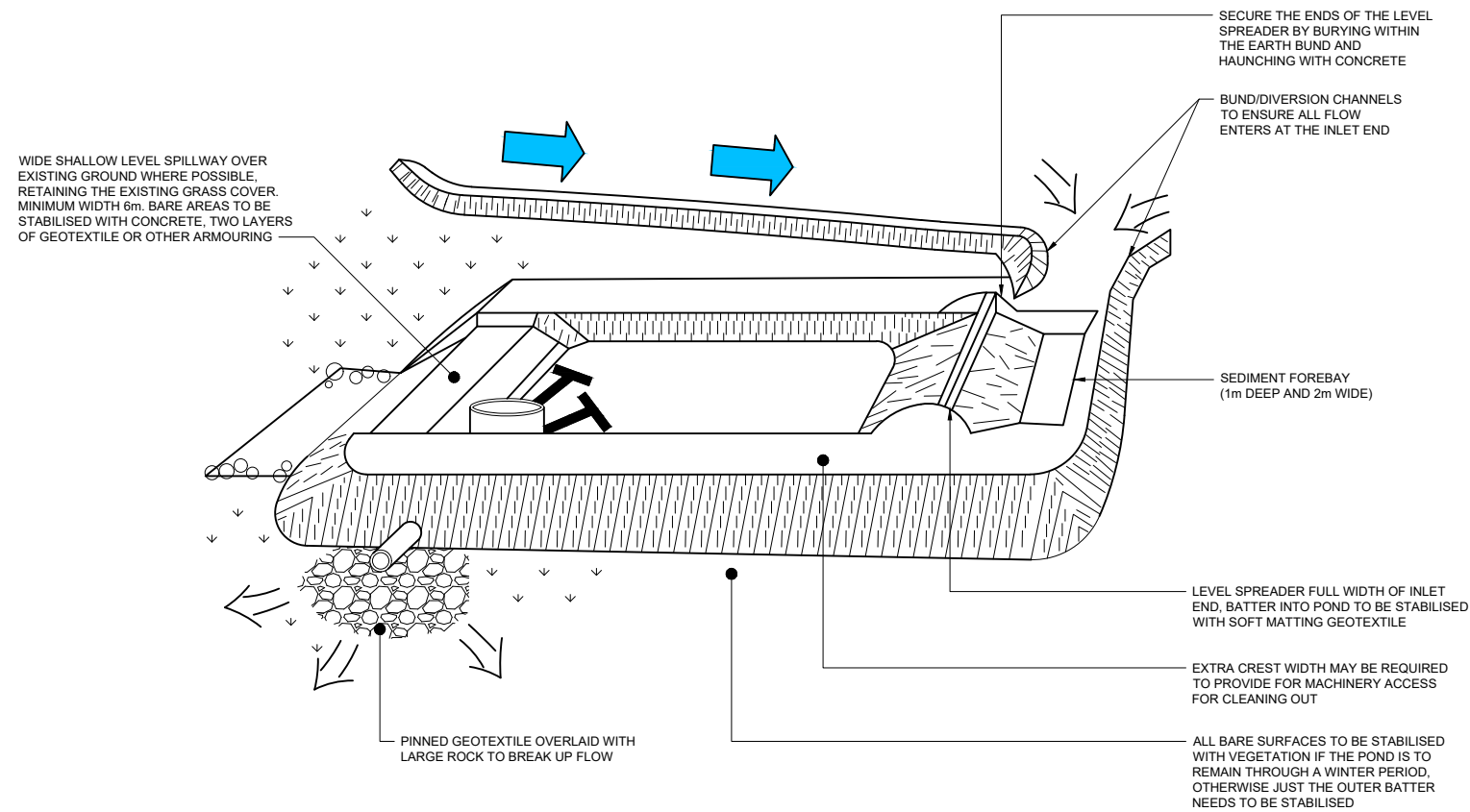
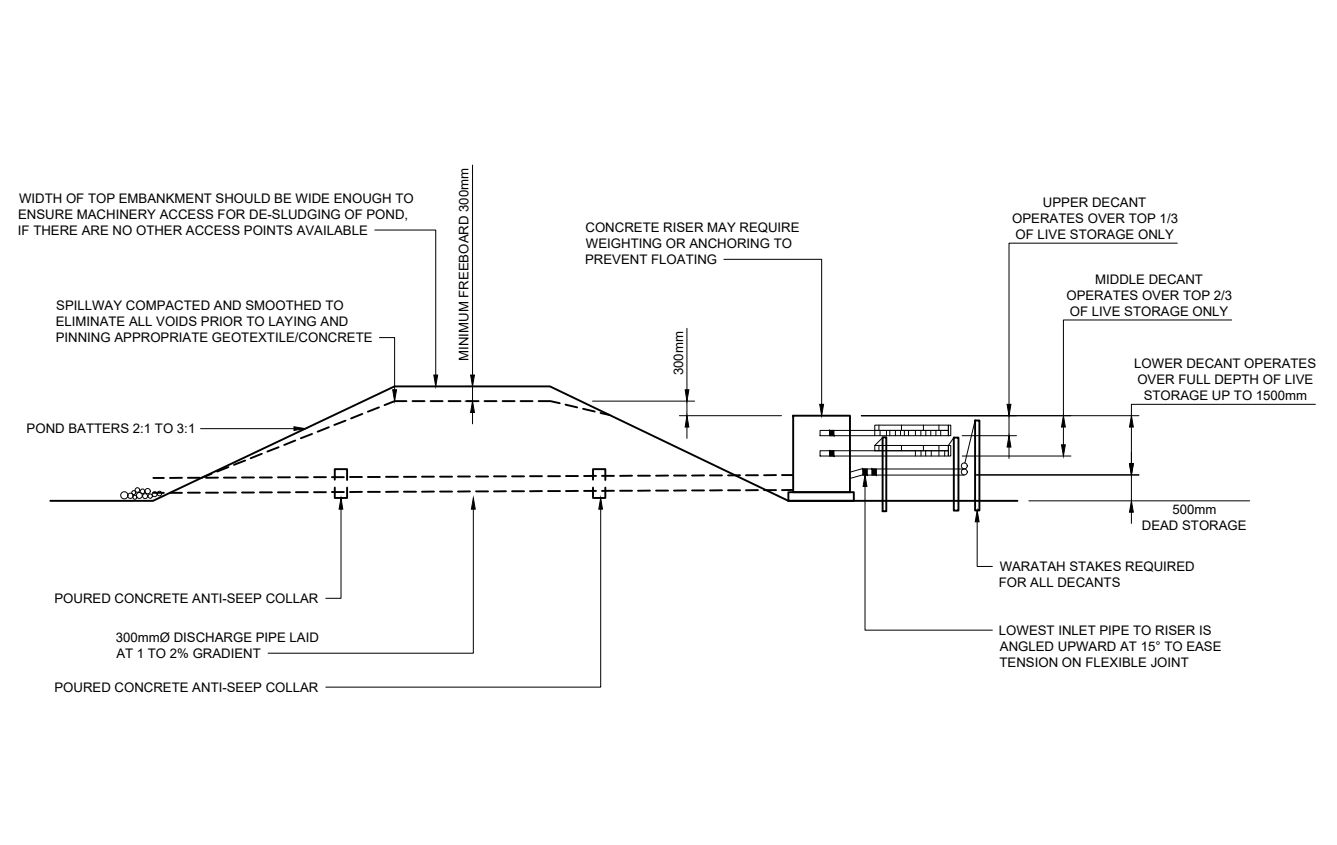


NOTES

- REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)
- PRIOR TO SEDIMENT RETENTION POND CONSTRUCTION:
 - CHECK GROUND CONDITIONS TO ENSURE STABLE AND GEOTECHNICAL ASSESSMENT OCCURS.
 - CONFIRM DESIGN IS NOT IN THE FLOOD PLAIN.
 - INSTALL SILT FENCE OR SUPER SILT FENCE BELOW WORKS AREA.
 - REMOVE UNSUITABLE MATERIAL AND CONFIRM APPROPRIATE LOCATION.



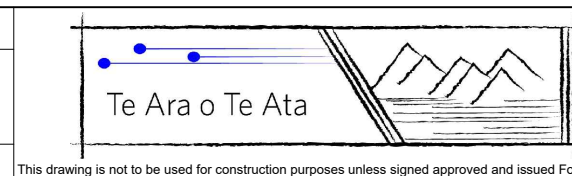
SCHEMATIC - SEDIMENT RETENTION POND
N.T.S.



SECTION - SEDIMENT RETENTION POND FOR THREE DECANTS
N.T.S.

Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017

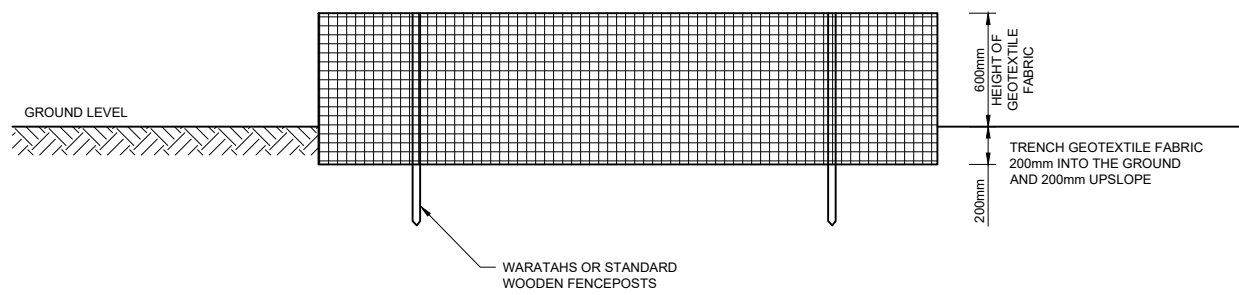
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Scales	NOT TO SCALE
Original Size	A1



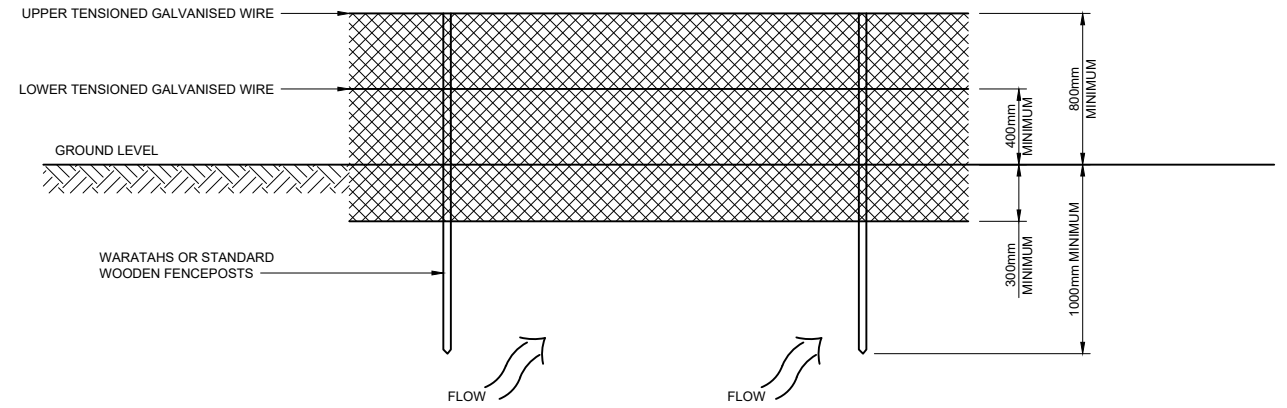
Approved	D. KENDERDINE
Status	FOR CONSENT
Drawing Number	MMA-DES-ESC-C0-DRG-4001
Revision	B

MT MESSENGER BYPASS	
EROSION AND SEDIMENT CONTROL	
TYPICAL DETAILS	
SEDIMENT RETENTION POND	

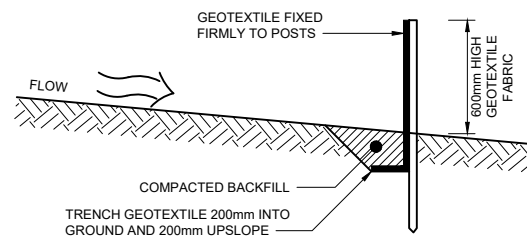
NOTES
 1. REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)



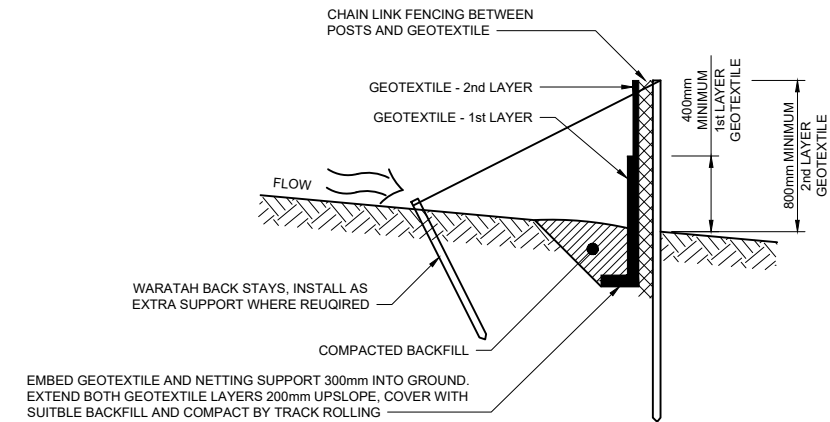
ELEVATION - SILT FENCE
 SCALE 1:20 (A1)



ELEVATION - SUPER SILT FENCE
 SCALE 1:20 (A1)



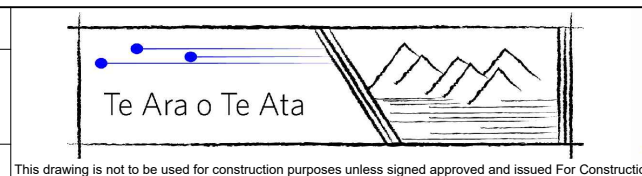
TYPICAL SECTION - SILT FENCE
 SCALE 1:20 (A1)



TYPICAL SECTION - SUPER SILT FENCE
 SCALE 1:20 (A1)

Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017

Tab	MMA-DES-ESC-C0-DRG-4002
Scales	1:40 (A3) 1:20 (A1)
Original Size	A1



MT MESSENGER BYPASS
EROSION AND SEDIMENT CONTROL
TYPICAL DETAILS
SILT FENCE

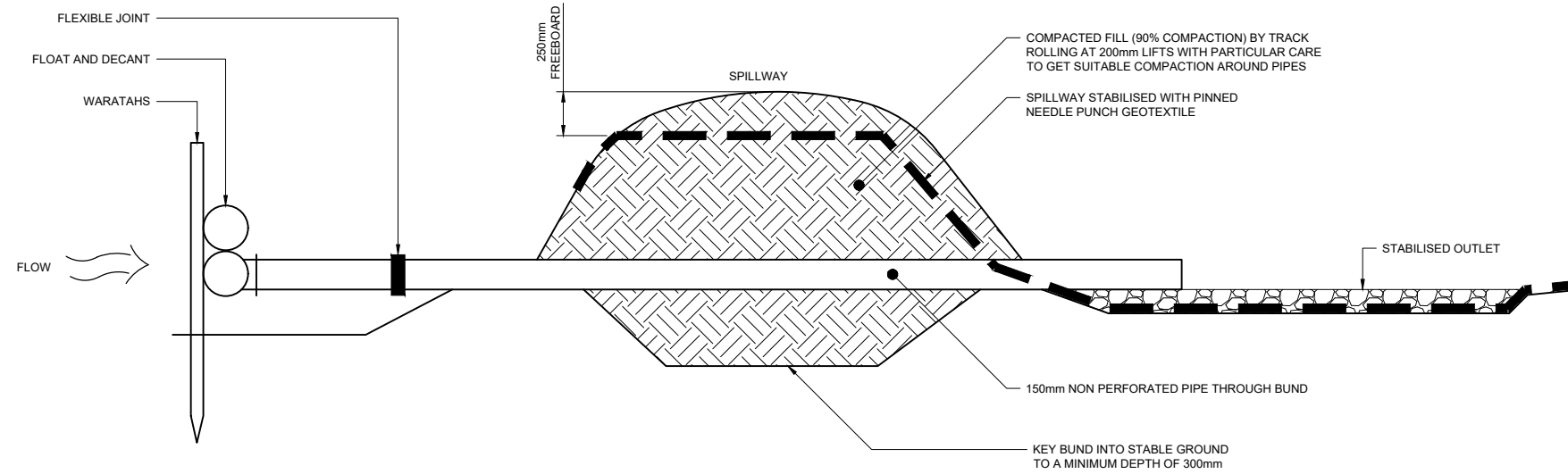
Approved	D. KENDERDINE
Status	FOR CONSENT
Drawing Number	MMA-DES-ESC-C0-DRG-4002
Revision	B

NOTES

1. REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)

2. DECANTING EARTH BUNS TO HAVE:

- 3:1 TO 5:1 LENGTH TO WIDTH RATIO
- FLOATING DECANTS
- ABILITY TO SAFELY PASS 1% AEP RAIN EVENT.



DECANTING EARTH BUND
N.T.S.

								Tab MMA-DES-ESC-C0-DRG-4003
								Scales NOT TO SCALE
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017	Original Size A1
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017	
Rev	Revision Description	Drawn	Drawing Checked	Designed	Design Checked	Approved	Date	

Te Ara o Te Ata

This drawing is not to be used for construction purposes unless signed approved and issued For Construction

MT MESSENGER BYPASS

EROSION AND SEDIMENT CONTROL

TYPICAL DETAILS

DECANTING EARTH BUND

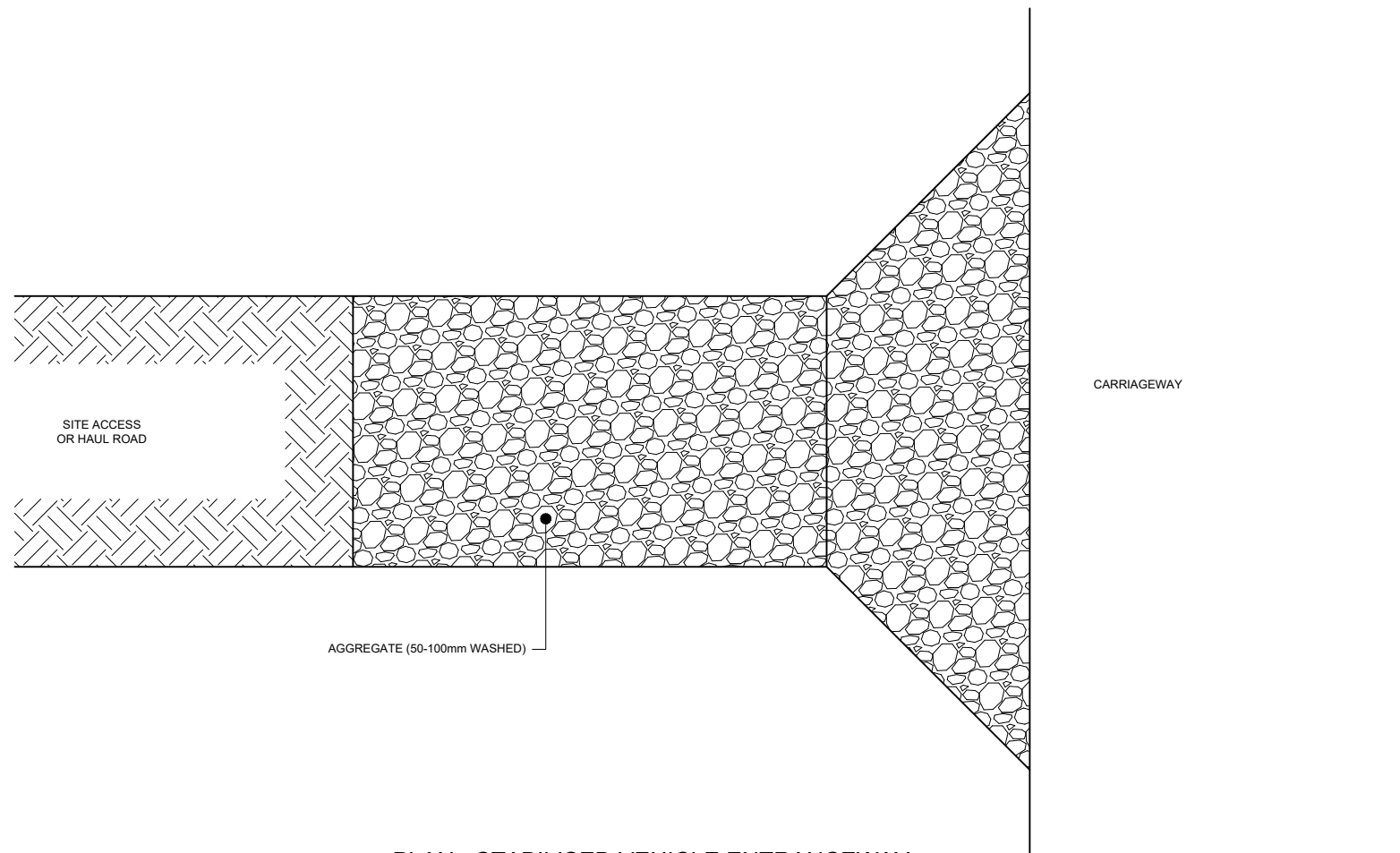
Approved
D. KENDERDINE

Status
FOR CONSENT

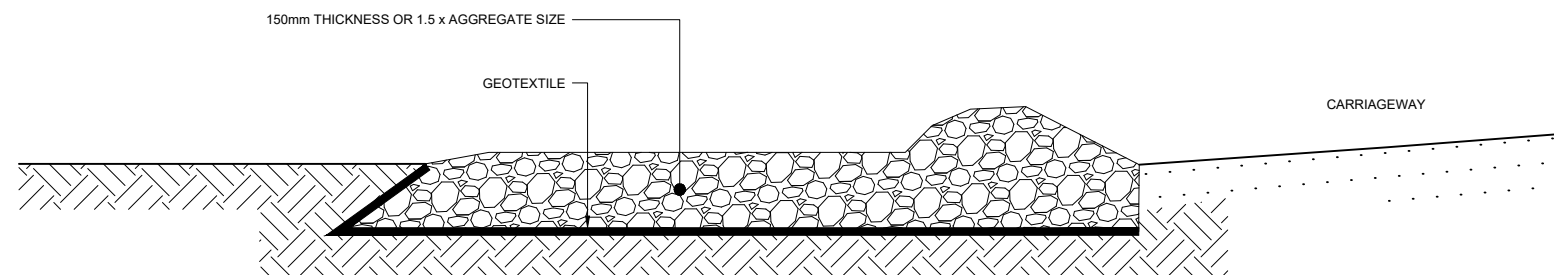
Drawing Number
MMA-DES-ESC-C0-DRG-4003

Revision
B

NOTES
 1. REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)



PLAN - STABILISED VEHICLE ENTRANCEWAY
 NOT TO SCALE



SECTION - STABILISED VEHICLE ENTRANCEWAY
 NOT TO SCALE

Rev	Revision Description	Drawn	Drawing Checked	Designed	Design Checked	Approved	Date
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017

Tab	MMA-DES-ESC-C0-DRG-4004
Scales	NOT TO SCALE
Original Size	A1

Te Ara o Te Ata

This drawing is not to be used for construction purposes unless signed approved and issued For Construction

MT MESSENGER BYPASS

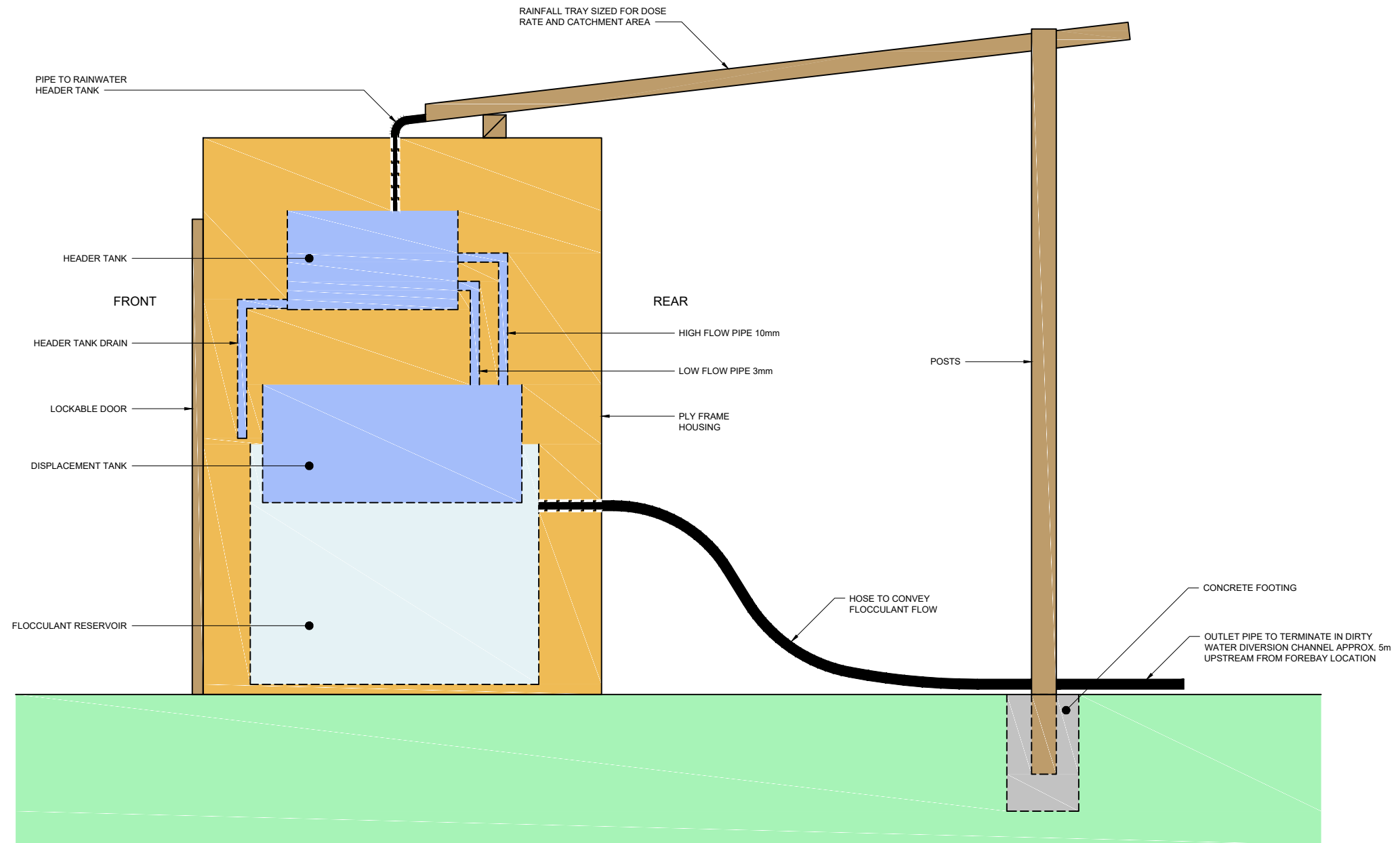
EROSION AND SEDIMENT CONTROL

TYPICAL DETAILS

STABILISED VEHICLE ENTRANCEWAY

Approved	D. KENDERDINE
Status	FOR CONSENT
Drawing Number	MMA-DES-ESC-C0-DRG-4004
Revision	B

NOTES
 1. REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)



								Tab MMA-DES-ESC-C0-DRG-4005
								Scales NOT TO SCALE
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017	Original Size A1
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017	
Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date	

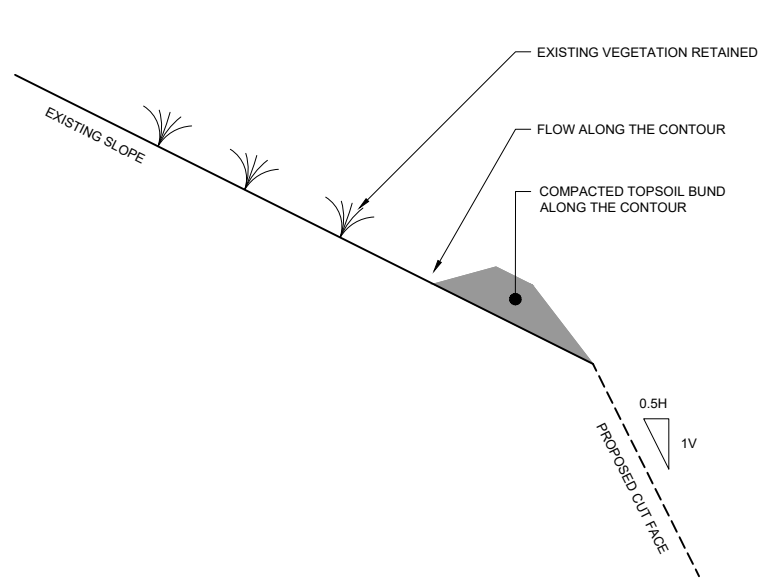
Te Ara o Te Ata

This drawing is not to be used for construction purposes unless signed approved and issued For Construction

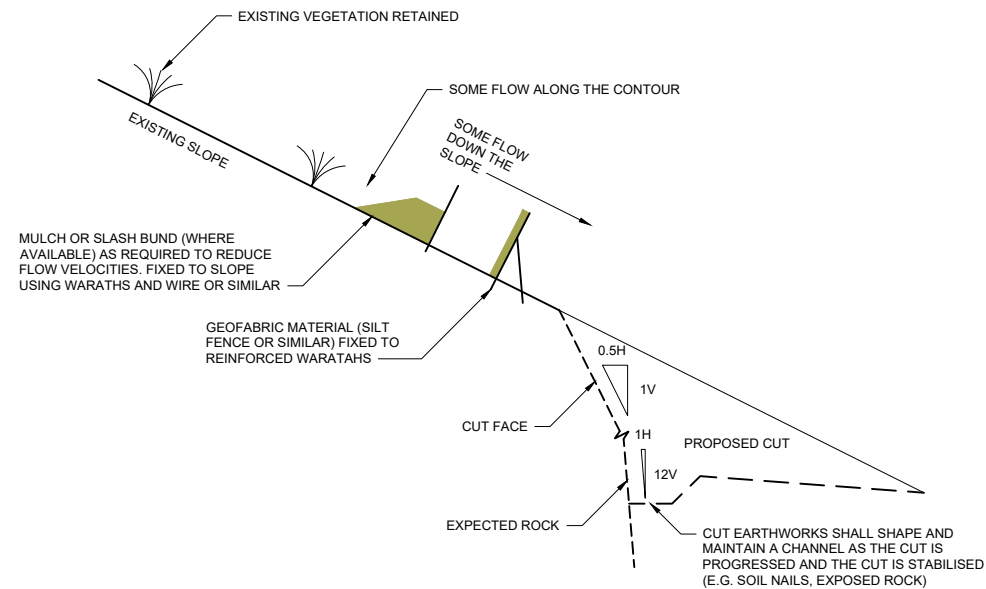
MT MESSENGER BYPASS
EROSION AND SEDIMENT CONTROL
TYPICAL DETAILS
FLOCCULATION SYSTEM

Approved D. KENDERDINE
Status FOR CONSENT
Drawing Number MMA-DES-ESC-C0-DRG-4005
Revision B

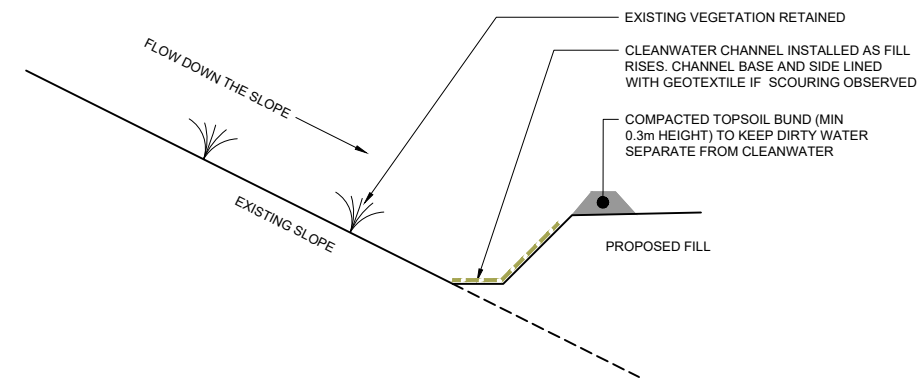
- NOTES
- REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)
 - DESIGN DIMENSIONS SUBJECT TO SPECIFIC DESIGN WITHIN CWMP AND SITE SPECIFIC MANAGEMENT PLAN DETAILS.



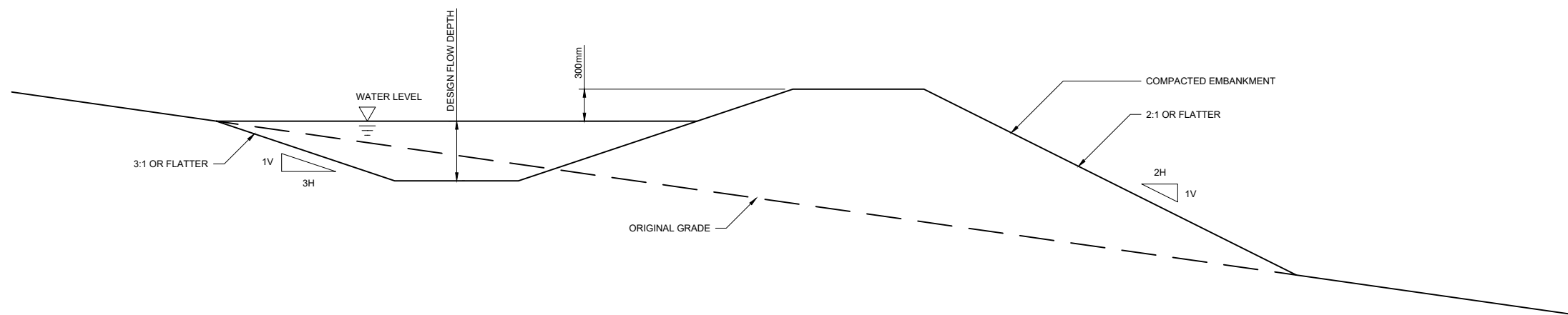
SECTION - CLEAN WATER DIVERSION TYPE A
N.T.S.



SECTION - CLEAN WATER DIVERSION TYPE B
N.T.S.



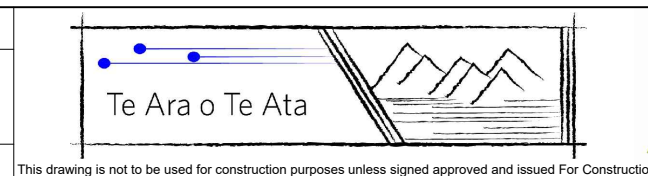
SECTION - CLEAN WATER DIVERSION TYPE C
N.T.S.



SECTION - DIRTY WATER DIVERSION
N.T.S.

Rev	Revision Description	Drawn	Drawing Checked	Designed	Design Checked	Approved	Date
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017

Tab	MMA-DES-ESC-C0-DRG-4006
Scales	NOT TO SCALE
Original Size	A1

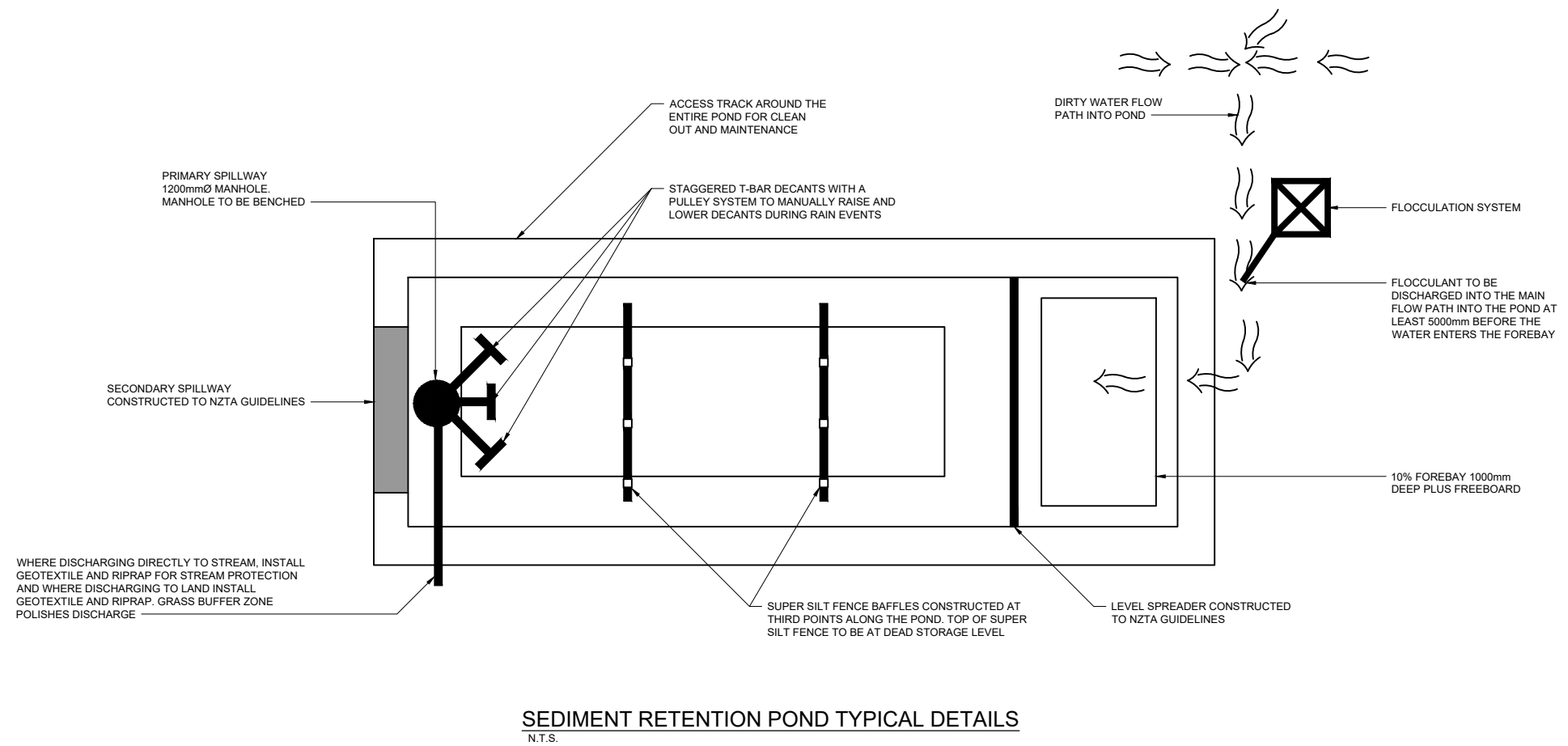
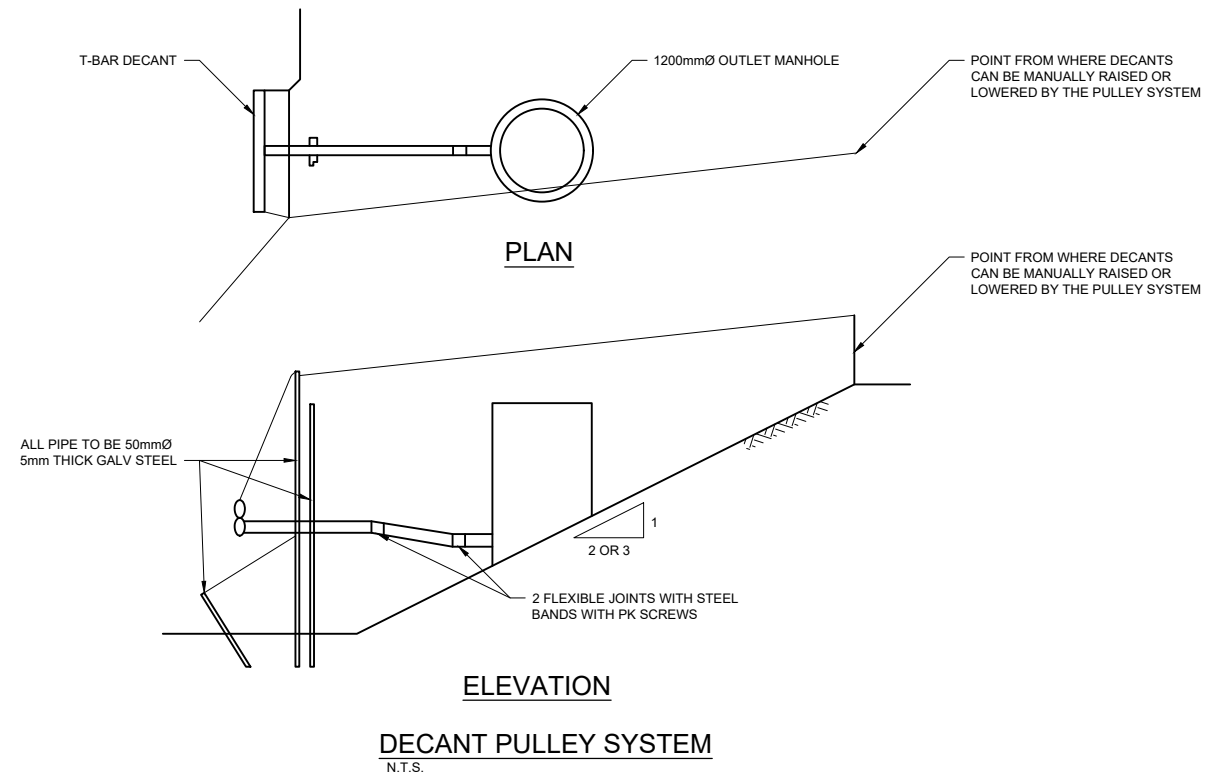


MT MESSENGER BYPASS
EROSION AND SEDIMENT CONTROL
TYPICAL DETAILS
WATER DIVERSION

Approved	D. KENDERDINE
Status	FOR CONSENT
Drawing Number	MMA-DES-ESC-C0-DRG-4006
Revision	B

NOTES

- REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)
- ALL ROPE FOR PULLEY SYSTEM TO BE NYLON ROPE.
- ROPE TO BE SECURED TO THE BANK WITH A STAKE SO THAT IT CAN BE EASILY ACCESSED DURING A RAIN EVENT AND INDIVIDUAL DECANTS CAN BE MANUALLY RAISED OR LOWERED.
- IF A PULLEY SYSTEM NOT INSTALLED THEN A "PLUG" WILL BE UTILISED IN THE OUTLET PIPE TO CEASE FLOWS AS NECESSARY.



Rev	Revision Description	Drawn	Drawing Checked	Designed	Design Checked	Approved	Date
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017

Tab	MMA-DES-ESC-CO-DRG-4007
Scales	NOT TO SCALE
Original Size	A1

Te Ara o Te Ata

This drawing is not to be used for construction purposes unless signed approved and issued For Construction

MT MESSENGER BYPASS

EROSION AND SEDIMENT CONTROL

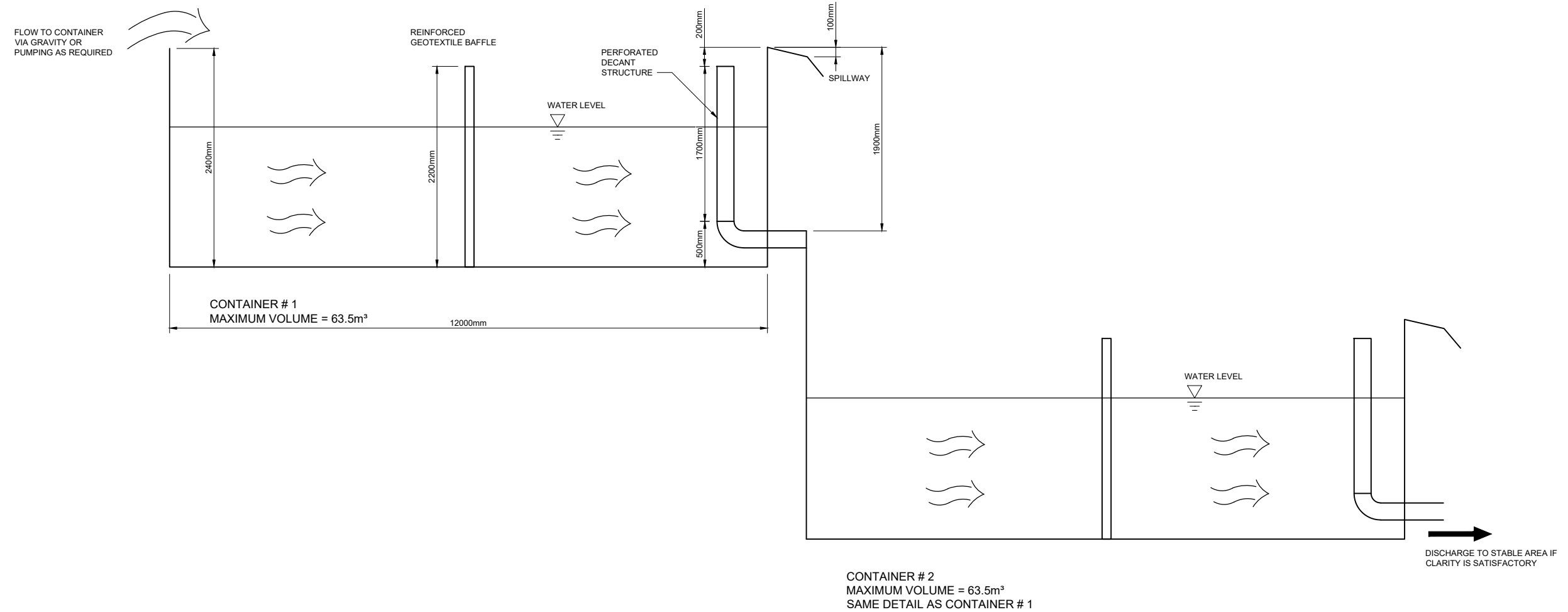
TYPICAL DETAILS

SEDIMENT RETENTION POND

Approved	D. KENDERDINE
Status	FOR CONSENT
Drawing Number	MMA-DES-ESC-CO-DRG-4007
Revision	B

NOTES

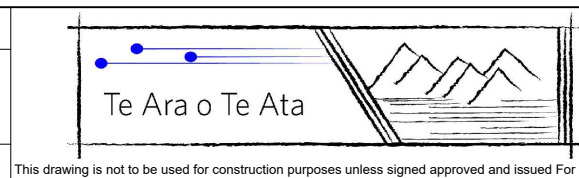
1. REFER TO NZTA EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE HIGHWAY INFRASTRUCTURE (NZTA GUIDELINES)
2. SHIPPING CONTAINERS CAN BE USED TO CREATE CONTAINERS. BAFFLE DESIGNED FROM REINFORCED GEOTEXTILE TO ALLOW FLOWS TO PASS. STRUCTURAL INTEGRITY OF CONTAINERS TO REMAIN.
3. CONTAINER # 1 WILL BE POSITIONED 1900mm HIGHER THAN CONTAINER # 2 IF CONTOURS DO NOT ALLOW THIS THEN CONTAINER # 1 WILL BE RAISED BY 1900mm.
4. WATER CLARITY CAN BE CHECKED IN CONTAINER # 2 AND FLOCCULANT ADDED MANUALLY IF NECESSARY TO ACHIEVE WATER CLARITY.



CONTAINER IMPOUNDMENT SYSTEM
N.T.S.

Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
B	FOR CONSENT	QDO'S	WHE	SPP	GR	LG	14/11/2017
A	PRELIMINARY DRAFT - FOR EXTERNAL REVIEW	QDO'S	WHE	SPP	GR	KJB	06/10/2017

Tab	MMA-DES-ESC-C0-DRG-4008
Scales	NOT TO SCALE
Original Size	A1



MT MESSENGER BYPASS	
EROSION AND SEDIMENT CONTROL TYPICAL DETAILS CHEMICAL TREATMENT DEVICES	

Approved	D. KENDERDINE
Status	FOR CONSENT
Drawing Number	MMA-DES-ESC-C0-DRG-4008
Revision	B