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0423110_9	DETAIL OF LOGS AND BUNDS
0422170_10	DETAIL OF CHUTES AND ROCK
0422170_11	CONSTRUCTION NOTES AND ROCK SPECIFICATIONS

GENERAL NOTES:	
1.	LOCATION AND SITE ACCESS: KROOMBIT CREEK, EICHMANNS RD THANGOOL
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 MEMO (P423110_01_Kroombit Creek Detailed design report) 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.

REV	DESCRIPTION	APP'D	DATE
A	PRELIMINARY ISSUE	MI	01.02.24



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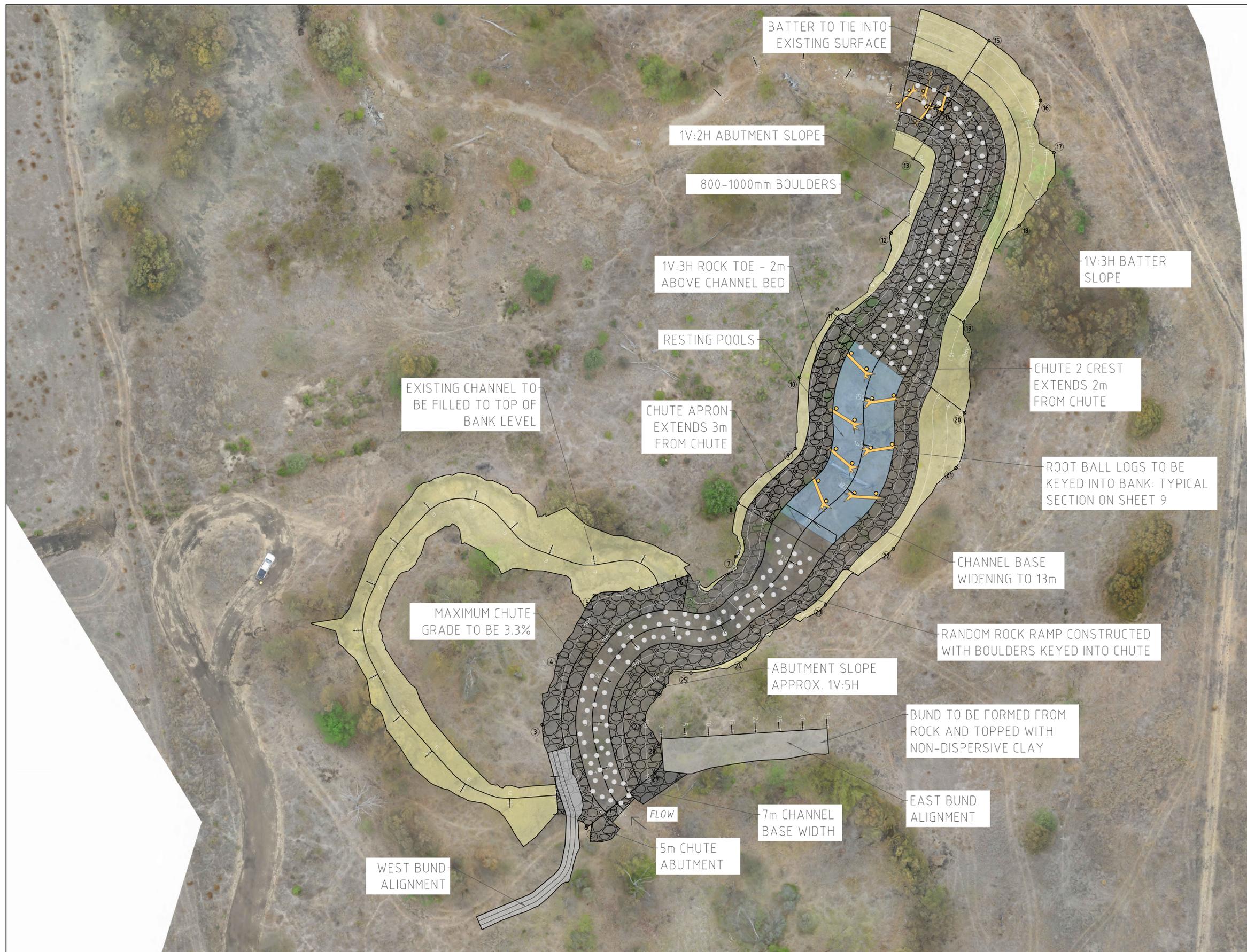
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DESIGNED: JB	DRAWN: AT	CHECKED: JT	APPROVED: MI	PROJECT No: 0423110
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**FITZROY BASIN ASSOCIATION  
 KROOMBIT CREEK TRIBUTARY DETAILED DESIGN**

LOCATION AND NOTES

REVISION: A	SHEET No.: 1 of 11	ORIGINAL SIZE: A1
DATUM: m AHD (GDA 2020 MGA z56)		



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DESIGNED:	DRAWN:	CHECKED:	APPROVED:	PROJECT No:
JB	AT	JT	MI	0423110

**KROOMBIT CREEK TRIBUTARY DETAILED DESIGN**  
**KROOMBIT ROCK CHUTE DESIGN**

**PLAN VIEW**

REVISION:	SHEET No.:	ORIGINAL SIZE:
A	2 of 11	A1
DATUM: m AHD (GDA 2020 MGA z56)		

CHUTE BOUNDARY SET OUT POINTS			
POINT	EASTING	NORTHING	LEVEL
1	255788.331	7295303.644	196.935
2	255781.779	7295298.358	198.009
3	255772.458	7295320.258	197.807
4	255775.890	7295335.100	197.470
5	255783.484	7295347.667	197.214
6	255803.445	7295351.948	196.897
7	255813.485	7295355.865	197.083
8	255813.960	7295367.239	197.162
9	255826.104	7295378.774	196.793
10	255826.991	7295393.852	196.911
11	255834.984	7295408.279	196.697
12	255846.386	7295424.410	196.365
13	255851.120	7295440.172	196.237
14	255857.342	7295449.870	192.896
15	255867.135	7295465.137	198.442
16	255878.092	7295452.484	198.385
17	255880.921	7295441.446	198.525
18	255873.623	7295425.973	197.369
19	255861.769	7295405.559	197.119
20	255862.031	7295386.334	199.216
21	255860.195	7295374.653	198.882
22	255846.895	7295357.500	197.454
23	255832.519	7295345.627	197.281
24	255815.500	7295334.193	197.545
25	255803.963	7295331.232	197.531
26	255798.361	7295328.355	197.553
27	255794.040	7295321.266	197.865
28	255797.271	7295316.142	198.587
29	255796.353	7295310.115	198.386

CHUTE CENTRELINE HORIZONTAL POINTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 5	32.122	255787.439	7295303.092	196.934		R = 15.000	10.872	4°31'43.14"
IP 6	41.196	255784.609	7295311.978	196.665		R = 30.000	2.236	4°16'14.61"
IP 7	45.170	255783.689	7295315.845	196.542		R = 17.000	0.823	2°46'22.23"
IP 8	48.167	255783.136	7295318.791	196.449		R = 15.000	1.844	7°02'35.96"
IP 9	51.112	255782.952	7295321.737	196.358		R = 15.000	3.065	11°42'23.17"
IP 10	53.711	255783.320	7295324.315	196.277		R = 15.000	1.152	4°23'55.34"
IP 11	58.775	255784.425	7295329.287	196.120		R = 15.000	5.309	20°16'50.23"
IP 12	64.013	255787.279	7295333.714	195.957		R = 15.000	1.844	7°02'40.33"
IP 13	67.701	255789.643	7295336.545	195.843		R = 13.000	0.293	1°17'34.70"
IP 14	67.847	255789.739	7295336.656	195.838				
IP 15	67.859	255789.747	7295336.665	195.838				
IP 16	74.747	255794.766	7295342.408	195.624		R = 12.900	13.777	61°11'23.11"
IP 17	88.427	255809.421	7295339.203	195.200		R = -11.000	11.466	59°43'17.81"
IP 18	96.506	255815.299	7295345.592	194.949		R = 10.000	3.671	21°02'01.92"
IP 19	98.342	255816.963	7295346.416	194.892				
IP 20	98.362	255816.981	7295346.425	194.892				
IP 21	100.082	255818.543	7295347.199	194.838		R = -8.700	3.440	22°39'18.44"
IP 22	103.503	255820.802	7295349.799	194.732		R = 10.000	0.443	2°32'14.57"
IP 23	106.960	255823.191	7295352.313	194.625		R = -15.000	3.950	15°05'17.77"
IP 24	110.378	255824.825	7295355.330	194.519		R = -15.000	2.080	7°56'35.97"
IP 25	114.081	255826.126	7295358.810	194.404		R = 15.000	3.730	14°14'56.54"
IP 26	118.351	255828.570	7295362.334	194.361		R = 20.000	4.481	12°50'14.78"
IP 27	125.171	255833.612	7295366.940	194.344		R = 20.000	1.069	3°03'47.76"
IP 28	131.715	255838.832	7295371.220	194.328		R = -15.000	10.193	38°55'59.03"
IP 29	141.678	255840.901	7295381.196	194.303		R = -16.000	4.938	17°40'52.22"
IP 30	152.736	255839.701	7295392.675	194.275		R = 22.000	17.166	44°42'20.43"
IP 31	162.642	255846.192	7295400.765	194.210		R = -14.000	2.301	9°24'54.99"
IP 32	172.317	255850.932	7295409.203	193.979		R = 25.000	1.235	2°49'45.49"
IP 33	182.427	255856.327	7295417.785	193.737		R = -25.000	7.428	17°01'25.17"
IP 34	189.162	255858.095	7295424.321	193.576		R = 35.000	5.925	9°42'00.59"
IP 35	197.519	255861.609	7295431.916	193.376		R = -12.000	2.616	12°29'21.34"
IP 36	202.748	255862.728	7295437.029	193.251		R = 18.000	0.989	3°08'56.09"
IP 37	209.997	255864.937	7295444.998	193.077		R = -10.000	12.708	72°48'43.93"
IP 38	219.464	255856.108	7295450.662	192.893		R = -15.000	1.988	7°35'42.63"
IP 39	225.816	255850.338	7295453.362	192.880		R = -15.000	4.571	17°27'39.40"

EAST BUND HORIZONTAL POINTS					
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	255797.728	7295317.215	198.510	86°24'16.03"
IP 2	35.185	255832.844	7295319.421	198.750	86°24'16.03"

WEST BUND HORIZONTAL POINTS					
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	255758.500	7295279.576	199.597	75°26'03.25"
IP 2	13.643	255771.705	7295283.007	198.023	
IP 3	18.713	255776.175	7295285.398	198.059	
IP 4	24.207	255778.879	7295290.181	198.138	
IP 5	29.299	255779.517	7295295.233	197.900	
IP 6	34.875	255780.022	7295300.786	197.889	
IP 7	43.556	255777.215	7295309.000	197.747	
IP 8	49.649	255774.616	7295314.511	197.824	334°44'48.61"

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FITZROY BASIN ASSOCIATION  
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SETOUT POINTS

DESIGNED: JB	DRAWN: AT	CHECKED: JT	APPROVED: MI	PROJECT No: 0423110
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REVISION: A	SHEET No.: 3 of 11	ORIGINAL SIZE: A1
DATUM: m AHD (GDA 2020 MGA z56)		



Datum RL 195	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-3.50
	0.00
	3.50

CHAINAGE 30.00

Datum RL 194	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.57
	-6.50
	-3.50
	0.00
	3.50
	6.50
	11.04

CHAINAGE 50.00

Datum RL 193	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-12.20
	-3.50
	0.00
	3.50
	11.00

CHAINAGE 70.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-9.17
	-7.57
	-3.50
	0.00
	3.50
	7.50
	8.91

CHAINAGE 90.00

Datum RL 195	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.74
	-3.50
	0.00
	3.50
	6.50
	12.38

CHAINAGE 35.00

Datum RL 194	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.06
	-6.50
	-3.50
	0.00
	3.50
	6.50
	11.31

CHAINAGE 55.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-8.63
	-3.50
	0.00
	3.50
	12.00

CHAINAGE 75.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-8.21
	-7.50
	-3.50
	0.00
	3.50
	7.50
	7.84

CHAINAGE 95.00

Datum RL 195	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.13
	-3.50
	0.00
	3.50
	6.50
	13.29

CHAINAGE 40.00

Datum RL 194	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.43
	-6.50
	-3.50
	0.00
	3.50
	6.50
	11.88

CHAINAGE 60.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.37
	-3.50
	0.00
	3.50
	9.68
	10.07

CHAINAGE 80.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-8.14
	-7.50
	-3.50
	0.00
	3.50
	7.50
	8.10

CHAINAGE 100.00

Datum RL 194	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-9.90
	-6.50
	-3.50
	0.00
	3.50
	6.50
	11.55

CHAINAGE 45.00

Datum RL 193	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.87
	-6.50
	-3.50
	0.00
	3.50
	6.50
	12.32

CHAINAGE 65.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.84
	-9.83
	-3.50
	0.00
	3.50
	8.36
	8.84

CHAINAGE 85.00

Datum RL 192	
DESIGN HEIGHT	
EXISTING SURFACE	
DESIGN OFFSET	
	-10.04
	-9.00
	-4.50
	0.00
	4.50
	9.00
	10.75

CHAINAGE 105.00

REV	A	PRELIMINARY ISSUE	MI	01.02.24
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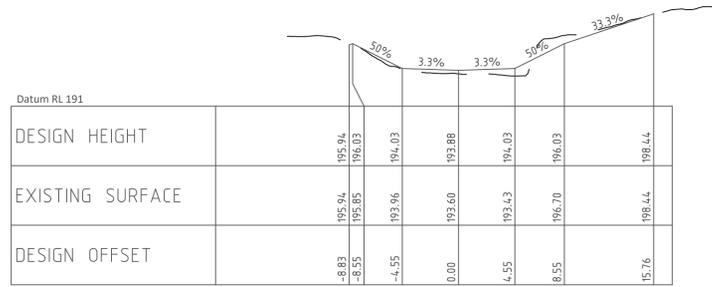
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JB	AT	JT	MI	0423110

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 KROOMBIT CREEK TRIBUTARY DETAILED DESIGN**

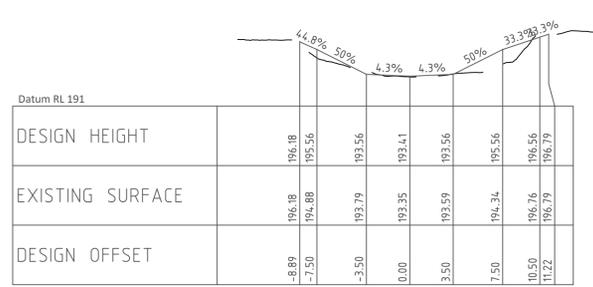
**CROSS SECTION**

REVISION:	SHEET No.:	ORIGINAL SIZE:
A	5 of 11	A1
DATUM: m AHD (GDA 2020 MGA z56)		

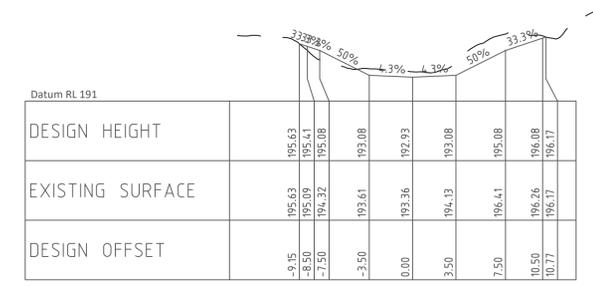




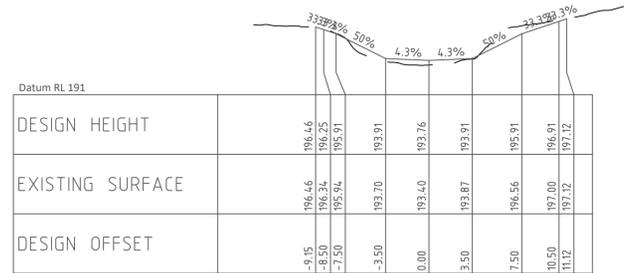
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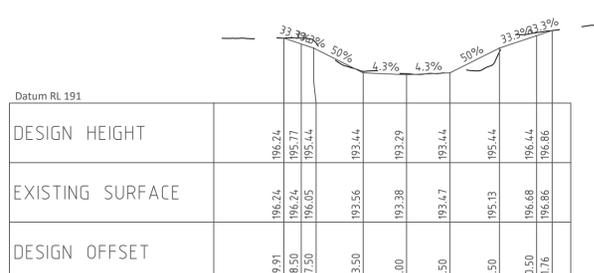
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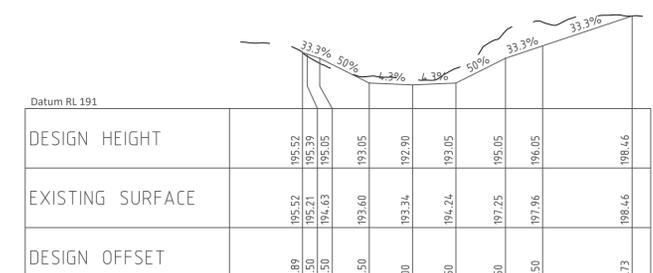
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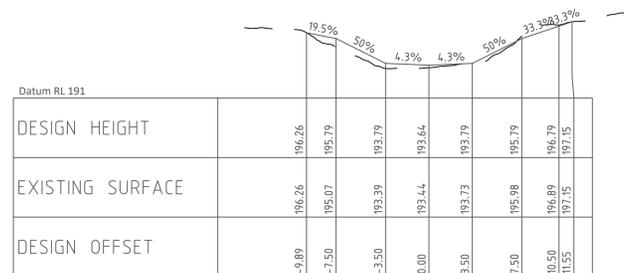
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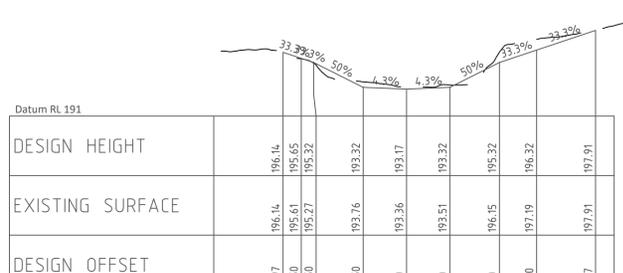
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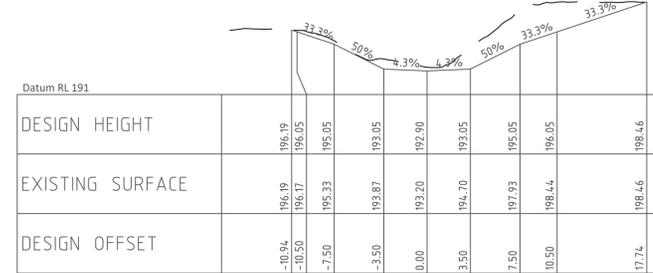
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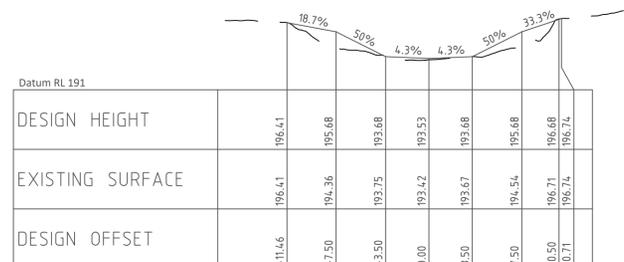
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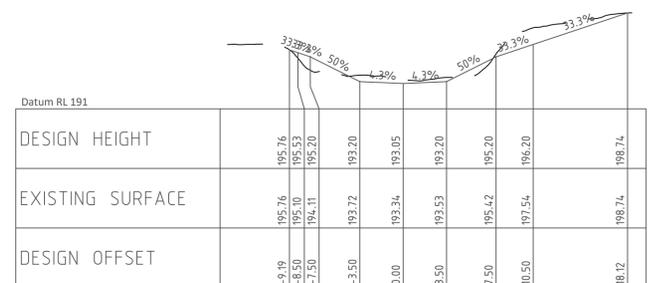
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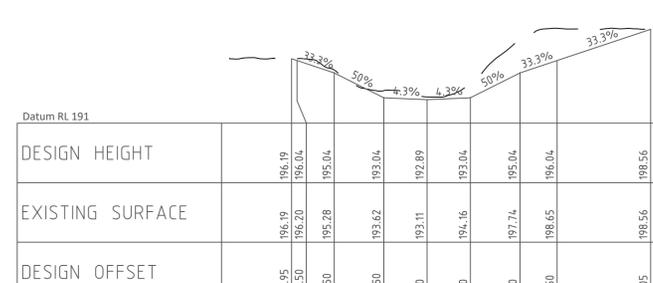
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CHAINAGE 185.00



CHAINAGE 205.00



CHAINAGE 225.00

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**FITZROY BASIN ASSOCIATION**  
**KROOMBIT CREEK TRIBUTARY DETAILED DESIGN**

CROSS SECTION

REVISION: A	SHEET No.: 7 of 11	ORIGINAL SIZE: A1
DATUM: m AHD (GDA 2020 MGA z56)		

Datum RL 195		
DESIGN HEIGHT	197.61	197.58
EXISTING SURFACE	197.61	197.58
DESIGN OFFSET	-3.63	2.22

CHAINAGE 0.00

Datum RL 194		
DESIGN HEIGHT	197.63	197.65
EXISTING SURFACE	197.63	197.55
DESIGN OFFSET	-4.07	5.23

CHAINAGE 40.00

Datum RL 193		
DESIGN HEIGHT	197.34	197.34
EXISTING SURFACE	197.34	197.28
DESIGN OFFSET	-3.31	3.29

CHAINAGE 70.00

Datum RL 193		
DESIGN HEIGHT	197.28	197.37
EXISTING SURFACE	197.28	197.18
DESIGN OFFSET	-5.02	9.68

CHAINAGE 100.00

Datum RL 192		
DESIGN HEIGHT	197.25	197.21
EXISTING SURFACE	197.25	197.08
DESIGN OFFSET	-8.22	6.20

CHAINAGE 130.00

Datum RL 195		
DESIGN HEIGHT	197.57	197.51
EXISTING SURFACE	197.57	197.45
DESIGN OFFSET	-5.98	2.76

CHAINAGE 10.00

Datum RL 193		
DESIGN HEIGHT	197.50	197.53
EXISTING SURFACE	197.50	197.44
DESIGN OFFSET	-2.57	4.28

CHAINAGE 50.00

Datum RL 193		
DESIGN HEIGHT	197.33	197.35
EXISTING SURFACE	197.33	197.25
DESIGN OFFSET	-4.13	5.30

CHAINAGE 80.00

Datum RL 193		
DESIGN HEIGHT	197.29	197.30
EXISTING SURFACE	197.29	197.15
DESIGN OFFSET	-6.95	7.51

CHAINAGE 110.00

Datum RL 192		
DESIGN HEIGHT	197.14	197.17
EXISTING SURFACE	197.14	197.05
DESIGN OFFSET	-4.58	5.88

CHAINAGE 140.00

Datum RL 195		
DESIGN HEIGHT	197.51	197.52
EXISTING SURFACE	197.51	197.45
DESIGN OFFSET	-2.98	3.69

CHAINAGE 20.00

Datum RL 193		
DESIGN HEIGHT	197.44	197.39
EXISTING SURFACE	197.44	197.32
DESIGN OFFSET	-5.78	3.56

CHAINAGE 60.00

Datum RL 193		
DESIGN HEIGHT	197.32	197.31
EXISTING SURFACE	197.32	197.21
DESIGN OFFSET	-5.09	4.78

CHAINAGE 90.00

Datum RL 192		
DESIGN HEIGHT	197.33	197.19
EXISTING SURFACE	197.33	197.12
DESIGN OFFSET	-10.49	3.81

CHAINAGE 120.00

Datum RL 192		
DESIGN HEIGHT	196.89	197.13
EXISTING SURFACE	196.89	197.03
DESIGN OFFSET	-6.96	4.94

CHAINAGE 146.00

Datum RL 194		
DESIGN HEIGHT	197.62	197.59
EXISTING SURFACE	197.62	196.35
DESIGN OFFSET	-5.49	4.04

CHAINAGE 30.00

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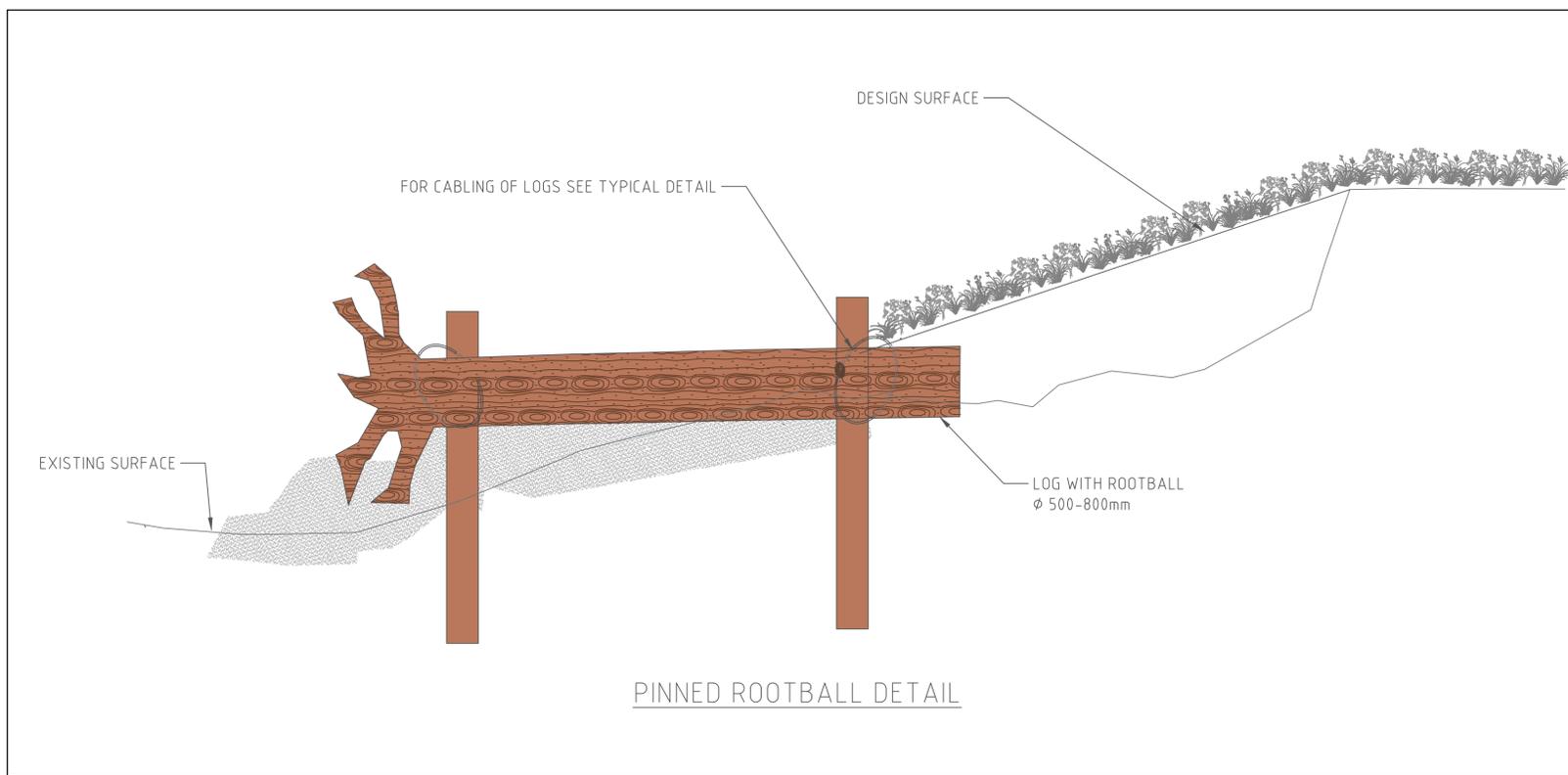
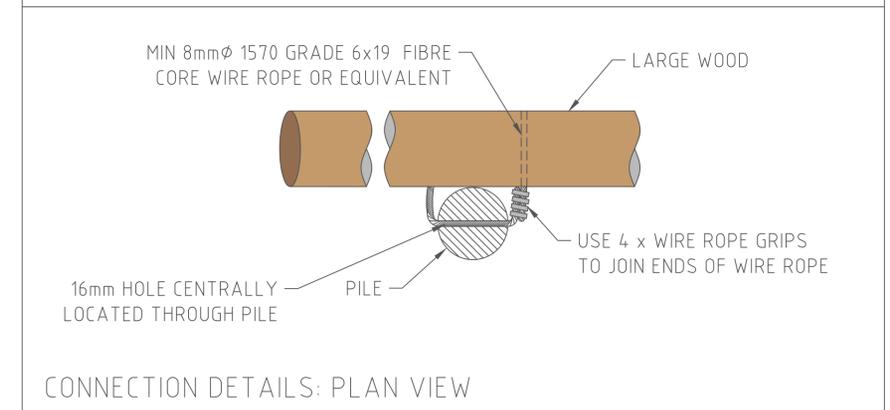
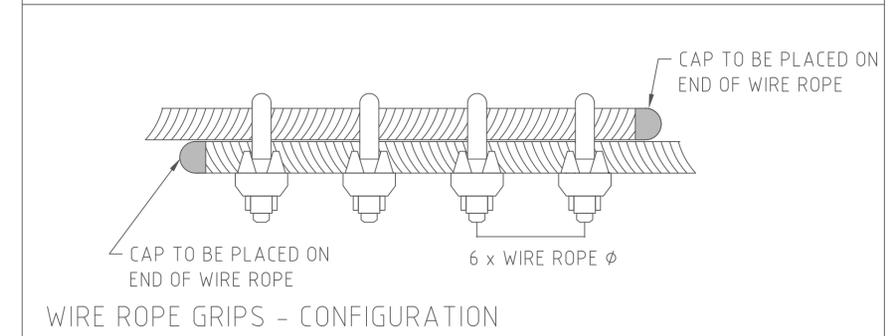
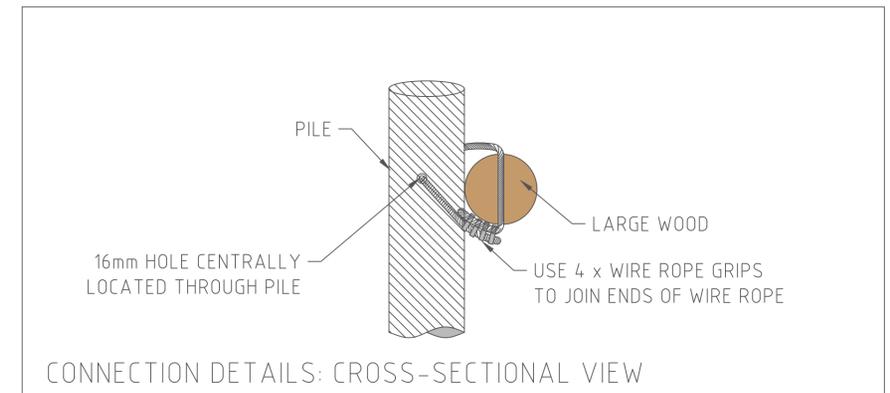
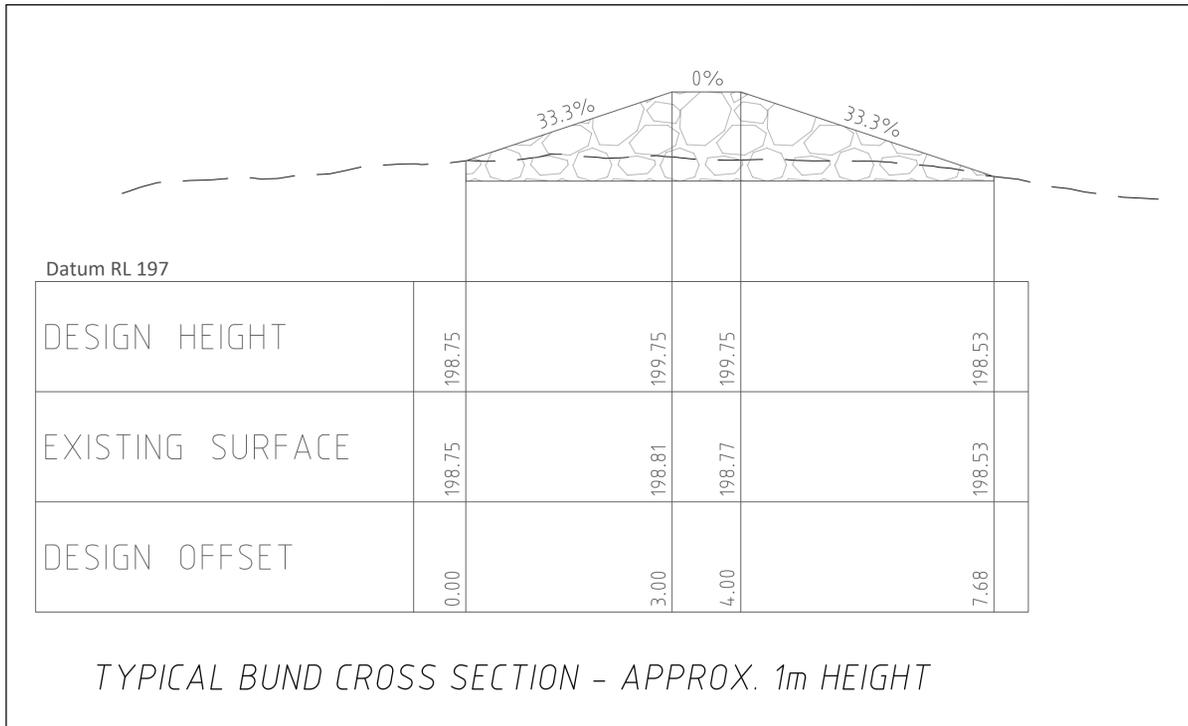
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**FITZROY BASIN ASSOCIATION  
 KROOMBIT CREEK TRIBUTARY DETAILED DESIGN**

**EXISTING CHANNEL FILL - CROSS SECTION**

REVISION: A	SHEET No.: 8 of 11	ORIGINAL SIZE: A1
DATUM: m AHD (GDA 2020 MGA z56)		



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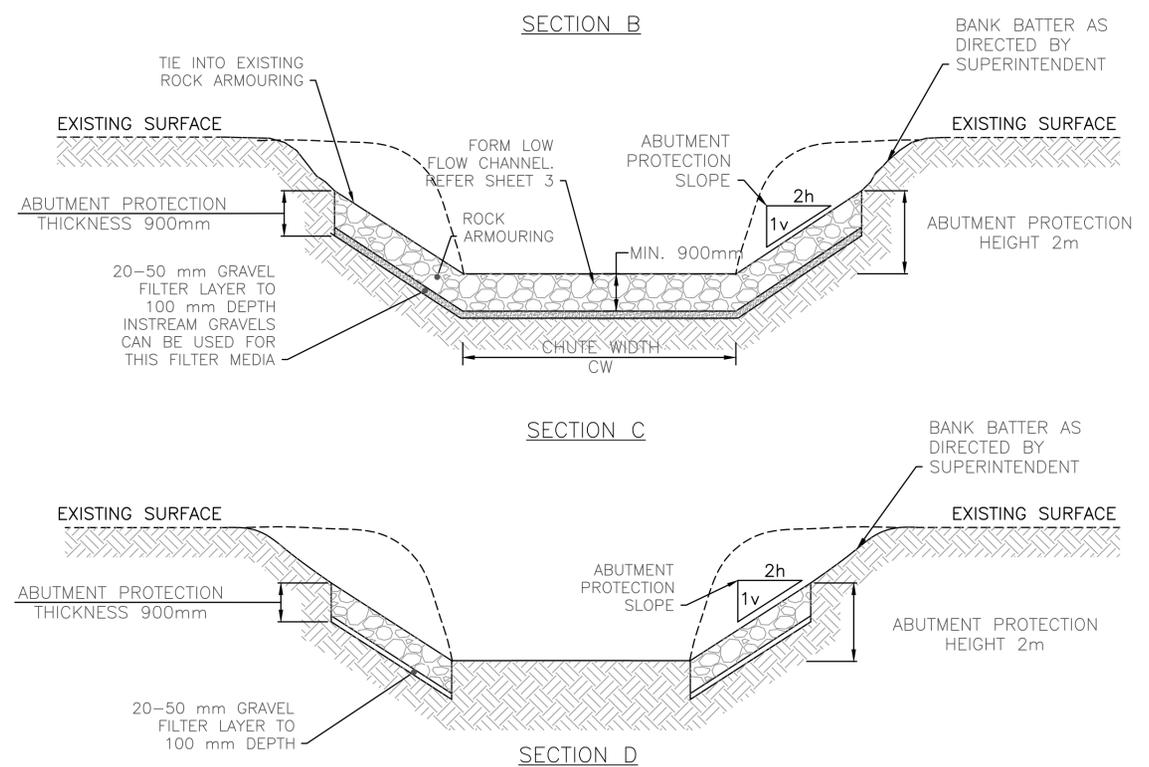
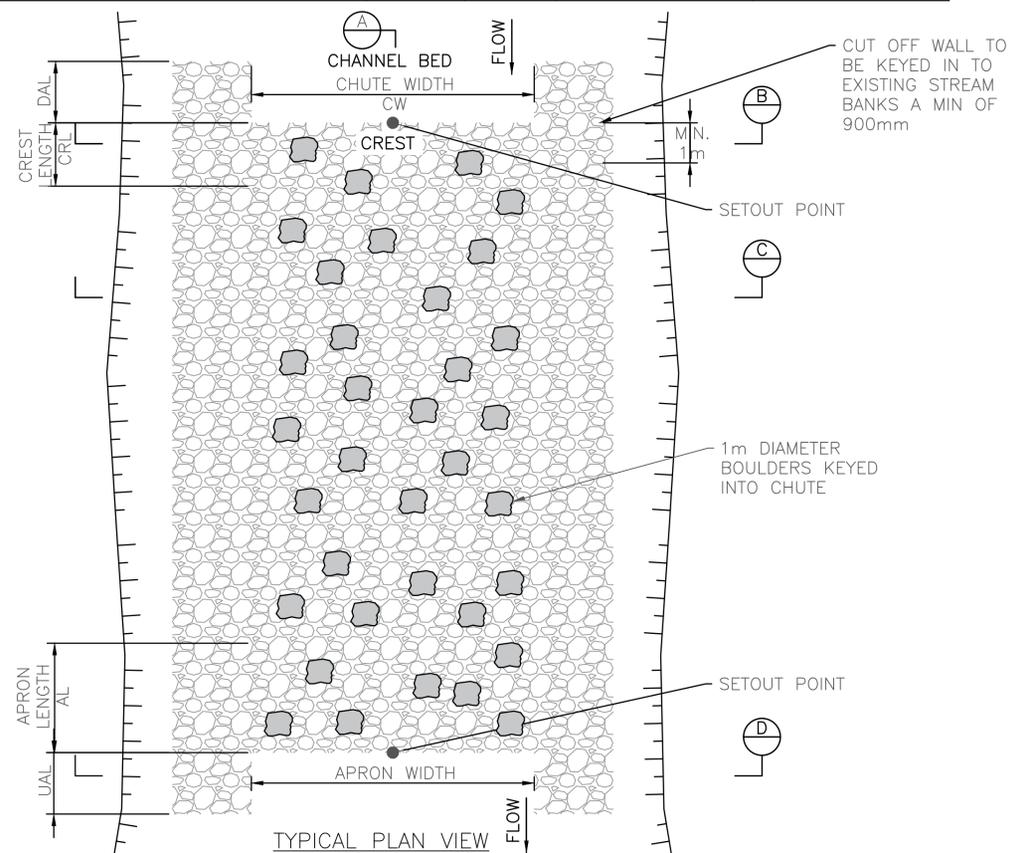
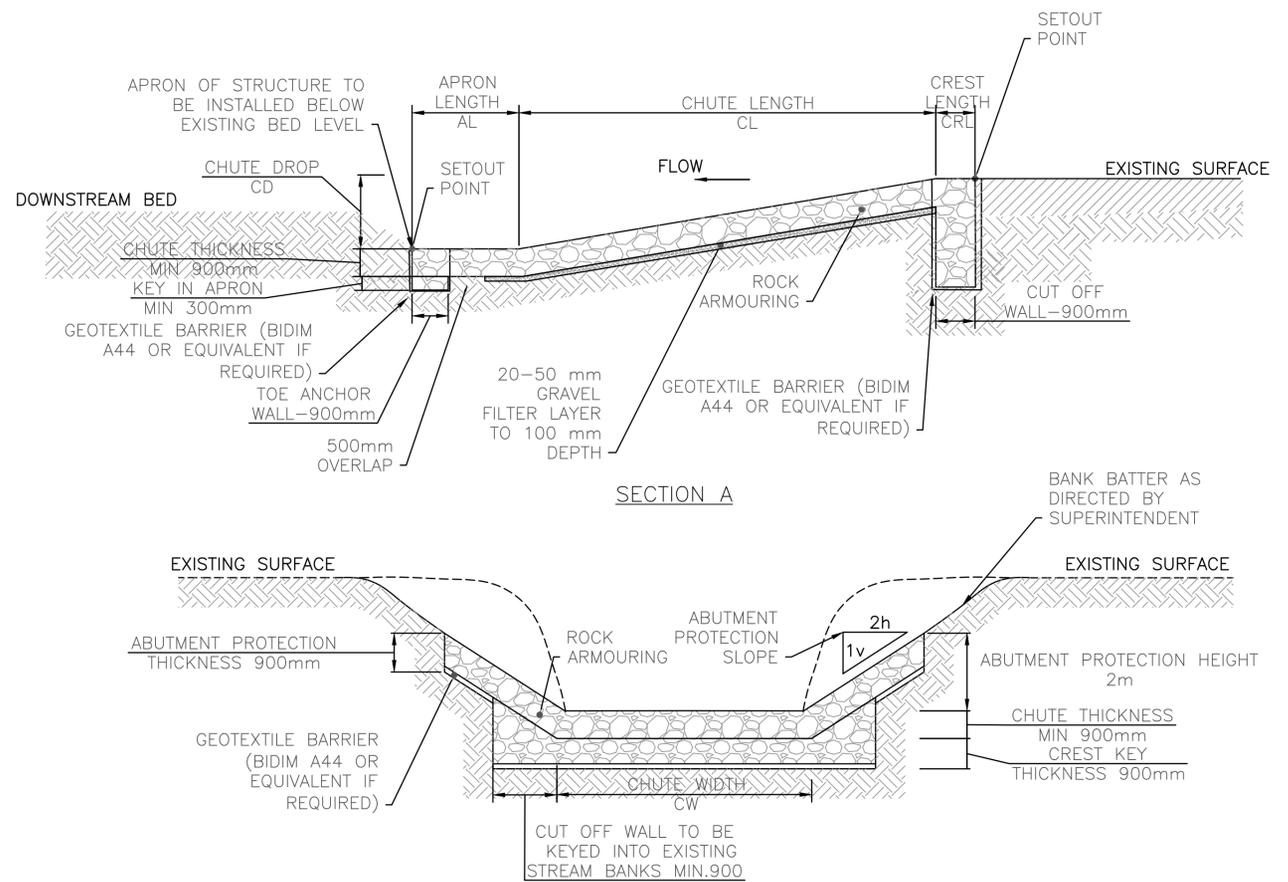
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LOG DETAIL

REVISION: A	SHEET No.: 9 of 11	ORIGINAL SIZE: A1
DATUM: m AHD (GDA 2020 MGA z56)		

CHUTE SPECIFICATION TABLE				
CHUTE ELEMENT	SYMBOL	UNITS	ROCK CHUTE CHUTE 1	ROCK CHUTE CHUTE 2
CHUTE LENGTH	CL	m	83.0	57.0
CHUTE DROP	CD	m	2.6	1.4
CHUTE WIDTH	CW	m	7	7
CREST LENGTH	CRL	m	2.00	2.00
CREST RL	-	m AHD	196.94	194.26
CREST HEIGHT ABOVE EXISTING ELEVATION	-	m	0.00	0.12
APRON LENGTH	AL	m	3	3
APRON RL (END OF CHUTE/START OF APRON)	-	m AHD	194.37	192.90
APRON RISE	-	m	0	0
APRON RL (END OF APRON)	-	m AHD	194.36	192.88
UPSTREAM EXTENT OF CREST SETOUT COORDINATES	-	Easting	255789.69	255843.82
	-	Northing	7295302.17	7295397.54
DOWNSTREAM EXTENT OF APRON SETOUT COORDINATES	-	Easting	255829.79	255849.02
	-	Northing	7295363.45	7295453.48
ABUTMENT PROTECTION HEIGHT (OR TOP OF BANK)	-	m	2.00	2.00
ABUTMENT PROTECTION SLOPE (MAX SLOPE)	-	m/m	1V:2H	1V:2H
ABUTMENT LENGTH UPSTREAM	UAL	m	5.00	22.50
ABUTMENT LENGTH DOWNSTREAM	DAL	m	22.50	10.00
ROCK (D50)	ROCK	mm	450.00	450.00
QUANTITY OF ROCK FOR CHUTE	ROCK	m <sup>3</sup>	2264	1617
	ROCK	tonnes	3622.4	2587
QUANTITY OF GRANULAR FILTER REQUIRED FOR CHUTES (20 - 50MM)	-	m <sup>3</sup>	226.40	161.70
	-	tonnes	430.16	307.23
LENGTH OF GEOFABRIC FOR CHUTES (4.0 m wide roll)	-	m	10	10



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FITZROY BASIN ASSOCIATION  
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ROCK DETAIL

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REVISION: A	SHEET No.: 10 of 11	ORIGINAL SIZE: A1
DATUM: m AHD (GDA 2020 MGA z56)		

EXCAVATION	
1.	EXCAVATION SHALL BE UNDERTAKEN IN A MANNER THAT MINIMISES DISTURBANCE TO MATERIAL OUTSIDE THE LIMITS OF THE WORKS.
2.	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.
3.	BANKS TO BE REPROFILED TO 1V:3-4H.
4.	EARTHWORKS SHOULD GRADUALLY TRANSITION OVER 10 m TO MATCH THE ADJACENT BANK AT EACH END OF THE WORKS.
5.	TOP SOIL SHOULD BE STOCK PILED AND SPREAD OVER FINISHED BANK SLOPE.
6.	MATERIAL USED FOR THE BUND SHOULD BE COMPACTED, NON-DISPERSIVE CLAY. A TOP SOIL LAYER SHOULD BE ADDED AND CONTINUOUS GRASS COVER ESTABLISHED.
ROCK SUPPLY AND PLACEMENT FOR ROCK PROTECTION WORKS:	
7.	SUPPLY AND PLACEMENT OF ROCK TO BE IN ACCORDANCE WITH THESE DRAWINGS AND ONSITE DIRECTION BY DESIGN ENGINEER OR SITE SUPERINTENDENT.
8.	ROCK PLACEMENT SHALL NOT COMMENCE UNTIL THE PREPARED SURFACE HAS BEEN APPROVED BY THE SUPERINTENDENT.
9.	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.
10.	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.
11.	GRADING SHALL PRODUCE A CONSISTENT MIX OF ROCK SIZES.
REHABILITATION OF DISTURBED AREAS	
12.	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.
13.	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.
14.	WHERE SLOPES ARE TOO STEEP FOR DIRECT PLANTING NATURAL REGENERATION IS PROPOSED.
15.	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.
16.	REVEGETATE THE WORKS SITE AND SURROUNDING AREA AS PER THE DETAILED REVEGETATION PLAN PROVIDED IN ATTACHMENT C OF DETAILED DESIGN REPORT.
ROCK PROTECTION MATERIALS	
17.	ROCK SHOULD NOT BE ADVERSELY AFFECTED BY REPEATED WETTING AND DRYING AND SHALL HAVE A CRUSHING STRENGTH OF NOT LESS THAN 25 MPa.
18.	BEACHING MATERIAL TO COMPRISE WELL-GRADED ANGULAR ROCK, FREE OF CRACKS AND FOREIGN MATERIAL.
19.	ROCK USED MUST MEET THE FOLLOWING SIZE SPECIFICATION:
20.	GRADING SHALL PRODUCE A CONSISTENT MIX OF ROCK SIZES.
21.	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.
ROCK CHUTE	
22.	CHUTE LENGTH MUST NOT BE REDUCED. BATTER SLOPES SHALL BE NO STEEPER THAN 1V:1.5H
23.	REFER ANY DEVIATION BETWEEN BED ELEVATION AND DESIGN ELEVATION OF CREST OR APRON TO SUPERINDENT
24.	CREST CUTOFF WALL IS TO EXTEND THE TOTAL CHUTE WIDTH
25.	CREST OF CHUTE AND START OF APRON TO BE CLEARLY DEFINED BY CHANGE IN GRADE
26.	ABUTMENT PROTECTION TO EXTENT A MINIMUM OF 3M UPSTREAM OF CHUTE CREST AND 5M DOWNSTREAM OF APRON AND TOP DRESSED WITH LOCALLY EXCAVATED MATERIAL. FINAL EXTENT OF ABUTMENT PROTECTION TO BE DETERMINED BY SUPERINTENDENT.
27.	BANK BATTERS ABOVE ABUTMENT PROTECTION TO BE AT THE SAME SLOPE OR FLATTER THAN ABUTMENT PROTECTION SLOPE.
28.	ROCK PLACE TO FORM ROCK CHUTES SHALL BE PLACED ONTO GRAVEL FILTER LAYER WHERE SHOWN ON DRAWINGS
29.	CREST AND APRON CUTOFF WALL SHOULD BE LINED WITH A GEOTEXTILE FILTER AS SHOWN ON DRAWINGS

ROCK PROTECTION SIZE SPECIFICATION	
EQUIVALENT SPHERICAL DIAMETER	PERCENT (BY WEIGHT) OF SMALLER SIZE
675-900mm (1.5-2.0 D50)	100%
450mm (D50)	50%
135-180mm (0.3-0.4 D50)	10-20%
45mm (0.1 D50)	<5%

BANK STABILISATION AND FISHWAY SPECIFICATION TABLE		
MATERIAL SPECIFICATION	UNITS	QUANTITY
CHUTE AND BANK REPROFILING CUT	m <sup>3</sup>	6,510
CHUTE AND BANK REPROFILING FILL	m <sup>3</sup>	965
VOLUME OF CUT OVER FILL IN CHUTE	m <sup>3</sup>	5,545
EXISTING CHANNEL FILL	m <sup>3</sup>	1,933
WEST BUND FILL	m <sup>3</sup>	230
EAST BUND FILL	m <sup>3</sup>	101
TOPSOIL AREA	m <sup>2</sup>	3,142
TOPSOIL VOLUME (175mm DEPTH)	m <sup>3</sup>	550
TOTAL VOLUME OF CUT OVER FILL	m <sup>3</sup>	2,732
CHUTE 1 BOULDERS (1m DIAMETER)	No.	92
CHUTE 2 BOULDERS (1m DIAMETER)	No.	59
ROCK VOLUME	m <sup>3</sup>	3,881

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CONSTRUCTION NOTES

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