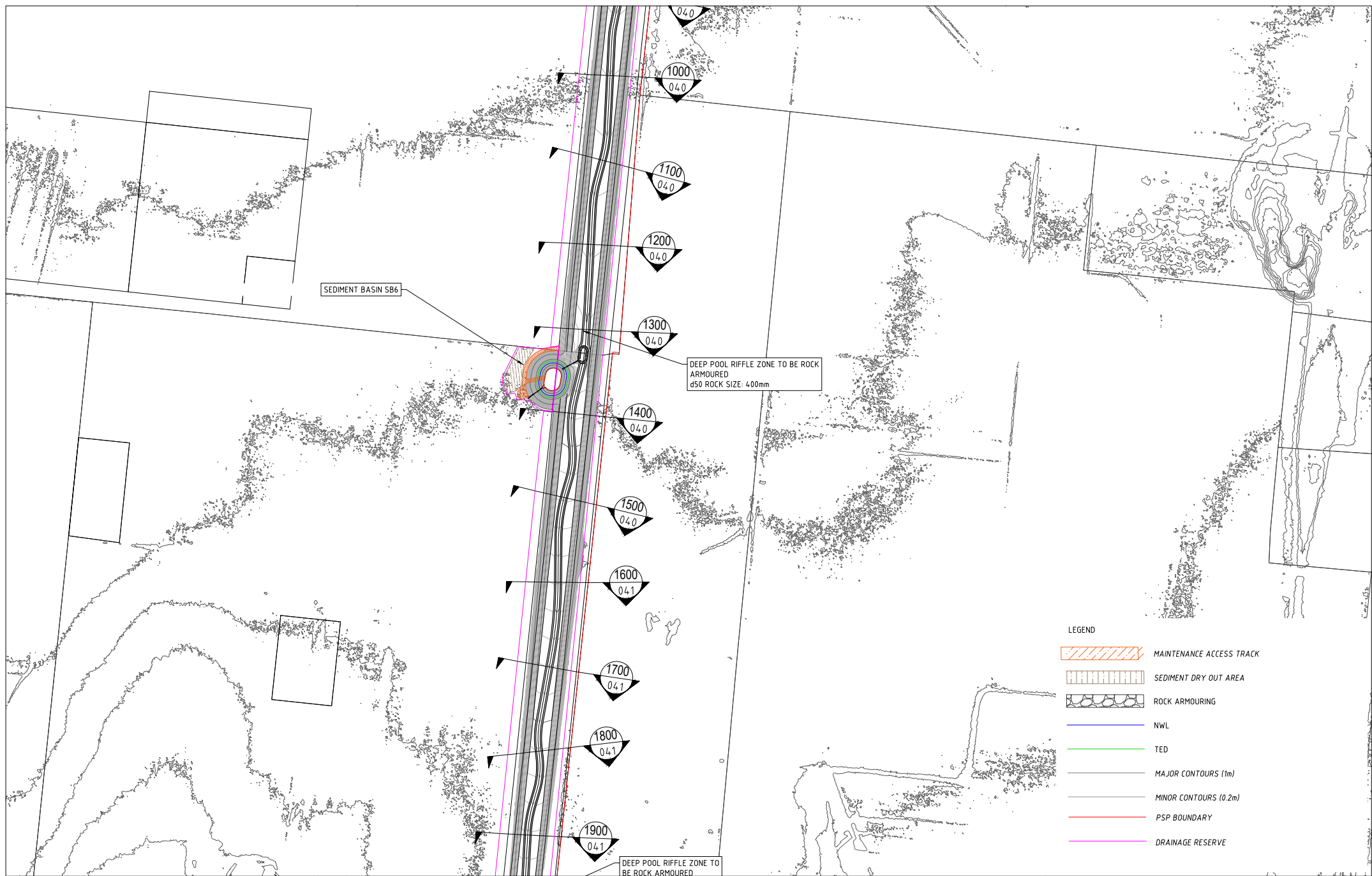
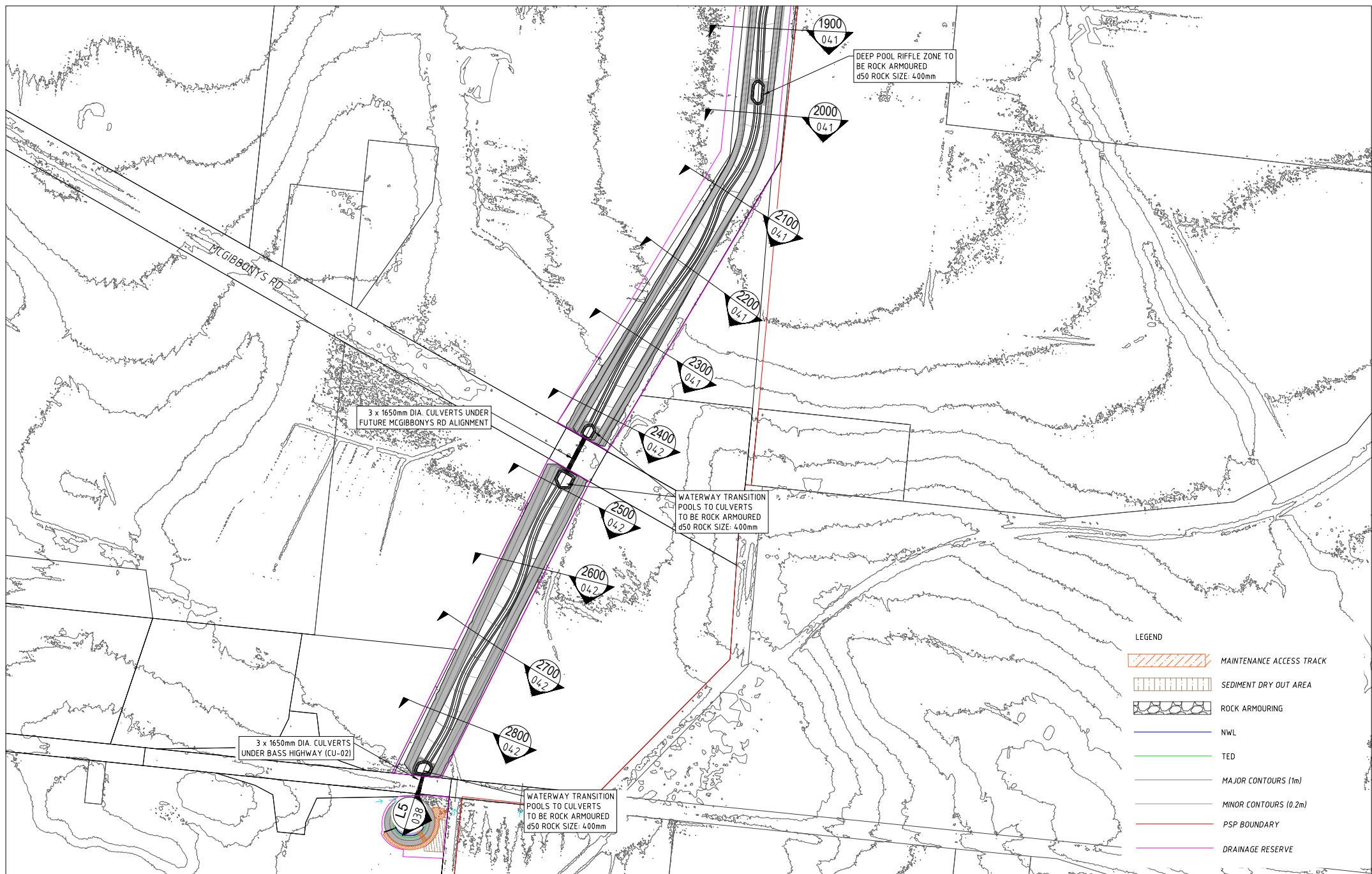




E	REVISED ISSUE - POST PANEL SAC RECOMMENDATIONS	DB	29.08.23
D	REVISED ISSUE	CC	22.04.22
C	REVISED ISSUE	CC	06.04.22
B	REVISED ISSUE	CC	05.11.21
	ELIMINARY ISSUE	CC	15.10.21
87	DESCRIPTION	APP'D	DATE

alluvium Alluvium Consulting Australia Pty. Ltd. ABN 76 151 119 792 Lvl 1, 105-115 Dover Street Cremorne Vic 3121 T 61 3 9421 2532 www.alluvium.com.au			
DESIGNED: D.BRAND	DRAWN: D.BRAND	CHECKED: C.CARVALHO	APPROVED: S.CLEVEN
PROJECT No: 0121128		REVISION: E	

VICTORIAN PLANNING AUTHORITY WONTHAGGI NORTH EAST PSP FUNCTIONAL DESIGN DRAWINGS EASTERN WATERWAY DESIGN (SHEET 2 OF 3) (DCP REF. DR-02)			
SHEET No.: 36 of 55	ORIGINAL SIZE: A1	SCALE: 1:2,000	DATUM: m AHD (MGA 255)
		0 40 80 120m 20	



REVISION	DESCRIPTION	APP'D	DATE
E	REVISED ISSUE - POST PANEL SAC RECOMMENDATIONS	DB	29.08.23
D	REVISED ISSUE	CC	22.04.22
C	REVISED ISSUE	CC	06.04.22
B	REVISED ISSUE	CC	05.11.21
A	ELIMINARY ISSUE	CC	15.10.21

alluvium

Alluvium Consulting Australia Pty. Ltd.
 ABN 76 151 119 792
 Lvl 1, 105-115 Dover Street
 Cremorne Vic 3121
 T 61 3 9421 2532
 www.alluvium.com.au

DESIGNED: D.BRAND
 DRAWN: D.BRAND
 CHECKED: C.CARVALHO
 APPROVED: S.CLEVEN
 PROJECT No: 0121128

VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
EASTERN WATERWAY DESIGN (SHEET 3 OF 3) (DCP REF. DR-02)

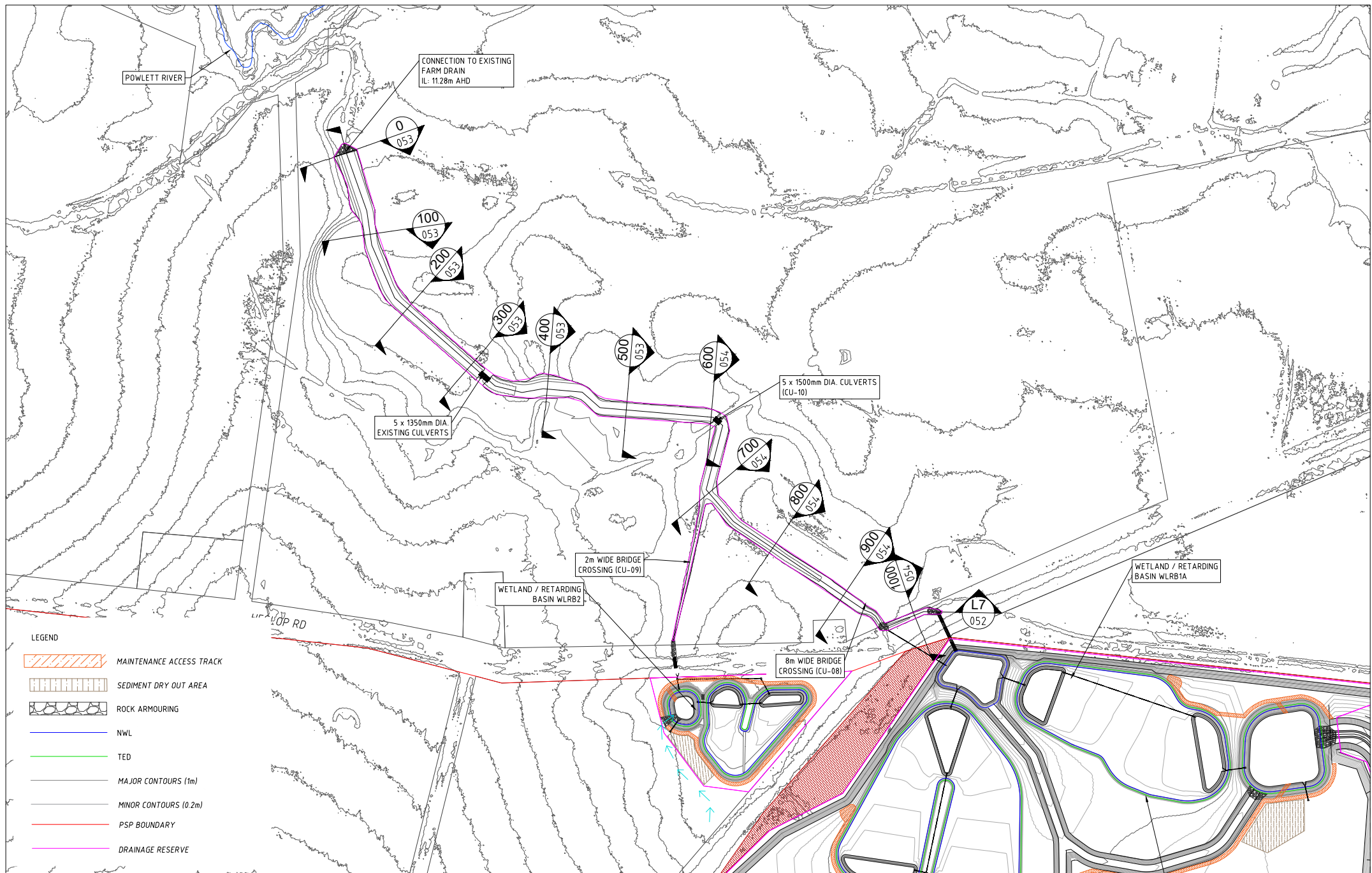
REVISION: E
 SHEET No: 37 of 55
 ORIGINAL SIZE: A1
 SCALE: 1:2,000
 DATUM: m AHD (MGA 2551)

0 40 80 120m

Amended by C172base

Main Outfall to Powlett River (MOP) DCP – DR-03 (22/23 cost base)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
1	SITE WORKS					
1.1	Site preparation	1	Item	\$10,000	\$10,000	
1.2	Diversion works	1	Item	\$20,000	\$20,000	
1.3	Waterway re-shaping	1	Item	\$20,000	\$20,000	
1.4	Stripping of topsoil	3,486	m3	\$1.30	\$4,532	MW reimbursement rates for south east region (stripping)
2	EARTHWORKS					MW reimbursement rates for south east region (earthworks rates)
2.1	Bulk excavation	16,910	m3	\$25	\$422,750	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
3	DRAINAGE					
3.1	Rockwork for waterway pool formation					
3.1.1	Supply and install D50=400mm rock, 800 mm thick to form WLRB1 Outlet Pool	151	m3	\$197	\$29,747	MW reimbursement rates for south east region (rockwork rate)
3.1.2	Supply and install D50=400mm rock, 800 mm thick to form WLRB2 Outlet Pool	60	m3	\$197	\$11,820	MW reimbursement rates for south east region (rockwork rate)
3.1.3	Supply and install D50=400mm rock, 800 mm thick to form connection to existing downstream drain	154	m3	\$197	\$30,338	MW reimbursement rates for south east region (rockwork rate)
3.1.4	Supply and install geofabric (Bidim A44 or equivalent) for all rock work	80	m3	\$25	\$2,000	
4	LANDSCAPING					
4.1	Re spread 200 mm topsoil for planting areas	3,312	m2	\$3.30	\$10,929	Allowance of 95% of topsoil stripped from site, 5% assumed as unsuitable for reuse MW reimbursement rates for south east region (Topsoiling (80% from stockpile and 20% imported))
4.2	Terrestrial revegetation of the high flow waterway	17,430	m2	\$16.80	\$292,824	MW reimbursement rates for south east region (terrestrial revegetation)
4.3	Supply and install heavy jute mat (800gsm) pre-slit at density 6/m2 to channel benches.	17,430	m2	\$7	\$122,010	MW reimbursement rates for south east region (weed control matting)
	SUB-TOTAL WORKS				\$976,949	
5	DELIVERY					
5.1	Council fees	3.25	%		\$31,751	
5.2	VicRoads fees	–	%		\$–	
5.3	Traffic management	2	%		\$19,539	
5.4	Environmental management	0.5	%		\$4,885	
5.5	Survey & design	5	%		\$48,847	
5.6	Supervision & project management	4	%		\$39,078	
5.7	Site establishment Note: Includes 24 months landscaping maintenance costs.	2.5	%		\$24,424	
5.8	Contingency	35	%		\$341,932	
	SUB-TOTAL DELIVERY				\$510,456	
6	TOTAL ESTIMATED COST				\$1,487,405	



REV	DESCRIPTION	APP'D	DATE
E	REVISED ISSUE - POST PANEL SAC RECOMMENDATIONS	DB	29.08.23
D	REVISED ISSUE	CC	22.04.22
C	REVISED ISSUE	CC	06.04.22
B	REVISED ISSUE	CC	05.11.21
A	ELIMINARY ISSUE	CC	15.10.21

alluvium

Alluvium Consulting Australia Pty. Ltd.
 ABN 76 151 119 792
 Lvl 1, 105-115 Dover Street
 Cremorne Vic 3121
 T 61 3 9421 2532
 www.alluvium.com.au

DESIGNED: D.BRAND	DRAWN: D.BRAND	CHECKED: C.CARVALHO	APPROVED: S.CLEVEN	PROJECT No: 012128
----------------------	-------------------	------------------------	-----------------------	-----------------------

VICTORIAN PLANNING AUTHORITY
 WONTHAGGI NORTH EAST PSP
 FUNCTIONAL DESIGN DRAWINGS
 MAIN OUTFALL DESIGN (DCP REF. DR-03)

REVISION	SHEET No.	ORIGINAL SIZE	A1	SCALE	12000
E	51 of 55	DATUM:	m AHD (MGA 255)		

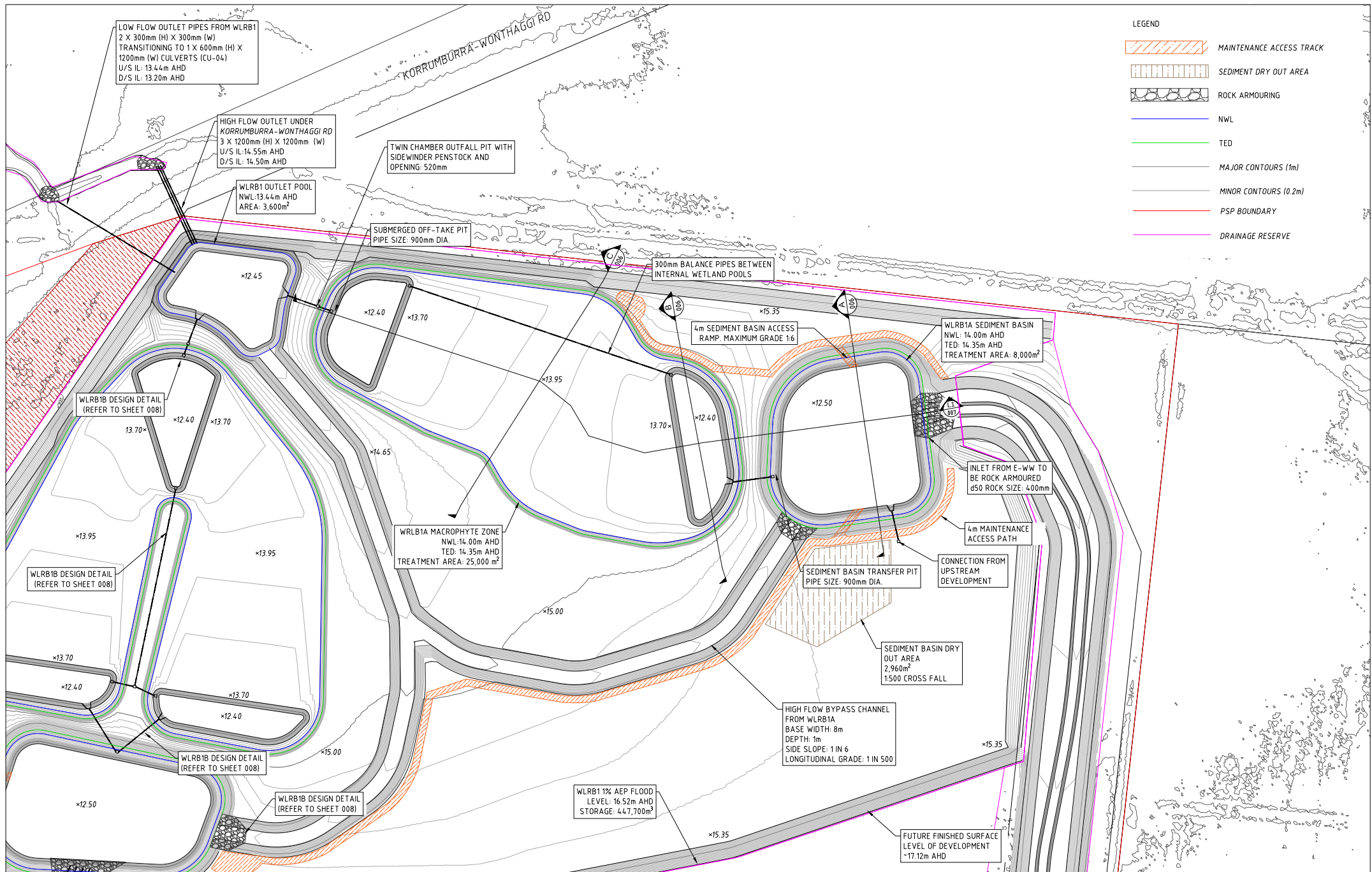
Wetland/Retarding Basin 1 (WLRB-1A & WLRB-1B) DCP – WL-01 (22/23 cost base)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
1	SITE WORKS					
1.1	Site preparation	1	Item	\$20,000	\$20,000	
1.2	Diversion works	1	Item	\$40,000	\$40,000	
1.3	Geotechnical Investigation	1	Item	\$50,000	\$50,000	
1.4	Cultural Heritage Assessment	1	Item	\$50,000	\$50,000	
1.5	Flora and Fauna Study	1	Item	\$30,000	\$30,000	
1.6	Safety Assessment	1	Item	\$20,000	\$20,000	
1.7	Stripping of topsoil	45,940	m3	\$1.30	\$59,722	MW reimbursement rates for south east region (stripping)
2	EARTHWORKS					MW reimbursement rates for south east region (earthworks rates)
2.1	Bulk excavation	297,854	m3	\$25	\$7,446,350	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
3	DRAINAGE – WLRB-1A					
3.1	Rockwork					
3.1.1	Supply and install D50=400mm rock, 800 mm thick to form WL1A Wetland inlet	438	m3	\$197	\$86,286	MW reimbursement rates for south east region (rockwork rate)
3.1.2	Supply and install D50=400mm rock, 800 mm thick to form WL1A Wetland overflow spillway	155	m3	\$197	\$30,535	MW reimbursement rates for south east region (rockwork rate)
3.2	Concrete					
3.2.1	Supply and install reinforced N32 grade concrete weir to form WL1A Wetland spillway weir	1	Item	\$10,000	\$10,000	
3.2.2	Supply and install reinforced N32 grade concrete, 150 mm deep to form WL1A sedimentation basin base	911	m3	\$322	\$293,342	Reinforced concrete slab 150mm thick (Rawlinsons publication)
3.3	Drainage					
3.3.1	Supply and install 900 mm dia RRJ sediment pond transfer pipe incl excavation, 20% crushed rock back fill (WL1A wetland)	22	m	\$561	\$12,342	MW reimbursement rates for south east region (900mm RRJ 20% FCR backfill)
3.3.2	Supply and install submerged offtake pit (WL1A wetland)	1	No.	\$6,710	\$6,710	
3.3.3	Supply and install 300 mm dia RRJ 20% backfill balance pipes (WL1A wetland)	160	m	\$170	\$27,200	MW reimbursement rates for south east region (300mm RRJ 20% FCR backfill)
3.3.4	Supply and install submerged offtake pits for balance pipes (WL1A wetland)	2	No.	\$6,710	\$13,420	
3.3.5	Supply and install 900 mm dia RRJ wetland outfall pipe incl excavation, 20% crushed rock back fill (WL1A wetland)	25	m	\$561	\$14,025	MW reimbursement rates for south east region (900mm RRJ 20% FCR backfill)
3.3.6	Supply and install twin chamber outfall pit with penstock and concrete weir (WL1A wetland)	1	No.	\$15,000	\$15,000	
3.4	Access path					
3.4.1	Supply and install N32 grade concrete to form 4m wide sediment pond maintenance access ramp WL1A wetland	160	m2	\$61.90	\$9,904	MW reimbursement rates for south east region (concrete access track)
3.4.2	Supply and install D50=200mm with Class 2 FCR backfill to form 4m wide maintenance access around WL1A wetland	3,440	m2	\$33.10	\$113,864	MW reimbursement rates for south east region (crushed rock access track)
4	DRAINAGE – WLRB-1B					
4.1	Rockwork					
4.1.1	Supply and install D50=400mm rock, 800 mm thick to form WL1B Wetland inlet channel	342	m3	\$197	\$67,374	MW reimbursement rates for south east region (rockwork rate)
4.1.2	Supply and install D50=400mm rock, 800 mm thick to form WL1B Wetland overflow spillway	249	m3	\$197	\$49,053	MW reimbursement rates for south east region (rockwork rate)
4.2	Concrete					
4.2.1	Supply and install reinforced N32 grade concrete weir to form WL1B Wetland spillway weir	1	Item	\$10,000	\$10,000	
4.2.2	Supply and install reinforced N32 grade concrete, 150 mm deep to form WL1B sedimentation basin base	1,026	m3	\$322	\$330,372	Reinforced concrete slab 150mm thick (Rawlinsons publication)
4.3	Drainage					

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
4.3.1	Supply and install 900 mm dia RRJ sediment pond transfer pipe incl excavation, 20% crushed rock back fill (WL1B wetland)	60	m	\$561	\$33,660	MW reimbursement rates for south east region (900mm RRJ 20% FCR backfill)
4.3.2	Supply and install submerged offtake pit (WL1B wetland)	1	No.	\$6,710	\$6,710	
4.3.3	Supply and install 300 mm dia RRJ 20% backfill balance pipes (WL1B wetland)	141	m	\$170	\$23,970	MW reimbursement rates for south east region (300mm RRJ 20% FCR backfill)
4.3.4	Supply and install submerged offtake pits for balance pipes (WL1B wetland)	4	No.	\$6,710	\$26,840	
4.3.5	Supply and install 1050 mm dia wetland outfall pipe incl excavation, crushed rock bedding and back fill (WL1B wetland)	21	m	\$696	\$14,616	MW reimbursement rates for south east region (1050mm RRJ 20% FCR backfill)
4.3.6	Supply and install twin chamber outfall pit with penstock and concrete weir (WL1B wetland)	1	No.	\$15,000	\$15,000	
4.4	Access path					
4.4.1	Supply and install N32 grade concrete to form 4m wide sediment pond maintenance access ramp WL1B wetland	82	m2	\$61.90	\$5,076	MW reimbursement rates for south east region (concrete access track)
4.4.2	Supply and install D50=200mm with Class 2 FCR backfill to form 4m wide maintenance access around WL1B wetland	1,127	m2	\$33.10	\$37,304	MW reimbursement rates for south east region (crushed rock access track)
5	LANDSCAPING – WLRB-1A					
5.1	Re spread 200 mm topsoil for planting areas	21,822	m2	\$3.30	\$72,011	Allowance of 95% of topsoil stripped from site, 5% assumed as unsuitable for reuse MW reimbursement rates for south east region (Topsoiling (80% from stockpile and 20% imported))
5.2	Placement of 300 mm compacted clay liners for sedimentation basin and wetland (clay sourced onsite)	45,167	m2	\$8.00	\$361,336	MW reimbursement rates for south east region (clay lining)
5.3	Supply and install submerged marsh planting.	748	m2	\$14.50	\$10,846	MW reimbursement rates for south east region (Aquatic revegetation)
5.4	Supply and install deep marsh planting (60cm3 tube, 2/m2).	13,439	m2	\$14.50	\$194,866	MW reimbursement rates for south east region (Aquatic revegetation)
5.5	Supply and install shallow marsh planting (60cm3 tube, 2/m2).	7,451	m2	\$14.50	\$108,040	MW reimbursement rates for south east region (Aquatic revegetation)
5.6	Supply and install wet ephemeral planting (90cm3 tube, 6/m2).	2,179	m2	\$14.50	\$31,596	MW reimbursement rates for south east region (Aquatic revegetation)
5.7	Supply and install dry ephemeral planting (90cm3 tube, 6/m2).	5,723	m2	\$16.80	\$96,146	MW reimbursement rates for south east region (terrestrial revegetation)
5.8	Supply and install sediment drying area planting (virocell planting, 6/m2).	2,960	m2	\$16.80	\$49,728	MW reimbursement rates for south east region (terrestrial revegetation)
5.9	Supply and install heavy jute mat (800gsm) pre-slit at density 6/m2 to TED to 350mm below NWL as specified for all Wet Ephemeral Planting	23,069	m2	\$7	\$161,483	MW reimbursement rates for south east region (weed control matting)
5.10	Supply, install and maintain plant protection netting for a selected species in the aquatic zones.	2	No.	\$20,000	\$40,000	
6	LANDSCAPING – WLRB-1B					
6.1	Re spread 200 mm topsoil for planting areas	21,822	m2	\$3.30	\$72,011	Allowance of 95% of topsoil stripped from site, 5% assumed as unsuitable for reuse MW reimbursement rates for south east region (Topsoiling (80% from stockpile and 20% imported))
6.2	Placement of 300 mm compacted clay liners for sedimentation basin and wetland (clay sourced onsite)	46,378	m2	\$8.00	\$371,024	MW reimbursement rates for south east region (clay lining)
6.3	Supply and install submerged marsh planting (60cm3 tube, 1/m2).	1,020	m2	\$14.50	\$14,790	MW reimbursement rates for south east region (Aquatic revegetation)
6.4	Supply and install deep marsh planting (60cm3 tube, 2/m2).	17,590	m2	\$14.50	\$255,055	MW reimbursement rates for south east region (Aquatic revegetation)
6.5	Supply and install shallow marsh planting (60cm3 tube, 2/m2).	9,820	m2	\$14.50	\$142,390	MW reimbursement rates for south east region (Aquatic revegetation)
6.6	Supply and install wet ephemeral planting (90cm3 tube, 6/m2).	7,378	m2	\$14.50	\$106,981	MW reimbursement rates for south east region (Aquatic revegetation)
6.7	Supply and install dry ephemeral planting (90cm3 tube, 6/m2).	6,520	m2	\$16.80	\$109,536	MW reimbursement rates for south east region (terrestrial revegetation)
6.8	Supply and install sediment drying area planting (virocell planting, 6/m2).	3,741	m2	\$16.80	\$62,849	MW reimbursement rates for south east region (terrestrial revegetation)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
6.9	Supply and install heavy jute mat (800gsm) pre-slit at density 6/m2 to TED to 350mm below NWL as specified for all Wet Ephemeral Planting	32,802	m2	\$7	\$229,614	MW reimbursement rates for south east region (weed control matting)
6.10	Supply, install and maintain plant protection netting for a selected species in the aquatic zones.	2	No.	\$20,000	\$40,000	
7	MISCELLANEOUS					
7.1	Allowance for timber bollards	1	Item	\$3,000	\$3,000	
7.2	Allowance for seats	1	Item	\$35,000	\$35,000	
	SUB-TOTAL WORKS				\$11,536,975	
8	DELIVERY					
8.1	Council fees	3.25	%		\$374,952	
8.2	VicRoads fees	1	%		\$115,370	
8.3	Traffic management	2	%		\$230,740	
8.4	Environmental management	1	%	\$50,000	\$50,000	
8.5	Erosion control management	0.5	%		\$57,685	
8.6	Survey & design	5	%		\$576,849	
8.7	Supervision & project management	4	%		\$461,479	
8.8	Site establishment Note: Includes 24 months landscaping maintenance costs.	2.5	%		\$288,424	
8.9	Contingency	35			\$4,037,941	
	SUB-TOTAL DELIVERY				\$6,193,439	
6	TOTAL ESTIMATED COST				\$17,730,414	

Amended by
C172base



E	REVISED ISSUE - POST PANEL SAC RECOMMENDATIONS	DB	29.08.23
D	REVISED ISSUE	CC	22.04.22
C	REVISED ISSUE	CC	06.04.22
B	REVISED ISSUE	CC	05.11.21
A	PRELIMINARY ISSUE	CC	15.10.21
	DESCRIPTION	APP'D	DATE

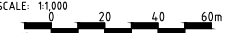


Alluvium Consulting Australia
Pty. Ltd.
ABN 76 151 119 792
Lvl 1, 105-115 Dover Street
Cremorne Vic 3121
T 61 3 9421 2532
www.alluvium.com.au

DESIGNED:	D.BRAND	DRAWN:	D.BRAND	CHECKED:	C.CARVALHO	APPROVED:	S.CLEVEN	PROJECT No:	0121128
-----------	---------	--------	---------	----------	------------	-----------	----------	-------------	---------

VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
WLRB1A DESIGN PLAN (DCP REF. WL-01)

REVISION:	E	SHEET No:	4 of 55	ORIGINAL SIZE:	A1	SCALE:	1:1,000
DATUM:	m AHD (MGA 255)						

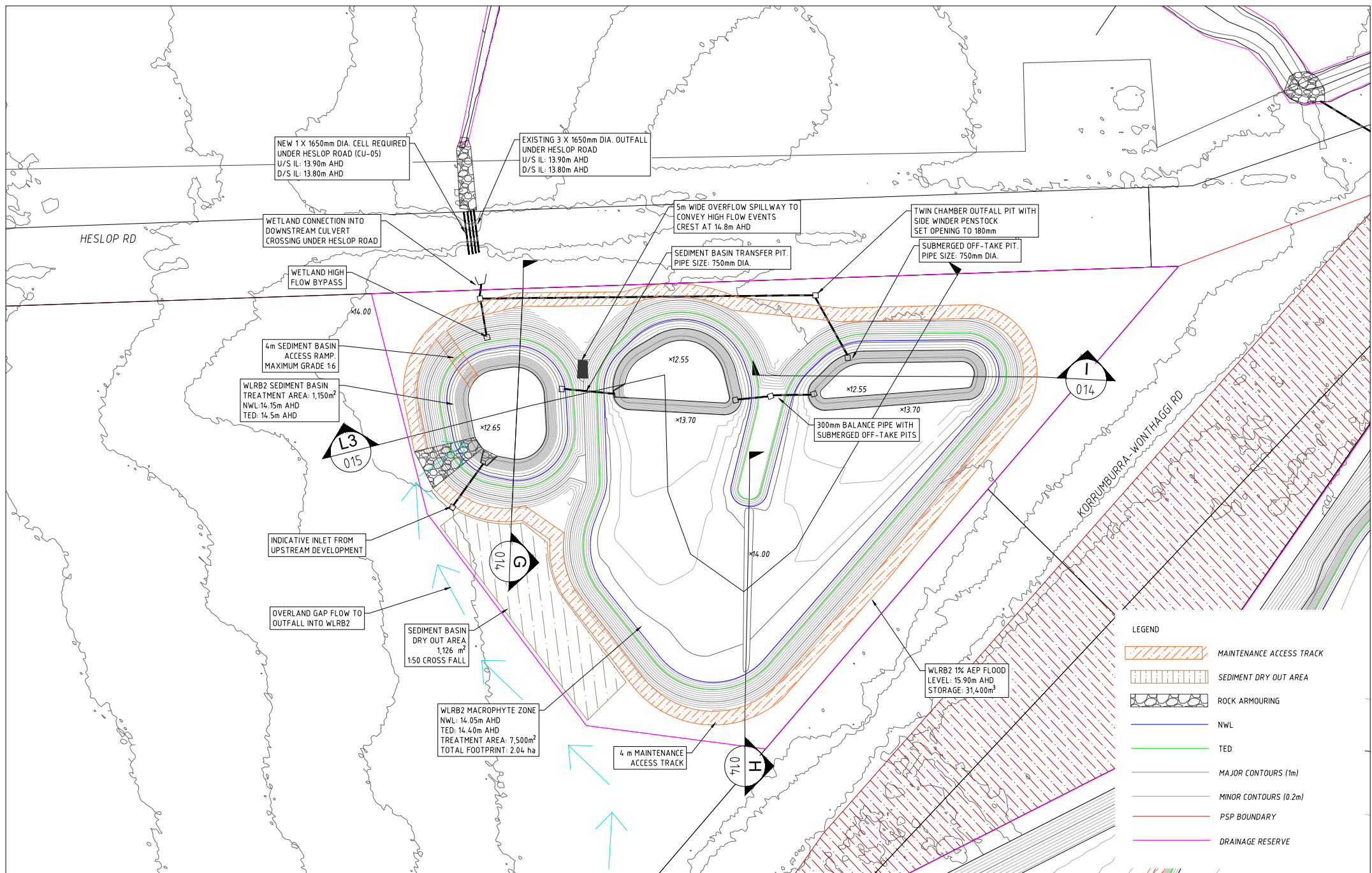


Wetland/Retarding Basin 2 (WLRB2) DCP – WL-02 (22/23 cost base)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
1	SITE WORKS					
1.1	Site preparation	1	Item	\$20,000	\$20,000	
1.2	Diversion works	1	Item	\$40,000	\$40,000	
1.3	Geotechnical Investigation	1	Item	\$50,000	\$50,000	
1.4	Cultural Heritage Assessment	1	Item	\$50,000	\$50,000	
1.5	Flora and Fauna Study	1	Item	\$30,000	\$30,000	
1.6	Safety Assessment	1	Item	\$20,000	\$20,000	
1.7	Stripping of topsoil	4,089	m3	\$1.30	\$5,316	MW reimbursement rates for south east region (stripping)
2	EARTHWORKS					MW reimbursement rates for south east region (earthworks rates)
2.1	Bulk excavation	9,505	m3	\$25	\$237,625	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
3	DRAINAGE					
3.1	Rockwork					
3.1.1	Supply and install D50=400mm rock, 800 mm thick to form WL2 Wetland inlet	133	m3	\$197	\$26,201	MW reimbursement rates for south east region (rockwork rate)
3.1.2	Supply and install D50=400mm rock, 800 mm thick to form WL2 Wetland overflow spillway	82	m3	\$197	\$16,154	MW reimbursement rates for south east region (rockwork rate)
3.2	Concrete					
3.2.1	Supply and install reinforced N32 grade concrete weir to form WL2 Wetland spillway weir	1	Item	\$10,000	\$10,000	
3.2.2	Supply and install reinforced N32 grade concrete, 150 mm deep to form WL2 sedimentation basin base	77	m3	\$322	\$24,794	Reinforced concrete slab 150mm thick (Rawlinsons publication)
3.3	Drainage					
3.3.1	Supply and install 600 mm dia RRJ sediment pond transfer pipe incl excavation, 20% crushed rock back fill (WL2 wetland)	14	m	\$337	\$4,718	MW reimbursement rates for south east region (600mm RRJ 20% FCR backfill)
3.3.2	Supply and install submerged offtake pit	1	No.	\$6,710	\$6,710	
3.3.3	Supply and install 300 mm dia RRJ 20% backfill balance pipes (WL2 wetland)	20	m	\$219	\$4,380	MW reimbursement rates for south east region (300mm RRJ 20% FCR backfill)
3.3.4	Supply and install submerged offtake pits for balance pipes	3	No.	\$6,710	\$20,130	
3.3.5	Supply and install 900 mm dia RRJ wetland high flow bypass pipeline incl excavation, 20% crushed rock back fill (WL2)	10	m	\$561	\$5,610	MW reimbursement rates for south east region (900mm RRJ 20% FCR backfill)
3.3.6	Supply and install submerged offtake pit for high flow bypass	1	No.	\$6,710	\$6,710	
3.3.7	Supply and install 750 mm dia RRJ wetland outfall pipe incl excavation, 20% crushed rock back fill	135	m	\$441	\$59,535	MW reimbursement rates for south east region (750mm RRJ 20% FCR backfill)
3.3.8	Supply and install twin chamber outfall pit with penstock and concrete weir	1	No.	\$15,000	\$15,000	
3.4	Access path					
3.4.1	Supply and install N32 grade concrete to form 4m wide sediment pond maintenance access ramp WL2 wetland	70	m2	\$61.90	\$4,333	MW reimbursement rates for south east region (concrete access track)
3.4.2	Supply and install D50=200mm with Class 2 FCR backfill to form 4m wide maintenance access around WL2 wetland	1971	m2	\$33.10	\$65,240	MW reimbursement rates for south east region (crushed rock access track)
4	LANDSCAPING					
4.1	Re-spread 200 mm topsoil for planting areas	3,885	m2	\$3.30	\$12,819	Allowance of 95% of topsoil stripped from site, 5% assumed as unsuitable for reuse MW reimbursement rates for south east region (Topsoiling (80% from stockpile and 20% imported))
4.2	Placement of 300 mm compacted clay liners for sedimentation basin and wetland (clay sourced onsite)	9,714	m2	\$8.00	\$77,712	MW reimbursement rates for south east region (clay lining)
4.3	Supply and install submerged marsh planting.	346	m2	\$14.50	\$5,017	MW reimbursement rates for south east region (Aquatic revegetation)
4.4	Supply and install deep marsh planting (60cm3 tube, 2/m2).	2,876	m2	\$14.50	\$41,702	MW reimbursement rates for south east region (Aquatic revegetation)
4.5	Supply and install shallow marsh planting (60cm3 tube, 2/m2).	3,412	m2	\$14.50	\$49,474	MW reimbursement rates for south east region (Aquatic revegetation)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
4.6	Supply and install wet ephemeral planting (90cm3 tube, 6/m2).	1,082	m2	\$14.50	\$15,689	MW reimbursement rates for south east region (Aquatic revegetation)
4.7	Supply and install dry ephemeral planting (90cm3 tube, 6/m2).	3,960	m2	\$16.80	\$66,528	MW reimbursement rates for south east region (terrestrial revegetation)
4.8	Supply and install sediment drying area planting (virocell planting, 6/m2).	1,112	m2	\$16.80	\$18,682	MW reimbursement rates for south east region (terrestrial revegetation)
4.9	Supply and install heavy jute mat (800gsm) pre-slit at density 6/m2 to TED to 350mm below NWL as specified for all Wet Ephemeral Planting	7,370	m2	\$7	\$51,590	MW reimbursement rates for south east region (weed control matting)
4.10	Supply, install and maintain plant protection netting for a selected species in the aquatic zones.	2	No.	\$20,000	\$40,000	
5	MISCELLANEOUS					
5.1	Allowance for timber bollards	1	Item	\$3,000	\$3,000	
5.2	Allowance for seats	1	Item	\$35,000	\$35,000	
	SUB-TOTAL WORKS				\$1,139,668	
6	DELIVERY					
6.1	Council fees	3.25	%		\$37,039	
6.2	VicRoads fees	0	%		\$-	
6.3	Traffic management	2	%		\$22,793	
6.4	Environmental management	1	Item	\$50,000	\$50,000	
6.5	Erosion control management	0.5	%		\$5,698	
6.6	Survey & design	5	%		\$56,983	
6.7	Supervision & project management	4	%		\$45,587	
6.8	Site establishment Note: Includes 24 months landscaping maintenance costs.	2.5	%		\$28,492	
6.9	Contingency	35	%		\$398,884	
	SUB-TOTAL DELIVERY				\$645,477	
7	TOTAL ESTIMATED COST				\$1,785,145	

Amended by
C172baso



REVISION	DESCRIPTION	APP'D	DATE
E	REVISED ISSUE - POST PANEL SAC RECOMMENDATIONS	DB	29.08.23
D	REVISED ISSUE	CC	22.04.22
C	REVISED ISSUE	CC	06.04.22
B	REVISED ISSUE	CC	05.11.21
A	PRELIMINARY ISSUE	CC	15.10.21



Alluvium Consulting Australia Pty. Ltd.
ABN 76 151 119 792
Lvl 1, 105-115 Dover Street
Cremorne Vic 3121
T 61 3 9421 2532
www.alluvium.com.au

DESIGNED: D.BRAND	DRAWN: D.BRAND	CHECKED: C.CARVALHO	APPROVED: S.CLEVEN	PROJECT No: 012128
----------------------	-------------------	------------------------	-----------------------	-----------------------

VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
WLRB2 DESIGN PLAN (DCP REF. WL-02)

REVISION: E	SHEET No: 12 of 55	ORIGINAL SIZE: A1 DATUM: m AHD (MGA 255)	SCALE: 1500 0 10 20 30m 5
----------------	-----------------------	---	---------------------------------

Wetland/Retarding Basin 3 (WLRB3) DCP – WL-03 (22/23 cost base)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
1	SITE WORKS					
1.1	Site preparation	1	Item	\$20,000	\$20,000	
1.2	Diversion works	1	Item	\$40,000	\$40,000	
1.3	Geotechnical Investigation	1	Item	\$50,000	\$50,000	
1.4	Cultural Heritage Assessment	1	Item	\$50,000	\$50,000	
1.5	Flora and Fauna Study	1	Item	\$30,000	\$30,000	
1.6	Safety Assessment	1	Item	\$20,000	\$20,000	
1.7	Stripping of topsoil	5,908	m3	\$1.30	\$7,680	MW reimbursement rates for south east region (stripping)
2	EARTHWORKS					MW reimbursement rates for south east region (earthworks rates)
2.1	Bulk excavation	15,455	m3	\$25	\$386,375	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
3	DRAINAGE					
3.1	Rockwork					
3.1.1	Supply and install D50=400mm rock, 800 mm thick to form WL3 Wetland inlet	96	m3	\$197	\$18,912	MW reimbursement rates for south east region (rockwork rate)
3.1.2	Supply and install D50=400mm rock, 800 mm thick to form WL3 Wetland overflow spillway	115	m3	\$197	\$22,655	MW reimbursement rates for south east region (rockwork rate)
3.2	Concrete					
3.2.1	Supply and install reinforced N32 grade concrete weir to form WL3 Wetland spillway weir	1	Item	\$10,000	\$10,000	
3.2.2	Supply and install reinforced N32 grade concrete, 150 mm deep to form WL3 sedimentation basin base	108	m3	\$322	\$34,776	Reinforced concrete slab 150mm thick (Rawlinsons publication)
3.3	Drainage					
3.3.1	Supply and install 675 mm dia RRJ sediment pond transfer pipe incl excavation, 20% crushed rock back fill (WL2 wetland)	35	m	\$387	\$13,545	MW reimbursement rates for south east region (675mm RRJ 20% FCR backfill)
3.3.2	Supply and install submerged offtake pit	1	No.	\$6,710	\$6,710	
3.3.3	Supply and install 300 mm dia RRJ 20% backfill balance pipes (WL3 wetland)	122	m	\$219	\$26,718	MW reimbursement rates for south east region (300mm RRJ 20% FCR backfill)
3.3.4	Supply and install submerged offtake pits for balance pipes	2	No.	\$6,710	\$13,420	
3.3.5	Supply and install 2x 900 mm dia RRJ wetland high flow bypass pipeline incl excavation, 20% crushed rock back fill (WL3)	368	m	\$561	\$206,448	MW reimbursement rates for south east region (900mm RRJ 20% FCR backfill)
3.3.6	Supply and install submerged offtake pit for high flow bypass	1	No.	\$6,710	\$6,710	
3.3.7	Supply and install 675 mm dia RRJ wetland outfall pipe incl excavation, 20% crushed rock backfill	16	m	\$387	\$6,192	MW reimbursement rates for south east region (675mm RRJ 20% FCR backfill)
3.3.8	Supply and install twin chamber outfall pit with penstock and concrete weir	1	No.	\$15,000	\$15,000	
3.4	Access path					
3.4.1	Supply and install N32 grade concrete to form 4m wide sediment pond maintenance access ramp WL3 wetland	70	m2	\$61.90	\$4,333	MW reimbursement rates for south east region (concrete access track)
3.4.2	Supply and install D50=200mm with Class 2 FCR backfill to form 4m wide maintenance access around WL3 wetland	2,404	m2	\$33.10	\$79,572	MW reimbursement rates for south east region (crushed rock access track)
4	LANDSCAPING					
4.1	Re-spread 200 mm topsoil for planting areas	5,613	m2	\$3.30	\$18,522	Allowance of 95% of topsoil stripped from site, 5% assumed as unsuitable for reuse MW reimbursement rates for south east region (Topsoiling (80% from stockpile and 20% imported))
4.2	Placement of 300 mm compacted clay liners for sedimentation basin and wetland (clay sourced onsite)	10,090	m2	\$8.00	\$80,720	MW reimbursement rates for south east region (clay lining)
4.3	Supply and install submerged marsh planting	343	m2	\$14.50	\$4,974	MW reimbursement rates for south east region (Aquatic revegetation)
4.4	Supply and install deep marsh planting (60cm3 tube, 2/m2).	2,939	m2	\$14.50	\$42,616	MW reimbursement rates for south east region (Aquatic revegetation)
4.5	Supply and install shallow marsh planting (60cm3 tube, 2/m2).	3,359	m2	\$14.50	\$48,706	MW reimbursement rates for south east region (Aquatic revegetation)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
4.6	Supply and install wet ephemeral planting (90cm3 tube, 6/m2).	1,190	m2	\$14.50	\$17,255	MW reimbursement rates for south east region (Aquatic revegetation)
4.7	Supply and install dry ephemeral planting (90cm3 tube, 6/m2).	2,810	m2	\$16.80	\$47,208	MW reimbursement rates for south east region (terrestrial revegetation)
4.8	Supply and install sediment drying area planting (virocell planting, 6/m2).	1,112	m2	\$16.80	\$18,682	MW reimbursement rates for south east region (terrestrial revegetation)
4.9	Supply and install heavy jute mat (800gsm) pre-slit at density 6/m2 to TED to 350mm below NWL as specified for all Wet Ephemeral Planting	7,488	m2	\$7	\$52,416	MW reimbursement rates for south east region (weed control matting)
4.10	Supply, install and maintain plant protection netting for a selected species in the aquatic zones.	2	No.	\$20,000	\$40,000	
5	MISCELLANEOUS					
5.1	Allowance for timber bollards	1	Item	\$3,000	\$3,000	
5.2	Allowance for seats	1	Item	\$35,000	\$35,000	
	SUB-TOTAL WORKS				\$1,478,143	
6	DELIVERY					
6.1	Council fees	3.25	%		\$48,040	
6.2	VicRoads fees	0	%		\$-	
6.3	Traffic management	2	%		\$29,563	
6.4	Environmental management	1	Item	\$50,000	\$50,000	
6.5	Erosion control management	0.5	%		\$7,391	
6.6	Survey & design	5	%		\$73,907	
6.7	Supervision & project management	4	%		\$59,126	
6.8	Site establishment Note: Includes 24 months landscaping maintenance costs.	2.5	%		\$36,954	
6.9	Contingency	35	%		\$517,350	
	SUB-TOTAL DELIVERY				\$822,330	
7	TOTAL ESTIMATED COST				\$2,300,473	

Amended by
C172baso