Permit

Environmental Protection Act 1994

Environmental authority EA0002735

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EA0002735

Environmental authority takes effect on a date to be decided later.

Environmental authority holder(s)

Name(s)	Registered address
MCVT PTY LTD	1 Boatworks Dr COOMERA QLD 4209 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
ERA 16 - Extraction and Screening 1: Dredging, in a year, the following quantity of material (b) more than 10,000t but not more than 100,000t	Lot 121 on Plan SP267278; Lot 122 on Plan SP267278; Lot 120 on Plan SP145333; Lot 109 on Plan CP908627; Lot 112 on Plan SP234493; Lot 110 on Plan SP234491; Lot 111 on Plan SP234491; Lot 37 on Plan SP113730; Lot 4 on Plan RP212183; Lot 5 on Plan RP212183; Lot 113 on Plan SP260300; and Coomera Dredged Sediment Management Facility (Lot 54 on SP137530, Lot 52 on SP137530 and Lot 18 on SP131567).

ABN 46 640 294 485

Queensland Government

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Amanda Gray
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 22 February 2021

Enquiries:
Coastal and Marine Assessment
Department of Environment and Science

Phone: 1300 130 372
Email: palm@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental authority

Location: Lot 121 on Plan SP267278; Lot 122 on Plan SP267278; Lot 120 on Plan SP145333; Lot 109 on Plan CP908627; Lot 112 on Plan SP234493; Lot 110 on Plan SP234491; Lot 111 on Plan SP234491; Lot 37 on Plan SP113730; Lot 4 on Plan RP212183; Lot 5 on Plan RP212183; Lot 113 on Plan SP260300; and Coomera Dredged Sediment Management Facility (Lot 54 on SP137530, Lot 52 on SP137530 and Lot 18 on SP131567).

Activity: ERA 16-(1b) Dredging more than 10,000t, but not more than 100,000t, in a year.

The environmentally relevant activitie(s) conducted at the location(s) as described above must be conducted in accordance with the following site-specific conditions of the approval.

Agency interest: General	
Condition number	**Condition**
G1	**Activities** under this environmental authority must be conducted in accordance with the following limitations: 1. The amount of material dredged per year must not exceed 30,000t. 2. Within the bounds and specifications of the following approved plans: a. As-Constructed Survey prepared by International Coastal Management dated 17/12/20, Drawing Number BWN-2021-002 revision N/A. b. Dredge Profiles prepared by International Coastal Management dated 17/12/20, Drawing Number BWN-1821-003 revision N/A. 3. **Dredged Material** must only be placed at the **Coomera Dredged Sediment Management Facility (CDSMF)** or at **Wholesale Sands and Recycling**[1].
G2	All reasonable and practicable **measures** must be taken to prevent or minimise environmental harm caused by the **activity**.
G3	Any breach of a condition of this environmental authority must be reported to the **administering authority** as soon as practicable within 24 hours of becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions taken.
G4	Other than as permitted by this environmental authority, the **release of a contaminant into the environment** must not occur.
G5	Environmental monitoring results must be kept until surrender of this environmental authority. All other information and records that are required by the conditions of this environmental authority must be kept for a minimum of five (5) years. All information and records required by the conditions of this environmental authority must be provided to the **administering authority, or nominated delegate** upon request**,** within the required timeframe and in the specified format.
G6	An **appropriately qualified person(s)** must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.

[1] Note: Under condition WT1 no release of contaminants to waters is authorised by this Environment Authority should the **Wholesale Sands and Recycling** placement site be utilised (this activity is permitted separately under EPPR00690613). This includes temporary releases during placement on shore, handling, and transport.

G7	All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (**NATA**) certification, or an equivalent certification, for such analyses. The only exception to this condition is for *in situ* monitoring of water quality parameters.
G8	When required by the **administering authority**, monitoring must be undertaken in the manner prescribed by the **administering authority**, to investigate a complaint of environmental nuisance arising from the **activity**. The monitoring results must be provided within 10 business days to the **administering authority** upon its request.
G9	Written notification of the commencement date must be provided to the **administering authority** at least five (5) business days prior to establishing a **new dredging activity**.
G10	The characterisation of sediments and suitability for **land**-based disposal of **dredged material** must be submitted to the **administering authority** in accordance with methodology provided in the latest edition of the: • *National Environment Protection (Assessment of Site Contamination) Measure*; and • *Queensland Acid Sulfate Soil Technical Manual* …and any other relevant guideline specified by the **administering authority**, at least 20 business days prior to the commencement of the **dredging activity**. **Note**: It is the responsibility of the operator to determine whether previous characterisation of sediments are suitable for assessing risks to **environmental values** associated with the **dredging** campaign to which this environmental authority relates.
G11	The **dredging activity** must not commence unless the lawful disposal of the **dredged material** has been authorised under an authority, licence or other permit issued by the Commonwealth or Queensland governments. Evidence of all necessary approvals must be provided to the **administering authority** upon request.
G12	Prior to the commencement of the **dredging activity**, a Dredge Management Plan (DMP)[1] for the activity must be developed and implemented, and the DMP must contain the following: 1. Clearly stated aims and objectives. 2. Description of **dredging** operation including: a. type of equipment to be used in **dredging**; b. volume of **dredged material** to be removed, and duration and timing of the dredging campaign; c. methods to be utilised for transporting **dredged material**; and d. **dredged material** disposal methods. 3. Maps or plans showing: a. legend, north arrow and scale; b. boundaries of **dredging** operation; c. estimated or modelled zone of influence of sediment plumes; d. location of designated disposal sites; e. location of sensitive receptors; and f. all monitoring locations. 4. A detailed description of sediment plume-associated monitoring program including: a. sampling regime and methods; and b. monitoring sites.

	5. A detailed description of the assessment methodology to provide data in relation to **trigger values** that will define **alert levels**. 6. Clearly set out data handling and evaluation procedures that demonstrate how exceedance of **alert levels** will be determined. 7. Management actions to be initiated if **alert levels** are exceeded. [1] Note: The Dredge Management Plan is subject to review and amendment as required by changing regulation, monitoring results or **administering authority** recommendations.
G13	The Dredge Management Plan must not be implemented or amended in a way that contravenes or is inconsistent with any condition of this authority.
G14	The Dredge Management Plan (DMP) must be provided to the **administering authority** at either of the addresses below: PALM@DES.qld.gov.au; or Department of Environment and Science Permit and Licence Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001
G15	The Dredge Management Plan must be submitted to the **administering authority** at least 20 business days prior to the commencement of **dredging** and amended in accordance with any comments made by the **administering authority**.
G16	If the Dredge Management Plan is amended, it must be provided to the **administering authority** at least 20 business days prior to commencing activities under the amended Dredge Management Plan.
G17	Any comments made by the **administering authority** on the amended Dredge Management Plan provided in accordance with condition G16 must be addressed to the satisfaction of the **administering authority** prior to implementing the amended Dredge Management Plan**.**
G18	Condition G16 and G17 apply each time the Dredge Management Plan is amended.
G19	The **dredging activity** must be undertaken in accordance with the Dredge Management Plan required in condition G12.
G20	**Dredged material** placed at the **Coomera Dredged Sediment Management Facility (CDSMF)** must be placed in accordance with conditions CDSMF1 – CDSMF11 of this authority.
G21	**Dredged Material** placed at **Wholesale Sands and Recycling** must be placed and managed in accordance with the requirements of the Environmental Authority for that site.

Agency interest: Air	
Condition number	**Condition**
A1	Odours or airborne contaminants must not cause environmental nuisance to any **sensitive place** or **commercial place**.
Agency interest: Water	
Condition number	**Condition**
WT1	The only contaminants to be released to surface **waters** are: 1. bed sediments necessarily disturbed during **dredging** at locations indicated in condition G1; and 2. treated waters released from the **Coomera Dredged Sediment Management Facility** in accordance with condition CDSMF2.
WT2	Where the **zone of influence** of a sediment plume generated by the **activity** encroaches upon a **sensitive receptor**, **slightly disturbed** or **high ecological value waters**, **sediment plume-associated monitoring (SPAM)** is to be undertaken as follows. The default[2] **SPAM** requirement is: 1. **continuous visual monitoring**[3], and 2. **spot-checking** (weekly and **event-based** concern site monitoring with **control site**-based checking)
WT3	In addition to WT1, the release to **waters** must not: 1. have any other properties at a concentration that is capable of causing environmental harm. 2. produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter.
Agency interest: Land	
Condition number	**Condition**
L1	Treatment and management of acid sulfate soils must comply with the guidance provided in the current edition of the *Queensland Acid Sulfate Soil Technical Manual.*

[2] The default **sediment plume-associated monitoring** program may be amended at the discretion of the **administering authority** to a more-intensive or less-intensive monitoring approach depending on the amount and quality of supporting information available at the time the dredging application is made, the management intent of waters under the Environmental Protection (Water) Policy 2009, and the level of perceived risk and protection status of each potentially-affected **environmental value**.

[3] The **continuous visual monitoring** methodology includes a subjective monitoring component, but must also be supplemented with daily, non-subjective (i.e. objective, empirical) data collection that must occur at the most appropriate times to report the full extent of the sediment plumes being generated (e.g. mid-ebb and flood tides whilst actively dredging) as detailed in the **Dredge Management Plan**.

<table>
<tr><th colspan="2">Agency interest: Noise</th></tr>
<tr><th>Condition number</th><th>Condition</th></tr>
<tr><td>N1</td><td>Noise generated by the activity must not cause environmental nuisance to any sensitive place or commercial place.</td></tr>
<tr><th colspan="2">Agency interest: Waste</th></tr>
<tr><th>Condition number</th><th>Condition</th></tr>
<tr><td>W1</td><td>All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.</td></tr>
<tr><th colspan="2">Agency interest: Site Specific (CDSMF)</th></tr>
<tr><th>Condition number</th><th>Condition</th></tr>
<tr><td>CDSMF1</td><td>Odours or airborne contaminants must not cause environmental nuisance to any sensitive place or commercial place as a result of the activities at the CDSMF.</td></tr>
<tr><td>CDSMF2</td><td>The only contaminants to be released to surface waters from the CDSMF are:
1. treated waters released to Oakey Creek (Release Point 1) located at Latitude -27.8574, Longitude 153.3269.</td></tr>
<tr><td>CDSMF3</td><td>The waters released from Release Point 1 must comply with each of the quality characteristics and monitoring frequencies specified in Table 1.
Table 1 – Surface water release limits
<table>
<tr><th rowspan="2">Parameter</th><th colspan="2">Release limit</th><th rowspan="2">Monitoring frequency</th></tr>
<tr><th>Minimum</th><th>Maximum</th></tr>
<tr><td>pH</td><td>7.0</td><td>8.5</td><td>Daily[1]</td></tr>
<tr><td>Turbidity (NTU)</td><td></td><td>25</td><td>Daily[1]</td></tr>
<tr><td>Dissolved Oxygen</td><td>85% saturation</td><td>105% saturation</td><td>Daily[1]</td></tr>
<tr><td>Total Suspended Solids</td><td></td><td>50mg/L</td><td>Daily[1]</td></tr>
</table>
1 – Samples only required on days when a discharge occurs.
Associated monitoring requirements
(a) Monitoring must be in accordance with the methods prescribed in the latest version of the administrative authority's Monitoring and Sampling Manual.
(b) Water quality samples must be representative of water being tested.
(c) All determinations must employ analytical practical quantification limits of sufficient sensitivity to enable comparisons to be made against water quality objectives/triggers/limits relevant to the particular water or sediment quality characteristic.</td></tr>
</table>

	(d) Monitoring must be undertaken during a release and at the frequency stated. (e) All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.
CDSMF4	Monitoring of contaminant releases to **waters** must be undertaken in accordance with condition CDSMF3 and **records** of the results must be kept.
CDSMF5	In addition to CDSMF3, the release to **waters** must not: 1. have any other properties at a concentration that is capable of causing environmental harm. 2. produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter.
CDSMF6	Treatment and management of acid sulfate soils must comply with the guidance provided in the current edition of the *Queensland Acid Sulfate Soil Technical Manual.*
CDSMF7	The stormwater runoff from **disturbed areas**, generated by a storm event up to and including a **24-hour storm event with an average recurrence interval of 1 in 10 years** must be retained on site or managed to remove contaminants before released offsite.
CDSMF8	Contaminants must not be released to **groundwater** or at a location where they are likely to release to **groundwater**.
CDSMF9	**Measures** must be taken to ensure no contaminants are released to **groundwater** as a result of seepage from treatment ponds.
CDSMF10	Noise generated at the **CDSMF** during sediment treatment must not cause environmental nuisance to any **sensitive place** or **commercial place**.
CDSMF11	All waste generated in carrying out the **activity** at the **CDSMF** must be reused, recycled or removed to a facility that can lawfully accept the waste.

Definitions

Key terms and/or phrases used in this document are defined in this section and **bolded** throughout this document. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

24-hour storm event with an average recurrence interval of 1 in 10 years means the maximum rainfall depth from a 24-hour duration precipitation event with an average recurrence interval of once in 10 years. For example, an Intensity–Frequency–Duration table for a 24-hour duration event with an average recurrence interval of 1 in 10 years, identifies a rainfall intensity of 8.2mm/hour. The rainfall depth for this event is therefore 24-hour x 8.2mm/hour = 196.8mm.

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the Department of Environment and Science or its successor or predecessors.

Alert level represent tiers in a hierarchy of increasing environmental risk and are defined by **trigger values**. Three alert levels (low, moderate, and high) are typically used in a management action framework to indicate adverse conditions and guide management responses that aim to prevent and minimise environmental harm.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

Concern site means a site where a sensitive receptor occurs within the zone of influence of a sediment plume.

Continuous visual monitoring means visual appraisal of the sediment plume extent and intensity as performed by the dredge crew throughout the day on an ad hoc basis (i.e. whenever it is safe and non-disruptive to do so). The continuous visual monitoring requirement is intended to facilitate an early response feature in the **dredge management plan**, so that the dredge operator remains cognisant of the extent and intensity of the sediment plume being generated and reacts according to the **dredge management plan** accordingly. This requirement must be supplemented with empirical data (e.g. photography, when water quality instruments are not in use) taken at key indicative points in the tidal cycle (where applicable) to demonstrate the extent and intensity of the sediment plume

Control site refers to a monitoring site located beyond the anticipated **zone of influence** of sediment plumes and has site pairing with one or more **test sites** or **sentinel sites**. In monitoring programs, **control sites** serve the same role as do **reference sites** but only for a defined subset of parameters

Coomera Dredged Sediment Management Facility (CDSMF) means the facility on land at Lot 54 on SP137530, Lot 52 on SP137530, Lot 18 on SP131567 and parts of the Ford Road and Shipper Drive road reserve, 91 Shipper Drive, Coomera.

Disturbed areas includes areas:

1. that are susceptible to erosion;
2. that are contaminated by the activity; and/or
3. upon which stockpiles of soil or other materials are located.

Dredge footprint is the area being dredged including batters.

Dredged material means mud, sand, coral, shingle, gravel, clay, earth and other material removed by dredging. Dredged material includes dredge spoil and extracted quarry material.

Dredging includes extraction of mud, sand, coral, ballast, shingle, gravel, clay, earth and other material from the bed of Queensland tidal and non-tidal **waters**. **Dredging** does not include the banks of a waterway.

Environmental value means

- a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or
- another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

Event-based actions refers to management responses (e.g. an increased level of monitoring) initiated in following 'an event', with the event being defined in the dredge management plan (e.g. 'an event' can occur when monitoring results indicate an exceedance of an adopted **trigger value**, or a non-compliance with the environmental authority condition).

Groundwater means water that occurs naturally in, or is introduced artificially into, an aquifer.

High Ecological Value (HEV) is the 'management intent' for the 'ecosystem condition' as defined in Schedule 1 of the Environmental Protection Policy (Water) 2019 for scheduled waters, or the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC & ARMCANZ 2000) for non-scheduled waters. HEV ecosystems are intact and typically exhibit relatively insignificant levels of anthropogenic impacts.

Measures has the broadest interpretation and includes plant, equipment, physical objects, bunding, containment systems, monitoring, procedures, actions, directions and competency.

NATA means National Association of Testing Authorities.

New dredging activity means a dredging activity that is currently not underway, the next stage of a dredging campaign that is currently underway, or a discretely separate area in a larger dredge campaign that is currently underway.

Nominated delegate means another government agency that provides services to the **administering authority**.

Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

Release of a contaminant into the environment means to:

- deposit, discharge, emit or disturb the contaminant
- cause or allow the contaminant to be deposited, discharged, emitted or disturbed
- fail to prevent the contaminant from being deposited, discharged emitted or disturbed
- allow the contaminant to escape
- fail to prevent the contaminant from escaping.

Reference site refers to a monitoring site located not only beyond the anticipated **zone of influence** of a sediment plume, but also beyond other sources of environmental impacts, and has **site pairing** with one or more **test sites** or **sentinel sites**. In monitoring programs, reference sites serve the same role as do control sites but can generally be suitable for a broader set of parameters.

Sediment plume-associated monitoring (SPAM) means environmental monitoring associated with risk management of **sediment plume-associated impacts.**

Sediment plume-associated impacts are impacts associated with sediment plumes including turbidity and suspended solids concentrations, light attenuation or sedimentation rates elevated above either **control site** or **reference site** readings or baseline conditions for an equivalent time of year. Where **dredge material** possesses acid sulfate soil-related properties, sediment plume-associated impacts may also include pH, dissolved oxygen and metal and metalloid-related toxicity impacts.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- a public thoroughfare, park or gardens; or
- for noise, a place defined as a sensitive receptor for the purposes of the *Environmental Protection (Noise) Policy 2008.*

Sensitive receptor includes biological sensitive receptors together with other **environmental values** sensitive to the effects of dredge-generated **sediment plume-associated impacts.**

Sentinel site is a **test site** that is situated between the disturbance source and the **sensitive receptor** and serves to provide earlier warning of developing adverse conditions than does a **test site**.

Site pairing refers to monitoring sites that have a functional control-impact relationship, for example, Control site A is referenced to assess monitoring data collected from Concern Sites AA and AB, thus, Concern Sites AA and AB share site pairing with Control Site A.

Slightly disturbed is the 'management intent' for the 'ecosystem condition' as defined in Schedule 1 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019. Slightly disturbed ecosystems should generally be regarded as **high ecological value** ecosystems in all respects except for some relatively minor disturbances (usually water-quality related e.g. nutrient concentrations exceeding the water quality objective).

Spot-checking refers to a non-continuous monitoring approach performed at a fixed distance and direction from a mobile impact source (in the context of this guidance, dredging vessels) or at other key points of interest. Spot-checking may be routine or **event-based**, and may also include monitoring at fixed monitoring sites, such as **reference sites** or **control sites** and **test sites** or **sentinel sites**, although the same sites need not necessarily be monitored on every sampling event.

Test site is a **concern site** that functions as a test point for compliance, is a monitoring site situated within the area where a **sensitive receptor** occurs and where environmental monitoring-related assessment criteria (e.g. **trigger values**) apply.

Trigger values are physicochemical, parameter-specific measurement values used to indicate a condition where an environmental value or sensitive receptor may be at low, moderate or high risk, or some other risk-related indicator

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

Wholesale Sands and Recycling means the facility at 1754 Jacobs Well Road authorised by EA EPPR00690613.

Zone of Influence of a sediment plume is, in its broadest application, defined by the **dredge footprint** and the area beyond the **dredge footprint** where at least some level of **sediment plume-associated impacts** are expected to occur. The overall zone of influence may be broken down into more risk-relevant sub-categories, such as the Zone of Unavoidable Loss (the **dredge footprint** and immediately adjacent areas), the Zone of Moderate Impact, or the Zone of Marginal Impact, with each zone being defined according to its purpose or role in environmental management.

Attachments

a. As-Constructed Survey prepared by International Coastal Management dated 17/12/20, Drawing Number BWN-2021-002 revision N/A.
b. Dredge Profiles prepared by International Coastal Management dated 17/12/20, Drawing Number BWN-1821-003 revision N/A.

END OF PERMIT

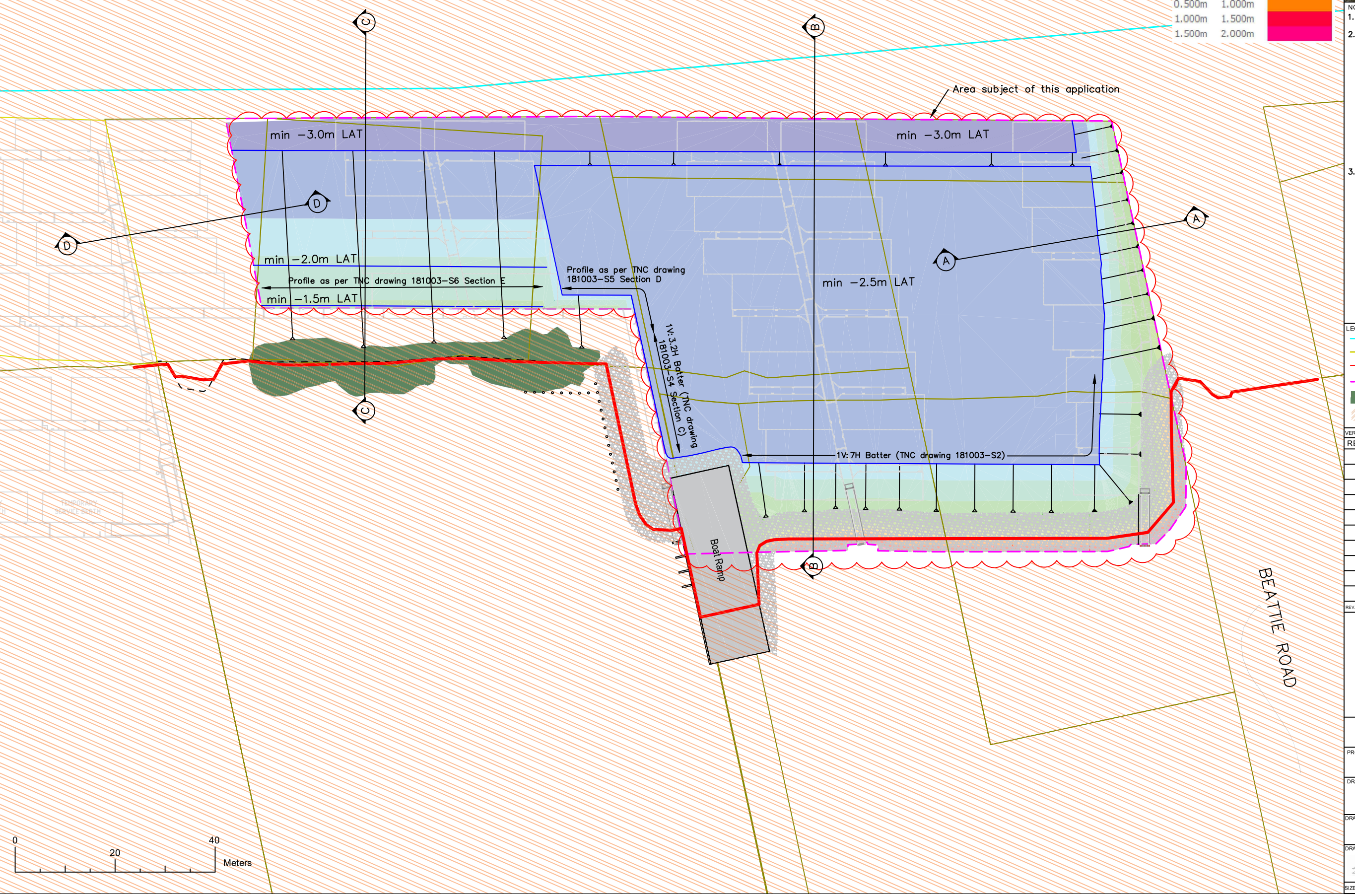
Volume to be removed 2019 Survey - Dredge Profile	Design	Max
Total (Volume)	12,550m^3	16,300m^3
Total (Tonnes)	22,590 tonnes	29,340 tonnes

Volume analysis based on the following survey data:
- Michel Group Services (18113–1) 26/07/2019 – (Excludes area landward of Lot 37 pontoon)
- TNC Survey of typical profile (181003–S6 Rev D) 24/09/2019 – (Landward of Lot 37 pontoon only)

Profile adjusted alongshore to reflect location of marine plants (as observed on site). Actual profiles could vary significantly, particularly at southern extent.

Coomera River Navigation Channel (-3.0 to -3.5m LAT)

Minimu...	Maxim...	Color Scheme
-5.000m	-4.500m	
-4.500m	-4.090m	
-4.090m	-3.390m	
-3.390m	-3.000m	
-3.000m	-2.500m	
-2.500m	-2.000m	
-2.000m	-1.500m	
-1.500m	-1.000m	
-1.000m	-0.500m	
-0.500m	0.000m	
0.000m	0.500m	
0.500m	1.000m	
1.000m	1.500m	
1.500m	2.000m	



LOCALITY PLAN



NOTES
1. No further dredging works landward of pontoon adjacent to marine plants.
2. Rock revetment and excavated profile north of boat ramp as per TNC design (refer drawings 181003_S4 to S6). Pacific Geotech global stability assessments (2019) indicate a Factor of Safety of minimum 1.3 (once solider piles are installed). Assessment of final excavated profile and ongoing monitoring to be undertaken and loading restrictions to be observed. These activities are to be undertaken in accordance with TNC drawings, Pacific Geotech stability assessments and Coastal Processes assessment (ICM, 2020).
3. For dredge sections, refer to drawing BWN–2021–003.

LEGEND
- COOMERA RIVER CHANNEL
- LOT BOUNDARY
- MHWS
- LIMIT OF DREDGING (Subject of this approval)
- MARINE PLANTS
- AREA SUBJECT TO SEPARATE APPLICATIONS

VERTICAL DATUM: LAT | HORIZONTAL DATUM: MGA56

REVISION REGISTER

REV NO.	DATE	DESCRIPTION	BY	ENG.	APP.

International Coastal Management
OFFICE 50 / G Arm, SYC Marina, Main Beach, 4217, QLD, Australia
POST PO Box 306, Main Beach LPO, Main Beach QLD, 4217, Australia
TELEPHONE +61 7 55640564 FAX +61 7 55329147
WEBSITE www.coastalmanagement.com.au

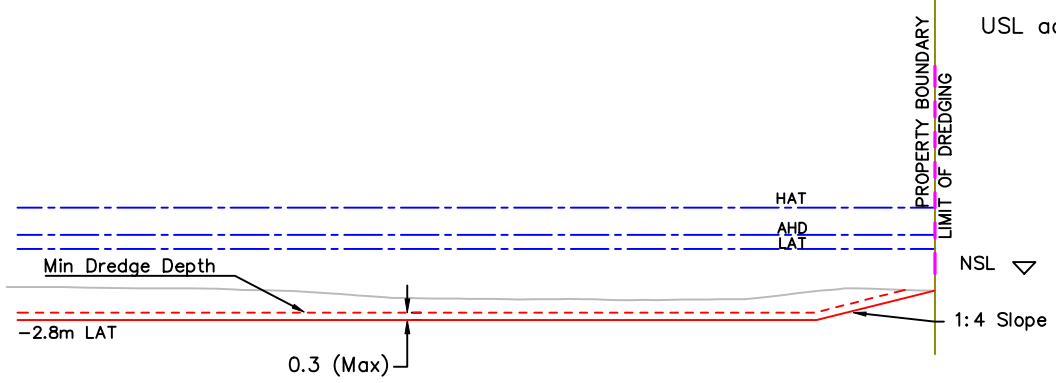
PROJECT NAME
BOAT WORKS NORTH

DRAWING TITLE
As-Constructed Survey

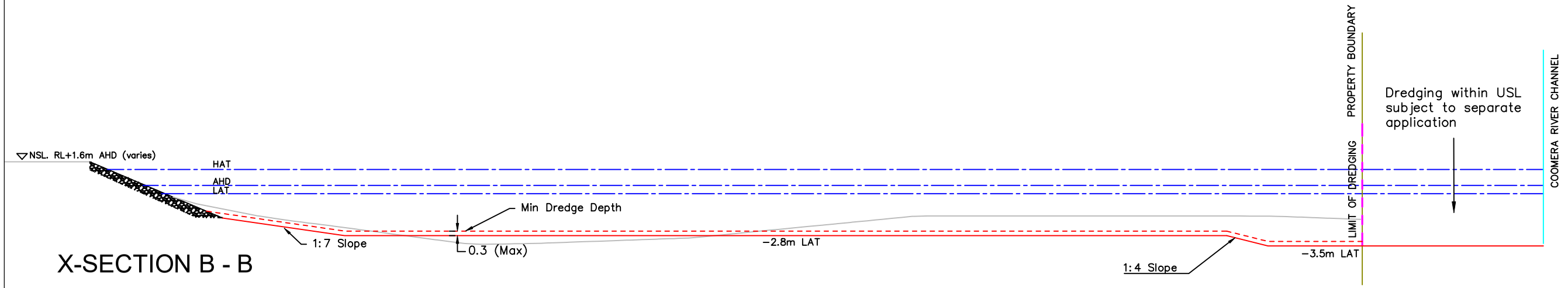
DRAWING No. BWN-2021-002 | REVISION:

DRAWN : SK | CHECKED :AJ | APPROVED :AJ
RPEQ 2876

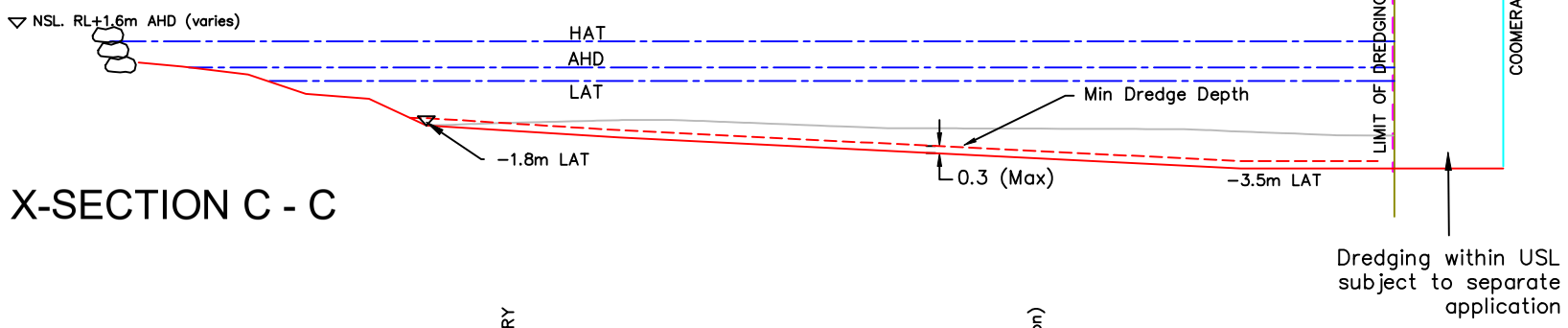
SIZE: A3 | SCALE : AS SHOWN | DATE : 17 Dec, 2020



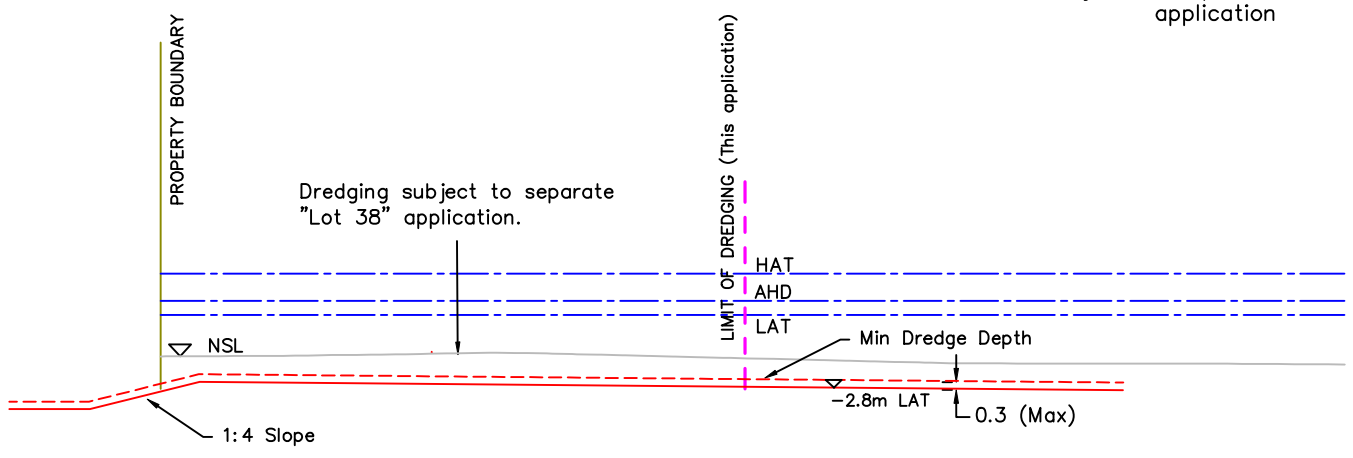
X-SECTION A - A



X-SECTION B - B



X-SECTION C - C



X-SECTION D - D

0 10 20 Meters

LOCALITY PLAN



NOTES

1. Survey by Michel Group Services dated 26/07/2019.
2. Profile near rock revetment and mangroves based on TNC drawings 181003_S1 to S6.
3. Location of Sections defined on drawing BWN−2021−002.

LEGEND

- COOMERA RIVER CHANNEL
- LOT BOUNDARY
- DESIGN DREDGE PROFILE
- PRESENT PROFILE (2019)

VERTICAL DATUM: LAT | HORIZONTAL DATUM: -

REVISION REGISTER

REV NO.	DATE	DESCRIPTION	BY	ENG.	APP.
G	15/12/20	Design dredge profile, present profile	SK	BC	AJ

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PROJECT NAME
BOAT WORKS NORTH

DRAWING TITLE
DREDGE PROFILES

DRAWING No. BWN-1821-003 | REVISION:

DRAWN : SK | CHECKED :AJ | APPROVED :AJ
RPEQ 2876

SIZE: A3 | SCALE : AS SHOWN | DATE : 17 Dec, 2020