

Arkaroo Rock Upgrade Project

Project Overview and Activities

Ikara-Flinders Ranges National Park

South Australia



Image of artwork at Arkaroo Rock

Prepared by the Department for Environment and Water
January 2022

Introduction

Located in the Ikara-Flinders Ranges National Park (Park), the Akurra Adnya (Arkaroo Rock) shelter features Adnyamathanha rock paintings with ochre and charcoal images that tell the creation story of Wilpena Pound. An archaeological excavation in the late 1980s uncovered fireplaces, debris from tool making and fragments of pigment that show Aboriginal people first camped in the shelter of Arkaroo Rock more than 6,000 years ago. Arkaroo Rock is a significant Adnyamathanha painting site that depicts aspects of the Yura Muda (stories) for Ikara-Wilpena Pound. According to the Yura Muda, powerful Creation serpents known as Akurra created many features of the Ikara-Flinders Ranges landscape. The bodies of two Akurra form the walls of Ikara-Wilpena Pound.

Arkaroo Rock is one of three rock art sites some 10 km south of the Wilpena Pound Resort. The site has been determined as an Aboriginal site under the *Aboriginal Heritage Act 1988* (SA) (Act). It was added to Aboriginal Affairs and Reconciliation's (AAR's) central archives in 1990 and is listed as site 6634-2315 (the site). The three rock sites, as well as an artefact assemblage site that encompasses two of them (6634-2738), are shown on the map at Attachment 1.

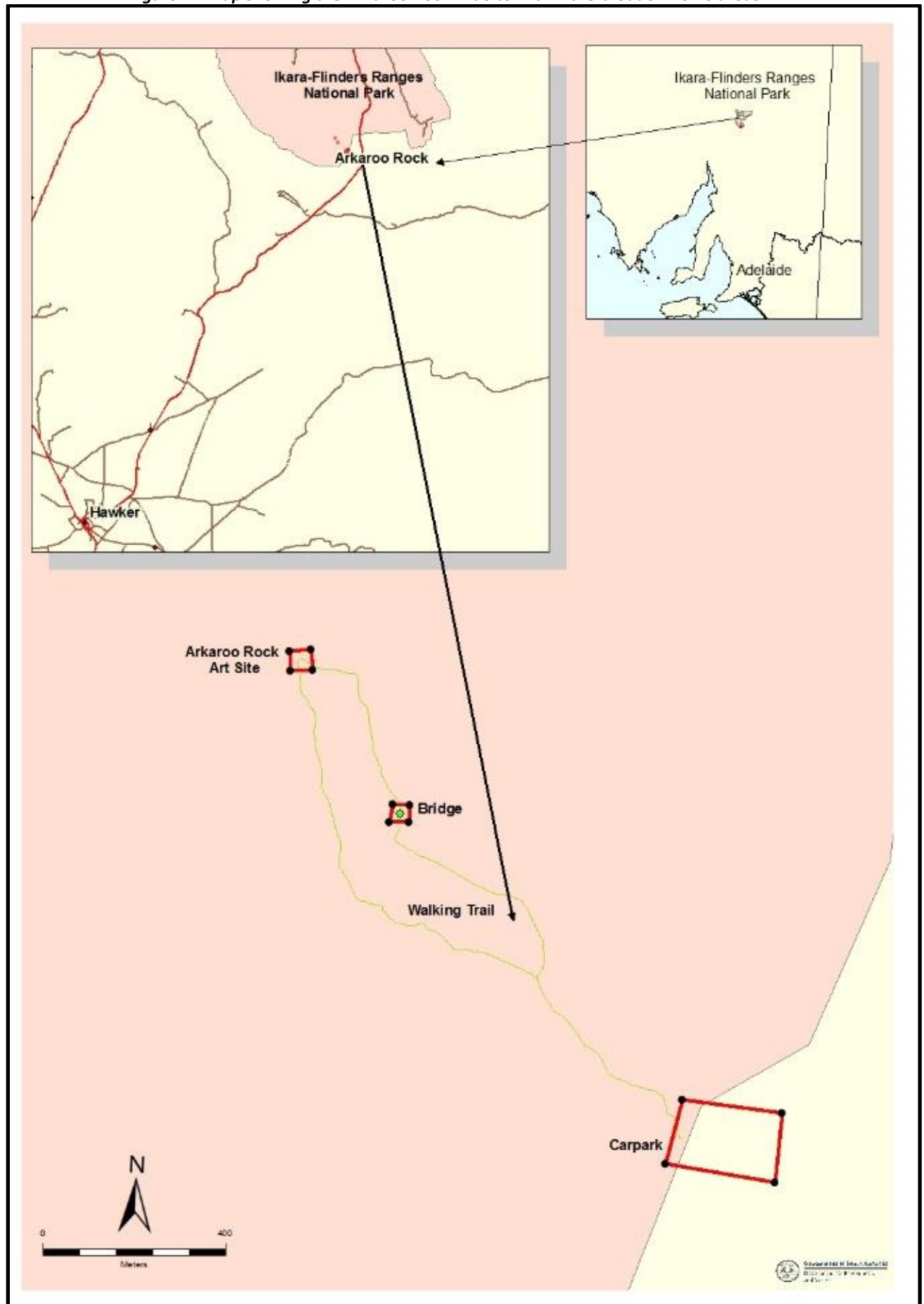
The site is located in the south-eastern portion of the Park and is only accessible by a 3 km loop walking trail from a small carpark that was upgraded in early December 2021. The site and the car park are shown on the map at Figure 1.

The State Government's Parks 2025 investment package is providing funding to improve the visitor experience in the Park. This includes Arkaroo Rock, where the existing infrastructure is aged and in need of upgrading (see Figure 2).

The Department for Environment and Water (DEW) is leading the Arkaroo Rock Upgrade Project (Project), which aims to create an improved visitor experience and ensure ongoing protection of the site. Specifically, the Project includes the following proposed works within the area bounded in purple on the map in Attachment 1 (Application Area):

- removal of the existing steel barrier attached to the rock shelter and the viewing deck around the rock shelter (including park furniture and steps affixed to it)
- installation of a new interpretive screen over the face of the rock shelter including re-coring of existing fixing points and drilling new ones into the rock shelter's dripline, as required, to secure the new screen
- construction of a new decking/bridge, and viewing platform which incorporates new park furniture and interpretive signage affixed to it
- installation of a continuous plinth (i.e. concrete strip clad in stone) to support the base of the new screen
- installation of stones grouted together with concrete footings to serve as retaining walls connecting into existing hiking trails and to create a stepped platform
- importation of material (including shale, stones and river rocks) to be used as infill for the stepped platform and at the base of the new decking/bridge and viewing platform
- widening the existing hiking trail connecting into each end of the new decking/bridge
- cleaning the artwork (i.e. dust removal only) and applying dust suppressant to the shelter's floor
- geotechnical investigations which would require some drilling into the ground in the vicinity of the rock shelter and into the rock shelter's dripline
- installation of temporary fencing for the duration of the Project
- various excavation works up to 750 mm in depth for works associated with demolition of existing infrastructure and installation of new infrastructure, including footings.

Figure 1 - Map showing the Arkaroo Rock Art Site within the broader works areas



While most of the new screen would be positioned within the rock shelter's dripline, most of the Project works would be outside the rock shelter's dripline. Further details regarding the above-listed Project works are provided from page 7 of this document and shown in the indicative construction plans at Attachment 2.

The Project works are expected to be completed within four months, once works commence.

Given the potential risks the Project works pose to Aboriginal sites, objects and/or remains (heritage), DEW has applied to the Premier, who is responsible for the Act, for authorisations under sections 21 and 23 of the Act. Section 21 of makes it an offence to excavate land to uncover any Aboriginal heritage without authorisation under the Act, while section 23 of the Act makes it an offence to damage, disturb or interfere with Aboriginal heritage without authorisation under the Act.

DEW notes that the Project is part of a broader Arkaroo Rock precinct improvement project that involves an upgrade to various assets and infrastructure supporting the visitor experience in the Park over two construction stages. The construction stages involve the following:

- **Stage 1:** involves an upgrade of a car park with a new toilet, seating picnic tables and interpretive signage. These works were completed in early December 2021. The location of the car park is shown at Figure 1
- **Stage 2:** involves the Project works, as well as an upgrade of a bridge on the walking trail loop to the site. These bridge works are outside the Application Area and therefore are not included in DEW's application for authorisations. The location of the bridge is also shown at Figure 1.

The proposed upgrade concept designs for the Project as well as other precinct improvement works in the Park have been informed by several years of consultation with Adnyamathanha Traditional Owners through the Ikara-Flinders Ranges National Park Co-Management Board (Board). The role of the Board is discussed later in this document.

Background

In 1966, prior to the creation of the Park, a steel barrier was constructed across the face of the rock shelter to help prevent damage and reduce the impact of increasing public visitation.

Following the creation of the Park, the steel barrier was replaced and a boardwalk constructed in the 1980s. Bridges and park furniture were also added along the walking trail to improve the visitor experience (see Figure 2 and Figure 3).

Since this time, the trail and infrastructure has deteriorated. The dry climate has affected the pine timber bridges, seating and boardwalks, resulting in cracking and splitting. These structures are now at the end of their lifespan and public safety is at risk of being compromised. Additionally, the appearance of the existing steel barrier and platform detracts from the artwork viewing experience. In addition to the structural and aesthetic issues, there is an increased risk of damage to the site if there is a fire in the area. As the current structure is made from timber, heat and ash from a fire could damage the artwork. The existing platform also contributes to the build-up of dust at the front of the rock shelter, which subsequently obscures and damages the artwork.

The removal and replacement of the viewing platform is in line with the recommendations from the National Environment Protection Council Committee (NEPC Committee) meeting on 19 October 2019 concerning the protection of Indigenous heritage sites. At this meeting, the NEPC Committee noted the risks and dangers of having flammable materials around areas of Aboriginal and Torres Strait Islander cultural heritage significance. Following this, it was accepted that DEW would manage risks regarding

flammable boardwalks adjacent to significant Aboriginal sites in the Park. The proposed replacement screen and viewing platform have been designed in response to these risks.

Figure 2 - Existing steel barrier and viewing platform installed in the 1980s to be upgraded as part of the Project

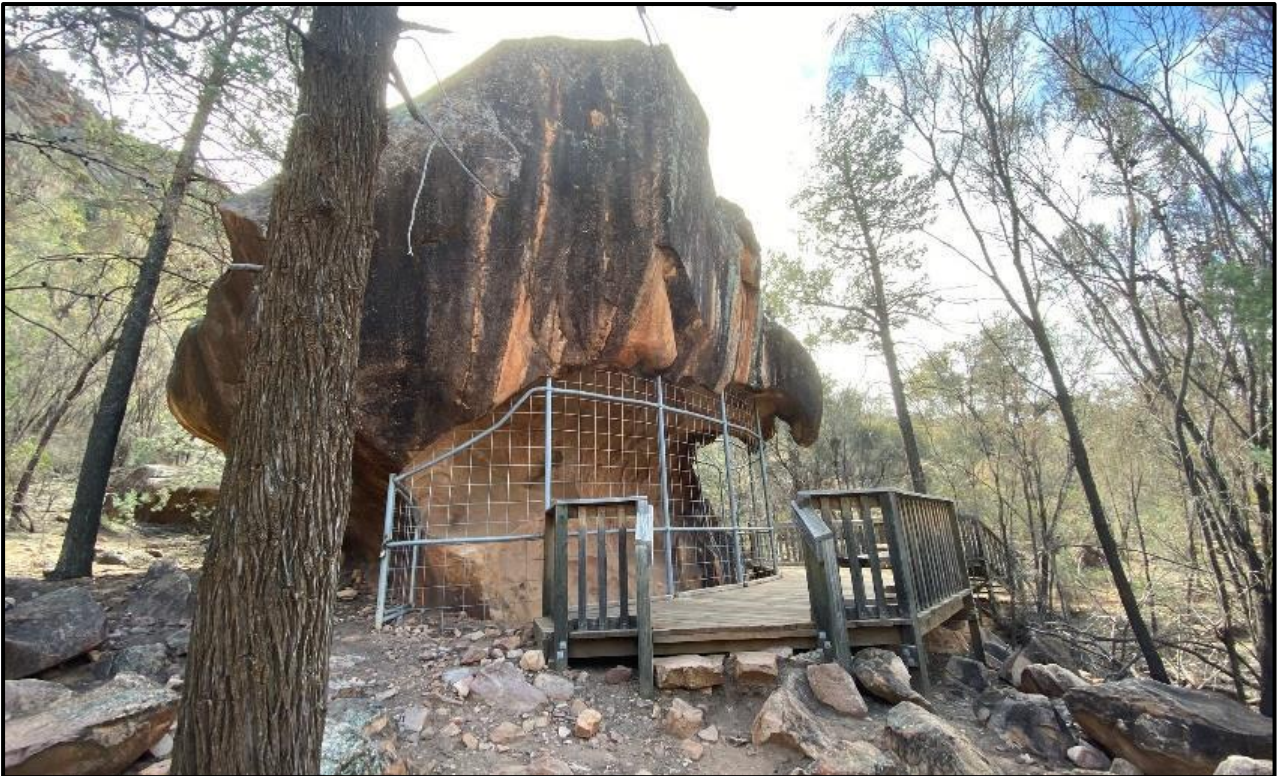


Figure 3 - Existing infrastructure installed in the late 1980s to be removed as part of the Project



Funding

The Park is an iconic South Australian park that attracts 170,000 visitors per year. It is nationally and internationally renowned for its geological history and iconic landscapes that includes Wilpena Pound, as well as its associated flora and fauna, and Aboriginal and European history. The Park is important to local tourism and the regional economy.

In March 2020, the State Government announced 'Parks 2025', a collection of investment initiatives designed to help build the capacity of parks across the state, to conserve natural landscapes and wildlife, boost the state economy, and strengthen local communities.

Stage 1 of Parks 2025 included a \$1m commitment to revitalise the Park, which will renew and expand visitor infrastructure and experiences in partnership with Traditional Owners. Stage 2 of Parks 2025 was launched in November 2020. It includes the Northern Flinders Ranges projects with additional funding of \$2.5m for park facilities to be expanded on new and improved campgrounds and amenities, as well as other improvements. The funding commitment covers a number of projects within the Park including the Wilpena Pound Resort, Brachina Gorge and Arkaroo Rock.

The site has been prioritised for investment as part of this funding. This investment will also provide increased opportunities for tour operators, including Aboriginal tour operators, to deliver high quality guest experiences in the Park. The Project involves replacing the current visitor infrastructure (see Figure 2 and Figure 3) to improve accessibility to the rock art, as well as its conservation and protection.

Management of the Park

The Park has been managed by the Board since 2012. The Board is a body that includes representatives from the Adnyamathanha community and DEW in partnership under a co-management agreement. It sets the strategic direction for the Park and is responsible for managing the cultural and natural landscape in a way that also protects and conserves the Park's outstanding natural and cultural features.

The Board works together with DEW to:

- conserve the Park's natural and cultural heritage, using both traditional and scientific knowledge to better manage the Park
- respect the rights, interests and needs of the Traditional Owners and create social development and economic opportunities for Adnyamathanha families and communities
- provide great experiences for visitors.

The Board has led a number of projects to improve the visitor experience in the Park including:

- the development of new interpretive signs across the park with an Adnyamathanha perspective
- the acquisition and management of Sacred Canyon with improved visitor infrastructure
- the review and rationalisation of infrastructure along the Arkaroo Rock trail.

The Board has been engaged in relation to the proposed works and has endorsed the plans associated with the Project.

Work Area Clearance

A Work Area Clearance (WAC) survey that covers all the proposed Project works at the site was completed on 29 September 2021. The WAC survey participants comprised representatives of DEW, two heritage consultants (one male and one female) and six Adnyamathanha representatives (three female and three males) of the Cultural Heritage and Native Title (CHANT) Group. The CHANT Group is an

interim committee established by the special administrators of Adnyamathanha Traditional Lands Association (Aboriginal Corporation) RNTBC (ATLA) to provide advice to the ATLA special administrators on heritage and native title matters.

It is a condition of the WAC survey that no works begin at the site without first obtaining authorisation under section 23 of the Act. The WAC deals with the following Project works:

- the removal of the existing infrastructure and construction of a replacement viewing deck, ensuring minimal ground disturbance
- the removal of the existing protective steel barrier in front of the rock shelter and construction of a replacement protective screen in front of the rock shelter with existing fixture points to be used if possible
- construction of new steps/stepped platform in front of the rock shelter with a membrane to be placed under the new steps to create a barrier between the existing ground level and any introduced fill material.

The WAC also allows DEW's National Parks and Wildlife Service to engage a specialist firm (such as Artlab) to clean the artwork. Cleaning is to proceed on the basis that the works are carried out in line with the endorsed methodology (discussed below), and in conjunction with the Board. The Board has approved the cleaning works proposed as part of the Project.

It is a condition of the WAC that nominated Adnyamathanha monitors would observe all ground disturbing construction works at the site. The nominated heritage monitors comprise one Adnyamathanha male monitor and two Adnyamathanha female monitors, as specified in the WAC survey report.

DEW's Project team has reviewed, and revised where necessary, the design and construction methodology for the Project to ensure compliance with the WAC conditions.

Project Details

The proposed Project works are outlined below, and indicative construction plans showing the Project works are provided at Attachment 2.

Geotechnical Investigation Methodology

Ground surface

As part of the investigations to install the various footings, DEW has received advice suggesting that excavation of up to four hand-auger holes would be required to help determine the nature of the soil type. These holes would be 50 mm in diameter and up to 1 m deep. At the end of this assessment, these holes would be carefully backfilled with the original soil dug out from them. In addition, up to ten finger-sized holes would be drilled into the ground with a light hand-held tool known as a Dynamic Cone Penetrometer (DCP). The DCP holes are mostly required to confirm the strengths of soil and depths to rock surfaces from existing ground levels.

Rock shelter's dripline

Up to four holes would be drilled into the rock shelter's dripline as part of the geotechnical investigations, if fixing points for the existing steel barrier cannot be used. These four new drill holes would be included as part of the new screen's final fixing points, if their bonding strength is adequate. These holes would be 20 mm in diameter and drilled into the rock shelter's dripline to a minimum depth of 200 mm.

Rock Art Screen Upgrade (Akurra Screen)

Concept designs for the new screen were developed to incorporate Adnyamathanha interpretive elements, and the final designs have been approved by the Board. The existing steel barrier would be carefully removed from the site.

Figure 4 shows an artist's impression of the upgrade (once completed). The images are provided for illustrative purposes, noting that the design may change once plans are finalised.

The design approach for the new rock art screen (or 'Akurra Screen') is categorised into three parts:

1. Akurra Screen fixing methodology (base and top of screen)
2. Akurra Screen overall materiality
3. Akurra Screen structural integrity and safety in design

Figure 4 - Artist's impression of the upgrade provided for illustrative purposes



1. Akurra Screen fixing methodology

The Akurra Screen is designed to be fixed at both ends of the rock shelter. The top of the screen would be fixed into the rock itself, whilst the base of the screen would be fixed into a concrete plinth cladded in stone (i.e. 'stone plinth'). The new screen would follow the original alignment of the existing steel barrier to ensure it fits precisely onto the rock, leaving no gaps that are large enough to enable unauthorised access and vandalism to the rock art.

At the base

The stone plinth at the base of the screen has been designed with a wide but shallow continuous concrete-strip footing to reduce the depth of excavation required to install it. The new screen would be fixed onto the stone plinth. The stone plinth provides the primary support for the new screen, and would meet all risk and safety requirements. In terms of its size, it would be up to 1 m wide by 12.9 m long by 300-400 mm high.

Some sections of the continuous concrete-strip footing would require excavation of up to 550 mm below existing ground level.

Shallower footings for the stone plinth may be used if the above-described approach is considered overly intrusive, or if required as a result of sub-surface conditions discovered during excavation. An alternative to the continuous concrete-strip footing is by splitting the stone plinth into three separate segments. To ensure optimal stability of the new screen, the continuous concrete-strip footing at the base of the new screen is DEW's preferred approach, if feasible.

Cross-sections of the stone plinth are shown on the indicative construction plans at Attachment 2 (see L453).

From the top

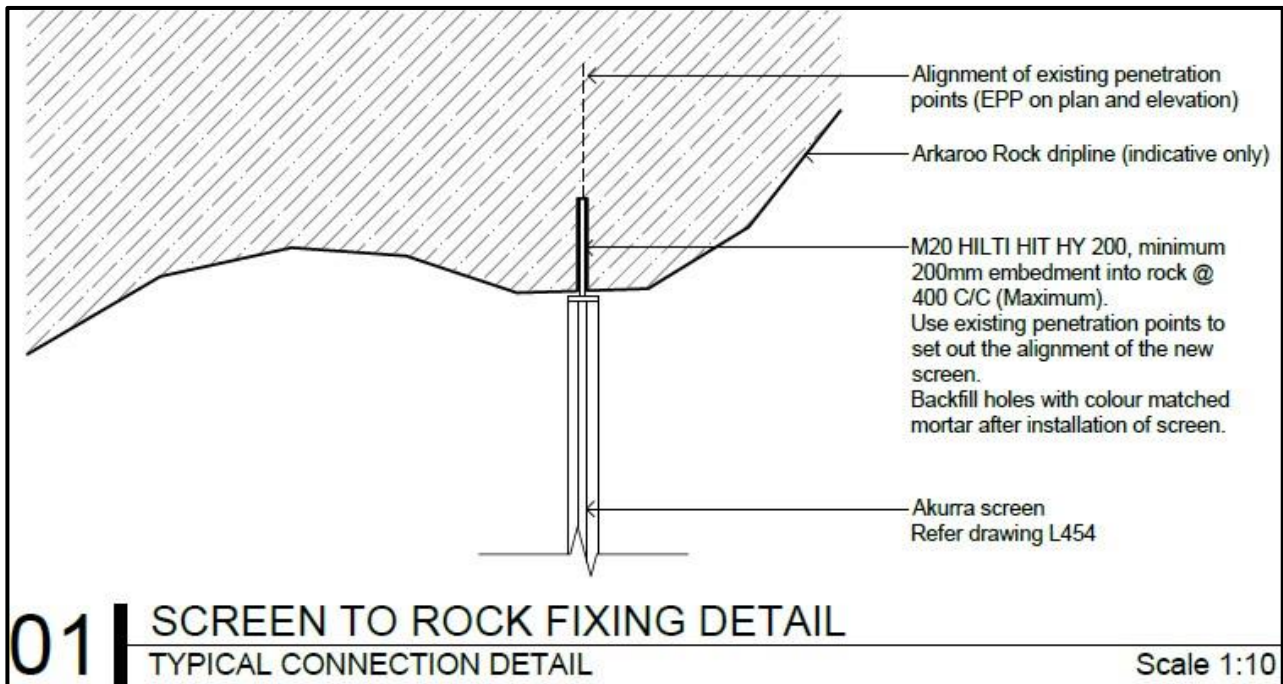
Fixings for the new screen to the rock shelter itself have also been carefully considered. With the aid of 3D point cloud scanning, the fixing points of the existing steel barrier would be identified and re-used, where possible, to align the new screen. The new screen panels have been designed to suit the spacing of the existing fixing points. At each fixing point, the screen would be anchored in place with a metal fixing pin.

This 3D point cloud scanning would allow for better precision as it would map out the exact dimensions of the existing steel barrier and its orientation. This would help inform the fabrication of the new screen off-site. Off-site fabrication of the new screen would also minimise the time required on-site and reduce construction risks when operating beside significant rock art.

Due to the presence of existing cracks around the dripline of the rock shelter, an independent geotechnical engineer would review the existing condition of Arkaroo Rock against the proposed construction methodology, so that any short and long term risks of drilling and fixing of the new screen are also considered.

As mentioned, drilling into the rock shelter's dripline would be required to verify the strength of the bond between the fixing pin and the rock. Pending on the outcome of this investigation, new fixing points would be drilled into the rock shelter's dripline to affix the new screen. Up to 31 new fixing points (including the four potentially required as part of the geotechnical investigations) could be required for this purpose. Using a low speed drill, these fixing points would have a maximum diameter of 20 mm and would be drilled to a minimum depth of 200 mm (see Figure 5). The number of new fixing points could be reduced if existing fixing points can be re-cored and re-used. New fixing points would be evenly spaced to reduce the risk of cracking. It is intended that an epoxy resin glue would be injected into the rock as part of the installation process.

Figure 5 - Details of screen fixing into the rock shelter's dripline



2. Akurra Screen Materiality

The Akurra screen would be made out of steel that complements the surrounding context and would not detract from the appearance of the rock art. Steel fabrication also results in a strong structure with long term durability and close to zero maintenance, as well as minimal ongoing risk to the site (such as from fire). A new lockable gate would also be integrated into the new screen at the rear of the rock to enable access for routine maintenance.

3. Akurra Screen Structural Integrity and Safety in Design

The sizes of the screen panels have been designed in compliance with fence standard (AS 1170.1) to ensure their stability. This has resulted in more, and heavier, screen panels when compared to the existing steel barrier which uses a lighter mesh.

As an outcome of consultation with the Board, two Akurra snakes feature as interpretive elements on the screen. Both Akurra snakes are strategically positioned across the screen panels to provide lateral strength. The omission of other horizontal bars ensures clear visibility to the art whilst discouraging climbing. This reduces the risk of misuse or unauthorised access behind the screen, and reduces the likelihood of vandalism.

The design of the new screen complies with AS4685-2014 (Playground Equipment – General Safety Requirements). This reduces the risk of children being trapped behind the new screen, whilst maintaining the appearance of the rock art it aims to protect.

Decking/bridge and viewing platform installation

The existing park furniture at the site is at the end of its useful life and would be updated with wider benches made from sustainable materials. The new viewing platform and screen would be constructed from steel so there is no risk of fire damage to the artwork, compared to the existing timber structure.

The height of the new viewing platform would be lower than the existing viewing platform, minimising ground disturbance as deck columns and footing sizes would typically be reduced. A lower viewing platform would also help protect the rock art as it would reduce dust generation.

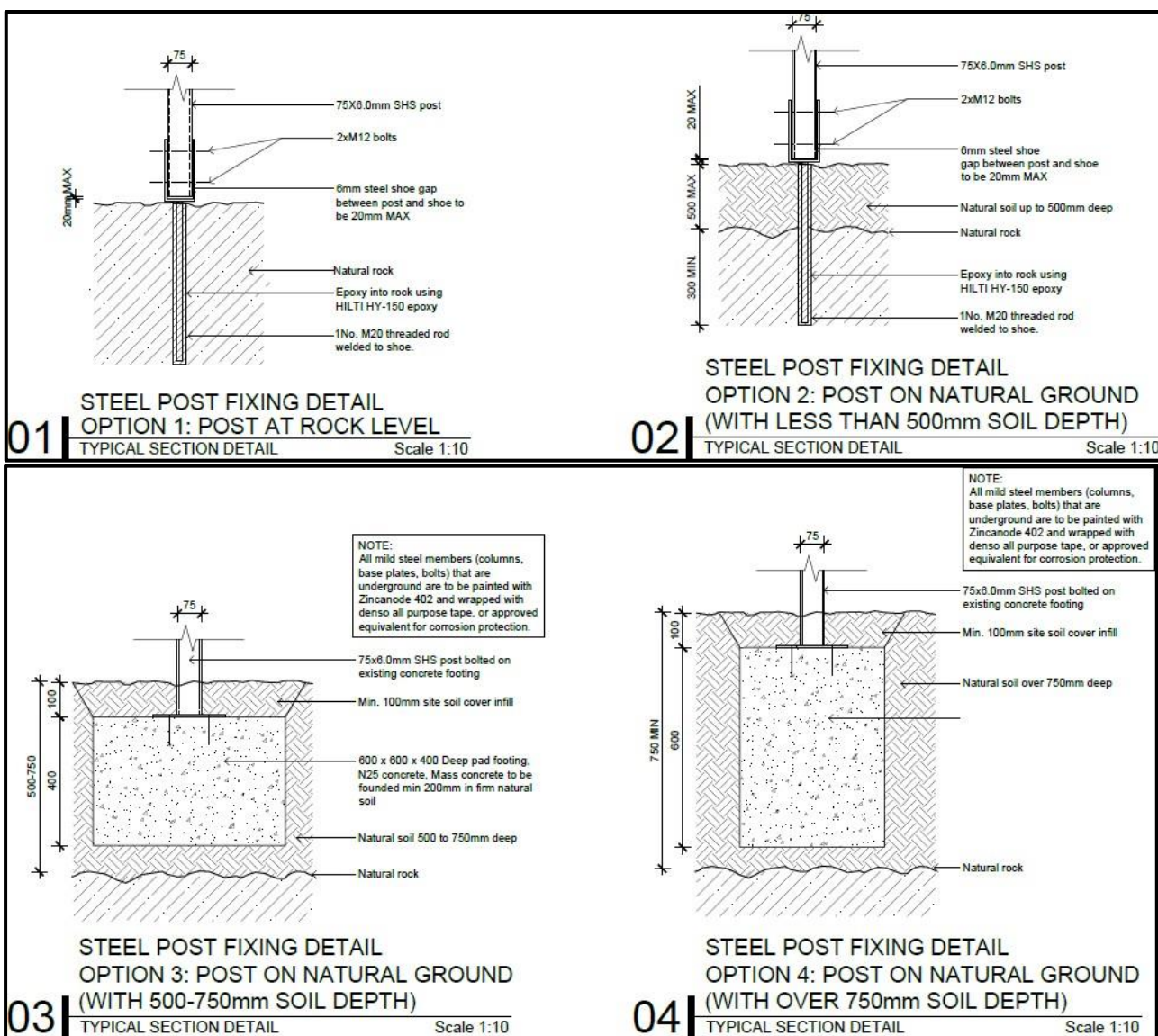
Similar to the new screen design, the new viewing platform would be pre-constructed off-site and assembled on-site. This would reduce the time required for on-site construction.

A range of footing types to support the new decking/bridge and viewing platform may be used depending on soil type and other considerations. Footings would mostly be installed within areas previously disturbed by works undertaken to build the existing platform. Up to 22 footings are intended to be installed as part of the new decking/bridge and viewing platform. The largest of these footings would be up to 450 mm wide by 450 mm long by 600 mm deep (see option 04 in Figure 6).

Excavations to install these footings are unlikely to exceed a maximum depth of 750 mm into the natural soil (see options 03 and 04 in Figure 6). However, some footings may be piled into the ground to a depth of 800 mm, including the natural rock (see option 02 in Figure 6).

DEW anticipates that options 01, 02 and 03 in Figure 6 would be most commonly used to secure the new decking/bridge and viewing platform, whereas option 04 would be used minimally.

Figure 6 - Footing options for new decking/bridge and viewing platform



DEW is investigating the possibility of reusing the existing viewing platform footing system, but given a lack of information regarding their condition, load rating and structural integrity, and life expectancy, its reuse is unlikely. If it cannot be reused, the existing footing system would be removed to the extent required to construct new works. Excavation depths to remove it is not expected to exceed 750 mm.

Stepped platform construction

The design of the stepped platform consists of stone steps with compacted shale infill in front of the new screen and rock shelter, which provides a relatively flat viewing area for improved visitor experience. Set at different levels, stepped platforms provide opportunities for visitors to view the rock art from different levels/perspectives, in comparison to the existing viewing platform that has one consistent level.

Maximum excavation depths to install the multiple concrete footings required to support the stepped platform would be 200 mm from existing ground levels. A geotextile membrane would be placed under the compacted shale infill at each step to create a barrier between the existing ground level and any introduced materials.

Material transport

Due to the difficulty of the terrain, Project components and materials would be brought into the Application Area by helicopter. The helicopter would bring construction materials in and out of the site, but would not land to do this. It would instead hover whilst materials are unloaded and loaded.

Artwork cleaning/remediation

Arkaroo Rock has been identified as a site for development to both improve its preservation and protection, and to heighten its presentation and interpretation for visitors. This presents a timely opportunity for conservation of the rock art by addressing an ongoing dust issue. An objects conservator from Artlab has advised that, to achieve this, the whole of the decorated rock wall could be cleaned. In line with this advice, DEW intends for this cleaning work to occur as part of the Project.

An approved objects conservator would be engaged to clean the artwork as well as demonstrate, supervise and advise Adnyamathanha monitors over the course of three days. Overall, a full cleaning approach could restore the appearance of the whole of the site; however, it is recognised that gaining access to all surfaces would be difficult due to height and varying vertical depths. Controlled access would ensure no unintended damage occurs to the rock and artworks. No chemicals or toxins would be used as part of the cleaning process – only air and brushing are proposed.

The cleaning would not involve restoration of the artwork (such as through the application of replacement ochre or other pigments) and would be limited to dust removal. The cleaning would be undertaken after the existing infrastructure is removed and new infrastructure is installed, as it is expected that those activities may create some dust.

In addition to the cleaning of the rock art, a specialist photographer would also be engaged to capture a photographic record of the rock shelter before, during and after the treatment. This would aim to identify any changes in the artwork caused by the treatment, and would function as an accurate record to monitor any future degradation.

If no cleaning were to occur, dust would continuously redeposit. Dust on the horizontal surfaces considerably adds to abrasion of the surrounding surfaces, swirled by wind and eroding the artwork and the rock. Dust on the art designs also reduces visibility, and could permanently bond to the art over time. For these reasons, the dust should be removed to better conserve the rock art.

This was weighed up against the risk of removing tiny amounts of ochre during the cleaning process. If

painted ochres seem to become loosened through the cleaning process (i.e. through brushing), then brushing would cease in that section. The work would be undertaken from the top down of the rock shelter.

Proposed measures to minimise risk to the rock shelter

The Project team is committed to working collaboratively with the Adnyamathanha community through the Board and ATLA (through its special administrators) to ensure their cultural beliefs are represented appropriately and work is carried out on site in a culturally appropriate manner. The Project would help foster the parties' existing partnership, and be crucial in enhancing a unique tourism opportunity for the Adnyamathanha community.

An Adnyamathanha Senior Ranger (Mr Arthur Coulthard) of DEW's National Parks and Wildlife Service would be engaged and be present on all stages of the Project. Nominated Adnyamathanha heritage monitors would also observe all ground disturbing construction works, as required by the WAC survey.

The following heritage management measures are proposed throughout the duration of the Project works:

- all care would be taken during construction to ensure that there is no collateral damage from on-site activities that causes vibration
- no vegetation would be removed during construction
- temporary security fencing would be installed around the site to protect the rock paintings while works are being undertaken
- temporary security fencing would be established on Arkaroo Rock Road to deter members of the public accessing the Application Area during construction
- before work starts, the rock art would be covered by material recommended by Artlab to stop any dust settling, and splatters onto the art during construction. The protective material would not be applied directly on the rock face for risk of abrasion
- the existing deck, seating and steel barrier would be carefully removed and dismantled into safe loads, that can be transported safely away from the site by helicopter
- all new materials would be brought to the Application Area by helicopter
- existing fixing points within the rock are to be re-cored and cleaned for re-use if possible
- practices would be implemented to safely excavate the footings, with a view to minimising ground disturbance
- concrete would be airlifted by helicopter into the Application Area, with safeguards in place to ensure that the loads do not come close to the rock shelter. Contractors would be required to undertake appropriate training prior to undertaking works to ensure correct loading and unloading from the helicopter lifts
- the sand and mortar colours would be carefully selected to match the natural stone colour of the rock shelter
- the compacted shale would be extended beneath the new infrastructure to create a natural finish.

Heritage Discovery Plan

A heritage discovery plan has been developed and approved by ATLA through its special administrators for the Project as there is a high likelihood that ground disturbing works may encounter subsurface Aboriginal heritage. The heritage discovery plan establishes processes to be followed in the event that Aboriginal heritage is discovered, so that it can be appropriately assessed while works are suspended. The Project contractors and cultural monitors would receive a site induction and would be briefed on the heritage discovery plan for the Project.

If the Premier grants the authorisations under sections 21 and 23 of the Act to DEW for the Project, DEW will comply with any conditions of those authorisations. DEW is also committed to adhering to AAR's *Aboriginal Heritage Discovery Protocols* (Attachment 3) to help manage any Aboriginal heritage that may be encountered during Project works. DEW notes that adherence to AAR's discovery protocols is typically a condition of authorisations, if granted.

DEW notes that its application includes a request for authorisation under section 21 of the Act so that it can appropriately manage any Aboriginal heritage that may be inadvertently discovered during the Project works, in consultation with Adnyamathanha Traditional Owners. The section 21 authorisation, if granted, is only intended to be relied upon if Aboriginal heritage is encountered within the Application Area during the Project works.

Previous Consultation with Traditional Owners

In July 2020, the Board considered the Parks 2025 project plan, which broadly sets out the scope of works for the Project as well as the other Arkaroo Rock precinct improvement works. The Board has approved the project plan.

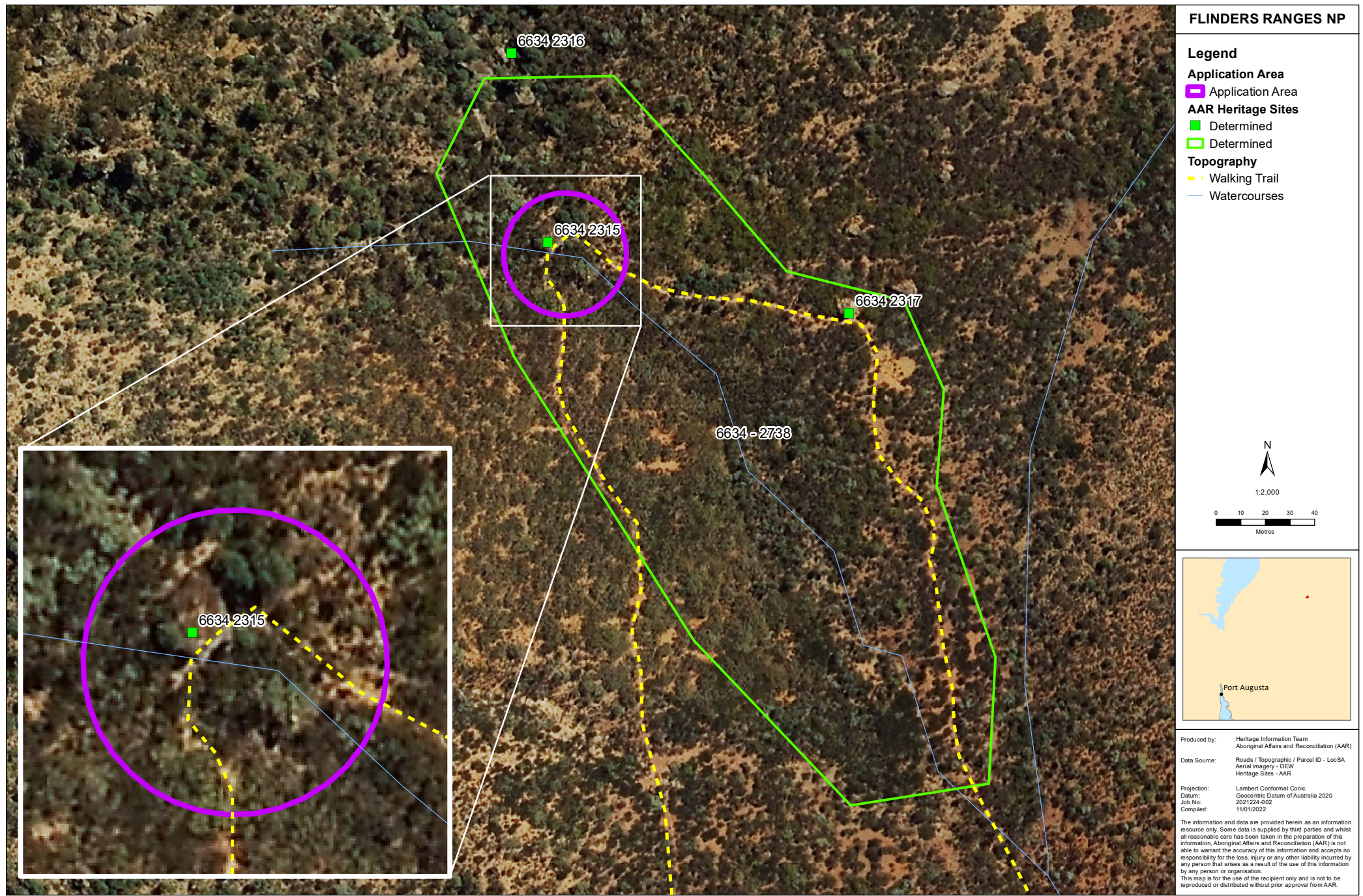
As required under the Indigenous Land Use Agreement (ILUA) dated 6 October 2011 between the state government and ATLA, a Notification Letter was sent to the ATLA special administrators on the 30 November 2020. The letter outlined the relevant notifiable acts associated with the Project.

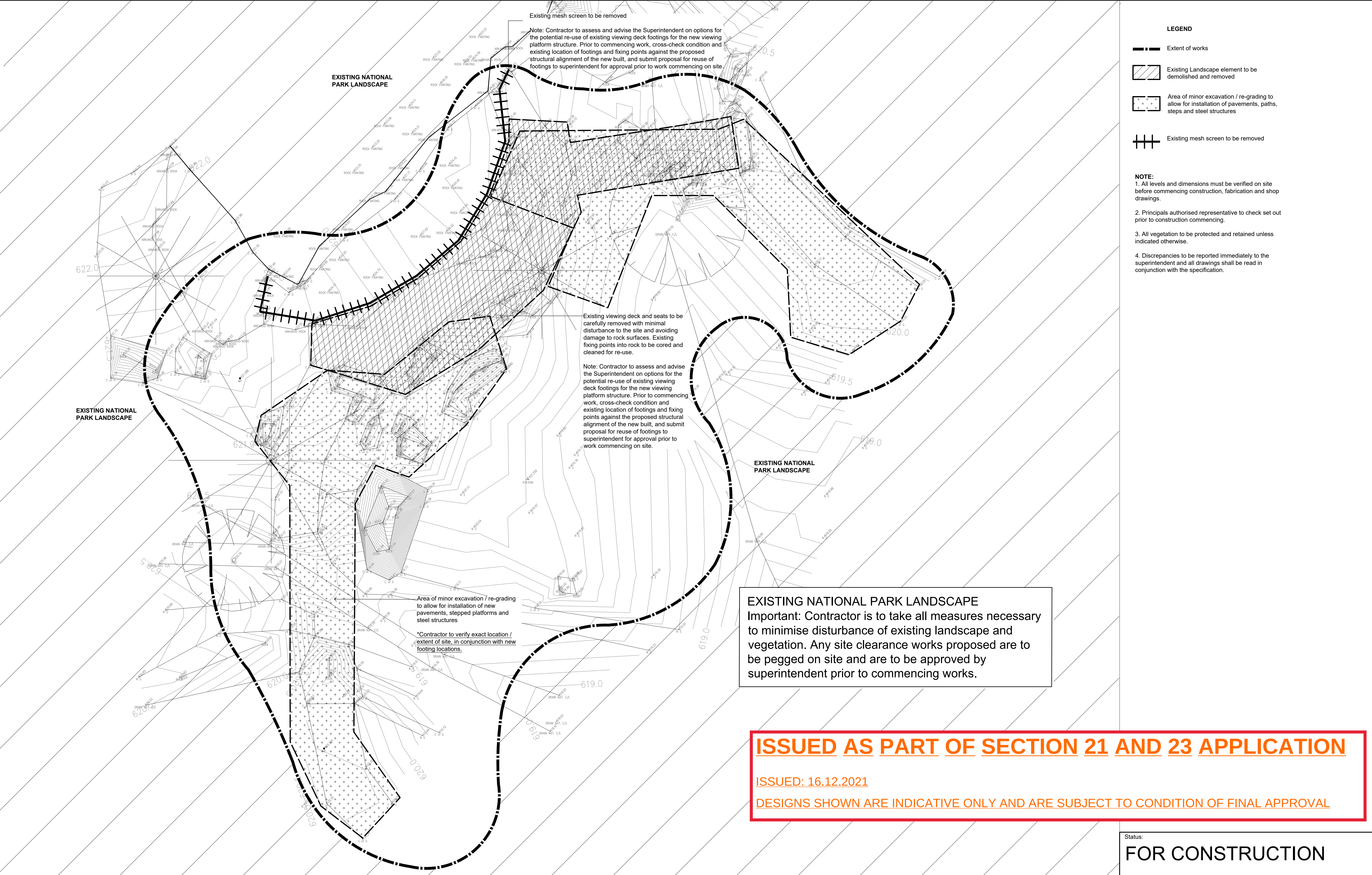
Attachments

Attachment 1 – Map of the Application Area and Aboriginal sites (prepared by AAR)

Attachment 2 – Indicative construction plans

Attachment 3 – AAR's *Aboriginal Heritage Discovery Protocols*





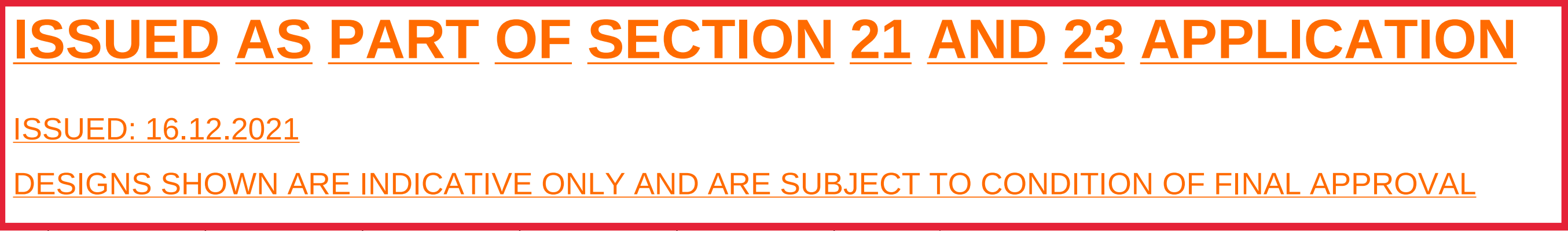
LEGEND

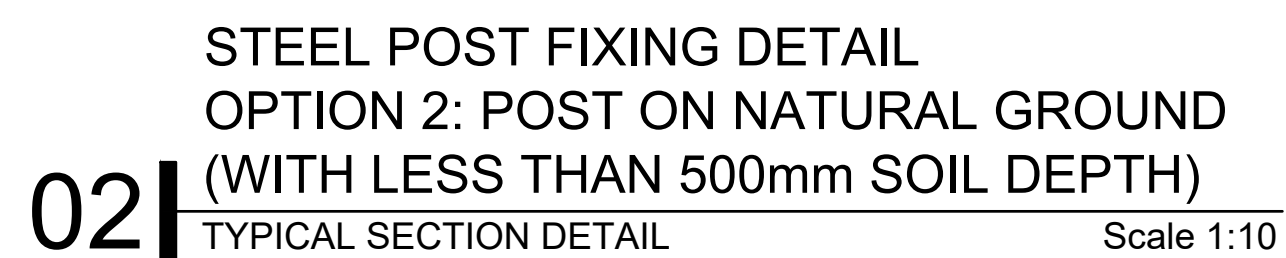
- Extent of works
- Existing Landscape element to be demolished and removed
- Area of minor excavation / re-grading to allow for installation of pavements, paths, steps and steel structures
- Existing mesh screen to be removed

NOTE:

1. All levels and dimensions must be verified on site before commencing construction, fabrication and shop drawings.
2. Principals authorised representative to check set out prior to construction commencing.
3. All vegetation to be protected and retained unless indicated otherwise.
4. Discrepancies to be reported immediately to the superintendent and all drawings shall be read in conjunction with the specification.

Consultant File Reference: A2022				Arkaroo Rock Upgrade Ikara-Flinders Ranges National Park				Designed by TCL				Drawing: DEMOLITION PLAN - ARKAROO ROCK				Date: 24.06.2021			
T.C.L. mei				Checked by SB				Sheet: SHEET 1 OF 1				Scale: 1:50@A1				Drawing No. L102			
C1 24.06.21 FOR CONSTRUCTION				Approved by DS				Purpose: LANDSCAPE ARCHITECTURE				Rev. C1							
Rev/Date				By/Chk/Rev/Date				Date 24.06.21											
Revision Details				Revision Details															





NOTES:

1. The natural ground (including areas of fractured shale) must be penetrated to bear on solid sheet bed rock, if in any doubt as to the anchorage capacity notify the engineer to inspect.
2. All steel work and fixings shall be grade 316 stainless steel.
3. All welds shall be 6mm Continuous Fillet Weld (CFW).
4. All timber embedded in ground shall be copper chrome arsenate treated to achieve H5 hazard level, all above ground timber shall be treated to achieve hazard level H3.
5. All cut or machined timber to be treated with emulsion for inground applications and timber protection for above ground applications. Refer to specification for details.
6. Shale infill to be 50-150mm above finish surface level, exact coverage refer plan.
7. Geotextile fabric to be placed between any introduced materials and the existing ground level (existing materials on site), to be installed as per manufacturer's recommendation.

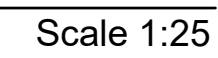
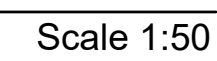
Contractor to provide sample and product information of geotextile fabric to be approved by superintendent

DESIGNS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CONDITION OF FINAL APPROVAL

300	C1
-----	----

[illegible]

DESIGNS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CONDITION OF FINAL APPROVAL



4. Height of stone plinth varies, to be MAX 300mm higher than adjacent finish surface

Consultant File Reference: A2022

Arkaroo Rock Upgrade
Ikara-Flinders Ranges National Park

T.C.L 
TAYLOR.CULLITY.LETHLEAN

Designed by TCL	Drawing: DECK FRAMING PLAN Sheet: SHEET 1 OF 3 Purpose: ARKAROO ROCK DETAILS	Date: 24.06.2021	
Drawn by KG		Scale: AS SHOWN @ A1	
Checked by KG		Drawing No.	Rev.
Approved by DS		Date 24.06.21	L450



DESIGNS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CONDITION OF FINAL APPROVAL

[illegible]

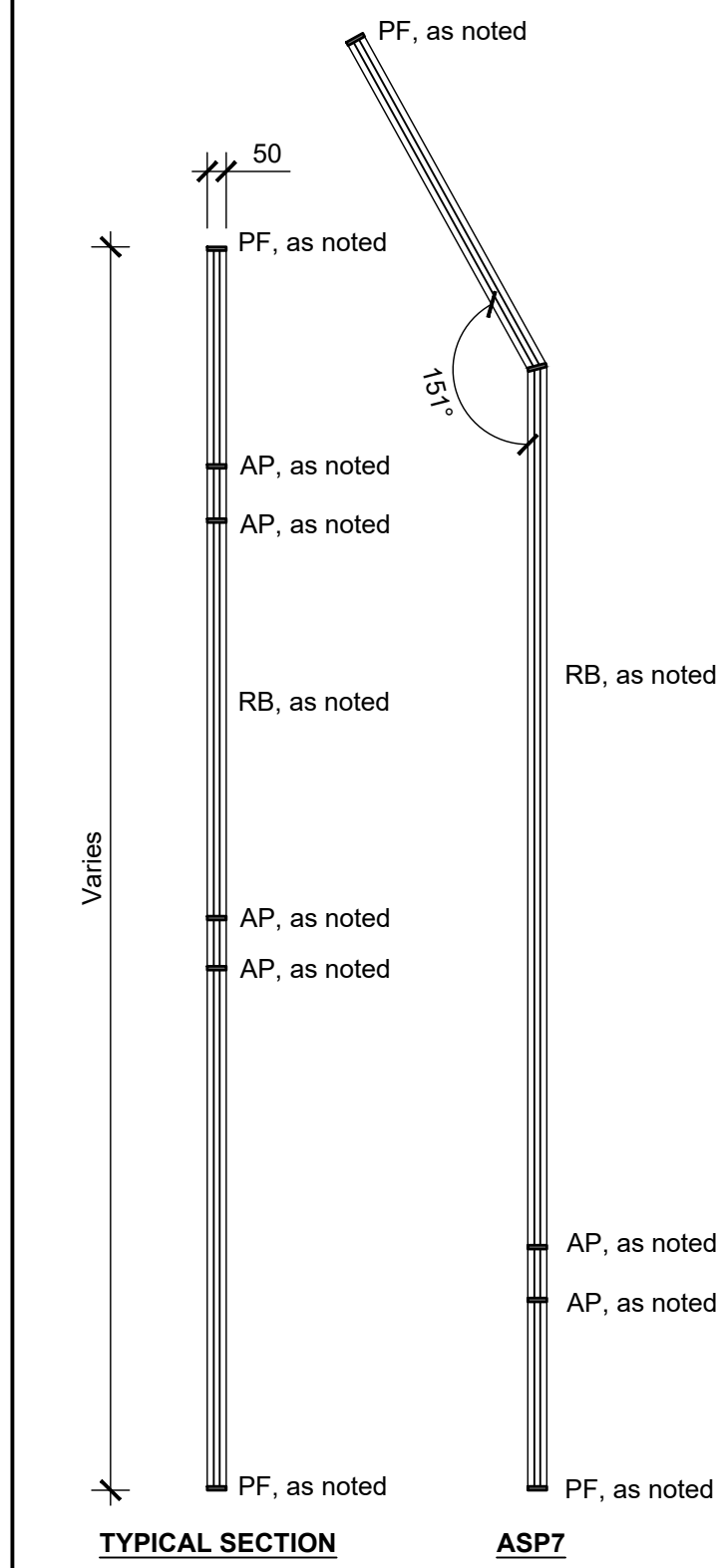
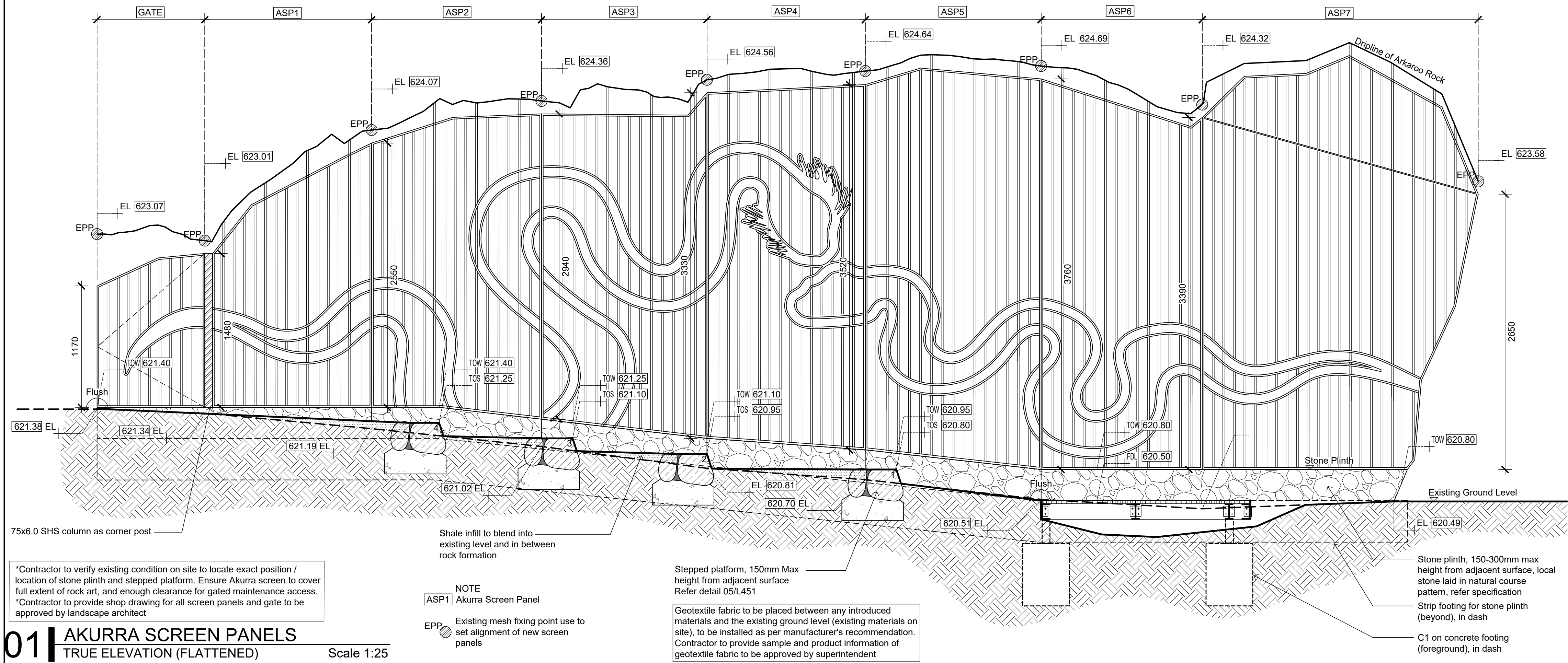


DESIGNS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CONDITION OF FINAL APPROVAL



Drawing:	AKURRA SCREEN FIXING DETAILS	Date:	24.06.2021
	Sheet:	Scale:	
	SHEET 1 OF 3	AS SHOWN @ A1	
Purpose:	ARKAROO ROCK DETAILS	Drawing No.	Rev.
		L453	C1

[illegible]



ISSUED AS PART OF SECTION 21 AND 23 APPLICATION

ISSUED: 16.12.2021

DESIGNS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CONDITION OF FINAL APPROVAL

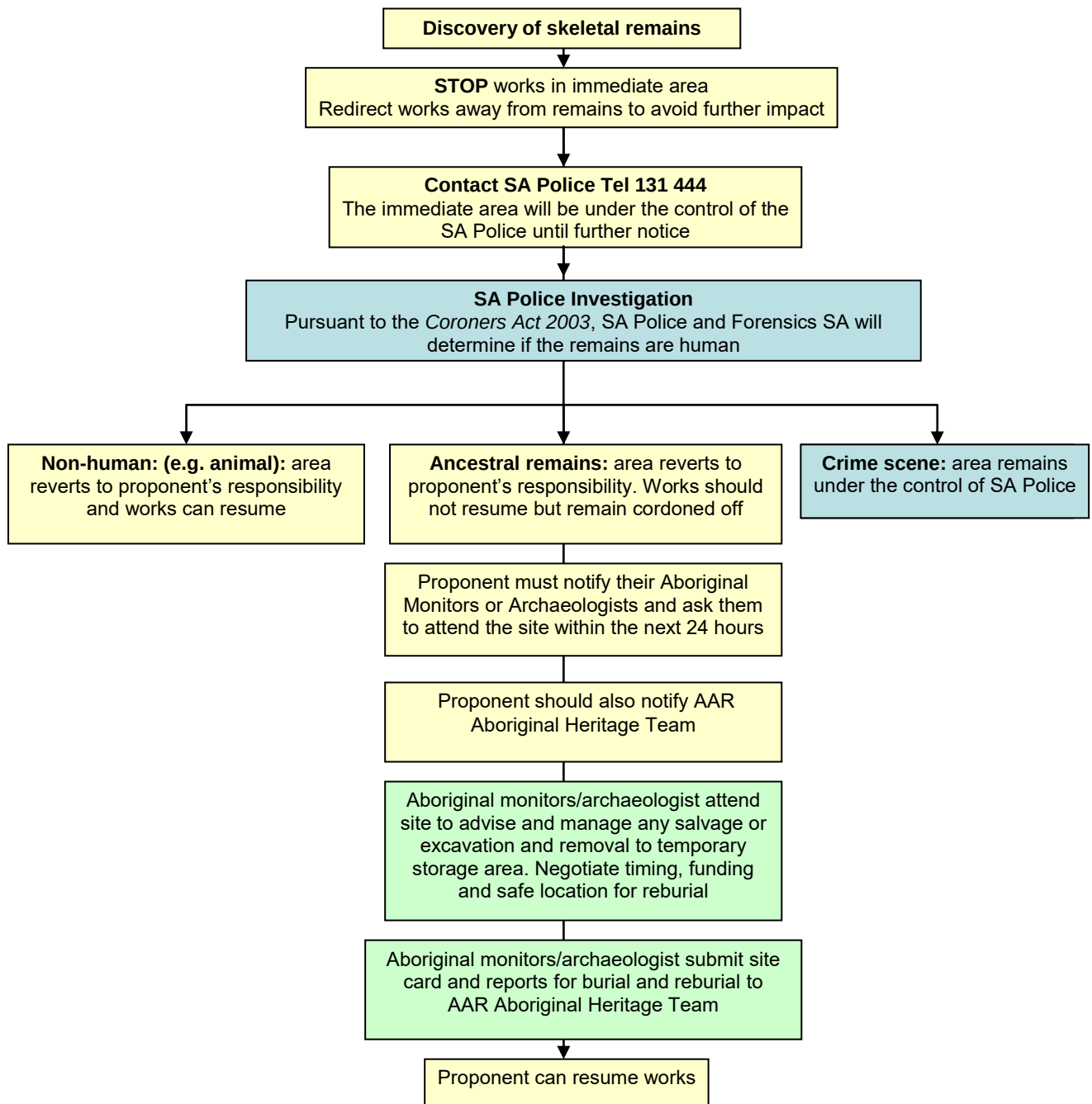
02 AKURRA SCREEN PANEL TYPICAL SECTION / ASP7 Scale 1:20										FOR CONSTRUCTION			
Consultant File Reference: A2022										Status:			
Arkaroo Rock Upgrade Ikara-Flinders Ranges National Park										Drawing: AKURRA SCREEN ELEVATION			
T.C.L. mlei										Sheet: SHEET 2 OF 3			
C1 24.06.21 FOR CONSTRUCTION										Purpose: ARKAROO ROCK DETAILS			
Rev Date Revision Details										Date 24.06.21			
By Chk App Rev Date Revision Details										Drawing No. Rev.			
										L454 C1			

ATTACHMENT 3

ABORIGINAL HERITAGE DISCOVERY PROTOCOL For proponents holding a section 23 Authorisation

Dealing with the discovery of skeletal remains

It is recommended that prior to beginning work, proponents undertaking ground disturbing works in high risk areas negotiate with the Aboriginal groups and an archaeologist a plan for managing the discovery of skeletal remains.



Key

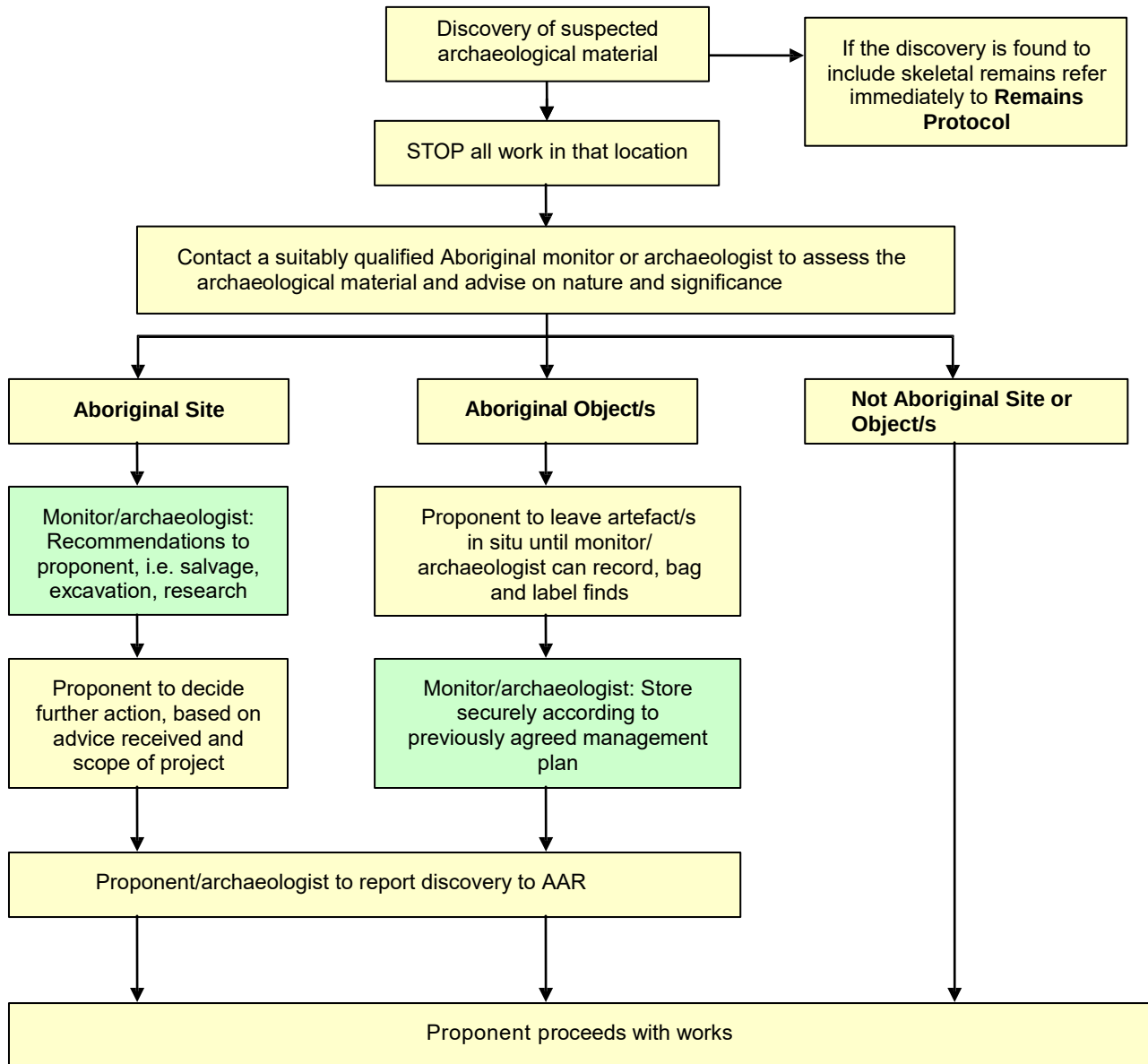
Proponent
SA Police
Aboriginal monitors/archaeologist

As part of project planning, proponents may allocate a secure on-site storage area for the temporary securing of remains, pending reburial.

ABORIGINAL HERITAGE DISCOVERY PROTOCOL
For proponents holding a section 23 Authorisation

Dealing with the discovery of Aboriginal sites and objects

It is recommended that prior to beginning works, proponents undertaking ground disturbing works in high risk areas negotiate with Aboriginal groups and an archaeologist a plan for managing the discovery of any Aboriginal sites and/or objects.



Key

Proponent
Monitor/archaeologist

As part of project planning, proponents may allocate a secure on-site storage area for the temporary securing of objects, pending repatriation.