# Yanco Weir and Site

## Ramp Abutment Remediation

## Statement of Heritage Impact

(To accompany a s60 Fast Track application under the Heritage Act, 1977)

## Contents

# 1. Introduction

WaterNSW is Australia's largest supplier of raw water, delivering water from 41 dams, numerous weirs and regulators, state rivers and pipelines to NSW irrigators, licenced authorities, retail suppliers and Councils.

Yanco Weir and Site comprises two main water related supply structures. The Yanco Weir (also known as Yanco Weir South) referred to in the heritage listing is the older or southern mass concrete fixed weir structure which was reconstructed in the early 1980s when the northern structure was built. The northern gated weir (also known as Yanco Weir North) is now the current source of operations on the site primarily controlling flow to downstream customers and users. The southern structure acts as an auxiliary spillway during high flows and is part of the only access route to the northern structure.

The southern structure or Yanco Weir (Yanco Weir South) condition was raised as a concern in 2023 when "sink holes" were observed behind the southern abutment or left-wing walls. The damage was likely exacerbated by the excessive flooding that occurred in March 2022 when the structure was repeatedly overtopped. Several engineering options were considered before a final solution was agreed and this Statement of Heritage Impact considers the impact to the southern structure or Yanco Weir (Yanco Weir South) by undertaking necessary remediation work.

# 2. Location

Yanco Weir and site is located on the Murrumbidgee River system near Cudgel, between the large towns of Leeton and Narrandera.

An aerial view of the location is shown in Figure 1 and Figure 2 shows the curtilage of the State Heritage Register site. Figure 3 is an aerial of the site with labels identifying the features of the asset.

The landownership is currently vested in WaterNSW who are the operators of the site and managers of the surrounding landscape which includes limited recreational facilities.

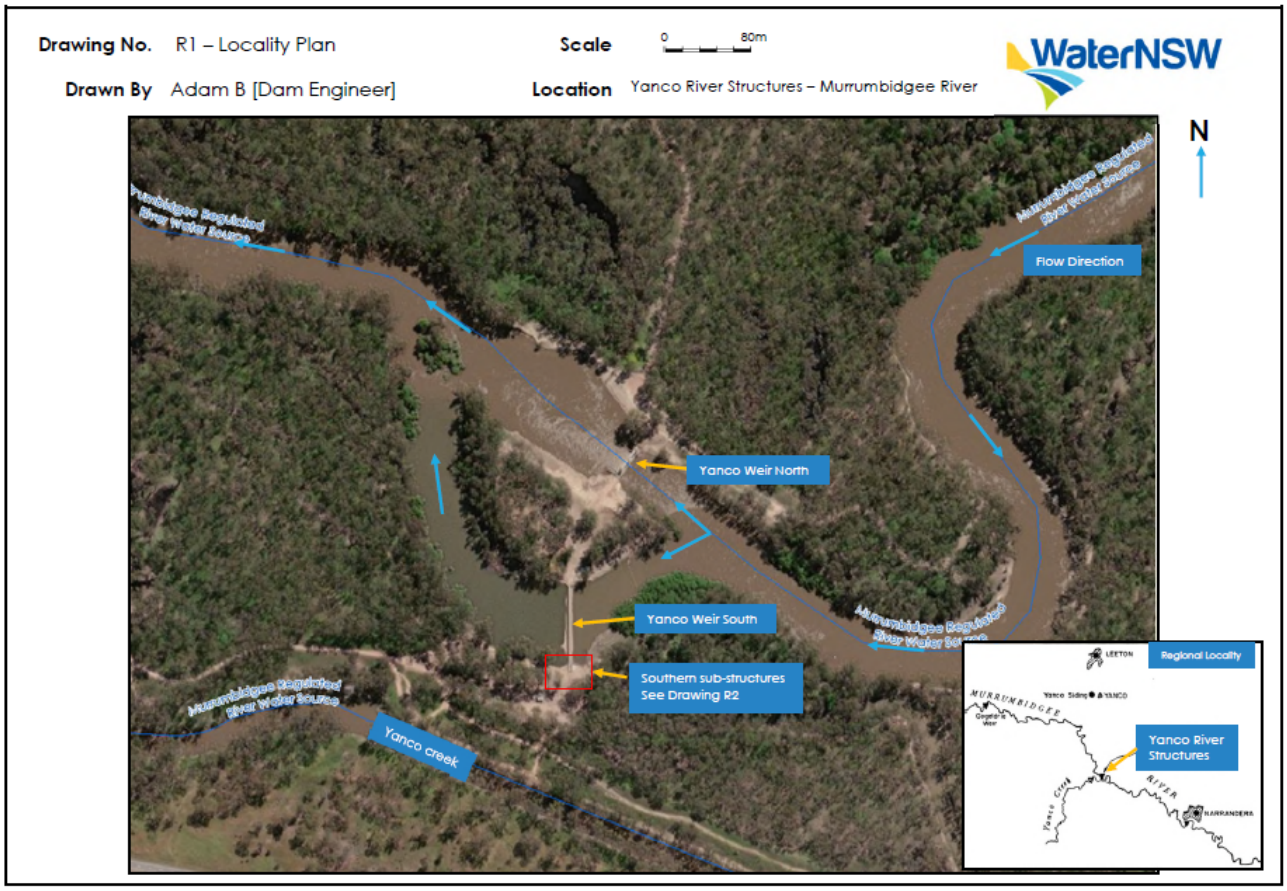


Figure 1: Yanco Weir (Yanco Weir South) location.

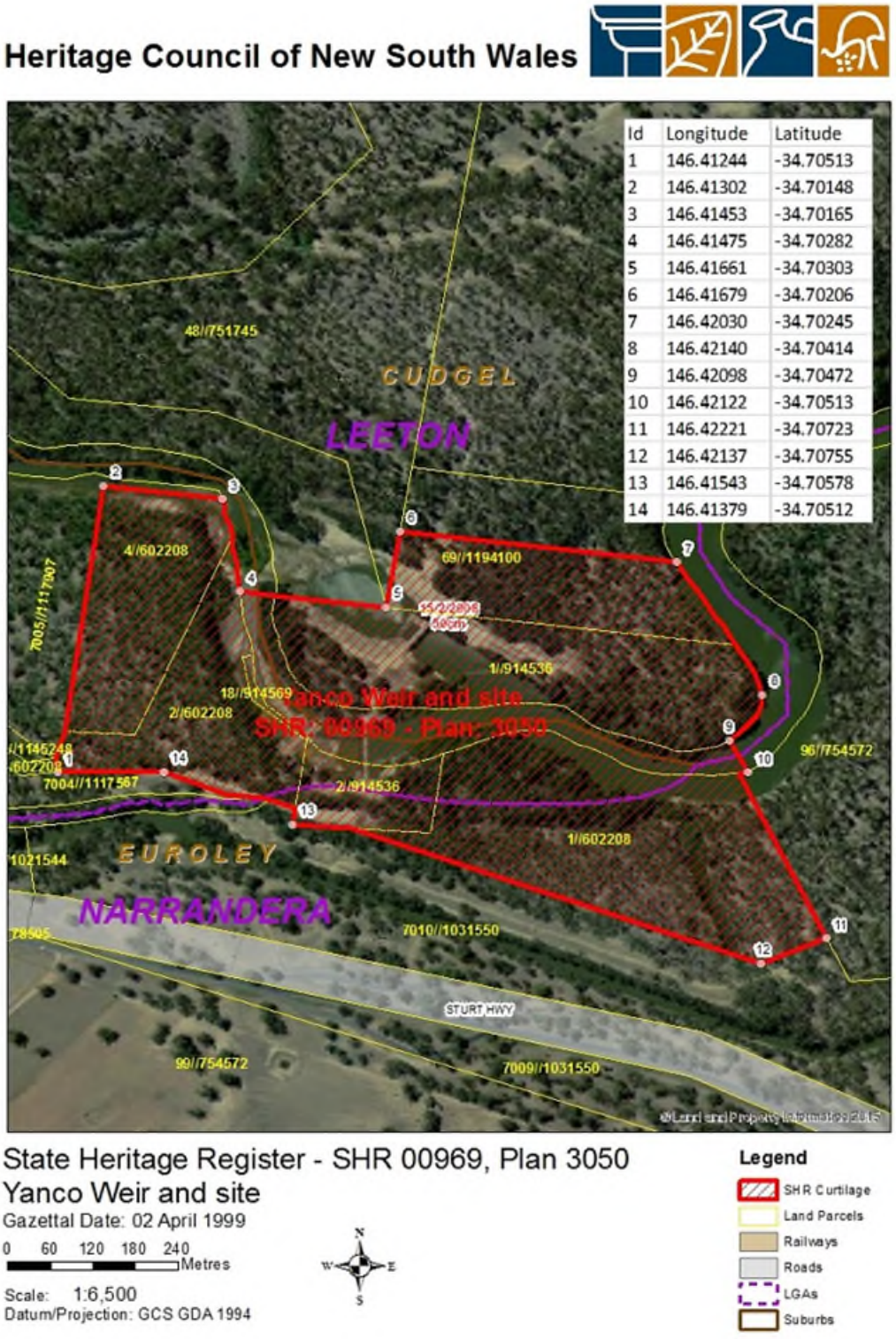


Figure 2: State Heritage Curtilage.


Figure 3: Overview of the structure.

# 3. Heritage Listings

The following heritage listings apply to Yanco Weir and Site:

Table 1. Heritage Listings

| Register | Listing Name and Number | Status |
|---|---|---|
| State Heritage Register | Yanco Weir and site (SHR 00969) | State |
| Leeton LEP | Yanco Weir and Site (I2) | State |
| WaterNSW s170 Register | Yanco Weir and Site (4550194) | State |

# 4. Heritage Significance, Site and Asset Description

Yanco Weir and site comprises two weirs on the Murrumbidgee River. Yanco Weir was constructed between 1926-1928, ten years after the Murrumbidgee Irrigation Areas were established. The weir was constructed in order to provide a permanent water supply to the Yanko, Colombo and Billabong Creeks. It was not intended for irrigation, but as an insurance against drought. However, in time it came to be relied upon for irrigation (ngh environmental, 2013).

Due to the deterioration of the original Yanco Weir a new weir to the north of the old weir was constructed between 1979 and 1980. The Yanco Weir now acts as an auxiliary spillway and provides access to the new weir for WaterNSW staff.

The Conservation Management Plan (CMP) (ngh environmental, 2013) outlines the heritage significance of Yanco Weir (Yanco Old Weir or Yanco Weir South). Yanco Weir is the significant site within the curtilage but has been extensively modified. The weir originally comprised boule trestle supported panels, with piers and drop boards on a timber piled slab base. When the Yanco Weir North was built the old weir (Yanco Weir South) had the panel and drop boards replaced with mass concrete. The existing slab was strengthened with steel piles. A fill blanket was provided upstream and the concrete sill floor, originally reinforced with timber piles and sheet pilings, was further reinforced with concrete tiles and more sheet piling (ngh environmental, 2013). Its overall integrity is low due to the modifications.

The CMP includes a summary statement of significance:

*The Yanco Weir is of state significance as one of the earliest weirs built on the Murrumbidgee River to regulate the flow of water to the Murrumbidgee Irrigation Area. It is associated with the historical development of the area and provides a good source for interpretation of the changing needs of the irrigation system. It is also an aesthetically significant element in an area designed for recreation. It is a good example of early weir construction in the MIA.*

# 5. Scope of Works

The aim of the works is to remediate the ramp abutment (also called the concrete ramp or approach ramp)(by installing footings and filling the voids or cavity with Teretek resin) and modify the wing walls upstream and downstream of the southern end of Yanco Weir (Yanco Weir South) by installing a concrete slab between the ramp and wingwalls. The two slabs are required for stability and to prevent further erosion.

The following is a list of works to be undertaken and the works are also shown in plan form in the following plans which are included in the Appendix and have been submitted individually.

| Drawing Number | Revision | Description |
|---|---|---|
| 24035-01 (DWG1.pdf) | A | Design layout for ramp repair |
| 24035-02 (DWG2.pdf) | A | Section A |
| 24035-03 (DWG3.pdf) | A | Section B, Section C and Section D |

- Site establishment (temporary fencing, silt barriers and portable toilet). Water booms for Teretek injection will be installed at that stage to protect potential water quality impacts if there is water in the River.
- Excavate either side of approach ramp and wing walls to allow for Civil Engineer inspection.
- Finalise excavations for construction of footings and structural works.
- Construction of formwork and reinforcement as per drawings listed above.
- Concrete pour.
- Inject cavity under ramp with Teretek. This will likely require the drilling of up to 10 x 16mm holes into the ramp. Drilling will try to be minimised or avoided by Contractor if possible.
- Complete remaining concrete works (surface upstream and downstream slabs).

- Undertake concrete finishing (grind and feather joints, apply mastic and/or polyurethane).
- Clean out all weep holes.
- Minor shaping to the road so it lines up with the ramp and directs drainage downstream.
- Site de-establishment and clean up.

# 6. Consideration of Alternatives

WaterNSW considered a number of options to address the issue at Yanco Weir (Yanco Weir South) which included Do Nothing; demolition of the concrete ramp and construction of a new ramp; or ramp remediation.

Do Nothing: No action could result in further deterioration of the ramp and weir structure which is the main access way to the new Yanco Weir (Yanco Weir North) which is WaterNSW's main operational asset at this location. WaterNSW staff and contractors could not access the new weir leading to operational and supply issues. This was deemed too high of a risk to operational capability and therefore was eliminated as an option.

Ramp Demolition and reconstruction: This option involved demolishing the ramp, mapping out the voids and undertaking temporary works to provide vehicle access across the area and rebuilding the area behind the downstream and upstream wing walls and a new ramp with concrete. This option was not preferred due to the impact to the ramp and cost.

Preferred Option: Ramp remediation – This option eliminates the demolition of the ramp and relies on a grout injection process to fill the "sink holes" or voids under the ramp. The resin material Teretek is preferred as it can expand in the void area and will also provide additional stability and bearing for the active loads from maintenance and contractor vehicles and mitigate any additional concrete deflection.

There is a sub option to the preferred option which was to use cementitious grout instead of the Teretek resin. The Teretek resin was the preferred option as it was recommended by WaterNSW Dam Safety Engineers and was the most cost-effective repair the cavity.

# 7. Heritage Impact Statement

This section provides an assessment of heritage impact on the significance of the Yanco Weir and site and specifically the Yanco Weir (Yanco Weir South) as outlined in the Guidelines for preparing a statement of heritage impact (Department of Planning and Environment 2023b, 18-20).

As per the CMP for Yanco Weir (ngh environmental, 2013), the weir has overall state significance, but the components of the structure have not been individually assessed and little of the original weir remains. The proposed works will not detrimentally impact the significance of the weir and site and are required remediation works to protect the asset from failure in future flood events and ensure the ramp and the overall structure can be used to access the Yanco Weir North in the future.

There is no potential for archaeological items to be discovered as the site has been severely impacted in the early 1980's when the extensive concrete modifications occurred. If any items are identified works will cease and the WaterNSW Heritage Specialist will be contacted to investigate the items discovered.

There will only be a minor visual impact to the weir as a result of the remediation works. The cement between the wing walls and the access ramp will be new but will not be overly visible. The material used will be concrete, which is the main material of the current weir wall and will not look out of place on the structure. The injection sites of the Teretek resin will be remediated after injection and will not be overly visible on the surface.

Overall, the works will not have a significant impact to the weir structure and are essential remediation works to ensure the structure is not impacted by future flooding.

The following are matters for consideration required to be assessed by the guideline for preparing a Statement of Heritage Impact:

Table 2. Considerations for Heritage Impact

| | |
|---|---|
| Fabric and Spatial Arrangements | Neither the fabric nor the spatial arrangements will be negatively affected from these works. The fabric of the approach ramp will have access holes for the resin application drilled into the ramp but this is favourable in comparison to demolition which was one of the options considered. |
| Settings, Views and Vistas | Setting, views and vistas will not be impacted by the works. The wing walls and ramp are already insitu and the concrete slabs to be installed will not impact any views around the site. |
| Landscape | The landscape will not be significantly altered in any way because of these works. The ramp leading to the old weir will be rectified and the concrete slabs will lead to increased stability and prevent future erosion. |
| Use | These works will ensure the continued use of the old Yanco Weir (Yanco Weir South) as a water supply structure and as a conduit for access to the new weir (Yanco Weir North) where water supply operations are undertaken. |
| Demolition | There will not be any demolition works undertaken in accordance with this proposal. The works are to repair an asset impacted by past flooding. |
| Curtilage | There will be no impact to the established curtilage of Yanco Weir and Site and all works are within the existing state heritage register curtilage. |
| Moveable Heritage | The proposed works do not involve moveable heritage items and there will be no impact to movable heritage items. |
| Aboriginal Cultural Heritage | WaterNSW assesses its activities in line with the National Parks and Wildlife Act 1974. No Aboriginal items are known from this immediate area and if there is an unexpected find, WaterNSW has a procedure to manage this situation. |
| Natural Heritage | The works will not impact the Natural Heritage that comprises this setting or any other elements of Yanco Weir and Site. |

| | |
|---|---|
| Conservation Areas | The works are not being undertaken in a conservation area and are not adjacent to such an area. As such, the proposed works will have no impact on a conservation area. |
| Cumulative Impacts | There will not be any cumulative impacts arising from these works. |
| Other heritage items in the vicinity | There are not any known heritage items listed in the vicinity of these works. |

# 8. The Conservation Management Plan

The following table outlines the proposed works consistency with the relevant policies contained in the Yanco Weir Conservation Management Plan (CMP) (ngh environmental, 2013).

Table 3. Consistency with the conservation management plan policies.

| Policy Number | CMP policy | Assessment |
|---|---|---|
| 6.4, POLICY 7 | *The Yanco Weir site and its setting should be conserved.*<br>As a significant place within its setting, it is important that the place is conserved, but this should not prevent some changes for continued visitation and enjoyment of the place. Some ongoing maintenance and works will always be necessary to ensure the place is kept in a suitable condition. This will be mostly related to the weir and associated structures. | The works to the weir are necessary works to ensure the structure of the weir is well maintained and prevents further impact from flood waters. It will ensure that Yanco Weir (Yanco Weir South) remains in a good or suitable condition and permits WaterNSW vehicles and contactor vehicles to pass safely over the site and on to accessing the new weir (Yanco Weir North). Therefore, these works meet the provision of 6.4 Policy 7. |
| 6.5, POLICY 9 | *Changes to the weir site are possible but any changes should not adversely affect the significance of the place or its setting. Any changes should preferably improve or reinforce significance.*<br>As mentioned, some sympathetic alterations and additions are acceptable.<br>Some degree of alteration and addition is possible provided the original form of remnant elements remains discernible and any new elements are sympathetic to the original (new elements should be limited). | The remediation works will not adversely affect the significance of the place or its setting on the Murrumbidgee River. The changes will not improve or reinforce the significance, but the works will ensure that the structure does not become further impacted by undermining and leakage. The new works that are visible on the surface will be undertaken in concrete which is the same material as much of the Yanco Weir is now constructed from. The resin Teretek will not be visible as it will be located under the access ramp. Thus, the remediation works are sympathetic to the current arrangement on site. Therefore, these works meet the provision of 6.5 Policy 9. |
| 6.6 POLICY 10 | *Original details and finishes must be recorded prior to any major refurbishment or alterations to the weir or its associated structures. Recording should be undertaken by a heritage professional and recording data submitted to State Water head office.*<br>Recording of elements should be carried out using Heritage Branch guidelines (How to Prepare Archival Records for Heritage Items 1995) by means of drawings and/or photographs before any changes. Any evidence, including existing historical images should also be recorded. | These works are not considered major works as they are not having a significant impact to the structure. As a result, an Archival recording will not be undertaken ahead of the works. |
| 6.7 POLICY 14 | Potential heritage impacts of all works to the Yanco Weir (or associated structures within the setting) must be considered in an REF, Heritage Impact Statement, or similar assessment. | This document meets the provision of 6.7 Policy 14. |

# 9. Recommendations

Prior to works

Contractors must be briefed on the heritage sensitive nature of the site and informed of any recommended mitigation measures or controls required.

During works

- All laydown areas will be located within the boundary of Yanco Weir and site. No site facilities will need to be brought onsite apart from a portable toilet as the works can be done from a work ute and other vehicles.
- In the event that unexpected historical archaeological remains not identified in this report are discovered within the works area, all works in this area should cease and the area protected. The WaterNSW Heritage Specialist should be notified, and if required Heritage NSW contacted.
- Any accidental damage to heritage items is to be treated as an incident, with appropriate recording and notification.
- Unauthorised removal of heritage fabric or the undertaking of works not outlined and assessed in this document is not permitted.
- All areas affected by works must be cleaned and made good by contractors after works are completed.

# 10. Conclusion

The works to be undertaken will not have a significant adverse impact on the heritage item. The works are required to repair the existing Yanco Weir (Yanco Weir South) and prevent further damage to the asset by flooding. Therefore, a s60 Fast Track approval is appropriate given the minor nature of these works, the installation of the new concrete slabs and the overall cost is below the $150,000 threshold for s60 Fast Track works.

# 11. References

ngh environmental (2013) *Conservation Management Plan Yanco Weir*. Prepared by ngh environmental Pty Ltd for State Water Corporation (now WaterNSW).

Guidelines for preparing a statement of heritage impact (Department of Planning and Environment 2023b, 18-20).

Prepared by WaterNSW April 2025

# 12. Appendices

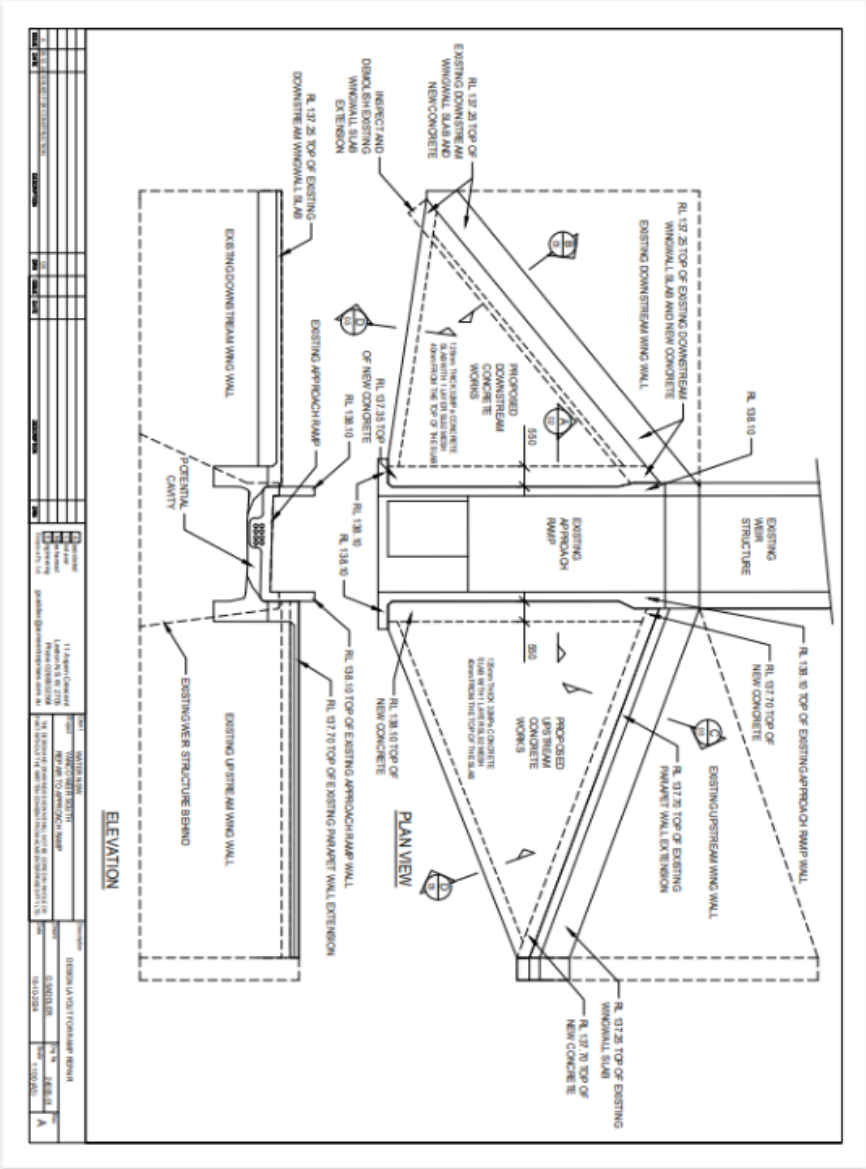


Figure 4: 24035-01 (A) Design layout for ramp repair.

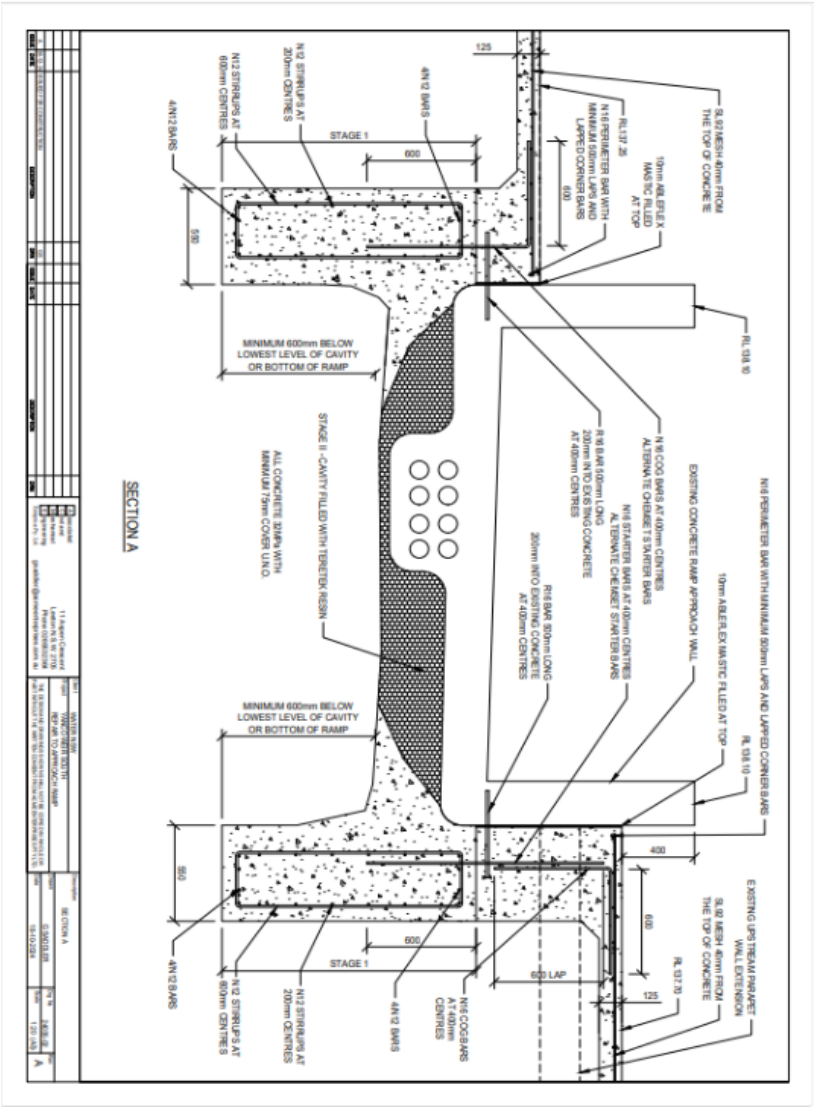


Figure 5: 24035-02 (A) Section A.

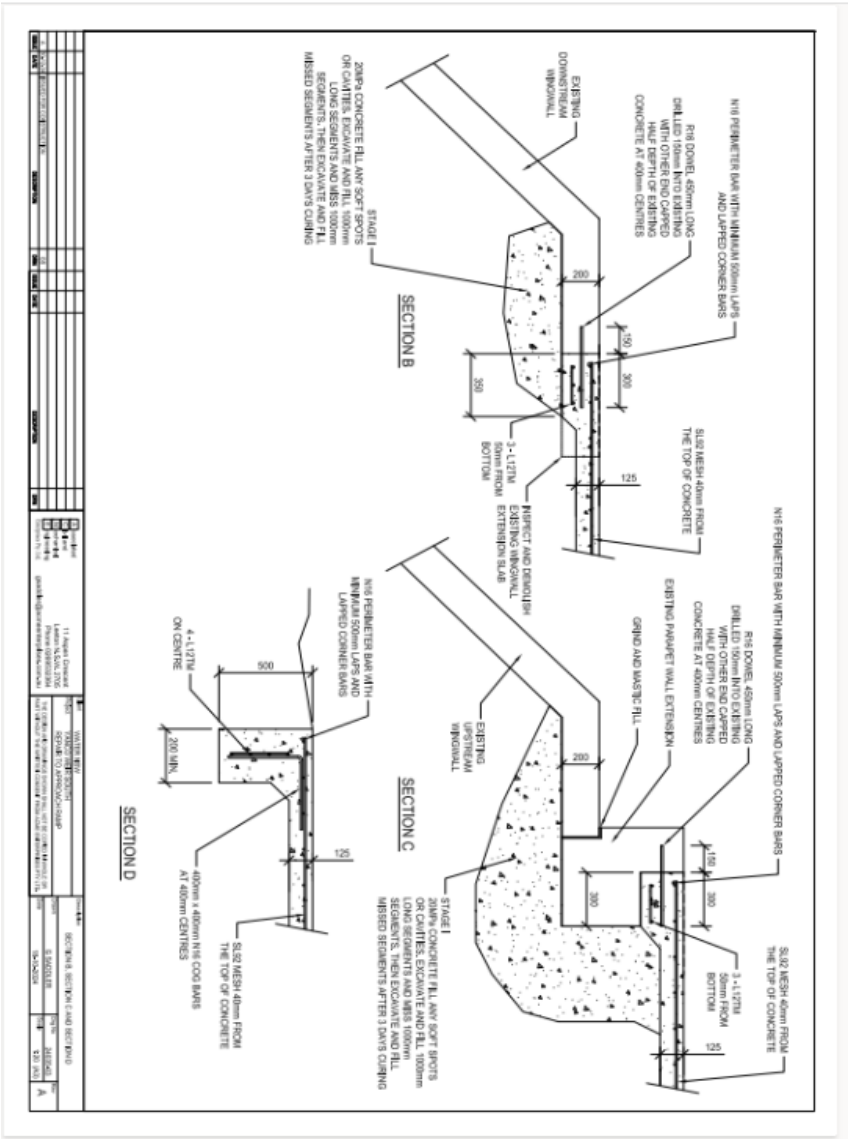


Figure 6: 24035-03 (A) Section B, Section C and Section D.