

BAULDERSTONE

BARANGAROO CENTRAL WATERFRONT PROMENADE AND INTERIM PUBLIC DOMAIN

PRELIMINARY NAVIGATION & WATER SAFETY

FINAL REPORT

F0001-AA004647-AAR-04

Date: 30th October 2012



BAULDERSTONE

BARANGAROO CENTRAL WATERFRONT PROMENADE AND INTERIM PUBLIC DOMAIN

Preliminary Navigation and Water Safety Report

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Checker	Sam Harris
Approver	Sam Harris
Report No	F0001-AA004647-AAR-04
Date	30 th October 2012

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EXECUTIVE SUMMARY

Hyder has been commissioned by Baulderstone for Barangaroo Delivery Authority to review and assess navigation and water safety requirements for the Barangaroo Central Waterfront Promenade and Interim Public Domain development.

The 2015 Barangaroo Central plan comprises two areas: a 30 meter wide zone at the harbour edge which will be built in its permanent state, and a secondary zone back to Hickson road. This secondary zone will be a interim landscape that will accommodate public use and space for large public gatherings, and special events.

The permanent 30 meter public foreshore design extension is defined in the concept plans , and identifies the water edge access with the design of a fixed lower boardwalk for walking and special boat access with multiple access points, and openings in the tree allee which are coordinated with the major site view corridors.

A public wharf at the northern cove has been maintained from the Headland Park design, which will accommodate access for small boats and water taxis. The lower boardwalk will have provisions for moorings of a length of 120 meters at the western edge of the harbour.

This reports sets out requirements for safe navigation of vessels within the Barangaroo Central site and its interface with the Headland Park. The assessment highlights navigation constraints and issues for various scenarios including during the construction period, permanent works and special events. To address these issues, provisions for navigational aids such as markers and signage as well as furniture such as bollards and fenders are advised. The report also addresses permits and approval requirements for each of the scenarios.

1 INTRODUCTION

The 2015 Barangaroo Central Waterfront Promenade and Interim Public Domain plan comprises two areas: a 30 meter wide zone at the harbour edge which will be built in its permanent state, and a secondary zone back to Hickson road. This secondary zone will be a interim landscape that will accommodate public use and space for large public gatherings, and special events.

Figure 1-1 illustrates the location of Barangaroo Central in relation to the Barangaroo site (also refer to Appendix A for plans). The permanent 30 meter waterfront promenade zone is based on the extension of the Headland Park design of the northern cove southern edge, and it includes in detail the section starting at the south side of the northern cove and ending at the temporary access path to Barangaroo south.

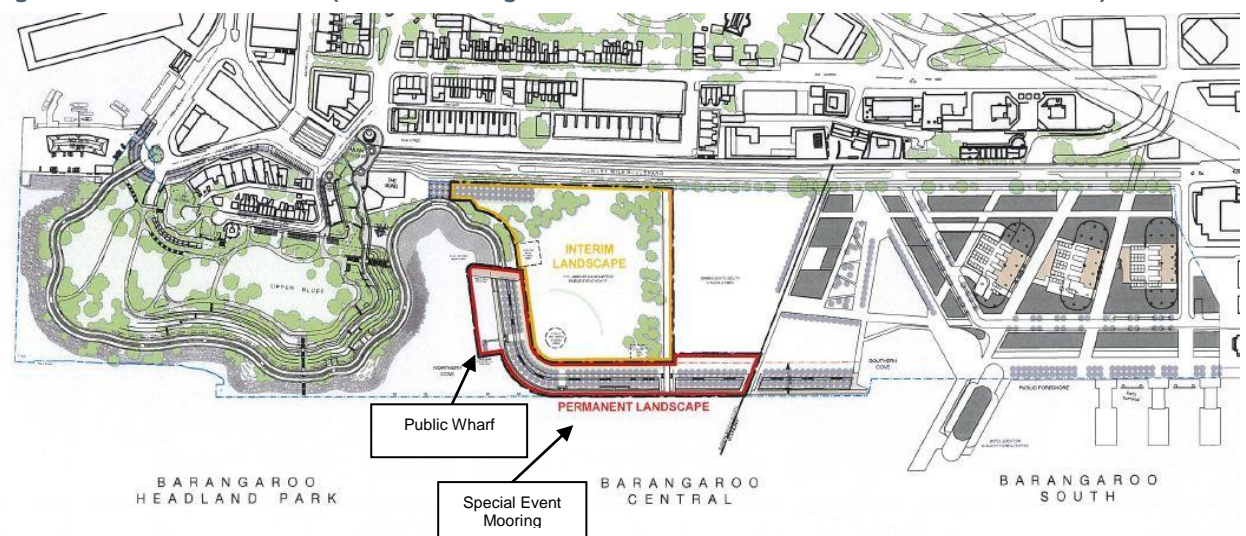
The permanent 30 meter public foreshore design extension from Headland Park / Barangaroo South, is defined in the concept plans , and identifies the water edge access with the design of a fixed lower boardwalk for walking and special boat access with multiple access points, and openings in the tree allee which are coordinated with the major site view corridors.

A public dock, (herein referred as the Public Wharf) at the northern cove has been maintained from the Headland Park design, which will accommodate access for small boats and water taxis. The lower boardwalk will have provisions for moorings along a length of 120 meters at the western edge of Barangaroo Central.

The interim landscape behind the 30meter permanent foreshore walk is envisioned as a major public gathering space for casual sports use, and picnicking. It is also intended to be a culturally programmed space for major public events such as concerts and festivals.

Hyder has been commissioned by Baulderstone on behalf of Barangaroo Delivery Authority to prepare a Navigation and Water Safety Report for Barangaroo Central. This preliminary report provides an assessment of the potential issues associated with the safe navigation of vessels within and adjacent to the Barangaroo Central development site.

Figure 1-1 Site boundaries (Source: Barangaroo Public Domain 2012 Plan: Central Main Works)



1.1 Study Objectives

The aim of this report is to address the following objectives:

- To assess navigational arrangements and restrictions at Barangaroo Central;
- To consider interfaces with the Barangaroo Headland Park Navigation and Water Safety assessment;
- To assess interaction of water borne construction plant and other water based activities with adjacent vessel movements on the harbour during construction; and
- To respond to the Director General's requirements.

2 REFERENCES AND GUIDELINES

2.1 References

Documentation reviewed during the course of this study includes:

1. **'MP10_0048 – Headland Park and Northern Cove – Main Works (Part 3A): Appendix 18 – Preliminary Navigation and Water Safety Report'** (prepared by Hyder dated 5 August 2010)
2. **'Final Barangaroo Central Waterfront Promenade and Interim Public Domain Works Request for DGRs 030712'** dated July 2012
3. **'Director General's Environmental Assessment Requirements'** dated 30 July 2012
4. **Barangaroo Headland Park Main Works (Marine) Tender Design drawings** (prepared by Hyder):
 - TE-HYD-P-S3-5103-G
 - TE-HYD-P-S3-5563-G
 - TE-HYD-P-S3-5565-B

While these drawings are under the Headland Park scope, the navigational aids design has been considered for the overall Barangaroo development site, including Barangaroo Central.

2.2 Design Guidelines

Navigational aids shall be designed in accordance with the following design guidelines where applicable:

1. BS6349-1989: British Standard Code of Practice for Maritime Structures – Part 6: Design of Inshore Moorings and Floating Structures;
2. IALA 'Maritime Buoyage System 'A'', Edition 1, 1980
3. IALA 'Recommendation for Leading Lights – Recommendation E-112', May 1998;
4. IALA 'LED Technologies and their use in Signal Lights', Edition 1, December 2005, Ref 1048;
5. IALA 'Rhythmic Characters of Lights on Aids to Navigation', Edition 2, December 2005, Ref E-110;
6. IALA 'Guidelines for the Design of Leading Lines', Ref 1023;

3 EXISTING NAVIGATIONAL ARRANGEMENTS AT BARANGAROO

The study considers that prior to completion of the entire stages of the Barangaroo development, neither Sydney Ferries vessels, nor cruise ships that may continue to use the cruise terminal at King Street Wharf, Darling Harbour, will enter into the Barangaroo development site. It is expected that these vessels will continue to navigate some distance clear of the development site as per current harbour operations. It is understood that the Barangaroo Wharf 5 Interim Passenger Terminal located at Barangaroo Central will be relocated to White Bay in 2013.

Roads & Maritime Services (RMS) issues boating maps for various waterways which indicates commercial shipping channels, waterside restricted zones, vessel speed restrictions and navigation aids types and location. Based on the Port Jackson boating map the only existing navigation mark within the Barangaroo development site is a fixed lit port beacon with no top mark (refer Appendix C). This mark is located on the existing wharf structure at the North West corner of Barangaroo Headland Park. There are no existing navigational aids within the Barangaroo Central development site. The Port Jackson admiralty chart (refer Appendix F) indicates an existing lead light on Merriman Street which is proposed to be relocated to a new location (refer drawing TE-HYD-P-S3-5103-G and TE-HYD-P-S3-5565-B in Appendix B).

Based on the 'MP10_0048 – Headland Park and Northern Cove – Main Works (Part 3A): Appendix 18 – Preliminary Navigation and Water Safety Report' (refer Appendix C), it is intended that recreational craft of limited draft may be permitted to enter the Northern Cove area. This arrangement applies similarly to the Northern Cove zone under the Barangaroo Central development area.

4 MARINE CONSTRUCTION ACTIVITIES REQUIREMENTS

Under the Marine Safety Act 2008, should marine construction activities be carried out, application for a Special Event Area/Construction Zone application will be required for RMS approval. The boundaries of this zone shall not impede onto the minimum commercial shipping channel requirements. The 'Construction Zone' shall be marked with yellow special marks (yellow buoys) and lights at night.

All vessels engaged in marine construction activities are to comply with the relevant policies and legislation, including but not limited to:

1. Port Procedures Guide for Sydney Harbour & Port Botany by Sydney Ports Corporation (SPC)
2. Marine Safety Act 1998 and Marine Safety Regulation 2010
3. Marine Pollution Act 1987 and Marine Pollution Regulation 2006

5 INTERFACE WITH BARANGAROO HEADLAND PARK

Key findings within the 'MP10_0048 – Headland Park and Northern Cove – Main Works (Part 3A): Appendix 18 – Preliminary Navigation and Water Safety Report' (refer Appendix C) can be summarised as below:

- No additional navigational aid will be required apart from the reinstatement of the fixed lit port beacon mark at the North West corner of the site with possible added top mark.
- Due to a decrease in navigable depth at the alignment of the modified caisson structures at the mouth of the Northern Cove (~RL-14m to ~RL-4m), it is possible to establish special marks (yellow in colour) to ensure recreational vessels of significant draft do not enter the cove.
- At the pontoon pier (i.e. the Public Wharf), appropriate navigable depth and berth/fairway width shall be provided to facilitate water taxis up to 8m length and of typical draft.

Further consultation with the SPC Harbour Master and RMS resulted in the addition of two new floating navigational mark west cardinals (white flashing) with added top mark and lighting (white rhythm very quick) located on the east and western side of the Northern Cove. A new floating cautionary marker for shallow water (yellow flashing) has been proposed to be located at the centre of the Northern Cove mouth. Note that navigational marker details are pending information from Barangaroo Delivery Authority and may be subject to change.

The navigational aids plan TE-HYD-P-S3-5103-G and cross section drawing TE-HYD-P-S3-5563-G are attached in Appendix B.

6 BARANGAROO CENTRAL NAVIGATIONAL REQUIREMENTS

6.1 During Construction

As previously mentioned in Section 4, the Special Event Area/Construction Zone shall be marked with yellow special marks (yellow buoys) and lights at night. RMS is responsible for issuing a marine notice that constitutes rules and regulations for passing vessels and construction vessels.

The Contractor shall consult with the RMS and SPC to determine requirements for any temporary navigation marks to delineate construction works areas and silt containment. The Contractor is required to prepare and implement a Marine Construction Management Plan to address these issues.

During construction, the contractor shall establish ongoing consultation with SPC's Harbour Master to manage the movement of water borne construction plant and vessels with commercial shipping operations in Port Jackson. Within the Construction Zone, vessel operators must comply with the Marine Safety Act 1998 and any directions given by a RMS Officer or Police Officers in relation to marine safety. All construction vessels, including floating plant are required to navigate clear of the seawall and rock armour structures.

6.2 Permanent Works

The Barangaroo Central Waterfront Promenade shall include the following permanent marine infrastructure:

- Public wharf, including water taxi pontoon and access ramp

The Public Wharf provides pick-up and drop-off access for small boats and water taxis. Provisions for mooring cleats shall be considered to allow vessels to moor on the pontoon.

As described in Section 5, the '*MP10_0048 – Headland Park and Northern Cove – Main Works (Part 3A): Appendix 18 – Preliminary Navigation and Water Safety Report*' (refer Appendix C) addresses navigational aids requirements for the Northern Cove. Apart from the proposed navigational aids shown on TE-HYD-P-S3-5103-G drawing plan (refer Appendix B), no additional navigation aids are considered to be required however NSW Maritime is to be consulted to confirm any requirement for additional navigation signage.

6.3 Special Events

It is intended that a length of 120m water front at the western side of the harbour will be limited to restricted use for special events only.

This area will accommodate deep water berthing for special event. In accordance with the Sydney Harbour Mooring Map issued by RMS, mooring is not permitted within the Barangaroo development site other than by permit at Barangaroo for special events such as naval vessel exhibition (refer Appendix E).

All vessels, including small recreational boats shall apply for berthing/mooring permits to be approved by RMS and other relevant authorities.

Provisions for furniture including bollards, and fender arrangements will be considered for safe mooring and berthing purposes. Signage associated with restricted use and mooring/berthing by permit only may need to be established in accordance with the requirements of the relevant authorities.

7 ITEM 4 OF DIRECTOR GENERAL'S REQUIREMENTS

Responses to the issues raised in Item 4 of the Director General's Requirements are given in the table below:

Item 4 of the Director General's Requirements	Response
Outline how the navigable waters created by the application will be managed, including consideration to Roads and Maritime Services (RMS) role.	Navigational aids design shall be developed in consultation with RMS, SPC and other relevant authorities. The Contractor shall develop and implement a Marine Construction Management Plan.
Identify the proposed use of waters abutting Barangaroo Central, and any infrastructure necessary to accommodate such uses.	A pontoon and public wharf to cater for water taxis and small boats is proposed to be located within Northern Cove. Provisions for deep water berthing for vessels such special event vessels along a length of 120m at the western side of the harbour, subject to permits and approvals from relevant authorities. Provisions for furniture including bollards, fenders and mooring cleats will be considered for special event use.
Identify the demand and location for private charter vessel set-down and pick-up, and how these impacts will be managed	Water taxis and small recreational vessels set-down and pick-up is located at the pontoon and public wharf. There should be no berthing times greater than 5 minutes, signage will be provided noting this.

8 CONCLUSION

A preliminary navigation and water safety assessment has been carried out for the Barangaroo Central development site. Key findings from the assessment include:

- The Public Wharf will provide pick-up and drop-off access for small vessels with limited draft and water taxis only.
- During construction, the Contractor shall consult with the RMS and SPC to determine requirements for any temporary navigation marks to delineate construction works areas and silt containment. The Contractor is also required to prepare and implement a Marine Construction Management Plan to address these issues.
- It is intended that a length of 120m waterfront at the south-western edge of Barangaroo Central will be limited to restricted use for special events only. Berthing/mooring permits will be required for all vessels intending to berth/moor within this zone.

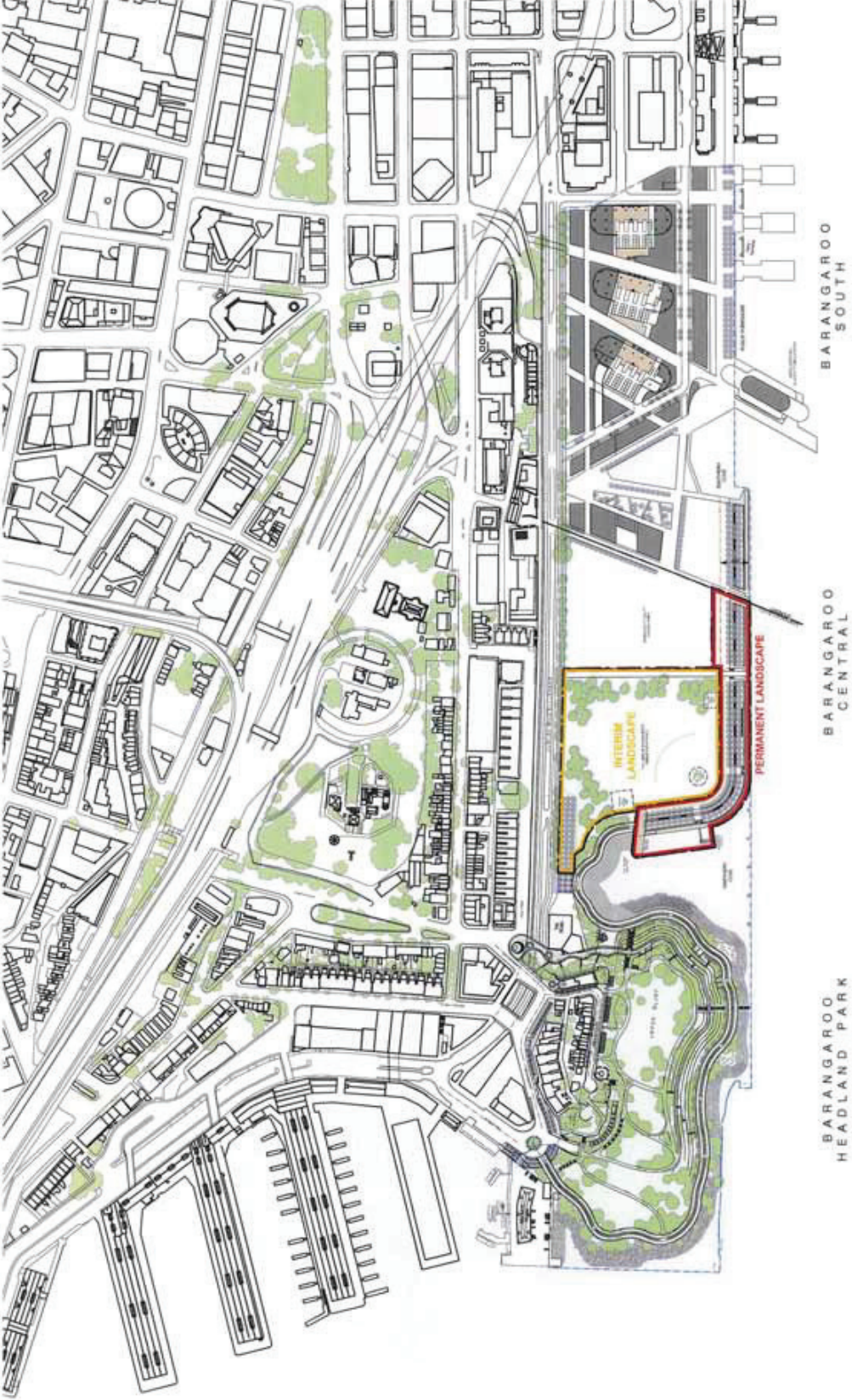
9 SUMMARY OF RECOMMENDATIONS

The following further information, assessment and consultation requirements are to be considered further to this report:

- Approval from SPC's harbour master and RMS for the proposed navigational aid types and location;
- Consultation with relevant authorities to discuss potential navigation impacts associated with marine construction activities; and
- Any other design changes to the Barangaroo Central and Barangaroo Headland Park and proposed construction activities that could pose a hazard to safe navigation will need to be considered through revisiting this assessment.

Appendix A

Barangaroo Central Plans



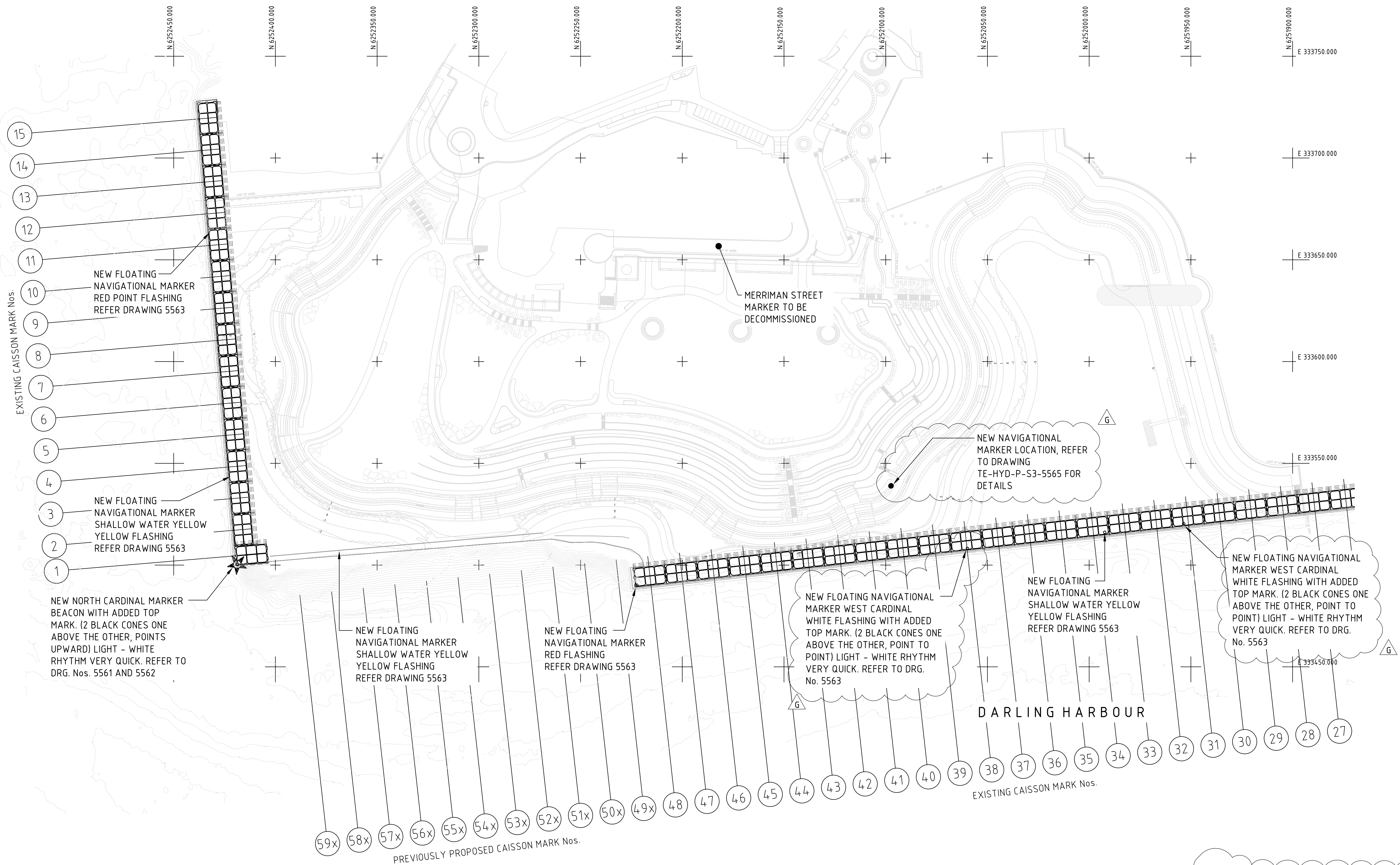
Scale 1:2000
September 17, 2012

B1 | BARANGAROO | Public Domain 2012 Plan - Central Main Works

PWP LANDSCAPE ARCHITECTURE

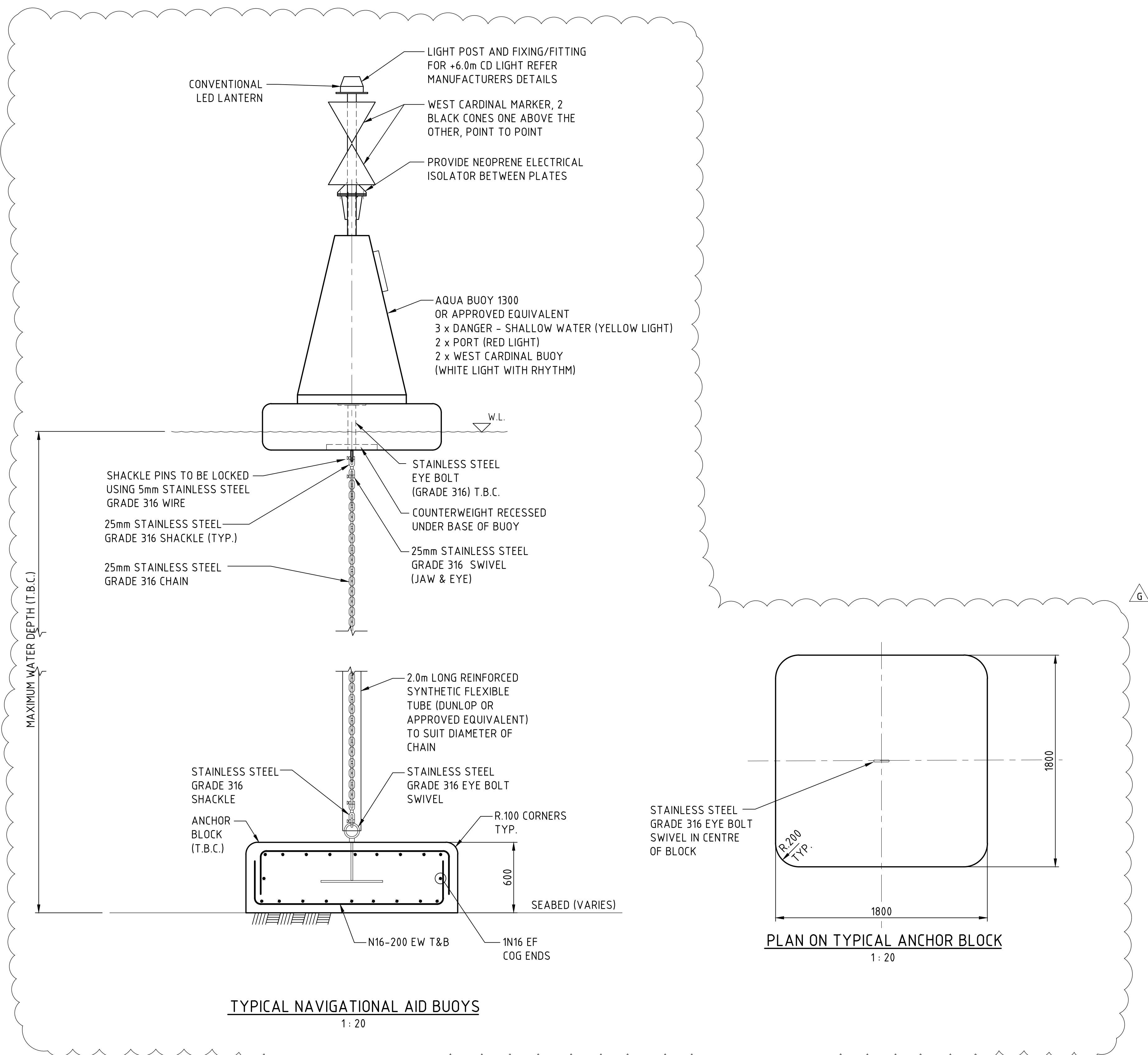
Appendix B

Barangaroo Headland Park Main Works (Marine) Tender Design Navigational Aids Drawings



1. FOR GENERAL NOTES REFER TO DRG. No. TE-HYD-P-S3-5002.
2. NAVIGATIONAL MARKER DETAILS PENDING INFORMATION FROM BARANGAROO DELIVERY AUTHORITY.

Documentation Stage
DETAILED DESIGN
Revision
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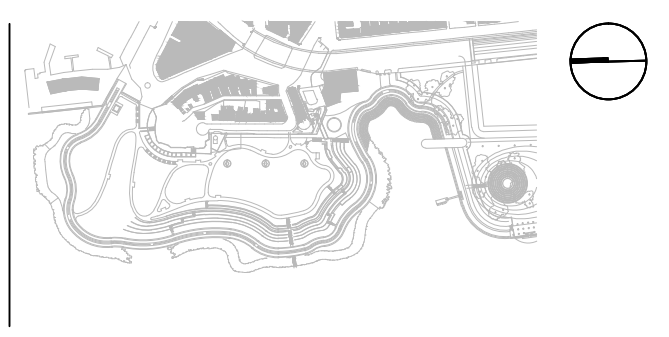
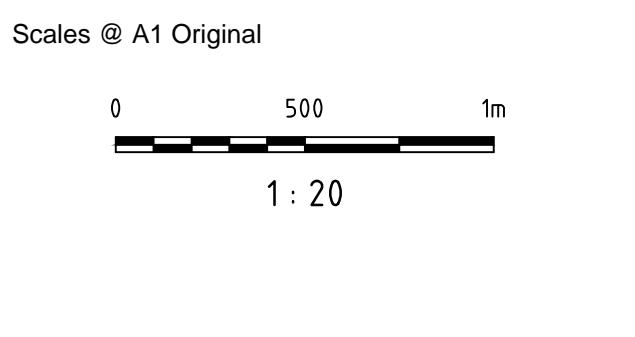


NOTES

1. FOR GENERAL NOTES REFER DRG. No. TE-HYD-P-S3-5102.
2. REFER TO DWG. No. TE-HYD-P-S3-5102 FOR NAVIGATIONAL AID TYPES AND GENERAL ARRANGEMENT.
3. ANCHOR BLOCK, CHAIN AND BOLT DETAILS TO BE CONFIRMED WITH BUOY SUPPLIER AND APPROVED BY THE ENGINEER.
4. POST-DREDGE BATHYMETRY AND DEPTH OF ANY DUMPED MATERIAL TO BE CONFIRMED PRIOR TO APPROVAL OF CHAIN LENGTH AND POSITION OF ANY INTERMEDIATE CHAIN SHACKLES OR MID-WEIGHTS BY THE ENGINEER.
5. ALL NAVIGATIONAL AIDS TO COMPLY WITH THE REQUIREMENTS OF IALA.
6. NAVIGATIONAL MARKER DETAILS PENDING INFORMATION FROM BARANGAROO DELIVERY AUTHORITY.

Rev	App	Ckd	Revision or reason for issue	Date
0	P.M.	T.R.	ISSUED FOR TENDER	24.02.2011
A	P.M.	T.R.	COORDINATION SET	18.03.2011
B	P.M.	T.R.	COORDINATION	20.06.2011
C	P.M.	T.R.	ISSUED FOR MEASUREMENT	13.07.2011
D	P.M.	T.R.	ISSUED FOR TENDER	29.07.2011
E	P.M.	T.R.	ISSUED FOR TENDER	26.08.2011
F	P.M.	T.R.	ISSUED FOR TENDER	16.09.2011
G	P.M.	T.R.	ISSUED FOR TENDER	24.08.2012

Rev	App	Ckd	Revision or reason for issue	Date
0	P.M.	T.R.	ISSUED FOR TENDER	24.02.2011
A	P.M.	T.R.	COORDINATION SET	18.03.2011
B	P.M.	T.R.	COORDINATION	20.06.2011
C	P.M.	T.R.	ISSUED FOR MEASUREMENT	13.07.2011
D	P.M.	T.R.	ISSUED FOR TENDER	29.07.2011
E	P.M.	T.R.	ISSUED FOR TENDER	26.08.2011
F	P.M.	T.R.	ISSUED FOR TENDER	16.09.2011
G	P.M.	T.R.	ISSUED FOR TENDER	24.08.2012



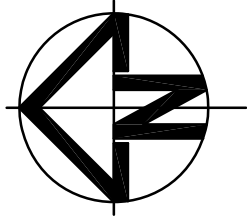
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Project Name
**BARANGAROO HEADLAND PARK
PUBLIC DOMAIN MAIN WORKS**
Barangaroo

Drawing Title
**GENERAL ARRANGEMENT
NAVIGATIONAL AIDS
DETAILS
SHEET 3**
Drawing Number
TE HYD P S3 5563
Documentation Stage
FOR TENDER
Revision
G



MARKER
LOCATED ON
HARBOUR
BRIDGE

LINE OF SIGHT FROM
HARBOUR BRIDGE

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DARLING HARBOUR

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5566

General Notes
Do not scale from drawing. Use marked dimensions.
To be read in conjunction with all other Consultant's drawings.
The Architect / Landscape Architect to be immediately notified of any discrepancies.
Copyright on this drawing retained by the Architect / Landscape Architect.
For landscape information refer to DD-PWP-L-series drawings.
For architectural information refer to DD-JPW-A-series drawings.

Rev	App	Ckd	Revision or reason for issue	Date
A	P.M.	T.R.	COORDINATION SET	26.08.2011
B	P.M.	T.R.	ISSUED FOR TENDER	16.09.2011



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1 : 2000



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Project Name
BARANGAROO HEADLAND PARK
**BARANGAROO
SYDNEY
AUSTRALIA**

**GENERAL ARRANGEMENT
NAVIGATIONAL AIDS
DETAILS
SHEET 5**
Project Number
TE HYD P S3 5565
Documentation Stage
FOR TENDER
Revision
B

Appendix C

Extract of MP10_0048 – Headland Park and Northern Cove – Main Works (Part 3A):

Appendix 18 – Preliminary Navigation and Water Safety Report

5 August 2010

Barangaroo Delivery Authority
Level 3, Foreshore House, 66 Harrington Street
The Rocks NSW 2000 Sydney Australia

Attention: Fleur Mellor - Public Domain Design Project Manager

Barangaroo Headland Park – Preliminary Navigation and Water Safety Report

Dear Fleur,

This preliminary letter report has been prepared in response to Item 2.19 in Headland Park Main Works Environmental Action List dated 22nd July 2010.

1. Introduction

This preliminary Navigation and Water Safety Report provides an assessment of the issues associated with the safe navigation of vessels within and adjacent to the Barangaroo Headland Park development site. This assessment is structured as follows:

- Assess vessel access restrictions at the developed Barangaroo site and consideration in design;
- Outline existing navigation constraints at the site;
- Outline possible navigational aid requirements at the developed site;
- Responds to maritime issues identified within Item 6 of the Director General's Requirements; and
- Summarise further information, assessment and consultation requirements.

2. Barangaroo – Vessel Access Restrictions

The design considers that neither Sydney Ferries vessels, nor cruise ships that may continue to use the cruise terminal at Darling Harbour in the interim prior to completion of the entire staged Barangaroo development, will enter into the Barangaroo development site (including the Northern Cove). It is expected that these vessels will continue to navigate at some distance clear of the development site as per current harbour operations.

However, it is noted that the wake and propeller wash generated by passing vessels (including tug vessels supporting cruise ship navigation operations) has been considered in the concept design of the seawalls, rock armour and scour protection at the Barangaroo site (refer "*Barangaroo Headland Park Maritime Works Concept Design Report*" dated 15th June 2010).

It is intended that recreational craft of limited draft will be permitted to enter the Northern Cove area but not the Moore's Wharf Bay area. An assessment of predicted vessel draft limitation is provided within "*Barangaroo Headland Park Maritime Works Concept Design Report*" dated 15th June 2010. This assessment is to be updated to reflect any recent changes in Northern Cove bathymetry. All craft are expected to navigate clear of seawall and rock armour structures.

3. Existing Navigation Constraints at the Site

NSW Maritime provides boating maps online for the various waterways for which it has responsibility (refer Appendix B). Commercial shipping channels, vessel speed restrictions and navigation aids are shown on this plan. The only existing navigation mark within the development area is a fixed lit port beacon to the commercial shipping channel with no top mark. This mark is located on the existing wharf structure at the Nth Wst corner of the site.

4. Navigational Aid Requirements

As the development does not impact upon existing commercial shipping channel and ferry operations there is limited requirements for additional marks to facilitate these operations, other than the reinstatement of the fixed lit port beacon mark at the Nth Wst corner of the site with possible added top mark. This mark would likely be reinstated on a new support column fixed to the modified corner caisson structure.

Coves within Port Jackson do not typically have navigation aids indicating navigational restrictions or changes in navigable depth (e.g. Farm Cove at the Royal Botanic Gardens Est of the harbour bridge). However, the Northern Cove presents a location where there is a sudden significant decrease in navigable depth at the alignment of the modified caisson structures at the mouth of the cove (~RL-14m to ~RL-4m). At this location the establishment of special marks (yellow in colour in accordance with the requirement of the International Association of Marine Aids to Navigation and Lighthouse Authorities (or IALA for short) – refer Appendix C) could be considered so that recreational vessels of significant draft refrain from attempting to enter the cove.

Provision of a pontoon pier within the Northern Cove is currently being considered to service water taxis only. No navigational aids are considered to be required for this pontoon pier at this stage. It is envisaged that this facility will be designed in accordance with the appropriate guidelines (including any particular requirements of NSW Maritime, disabled access, provision of life saving equipment etc) and AS3962-2001: *Guidelines for Design of Marinas*. Appropriate navigable depth and berth/fairway width is to be provided to facilitate water taxis up to 8m in length and of typical draft.

Should floating markers be adopted rather than fixed marks, then the wander of the buoy(s) should be considered in their positioning so that they reasonably accurately define the location of the change in navigable depth or edge of channel.

No vessels are to enter the Moore's Wharf Bay area at the far Nth Est of the development site due to a lack of navigable depth and limited navigable width. No navigation aids are considered to be required however NSW Maritime is to be consulted to confirm any requirement for the erection of navigation signage to communicate this constraint.

A "DO NOT DRIFT OR ANCHOR" zone extends from the Nth Wst corner of the Barangaroo development site to the Opera House on the other side of the harbour bridge. Any signage associated with this restriction (or others such as speed limit zones, or no fishing etc) may need to be established in accordance with the requirements of the relevant authorities.

Refer to sketch SK21-AA003264-A enclosed within Appendix A for illustration of possible navigational aid requirements.



5. Item 6 of Director General's Requirements

Our response to the issues raised in Item 6 of the Director General's Requirements is given in the table below:

Issue Identified within Item 6 of the Director General's Requirements	Maritime Designer's Response
Details of any proposed transportation of waste materials via the Harbour and proposed locations for handling materials.	All waste materials are to remain within the site with any materials received via land based access.
Navigation and safety impacts on other water based traffic and ferry commuter services from any barging of contaminated materials, including navigation in and around Darling Island, King Street Wharf, Johnstons Bay and White Bay.	No barging of contaminated materials is proposed.
Impact of shoreline works (particularly the creation of the Northern Cove) on navigation in Sydney Harbour.	Navigation impacts of shoreline works shall be reasonably minimised. The design of silt curtain arrangements and temporary aids to navigation shall be developed in consultation with SPC, NSW Maritime and other relevant authorities.
Potential provision for a water taxi stop.	A water taxi stop is proposed at a pontoon pier located within the Northern Cove. The facility shall be designed in accordance with the relevant guidelines and Australian Standards.

6. Yet to Be Addressed

The following further information, assessment and consultation requirements are to be considered in finalising the Navigation and Water Safety report:

- Nav aids are to be consistent with the navigational aids already in place in the harbour to avoid confusion. Therefore the requirements of SPC's harbour master, NSW Maritime and Sydney Ferries need to be confirmed through consultation with these parties;
- Navigation impacts associated with the construction of the Barangaroo development have not been considered as part of this preliminary assessment and will need to be addressed at a later stage in consultation with the relevant authorities;
- Any other features that may emerge through the finalisation of the design of the development, that could pose a hazard to safe navigation, will need to be considered in finalising this assessment.

Yours sincerely,

A black and white image of a handwritten signature, likely belonging to Sam Harris, written in a cursive style.

Sam Harris

Manager - Ports and Maritime NSW

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Enclosed Appendices:

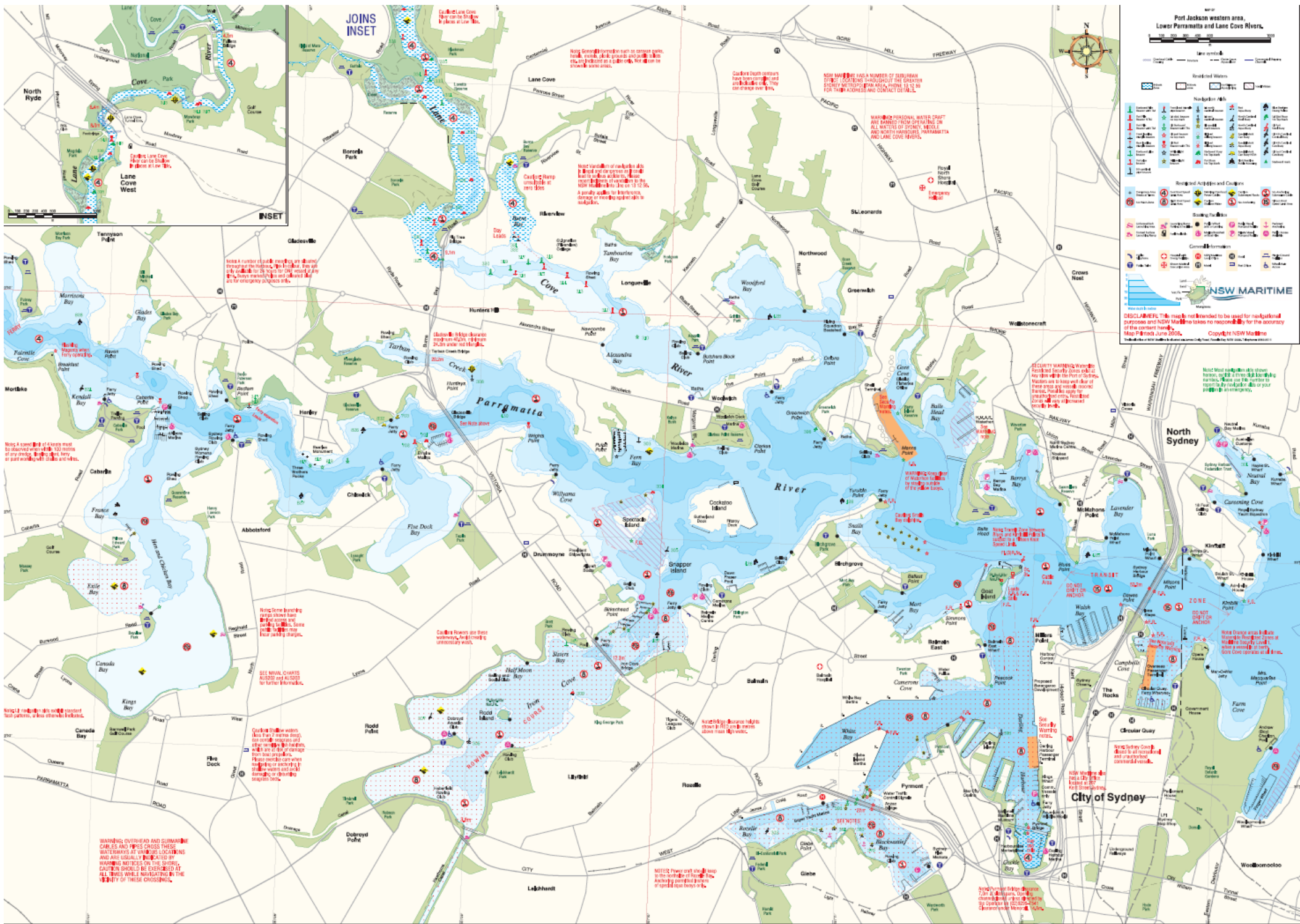
- Appendix A – SK31-AA003264-A Aids to Navigation
- Appendix B – NSW Maritime Boating Map: Port Jackson Western Area
- Appendix C – IALA Navigation Mark Guidance Extract



Appendix D

NSW Boating Map

Port Jackson Western Area



Appendix E

Sydney Harbour Mooring Area Map

Appendix F

Port Jackson Admiralty Chart

