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	PRELIMINARY ISSUE	CC	15.10.21

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

VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
WESTERN WATERWAY DESIGN (SHEET 3 OF 3) (DCP REF. DR-01)

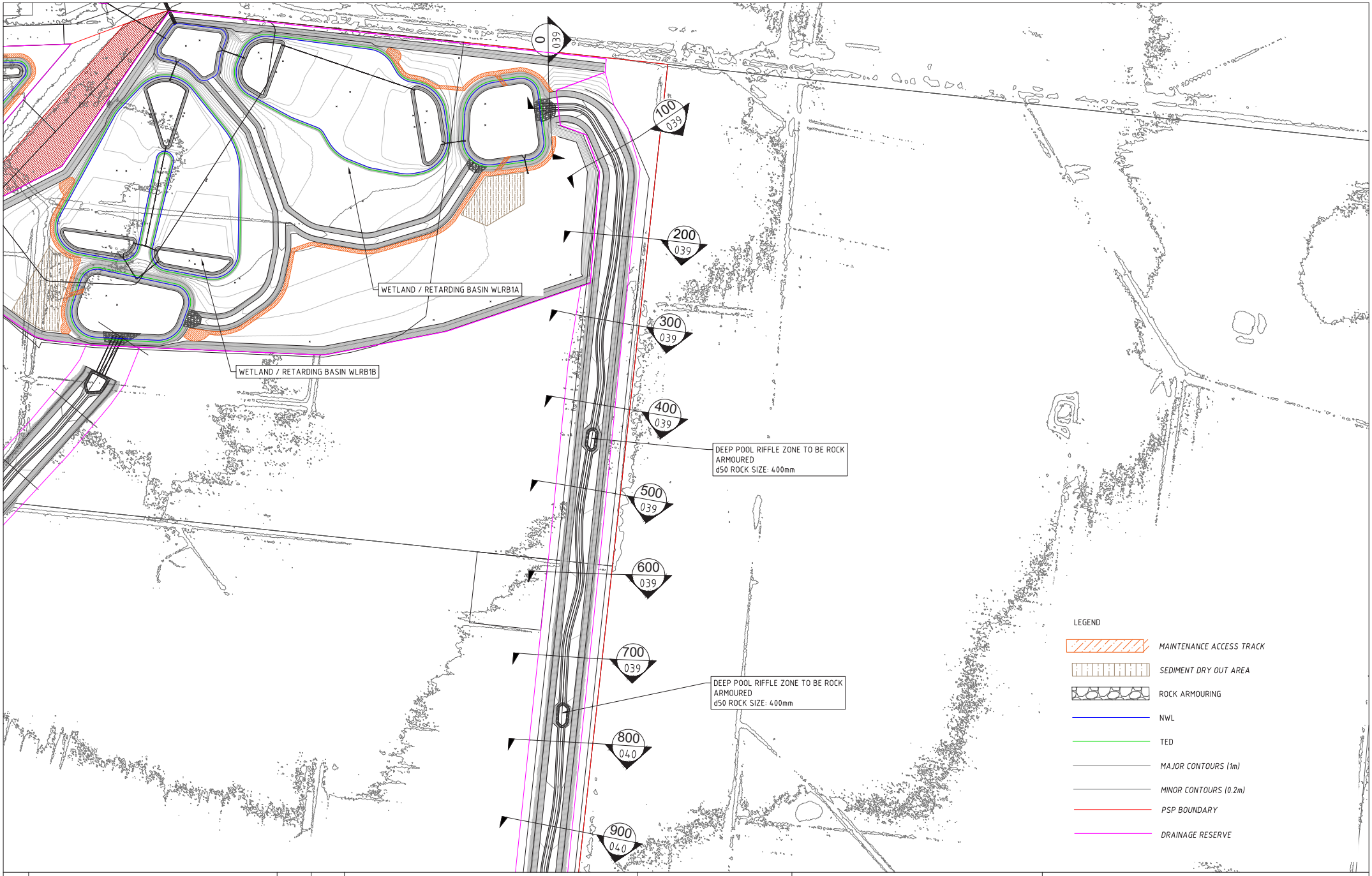
REVISION:	SHEET No.:	ORIGINAL SIZE:	SCALE:
E	45 of 55	A1	1:2,000

DATUM: m AHD (MGA z55)

0 20 40 80 120m

East Waterway (E-WW) DCP– DR-02

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	34,083	m3	$1.30	$44,308	MW reimbursement rates for south east region (stripping)
2	**EARTHWORKS**					MW reimbursement rates for south east region (earthworks rates)
2.1	Bulk excavation	178,994	m3	$10.90	$1,951,035	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
2.2	Reuse of onsite cut for filling	170,044	m3	$11.70	$1,989,518	Assumed 95% of bulk excavation for reuse
2.3	Disposal of excess cut	8,950	m3	$19.20	$171,834	Assumed 5% of bulk excavation
3	**DRAINAGE**					
3.1	**Rockwork for waterway pool formation**					
3.1.1	Supply and install D50=400mm rock, 800 mm thick to form Bass Hwy Outlet Pool	116	m3	$197	$22,852	MW reimbursement rates for south east region (rockwork rate)
3.1.2	Supply and install D50=400mm rock, 800 mm thick to form McGibbonys Rd Inlet Pool	134	m3	$197	$26,398	MW reimbursement rates for south east region (rockwork rate)
3.1.3	Supply and install D50=400mm rock, 800 mm thick to form McGibbonys Rd Outlet Pool	101	m3	$197	$19,897	MW reimbursement rates for south east region (rockwork rate)
3.1.4	Supply and install D50=400mm rock, 800 mm thick to form pool No 1.	140	m3	$197	$27,580	MW reimbursement rates for south east region (rockwork rate)
3.1.5	Supply and install D50=400mm rock, 800 mm thick to form pool No 2.	101	m3	$197	$19,897	MW reimbursement rates for south east region (rockwork rate)
3.1.6	Supply and install D50=400mm rock, 800 mm thick to form pool No 3.	142	m3	$197	$27,974	MW reimbursement rates for south east region (rockwork rate)
3.1.7	Supply and install D50=400mm rock, 800 mm thick to form pool No 4.	131	m3	$197	$25,807	MW reimbursement rates for south east region (rockwork rate)
3.1.8	Supply and install geofabric(Bidim A44 or equivalent) for all rock work	343	m3	$25	$8,575	
4	**LANDSCAPING**					
4.1	Re-spread 200 mm topsoil for planting areas	32,379	m2	$3.30	$106,850	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	Aquatic revegetation of the low flow waterway	22,908	m2	$14.50	$332,166	MW reimbursement rates for south east region (Aquatic revegetation)
4.3	Terrestrial revegetation of the high flow waterway	95,245	m2	$16.80	$1,600,116	MW reimbursement rates for south east region (terrestrial revegetation)
4.4	Supply and install heavy jute mat (800gsm) pre-slit at density 6/m2 to channel benches.	38,519	m2	$7	$269,633	MW reimbursement rates for south east region (weed control matting)
4.5	Supply and install coir logs along channel for temporary erosion control.	5,736	lm	$20	$114,720	
	SUB-TOTAL WORKS			**$6,809,160**		
5	**DELIVERY**					
5.1	Council fees	3.25	%		$221,298	
5.2	VicRoads fees	–	%		$–	
5.3	Traffic management	2	%		$136,183	
5.4	Environmental management	0.5	%		$34,046	
5.5	Survey & design	5	%		$340,458	
5.6	Supervision & project management	4	%		$272,366	
5.7	Site establishment	2.5	%		$170,229	
5.8	Contingency	35	%		$2,383,206	
	SUB-TOTAL DELIVERY				**$3,557,786**	
6	**TOTAL ESTIMATED COST**				**$10,366,946**	



REV	DESCRIPTION	APP'D	DATE
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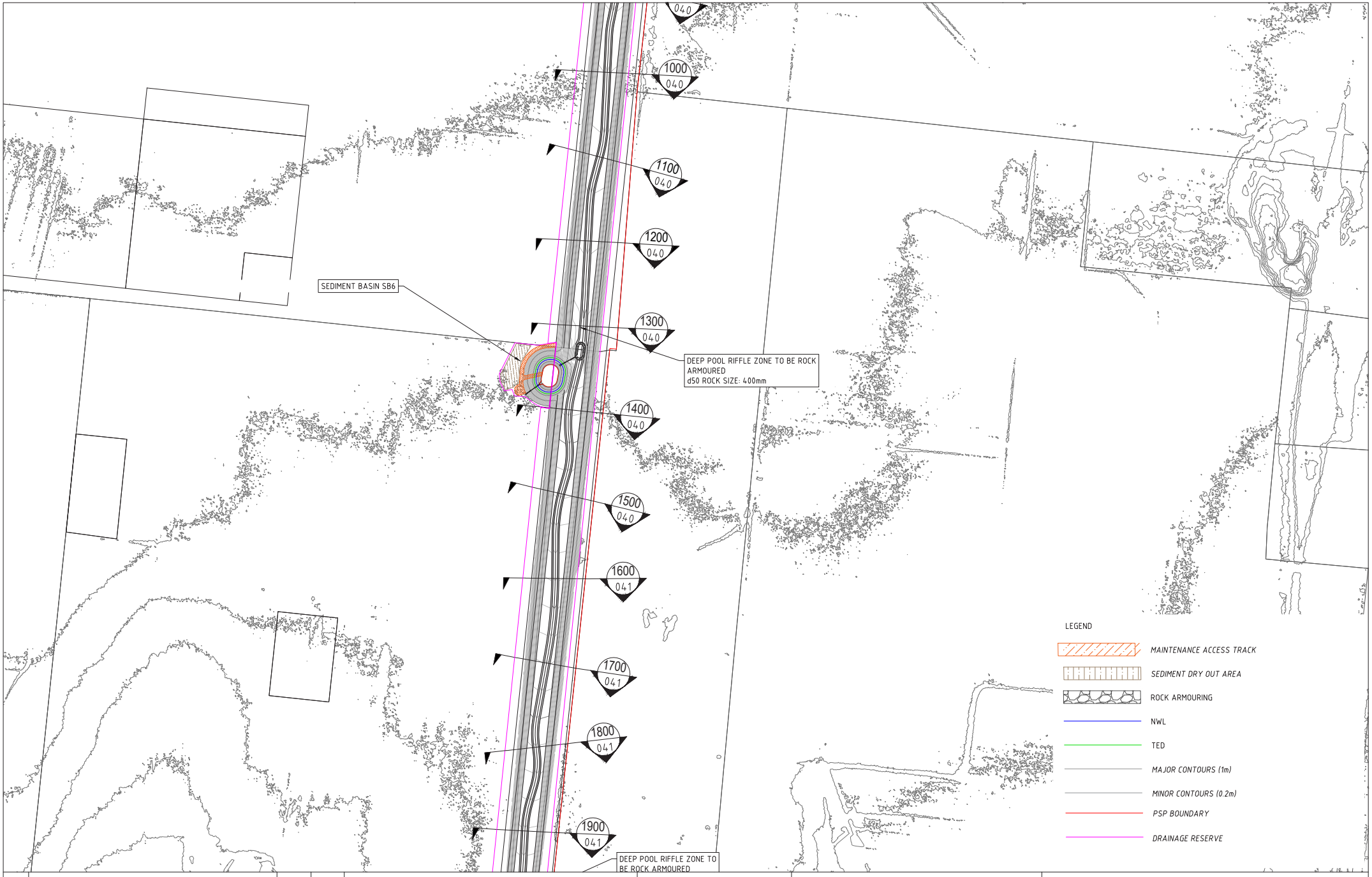
VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
EASTERN WATERWAY DESIGN (SHEET 1 OF 3) (DCP REF. DR-02)

REVISION:	SHEET No.:	ORIGINAL SIZE:	SCALE:
E	35 of 55	A1	1:2,000

DATUM: m AHD (MGA z55)

0 40 80 120m
20



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VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
EASTERN WATERWAY DESIGN (SHEET 2 OF 3) (DCP REF. DR-02)

REVISION:	SHEET No.:	ORIGINAL SIZE:	SCALE:
E	36 of 55	A1	1:2,000

DATUM: m AHD (MGA z55)

0 20 40 80 120m

REV	DESCRIPTION	APP'D	DATE
E	REVISED ISSUE - POST PANEL SAC RECOMMENDATIONS	DB	29.08.23
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VICTORIAN PLANNING AUTHORITY
WONTHAGGI NORTH EAST PSP
FUNCTIONAL DESIGN DRAWINGS
EASTERN WATERWAY DESIGN (SHEET 3 OF 3) (DCP REF. DR-02)

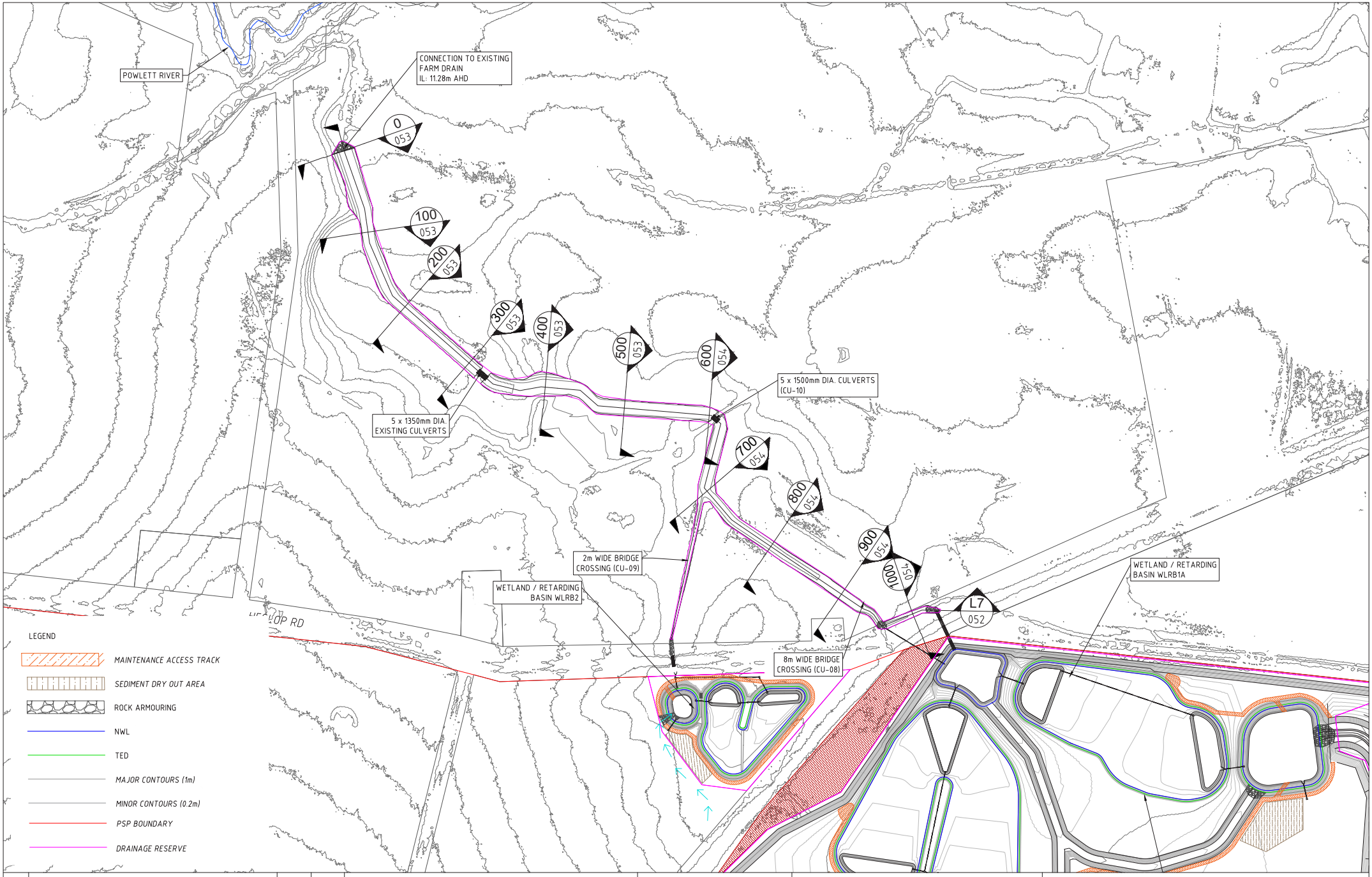
REVISION:	SHEET No.:	ORIGINAL SIZE:	SCALE:
E	37 of 55	A1	1:2,000

DATUM: m AHD (MGA z55)

0 20 40 80 120m

Main Outfall to Powlett River (MOP) DCP – DR-03

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	$10.90	$184,319	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
2.2	Reuse of onsite cut for filling	16,065	m3	$11.70	$187,955	Assumed 95% of bulk excavation for reuse
2.3	Disposal of excess cut	846	m3	$19.20	$16,234	Assumed 5% of bulk excavation
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			**$942,707**		
5	**DELIVERY**					
5.1	Council fees	3.25	%		$30,638	
5.2	VicRoads fees	–	%		$–	
5.3	Traffic management	2	%		$18,854	
5.4	Environmental management	0.5	%		$4,714	
5.5	Survey & design	5	%		$47,135	
5.6	Supervision & project management	4	%		$37,708	
5.7	Site establishment	2.5	%		$23,568	
5.8	Contingency	35	%		$329,947	
	SUB-TOTAL DELIVERY				**$492,564**	
6	**TOTAL ESTIMATED COST**				**$1,435,271**	



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

REVISION:	SHEET No.:	ORIGINAL SIZE:	SCALE:
E	51 of 55	A1	1:2000
		DATUM: m AHD (MGA z55)	

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

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	$10.90	$3,246,609	Excavation in broad greenfield land, excavated material to be reused on site for filling, allowance of 95% reuse on site for filling
2.2	Reuse of onsite cut for filling	282,961	m3	$11.70	$3,310,647	Assumed 95% of bulk excavation for reuse
2.3	Disposal of excess cut	14,893	m3	$19.20	$285,940	Assumed 5% of bulk excavation
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 install900 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 rampWL1A 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)

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT	COMMENTS
4.3	**Drainage**					
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 rampWL1B 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				**$10,933,821**	
8	**DELIVERY**					
8.1	Council fees	3.25	%		$355,349	
8.2	VicRoads fees	1	%		$109,338	
8.3	Traffic management	2	%		$218,676	
8.4	Environmental management	1	%	$50,000	$50,000	
8.5	Erosion control management	0.5	%		$54,669	
8.6	Survey & design	5	%		$546,691	
8.7	Supervision & project management	4	%		$437,353	
8.8	Site establishment	2.5	%		$273,346	
8.9	Contingency	35			$3,826,837	
	SUB-TOTAL DELIVERY				**$5,872,260**	
6	**TOTAL ESTIMATED COST**				**$16,806,080**	