



Works Approval Application

for

**Commonwealth Avenue Bridge Renewal
Works**

Commonwealth Avenue Bridge Renewal Project

Works Approval Application

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1. Purpose of this document

- (a) The purpose of this document is to provide an overview of the Commonwealth Avenue Bridge Renewal (CABR) Project, and to present the details required to support the National Capital Authority (NCA) Works Approval application for the Permanent Works including barge works for the bearing replacement.
- (b) Separate Works Approval applications have been submitted for:
 - (i) Investigations
 - (ii) site establishment
 - (iii) construction of the temporary crossover
- (c) Future applications will be submitted to cover any additional Temporary Works or Construction Activities Works Approval where required
- (d) It should be noted that the Permanent Works will not substantially change the form of Commonwealth Avenue Bridge. The Project seek to renew and strengthen the bridge while retaining its heritage character. Visual changes are carefully designed to be sympathetic to the original 1960s design intent, primarily relating to new shared user paths, upgraded barriers, and architectural refinements to lighting and materials. Further details on the visual character and heritage impact are provided in the Heritage Impact Assessment.
- (e) Section 2 details what documents have been provided as part of the Works Approval application.
- (f) Section 6 details Reference Documents prepared and aggregated for the project.
- (g) This document does not attempt to reproduce all technical or design details; full information is available in the supporting design packages prepared by the Design Consultants.

2. Works Approval application documentation

The following information has been requested by the Works Approval application instructions (on the Major Works Approval Application Information Checklist).

Each subsection identifies the information required by the NCA and the documents submitted as part of this Works Approval application for the Commonwealth Avenue Bridge Renewal (CABR) Project.

2.1 Planning Report

- (a) As per the NCA Major Works Approval Application Information Checklist, the Planning Report should address the relevant design and planning matters in accordance with the provisions of the National Capital Plan. It should also contain advice in relation to how obligations have been met under other legislation including the Environment Protection and Biodiversity Conservation Act 1999, Copyright Amendment (Moral Rights) Act 2000 or relevant Territory legislation.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following documents in support of this requirement (these documents are attached to the application):
 - (i) This Works Approval Application for Commonwealth Avenue Bridge Renewal Works.
 - (ii) Commonwealth Avenue Bridge Renewal - Heritage Impact Assessment
 - (iii) Commonwealth Avenue Bridge Renewal - HIA Mitigation Measures & responses
 - (iv) Commonwealth Avenue Bridge Renewal Aboriginal Cultural Heritage Assessment
 - (v) Commonwealth Avenue Bridge Renewal Environmental Report

2.2 Schedule of proposed works

- (a) A schedule of proposed works should be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal - Works Schedule

2.3 QS Certificate of all costs

- (a) A schedule of proposed works should be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal - Contract Price Schedule

2.4 Detailed Site Plan

- (a) A detailed site plan which identifies site boundaries and key characteristics of the site should be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal - Overall Roll plot (Drawing No. CAB-BGE-CV-SKE-03001 Rev A)

2.5 Architectural Drawings

- (a) Architectural drawings that assist to fully explain the proposal should be included.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal - Combined architectural drawing set.

- (ii) The Architecture, Landscape Architecture and Urban Design Detailed Design Report
- (iii) Commonwealth Avenue Bridge Renewal - Combined selected lighting drawing set.

2.6 Landscape Plans

- (a) Landscape drawings, that assist to fully explain the proposal, should be included.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal – Combined Urban Design and Landscape drawing set.
 - (ii) Commonwealth Avenue Bridge Renewal – Tree Management Plan

2.7 Civil & Excavation Plans

- (a) Civil and Excavation plans necessary to explain the proposal should be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal – Combined selected drawings from the Civil Drawing Set.
 - (ii) Commonwealth Avenue Bridge Renewal – Civil Design Report
 - (iii) Commonwealth Avenue Bridge Renewal – Temporary works for pier bearing replacement

2.8 Drawing Schedule

- (a) A drawing schedule provided in an editable format such as .doc, .docx or similar should be provided (not .pdf).
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal – Drawing Schedule
- (c) The Commonwealth Avenue Bridge Renewal Project drawing schedule for this application is included in Section 6.2 below

2.9 Traffic and Parking Assessment Report

- (a) A Traffic and Parking Assessment Report which considers the potential impact on the area, vehicle access and egress, parking arrangement and road capacity should be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Current Traffic Management Plan, which will be updated as the project progresses
 - (ii) Commonwealth Avenue Bridge Renewal Staging Plans
- (c) A Parking Assessment Report is not required for this application.

2.10 ACT Government Agency Clearances

- (a) Works Approval application requires that ACT Government clearances be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) ACT Government Permits to Place an Object on Public Land
 - (ii) WAEL Letters of Authorisation
- (c) The landscape works on the west side of the bridges are on TCCS and CRA land and the

rest of the works are wholly within NCA controlled land. Letters of authorisation have been received and the permit for public land use of the ACT Government land.

2.11 A Consultation Report

- (a) Works approval requires that a Consultation Report outlining any pre-consultation conducted by the proponent and how the matters raised during construction have been addressed be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal - Summary Consultation report
- (c) The NCA Commonwealth Avenue Bridge Renewal team has undertaken numerous stakeholder engagements and consultation events, including the following:
 - (i) Public consultation as part of the Public Works Committee approval and as part of the NCA Works Approval for the permanent works. Refer to the PWC public submission paper for further details.
 - (ii) NCA has also implemented a stakeholder communications plan in the lead up to construction with key information about the project and benefits of the works.
 - (iii) NCA Website - the NCA maintains a webpage on the NCA website which provides details about the project for interested individuals.
 - (iv) Media releases and social media.
 - (v) Periodic email updates to members of the community who wish to sign up to the project newsletter; and

2.12 A Site Establishment and Construction Management Report

- (a) Works Approval requires that a Site Establishment and Construction Management Report be provided.
- (b) The Commonwealth Avenue Bridge Renewal Project submits the following in support of this requirement:
 - (i) Commonwealth Avenue Bridge Renewal - Construction Management Plan
- (c) A separate works approval application has been submitted and approved for Site Establishment

3. About the NCA

3.1 Background to the NCA

- (a) The NCA is responsible for planning and managing the Australian Government's interests in the development, enhancement and long-term stewardship of Canberra as the national capital.
- (b) The NCA's functions are defined under Section 6 of the Australian Capital Territory (Planning and Land Management) Act 1988 (Cth), which sets out its responsibilities to maintain and promote Canberra's national significance and to manage designated areas, including the Central National Area and Lake Burley Griffin.
- (c) In this capacity, the NCA oversees planning, heritage, and infrastructure outcomes that protect the city's symbolic values while supporting its evolution as a functional and sustainable capital.

3.2 The NCA and the Bridge

- (a) The NCA is responsible for the safe operation and maintenance of Commonwealth Avenue Bridge.
- (b) As part of its ongoing stewardship of the asset, the NCA has engaged Seymour Whyte Constructions (SWC) to design and deliver the CABR project to strengthen and widen the bridge and enhance associated surrounding landscaped areas and infrastructure:
- (c) SWC is responsible for the delivery of the renewal works and for managing construction staging within an operational transport corridor.
- (d) BG&E is engaged by SWC as the lead design consultant to lead the multi-disciplinary design for the renewal works,
- (e) Specialist sub-consultants include Freyssinet Australia (bearings and post-tensioning), Webb Australia (lighting design), and SMM/TZG (Urban Design and Landscape Architecture).
- (f) Technical Advisor – ARUP, appointed to provide independent review and assurance on behalf of the NCA through the design stages.

4. Purpose of the Project

- (a) The CABR Project is a major infrastructure initiative led by the NCA to strengthen one of Canberra's most important transport assets. The bridge provides a vital connection between the Parliamentary Zone and the Canberra Central Business District, carrying high volumes of vehicles, pedestrians, and cyclists daily.
 - (i) Strengthen the bridge so it is capable to safely carry modern heavy vehicles, including large trucks, without risk of structural damage.
 - (ii) Provide enhanced pedestrian and cycling facilities by providing a 5-metre-wide shared path across the bridge, as well as addressing inadequate existing widths and layouts in the adjacent parks to ensure they meet contemporary accessibility and safety requirements.
 - (iii) Deliver widened viewing platforms at each of the bridge abutments
 - (iv) Upgrade the traffic barriers and lighting to modern day standards for safety and energy-efficiency standards.
 - (v) Enhance the landscaping in the parks adjacent to the bridges
 - (vi) Consider the Heritage value of the bridge and surroundings during the design and delivery of the works
- (b) The project's overarching aims include:
 - (i) Extend the bridge's service life by at least 50 years through strengthening and upgrades to the structure.
 - (ii) Improve safety and accessibility for all users, including pedestrians, cyclists, and motorists, through upgraded paths, barriers, and lighting.
 - (iii) Preserve and enhance the bridge's heritage character, ensuring that all new interventions are sympathetic to the bridge's original architectural design and setting within Lake Burley Griffin's Central Basin.
 - (iv) Support Canberra's evolving transport and urban design objectives.

5. Project background

5.1 About the Bridge

- (a) The Commonwealth Avenue Bridge spans Lake Burley Griffin within the central axis of Canberra, connecting the Parliamentary Zone to the City Centre. The bridge is one of two primary crossings of the Lake and forms part of the gateway into the National Triangle.
- (b) The Commonwealth Avenue Bridge was designed in the late 1950s, built in the early 1960s and opened in November 1963.
- (c) The bridge comprises two parallel pre-stressed concrete box-girder structures, each carrying three traffic lanes. The twin bridges rest on shared piers founded in the lakebed and are separated by a narrow central void.
- (d) The existing Bridge currently presents limitations both at present and in the future including vehicle design load limitations, shared pedestrian and cycleway path width limitations and vehicle and shared path safety barrier design.
- (e) The Bridge, as part of Commonwealth Avenue, provides a critical and strategically important arterial corridor in Canberra's metropolitan transport network and the Australian Capital Territory overall.
- (f) The Site has considerable cultural and heritage value. It is an integral component of the Central National Area of Canberra, a place designed by Walter Burley and Marion Mahony Griffin, and is of exceptional heritage significance to Canberra and Australia. The Central National Area of Canberra has been nominated to the National Heritage List.
- (g) Commonwealth Park and the Parliamentary Zone are within the Commonwealth Heritage listed Parliament House Vista.
- (h) A heritage assessment has been undertaken. This assessment concluded that the Bridge meets the criteria for having Commonwealth Heritage values.

Figure 1: view from Barrine Drive looking south.



5.2 Location of the Bridge

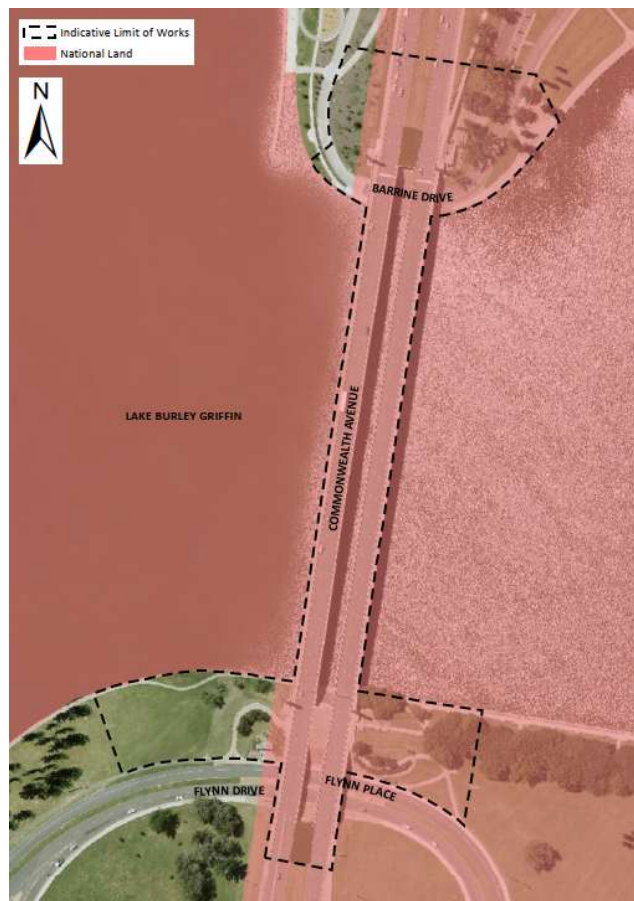
- (a) The bridge is located at the western end of Lake Burley Griffin's Central Basin, approximately midway between the Kings Avenue Bridge and Scrivener Dam.
- (b) It carries Commonwealth Avenue between Parliament House and London Circuit, forming a key link in Canberra's north-south arterial network and an important pedestrian and cycling corridor along the Lake Burley Griffin foreshore.

Figure 2: location plan.



- (c) The bridge itself, and the area to the east of the bridge, are located on national land managed by the NCA, whilst the land to the west of the bridge is managed by the ACT Government.

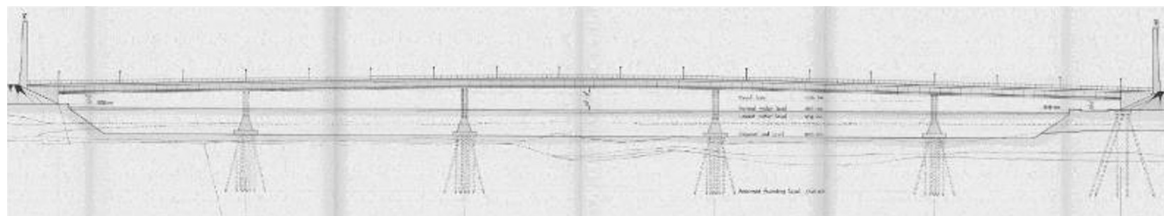
Figure 3: Study area and land ownership.



5.3 Bridge structure and operation

- (a) The bridge serves as a significant connection between South Canberra and North Canberra. The bridge comprises of two parallel bridges spanning the Lake, both consisting of five continuous spans. The bridge was designed to carry H20-16-44 highway live loading which were based on the Conference of State Road Authorities of Australia, Highway Bridge Specification, 1958.

Figure 4: Elevation of Commonwealth Avenue Bridge



- (b) The bridge's twin structures consist of:
- (i) continuous pre-stressed concrete box girders supported by reinforced concrete piers.
 - (ii) integral diaphragms and transverse post-tensioning.
 - (iii) reinforced-concrete deck slabs supporting asphalt pavement; and
 - (iv) steel bearings at abutments and piers to accommodate movement and rotation.
- (c) The two bridge decks together provide six traffic lanes plus narrow footpaths. Services including lighting, drainage, and communication conduits are accommodated within the

box girders and verge zones.

- (d) Each bridge has an existing shared path that is approximately 2.4 m wide. These paths are narrow by modern standards and provide limited separation between pedestrians and cyclists.
- (e) The bridge initially featured single-rail steel traffic barriers about 520 mm high, fixed to the concrete kerb upstands, with a separate 1.2 m pedestrian handrail mounted above. Later upgrades (on the southbound bridge) introduced a two-rail post-and-rail steel barrier system, integrated with a handrail at 1.2 m above the path. The existing barrier systems are not based on current standards and are inconsistent across the two bridge decks.
- (f) The bridge provides dedicated pedestrian and cyclist access ramps on both the southern and northern abutments

Figure 5: View of the Southern abutment and pedestrian approach to Commonwealth Avenue Bridge



Figure 6: View of the northern abutment and pedestrian approach to Commonwealth Avenue Bridge



- (g) Normal operation involves high daily traffic volumes with limited maintenance access; consequently, renewal works must be staged to maintain access for cyclists, buses and cars.

5.4 Need for the Works

- (a) Due to its remarkable engineering design, Commonwealth Avenue Bridge has not undergone any significant upgrades for sixty years. In this time, we have seen the size and weight of everyday vehicles increase. It is important to ensure the bridge is upgraded to accommodate these increasing vehicle sizes today and into the future.
- (b) Whilst these strengthening works will increase the bridge's load rating to accommodate heavier vehicles. Vehicle limits across the bridge will remain consistent with the authorised heavy vehicle routes determined by the National Heavy Vehicle Regulator.
- (c) In addition to the traffic lanes, Commonwealth Avenue Bridge is the primary north-south link for pedestrians and active travel users. At only 2.4 metres wide, the existing shared paths on both sides of the bridge do not meet Austroad Guidelines or industry standards. The project will double the width of the path system, significantly improving safety for both pedestrians and cyclists.
- (d) The purpose of the works is to renew Commonwealth Avenue Bridge. The objective of the renewal is to strengthen and widen both bridge structures, replace all the traffic and shared path safety barriers on the bridge, and upgrade the shared path approach ramps and lighting on the bridge. Utility work forms part of the project.

5.5 Project Objectives

- (a) The Project Objectives are to:
 - (i) increase the load-bearing capacity of the Bridge to meet current and forecast traffic load demands
 - (ii) to extend the Design Life of the Bridge
 - (iii) relocate and/or protect Utilities currently located in the Bridge structure, with minimal disruption and impact to the operation of those services.
 - (iv) widen the shared pedestrian and cycleway paths on the Northbound Bridge and the Southbound Bridge by 2.6 metres (from 2.4 metres to 5 metres clear width on each Bridge) to accommodate a shared pedestrian and cycleway paths, improve safety, comply with Austroads guidelines Bridge.
 - (v) replace all barriers on both Bridge spans to meet code requirements unless otherwise stated and improve safety for all users of the bridge including consideration of integrated lighting into proposed barrier solutions.
 - (vi) make improvements to the Bridge approach ramps to provide better access to the Bridge for all users and to better integrate with the wider shared path network; and
 - (vii) ensure that the Works are of a high architectural quality
 - (viii) design and construct the Works in a manner that is consistent with, is sympathetic to, and preserves:
 - the existing design and construction character of the Bridge and the surrounding areas; and
 - the Commonwealth heritage values of the Site and the surrounding areas (as set out in the Commonwealth Heritage List maintained under the EPBC Act).
 - (ix) use identical (where possible), and otherwise substantially similar, Materials to those used in the existing Bridge.

- (x) alter the visual appearance of the Bridge and the surrounding areas only to the extent necessary because of the Works; and
- (xi) integrate the Works with the Bridge in a cohesive and seamless manner.

5.6 Head Contractor Procurement

- (a) NCA has appointed Seymour Whyte Constructions for this design and construct contract
- (b) Once engaged, the Head Contractor will prepare for the Temporary Works; and will, with the assistance of the NCA, submit a second Works Approval for the temporary works component of the project.

5.7 Designer and Design Works

- (a) The design has been led by BG&E Pty Ltd under contract to Seymour Whyte, with contributions from specialist consultants including:
 - (i) Freyssinet Australia – bearings, post-tensioning, and strengthening systems.
 - (ii) Webb Australia – lighting design and electrical services.
 - (iii) Spackmann Mossop Michaels, Tonkin Zulaikha Greer – urban design and public-domain treatments.
- (b) The design has undergone independent review by ARUP on behalf of the NCA.
- (c) At the time of writing design has reached 90% status.

5.8 PWC approvals

- (a) In September 2023, the Parliamentary Standing Committee on Public Works conducted an inquiry into the proposed renewal of the Commonwealth Avenue Bridge and published its report recommending that the project proceed as “expedient to carry out”. [National Capital Authority — Commonwealth Avenue Bridge, Canberra, ACT, Renewal Project – Parliament of Australia](#)

6. Reference documents

6.1 Overview

- (a) This section identifies the drawings, reports, and supporting material that collectively form the technical basis of this Works Approval application.
- (b) Some supporting material may be sensitive or commercially confidential. Where this applies, controlled access to the complete versions can be provided for review and verification.

6.2 Design Documentation

- (a) BG&E and other specialist sub-consultants have prepared the drawings for the Works. The Head Contractor is required to construct the Works in accordance with these drawings.
- (b) The following drawings have been included in the Works Approval application.

Drawing Number	Design Package	Drawing Name
CAB-SMM-AR-DRG-060001	Architectural Design	COVER SHEET
CAB-SMM-AR-DRG-060100	Architectural Design	GENERAL ARRANGEMENT PLAN
CAB-SMM-AR-DRG-060110	Architectural Design	ELEVATIONS
CAB-SMM-AR-DRG-060200	Architectural Design	ABUTMENT PLANS
CAB-SMM-AR-DRG-060210	Architectural Design	SOUTH ABUTMENTS ELEVATION
CAB-SMM-AR-DRG-060211	Architectural Design	NORTH ABUTMENTS ELEVATION
CAB-SMM-AR-DRG-060212	Architectural Design	ABUTMENT SECTIONS AND DETAILS
CAB-SMM-AR-DRG-060213	Architectural Design	ABUTMENT BALUSTRADE SETOUT AND DETAILS
CAB-SMM-AR-DRG-060300	Architectural Design	BRIDGE SECTION
CAB-SMM-AR-DRG-060301	Architectural Design	BRIDGE DETAIL SECTION
CAB-SMM-AR-DRG-060302	Architectural Design	BRIDGE DETAIL PLANS AND SETOUT
CAB-SMM-AR-DRG-060400	Architectural Design	SETOUT PAVEMENT DETAILS
CAB-SMM-AR-DRG-060500	Architectural Design	FINISHES SCHEDULE / SPECIFICATION

Drawing Number	Design Package	Drawing Name
CAB-SMM-UD-DRG-050001	Urban Design and Landscaping	COVER SHEET - PROJECT LOCATION
CAB-SMM-UD-DRG-050002	Urban Design and Landscaping	OVERALL PLAN, SHEETS LAYOUT AND KEY PLAN
CAB-SMM-UD-DRG-050003	Urban Design and Landscaping	GENERAL PLAN - NORTHERN APPROACHES
CAB-SMM-UD-DRG-050011	Urban Design and Landscaping	GENERAL PLAN - SOUTHERN APPROACHES
CAB-SMM-UD-DRG-050012	Urban Design and Landscaping	DETAILED PLAN - NORTHERN APPROACHES 1
CAB-SMM-UD-DRG-050021	Urban Design and Landscaping	DETAILED PLAN - NORTHERN APPROACHES 2
CAB-SMM-UD-DRG-050022	Urban Design and Landscaping	DETAILED PLAN - NORTHERN APPROACHES 3
CAB-SMM-UD-DRG-050023	Urban Design and Landscaping	DETAILED PLAN - SOUTHWESTERN APPROACH
CAB-SMM-UD-DRG-050024	Urban Design and Landscaping	DETAILED PLAN - SOUTHEASTERN APPROACH
CAB-SMM-UD-DRG-050025	Urban Design and Landscaping	SECTIONS SHEET 1 - NORTHERN APPROACHES 1-3
CAB-SMM-UD-DRG-050101	Urban Design and Landscaping	SECTIONS SHEET 2 - NORTHERN APPROACHES 4-5
CAB-SMM-UD-DRG-050102	Urban Design and Landscaping	SECTIONS SHEET 3 - NORTHERN APPROACHES 6-7
CAB-SMM-UD-DRG-050103	Urban Design and Landscaping	SECTIONS SHEET 4 - NORTHERN APPROACHES 8
CAB-SMM-UD-DRG-050104	Urban Design and Landscaping	SECTIONS SHEET 5 - SOUTHWESTERN APPROACH 9-10
CAB-SMM-UD-DRG-050105	Urban Design and Landscaping	SECTIONS SHEET 6 - SOUTHEASTERN APPROACH 11-12
CAB-SMM-UD-DRG-050106	Urban Design and Landscaping	SECTIONS SHEET 7 - SOUTHEASTERN APPROACH 13-14
CAB-SMM-UD-DRG-050107	Urban Design and Landscaping	DETAILED SECTIONS SHEET 1 - NORTHWESTERN STAIRS
CAB-SMM-UD-DRG-050111	Urban Design and Landscaping	DETAILED SECTIONS SHEET 2 - NORTHEASTERN STAIRS
CAB-SMM-UD-DRG-050112	Urban Design and Landscaping	DETAILED SECTIONS SHEET 3 - SOUTHEASTERN STAIRS
CAB-SMM-UD-DRG-050113	Urban Design and Landscaping	PLANTING SCHEDULES
CAB-SMM-UD-DRG-050200	Urban Design and Landscaping	PLANTING PLAN - NORTHERN APPROACHES 1
CAB-SMM-UD-DRG-050201	Urban Design and Landscaping	PLANTING PLAN - NORTHERN APPROACHES 2
CAB-SMM-UD-DRG-050202	Urban Design and Landscaping	PLANTING PLAN - NORTHERN APPROACHES 3
CAB-SMM-UD-DRG-050203	Urban Design and Landscaping	PLANTING PLAN - SOUTHWESTERN APPROACH
CAB-SMM-UD-DRG-050204	Urban Design and Landscaping	PLANTING PLAN - SOUTHEASTERN APPROACH
CAB-SMM-UD-DRG-050205	Urban Design and Landscaping	DETAILS SHEET 1
CAB-SMM-UD-DRG-050301	Urban Design and Landscaping	DETAILS SHEET 2
CAB-SMM-UD-DRG-050302	Urban Design and Landscaping	DETAILS SHEET 3
CAB-SMM-UD-DRG-050303	Urban Design and Landscaping	DETAILS SHEET 4
CAB-SMM-UD-DRG-050001	Urban Design and Landscaping	COVER SHEET - PROJECT LOCATION

Drawing Number	Design Package	Drawing Name
CAB-BGE-LT-DRG-040101	LIGHTING & ELECTRICAL DESIGN	GENERAL ARRANGEMENT PLAN - SHEET 1
CAB-BGE-LT-DRG-040102	LIGHTING & ELECTRICAL DESIGN	GENERAL ARRANGEMENT PLAN - SHEET 2
CAB-BGE-LT-DRG-040103	LIGHTING & ELECTRICAL DESIGN	GENERAL ARRANGEMENT PLAN - SHEET 3
CAB-BGE-LT-DRG-040107	LIGHTING & ELECTRICAL DESIGN	GENERAL ARRANGEMENT PLAN - SHEET 7
CAB-BGE-LT-DRG-040108	LIGHTING & ELECTRICAL DESIGN	GENERAL ARRANGEMENT PLAN - SHEET 8
CAB-BGE-LT-DRG-040301	LIGHTING & ELECTRICAL DESIGN	NORTHBOUND CARRIAGEWAY DETAILS
CAB-BGE-LT-DRG-040302	LIGHTING & ELECTRICAL DESIGN	SOUTHBOUND CARRIAGEWAY DETAILS
CAB-BGE-LT-DRG-040303	LIGHTING & ELECTRICAL DESIGN	SECTIONS
CAB-BGE-LT-DRG-040402	LIGHTING & ELECTRICAL DESIGN	POLE DETAILS

Drawing Number	Design Package	Drawing Name
CAB-BGE-CV-DRG-031015	ROADS AND CIVIL DRAWINGS SET	GENERAL LEGEND SHEET 1 C1
CAB-BGE-CV-DRG-031021	ROADS AND CIVIL DRAWINGS SET	OVERALL PLAN SHEET 1 B1
CAB-BGE-CV-DRG-031091	ROADS AND CIVIL DRAWINGS SET	TYPICAL SECTIONS SHEET 1 C1

CAB-BGE-CV-DRG-031092	ROADS AND CIVIL DRAWINGS SET	TYPICAL SECTIONS SHEET 2 C1
CAB-BGE-CV-DRG-031202	ROADS AND CIVIL DRAWINGS SET	BARRIER TRANSITION DETAILS SHEET 2 C1
CAB-BGE-CV-DRG-031203	ROADS AND CIVIL DRAWINGS SET	BARRIER TRANSITION DETAILS SHEET 3 B1
CAB-BGE-CV-DRG-031204	ROADS AND CIVIL DRAWINGS SET	ROAD FURNITURE DETAILS SHEET 1 B1
CAB-BGE-CV-DRG-031811	ROADS AND CIVIL DRAWINGS SET	DEMOLITION PLAN SHEET 1 C1
CAB-BGE-CV-DRG-031812	ROADS AND CIVIL DRAWINGS SET	DEMOLITION PLAN SHEET 2 C1
CAB-BGE-CV-DRG-031821	ROADS AND CIVIL DRAWINGS SET	SIGNS AND LINEMARKING SHEET 1 C1
CAB-BGE-CV-DRG-031822	ROADS AND CIVIL DRAWINGS SET	SIGNS AND LINEMARKING SHEET 2 C1
CAB-BGE-CV-DRG-031831	ROADS AND CIVIL DRAWINGS SET	SIGNS AND LINEMARKING SCHEDULE B1

Drawing Number	Design Package	Drawing Name
CAB-FRE-TW-DRG-210001	Bearing Replacement and Pier Top Modifications	COVER SHEET AND LOCALITY PLAN
CAB-FRE-TW-DRG-210002	Bearing Replacement and Pier Top Modifications	GENERAL NOTES
CAB-FRE-TW-DRG-210011	Bearing Replacement and Pier Top Modifications	BEARING INSTALLATION METHODOLOGY - SHEET 1
CAB-FRE-TW-DRG-210012	Bearing Replacement and Pier Top Modifications	BEARING INSTALLATION METHODOLOGY - SHEET 2
CAB-FRE-TW-DRG-210013	Bearing Replacement and Pier Top Modifications	BEARING INSTALLATION METHODOLOGY - SHEET 3
CAB-FRE-TW-DRG-210021	Bearing Replacement and Pier Top Modifications	JACKING ARRANGEMENT AT PIER - SHEET 1
CAB-FRE-TW-DRG-210022	Bearing Replacement and Pier Top Modifications	JACKING ARRANGEMENT AT PIER - SHEET 2
CAB-FRE-TW-DRG-210023	Bearing Replacement and Pier Top Modifications	JACKING ARRANGEMENT AT PIER - SHEET 3
CAB-FRE-TW-DRG-210024	Bearing Replacement and Pier Top Modifications	JACKING ARRANGEMENT AT PIER - SHEET 4
CAB-FRE-TW-DRG-210031	Bearing Replacement and Pier Top Modifications	TEMPORARY WORKS - GENERAL ARRANGEMENT
CAB-FRE-TW-DRG-210033	Bearing Replacement and Pier Top Modifications	ACCESS BARGE - GENERAL ARRANGEMENT
CAB-FRE-TW-DRG-210041	Bearing Replacement and Pier Top Modifications	ACCESS SCAFFOLD - GENERAL ARRANGEMENT
CAB-FRE-TW-DRG-210051	Bearing Replacement and Pier Top Modifications	TROLLEY RAILS - GENERAL ARRANGEMENT
CAB-FRE-TW-DRG-210061	Bearing Replacement and Pier Top Modifications	TROLLEY - 3D VIEW
CAB-FRE-TW-DRG-210062	Bearing Replacement and Pier Top Modifications	TROLLEY - GENERAL ARRANGEMENT
CAB-FRE-TW-DRG-210063	Bearing Replacement and Pier Top Modifications	TROLLEY - DETAILS
CAB-FRE-TW-DRG-210064	Bearing Replacement and Pier Top Modifications	ROLLER CLAMPING BRACKET - GENERAL ARRANGEMENT
CAB-FRE-TW-DRG-210065	Bearing Replacement and Pier Top Modifications	ROLLER CLAMPING BRACKET - DETAILS

6.3 Design-related reports

- (a) Several design related documents, that capture and provide some of the design history of the Project, have been aggregated for the project.
- (b) The design related documents include the following:
 - (i) **Commonwealth Avenue Bridge Renewal - 90% Architecture, Landscape Architecture and Urban Design (SMM/TZG).** This report provides a comprehensive review of the Project objectives, current context and future conditions, guiding to propose a vision, design objectives and principles which frame the design development.
 - (ii) **Commonwealth Avenue Bridge Renewal - 90% Civil Design Report (BG&E).** This report provides a comprehensive description of the Civil works associated with the project.
- (c) These documents have been included in the Works Approval application.

6.4 Investigations and study reports

- (a) Several investigations were undertaken during the design stage of the Project. These investigations, and the corresponding reports, provided the NCA, SWC and BG&E with information to be considered as part of the Project.
- (b) The investigations and study reports are as follows:
 - (i) **Commonwealth Avenue Bridge Renewal - Heritage Impact Assessment.** This is the 90% report for the heritage impact assessment of the works on the heritage listing of Commonwealth Avenue Bridge.
 - (ii) **Commonwealth Avenue Bridge Renewal – Tree Management Plan.** This assesses the impact and protection measures required for trees that are removed or retained within the project boundary.
- (c) These documents have been included in the Works Approval application.

7. The Head Contractor's Activities and the Works

7.1 Overview

- (a) This section outlines the Head Contractor's role, the nature of the Contractor's Activities, and the key components of the Works proposed under this Works Approval.
- (b) As noted above, the Head Contractor for the project is Seymour Whyte Constructions Pty Ltd. SWC is responsible for managing the design, and delivery of all works in accordance with the approved design documentation and the NCA's Works Approval conditions.
- (c) The Works comprise both Permanent and Temporary Works. This application relates to Permanent Works only. Separate submissions have been and will continue to be made to cover the Temporary Works.

7.2 Head Contractor involvement

- (a) SWC has been engaged under a Design and Construct contract to manage and deliver the CABR Project on behalf of the NCA.
- (b) In addition to construction, SWC's scope includes:
 - (i) Coordination of the multi-disciplinary design team (BG&E, Freyssinet, Webb, SMM/TZG, and others).
 - (ii) Implementation of design assurance processes, including proof engineering, independent verification, and safety-in-design reviews.
 - (iii) Development of detailed construction staging plans to maintain traffic and pedestrian access throughout delivery; and
 - (iv) Management of site establishment, environmental protection, and coordination of utilities in coordination with NCA.
- (c) SWC will also oversee the transition from design approval to delivery, ensuring that Permanent Works are executed in accordance with the approved drawings and specifications.

7.3 Temporary Works summary

- (a) The Head Contractor will be required to complete all Temporary Works required to complete the Works.
- (b) The Head Contractor will be required to design, certify, gain approval for, construct, inspect, and maintain all Temporary Works.
- (c) The Temporary Works includes the following (without limitation):
 - (i) site fencing.
 - (ii) environmental controls as required.
 - (iii) traffic, cycle and pedestrian management and safety measures including preparation, approvals, implementation and maintenance of TMPs.
 - (iv) establishment of a site compound, including access from existing roads, parking areas, site offices, equipment storage and laydown areas, assembly and handling areas and other required facilities.
 - (v) vehicle and pedestrian access roadways and pathways into and around the Site.
 - (vi) barge system for jacking.
 - (vii) access systems and scaffolding.
 - (viii) bridge deck cutouts for access during strengthening works.
 - (ix) temporary traffic management.

7.4 Permanent Works summary

- (a) The Head Contractor is to deliver the Permanent Works.
- (b) The Permanent Works have been designed by BG&E and are documented on the design drawings. The Head Contractor will be required to complete the Permanent Works in accordance with the Principal's Project Requirements and the drawings
- (c) The Works include the following, but are not limited to:
 - (i) Structural strengthening of the existing bridge superstructure, including internal web and diaphragm strengthening, new post-tensioning systems, and bearing replacement.
 - (ii) Bridge widening works to provide dedicated 5-metre-wide shared pedestrian and cycle paths on the outside of both bridges.
 - (iii) Installation of new bridge barriers.
 - (iv) Construction of new widened viewing platforms on each abutment;
 - (v) Rehabilitation and replacement of pavement and drainage systems on the bridge and approaches.
 - (vi) Upgraded lighting on the bridge and in the parks.
 - (vii) Associated civil, utility, and urban design elements, including footpath and shared path connections and abutment interface treatments.

8. The Permanent Works

8.1 General

- (a) The Permanent Works form the long-term renewal and strengthening of the bridge. They have been developed to ensure the bridge continues to operate safely and efficiently for the next 50 years while preserving its heritage and architectural integrity.
- (b) The design has been developed in line with the approved Heritage Framework aligned with the National Capital Plan as well as relevant technical standards and
- (c) The Head Contractor must construct the Permanent Works in accordance with:
 - (i) the Principal's Design Documentation, and
 - (ii) the Technical Specifications.

8.2 Staging the Works

- (a) The construction sequence for the Works has been developed collaboratively between the Design and Construction team, in consultation with the NCA and relevant ACT Government stakeholders to optimise staging and minimise risk and disruption.
- (b) Given the nature of the asset, there are many constraints relating to construction sequences that have been considered to develop a robust program of works.
- (c) Key staging principles include:
 - (i) Implementing temporary traffic management to always retain at least one lane of traffic open in each direction (covered under a separate works approval submission).
 - (ii) completing pier diaphragm strengthening prior to bearing replacement.
 - (iii) Installing new post-tensioning tendons before landing precast walkway panels.
 - (iv) Sequencing barrier installation and deck widening to maintain deck stability.
 - (v) Completing relocation of the existing High Voltage cables before any work can occur in those cells of the bridge.

8.3 Structural Strengthening

- (a) Strengthening is designed to deliver load-carrying capacity to meet current T44 design loading.
- (b) The main interventions include:
 - (i) Installation of new post-tensioning systems.
 - (ii) Carbon fibre reinforcement (CFRP) to select internal bridge elements.
 - (iii) Concrete strengthening and repairs; and
 - (iv) Replacement of bearings at piers and abutments.

8.4 Widening and Pedestrian Access Improvements

- (a) The bridges will both be widened on the outside through the installation of a precast cantilever wing to accommodate new shared user paths
- (b) The SUPs will improve accessibility for pedestrians and cyclists, linking them with existing paths along the Lake Burley Griffin foreshore.

- (c) New precast panels and cantilever will integrate with the existing deck, visually consistent with the bridge's original profile and detailing such as joint lines.

8.5 New widened viewing platforms

- (a) An extension to the existing abutments will be constructed in all four quadrants
- (b) These comprise of a steel frame with a combination of precast and cast in situ concrete elements that complement and enhance the existing structure with careful architectural detailing

8.6 Bridge and Approach Lighting

- (a) New LED luminaires on the bridge designed to provide uniform lighting levels on the shared user paths, with fittings designed to minimise glare and light spill.
- (b) Architectural lighting to installed to the underside of the bridge and on handrails to create linear features.
- (c) New light fixtures in the park to provide compliant light levels for safety and comfort.

8.7 Road Alignment, Pavement and Barrier upgrades

- (a) Minor reconfiguration of carriageways over the bridge to provide a consistent three-lane (3.7 m + 3.3 m + 3.7 m) arrangement in each direction.
- (b) Barrier replacement with proprietary VGAN 400 TL4 system and new 1.2 m high pedestrian balustrades including cyclist bump rails.
- (c) Bridge barriers will be replaced with new VGAN barriers, a modern safety-rated system that has been selected to complement aesthetic of the bridge.
- (d) Pavement repairs and upgrades across the project study area.

8.8 Active Transport and Parkland Connections

- (a) New and upgraded shared user paths and ramps on both north and south sides, designed for full DDA compliance ($\leq 5\%$ grades, landings at ramps).
- (b) Integration with existing Lake Burley Griffin path network, including new connections at Barrine Drive, Albert Street and Flynn Drive.
- (c) 3 new accessible parking spots.

8.9 Barrine Drive and Approach Roads

- (a) Reconstruction and regrading of Barrine Drive as a 10 km/h shared zone beneath the bridge.
- (b) Upgrades to intersecting paths, parking areas, and kerb alignments to improve pedestrian and cyclist safety.
- (c) Retention of existing clearances under the bridge (minimum 4.3 m) and tie-ins to the existing network.

8.10 Drainage and Stormwater Management

- (a) New bridge drainage network including scuppers, carrier pipes, and abutment connections.
- (b) Surface drainage and pit-pipe systems for roadways, ramps, and parklands
- (c) Incorporation of swales and bio-filtration zones within parklands to enhance water quality.