

FITZROY BASIN ASSOCIATION FITZROY RIVER - BANK STABILISATION DESIGN



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GENERAL NOTES:	
1.	LOCATION AND SITE ACCESS: FITZROY RIVER, BINDAREE.
2.	ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THESE DRAWINGS AND RELEVANT AUSTRALIAN STANDARDS.
3.	ALL LEVELS PROVIDED ARE IN METRES TO AUSTRALIAN HEIGHT DATUM.
4.	ALL CO-ORDINATES PROVIDED ARE IN METRES TO DATUM GDA2020 AND PROJECTION AMG ZONE 56.
5.	ALL DESIGN OFFSETS AND CHAINAGES PROVIDED ARE IN METRES UNLESS NOTED OTHERWISE.
6.	THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORKS.
7.	IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE LOCATION AND DEPTH OF ALL OBSTRUCTIONS AND UNDERGROUND SERVICES IN THE VICINITY OF THE PROPOSED WORKS PRIOR TO THE COMMENCEMENT OF ANY WORKS.
8.	STRUCTURES MUST BE SURVEY CONTROLLED TO ENSURE THAT DESIGN ELEVATIONS AND GRADES ARE OBTAINED.
9.	ALL PREPARED SURFACES SHALL BE APPROVED BY THE SUPERINTENDENT PRIOR TO THE PLACEMENT OF LOGS, ROCK BEACHING, TOPSOIL OR OTHER COVERING MATERIALS.
10.	EXTENT OF WORKS MAY BE MODIFIED SLIGHTLY TO AVOID UNFORSEEN OBSTACLES IF REQUIRED, WHERE APPROVED BY SUPERINTENDENT.
11.	ALL STRUCTURES SHALL BE MAINTAINED IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE NO PART OF ANY STRUCTURE IS OVERSTRESSED DURING CONSTRUCTION PROCEDURES.
12.	ALL REASONABLE EFFORTS SHALL BE MADE TO PRESERVE AND PROTECT EXISTING VEGETATION.
13.	AN APPROPRIATE SAFE WORK METHOD STATEMENT FOR WORKING NEAR WATER IS REQUIRED.
14.	ALL WORKS SHALL BE IN ACCORDANCE WITH THE DETAILED DESIGN REPORT (Detailed design report for Fitzroy River) AND SHALL NOT COMMENCE WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
15.	WORKS SHOULD BE UNDERTAKEN IN THE MONTHS BETWEEN JULY - OCTOBER WHEN RAINFALL/FLOOD RISKS ARE LOWEST.
16.	EROSION AND SEDIMENT CONTROL AT THE SITE IS THE RESPONSIBILITY OF THE CONTRACTOR AND MAY REQUIRE THE DIRECTION OF OVERLAND FLOW AWAY FROM THE WORKS AREA.

SAFETY IN CONSTRUCTION

CONSTRUCTION ACTIVITY CAN BE HAZARDOUS. POTENTIAL SAFETY HAZARDS CONSIDERED BY THE DESIGNERS TO HAVE A HIGHER RISK THAN NORMAL CONSTRUCTION ACTIVITY ARE IDENTIFIED WITH APPROPRIATE NOTES ON THESE DRAWINGS. IT SHOULD BE NOTED THAT DESIGNERS HAVE A LOWER UNDERSTANDING OF THE RISKS INVOLVED IN CONSTRUCTION COMPARED WITH THAT OF A COMPETENT CONTRACTOR. IT IS THEREFORE ESSENTIAL THAT AN ADEQUATE SAFETY PLAN FOR THE WORKS IS PREPARED BY THE CONTRACTOR. SAFETY PLANS ARE TO BE PREPARED IN COMPLIANCE WITH THE STATUTORY REQUIREMENTS. THE DESIGNERS MAY NOT BE AWARE OF ALL SAFETY RISKS AND HAZARDS INVOLVED IN THIS PROJECT AND THE ABSENCE OF COMMENT DOES NOT IMPLY THAT THERE ARE ONLY LOW LEVEL RISKS OF HAZARDS INVOLVED IN THE PROJECT. APPROPRIATE WORK METHOD STATEMENTS ARE TO BE PREPARED FOR ANY HIGH RISK ACTIVITY BY THE CONTRACTOR. THE DESIGNERS ARE AVAILABLE TO BE CONSULTED WHEN REQUIRED CONCERNING THEIR AREA OF CONTROL WITH REGARD TO SAFETY PLANS.

REV	DESCRIPTION	DATE	INTL
A	ISSUED FOR CONSTRUCTION	13/03/2024	JT
REVISIONS			



	NAME	DATE
DESIGNED:	J. TEAGUE	3/01/2024
DRAWN:	J. TEAGUE	3/01/2024
CHECKED:	M. IVEZICH	3/01/2024
APPROVED:	M. IVEZICH	3/01/2024

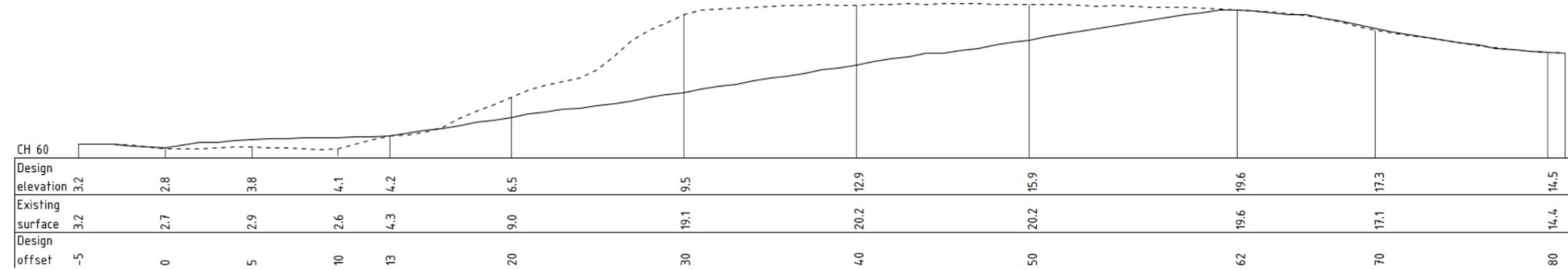
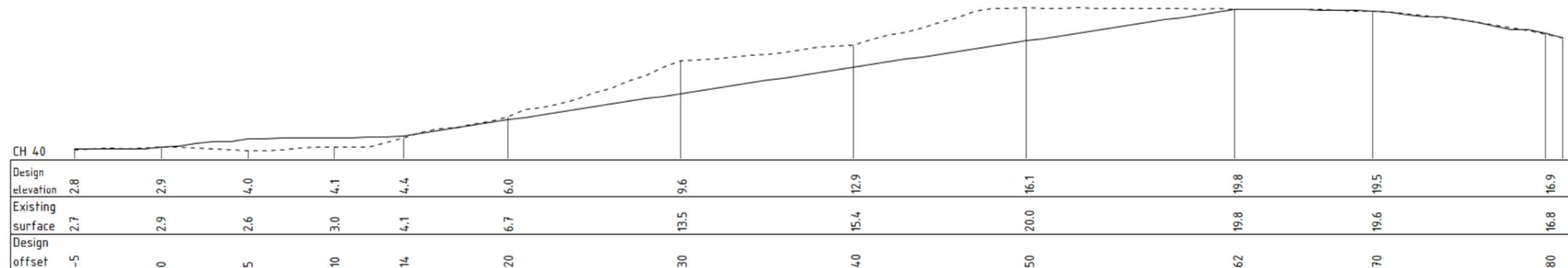
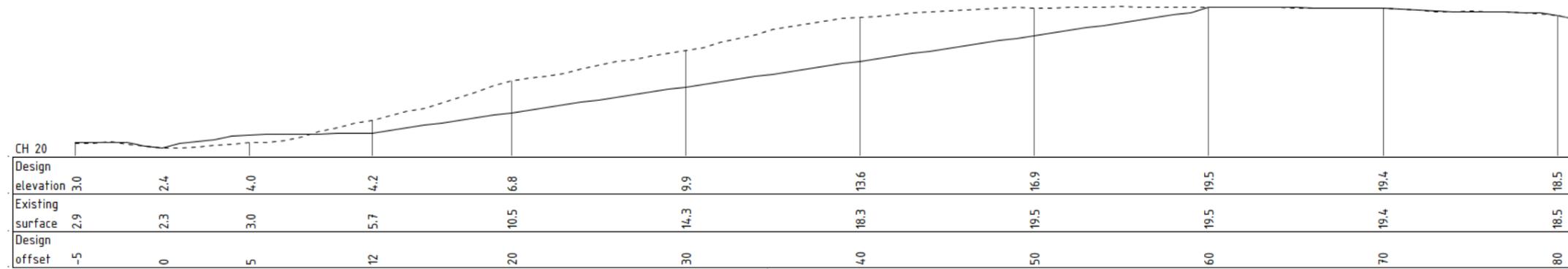
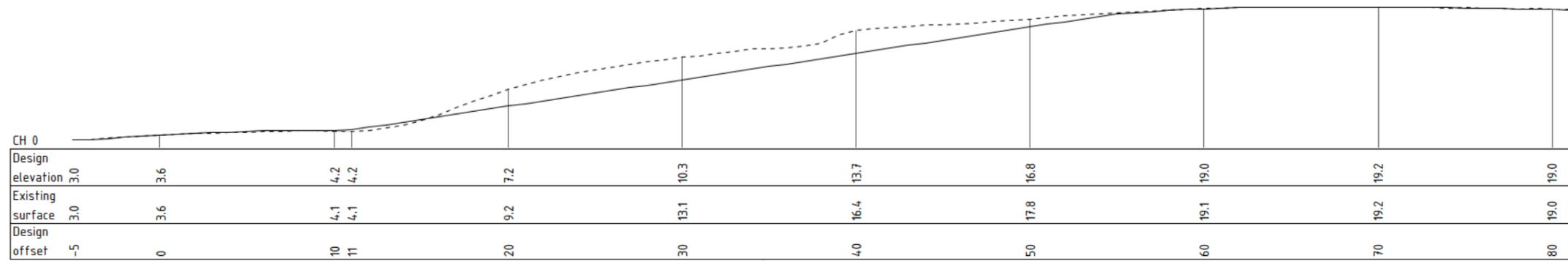
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FITZROY BASIN ASSOCIATION
FITZROY RIVER - BINDAREE, SAFETY IN
CONSTRUCTION
GENERAL NOTES AND SHEET INDEX

Sheet No. 0423110_1 Revision No. B
 File Name: Fitzroy River

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FITZROY BASIN ASSOCIATION
FITZROY RIVER – BINDAREE,
TYPICAL SECTIONS

Revision No. B

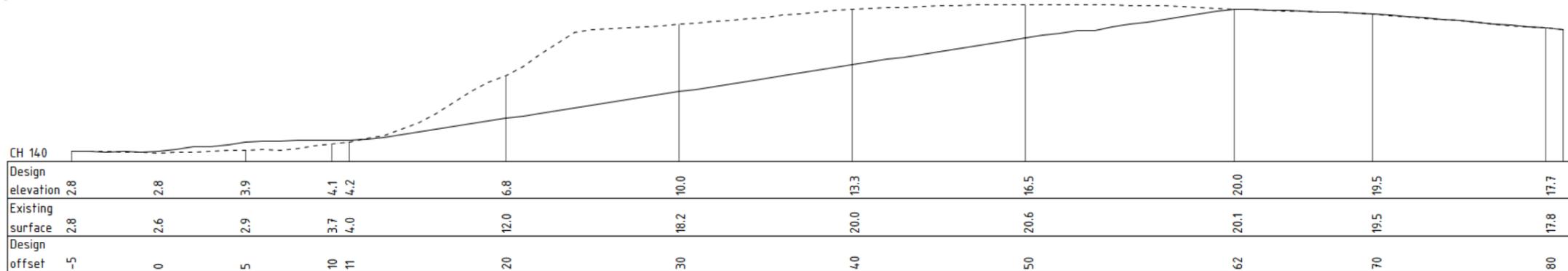
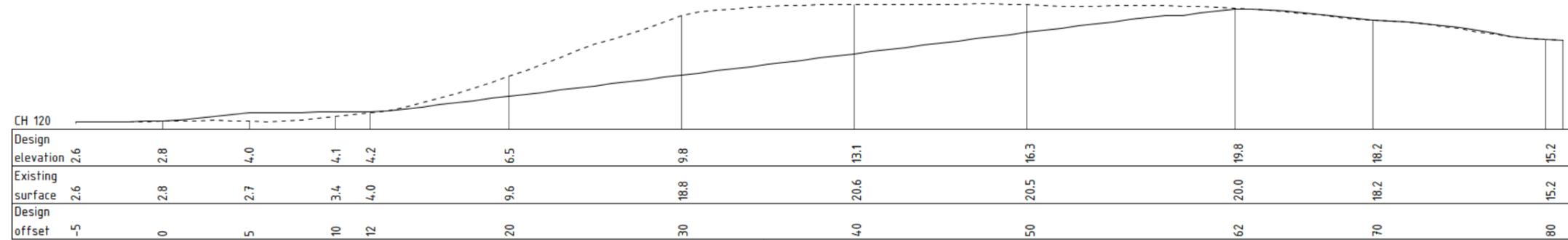
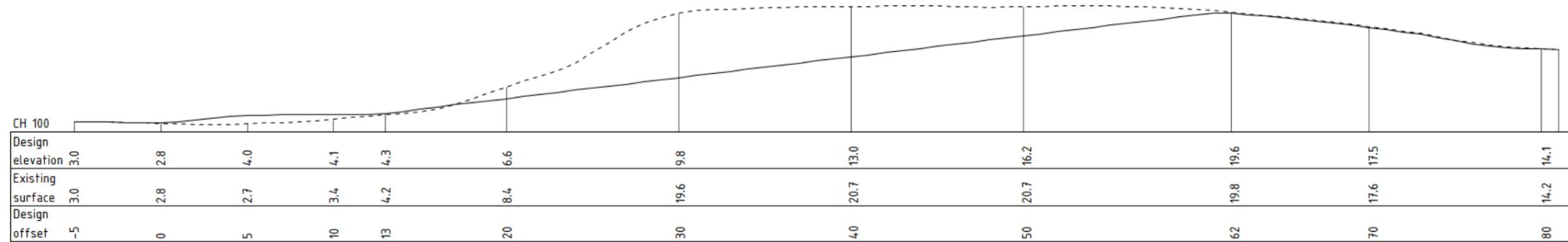
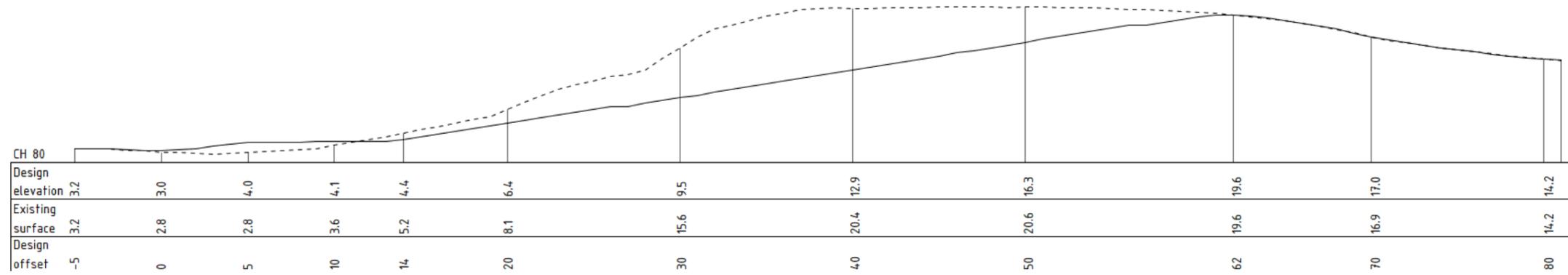
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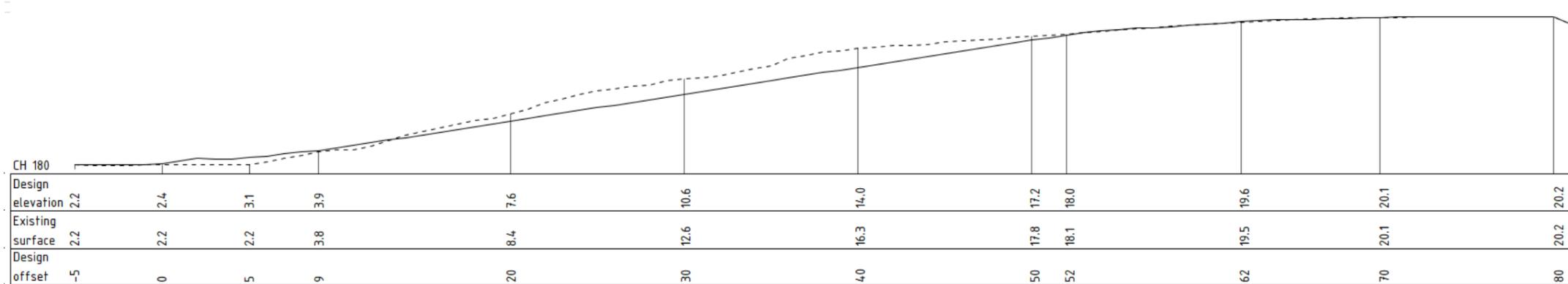
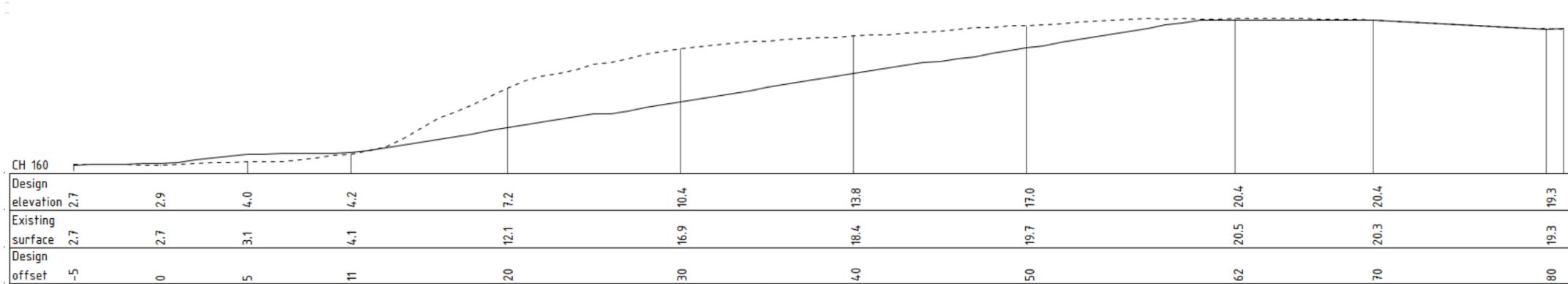
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FITZROY BASIN ASSOCIATION
 FITZROY RIVER – BINDAREE,
 TYPICAL SECTIONS

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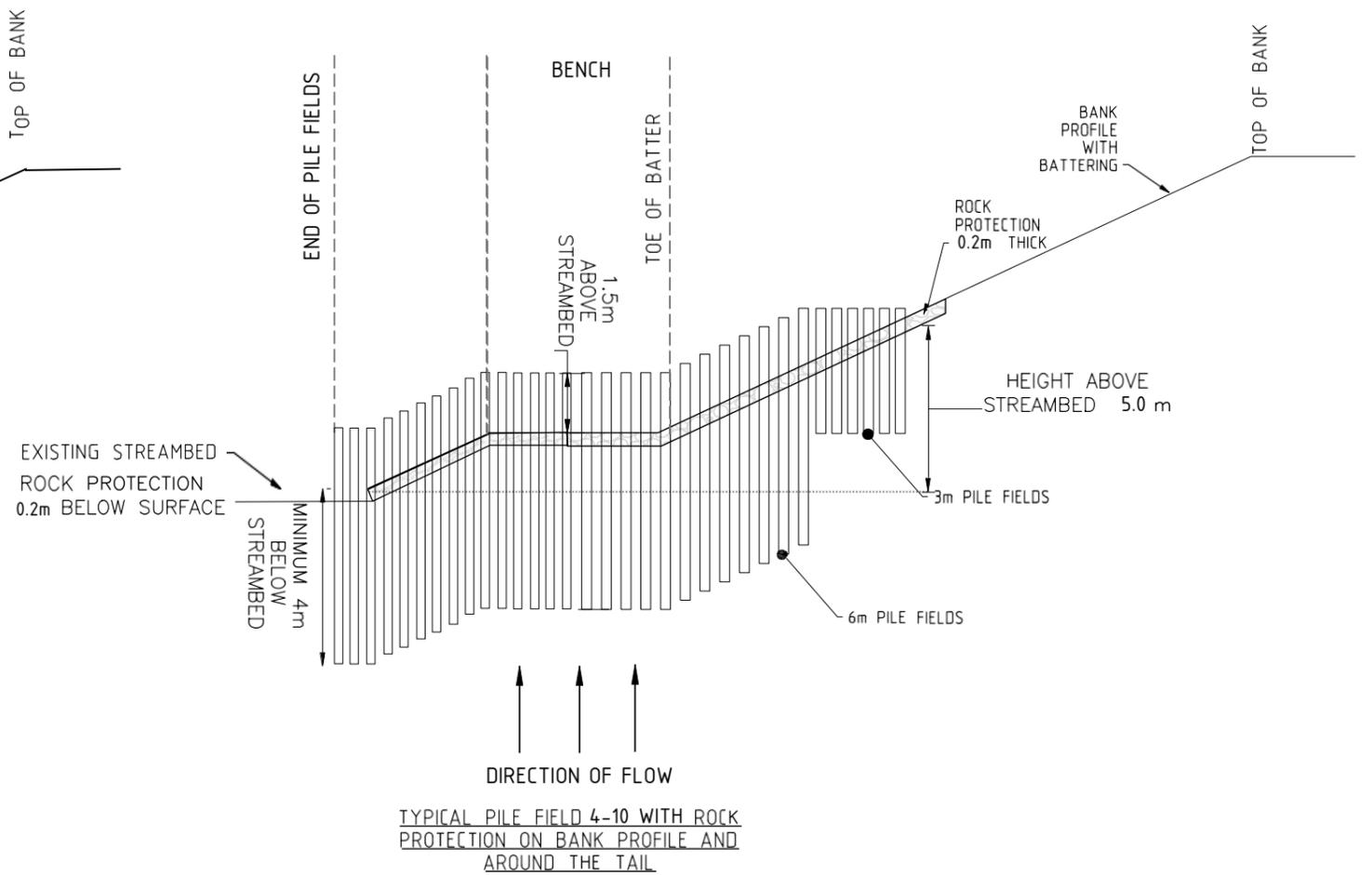
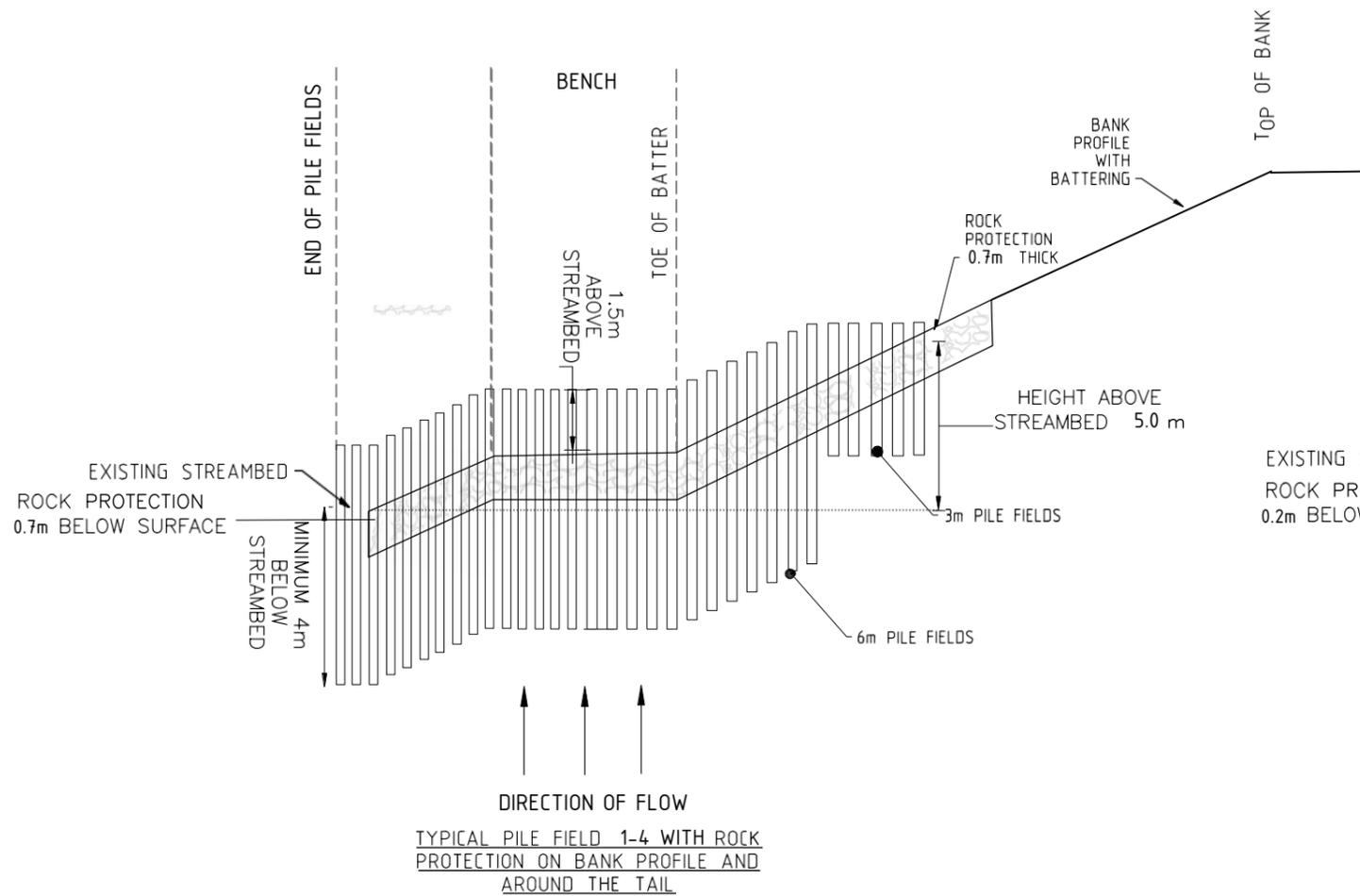
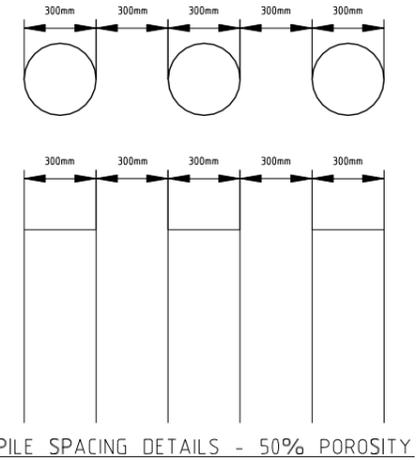
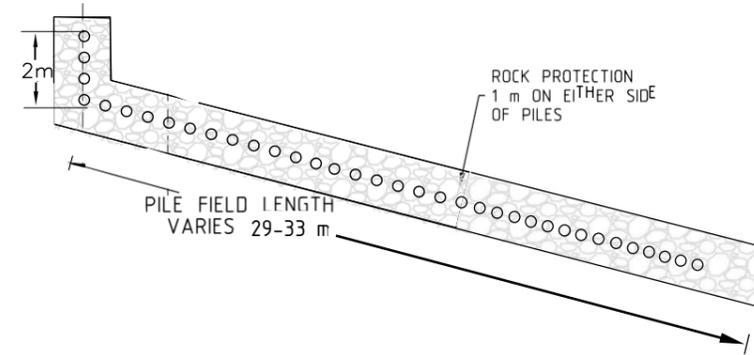
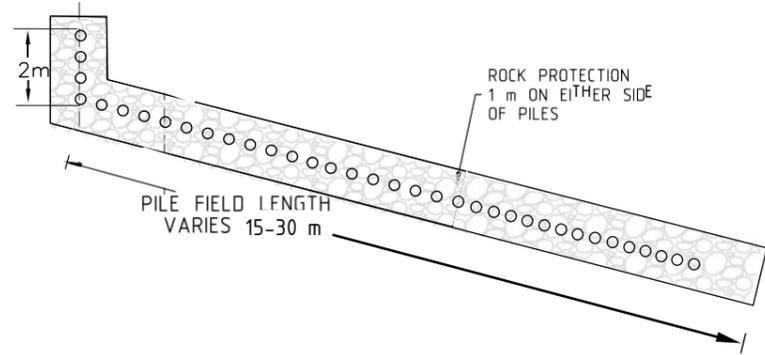
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FITZROY BASIN ASSOCIATION
 FITZROY RIVER – BINDAREE,
 TYPICAL SECTIONS

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FITZROY BASIN ASSOCIATION
FITZROY RIVER - BINDAREE,
TYPICAL TOE PROTECTION DETAIL

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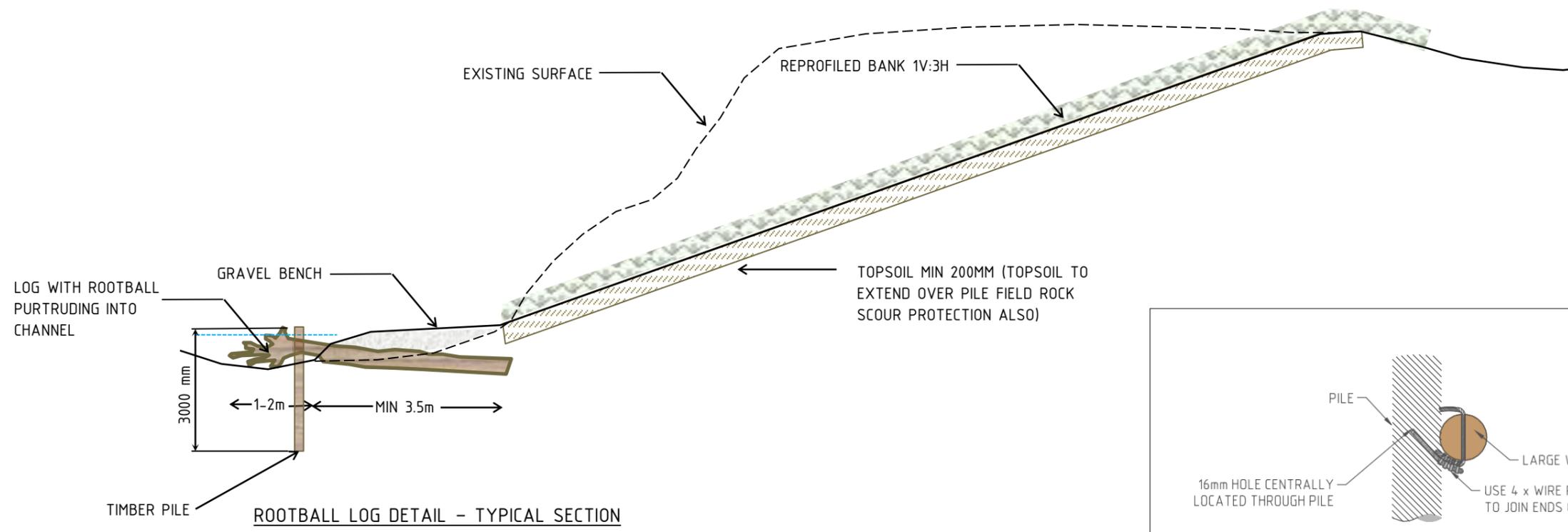
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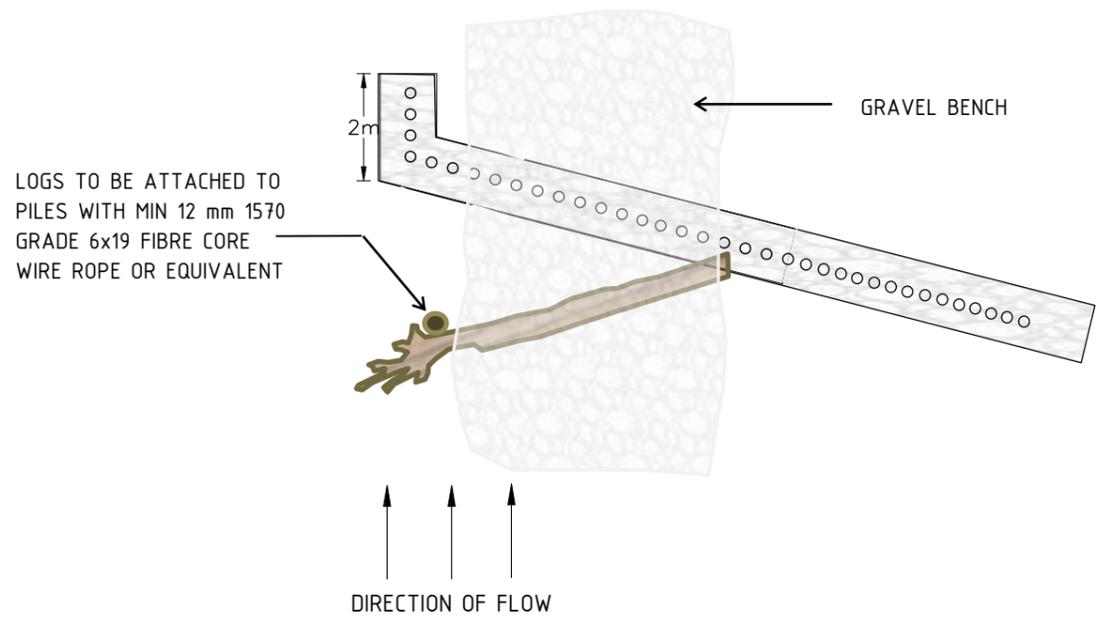
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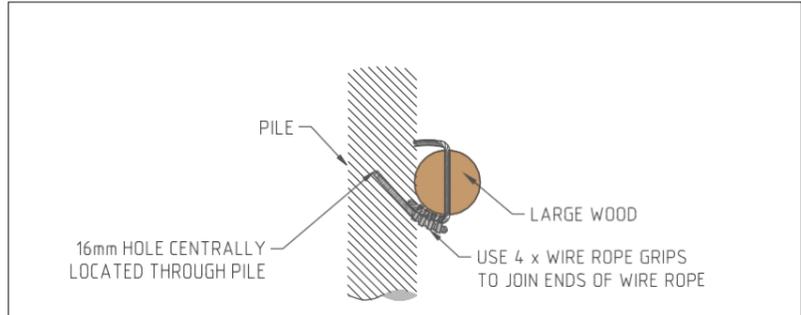
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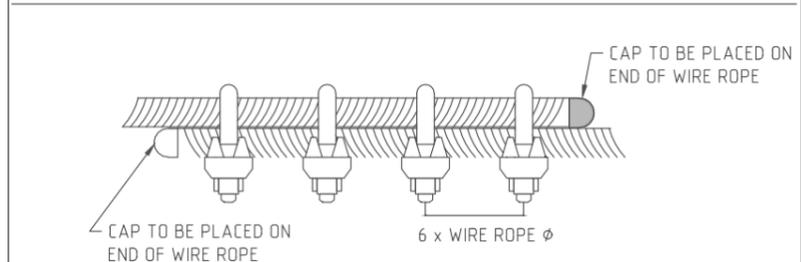
ROOTBALL LOG DETAIL - TYPICAL SECTION



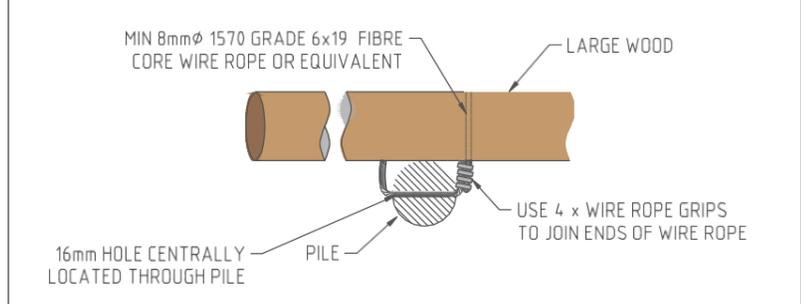
ROOTBALL LOG DETAIL - PLAN VIEW



CONNECTIONS DETAIL - SECTION VIEW



WIRE ROPE GRIPS - CONFIGURATION



CONNECTIONS DETAIL - PLAN VIEW

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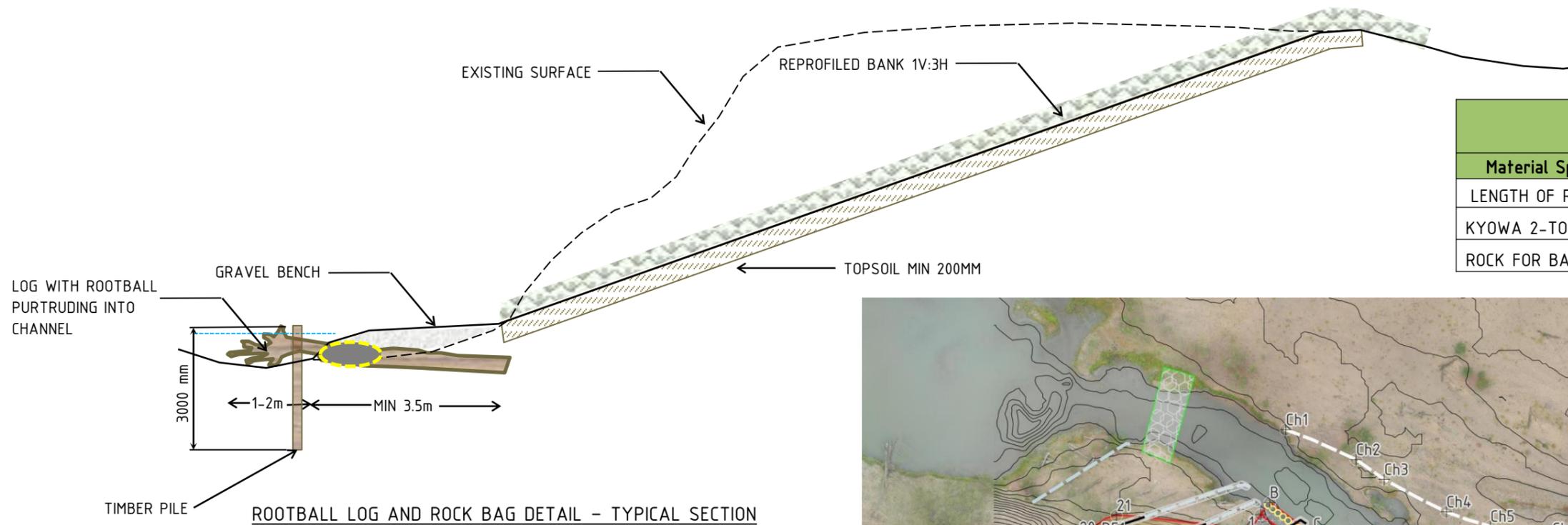


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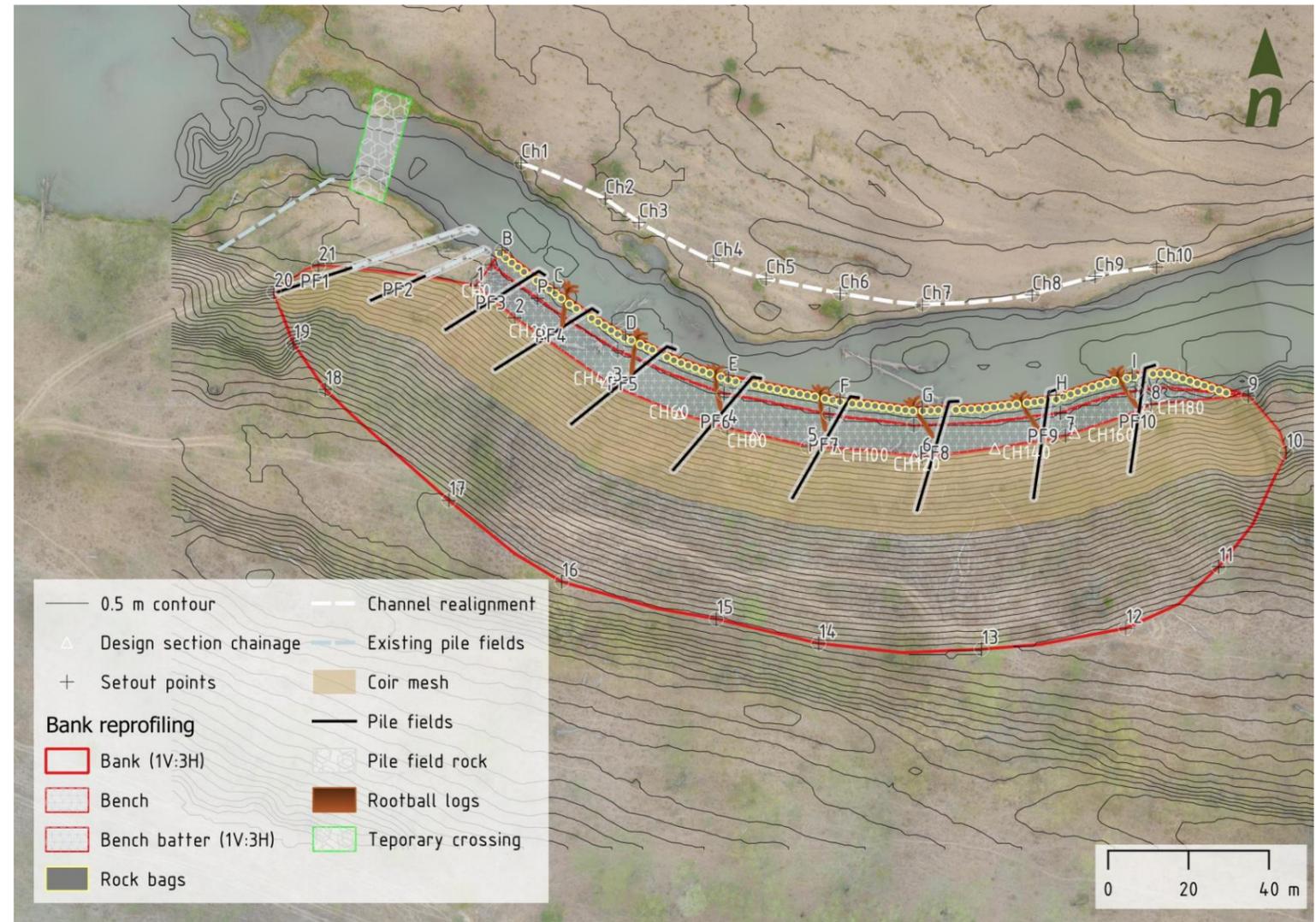
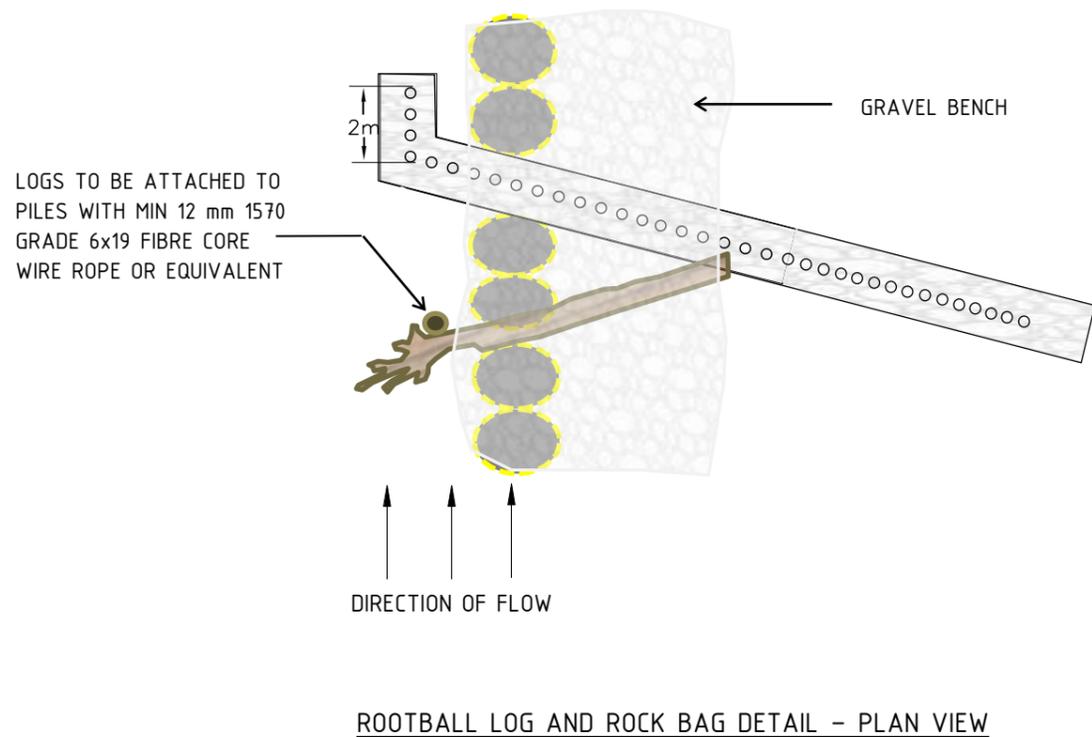
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FITZROY BASIN ASSOCIATION
 FITZROY RIVER - BINDAREE,
 TYPICAL LOG PROTECTION DETAIL
 Revision No. B

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ROCK BAG SPECIFICATION TABLE		
Material Specifications	Units	Quantity
LENGTH OF ROCK BAG TOE	m	193
KYOWA 2-TONNE ROCK BAG	ITEM	90
ROCK FOR BAGS (50-150mm)	TONNES	180



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FITZROY BASIN ASSOCIATION
 FITZROY RIVER - BINDAREE,
 OPTIONAL ROCK BAG BENCH CONFIGURATION

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Pile field Number	Setout point (bank side)		Setout point (channel side)		Pile field length (m)	Pile field tail length (m)	Pile diameter (mm)	Clear space between piles (mm)	Number of piles (6m long)	Number of piles (3m long)	Mass of rock beaching (tonnes)	Rock size (mm)
	Easting	Northing	Easting	Northing								
PF-1	217409.6	7441447.8	217427.7	7441453.7	17.9		300	300	27	5	45	D ₅₀ 350
PF-2	217432.8	7441445.7	217446.0	7441451.6	13.2		300	300	19	5	33	D ₅₀ 350
PF-3	217451.3	7441438.4	217474.5	7441452.9	28.4	2	300	300	50	5	77	D ₅₀ 350
PF-4	217463.6	7441428.5	217487.7	7441443.6	29.6	2	300	300	52	5	80	D ₅₀ 350
PF-5	217482.6	7441414.9	217506.4	7441434.1	32.3	2	300	300	57	5	25	100-200
PF-6	217508.0	7441403.5	217527.6	7441426.5	31.9	2	300	300	56	5	24	100-200
PF-7	217537.6	7441396.5	217552.0	7441421.7	30.6	2	300	300	54	5	23	100-200
PF-8	217568.6	7441393.5	217576.6	7441420.4	29.8	2	300	300	52	5	23	100-200
PF-9	217597.6	7441396.5	217601.5	7441422.9	28.5	2	300	300	50	5	22	100-200
PF-10	217621.7	7441403.0	217625.4	7441428.7	27.9	2	300	300	49	5	22	100-200
SUB-TOTAL									465	50		
TOTAL									515		374	

Setout point	Bank reprofiling	
	Easting	Northing
1	217458.95	7441449.26
2	217468.47	7441441.29
3	217492.81	7441424.25
4	217521.38	7441413.75
5	217541.38	7441409.25
6	217569.88	7441406.75
7	217605.55	7441411.94
8	217626.88	7441419.75
9	217651.05	7441421.86
10	217660.47	7441407.73
11	217643.69	7441379.37
12	217620.53	7441364.03
13	217584.64	7441358.82
14	217544.11	7441360.26
15	217518.64	7441366.34
16	217480.14	7441375.60
17	217452.07	7441395.87
18	217421.34	7441423.45
19	217413.37	7441434.88
20	217408.53	7441447.69
21	217419.61	7441454.26

Setout point	Gravel bench	
	Easting	Northing
A	217462.61	7441454.54
B	217465.33	7441458.12
C	217478.21	7441448.80
D	217496.11	7441437.14
E	217521.70	7441426.85
F	217549.44	7441421.40
G	217569.86	7441419.08
H	217603.24	7441422.04
I	217622.15	7441427.48
J	217622.96	7441423.05
K	217604.29	7441417.64
L	217567.82	7441414.50
M	217546.79	7441417.33
N	217520.57	7441422.49
O	217494.10	7441433.09
P	217474.11	7441446.17

BANK STABILISATION SPECIFICATION TABLE		
Material Specifications	Units	Quantity
LENGTH OF BATTER	m	307
BATTER CUT	m ³	40,375
BATTER FILL	m ³	135
GRAVEL BENCH CUT	m ³	58
GRAVEL BENCH FILL	m ³	1,472
EROSION MATTING	m ²	4,800
TOPSOIL REQUIREMENT	m ³	2,361
ROOTBALL LOGS	Each	7
ROOTBALL LOG PILES	Each	7

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SCALE



FITZROY BASIN ASSOCIATION
 FITZROY RIVER – BINDAREE,
 PILE AND BATTER SPECIFICATIONS SETOUT
 POINTS

Client:

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EXCAVATION

- EXCAVATION SHALL BE UNDERTAKEN IN A MANNER THAT MINIMISES DISTURBANCE TO MATERIAL OUTSIDE THE LIMITS OF THE WORKS.
- EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE SUPERINTENDENT, BUT THE EXCESS MATERIAL MUST NOT BE SOLD TO ANY OTHER INDIVIDUAL OR PARTY AND THEN REMOVED FROM THE PROPERTY.
- BANKS TO BE REPROFILED TO 1V:3H
- EARTHWORKS SHOULD GRADUALLY TRANSITION OVER 10 m TO MATCH THE ADJACENT BANK AT EACH END OF THE WORKS
- TOP SOIL SHOULD BE STOCK PILED AND SPREAD OVER FINISHED BANK SLOPE

ROCK PROTECTION MATERIALS

- ROCK SHOULD NOT BE ADVERSELY AFFECTED BY REPEATED WETTING AND DRYING AND SHALL HAVE A CRUSHING STRENGTH OF NOT LESS THAN 25 MPa.
- BEACHING MATERIAL TO COMPRISE WELL-GRADED ANGULAR ROCK, FREE OF CRACKS AND FOREIGN MATERIAL.
- ROCK USED FOR PILE FIELD PROTECTION MUST MEET THE FOLLOWING SIZE SPECIFICATION:

ROCK SIZE SPECIFICATIONS FOR PILE FIELD 1-4

EQUIVALENT SPHERICAL DIAMETER	PERCENT (BY WEIGHT) OF SMALLER SIZE
525-700 mm (1.5-2.0 D50)	100%
350 mm (D50)	50%
100-140 mm (0.3-0.4 D50)	10-20%
35 mm (0.1 D50)	<5%

ROCK SIZE SPECIFICATIONS FOR PILE FIELD 5-10

EQUIVALENT SPHERICAL DIAMETER	PERCENT (BY WEIGHT) OF SMALLER SIZE
100-200 mm	100%

ROCK SUPPLY AND PLACEMENT FOR ROCK PROTECTION WORKS:

- SUPPLY AND PLACEMENT OF ROCK TO BE IN ACCORDANCE WITH THESE DRAWINGS AND ONSITE DIRECTION BY DESIGN ENGINEER OR SITE SUPERINTENDENT.
- ROCK PLACEMENT SHALL NOT COMMENCE UNTIL THE PREPARED SURFACE HAS BEEN APPROVED BY THE SUPERINTENDENT.
- ROCK SHALL BE CAREFULLY PLACED BY BUCKET FROM A LOADER OR EXCAVATOR FROM NO GREATER THAN 1.0 m ABOVE THE MATERIAL ONTO WHICH IT IS TO BE PLACED.
- ROCK SHALL BE WORKED INTO PLACE SO AS TO PRODUCE A BLANKET OF INTERLOCKING ROCK THAT HAS NO SIGNIFICANT VOIDS AND DOES NOT MOVE UNDER FOOT.
- GRADING SHALL PRODUCE A CONSISTENT MIX OF ROCK SIZES.

STREAM BANK LOG PROTECTION

- ALL LOGS TO BE AUSTRALIAN HARDWOOD
- LOGS TO BE PLACED ON GEOTEXTILE FILTER
- LOGS WITH ROOTBALLS TO BE SECURED IN PLACE WITH BOULDERS MINIMUM DIAMETER 800 mm

REHABILITATION OF DISTURBED AREAS

- REHABILITATION OF DISTURBED AREAS SHALL NOT BE UNDERTAKEN UNTIL THE PREPARED AREA HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN AND APPROVED BY THE SUPERINTENDENT.
- THE EXPOSED REPROFILED SLOPE AND ROCK PROTECTION SHALL BE COVERED WITH TOPSOIL AND REVEGETATED. REVEGETATION SHALL EXTEND A MINIMUM 15 m BEYOND THE TOP OF BANK.
- WHERE SLOPES ARE TOO STEEP FOR DIRECT PLANTING NATURAL REGENERATION IS PROPOSED.
- EROSION PROTECTION MATTING OR ALTERNATIVE SUITABLE GROUND COVER MAY BE USED ON REPROFILED BANK DURING THE VEGETATION ESTABLISHMENT PHASE, AT THE DISCRETION OF THE SUPERINTENDENT, TO REDUCE RISK TO THE WORKS.
- REVEGETATE THE WORKS SITE AND SURROUNDING AREA AS PER THE DETAILED REVEGETATION PLAN PROVIDED IN ATTACHEMENT B OF DETAILED DESIGN REPORT

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FITZROY BASIN ASSOCIATION
FITZROY RIVER – BINDAREE,
NOTES AND SPECIFICATIONS

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