Raukawa Community Centre, helping people get bikes and build skills so they have what they need to get around in low-carbon ways. Underpinning each initiative is learning and sharing traditional knowledge of the whenua, moana and climate change.

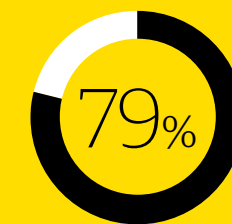
Climate action in the capital

Wellingtonians have consistently told us they want climate action. We're making progress, but there is more mahi to be done.

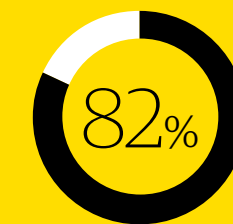
The Council's September 2024 Climate Action Monitor survey provided some insightful results. For example, while many felt they understood the impacts of climate change, there was a general sense that not enough is being done to cope with or prepare for future impacts.



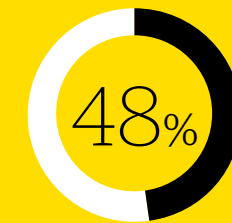
said they understand the potential impacts of climate change fairly or very well.



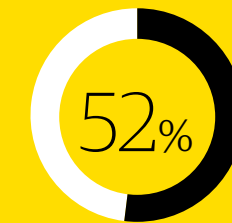
believed the negative effects of climate change are already being felt in Wellington.



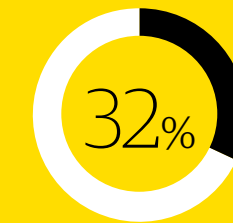
believed we need to act now to start reducing Wellington's carbon emissions.



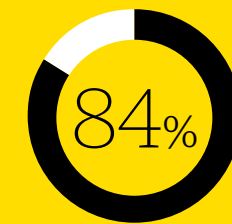
were not confident at all that enough action is being taken.



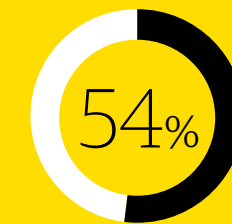
were confident enough action is being taken to prepare Wellington for the impacts of climate change.



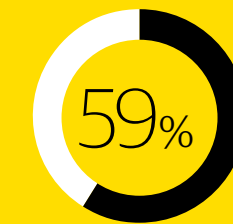
eat plant-based meals five days a week.



ranked accessible modern transport options as a priority to reduce emissions.



said they compost their food waste.



said they cycle, walk or scoot as part of their daily commute.

Wellington city's emissions over time

Cities play a crucial role

According to the United Nations, 55% of the world's population currently live in cities and that figure is predicted to increase to 68% by 2050. Cities are estimated to contribute to 75% of all CO₂ emissions globally, which means that cities are where climate action is most needed and impactful.

Our target of reducing city emissions by 57% between 2020 and 2030 is science-based, using the Worldwide Wildlife Fund's One Planet City Challenge, and aligns with national and international commitments to limit global warming to below 1.5 degrees.

Our measurement approach

Each year we measure and report city emissions following the Greenhouse Gas Protocol standard.

Our measurement of greenhouse gas emissions, and our 2030 and 2050 targets, focus on emissions directly produced in Wellington city. For example, emissions from fossil fuel in vehicles, gas boilers, industrial processes, electricity consumption, and from methane produced by the breakdown of the city's waste in landfill. This aligns to international best practice guidance for city inventories, and how national emissions are calculated.

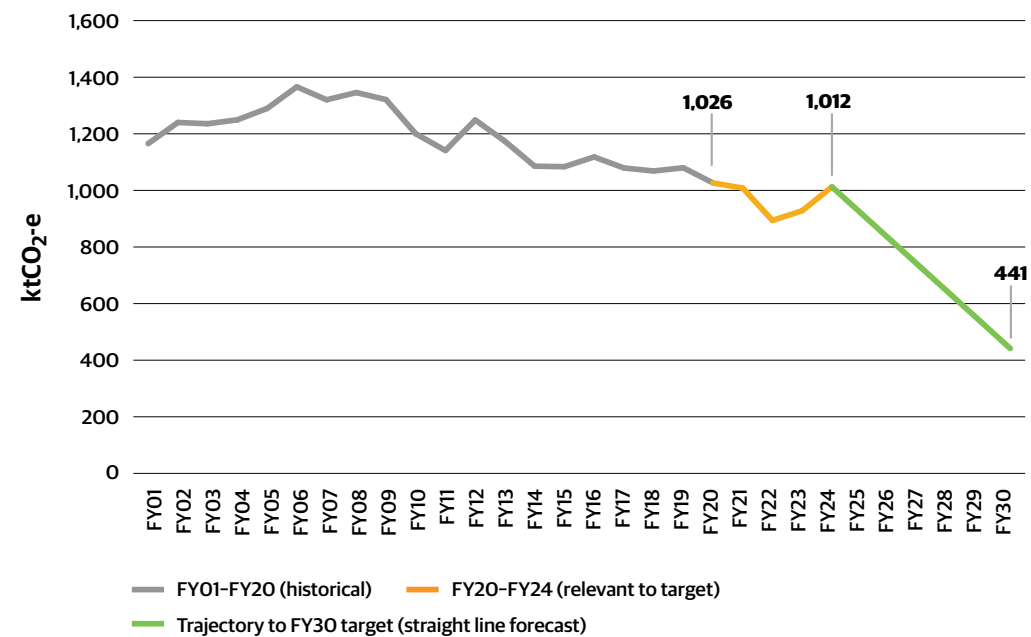
The graph below shows the city's historical gross emissions and the pathway to reaching our 2030 emissions reduction target.

How are we doing?

Wellington city's emissions have reduced by 1.4% between FY20 and FY24, to 1,012 ktCO₂-e.

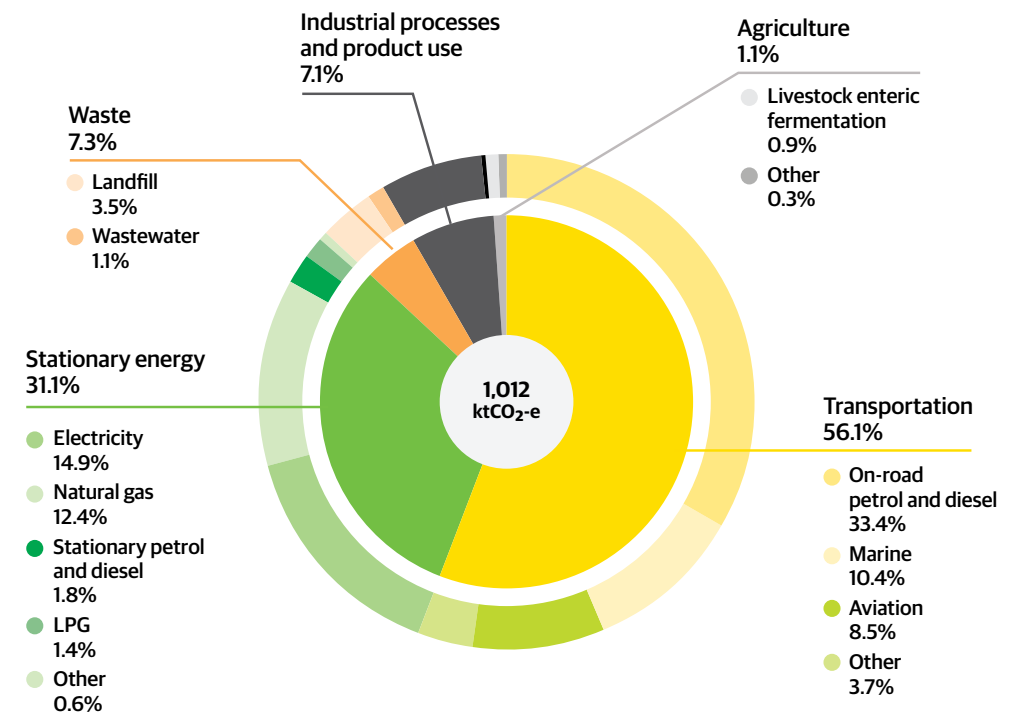
In calculating these figures, we used gross emissions, which means they are not adjusted for any change in forestry.

Wellington city's emissions over time



From FY20 cruise ship emissions have been included, however, no cruise ships visited Wellington in FY21 and FY22. FY24 figures are provisional and use AR6 (2021) GWP values, while previous years used AR5 (2014) values.

Wellington city emissions breakdown FY24



FY24 figures are provisional

Council's emissions over time

Leading by example

Council's emission reduction target mirrors the city's goal of reducing emissions by 57% between 2020 and 2030. This target applies to our Scope 1 and Scope 2 energy consumption-related emissions, as these are the areas we directly control. This is a science-based target and aligns with national and international commitments to limit global warming to below 1.5 degrees. We have a longer-term goal to reduce our emissions to net-zero by 2050.

We also have a target for our Scope 3 emissions, those associated with areas we do not completely control, such as supply chain emissions associated with goods and services we purchase. Our target is to have two thirds of our supply chain emissions coming from suppliers who have science-based targets by 2030.

Currently 22% of our supply chain emissions are from suppliers with science-based targets. In simple terms, over time we want to work with more suppliers who share our climate goals.

The chart below shows the Council's historical Scope 1 and 2 emissions² and the pathway to reaching our 2030 emissions reduction target.

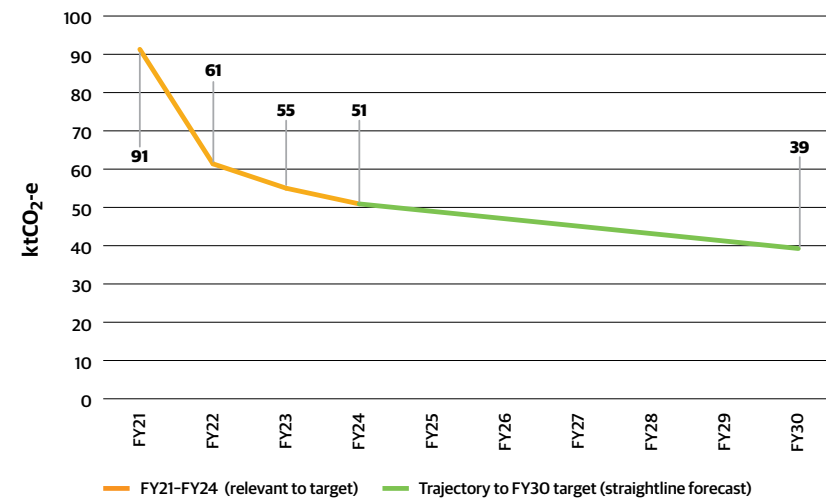
In simple terms, over time we want to work with more suppliers who share our climate goals.

How are we doing?

Between FY21 and FY24, the Council reduced its Scope 1 and 2 greenhouse gas emissions by 44%, making significant progress towards our emissions target of a 57% reduction by FY30.

The Council's organisational emissions were 50,909 tCO₂-e in FY24 (Scope 1 & 2), with 77% of the emissions relating to the emissions produced by the Southern Landfill. The landfill is categorised within the Council's emissions because it is wholly owned by the Council, and is an important contributor to the city's emissions.

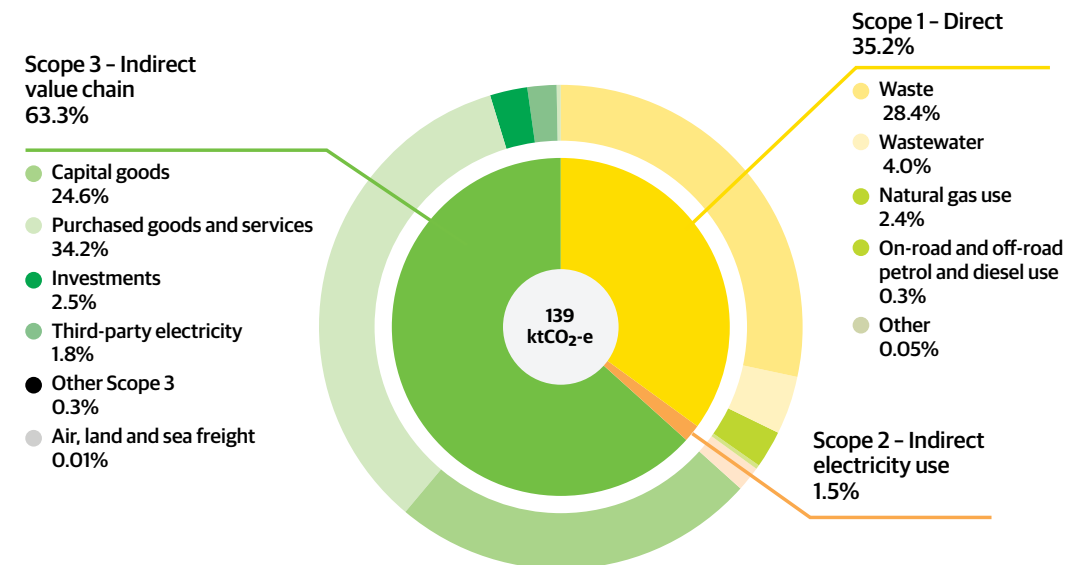
Council's emissions over time (Scope 1 & 2)



The previously reported FY23 CO₂-e emissions, in the Te Atakura 2023 Update, has mainly increased because a new unique emissions factor (UEF) for waste data was used for the second half of FY23

² Scope 1 refers to direct emissions. Scope 2 is indirect emissions resulting from electricity consumption. For science-based targets, the methodology recommends setting a target for Scope 1 and 2 emissions only, as these are under an organisation's direct control, and then setting supplier engagement targets for Scope 3, which are emissions from the full value chain.

Council's emissions breakdown FY24



Climate change impacts over time

Our location makes us more vulnerable

Due to our coastal location and hilly terrain, the capital is more at risk from natural hazards than some other cities. Climate change will intensify some of those risks.

In Wellington we have already experienced approximately 26cm of sea level rise since the early 1900s and some areas, including parts of the city centre, are projected to be below high tide levels by the end of the century.

Our weather is already more volatile, with extreme weather events becoming more common. In the coming years, Wellington is likely to experience an increase in hot days, a rise in annual average temperatures, and increased risk from floods, storm surge, coastal erosion and landslides. These changes are likely to result in loss and damage to infrastructure and biodiversity, cause environmental harm, and negatively impact our economy and communities. This will disproportionately impact Māori, low income, and already disadvantaged communities.

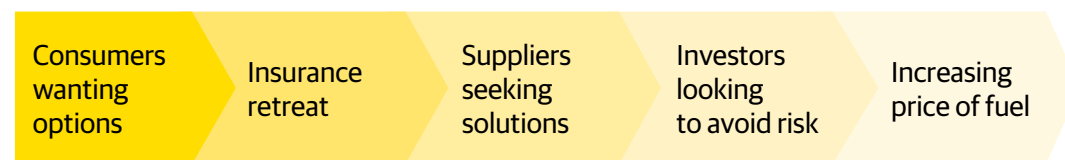
Impacts will be social and financial as well as physical

While many impacts will involve physical loss and damage to property, other significant impacts will be experienced financially and socially. For example, insurance premiums are likely to rise, alongside the inability to secure house insurance in low-lying areas. The reality of climate change will increasingly strain the systems governing our built environment, and the stability of our housing, finance and insurance markets. Transitioning our economy to function without fossil fuels will also be challenging.

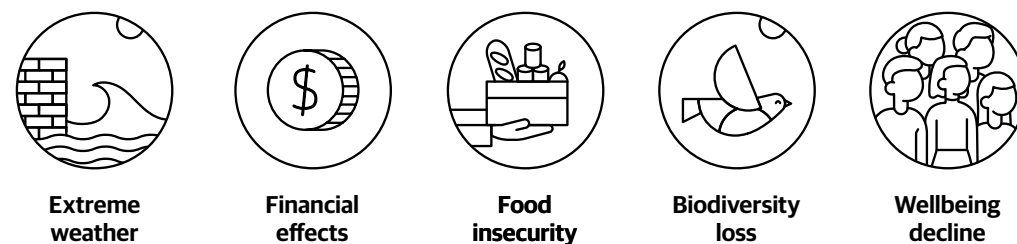
We need to both adapt and reduce as fast as possible

Historical emissions mean we are locked into continued global warming until at least mid-century, and even longer for sea level rise. However, there is still opportunity to avoid the worst impacts of climate change if we act urgently across all sectors to make significant reductions in global greenhouse gas emissions. Recent changes to the *District Plan* promote a city environment that is more resilient to the physical impacts of climate change and enables emissions reduction over time.

Drivers of economic transition



Impacts of the climate crisis



Embedding climate action



Action area: Analysis and integration

The Council provides localised climate change data and analysis and continuously improves the integration of climate change considerations into relevant decisions.

Embedding climate action is central to the Council's strategic framework for the future as part of the 2024 LTP. This reflects both our responsibility to addressing climate change and our understanding that many of the decisions we make influence the carbon emissions and climate change resilience of the city we serve.

This action area reflects our ongoing commitment to improving the integration of climate change considerations into all areas of our work. This includes providing relevant and useful data and analysis and integrating climate change into our policies, processes, culture, capability and decision-making.

Evidence-based approach

The Intergovernmental Panel on Climate Change has highlighted that climate change impacts and risks are becoming increasingly complex and more difficult to manage.

Our focus is to better understand our emissions and potential local impacts, and to help inform climate adaptation decision-making for both the Council and the capital.

Greenhouse gas emissions measurement and reporting

We continue to measure both the Council and citywide greenhouse gas inventories annually, report on progress and publish results online using internationally recognised standards. City emissions are calculated by a third-party consultancy while the Council's emissions are calculated by staff and receive independent assurance from Audit New Zealand. The Council also participates in the Emissions Trading Scheme (ETS) for both landfill emissions and the carbon sequestration of our forestry. We report on these annually to the government.

Updating hazard maps with current adaptation projections

Climate impacts can be highly localised. District Planning rules and policies are key to supporting climate resilience and reducing exposure to future climate-related risk areas. Wellington's hazard maps ensure the risks can be incorporated into our planning documents as accurately as possible, both to inform our city's spatial planning and growth projections, and support individual landowners assessing the risk to specific properties. The 2024 District Plan now includes a new risk-based approach to managing development across the city, based on hazard and climate change risks.

Understanding how climate change impacts Wellington region

To better understand how climate change impacts Wellington and its surroundings, Wellington City Council led the *Wellington Regional Climate Change Impact Assessment* project on behalf of the Wellington Regional Leadership Committee partners. The assessment was undertaken by Beca, NIWA, GNS and Victoria University. It used the most recent and best available local climate change modelling and was guided by the Ministry for the Environment's latest Local Government Guide for Climate Risk Assessments and Interim Guidance on Sea Level Rise Modelling.

Published in June 2024, this regional impact report found that climate change could have a 'catastrophic' impact on the Wellington region's infrastructure, buildings, and natural environment by 2100. The assessment found 363 risks likely to impact the Wellington region by the end of the century, and worsen over time:

- infrastructure (128)
- economy (93)
- natural environment (73)
- community impacts (69)
- governance (6)
- transition to low carbon (5).

Horizon Europe project on risk assessment for the city

In 2024, the Council was awarded Horizon Europe funding to deliver a multi-hazard climate change resilience study by 2027, using 3D digital technology to support climate resilience infrastructure investment. This involves a partnership with 13 other agencies, including University College London, University of Canterbury and University of Auckland.

Understanding how climate change impacts the Council

Although local government is not mandated to report under the *Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021*, the Council undertook its first assessment to identify Wellington City Council-specific climate change risks and opportunities, guided by recently published national climate-related disclosure standards. This assessment was qualitative with subject matter experts, rather than quantitative analysis. The Council intends to undertake further analysis using this methodology for future quantitative assessments.

Understanding how climate change could impact the city's economy

In the previous financial year, we commissioned EY to conduct desktop research to develop our thinking on how to support the transition of the Wellington economy to a zero-carbon circular economy. We also investigated Doughnut Economics as part of our city activation work. Due to budget constraints, we are not taking these projects forward, so we plan to conclude these projects and publish key information on our website.

Climate change data review

Climate datasets held by the Council, GWRC and other agencies have been used to generate hazard maps. However, climate adaptation planning and decision-making may need different datasets, so a third-party expert review of current spatial climate datasets was undertaken. This review considered their suitability for use in different scenarios and identified gaps in the available data to support best practice, evidence-based decision-making.

Improving LIMs

The *Local Government Official Information and Meetings Amendment Act* provides for the provision of better natural hazard information, including the impacts of climate change, on Land Information Memoranda (LIMs). As of 1 July 2025, the Council will have a statutory requirement to disclose improved natural hazards and climate change information on LIMs to improve access to natural hazards information for home buyers.



Climate disclosure project

As part of our continued membership of the Global Covenant of Mayors for Climate and Energy, we report into the CDP (formerly the Carbon Disclosure Project).

CDP is a non-profit organisation that runs the global disclosure system for investors, companies, cities, states, and regions. This enables better environmental reporting through transparency and accountability. In 2023, over 23,000 companies and 1,200 cities, states, and regions disclosed their climate actions through CDP.

Wellington City Council has been sharing Wellington’s climate journey through this platform on an annual basis since 2014. Key disclosures include the city’s annual greenhouse gas emissions inventories, climate change risks, mitigation and adaptation targets, climate action strategies and plans, and the implementation and monitoring of our climate actions.

In 2023 Wellington received an ‘A’ score, the highest rating, for the third consecutive year in recognition of the Council’s bold leadership on climate action.

Setting policy

Emissions Reduction Plan

The Council’s 2023 *Emissions Reduction Plan* sets our emissions goals and outlines projects funded in the 2024 *LTP* that will reduce the Council’s emissions and enable process improvements. These include reducing landfill emissions, electrifying our vehicle fleet and transitioning Council-owned buildings and facilities away from fossil fuel use. These projects reduce Council emissions, the city’s emissions and allow us to lead by example.

Climate Adaptation Community Engagement Roadmap

Approved in May 2023, the roadmap outlines the Council’s commitment to collaborating with communities on climate change response. The first three phases of the roadmap have been funded in the 2024 *LTP*, along with a pilot of community planning processes starting in late 2025. The progress made on the roadmap is detailed in the “Collaborating with communities” section of this report.

Integrating climate change adaptation into Council strategies and plans

The Council is embedding climate adaptation into a range of plans and strategies with a focus on key physical risks.

Preparing to withstand and adapt to climate change is a key priority of the 2024 *LTP* and the 2024 *Infrastructure Strategy*. The *District Plan* now also includes new rules to reduce future climate risks. In the coming year, integration of climate adaptation will continue with a focus on the *Coastal Reserves Management Plan* and the *Spatial Plan* (see the Resilient Urban Form action area).

Te Atakura review

Last year we signalled our intention to conduct a review of *Te Atakura*. The review, which will include engagement with Tākaia Here partners and the public, is planned for 2026.

Improving our decision making

As our understanding of climate change risks and opportunities grows, we are also improving our understanding of how to increase resilience and enable emission reductions for the Council and the city.

This understanding is integrated into decision-making and operations.

Council papers for Councillor decisions

Each Council paper has a climate change considerations section where officers state the emissions and resilience implications of the decision being asked of Councillors. In the 2024 *LTP* a new impact KPI has been set to improve the percentage of relevant papers with high-quality climate considerations.

Asset and project management

The focus of the Council’s asset management is using maintenance as an opportunity to decrease emissions and increase the resilience of our facilities, buildings, footpaths and roads. With project management the focus is on incorporating climate change as a key consideration in project design right from the beginning. As these processes are updated internally, we look for opportunities to improve how climate change is referenced and included, and how kaimahi (staff) are supported to apply climate change thinking to their work.

Procurement

Procurement is a powerful opportunity to not only reduce Council emissions, but also influence a broad range of suppliers. This year we have been engaging with our suppliers and Council-controlled organisations (CCOs) to facilitate the reduction of Council emissions across our value chain. In the coming year we will be embedding emissions standards into our procurement processes with our key suppliers. This will enable us to meet our *Emissions Reduction Plan* target of ensuring that two thirds of our supply chain emissions are from suppliers that have also set science-based targets.

Raising capability

Providing targeted support

For the last three years we have run an internal staff survey to assess current capability of our kaimahi to apply thinking about climate change to their work. In the coming year, we are shifting our approach to the same model used by the Council's Health and Safety and People and Culture teams, where subject matter experts in climate change are assigned to specific business units and groups to provide support. Results of the 2024 survey will help us provide support where it is most needed. We also have an online learning hub of training resources and videos about climate change on our internal learning website, Whare Kura.

The Council is embedding climate adaptation into a range of plans and strategies with a focus on key physical risks.

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Climate-related disclosures - assessment of physical and transition risks to the Council	WCC	Enabling both reductions and resilience	Underway
Council greenhouse gas emission measurement	WCC	Enabling reductions	Ongoing
Updating hazard maps in the <i>District Plan</i> with current adaptation projections	WCC	Enabling resilience	Completed
Wellington City Council's <i>Climate Change Risk Assessment</i> ³	WCC	Enabling resilience	Underway
<i>Te Atakura</i> action investigation	WCC	Enabling reductions	Not continuing
Procurement - broader outcomes	WCC	Enabling reductions	Ongoing
Improve governance	WCC	Enabling reductions	Ongoing
Staff engagement ⁴	WCC	Enabling reductions	Ongoing
Leading the <i>Wellington Regional Climate Change Impact Assessment</i>	Wellington Regional Leadership Committee	Enabling resilience	Completed

³ Previously "Developing Wellington City Council's Climate Change Impact Assessment"

⁴ Includes the previous "Hybrid working" action

Metrics

Indicators	2022 (as at June 30)	2023 (as at June 30)	2024 (as at June 30)
% of relevant Council/Committee papers with high quality climate considerations			New indicator for FY25
% of kaimahi who feel supported to consider all relevant climate risks in their role	29%	32%	34%
% of kaimahi who feel they have the knowledge and skills to deliver climate action in their role	59%	58%	56%

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Climate-related disclosures - assessment of physical and transition risks to the Council	WCC	Enabling both reductions and resilience	Aligning to the External Reporting Board (XRB) Climate Reporting disclosures standard
Council and city greenhouse gas emission measurement	WCC	Enabling reductions	Using the GHG Protocol
Detailed physical climate risk, impact and vulnerability assessments	WCC	Enabling resilience	To inform our infrastructure planning and management
Participating in the Horizon Europe project (risk and resilience assessment of the central city)	University of Auckland	Enabling resilience	Partnership with 13 other agencies including University College London, University of Canterbury and University of Auckland
Improving Land Information Memoranda (LIMs)	WCC Central government	Enabling resilience	As required under a change to regulation, to be implemented by June 2025
Integrating climate change considerations in processes and decision-making	WCC	Enabling both reductions and resilience	Across Council papers, asset management, project management and procurement
Training and support	WCC	Enabling reductions	Through workshops and online resources
Te Ngutu Kākā - building our ability to apply te ao Māori to climate change response	WCC	Enabling both reductions and resilience	Builds capability, and focuses on iwi partnerships specific to climate change



Action area: Sustainable transport networks

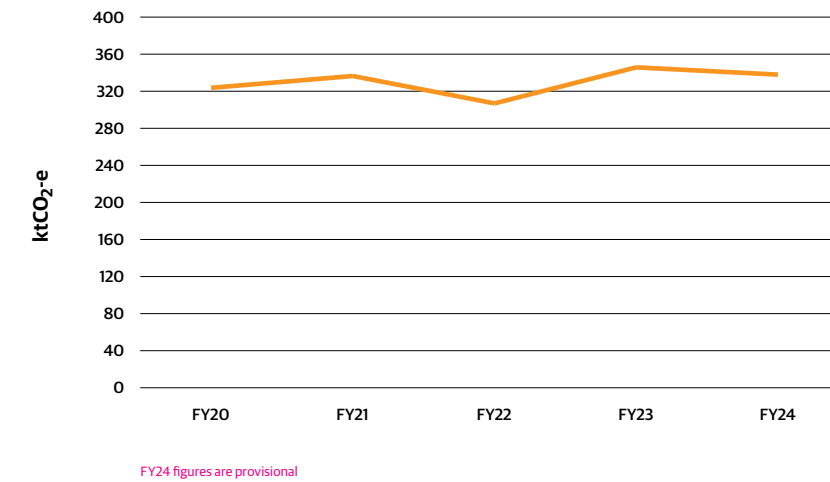
The Council is the road-controlling authority, working towards a resilient transport system that moves more people with fewer vehicles. This is an area of significant investment.

Road transport

How we move around the city contributes over half of Wellington's emissions, yet our compact city presents a significant opportunity for the Council to design a city that supports more people to live centrally and move around with fewer vehicles.

The Climate Change Commission's first monitoring report says that government policy in transport risks Aotearoa not meeting its second and third emissions budgets. Certainly, the lack of policy settings and funding will make it more difficult for Wellington city to meet its goal to reduce 2020 emissions by 57% by 2030.

Wellington city on-road transport emissions over time



Central and regional government policy settings

The Council's work to improve transport in Wellington is highly dependent on central government funding and policy settings. They provide policy direction through the *Government Policy Statement on Land Transport* as well as the national *Emissions Reduction Plan*, and then funds transport through the *National Land Transport Plan*.

Current policy is not supportive of reducing carbon emissions from the transport system. The Government's draft *Second Emissions Reduction Plan* identifies the key mechanism for emissions reduction will be the Emissions Trading Scheme. For transport, this raises the price of fuel, however without viable alternatives to private petrol or diesel vehicles, this increase in fuel price adds to the cost of living, rather than reducing transport emissions.

The Government's draft *Second Emissions Reduction Plan* chapter on transport policy focuses on enabling electric vehicle (EV) charging infrastructure, removing regulatory barriers to decarbonising heavy vehicles and funding some public transport projects in main cities.

A requirement that the *Government Policy Statement on Land Transport* support emissions reduction has been removed. This lack of alignment is evident in both the *Government Policy Statement on Land Transport* and the *National Land Transport Plan*. New roads of national significance that will increase

emissions have been funded, and in general, public and active transport projects have received lower levels of funding than was requested or expected.

Regional policy settings remain focused on reducing emissions. This year GWRC published the *Regional Transport Emission Reduction Pathway*. Goals include a 35% reduction in road transport generated carbon emissions by 2030 and a 25% reduction in kilometres travelled in a vehicle by 2035. Ideas mentioned in the plan that directly impact Wellington city include the development of a second bus spine in the Wellington city centre, the potential for congestion charging, and the need for traffic circulation plans and regional cycle networks.

This pathway is part of the *Regional Emissions Reduction Plan* adopted by the Wellington Leadership Committee in December 2023 which will help shape the other regional workstreams, including the Future Development Strategy. All councils within the Wellington region contributed to the formation of the plan which identifies areas where a coordinated, regional solution is required such as large waste processing facilities, electricity supply networks and transportation links.

GWRC has also proposed an updated *Regional Policy Statement* with a chapter on climate change.

The Council's role

Setting policy

Enabling urban density through the *District Plan*

The *2024 District Plan* enables more development capacity at greater densities across much of the city, to accommodate the expected increase in our population of 50,000 to 80,000 people by 2050. When combined with higher levels of public transport delivered by GWRC and the Council's focus on active travel, this will reduce travel distances, increase public transport use and help reduce city emissions.

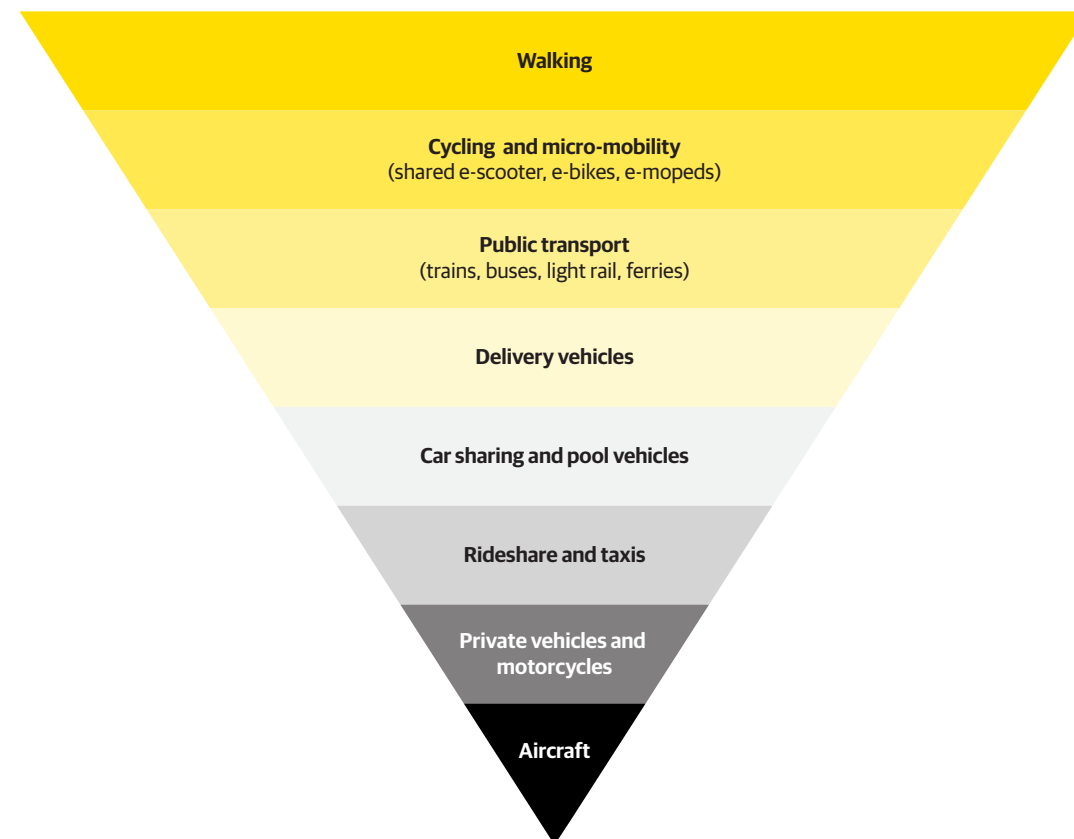
Wellington City Transport Plan

This plan will incorporate the Council's Sustainable Transport Hierarchy and *Paneke Pōneke*, to create an integrated approach to the car, bus, bike and pedestrian transport networks across the city.

Sustainable transport hierarchy

Our sustainable transport hierarchy guides our work on improving Wellington's transport networks.

Wherever possible we look for opportunities to maximise the benefits across more than one network.



Investing in infrastructure

City transport projects are central to the Council's work to encourage mode shift and reduce transport emissions, while delivering improved liveability, accessibility, safety, and resilience. Our most significant investments - around 22% of Council's annual capital budget last year - are to improve our transport networks. Significant progress has been made in both planning and delivering investments in public transport, walking and cycling. For more detailed reporting on our transport projects see our [Annual Report](#).

Central City Connections

The *People-friendly City Streets* programme has started improvements across the central city to support safer, quicker, and easier walking, and is developing preferred options to improve connections for people on bikes, buses, and walking on key corridors between suburban centres and the central city. Intersection upgrades have been completed to create a better and accessible environment, to make the central city safer and a more enjoyable place to spend time. The Central City Walking Improvements project continues upgrades along the waterfront quays and is scheduled for completion by late December 2024, which will further improve connections to the waterfront.

The *2024 LTP* has confirmed a rapid transit bus corridor and a central city connections programme to be progressed pending councillor prioritisation. This includes the rapid transit bus corridor which allows public transport along the Quays and a cross-city cycle connection connecting Thorndon Quay to Cambridge Terrace. The Cuba Street pedestrianisation infrastructure and activations will include significant improvements beyond proposed footpath widening and the Golden Mile design will provide higher prioritisation of pedestrian space including connection to public transport and will include the Dixon Street upgrade.

Paneke Pōneke

Our bike network plan, *Paneke Pōneke*, is creating a city-wide network of connected bike routes in tandem with walking improvements and significant public transport changes. Over the past year we have completed an additional three routes including Aro, Ngaio and Kilbirnie Connections. We are constructing Karori Connections, Thorndon Connections and Berhampore to Newtown and once completed they will form our first two fully connected routes to the west and south. Evans Bay cycleway construction has continued, and the first stages of Wadestown Connections have been delivered.

Facilitating solutions

Supporting electrification of the fleet

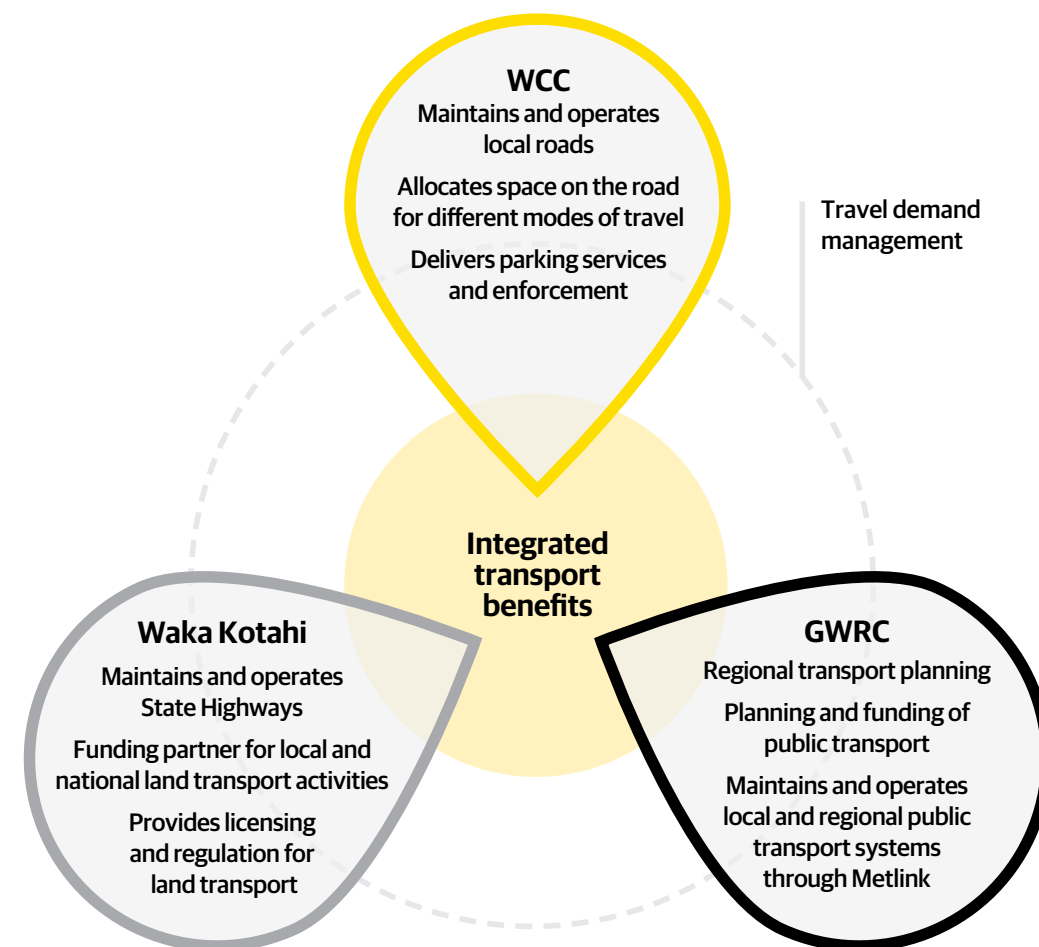
Battery electric vehicles are a growing presence in our city with 5,425 battery electric vehicles registered in FY24⁵. Council supports electrification by increasing electric vehicle charging infrastructure through our *Charged Up Capital* programme, which aims to create a network of 60 publicly accessible 24kW DC chargers across our communities. These are delivered in partnership with the Energy Efficiency and Conservation Authority (EECA) and installed by Meridian Energy. As of 30 June 2024, Council had installed 22 of the chargers, with 12 more installed in the subsequent three months.

In the *2024 LTP* process, Council decided to pause the project following the installation of the 34 chargers approved to date, pending advice on the costs and benefits of the installation of the remaining 26 chargers. Council has also asked officers to investigate the potential sale of the existing EV chargers to recover Council's investment. However, further support is provided by facilitating private EV charger suppliers access to public land through a Licence to Occupy, allowing more EV charging stations to operate in Wellington.

⁵ Sourced from NZ Transport Agency Waka Kotahi - The data in the table does not include registered motorbikes and mopeds.

While Wellington City Council is the road controlling authority, we do not deliver transformation in transport on our own. Transport is a partnership between Waka Kotahi, the Council, and Greater Wellington Regional Council (GWRC).

Local transport delivered in partnership



Supporting public share micro-mobility

Wellington city has allowed for public share micro-mobility to operate since 2018, increasing the cap on the number of e-scooters to 1000 in April 2024 to meet increase market demand and introducing e-bikes into the market in 2023. In the FY24 we saw 840,615 public share e-scooter trips maintaining a steady level of demand while there were 33,979 public share e-bike trips taken in Wellington. The *Electric micro-mobility share scheme review 2024* showed that approximately one-fifth to one-quarter of trips reportedly reduced car ownership, as well as noting health and fitness, and equity and accessibility are the positive impacts of using shared micro-mobility.

Car sharing

Car sharing supports residents and businesses who need a car occasionally, and those living where space is limited. It gives people greater travel choice and means they can get a car when they need one while avoiding the high cost of car ownership or needing a second car. Cityhop and Mevo provide car services in Wellington with Council providing support in the form of dedicated on street parks (at a cost to the provider), *Car Share Guidelines* and operating licences. This year there were 89,482 trips made through our two car sharing operators.

Leading by example

EV First Fleet

In FY24 battery electric passenger vehicle represented 67% of the Council's fleet. The EV First Fleet renewal programme will replace the remaining internal combustion engine (ICE) utility and light commercial vehicles with electric alternatives as fit for purpose alternatives become available, with the aim to have the whole fleet electric by 2030.



840,615

e-scooter public share trips taken in Wellington in FY24



33,979

e-bike public share trips taken in Wellington in FY24



People gather at the launch of the Lyall Bay street trial

Education and practical support

Better infrastructure is only one part of supporting the shift from high emission options such as cars, vans and trucks to low or zero emissions travel like public transport, walking and cycling. We delivered multiple initiatives including events and activations (including guided rides of new infrastructure), education, training and promotion, travel activities for schools and workplaces, and supported accessible journey planning.

Supporting active transport in schools

The School Cycling Support Fund was piloted this year and has funded bike parking facilities at six schools (Wellington College, Wellington East Girls' College, Wellington High School, St Catherine's College, Kilbirnie School and Newtown School).

There are currently 15 Bikes in Schools bike tracks installed in Wellington, with a new bike track built this year at Newtown School. In Movin' March 44 schools participated to promote active travel to schools. The Council also helped establish walking school buses at Berhampore School and Miramar Central School and trialled street changes outside Lyall Bay School to make it safer and more pleasant to cross.

Workplace travel planning

Council supports workplaces with tailored initiatives that encourage and promote more active transport and sustainable commuting for staff. The Active Transport Workplace Fund has helped fund 13 projects since 2020 aimed at increasing active travel options for staff at workplaces. For example, in October 2023 Athfield Architects Limited received funding towards the cost of constructing a covered bike shed and providing bike racks inside. This project removes barriers for the use and storage of bikes, particularly heavy e-bikes, providing more transport options for staff keen and able to ride a bike to work.

Bikespace

Since 2017 Bikespace, a free bike education workshop, has been empowering cyclists by providing hands-on education and experience repairing and maintaining their bikes. Bikespace has a container workshop near Te Papa, and a mobile service delivered by cargo bike to schools, workplaces and community centres.

Link track

Wellington East Girls' College Enviro Club wanted a better commuter link from the eastern suburbs for students to bike or walk to school. A 400m link track has been built, from the college to Hataitai via the town belt, funded by the Bloomberg Initiative for Cycling Infrastructure (BICI).

Over the course of two months the enviro club worked with the Maitarangi Trail Builders and the Council to construct the trail, learning about core principles of trail building throughout the process. The trail has also been planted out with 500 native plants from the Council's nursery, contributing to ongoing rewilding efforts in Mt Victoria. It's now used by a variety of



community members including students, dog walkers, running groups and cyclists. A new mountain biking group has also started up at Wellington East Girls' College.

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Enabling urban density (<i>District Plan</i>)	WCC	Reducing emissions	Completed
Mass rapid transit	WCC, GWRC, Waka Kotahi, Govt	Reducing emissions	Not continuing
Central City Connections ⁶	WCC, GWRC, Waka Kotahi, Govt	Reducing emissions	Underway
<i>Paneke Pōneke</i>	WCC	Reducing emissions	Underway
Charged-up Capital (Public EV chargers)	WCC	Reducing emissions	Underway
Car sharing	Business sector	Reducing emissions	Ongoing
Shared mobility (e-scooters and e-bikes)	Business sector	Reducing emissions	Ongoing
Practical support to change travel habits	WCC	Enabling reductions	Ongoing
Active Workplace Travel Fund	WCC	Enabling reductions	Not continuing
EV First Fleet	WCC	Reducing emissions	Ongoing

⁶ Includes the "People-friendly city streets" action from the last update report

Metrics

Indicators	2020 (as at 30 June)	2021 (as at 30 June)	2022 (as at 30 June)	2023 (as at 30 June)	2024 (as at 30 June)
Walking - number of pedestrians entering the CBD during peak times	9,157	10,375	Not measured ⁷	Not measured ⁸	Not available ⁹
Cycling - number of cyclists entering the CBD during peak times ¹⁰	2,475	2,462	Not measured ⁷	Not measured ⁸	Not available ⁹
Cycleways - in kms (cumulative)	33.5	35.3	35.6	40.0	50.4
Registered vehicles in Wellington city (cumulative) ¹¹	141,393	144,942	147,898	144,638	142,445
Registered battery electric vehicles in Wellington city (cumulative) ¹¹	1,135	1,708	2,756	4,394	5,425
Car sharing (number of vehicle trips)	42,380	65,933	83,500	96,821	89,482
Number of 24kW DC Fast Chargers that have been installed by Council (cumulative)		-	12	14	22

⁷ No study in 2022 due to COVID-19 limitations.

⁸ Cordon count data provided for May instead of March in previous years making the data not comparable.

⁹ The traditional cordon counts that these figures were sourced from have been discontinued in favour of the Vivacity sensors. We have made great progress and currently have sensors installed at 17 of the 30 cordon sites. A comparison of the data from both sources is planned for late 2024 once we have all the sites operating or enough to make a suitable sample size. Until this piece of work has been completed, there is no direct comparison of the traditional cordon figures with the data from the Vivacity sensors.

¹⁰ Taken from 5 cycle meters.

¹¹ Sourced from NZ Transport Agency Waka Kotahi - The data in the table does not include registered motorbikes and mopeds

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Central City Connections	WCC GWRC	Reducing emissions	Our planned transport infrastructure investments are detailed in the 2024 LTP, noting that NLTP funding allocations differ from the assumption made in the LTP, which will have to be worked through
Panake Pōneke	WCC	Reducing emissions	Our planned transport infrastructure investments are detailed in the 2024 LTP, noting that NLTP funding allocations differ from the assumption made in the LTP, which will have to be worked through
Electrification of Council vehicles	WCC	Reducing emissions	It is anticipated that new plug-in hybrid and battery electric utility vehicle variants will be available in FY25, enabling consideration to be given to transitioning the next segment of the fleet
Charged-up Capital (Public EV chargers)	WCC	Reducing emissions	Will be reviewed in FY25
Car share, micro-mobility, and EV charger providers	WCC Business sector	Reducing emissions	We will continue to provide the licensing and approvals to enable these providers to offer transport options to our residents
Practical support to change travel habits	WCC	Enabling reductions	Targeted set of cost-effective initiatives



Marine and air transport

Marine and air transport contribute 19% of the city’s emissions, and as a capital city of an island nation, our economy relies on both ships and planes to bring visitors here and to export and import goods.

This is the first year we have calculated cruise ship emissions as part of our marine and air transport.

Wellington city marine and air transport emissions over time



Marine transport now includes cruise ship emissions. Note there were no cruise ship visits to Wellington in FY21 and FY22
FY24 figures are provisional

Central and regional government policy settings

In April 2024, the Climate Change Commission consulted on including international aviation and shipping in the 2050 emission reduction targets. Wellington City Council made a submission and supported this inclusion, emphasising that Wellington city’s emissions reduction targets already encompass these sectors and setting national reduction targets would drive innovation in cleaner technologies and create a framework for collaboration and coordination among local councils, stakeholders, and industries.

The Government’s draft Second *Emissions Reduction Plan* does not propose robust, near-term actions for aviation and maritime emissions reduction. The plan assumes that future innovations like sustainable fuels will reduce these sectors’ emissions and lacks strong domestic policy measures or targets. Regionally, CentrePort have long-term plans to provide electricity for cruise ships in port.

The Council’s role

Engaging with stakeholders

We are engaging with Wellington air transport and maritime authority stakeholders to support them to achieve their future emission reduction targets, however the fuel choices of airlines and shipping companies are not under our control. Reducing demand for air travel and shipping is another option, although this could have negative impacts on Wellington’s economy until we have worked through our transition to a zero-carbon circular economy.

Progress on actions

Action	Lead	Impact	Status 2024 (as at 30 June)
Identify aviation and marine opportunities	Business sector, CentrePort, Wellington International Airport	Unclear	Not continuing Investigations concluded with no opportunities identified for Council to pursue

Looking forward

This action is not continuing in the 2024 LTP, although we will continue to keep a watching brief on industry and stakeholder developments in this space.



Action area: Climate resilient urban form

The Council is the planning authority, enabling a compact urban form and increased resilience through district plan settings and city design.

Wellington is a low-lying coastal city, already experiencing physical impacts from climate change in the form of more intense rainfall events, coastal storms, flooding in low-lying areas, and slips after heavy rain.

With many of our critical assets situated at or near sea level, the future functioning of our city depends on our infrastructure adapting and being resilient to climate change. Over time we will need to increase our resilience to water, by accommodating the water, reducing our vulnerability, or relocating infrastructure. For this we will need to embed climate resilience in urban planning.

Central and regional government policy settings

The *Regional Policy Statement* and *District Plan* currently discourage development in locations susceptible to high hazard risk, including inundation from sea level rise, unless there is a functional necessity to locate in those areas. Upcoming changes to the *Resource Management Act* will introduce new direction on managing natural hazard risks, including climate change. Further reform has been signalled for late 2025, where new planning law will seek to enable development while also adapting to the effects of climate change.

The Council's role

Setting policy

The Council is embedding climate adaptation into a range of plans and strategies with a focus on our key physical risks. Preparing to withstand and adapt to climate change is a key priority of the *2024 LTP* and the *2024 Infrastructure Strategy*. The *2024 District Plan* now also includes new rules to reduce future climate risks. In the coming year, integration of climate adaptation will continue with a focus on the *Coastal Reserves Management Plan* and the updated *Spatial Plan*.

Water Sensitive Cities benchmarking assessment

This year we are undertaking a benchmarking exercise, which assesses water management practices, highlighting strengths and deficiencies across a broad range of measure such as governance, resources efficiency, community outcomes, ecological health and resilience. This will inform the scoping of a *Blue Network Plan*.

Coastal Reserves Management Plan

The proposed *Coastal Reserves Management Plan* seeks to create an integrated approach to how we manage our coastal reserves and assets. The new plan is proposed to cover a broader coastal area than the existing *South Coast Management Plan*. Short-term coastal climate resilience actions for public assets will be included in the scope of the planning, but longer-term adaptation actions will be covered in other activities (eg *Community Climate Adaptation Programme* etc). Public consultation on the proposed plan started in 2024, and it is expected that the draft plan will be presented to Council in mid-2025.

Over time we will need to increase our resilience to water, by accommodating the water, reducing our vulnerability, or relocating infrastructure. For this we will need to embed climate resilience in urban planning.



Spatial Plan

The *2021 Spatial Plan* sets out a plan of action on how the city will grow, including where and how the city should grow and develop over the next 30 years. This includes planning for land use, transport, three waters infrastructure, natural hazards and natural environment - all of which have significant climate resilience opportunities to drastically reduce emissions and adapt to localised impacts by promoting development outside of the places likely to be at high risk of climate change risks in the future. The *Spatial Plan* will be updated again starting in 2025.

Infrastructure Strategy

Our *Infrastructure Strategy* identified climate change as a challenge that we are already experiencing, and that will continue to impact us going forward. For infrastructure this is both the opportunity for us to reduce our emissions and increase our resilience through our projects, and also the challenge of maintaining our infrastructure as the impacts of climate change increase over time.



Improved climate resilience rules in the 2024 District Plan

One of the most important tools the Council has to increase the city’s resilience is the *District Plan*. It includes a suite of policies and rules to guide and control land use development in Wellington, such as where and how high you can build in different parts of the city, along with measures to protect the environment, heritage and character, sites of significance and manage the risks of natural hazards.

The *District Plan* has created new rules to protect outstanding natural features and landscapes, significant natural areas, and coastal and cultural landscapes. The plan has an increased focus on natural hazards, climate change, and sustainability. This includes recognising natural hazards and climate change as important factors influencing our response to growth, clarifying that natural hazards and climate change have been specifically considered in the plan’s growth proposals.

The plan also includes a new risk-based approach to managing development across the city based on hazard and climate change risks, introducing a suite of rules that support risk reduction and climate resilience including:

- Encouraging new development outside high-risk climate hazard areas.
- Restricting development or modification of buildings/homes in high and medium coastal hazard zones and flood zones.
- Restrictions on constructing new seawalls unless they are for regional or national assets of significance or other key reasons.
- Encouraging green infrastructure and mātauranga Māori approaches for coastal hazards.
- Restricting the ability to remove vegetation in coastal areas.

Investing in infrastructure

Reducing the impact of water events

While much attention has recently been focused on the supply of freshwater to the city, stormwater is also a key area of focus and investment, through our shared ownership of Wellington Water. Increased rainfall, flooding and sea level rise are putting more pressure on the city’s stormwater network. Seawater intrusion is now significant. There are already a number of areas around the city that are impacted by flooding in high rainfall events, this will be exacerbated by higher tides associated with sea level rise. The *Wellington Water Stormwater Strategy* outlines an approach for Sub-Catchment Management Plan.

Protecting resilience of assets

As a steep coastal city with many of our roads and other critical assets situated at or near sea level, the functioning of our city depends on adapting our infrastructure to be resilient to climate change. Our historical approach to protecting public coastal assets is to build seawalls but in the future the Council will explore natural solutions. One of our most at-risk assets is our roading network, particularly coastal roads. In the years ahead there may be locations where we will need to relocate or stop managing assets.

Partnerships

Environmental Defence Society

The Council has supported the Environmental Defence Society and others to undertake research that will inform the drafting of proposals for the Climate Adaptation Act. All three papers have been made available online and have already been used by the Ministry for the Environment to inform the 2023 report of the *Expert Working Group on Managed Retreat* and the recommendations report to Government for Climate Adaptation Act in July 2024.

International partnerships

Internationally we are a member of several initiatives that give us access to global expertise, thinking, data and connections. These include the *100 Resilient Cities Network* helping cities around the world become more resilient to physical, social, and economic shocks and stresses, and the *Global Covenant of Mayors* which is the largest global alliance for city climate leadership across the globe. The *Bloomberg Mayors Challenge* aims to inspire bold, replicable innovations developed by cities and awarded US\$1 million to Wellington City Council to further develop Wellington’s 3D digital city model adaptation engagement tool discussed in the “Community climate action” section.

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Wellington Regional Climate Change Adaptation workstream	Wellington Regional Leadership Committee	Enabling resilience	Underway

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Integrate climate change adaptation into the Council’s urban form strategies and plans	WCC	Enabling resilience	Includes the <i>Coastal Reserves Management Plan</i> and <i>Spatial Plan</i>
Wellington Regional Climate Change Adaptation workstream	Wellington Regional Leadership Committee	Enabling resilience	Builds on the regional impact assessment published in June 2024
Infrastructure investments to increase resilience	WCC Wellington Water	Increasing resilience	Includes our investments maintaining and improving our physical infrastructure



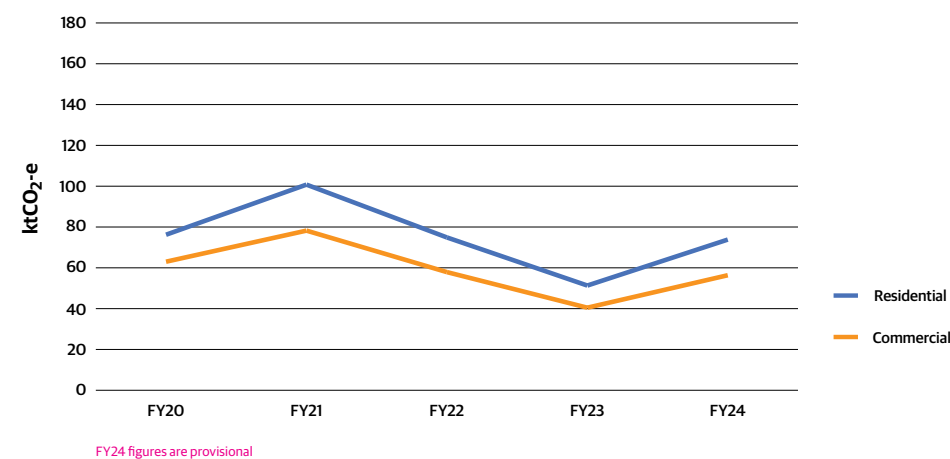
Action area: Renewable building energy

While we have no regulatory instruments to improve the emissions intensity of buildings in Wellington, we lead by example in our own buildings and facilities, increasing energy efficiency and shifting from natural gas to renewable electricity.

Building energy consumption creates carbon emissions through the use of electricity and natural gas and accounts for 13% of Wellington city's total carbon emissions. Although the Council administers the *Building Act* it has no power to require an 'improved' standard that would reduce energy

consumption across Wellington's building stock. We continue to advocate for stronger policy settings and focus on providing incentives and funding to support developers and homeowners wanting to improve the energy performance of their buildings.

Wellington city building energy emissions over time



Central and regional government policy settings

Building energy standards are set through the Building Act by central government. In the past year, the the government's Building for Climate Change programme has not progressed. In the draft *Second Emissions Reduction Plan* there are no proposals to put in place policy or funding mechanisms to improve building performance.

The Council's role

Incentives and funding

During the *2021 Long-term Plan* (2021 LTP) the Council provided incentives and funding to support developers and homeowners wanting to improve the energy performance of their buildings.

Home Energy Saver

Council provided free home energy efficiency assessments and advice to Wellington households to create healthier, more energy efficient homes. Sustainability Trust were the Council's supplier contracted to deliver these assessments, and in FY24 delivered 446 assessments. Since 2014, 14,842 homes have been assessed. This programme is not continuing in the *2024 LTP*.

Warmer Kiwi Homes

In FY24 the Sustainability Trust also delivered 39 home insulation upgrades supported by the Council as part of the EECA Warmer Kiwi Homes initiative. Since 2011, 9,354 Wellington homes have received insulation through the programme.

Environmental and Accessibility Performance Fund

The Environmental and Accessibility Performance Fund, approved in the *2022/23 Annual Plan* offered up to \$20 million over seven years for green building and accessible design certifications in commercial and residential developments. In FY24, three applications reserved \$2.5 million of the fund, but no funds have been disbursed yet as funding is only granted once the certifications have been achieved. In the *2024 LTP* the Council has redirected the fund's remaining budget towards decarbonising council-owned swimming pools, aligning with broader climate action goals.

Leading by example

We have also improved the performance of several Council-owned buildings and facilities. Our Energy Strategy and improving the energy performance of our facilities and buildings, are now part of Council's *Emissions Reduction Plan*, approved in November 2023, which targets a 57% reduction in our 2020 Scope 1 & 2 emissions by 2030.

Te Matapihi Central Library

Due for completion in early 2026, this building will have no natural gas connection, and will be certified to a 5 Green Star rating.

Te Kāinga affordable housing programme

The Council is incorporating improved energy efficiency standards into our Te Kāinga affordable housing programme for use when we refurbish and build new homes. We also aim, where feasible, to achieve New Zealand Green Building Council certification of our homes to a HomeStar 6 rating. This building programme is also an excellent example of how the Council is increasing housing availability, reusing existing commercial buildings for residential dwellings. This is both efficient with resources, and increases housing in alignment with the Spatial Plan, near transport corridors and in the heart of the city.

Council-owned social housing stock

The Council's social housing is now primarily leased to an independent charitable trust, Te Toi Mahana. While the Council remains the asset owner, the trust took over the tenancy management and minor maintenance responsibilities on 1 August 2023. As a part of an \$18M project, all Council-owned social housing has been upgraded where needed to meet the Healthy Homes Guarantees Act 2017 Standards. These Standards set out minimum requirements for all rental housing and includes heating, ventilation, insulation, moisture ingress and drainage, and draft stopping. These upgrades contribute to tenants living in a warm, safe and dry whare.

Decarbonising Council facilities

As part of the *2024 LTP*, the Council will implement energy decarbonisation initiatives in Council-owned facilities which will replace gas with electric solutions. These initiatives will collectively reduce our stationary energy emissions by an estimated 2,000 tCO₂-e per year. The decarbonisation initiatives include works at Wellington Regional Aquatic Centre, Karori Pool, Tawa Pool, and Keith Spry Pool.



Win-win from private-public partnerships

Through the Te Kāinga programme, Wellington City Council partners with developers to convert commercial buildings into residential apartments which are then rented to families, flatmates, couples, and individuals. The Council balances the rent it charges tenants with the cost to lease the building, which makes the programme cost-neutral for the Council and ratepayers.

In October 2023, Sense Partners was commissioned to research the non-direct economic or 'non-cash' financial benefits the programme creates for the city. The research focused on five areas: transport and infrastructure cost savings, economic productivity (from having improved access to potential employees), and transport and construction emissions reductions savings. The study concluded that for the 400

tenants living in 212 apartments at the time, there was an initial one-off economic benefit of over \$5M related to infrastructure cost savings, as well as an annual recurring benefit of around \$1.5M per year (almost \$32M over 20 years) related to the five areas noted above. This is because higher density living can use existing infrastructure more efficiently, and converting existing buildings taps into existing capacity rather than the additional financial and emissions-related costs of new subdivisions.

Read the full report on page 33 in the [Council Environment and Infrastructure Committee Agenda](#)

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Warmer Kiwi Homes	EECA (10-20% top up by WCC)	Reducing emissions	Ongoing
Home Energy Saver	Sustainability Trust	Reducing emissions	Not continuing
Environmental and Accessibility Performance Fund (EAPF)	WCC	Enabling reductions	Not continuing
Reduce electricity and fossil gas consumption in Council buildings ¹²	WCC (from Council's <i>Emissions Reduction Plan</i>)	Reducing emissions	Ongoing

Metrics

Indicators	2020 (as at 30 June)	2021 (as at 30 June)	2022 (as at 30 June)	2023 (as at 30 June)	2024 (as at 30 June)
Home Energy Saver - No. of Wellington homes audited (cumulative total)	12,179	12,955	13,645	14,396	14,842
Home Energy Saver - % of Wellington homes audited ¹³	5%	16%	17%	18%	18.3%
Warmer Kiwi Homes - total homes insulated since 2011	9,065	9,197	9,271	9,315	9,354

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Warmer Kiwi Homes	EECA (10-20% top up by WCC)	Reducing emissions	This is now part of the <i>Housing Action Plan</i>
Reduce electricity and fossil gas consumption in Council buildings	WCC (from Council's <i>Emissions Reduction Plan</i>)	Reducing emissions	New project funded to replace natural gas heating with heat pump technology, across four swimming pool facilities

¹² Replaces (or absorbs) the actions "Displacing natural gas", "Energy Management Strategy and Plan" and "Climate Smart Buildings and Infrastructure"

¹³ 81,003 dwellings as per 2018 census.



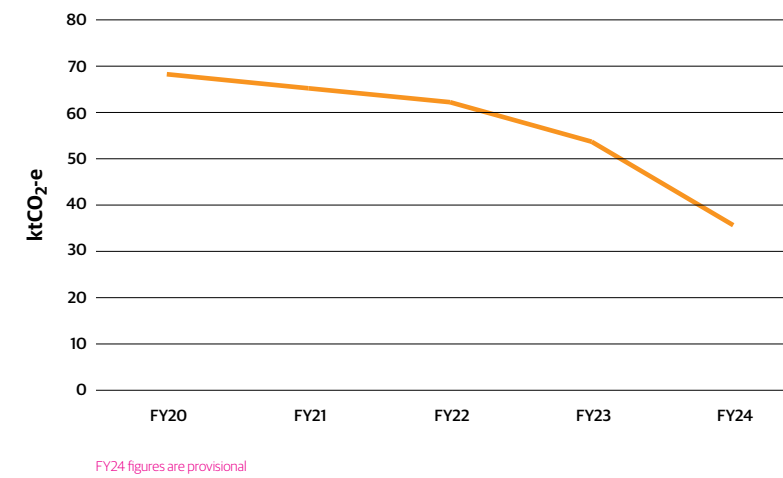
Action area: Circular waste and wastewater

As the operator of the Southern Landfill and contract holder for waste and recycling services, the Council oversees key components of the waste system. We also own wastewater treatment facilities, operated by Wellington Water on our behalf. This is an area of significant investment.

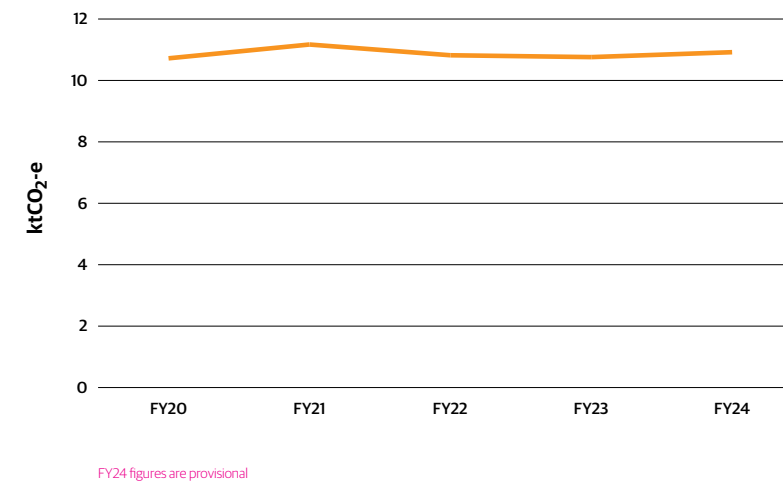
The Council owns landfills, runs the rubbish and recycling systems, and through Wellington Water owns the wastewater treatment facility at Moa Point, which is being transformed into a sludge processing plant to reduce pressure on landfill space and emissions. The Council contributes approximately 5% of the city's emissions, mostly through emissions from the Council owned Southern Landfill.

The Council contributes approximately 5% of the city's emissions, mostly through emissions from the Council owned Southern Landfill.

Wellington city waste emissions over time



Wellington city wastewater emissions over time



Central and regional government policy settings

The second draft *Emissions Reduction Plan* emphasises targeted investments in resource recovery infrastructure and systems, including construction and demolition waste. It also focuses on improving organic waste disposal methods and enhancing landfill gas capture to effectively reduce emissions. The government also has a waste strategy *Te Rautaki Para*, which was published in March 2023. This strategy provides further detail on transitioning towards a circular economy, with the vision that Aotearoa will be a low-emissions, low-waste society, built upon a circular economy by 2050. Central government funding is currently available for councils to process organic waste and create recovery infrastructure, as well as for the implementation of kerbside organic collections.

At the 2024 WasteMINZ Conference the Minister for the Environment acknowledged they are reviewing some policy direction set by the Labour Government, although no major announcements have been made with the exception of amending the Waste Minimisation and Management Act. The recently adopted *Waste Minimisation (Waste Disposal Levy) Amendment Act 2024* has broadened the scope of what the government's portion of the levy can fund.

This now includes remediation of contaminated sites, including landfills vulnerable to severe weather impacts, as well as wider environmental benefit activities. At this stage, it does not impact on the territorial authorities portions of the waste levy or how they can use the funding to implement waste management and minimisation plans.

The future rates for the waste disposal levy have also been set until 2027, providing an additional \$5 per tonne until 1 July 2027. This equates to an increase from a current \$60 to \$75 per tonne for municipal landfills.

As part of our regional collaboration on waste, the *Wellington Region Waste Management and Minimisation Plan 2023-29* was adopted in February 2024 by the Environment and Infrastructure Committee. This plan shows a strong move towards achieving a circular economy, stepping away from a more traditional focus on waste minimisation.

The Council's role

Setting policy

The *He anamata para kore mō Pōneke - Zero Waste Strategy*, adopted by the Council in April 2023, outlines Council's approach to zero waste and circular economy, and intentionally aligns with the Ministry for the Environment's waste strategy *Te Rautaki Para*.

In February 2024 Council adopted the *2023-29 Wellington Region Waste Management and Minimisation Plan* which builds on this strategy. Implementation planning for the regional and local plans is underway with further projects expected to be identified and progressed.

Two key projects were included in the *2024 LTP*, the introduction of kerbside organic collections, and progressing with a regional organics processing solution.

Investing in infrastructure

Sewage sludge solution

Construction of an innovative sludge minimisation facility, named Te Whare Wai Para Nuku, has started and completion is due in 2026. This facility will reduce the amount of sludge being sent to the Southern Landfill by up to 80%. The process being introduced will reduce carbon emissions by approximately 60% compared to the current sludge management process. In parallel, the Council is exploring options with iwi and community stakeholders to divert the biosolid produced from landfill completely for beneficial re-use. Once operational, the plant will use the biogas produced as a byproduct of the treatment process as a fuel to power its thermal dryer and steam boilers.

Diversion of food waste

When food waste ends up in a landfill it releases more methane than if it decomposed naturally, for example in a compost bin. Whilst the government has not yet mandated territorial authorities to collect food scraps, as part of the *2024 LTP* the Council has made the decision to proceed with a weekly food scraps and garden waste collection starting in 2027/28. To enable the collection of organic material, an organics processing solution is required. No decision has yet been made on what this solution looks like, what technology it will use or where it will be located. Decisions on this will be made next year.

Partnerships

Te Aro Zero Waste

In partnership with Sustainability Trust, Te Aro Zero Waste is based in the Sustainability Trust's Forrester Lane location, off Tory Street. This new resource recovery centre offers services similar to the much-loved Tip Shop at the Southern Landfill. It's a place where people can drop off items for reuse and recycling, and get help fixing things instead of throwing them out. People can also drop off "hard to recycle items" like electronic gear, batteries and plastic/metal lids.

Te Aro Zero Waste will increase the estimated 1000 tonnes diverted by the Tip Shop from landfill, and due to its central location minimises emissions from transport. Expanding the resource recovery network is key to achieving a key objective of the *Zero Waste Strategy* to make waste reduction attractive and accessible to Wellingtonians.

Education and practical support

Reducing waste to landfill

Our waste minimisation team continues to support schools, businesses and the wider community to reduce waste through education, campaigns, resources and funding. The focus is on moving towards a circular economy where waste is designed out and the lifespan of products and materials are extended through reuse, repair, refurbishment and recycling. For example, a weekly average of 0.4 tonnes of waste is diverted from the waste transfer station to the Council's Tip Shop.

Climate and Sustainability Fund - Kaicycle

The Climate and Sustainability Fund supported community organisations like Kaicycle to take climate actions that will reduce emissions. Kaicycle received funding to help establish a community composting facility in Rongotai. This facility will allow Kaicycle to divert another 55 tonnes per year of green waste from our landfill, reducing greenhouse gas emissions and building healthy soil, kai and community.

They have more than doubled their capacity to process food waste from whānau and businesses around the city and are currently composting 160 kg of food waste per day into high-quality living compost that is used to grow local kai.

They have a vision of a distributed network of small-medium scale composting operations across the city helping to divert food scraps from landfill, with the focus on producing living compost to improve soil health, grow nutritious local kai, and build food resilience. Kaicycle is an 'open-source' organisation, aiming to share their knowledge and experience to help other similar initiatives start and scale up.



Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Sewage sludge solution	WCC	Reducing emissions	Underway
Diversion of food waste	WCC	Reducing emissions	Underway

Metrics

Indicators	2020 (as at 30 June)	2021 (as at 30 June)	2022 (as at 30 June)	2023 (as at 30 June)	2024 (as at 30 June)
Waste - annual landfilled rubbish (tonnes)	97,745	89,287	85,135	160,324 ¹⁴	142,311 ¹⁵
Waste - diverted from landfill (tonnes) ¹⁶	17,900	18,174	17,179	16,719	17,029
Green waste (tonnes)	5,210	5,482	5,295	5,288	5,464
Commercial food waste (Kai to compost) (tonnes)	1,392	1,521	1,201	1,156	1,231
Recycling (tonnes)	10,679	10,568	10,232	9,598	9,909 ¹⁷
Tip Shop - diverted from landfill (tonnes) ¹⁸	19	19	44	25 ¹⁹	34
Scrap metal (tonnes)	571	557	531	373	364
Hazardous waste (tonnes)	29	29	30	20	25
Council battery electric passenger vehicle fleet	5%	6%	12%	68%	67%

Note that the landfill data in the metrics above is from the Council-owned Southern Landfill.

- 14 This increase is largely due to the treatment of contaminated soil. Before July 2022, contaminated soil was diverted from landfill to re-contour a closed landfill. As such, volumes were excluded from previous years reporting.
- 15 This decrease is due to the reduction in contaminated soil volumes because we now reject applications for contaminated soil outside Wellington city district.
- 16 This figure relates to material diverted from the transfer station and includes green waste, hazardous waste, commercial food scraps, scrap metal as well as recycling tonnages from the kerbside and the recycle centre.
- 17 This tonnage figure includes central business district recycling tonnage where previous financial year tonnages did not include this.
- 18 Refers to recovered items diverted from the transfer station to be processed through the Tip Shop for recycle, repair or re-use.
- 19 The Tip Shop employed more resource to support the recovery of re-usable items from the transfer station. This reduction can also be attributed to an increase in people dropping goods off at the Tip Shop before entering the landfill.

Metrics

Indicators	2024 (as at 30 June)
Reduce total waste to landfill by 50% by 2030	11% reduction between FY23 and FY24
Reduce biogenic methane gas emissions by at least 30% by 2035 - new indicator	Data will be reported at a later date
Divert 50-70% of organic waste from landfill by 2030	Monitoring will start after the organics collections commence in 2027/2028
Reduce per capita kerbside waste by 40% by 2030	Monitoring will start after the organics collections commence in 2027/2028
Divert 50% of construction and demolition waste from landfill by 2030 and 70% by 2035	An updated survey of waste, using the Solid Waste Analysis Protocol, will provide a baseline figure in 2025

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Sewage sludge minimisation facility	WCC	Reducing emissions	Planned to be operational in 2026
Kerbside organics collection service	WCC	Reducing emissions	Weekly food scraps and garden waste collection planned to start in 2027/28
Regional organics food processing facility	WCC and Hutt City Council	Reducing emissions	Anticipated to be in place by 2027/2028
Reducing waste to landfill	WCC	Enabling reductions	Through education and practical support



Photo: The Capital Kiwi Project

Action area: Biodiverse forestry

The Council holds a significant proportion of the green space in Wellington, on the city's behalf.

Wellington has been recognised globally as a city that is bringing nature back. As well as kiwi returning, restoration efforts are also helping to increase carbon sequestration.

These efforts respond jointly to the climate and ecological emergency. For example, we are working on increasing the amount of Council land that is regenerating, which has both carbon sequestration and biodiversity benefits. Actions to improve our city's biodiversity are also contained across several Council strategies and plans, including our biodiversity strategy *Our Natural Capital* and the *Green Network Plan*, as well as being delivered by Council-controlled organisations Zealandia Te Māra a Tāne and Te Nukua Wellington Zoo.

When we measure our city's emissions, we also measure how much carbon we are pulling back down from the atmosphere in our forested land. While our targets are to reduce our gross emissions, our forestry will make an important contribution to our 2050 net-zero carbon goal.

Wellington has been recognised globally as a city that is bringing nature back. As well as kiwi returning, restoration efforts are also helping to increase carbon sequestration.

Central and regional government policy settings

The government's draft *Second Emissions Reduction Plan* places a heavy reliance on the Emissions Trading Scheme and forestry sequestration as the main mechanisms for helping meet net carbon reduction targets. While increasing the amount of native forest has positive biodiversity benefits, relying on forestry for sequestration is risky. The impacts of climate change mean that growth patterns may differ in the future as a result of changes to seasons and average temperatures, and severe weather events will likely occur more often increasing the risk of forest loss.

The Council's role

Leading by example

Restoration planting

This year we have reached 2,319,682 plants in the ground for the restoration planting programme, slightly ahead of schedule for meeting the three million target by 2030. Over 100 community groups are planting across the city to restore local reserves, sand dunes and more. However, the largest scale planting focus this year was on the northern end of the Outer Green Belt, helping to recloak vast areas with native coastal forest species and creating a significant wildlife corridor.

The Green Network Plan

The *Green Network Plan* sets the direction and targets for how we improve and increase green space in Wellington's central city in the next 10 years. The goal is to double the number of trees from 2,000 to 4,000, improve the greening of twenty existing spaces, and deliver two new urban parks. This will boost our climate action efforts by capturing carbon dioxide and make the city more resilient to the impacts of climate change through their cooling effect and reducing stormwater runoff. The *2024 LTP* includes \$6M for delivery of the first 500 trees. Funding for implementation has been confirmed and a programme brief is underway. The first proposed new park has been identified on the corner of Taranaki and Frederick Streets and is due to be completed in 2025.

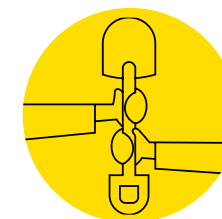
Carbon farming

Around 3,165 hectares of Council owned land is regenerating indigenous forests, and another 418 hectares is planted in exotic forests. These forests sequester carbon from the atmosphere. Of these forests, 1,453 hectares of indigenous and 33 hectares of exotic forests are post-1989 forests and are included in the Emissions Trading Scheme. Over time we are transitioning areas of exotic pine trees to native coastal forest species as part of our restoration planting programme.

Partnerships

Native indigenous forests in partnership

In 2020, we partnered with Te Herenga Waka - Victoria University of Wellington to lease 11 hectares of land for 33 years with the aim of establishing new native indigenous forests and expanding carbon sink areas within the outer green belt. Between 2021 and 2023, with the help of hundreds of university students, staff and alumni, the university planted 12,500 eco-sourced native trees on half of the 11-hectare site. The remaining half has been left to naturally regenerate. Our ongoing collaboration with the university aims to validate and register the site in the Emissions Trading Scheme given the university agreed to provide us with half of the credits generated over the 33-year term.



100+

Community groups planting across the city to restore local reserves and sand dunes

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Accelerate opportunities to support carbon farming	WCC	Enabling reductions	Underway
Green Network Plan	WCC	Reducing emissions	Underway

Metrics

Indicators	2020 (as at 30 June)	2021 (as at 30 June)	2022 (as at 30 June)	2023 (as at 30 June)	2024 (as at 30 June)
tCO ₂ -e sequestered annually in Council owned exotic forestry (measured in carbon credits granted)	975	932	674 ²⁰	1,132	887
tCO ₂ -e sequestered annually in Council owned permanent forestry (measured in carbon credits granted)	13,375	13,072	12,497	9,520	10,447

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Accelerate opportunities to support carbon farming	WCC	Enabling reductions	Through our ongoing work to improve the inner and outer green belts
Green Network Plan	WCC	Reducing emissions	Integrated into our city design work

²⁰ Some radiata pine trees were harvested to prevent illegal track building and further damage to the forest.



Action area: Resilient food systems

While having no direct role in the city's food system, the Council recognises its importance to the city's resilience and community wellbeing.

Wellington's food is not counted as part of our emissions inventory, as it is produced in other parts of Aotearoa and overseas. But what we eat matters, as food is the second largest source of household emissions behind transport, with most coming from agriculture and land-use change.

Supply chain processes are less than a quarter of the emissions from most foods but have significant implications for the resilience of our communities in the future. For example, locally we have seen how large storms can disrupt the areas that supply us with fruit and vegetables. Internationally, rice supplies have been impacted as countries restrict exports to ensure they have sufficient domestic food supply. The emissions from food waste are discussed in the section on waste and wastewater.

The Council's response to food system emissions and food security continues to be steered by *Te Anamata Ā-Kai o Tō Tātou Tāone - Our City's Food Future*, adopted in March 2023.

Central and regional government policy settings

We are not aware of central government policy work on food systems or food security. However, at a regional and local level there are several projects underway. The *Regional Food System Plan* (RFSP) falls under the climate change priority of the Wellington Regional Leadership Committee's 30-year plan. Te Whatu Ora Public Health was commissioned to develop the RFSP in September 2022 and currently remains the lead agency for the project. Numerous stakeholders have been involved in developing the plan alongside our Tākai here partners, with the vision of "A sustainable, equitable, and locally led regional food system that centres on the wellbeing of the environment and people."

Food is the second largest source of household emissions behind transport.

The Council's role

Partnerships

Activities have focused on improving kai security through inter-agency coordination, fostering collaboration within the Council, and identifying strategies to increase equitable access to nutritious and culturally appropriate food for the community.

Kai and Climate Sustainability Fund

Co-funded between Council teams and Te Toi Mahana, the Kai and Climate Sustainability Fund is a twelve-month pilot supporting projects led by city housing tenants. Inspired by the Stone Soup fund for community gardens, a participatory decision-making model is being co-designed with tenants to allocate available funds.

Benchmarking Wellington's emergency food response

A plan for developing a benchmark and assessing the city's current emergency food response has been drafted and communicated to key partners. Opportunities to progress this project in collaboration with the city's universities are being explored.

Education and practical support

Support for community-led programmes

Programmes to equip people with the knowledge, skills, and opportunity to be active participants in the food system have received practical and financial support from the Council.

The Seeds to Feeds Foundation have received funding to support communities to host and run a series of events encouraging locals to grow, forage, produce, cook, and share more food in their neighbourhoods. Garden to Table has been supported to continue their work with children in schools, developing skills and knowledge to grow and prepare nutritious kai in ways that uphold the mana of the natural world. GROW Pōneke was a three-month programme of community-led food initiatives and events encompassing Local Food Week, Neighbours Aotearoa and Community Gardens Open Sundays, brought together and

promoted by the Council. Kai Kitchen continues as a strong community event in Linden with 80 to 90 people attending each time. Newlands and Tawa Community Centres now also offer a free soup lunch for their communities. The demand for food support has increased as unemployment rates rise across the city. We established a growing fund for Te Toi Mahana (previously City Housing) tenants to increase their access to affordable healthy food and gardening knowledge.

Māori Kai Sovereignty Network

The Council established a Māori Kai Sovereignty Network intended to disperse funding for mana whenua and Māori-led kai and soil sovereignty projects. The first network hui was held in July 2024.

Community gardening

Increased expressions of interest for new community gardens and orchards indicate growing community engagement with sustainable food practices. The Stone Soup fund is allocated by the network of established community gardens to assist with running costs. Funds have been budgeted to assist with set-up costs for new gardens, which pose a financial barrier for some groups.

Community composting hubs trial

Four hubs, designed and run by communities, have been supported to date. The Council provided funds for equipment, a part-time manager and mentoring support, and assistance to obtain necessary permits. The hubs are located at Te MĀRamatanga Community Garden, Innermost Garden, Newtown Park Apartments and Massey University. Data is being collected to enable a full review.

Leading by example

Sustainable food procurement policy for the Council

Council teams are partnering to develop a sustainable food procurement component for the broader procurement toolkit.

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
<i>Te Anamata Ā-Kai o Tō Tātou</i> <i>Tāone - Our City's Food Future</i>	WCC	Enabling reductions	Ongoing

Metrics

Indicators*	2024 (as at 30 June)
Number of community composting hubs operating	4
Kilograms of food waste composted through community hubs	5,971
Number of community gardens	26
Grants made to community gardens through Stone Soup fund	17

*other metrics are being developed

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Working with communities on local food systems	WCC	Enabling reductions	Through collaboration, financial and practical support
Māori Kai Sovereignty Network	WCC	Enabling reductions	Recommendations commissioned and initial funding pool provided
Improve the city's emergency food response	WCC	Enabling reductions	Starting with benchmarking to assess current provisions and steer further work
Community composting hubs trial	WCC	Reducing emissions	Two more hubs to come. Trial being assessed to develop framework for hubs' continuation
Sustainable food procurement policy for the Council	WCC	Enabling reductions	To be integrated into procurement toolkit



Collaborating with communities

Action area: Community climate action

Wellingtonians are already working to reduce emissions and to adapt to the effects of climate change.

We amplify their impact by providing seed funding, advice and guidance. In the 2024 LTP we also committed to delivering a Community Adaptation Planning Programme, to support high-risk communities to adapt to climate change impacts.

The Council has supported communities and businesses in a number of ways since *Te Atakura* was adopted, including through initiatives like the *Zero Together* community sustainability programme, community climate action and support, community climate leaders training course, the Climate and Sustainability Fund, and a *Let's Talk Shop* sustainability project with the retail sector.

Building on existing relationships, the Council plays a role in supporting communities to navigate the economic and physical changes in Wellington as we transition to a zero-carbon resilient city.

Central and regional government policy settings

In the government's draft *Second Emissions Reduction Plan*, several initiatives that provided support for individuals, communities and businesses to reduce their emissions have been removed. The focus of the Plan is on incentivising adoption of low and zero emission technologies such as battery and hybrid heavy goods vehicles for business and further R&D. Whilst supportive of investment into R&D of low carbon solutions, the Council is mindful of the risk of placing faith in new technical solutions to deliver emissions reductions rather than supporting communities shift to existing proven lower carbon solutions.

The government is currently developing a strategy that is expected to provide national direction on key aspects of adapting to the changing climate, such as 'who pays?' and 'who decides?'. In 2023 there was the Inquiry into Climate Adaptation and Managed Retreat which included options to inform the *Climate Adaptation Act/Bill*. However there is uncertainty regarding *Resource Management Act* reform and therefore the future support for or requirements of local governments.

In June 2024 the Government announced it would develop a Climate Adaptation Framework to set out the Government's approach to sharing the costs of adapting to climate change. It is expected the *Climate Adaptation Framework* will be released in early 2025 and will be informed by the October 2024 Finance and Expenditure Committee's Inquiry into Climate Adaptation.

In 2024 the Climate Change Commission released the first Monitoring Report of the *National Adaptation Plan*. This report highlighted significant barriers for Councils and communities to plan for climate change.

The Council's role

Setting policy

Climate Adaptation Community Engagement Roadmap
In April 2023, Council adopted the *Climate Adaptation Community Engagement Roadmap* which sets out the approach to planning for climate change in Wellington over the next six+ years. Community participation will be vital to the process of making difficult adaptation decisions for the city's long-term resilience.

In FY24 we started implementing of the first two phases of the roadmap using grant funding from the Department of Internal Affairs (DIA) and Bloomberg Philanthropies.

Phase 1	Scoping and groundwork 2023-2024	This stage includes building partnerships with Tākai Here partners, GWRC and other agencies to do climate change risk assessments, develop tools and a framework to support adaptation planning processes.
Phase 2	Awareness raising Ongoing	This phase includes developing and piloting education resources and tools. Public engagement activities will be ongoing and will be built on over time.
Phase 3	Stakeholder engagement Early 2025	Communities will have the opportunity to provide feedback on the proposed approach of the Community Climate Adaptation Planning pilot.
Phase 4	Community adaptation planning Mid 2025	Where the Council will facilitate proactive planning processes with one to two high risk communities. The process will align with citywide climate change adaptation planning to connect local and citywide strategies.
Phase 5	Council decision-making	When the Council may need to make decisions regarding investment or other implementation measures, resulting from the community process.
Phase 6	Reporting and review	Focuses on implementation, monitoring and reporting of the planning phase.

Design of the Community Climate Adaptation Planning Programme

Engagement on the proposed *Community Climate Adaptation Planning Programme* – including its scope, approach and pilot locations – will take place in early 2025. In preparation for this project, we have commissioned a multi-criteria spatial analysis to identify high-risk communities and define their size and boundaries. Additionally, we have sought expert advice to tailor adaptation processes to Wellington's unique context. This advice includes defining the scope and key steps of the process for working with high-risk communities, including how decisions

could be made and how our Tākai Here partners, the Council and the public can work together. The intention is that the programme will align to both regional adaptation planning and the Ministry for the Environment's *Framework for Adaptation Planning Inquiry* due out later this year. Engagement will gather feedback on the proposed process design, and which communities should be included in the pilot during years 2 and 3 of the 2024 LTP.

Education and practical support

Climate action education, events and activation

We have been working with communities who want to learn more about the causes and impacts of climate change, and take action to reduce their emissions and increase their resilience. By sharing resources and the wero (challenge) with communities and using community-led approaches, they will increase their capability and capacity to respond to climate challenge with action that both suits and is sustained by them. The Council is focusing on equity in our approach, seeking opportunities to work with communities that are traditionally less engaged with government programmes. Our goal is to provide them with developmental opportunities similar to those who engage with the Council more often.

Activities to support community climate action over the last year include:

- Face to face connection with 49 different community groups on community climate activities, and specific support provided to 22 groups.
- Development and delivery of a community climate leadership training course in partnership with Voice of Aroha.
- Delivery of a Wellington-specific community climate conversation webinar.
- Participation in and supporting community events.

To support individuals, communities and businesses to take climate action, we want to increase the understanding of effective climate action. We intend to build on Wellington's climate action reputation and profile the innovative businesses leading the way.

Funding changes

Our community climate action mahi was partially funded through a grant from the Department of Internal Affairs (DIA) to support community-led climate planning and action as outlined in our *Climate Adaptation Community Engagement Roadmap*, in advance of budget decisions in the 2024 LTP.

In January 2024 the new government reprioritised the budget the DIA grant was funded from, creating a funding shortfall for the roadmap. Actions from the *Implementation Plan* that had previously been funded from the 2021 LTP including *Zero Together*, *Let's Talk Shop* and *Te Atakura Action Investigation* were discontinued, to ensure we could continue to make progress on the *Climate Adaptation Community Engagement Roadmap* instead. Action 2.1.1 from the *Economic Wellbeing Strategy*, to co-create business sector plans, is also not continuing.

Zero Together

The *Zero Together* programme was developed to support Wellingtonians to engage in 'everyday actions for a better climate future'. Five courses and a one-day workshop were run in FY24 for 56 people. Due to funding constraints the programme is not continuing. Council's Connected Communities is investigating platforms to share course resources as a tool to support community-led climate conversations. A small number of hours will be allocated to updating materials and responding to enquiries.

Let's Talk Shop

In FY23 a pilot programme involving 11 small and medium-sized retailers was launched to address challenges such as being under-resourced and unsure of where to start with climate action.

The programme helped participants measure their greenhouse gas emissions, create action plans, build a supportive business community, and empower participants to communicate climate actions effectively. Participants gained a clear understanding of climate issues, actively reducing their emissions and forming stronger connections with the Council. The project highlighted the importance of trust between the Council and businesses for encouraging significant climate action.

Due to funding constraints the pilot was not extended. We are investigating publicly sharing our programme resources.

Building public awareness of climate change impacts

Leveraging the latest climate change projections and updated hazard maps for Wellington, the Council is working with Tākai Here partners and community members to develop and pilot a suite of digital education tools to increase public awareness of climate change impacts and adaptation opportunities.

The Council has also been working on an innovative engagement techniques and technologies to communicate and engage the public about the need for adapting to climate change impacts by looking to the past for solutions for the future.

Website content and new adaptation-related resources have also been produced to raise awareness about adaptation. For example, the *Wellington Climate Adaptation Options Catalogue* was developed to support the design and delivery of community climate adaptation planning activities.



Our Changing City

In January 2022 Wellington City Council won an award for innovation from the prestigious Bloomberg Global Mayors Challenge. The Council was named one of 15 worldwide winners to receive US\$1million. Funding was used to deliver Wellington’s digital city model tool, which aims to create accessible and engaging experiences for the public to explore the changing shape of Wellington, looking to the past to seek solutions for a more resilient future.

An interactive touchscreen experience for Motukairangi and the surrounding area (including Miramar, Kilbirnie and Lyall Bay) was developed and tested with the feedback from more than 600 Wellingtonians. Called *Our Changing City*, it was launched as a pilot in late October. In early 2025, following refinement of the tool based on feedback from the community, it will be scaled up to support city-wide education on climate change impacts and adaptation as part of the Council’s *Community Climate Adaptation Planning Programme*.

An interactive touchscreen experience for Motukairangi and the surrounding area (including Miramar, Kilbirnie and Lyall Bay) was developed and tested with the feedback from more than 600 Wellingtonians.

Incentives and funding

The Climate and Sustainability Fund was launched in 2022 to boost climate action across the city. With an annual budget of \$250,000 per year, it has funded 21 projects across five rounds totalling \$672,040 up to and including FY24.

The fund has increased community action on climate change and has supported:

- More than 120 climate events or workshops attended by over 3,500 people.
- Hundreds of bikes repaired and regifted to people and whānau who may not have other access to bikes.
- 57 businesses learning about climate change and supported to make emissions reductions plans.
- More than 10 Wellington churches becoming eco churches and taking action together.
- Four groups developing Wellington-specific educational resources for a range of audiences.
- Three Māori-led initiatives for Māori whānau to grow and share skills related to māra kai, mahinga kai, rongoā, cooking sustainably, active transport and more.

This fund will continue to run annually with a budget of \$250,000 per year to support communities to take climate action. A focus on supporting climate action Māori-led projects and initiatives will continue, and/or projects that will deliver measurable emissions reductions in the short term. These are priority areas for the fund that have so far been underfunded.

Progress on actions

Table of actions for FY24

Action	Lead	Impact	Status 2024 (as at 30 June)
Climate action education, events and activation	WCC	Enabling	Ongoing
Climate and Sustainability Fund	WCC	Enabling	Ongoing
<i>Zero Together</i>	WCC	Enabling	Not continuing
<i>Let’s Talk Shop</i>	WCC with delivery partner	Enabling	Not continuing
Co-create business sector plans (from the <i>Economic Wellbeing Strategy</i>)	WCC	Enabling	Not continuing
<i>Climate Adaptation Community Engagement Roadmap</i>			
Phase 1: Design of the <i>Community Climate Adaptation Planning Programme</i> ²¹	WCC		Underway (using DIA grant funding)
Phase 2: Increase public awareness of climate change risks and adaptation opportunities ²²	WCC		Underway (using DIA grant & Bloomberg funding)

²¹ Previously called Developing a community-based dynamic adaptive pathways planning programme for high-risk communities

²² Incorporates the action Bloomberg digital twin project and community engagement tool.

Metrics

Indicators	2020 (as at 30 June)	2021 (as at 30 June)	2022 (as at 30 June)	2023 (as at 30 June)	2024 (as at 30 June)
Total funding disbursed by the Climate and Sustainability Fund annually	n/a	n/a	\$168,636 ²³	\$250,000	\$253,404
Number of projects funded by the Climate and Sustainability Fund	n/a	n/a	5 ²⁴	6	10
Number of people participating in <i>Zero Together</i>	n/a	n/a	n/a	32	56
Number of businesses receiving support through <i>Let's Talk Shop</i>	n/a	n/a	n/a	11	0

Looking forward

Actions funded in the 2024 LTP

Action	Lead	Impact	Comments
Climate action education, events and activation	WCC	Enabling reductions and resilience	Ongoing, across both emissions reduction and adaptation
Climate and Sustainability Fund	WCC	Enabling reductions	Delivers funding to community groups to enable city-wide emissions reduction
<i>Climate Adaptation Community Engagement Roadmap</i>			
Phase 1: Design of the <i>Community Climate Adaptation Planning Programme</i> ²⁵	WCC	Enabling resilience	Underway now
Phase 2: Increase public awareness of climate change risks and adaptation opportunities ²⁶	WCC with support from Bloomberg Philanthropies	Enabling resilience	Pilot 'pop-up' installations planned this year
Phase 3: Engagement on the <i>Community Climate Adaptation Planning Programme</i>	WCC	Enabling resilience	Planned for early-2025

²³ One project in year 1 had to cancel. These funds are being repaid in stages, which accounts for the more than \$250,000, allocated in year 3. One project in year 3 was cancelled so there is an additional \$20,000 to reallocate in year 4.

²⁴ Six projects were allocated funding but one had to cancel so there are five in total.

²⁵ Previously called Developing a community-based dynamic adaptive pathways planning programme for high-risk communities.

²⁶ Incorporates the action Bloomberg digital twin project and community engagement tool.



Appendix 1

Revised Te Atakura Implementation Plan

Action	Lead	Council's role	Contribution to targets			Comments
			Council reduction	City reduction	Resilience	
Embedding climate action						
Action area: Analysis and integration The Council provides localised climate change data and analysis and continuously improves the integration of climate change considerations into relevant decisions.						
Climate-related disclosures - assessment of physical and transition risks to the Council	WCC	Data and analysis	✓	✓	✓	Aligning to the XRB's Climate Reporting Disclosures standard
Council and city greenhouse gas emission measurement	WCC	Data and analysis	✓	✓		Using the GHG Protocol
Detailed physical climate risk, impact and vulnerability assessments	WCC	Data and analysis			✓	To inform our infrastructure planning and management
Participating in the Horizon Europe project (risk and resilience assessment of the central city)	University of Auckland	Data and analysis			✓	Partnership with 13 other agencies including University College London, University of Canterbury and University of Auckland
Improving Land Information Memoranda (LIMs)	WCC Govt	Data and analysis			✓	As required under a change to regulation, to be implemented by June 2025
Integrating climate change considerations in processes and decision-making	WCC	Improving our decision making	✓	✓	✓	Across Council papers, asset management, project management and procurement
Training and support	WCC	Raising capability	✓	✓	✓	Through workshops and online resources
Te Ngutu Kākā - building our ability to apply te ao Māori to climate change response	WCC	Raising capability	✓	✓	✓	Builds capability, and focuses on iwi partnerships specific to climate change

Action	Lead	Council's role	Contribution to targets			Comments
			Council reduction	City reduction	Resilience	
Action area: Sustainable transport networks The Council is the road-controlling authority, working towards a resilient transport system that moves more people with fewer vehicles. This is an area of significant investment.						
Central City Connections	WCC GWRC	Investing in infrastructure		✓		Our planned infrastructure investments are detailed in the 2024 LTP, noting that NLTP funding allocations differ from the assumption made in the LTP, which will have to be worked through
Paneke Pōneke	WCC	Investing in infrastructure		✓		Our planned infrastructure investments are detailed in the 2024 LTP, noting that NLTP funding allocations differ from the assumption made in the LTP, which will have to be worked through
Electrification of Council vehicles	WCC	Leading by example	✓			It is anticipated that new plug-in hybrid and battery electric utility vehicle variants will be available in FY25, enabling consideration to be given to transitioning the next segment of the fleet
Charged-up Capital (Public EV chargers)	WCC	Facilitating solutions		✓		Will be reviewed in FY25
Car share, micro-mobility, and EV charger providers	WCC Business sector	Facilitating solutions		✓		We will continue to provide the licensing and approvals to enable these providers to offer transport options to our residents
Practical support to change travel habits	WCC	Education and practical support		✓		Targeted set of cost-effective initiatives
Action area: Climate resilient urban form The Council is the planning authority, enabling a compact urban form and increased resilience through <i>District Plan</i> settings and city design.						
Integrate climate change adaptation into the Council's urban form strategies and plans	WCC	Setting Policy			✓	Includes the <i>Coastal Reserves Management Plan</i> and <i>Spatial Plan</i>

Action	Lead	Council's role	Contribution to targets			Comments
			Council reduction	City reduction	Resilience	
Wellington Regional Climate Change Adaptation workstream	Wellington Regional Leadership Committee	Investing in infrastructure			✓	Builds on the regional impact assessment published in June 2024
Infrastructure investments to increase resilience	WCC Wellington Water	Investing in infrastructure			✓	Includes our investments maintaining and improving our physical infrastructure
Action area: Renewable building energy						
While we have no regulatory instruments to improve the emissions intensity of buildings in Wellington, we lead by example in our own buildings and facilities, increasing energy efficiency and shifting from natural gas to renewable electricity.						
Warmer Kiwi Homes	EECA	Incentives and funding		✓		WCC top up of 10-20%. This is now part of the <i>Housing Action Plan</i>
Reduce electricity and fossil gas consumption in Council buildings	WCC	Leading by example	✓			New project funded to replace natural gas heating with heat pump technology, across four swimming pool facilities
Action area: Circular waste and wastewater						
As the operator of the Southern Landfill and contract holder for waste and recycling services, the Council oversees key components of the waste system. We also own wastewater treatment facilities, operated by Wellington Water on our behalf. This is an area of significant investment.						
Sewage sludge minimisation facility	WCC	Investing in infrastructure	✓	✓		Planned to be operational by 2026
Kerbside organics collection service	WCC	Investing in infrastructure	✓	✓		Weekly food scraps and garden waste collection planned to start in 2027/2028
Regional organics food processing facility	WCC Hutt City Council	Investing in infrastructure	✓	✓		Anticipated to be in place by 2027/2028
Reducing waste to landfill	WCC	Education and practical support	✓	✓		Through education and practical support
Action area: Biodiverse forestry						
The Council holds a significant proportion of the green space in Wellington, on the city's behalf.						
Accelerate opportunities to support carbon farming	WCC	Leading by example	✓	✓		Through our ongoing work to improve the inner and outer green belts
<i>Green Network Plan</i>	WCC	Leading by example	✓	✓		Integrated into our city design work

Action	Lead	Council's role	Contribution to targets			Comments
			Council reduction	City reduction	Resilience	
Action area: Resilient food systems						
While having no direct role in the city's food system, the Council recognises its importance to the city's resilience and community wellbeing.						
Working with communities on local food systems	WCC	Education and practical support		✓	✓	Through collaboration, financial and practical support
Māori Kai Sovereignty Network	WCC	Education and practical support		✓	✓	Recommendations commissioned and initial funding pool provided
Improve the city's emergency food response	WCC	Partnerships			✓	Starting with benchmarking to assess current provisions and steer further work
Community composting hubs trial	WCC	Education and practical support	✓	✓		Two more hubs to come. Trial being assessed to develop framework for hubs' continuation
Sustainable food procurement policy for the Council	WCC	Leading by example	✓			To be integrated into procurement toolkit
Collaborating with communities						
Action area: Community climate action						
Building on existing relationships, the Council plays a role in supporting communities to navigate the economic and physical changes in Wellington as we transition to a zero-carbon resilient city.						
Climate action education, events and activation	WCC	Education and practical support		✓	✓	Ongoing, across both emissions reduction and adaptation
Climate and Sustainability Fund	WCC	Incentives and funding			✓	Delivers funding to community groups to enable city-wide emissions reduction
Climate Adaptation Community Engagement Roadmap						
Phase 1: Design of the <i>Community Climate Adaptation Planning Programme</i>	WCC	Setting policy			✓	Underway now
Phase 2: Increase public awareness of climate change risks and adaptation opportunities	WCC with support from Bloomberg Philanthropies	Education and practical support			✓	Pilot 'pop-up' installations planned this year
Phase 3: Engagement on the <i>Community Climate Adaptation Planning Programme</i>	WCC	Setting policy			✓	Planned for mid-2025

Appendix 2

Glossary: Climate change terms

This glossary defines some of the specific terms used in this document and that are common in discussions on climate change.

Adaptation

Actions that help manage, moderate, and cope with the effects of climate change. For example, avoiding building in areas likely to be affected by rising sea levels.

Biodiversity

Biological diversity. The variability among living organisms from all sources, and the ecological systems of which they are part; this includes diversity within species, between species and within ecosystems.

Climate change

A pattern of change attributed directly or indirectly to human activity that alters the composition of the atmosphere, affecting global or regional climate, as measured by factors such as average temperature and rainfall, or an alteration in the frequency of extreme weather conditions.

Carbon dioxide

A naturally occurring gas, CO₂ is also a by-product of burning fossil fuels such as oil, gas, and coal, of burning biomass, of land-use changes, and of industrial processes eg cement production. See also Greenhouse gas (GHG).

Decarbonisation

The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. It typically refers to a reduction of the carbon emissions associated with electricity, industry, and transport.

Fossil fuels

Fuels made from decomposing animals or plants. Examples include coal, oil, and natural gas, which all contain hydrocarbons. As they are carbon-based, these fuels produce carbon dioxide when burnt.

Global warming

The steady rise in the global average temperature of the Earth's atmosphere, which is largely caused by increased levels of human-produced greenhouse gas emissions.

Greenhouse gas (GHG)

Natural and industrial gases that cause the greenhouse effect on Earth. Carbon dioxide and methane are natural GHG, and hydrofluorocarbons are industrial GHG.

Liquefaction

Takes place when loosely packed, water-logged soil at or near the ground surface loses its strength in response to strong ground shaking eg during an earthquake.

Mitigation

Actions aiming to reduce the impacts of climate change by preventing or reducing the emission of greenhouse gases.

Net zero

Refers to a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere, whereby we are not adding new greenhouse gases to the atmosphere.

Scope 1, 2 and 3 emissions

Scope 1 emissions are all the direct emissions from an organisation's actions or under their control eg emissions from gas boilers, vehicles, and industrial processes. Scope 2 emissions are indirect emissions from electricity purchased and used by the organisation. Scope 3 emissions are all other indirect emissions from activities of the organisation, occurring from sources that they do not own or control eg all purchased goods, emissions from suppliers, any travel not in company owned vehicles. Scope 3 emissions are usually the greatest share of the carbon footprint.

Sequester/carbon sequestration

The process of capturing from the atmosphere and storing carbon dioxide. This can happen naturally, as growing trees and other plants turn CO₂ into biomass stored within the plant. It can also refer to the capture and storage of CO₂ through technical processes.

Tiakina te Taiao

Protect the environment.



CBO0994 - November 2024

Climate Change Response
ClimateAction@wcc.govt.nz
[wellington.govt.nz](https://www.wellington.govt.nz)

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

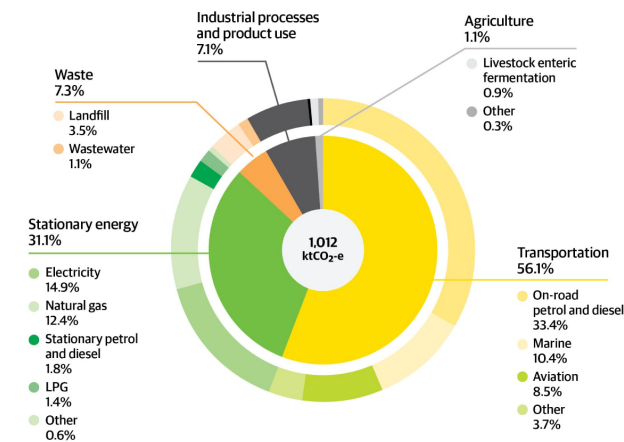
This is climate change

Addressing climate change is essential for the **future of our city**, and has rightly been prioritised by residents and Councillors.

The challenge is no longer technical – this is an **emotional, social and economic journey**. With economic implications that will arrive well before sea level rise.

The Council has a robust **climate response strategy**, which is evidence based, impactful and rigorous. Importantly, it is focused on where we have power to make a difference.

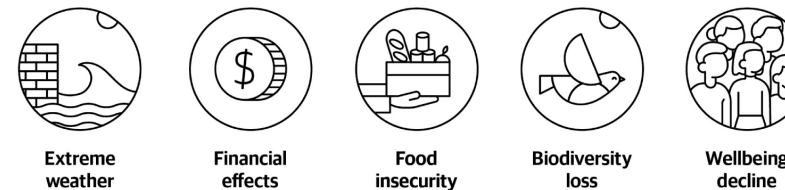
Our main emission sources



Drivers of economic transition



Impacts of the climate crisis



“The 2024 Long-term Plan will cost-efficiently deliver on the big system shifts that matter the most and are central to the Council’s mahi. Our strongest contribution to a low-carbon capital is investing in infrastructure changes to the transport and waste networks, and using our city planning capabilities.”

2024 Te Atakura Update

Current role of local govt

Data & analysis

Investing in infrastructure

Setting policy

Education & practical support

Funding, partnering, incentives

Leading by example

Facilitating solutions

Te Atakura First to Zero

Reduce **city emissions** by 57% between 2020 and 2030
 Reduce **Council emissions** by 57% between 2021 and 2030
 Increase the **city's resilience**

Responding to the challenges of climate change through the role of local government, these are Te Atakura's action areas:



Examples of Wellington City Council actions

from the *Te Atakura Implementation Plan*



Council and city greenhouse gas emission measurement
Climate-related disclosures



Submissions on adaptation and mitigation policy settings
Updated *Spatial Plan*



Paneke Pōneke Sewage sludge minimisation facility



Our Changing City School travel planning
Māori Kai Sovereignty Network



Climate & Sustainability Fund
Te Aro Zero Waste hub



EV First Fleet
Electric heating of pools
Green Network Plan



Car share, micro-mobility, and EV charger providers

Delivering on the 2024 Long-term Plan

Collaborate with our communities to mitigate and adapt to climate change

The Climate Change Response business unit leads community climate action, delivering on this 2024 Long-term Plan priority.

Example: *Community Climate Adaptation Planning Programme*

Embedding climate action

The Climate Change Response business unit supports teams across the Council to apply climate considerations to their work, helping the Council deliver this 2024 Long-term Plan strategic approach.

Examples: *Insights and analysis, policy and strategy advice, training and capability delivery*

Pōneke, the creative capital where people and nature thrive.

Absolutely Positively Wellington City Council

Me Heke Ki Pōneke

DECISION REGISTER UPDATES AND UPCOMING REPORTS

Kōrero taunaki | Summary of considerations

Purpose

1. This report provides an update on which previous decisions have been implemented and which are still outstanding. It also provides a list of items scheduled to be considered at the next two meetings (hui).

Why this report is being considered

2. This report is considered at every ordinary meeting and assists in monitoring progress on previous decisions and planning for future meetings.

Taunakitanga | Officers' Recommendations

Officers recommend the following motion:

That the Kōrau Tūāpapa | Environment and Infrastructure Committee:

1. Receive the information.

Author	Tian Daniels, Democracy Advisor
Authoriser	Sean Johnson, Democracy Team Leader Liam Hodgetts, Chief Planning Officer

Whakarāpopoto | Executive Summary

Decision register updates

3. A full list of decisions, with a status and staff comments, is available at all times on the Council website. Decisions where work is still in progress, or was completed since the last version of this report can be viewed at this link: [Council meetings decision register \(wellington.govt.nz\)](https://www.wellington.govt.nz/council-meetings/decision-register).
4. If members have questions about specific resolutions, the best place to ask is through the written Q&A process.
5. This body passed 18 resolutions at the last meeting:
 - 15 are complete and 3 are still in progress.
6. 80 in progress resolutions were carried forward from previous reports:
 - 4 are now complete and 76 are still in progress.

Upcoming reports

7. The following items are scheduled to go to the next two hui:
Rāpare, 20 Hui-tanguru 2025 (Thursday, 20 February 2025)
 - CAB and MOB Redevelopment Heads of Terms (PX)Rāpare, 20 Poutū-te-rangi 2024 (Thursday, 20 March 2024)
 - No reports currently scheduled.

Takenga mai | Background

8. The purpose of the decisions register is to ensure that all resolutions are being actioned over time. It does not take the place of performance monitoring or full updates. A resolution could be made to receive a full update report on an item, if desired.
9. Resolutions from relevant decision-making bodies in previous trienniums are also included.
10. Elected members are able to view public excluded clauses on the Council website: <https://meetings.wellington.govt.nz/your-council/decision-register>.
11. The upcoming reports list is subject to change on a regular basis.

Attachments

Nil