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Our Ref: PEH: L.N0310.052.BAL_bund_consent_modification

14 March, 2007

Hunter-Central Rivers Catchment Management Authority
Tocal Road
PATERSON NSW

Attention: Brett Peterkin

Dear Brett,

RE: CONSTRUCTION OF BAL BUND USING CONCRETE WALL

Specifications for the construction of bunds as part of the Hexham Swamp Rehabilitation Project stipulate the use of Virgin Excavated Natural Material (VENM) (refer Clause 23 of Project Approval). Given the limited space between Ironbark Creek and the BAL towers compound where part of the BAL bund is to be located, it is proposed to construct part of the BAL bund using a vertical concrete wall instead of VENM. Consequently, a modification to the Project Approval is required given the conditions specified in Clause 23.

Details of the concrete wall

An 80 metre long concrete wall is proposed to be constructed as part of the BAL bund (total bund length = 290m). The wall is to be approximately 1 metre high, and positioned adjacent to the existing man-proof fence alignment. The use of a concrete wall would maintain pedestrian access along the creek foreshore without encroaching into the BAL compound (except during construction, as agreed with BAL).

Design drawings for the concrete wall section of the bund are provided at the rear of this letter document.

The construction of the wall will require minor excavation of a footing into the existing bank material. The footing depth will vary depending on the existing bank level, but would typically be 450mm wide by 300mm deep, running the full length of the wall (80 metres). Consequently, a volume of approximately 11m^3 of material will be excavated from the bank.

Environmental Impacts of the Concrete Bund

It is considered that the environmental impacts arising from the construction of the concrete wall section of the bund would largely be the same as those associated with the construction of an earthen bund in this location. The wall would still inhibit saltwater encroachment onto land around the BAL towers, as per the intent of the design. A culvert with a one-way flapgate would still be included in the wall to allow for drainage of rainwater from the land.

The only changes to the project will be during construction, which will require approximately 60m^3 of concrete plus associated steelwork and formwork, instead of approximately 300m^3 of imported clean fill (VENM), and the excavation of approximately 11m^3 of material from the bank (typical excavation depth of 300mm).

Acid Sulfate Soil (ASS) tests have been carried out in the vicinity of the proposed concrete wall. These tests confirm that the material to be excavated is ASS. Consequently, removal and treatment of the material will be carried out in accordance with the ASS Management Plan, prepared by RCA Australia. The Plan includes verification testing of the material, following removal and initial treatment, to determine if additional neutralisation is required. Additionally, provisions will be made as part of the construction works to minimise the impacts of ASS on the integrity of the concrete.

The material to be excavated for the wall footing is on the alluvial bank of Ironbark Creek immediately in front of the BAL tower compound. The location has not been previously identified as containing contaminated soil, and as such, there is a low likelihood of soil contamination. Given the small volume to be excavated and the degree of past land activities, it is unlikely that the excavations will unearth Aboriginal relics. Nonetheless, if any relics are uncovered, then works will stop until a representative of the LALC and/or DEC can assess the relic and the site and determine an appropriate course of action. As part of the Project EIS (WBM, 2006), the location of the bund was previously assessed from a heritage perspective and found not to contain any Aboriginal relics.

It is noted that the reduction in material required for construction will reduce the number of truck movements to and from the site during the construction period.

Table 1 summarises the impacts of the bund wall on the environment.

Table 1 Summary of Impacts of BAL bund

Area of environmental concern	Impacts of original bund wall	Impact of new concrete section of BAL bund	Mitigation Measures
Tidal Hydraulics	• Exclusion of tides from BAL tower compound	• No change to earthen bund impacts	• Nil required – intent of works
Flooding	• Exclusion of local Ironbark Creek floods from BAL tower compound for floods up to approximately 1 in 20yr event	• No change to earthen bund impacts	• Nil required
Local site drainage	• Detention of surface runoff during rainfall events	• No change to earthen bund impacts	• Culverts within bund to allow outflow of runoff through bund wall
Groundwater	• No impacts on groundwater	• No impacts	• Nil required
Water quality	• No impacts on water quality	• No impacts	• Nil required
Acid Sulfate Soils	• No impacts on ASS	• Exposure of ASS	• Treatment of exposed ASS in accordance with ASSMP
Soil contamination	• No impacts on soil contamination	• No impacts	• Nil required
Archaeology	• No impacts on archaeology	• Potential unearthing of Aboriginal relic	• Consultation with LALC and/or DEC
Vegetation	• Removal of some existing vegetation (casuarinas, mangroves) during construction	• No change to earthen bund impacts	• Retain vegetation wherever possible
Fauna	• No impacts on fauna	• No impacts	• Nil required
Mosquitoes	• No impacts on mosquitoes	• No impacts	• Nil required
Economics	• No impacts on economics	• No impacts	• Nil required

Conclusion

It is regarded that there will be no adverse environmental impacts associated with changing the design of the bund from an earthen (VENM) bund to a concrete wall over a length of 80 metres (total length of bund = 290m) provided that material excavated for the footing is managed in accordance with the defined ASS Management Plan, and any unearthing of Aboriginal relics are referred to the LALC and/or DEC for consideration. It is therefore considered that the Project Approval (dated 30/11/06) can be modified without any increased risk to the environment or any modification to the intent of the works.

If you would like any further information on this matter, please do not hesitate to contact me.

Yours faithfully
WBM Pty Ltd

Dr Philip Haines
Project Manager, Hexham Swamp Rehabilitation Project Environmental Assessment Team

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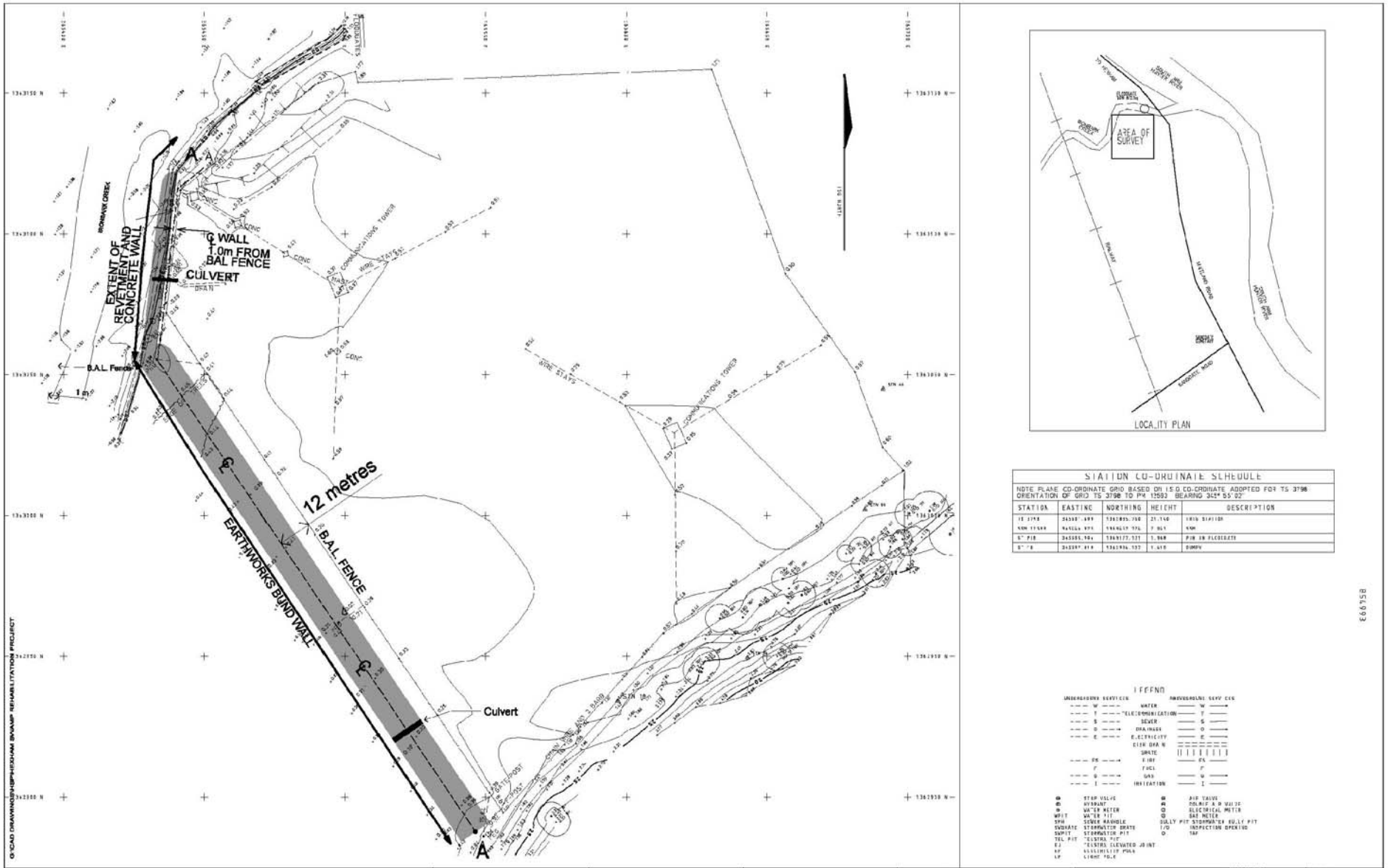

NOTE:
WORK IN FIGURED DIMENSIONS IN PREFERENCE TO SCALE.
CHECK DIMENSIONS AND LEVELS ON SITE PRIOR TO ORDERING OF MATERIAL & ON THE COMPLETION OF WORKSHOP DRAWINGS.
IF IN DOUBT ASK, REPORT ALL ERRORS AND OMISSIONS.
DO NOT SCALE OFF DRAWING.

LEGEND

TRUE NORTH

AMENDMENT

NO.	DATE	COMMENT

STRUCTURAL — NSW DEPARTMENT OF COMMERCE — T 4908 4000 F 4908 4004
ARCHITECTURAL — NSW DEPARTMENT OF COMMERCE — T 4908 4000 F 4908 4004
ELECTRICAL — NSW DEPARTMENT OF COMMERCE — T 4908 4000 F 4908 4004
PROJECT MANAGEMENT — NSW DEPARTMENT OF COMMERCE — T 4908 4000 F 4908 4004
MECHANICAL — NSW DEPARTMENT OF COMMERCE — T 4908 4000 F 4908 4004
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NSW Department of Commerce
MICHAEL GOUTTE-TROTTER

Hunter - Central Rivers CMA CATCHMENT MANAGEMENT AUTHORITY

Hexham Swamp Rehabilitation Project
Broadcast Australia Limited Bund

Plan & Survey

PLAN RM NO: MM06-28
SHEET NO IN SET: 11 OF 20
SCALES: 1:
PROJECT NO: .
DESIGNED: R LANE
DATE: SEPT 2006
DRAFTED: J BAGGS
VERIFIED:
SHEET NO: A11
REVISION: 1

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