

NOTES

- This survey was conducted using the equipment as outlined in the MDS document. References for equipment details are provided in the MDS document.
- Control line dredges were surveyed using a GNSS system with a real-time kinematic (RTK) correction service. The RTK service was provided by a base station located on the Gold Coast. The RTK service was used to determine the precise location of the dredges. The RTK service was used to determine the precise location of the dredges.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.
- The bathymetry was surveyed using a single beam echosounder. The echosounder was used to measure the depth of the water. The echosounder was used to measure the depth of the water.

Horizontal Datum	MGA Zone 58 (GDA04)	Heading	Heading
Vertical Datum	LAF based on PA 46814 (RL 3.721m)	Weather	5-15 kn SE
Chart/Map	Chart 11000 (Mullumbidgee)	Class	C
Map Name	LAF based on PA 46814 (RL 3.721m)	Client	GCWA

Vessel	05 Fantasee	Soundings	0.2m
Echo Recorder	HORNET 10000 Multibeam	CLASS	C
Horizontal Positioning	RTK GNSS (Trimble R10)	CLIENT	GCWA
Vertical Positioning	RTK GNSS (Trimble R10)		

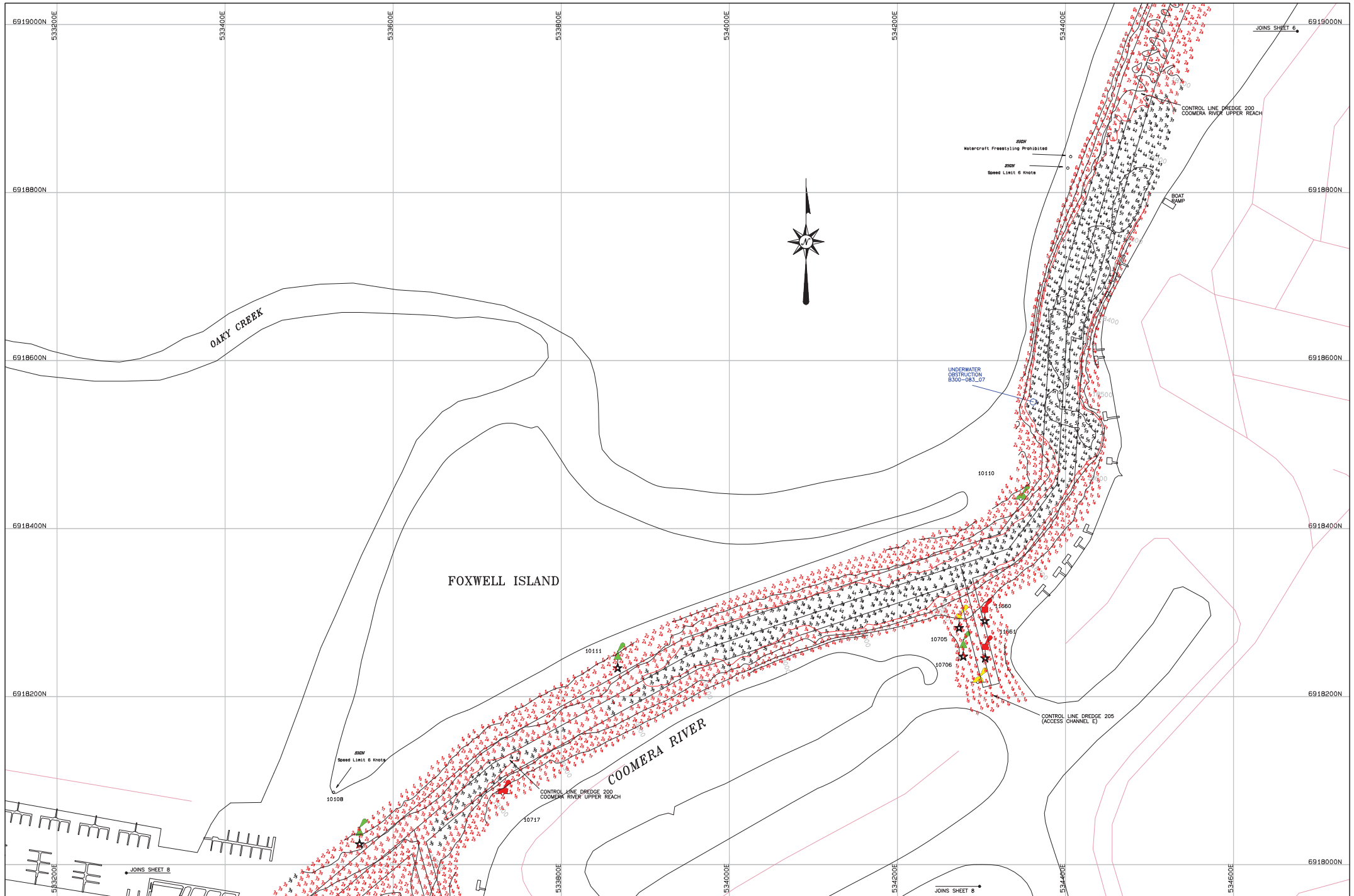


Operator	David Cashill	Project	COOMERA RIVER
Surveyor	David Cashill	Client	GCWA
Check	David Cashill	Date	08 FEBRUARY 2019



COOMERA RIVER
 BROADWATER (Ch 9000) TO GOLD COAST CITY MARINA (Ch 20800)
 PRE-DREDGE HYDROGRAPHIC SURVEY
 08 FEBRUARY 2019
 Copyright The State of Queensland 2019 (Transport and Main Roads)

Plot No. B300083PS.PDF
 Job No. GC140053
 File No.
B300-083
 SHEET 5 OF 9



- NOTES**
- This survey was conducted using the equipment as outlined in the MR document referenced for this project.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.
 - Control line dredges are shown as dashed lines with a 10m interval.

Horizontal Datum	MSL Zone 58 (GDA04)	Swath	Swath
Vertical Datum	LAP based on BM 46814 (RL 3.721m)	Beam	Beam
Depth Reference	0.2m	Horizontal Tolerance	± 5m

Vessel	DS Fantome	Operator	DS Fantome
Master	John J. Mulligan	Surveyor	John J. Mulligan
Horizontal Positioning	RTK GNSS	Vertical Positioning	RTK GNSS
Data Collection/Processing	Trimble	Chart Reference Station	TR 50002, TR 44200A, TR50001

CLASS C **QUIET**

GCWA

SCALE 1 : 2000 AT A1

0 20 100 200

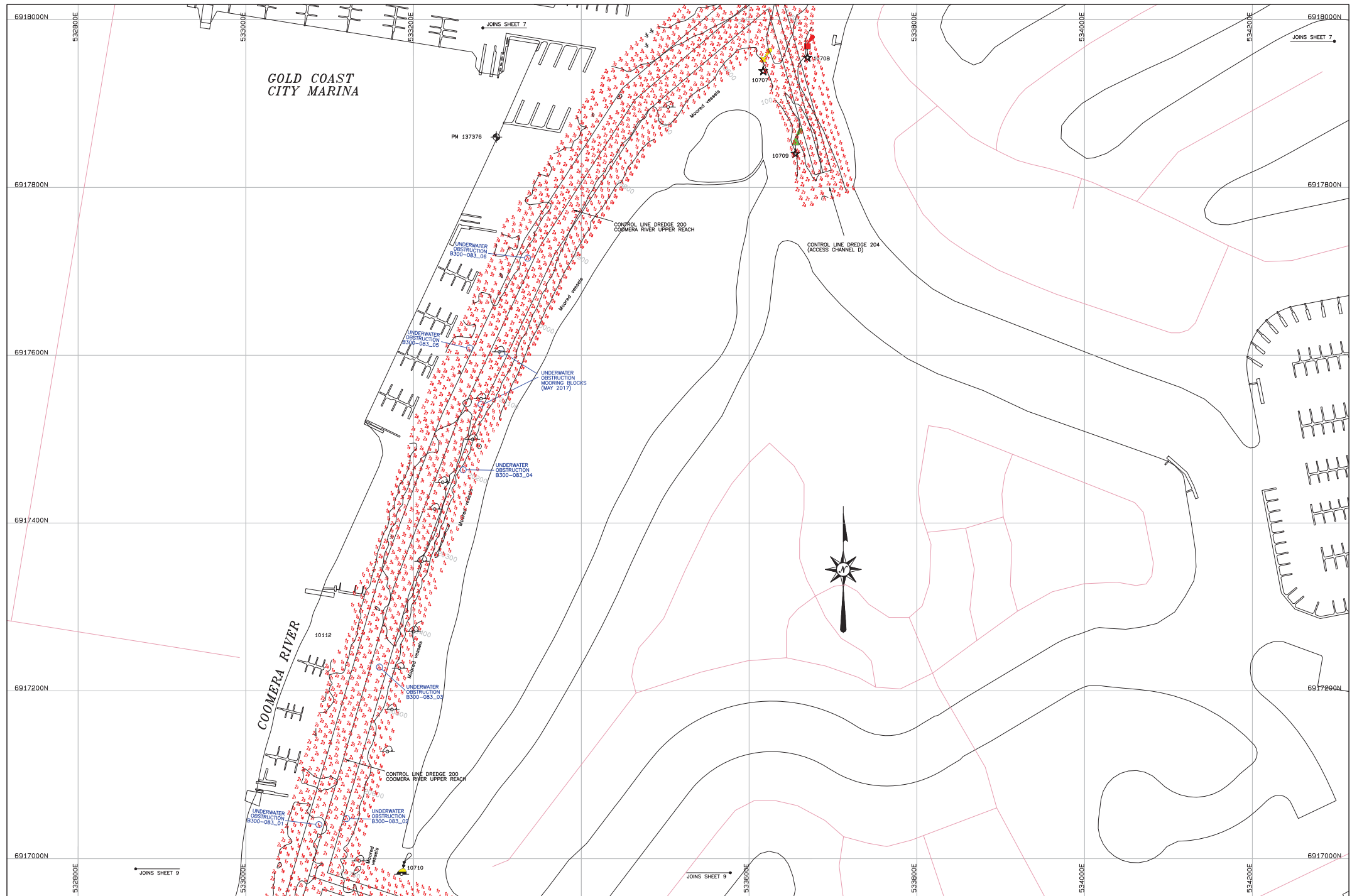
Reference Hydrographic Survey	N Me 13.10
Surveyor	John J. Mulligan
Contract	T 201310
Client	Queensland Government
Date	2019.03.08
Project No.	13-4508-11000

Queensland Government

HYDROGRAPHIC SERVICES

COOMERA RIVER
BROADWATER (CH 9000) TO GOLD COAST CITY MARINA (CH 20800)
PRE-DREDGE HYDROGRAPHIC SURVEY
08 FEBRUARY 2019

Plot No. B300083P7.PDF
Job No. GC140053
File No. B300-083
SHEET 7 OF 9



NOTES

- This survey used the necessary class equipment as outlined in the MIS document. References for equipment models and specifications are included.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.
- Control lines were surveyed using a 100m steel tape.

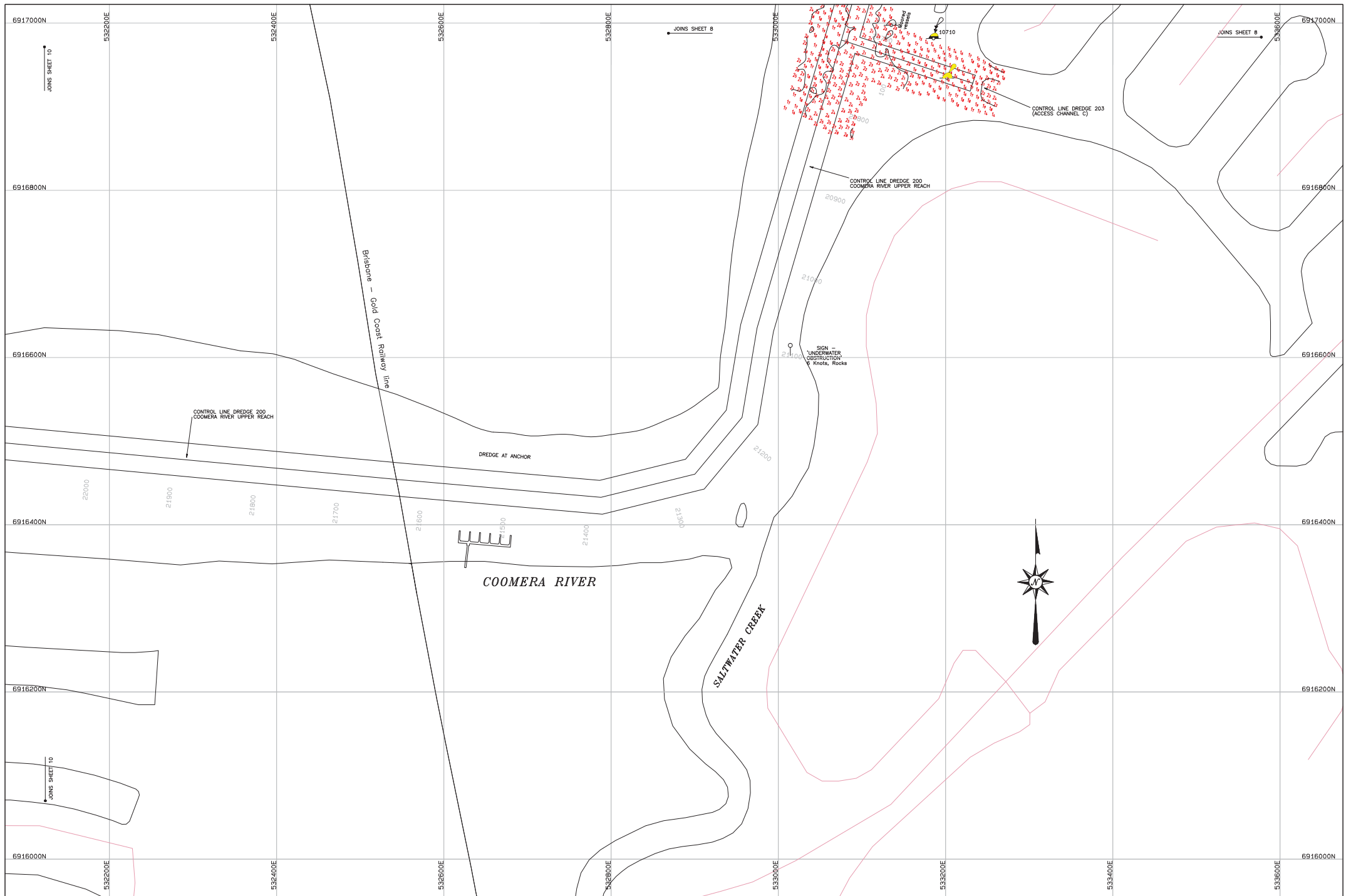
Horizontal Datum	MGA Zone 58 (GDA04)	Heading	05 Fantone
Vertical Datum	LAF based on PM 46814 (RL 3.721m)	Mooring	None
Depth Unit	metres	Chart	None
Chart	None	Scale	1:2000 AT A1
Chart Edition	None	Chart No.	None
Chart Authority	None	Chart Date	None
Chart Title	None	Chart Scale	None
Chart Edition	None	Chart No.	None
Chart Authority	None	Chart Date	None
Chart Title	None	Chart Scale	None

Vertical Datum	MGA Zone 58 (GDA04)	Heading	05 Fantone
Vertical Datum	LAF based on PM 46814 (RL 3.721m)	Mooring	None
Depth Unit	metres	Chart	None
Chart	None	Scale	1:2000 AT A1
Chart Edition	None	Chart No.	None
Chart Authority	None	Chart Date	None
Chart Title	None	Chart Scale	None

Vertical Datum	MGA Zone 58 (GDA04)	Heading	05 Fantone
Vertical Datum	LAF based on PM 46814 (RL 3.721m)	Mooring	None
Depth Unit	metres	Chart	None
Chart	None	Scale	1:2000 AT A1
Chart Edition	None	Chart No.	None
Chart Authority	None	Chart Date	None
Chart Title	None	Chart Scale	None

Vertical Datum	MGA Zone 58 (GDA04)	Heading	05 Fantone
Vertical Datum	LAF based on PM 46814 (RL 3.721m)	Mooring	None
Depth Unit	metres	Chart	None
Chart	None	Scale	1:2000 AT A1
Chart Edition	None	Chart No.	None
Chart Authority	None	Chart Date	None
Chart Title	None	Chart Scale	None

<p>Queensland Government</p>	<p>COOMERA RIVER BROADWATER (CH 9000) TO GOLD COAST CITY MARINA (CH 20800) PRE-DREDGE HYDROGRAPHIC SURVEY 08 FEBRUARY 2019</p>	<p>Plot No. B300083PB.PDF Job No. GC140053 File No. B300-083 SHEET 8 OF 9</p>
<p>Hydrographic Survey</p> <p>Surveyor N. M. 10</p> <p>Checked T. 10</p> <p>Drawn C. 10</p> <p>2019.03.08</p> <p>15:45:57 +10:00</p>	<p>Copyright The State of Queensland 2019 (Transport and Main Roads)</p>	



NOTES

- This survey meets the necessary class requirement as outlined in the MR document. References for:
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised)
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 1
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 2
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 3
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 4
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 5
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 6
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 7
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 8
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 9
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 10
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 11
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 12
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 13
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 14
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 15
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 16
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 17
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 18
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 19
 - Hydrographic Surveying - International Code of Signals (ICS) - 1985 Edition (Revised) - Appendix 20

Horizontal Datum	MGA Zone 58 (GDA04)	Beating	Swath	Heading	05 Fantone
Base Station	DMR/MAUD LONG CONNECTION (Multi Base Stations: MAC)	Water	Normal	Scale	1:2000 AT A1
Vertical Datum	LAF based on BM 46814 (RL 3.721m)	Water	Normal	Scale	1:2000 AT A1
Water	Normal	Water	Normal	Scale	1:2000 AT A1
Depth	0.2m	Horizontal	1.0m	Vertical	0.1m

Water	Normal	Water	Normal	Scale	1:2000 AT A1
Water	Normal	Water	Normal	Scale	1:2000 AT A1
Water	Normal	Water	Normal	Scale	1:2000 AT A1
Water	Normal	Water	Normal	Scale	1:2000 AT A1
Water	Normal	Water	Normal	Scale	1:2000 AT A1

CLASS	C	CLIENT	GCWA
--------------	---	---------------	------

Scale: 1:2000 AT A1

North Arrow: True North

Surveyor: N Me 1x 10

Checked: T Me 10

Drawn: Owen Cantrell

Date: 2019.03.08

Project: 15-46234-11000

Hydrographic Services: HYDROGRAPHIC SERVICES

Website: www.hydrographic.com.au

Queensland Government

COOMERA RIVER

BROADWATER (Ch 9000) TO GOLD COAST CITY MARINA (Ch 20800)

PRE-DREDGE HYDROGRAPHIC SURVEY

08 FEBRUARY 2019

Copyright The State of Queensland 2019 (Transport and Main Roads)

Plot No.: B300083P9_PDF

Job No.: GC140053

File No.: B300-083

SHEET 9 OF 9