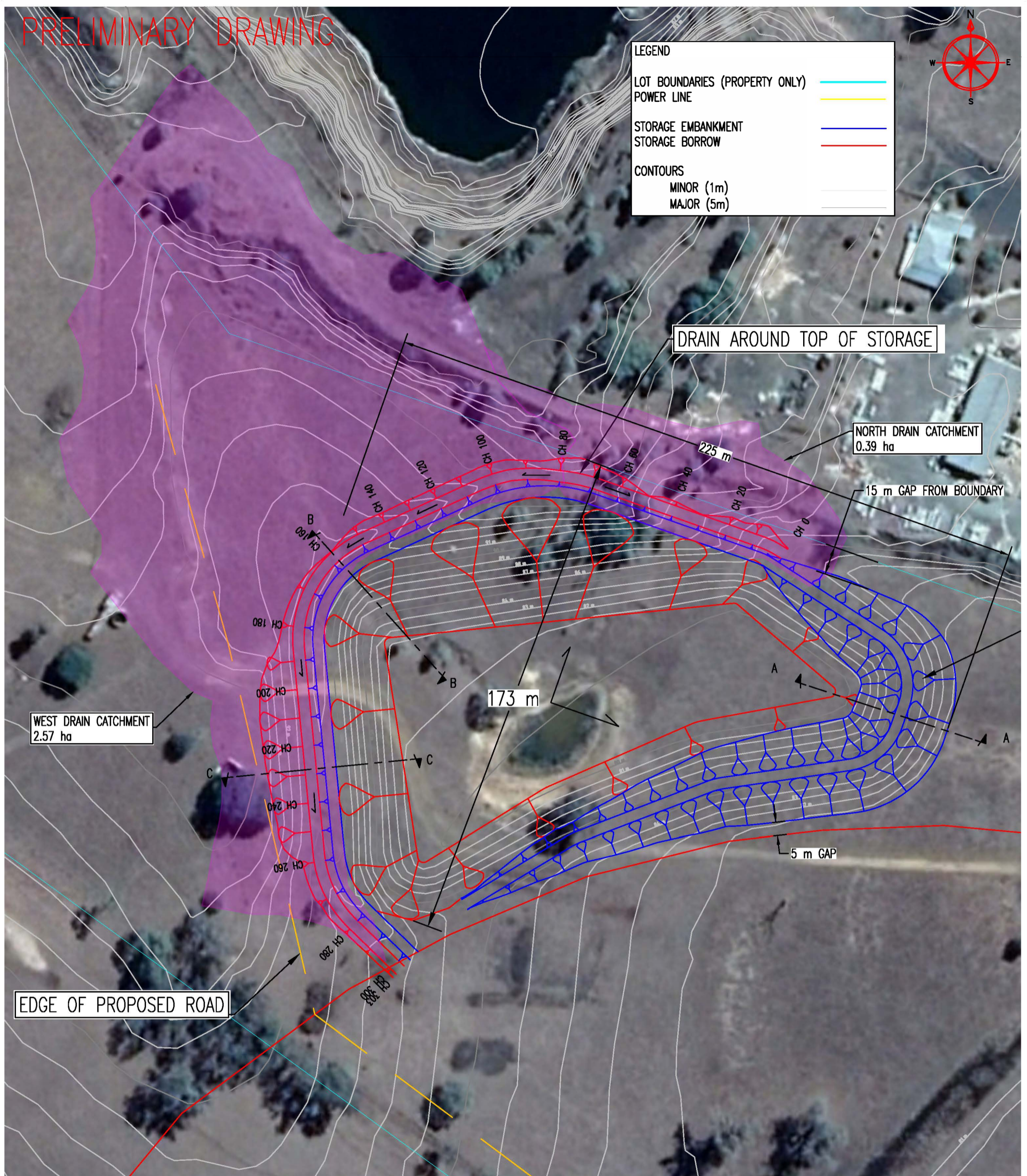


## **B.3 Design of Water Storage Dam**


# PRELIMINARY DRAWING

LEGEND	
LOT BOUNDARIES (PROPERTY ONLY)	
POWER LINE	
STORAGE EMBANKMENT	
STORAGE BORROW	
CONTOURS	
MINOR (1m)	
MAJOR (5m)	

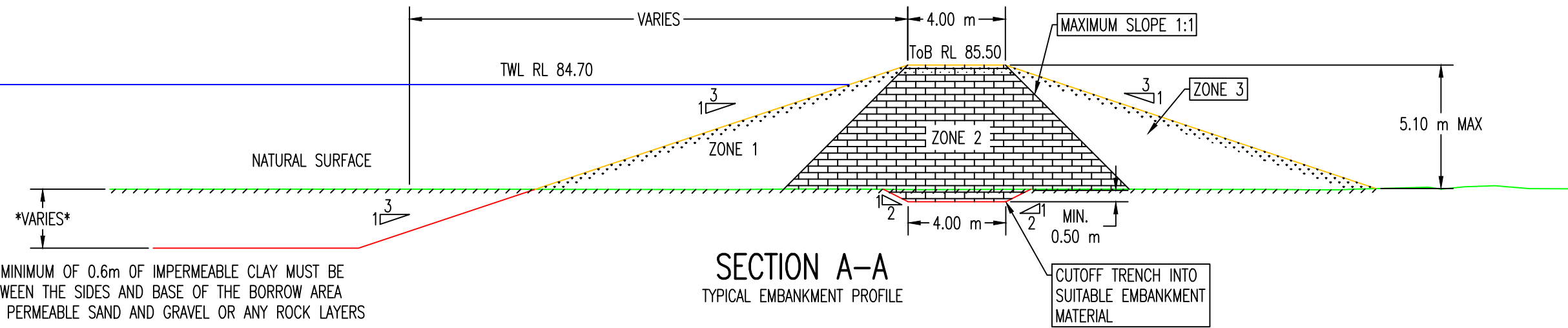


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No.	REVISION	DATE	BY
F	ISSUED AS APPROVED	1/09/23	AJM
E	DRAIN DETAILS ADDED	17/05/23	AJM
D	STORAGE LAYOUT MODIFIED	8/05/23	AJM
C	STORAGE LAYOUT MODIFIED	7/11/22	AJM
B	STORAGE LAYOUT MODIFIED	7/11/22	AJM

 <b>Tahlee Consulting Services</b> ABN 23 829 235 819 CONSULTING ENGINEERS 19A ABBOTT St GUNNEDAH NSW 2380 Tel: 02 6742 5275	SURVEYED BY: LIDAR 2012 DATUM: AHD	© COPYRIGHT 2020 TAHLEE CONSULTING SERVICES GUNNEDAH	PROJECT KALFRESH PTY LTD KINCORA	TITLE KALBAR PROPOSED STORAGE 3.2m STORAGE LAYOUT SHEET 1 OF 4
	DRAWN AJM	CHECKED	APPROVED	SCALE 1:1,250 (A3 SHEET)

# PRELIMINARY DRAWING



STORAGE EARTHWORKS	
STORAGE EMBANKMENT	13,680m <sup>3</sup>
CUT OFF TRENCH	570m <sup>3</sup>
TOPSOIL STRIPPING	880m <sup>3</sup>
<b>TOTAL</b>	<b>15,160m<sup>3</sup></b>
BORROW EARTHWORKS (2.5m)	83,600m <sup>3</sup>
CUT OFF TRENCH VOLUME CALCULATED AT 500mm DEEP	

STORAGE DETAILS	
TOP BANK LEVEL	RL 85.50
TOP WATER LEVEL (TWL)	RL 84.70
BORROW MIN LEVEL	RL 78.00
EMBANKMENT FOOTPRINT	2.5ha
CAPACITY AT TWL	50ML
WATER SURFACE AREA AT TWL	1.4ha

NOTE. STORAGE VOLUME IS BASE ON THE REMOVAL OF THE DESIGNED STORAGE BORROW AS WELL AS EMBANKMENT CONSTRUCTION

## CONSTRUCTION SPECIFICATION

### Foundation Preparation

The area to be covered by the embankment shall be cleared of all trees, stumps, roots dead timber and rubbish. Particular care shall be taken with any stump holes that they are backfilled with sound, compacted moist fill. All grass growth and topsoil shall be stripped from the embankment area to a depth of at least 150mm. All water shall be drained or pumped away.

The cutoff trench will be excavated as shown to a minimum depth of 500mm. The bottom of the trench should have a clean uniform and moist surface before backfilling commences. The bottom of the trench and the foundation area shall be traversed with a sheepsfoot roller before backfilling commences. Ripping of the area under the embankment is not recommended.

### Embankment construction

Zone 2 is the core of the storage embankment. This zone shall be constructed with select material as close as possible to optimum moisture content and compacted using a sheepsfoot roller to a minimum of 98% of maximum dry density. It is expected that it will require 6 to 8 passes of a tamping roller.

Zones 1 and 3 should be compacted a minimum of three passes of a tamping roller and construction traffic at all practical opportunities.

The embankment shall be built in successive horizontal layers, with each successive layer being placed at the specified moisture content and compacted before the next layer is added. Each layer should be spread evenly and no thicker than 200mm. The embankment must be free of lenses, pockets, streaks or layers of material that differ substantially from those surrounding.

### Topsoil


A layer of topsoil 300mm thick shall be placed over the entire finished embankment to assist in protection of the moist compacted core. This topsoil material can be won from under the embankment and the borrow area. To avoid double handling of material this layer should be added as the embankment is constructed.

### Borrow Area

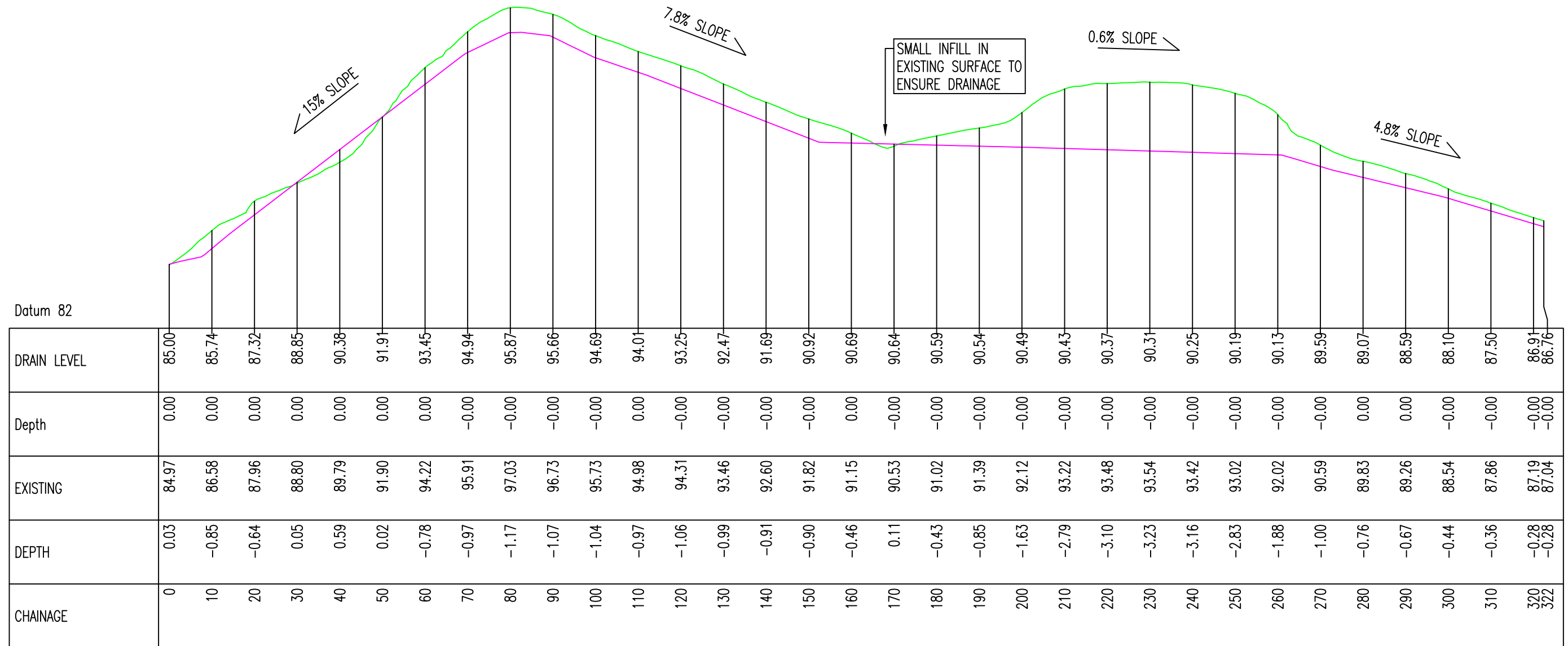
Any unsuitable material uncovered in the borrow area shall be covered with a minimum of 500mm of moist, compacted select fill. The borrow area shall be maintained during construction so that any water will drain to a point where it can be pumped away with relative ease. The borrow area upon completion will drain to the outlet with a minimum slope of 1:3,000.

### Pipeline

The area of the embankment where the pump station and pipeline are to be installed should be left to last. Once the pipeline has been installed the embankment can be constructed over it. Heavy construction traffic should not traverse the pipeline until a minimum OF 1000mm of compacted fill has been placed over pipe.


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E	DRAIN DETAILS ADDED	17/05/23	AJM						
D	STORAGE LAYOUT MODIFIED	8/05/23	AJM						
C	STORAGE LAYOUT MODIFIED	7/11/22	AJM						
B	STORAGE LAYOUT MODIFIED	7/11/22	AJM	DRAWN AJM	CHECKED	APPROVED	SCALE 1:200 (A3 SHEET)	DRAWING NO. 0542_2.2	AMDT. F
No.	REVISION	DATE	BY						

# PRELIMINARY DRAWING

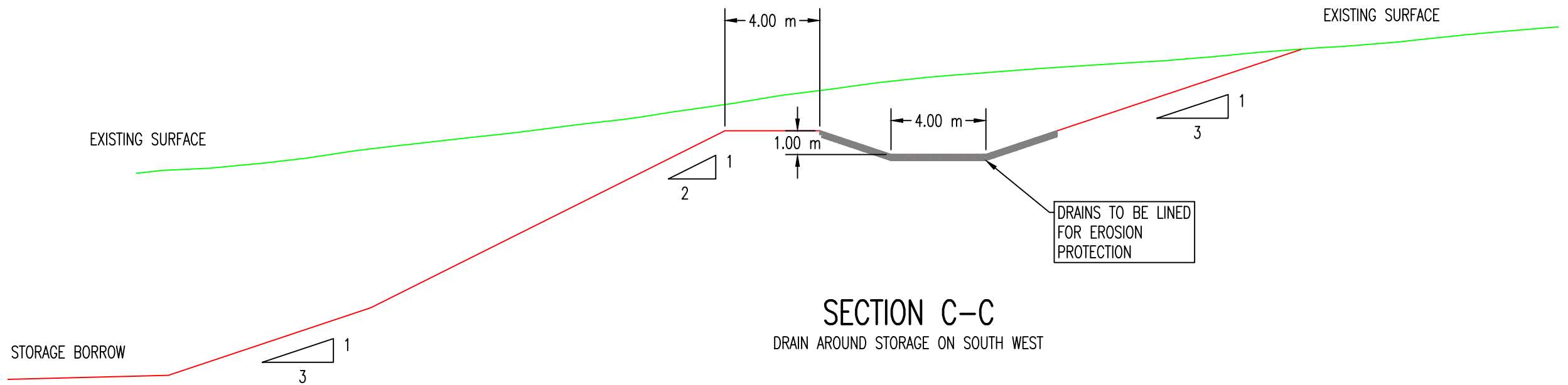
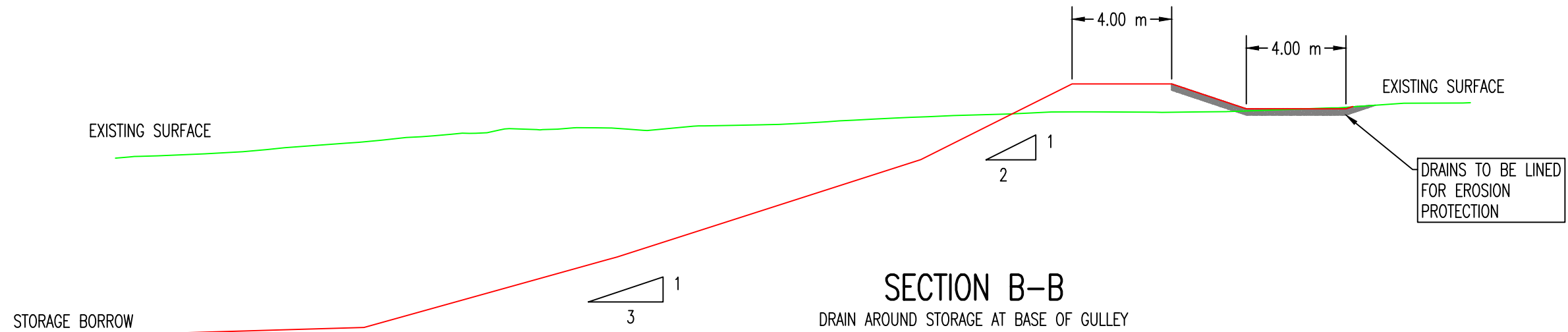



## STORAGE DRAIN LONG SECTION

SCALE 1:1,000 HORIZ 1:200 VERT (A3 SHEET)

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E	DRAIN DETAILS ADDED	17/05/23	AJM						
D	STORAGE LAYOUT MODIFIED	8/05/23	AJM						
C	STORAGE LAYOUT MODIFIED	7/11/22	AJM						
B	STORAGE LAYOUT MODIFIED	7/11/22	AJM	DRAWN AJM	CHECKED	APPROVED	SCALE AS SHOWN (A3 SHEET)	DRAWING NO. 0542_2.3	AMDT. F
No.	REVISION	DATE	BY						

# PRELIMINARY DRAWING



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E	DRAIN DETAILS ADDED	17/05/23	AJM	DATUM:					SCALE	KINCORA		DRAWING NO.	0542_2.4	
D	STORAGE LAYOUT MODIFIED	8/05/23	AJM	AHD				DRAWN		CHECKED	APPROVED		PROPOSED STORAGE	
C	STORAGE LAYOUT MODIFIED	7/11/22	AJM	AHD					AJM					DRAIN LONG SECTION
B	STORAGE LAYOUT MODIFIED	7/11/22	AJM	AHD					SHEET 3 OF 4					
No.	REVISION	DATE	BY						1:200 (A3 SHEET)					