

**PHASE 1 WORKS**

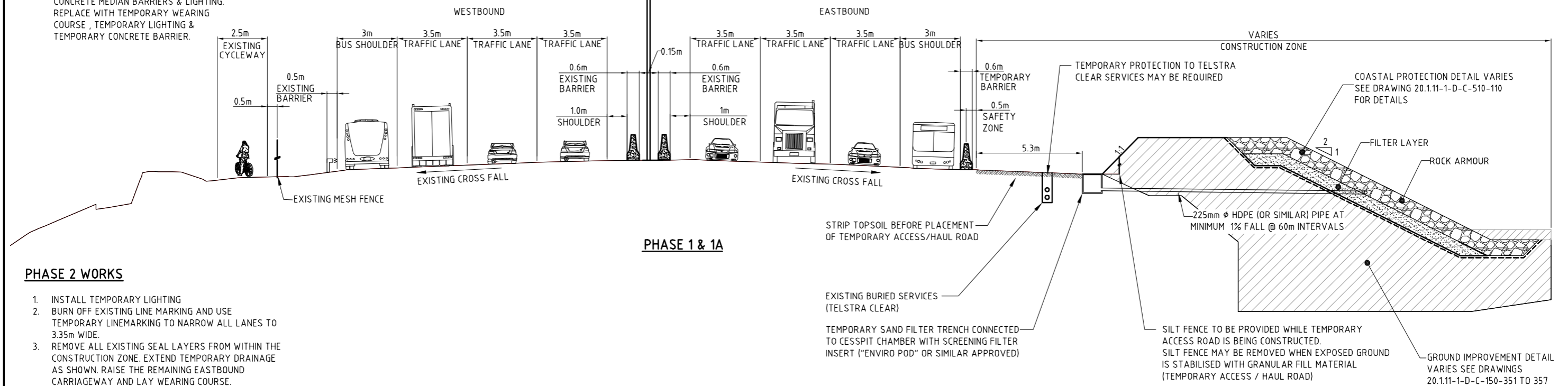
1. CONSTRUCT (WIDEN & RAISE) EASTBOUND SIDE OF MOTORWAY. WORKS INCLUDE, BUT NOT LIMITED TO; GROUND IMPROVEMENTS, EXISTING RIP-RAP REMOVAL, BULK FILL, RIP-RAP REPLACEMENT, GENERAL FILL, AND TEMPORARY DRAINAGE.

**NOTE:**

BOTH EASTBOUND & WESTBOUND EXISTING BUS SHOULDERS ARE UNAFFECTED DURING PHASE 1.

**PHASE 1A WORKS**

1. DURING NIGHT SHIFTS REMOVE EXISTING CONCRETE MEDIAN BARRIERS & LIGHTING. REPLACE WITH TEMPORARY WEARING COURSE, TEMPORARY LIGHTING & TEMPORARY CONCRETE BARRIER.

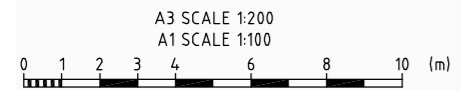
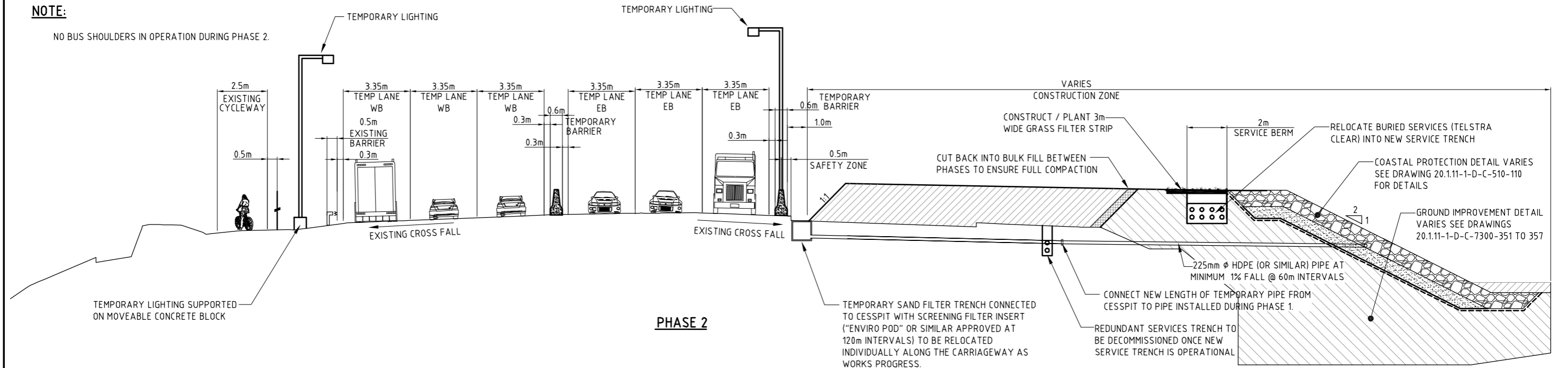


**PHASE 2 WORKS**

1. INSTALL TEMPORARY LIGHTING
2. BURN OFF EXISTING LINE MARKING AND USE TEMPORARY LINEMARKING TO NARROW ALL LANES TO 3.35m WIDE.
3. REMOVE ALL EXISTING SEAL LAYERS FROM WITHIN THE CONSTRUCTION ZONE. EXTEND TEMPORARY DRAINAGE AS SHOWN. RAISE THE REMAINING EASTBOUND CARRIAGEWAY AND LAY WEARING COURSE.

**NOTE:**

NO BUS SHOULDERS IN OPERATION DURING PHASE 2.



**DRAFT FOR REVIEW**

No.	Revision	By	Chk	Appd	Date
B	FOR REVIEW				17.06.10
A	FOR REVIEW				08.03.10

Drawing Originator:  
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Original Scale (A1)	Design/Engineer
1:100	Review/Engineer
Reduced Scale (A3)	Drafting Checked
1:200	Consultant Approval
	Revised by Becca

**NZ TRANSPORT AGENCY**  
WAKA KOTAHU

Project: **WATERVIEW CONNECTION PROJECT**  
SH16 / SH20

Title: **CAUSEWAY - CONSTRUCTION PHASE**  
TYPICAL SECTIONS  
SHEET 1 OF 3 - (SECTOR 4)

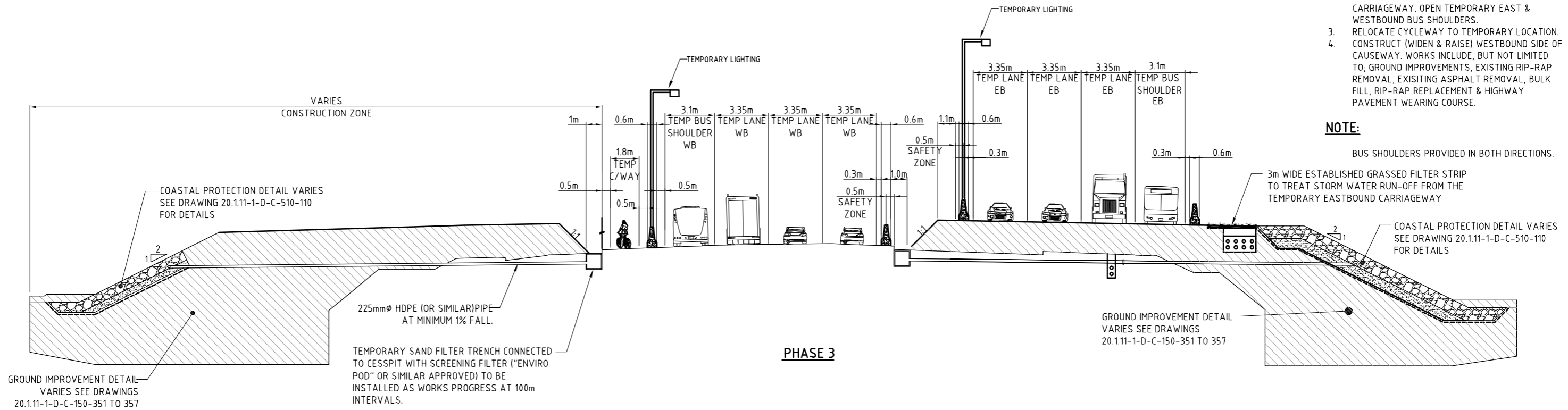
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Grid Reference:  
**Mt Eden 2000**  
Originator No.  
Project No. **20.111-3-D-C-150-301**  
Rev. **A**

**PHASE 3 WORKS**

1. MOVE ALL EASTBOUND LANES UP ONTO NEW CARRIAGEWAY BUILT IN STAGE 2.
2. MOVE ALL WESTBOUND LANES TO CENTRAL CARRIAGEWAY. OPEN TEMPORARY EAST & WESTBOUND BUS SHOULDERS.
3. RELOCATE CYCLEWAY TO TEMPORARY LOCATION. CONSTRUCT (WIDEN & RAISE) WESTBOUND SIDE OF CAUSEWAY. WORKS INCLUDE, BUT NOT LIMITED TO; GROUND IMPROVEMENTS, EXISTING RIP-RAP REMOVAL, EXISTING ASPHALT REMOVAL, BULK FILL, RIP-RAP REPLACEMENT & HIGHWAY PAVEMENT WEARING COURSE.
- 4.

**NOTE:**

BUS SHOULDERS PROVIDED IN BOTH DIRECTIONS.



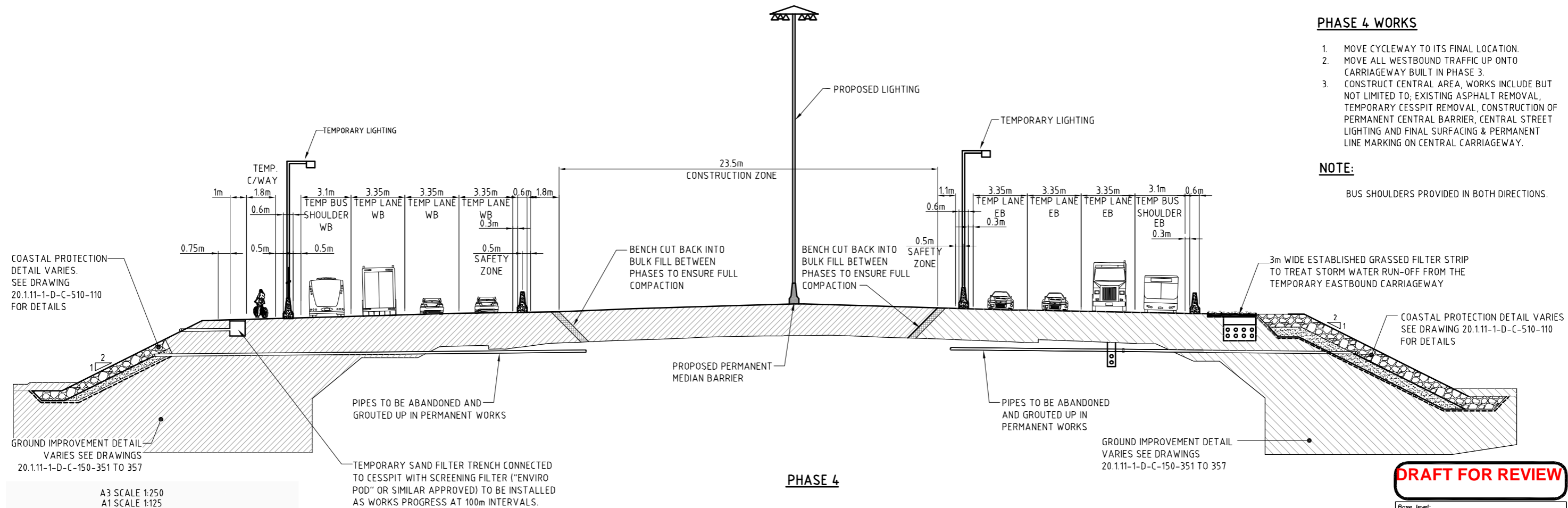
**PHASE 3**

**PHASE 4 WORKS**

1. MOVE CYCLEWAY TO ITS FINAL LOCATION.
2. MOVE ALL WESTBOUND TRAFFIC UP ONTO CARRIAGEWAY BUILT IN PHASE 3.
3. CONSTRUCT CENTRAL AREA, WORKS INCLUDE BUT NOT LIMITED TO; EXISTING ASPHALT REMOVAL, TEMPORARY CESSPIT REMOVAL, CONSTRUCTION OF PERMANENT CENTRAL BARRIER, CENTRAL STREET LIGHTING AND FINAL SURFACING & PERMANENT LINE MARKING ON CENTRAL CARRIAGEWAY.

**NOTE:**

BUS SHOULDERS PROVIDED IN BOTH DIRECTIONS.



**PHASE 4**

**DRAFT FOR REVIEW**



No.	Revision	By	Chk	Appd	Date
B	FOR REVIEW				17.06.10
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 WAKA KOTAHU

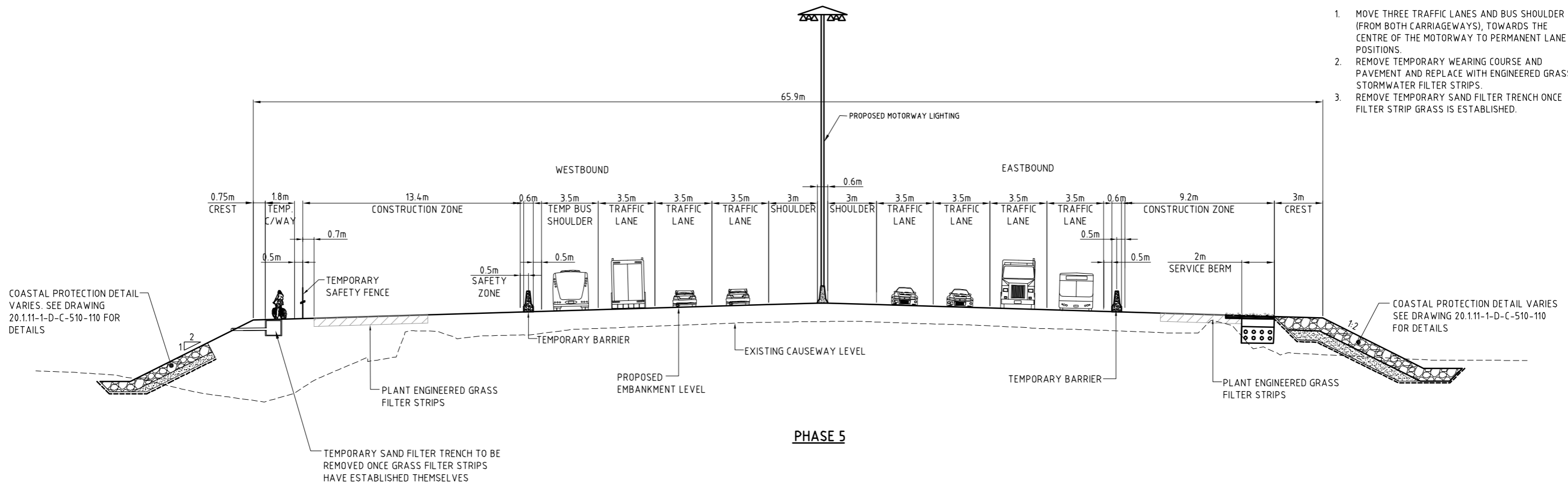
Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **CAUSEWAY - CONSTRUCTION PHASE**  
 TYPICAL SECTIONS  
 SHEET 2 OF 3 - (SECTOR 4)

Base level:  
**MSL AUCK. VERT. DATUM 1946**  
 Grid Reference:  
**Mt Eden 2000**  
 Originator No.  
 Project No.  
**20.11-3-D-C-150-302**  
 Rev.  
**B**

**PHASE 5 WORKS**

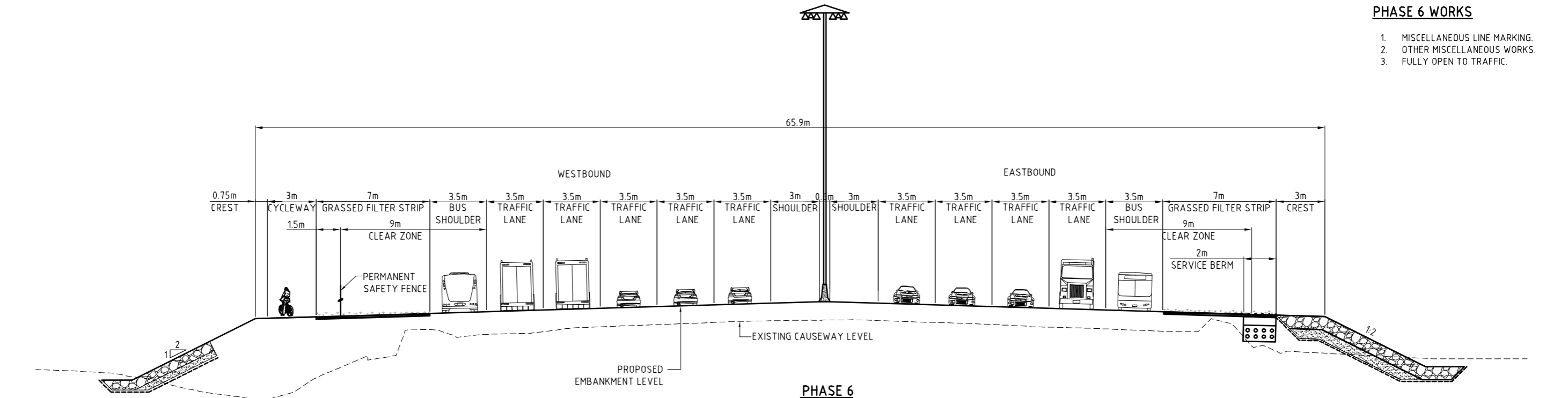
1. MOVE THREE TRAFFIC LANES AND BUS SHOULDER (FROM BOTH CARRIAGEWAYS), TOWARDS THE CENTRE OF THE MOTORWAY TO PERMANENT LANE POSITIONS.
2. REMOVE TEMPORARY WEARING COURSE AND PAVEMENT AND REPLACE WITH ENGINEERED GRASS STORMWATER FILTER STRIPS.
3. REMOVE TEMPORARY SAND FILTER TRENCH ONCE FILTER STRIP GRASS IS ESTABLISHED.



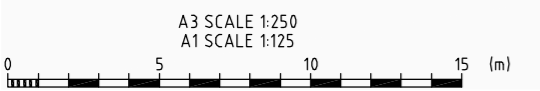
**PHASE 5**

**PHASE 6 WORKS**

1. MISCELLANEOUS LINE MARKING.
2. OTHER MISCELLANEOUS WORKS.
3. FULLY OPEN TO TRAFFIC.



**PHASE 6**



**DRAFT FOR REVIEW**

Base Level:	MSL AUCK. VERT. DATUM 1946
Grid Reference:	Mt Eden 2000
Originator No.	
Project No.	20.111-3-D-C-150-303
Rev.	B

No.	Revision	By	Chk	Appd	Date
B	FOR REVIEW				17.06.10
A	FOR REVIEW				08.03.10

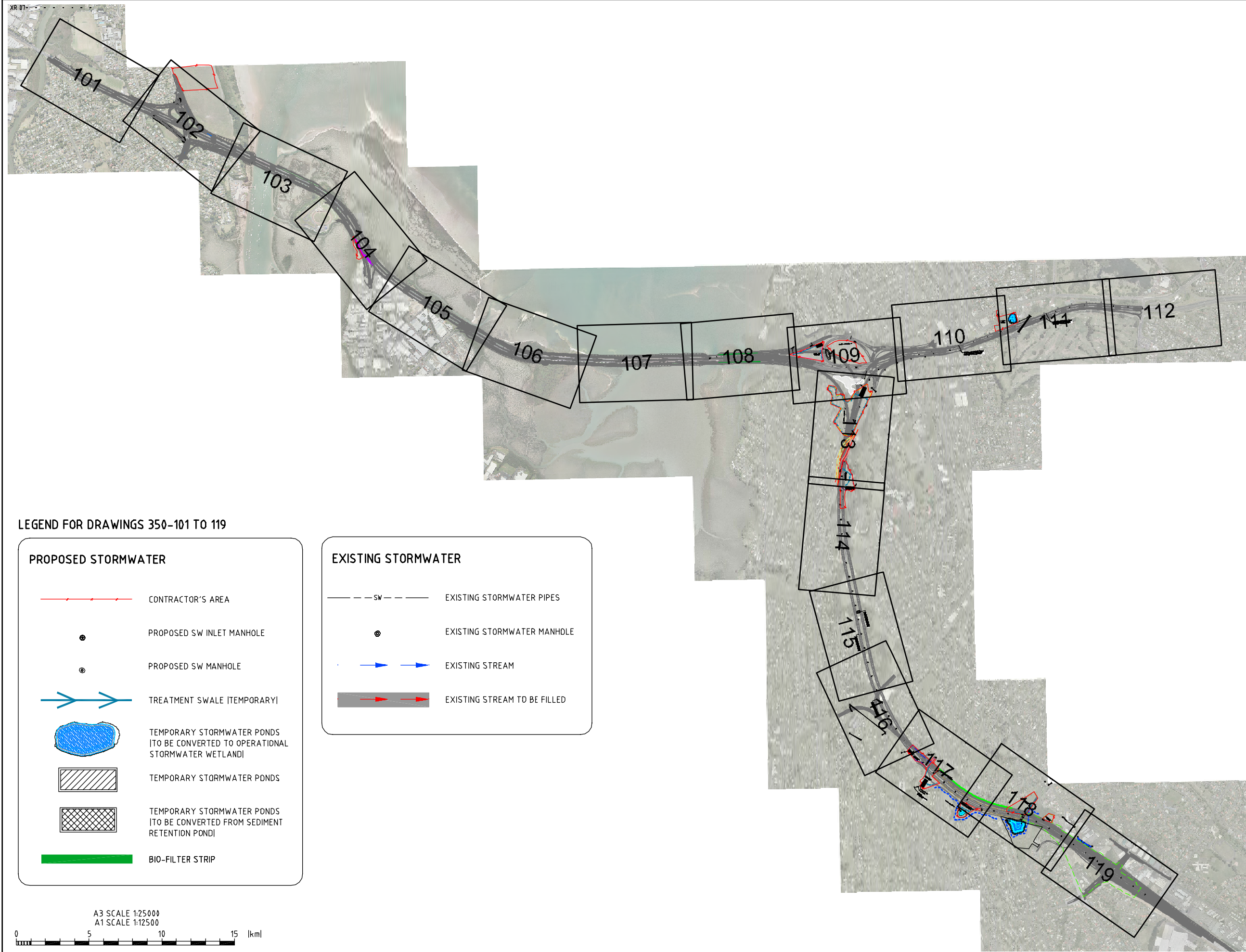
Drawing Originator:  
**aurecon**  
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Reduced Scale (A3)	1:250	Review Engineer	
		Drafting Checked	
		Consultant Approval	
		Reviewed by Becca	

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHU

Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **CAUSEWAY - CONSTRUCTION PHASE**  
 TYPICAL SECTIONS  
 SHEET 3 OF 3 - (SECTOR 4)



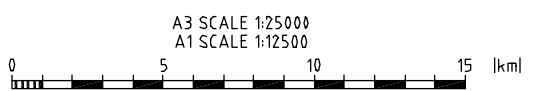
LEGEND FOR DRAWINGS 350-101 TO 119

**PROPOSED STORMWATER**

- CONTRACTOR'S AREA
- PROPOSED SW INLET MANHOLE
- PROPOSED SW MANHOLE
- TREATMENT SWALE (TEMPORARY)
- TEMPORARY STORMWATER PONDS (TO BE CONVERTED TO OPERATIONAL STORMWATER WETLAND)
- TEMPORARY STORMWATER POND
- TEMPORARY STORMWATER PONDS (TO BE CONVERTED FROM SEDIMENT RETENTION POND)
- BIO-FILTER STRIP

**EXISTING STORMWATER**

- EXISTING STORMWATER PIPES
- EXISTING STORMWATER MANHOLE
- EXISTING STREAM
- EXISTING STREAM TO BE FILLED



No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:		Original Scale (A1)	Design Engineer	SMR
<b>Tonkin &amp; Taylor</b> Environmental and Engineering Consultants		1:1000	Review Engineer	TSRF
		Reduced Scale (A3)	Drafting Checked	-
		1:2111	Consultant Approval	-
			Received by Becca	RM

**NZ TRANSPORT AGENCY**  
WAKA KOTAHI

Project: WATERVIEW CONNECTION PROJECT  
SH16 / SH20

Title: STORMWATER & STREAMWORKS CONSTRUCTION PHASE KEY PLAN

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level: MSL AUCK. VERT. DATUM 1946  
Grid Reference: MT EDEN 2000

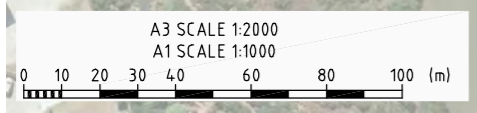
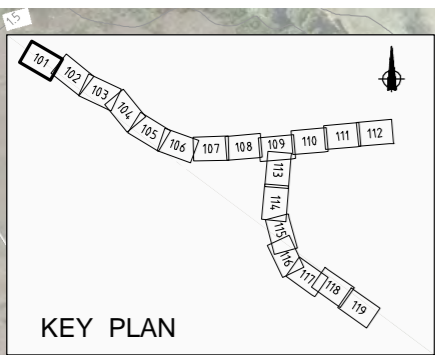
Project No. 20.111-3-D-D-350-100 Rev. B

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Base level:  
**MSL AUCK. VERT. DATUM 1946**  
 Grid Reference:  
**Mt Eden 2000**

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	TM	JB	JH	27.07.10
A	FOR REVIEW	TM	JB	JH	30.03.10

Drawing Originator:  
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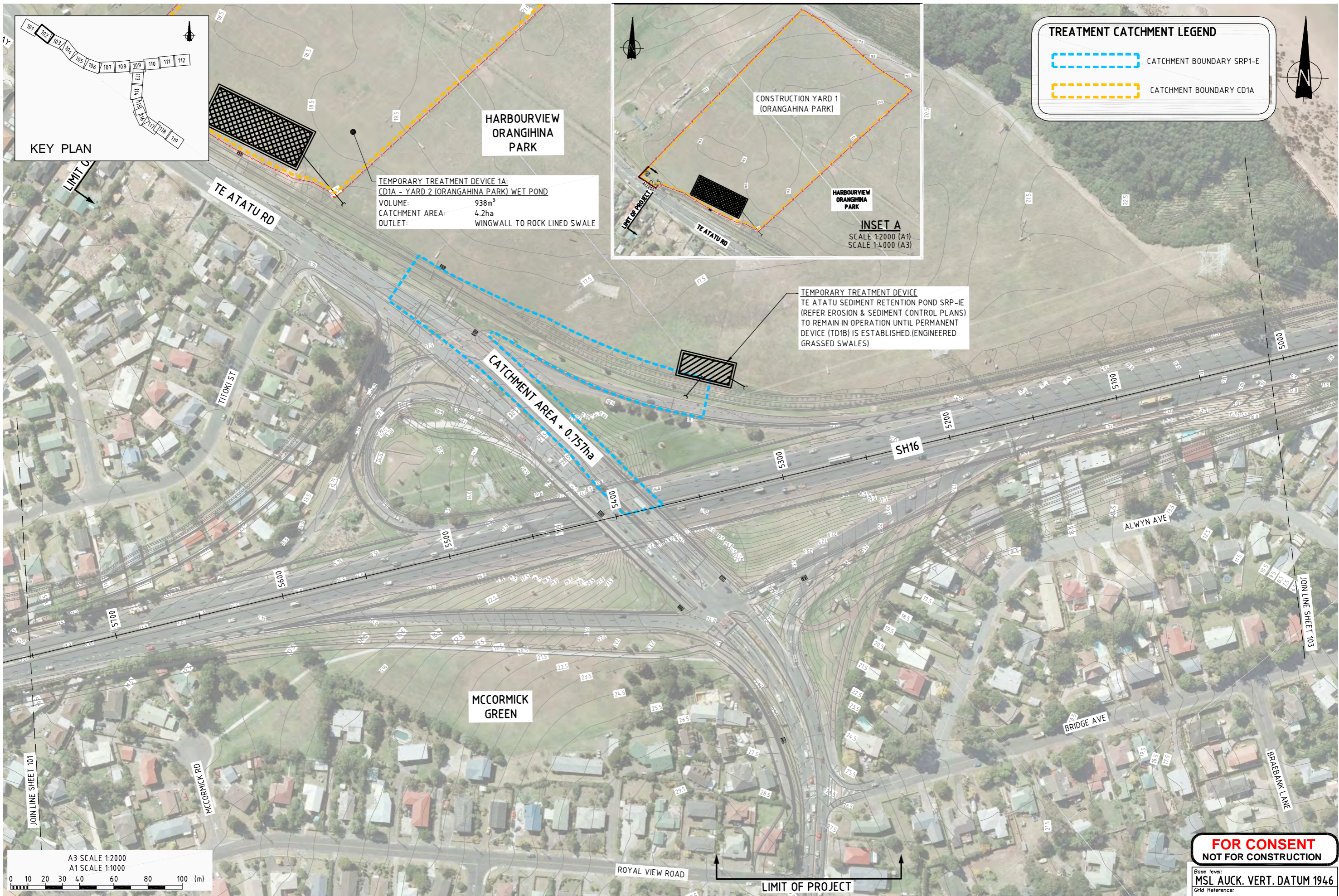
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Reduced Scale (A3) 1:2000	Review Engineer	
	Drafting Checked	
	Consultant Approval	
	Reviewed by Beqa	



Project: **WATERVIEW CONNECTION PROJECT**  
**SH16 / SH20**

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
**SHEET 1**

Originator No.	
Project No.	20.11-3-D-D-350-101
Rev.	B



**TREATMENT CATCHMENT LEGEND**

- CATCHMENT BOUNDARY SRP1-E
- CATCHMENT BOUNDARY CD1A

**KEY PLAN**

**TEMPORARY TREATMENT DEVICE 1A:**  
 CD1A - YARD 2 (ORANGIHINA PARK) WET POND  
 VOLUME: 938m<sup>3</sup>  
 CATCHMENT AREA: 4.2ha  
 OUTLET: WINGWALL TO ROCK LINED SWALE

**TEMPORARY TREATMENT DEVICE**  
 TE ATATU SEDIMENT RETENTION POND SRP-IE  
 (REFER EROSION & SEDIMENT CONTROL PLANS)  
 TO REMAIN IN OPERATION UNTIL PERMANENT  
 DEVICE (TD1B) IS ESTABLISHED.(ENGINEERED  
 GRASSED SWALES)

**INSET A**  
 SCALE 1:2000 (A1)  
 SCALE 1:4000 (A3)



**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base Level:  
**MSL AUCK. VERT. DATUM 1946**  
 Grid Reference:  
**Mt Eden 2000**

Originator No.  
 Project No.  
**20.11-3-D-D-350-102**

Rev.  
**B**

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A	FOR REVIEW	TM	JB	JH	30.03.10
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Drawing Originator:  
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Original Scale (A1)	1:1000	Design Engineer	
Reduced Scale (A3)	1:2000	Review Engineer	
		Drafting Checked	
		Consultant Approval	
		Reviewed by	Beca

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHI

Project:  
**WATERVIEW CONNECTION PROJECT**  
**SH16 / SH20**

Title:  
**STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
**SHEET 2**



No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	TM	JB	JH	27.07.10
A	FOR REVIEW	TM	JB	JH	30.03.10

Drawing Originator:  
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Original Scale (A1) 1:1000  
 Reduced Scale (A3) 1:2000  
 Design Engineer  
 Review Engineer  
 Drafting Checked  
 Consultant Approval  
 Resigned by Becca



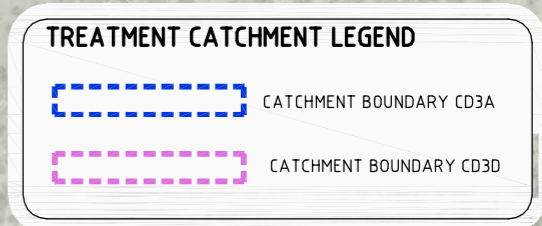
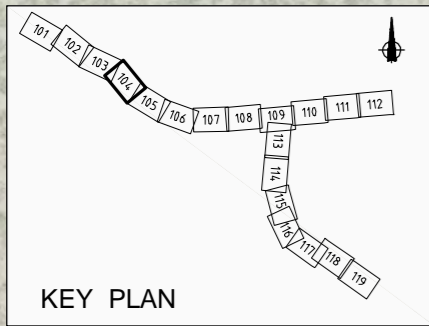
Project: **WATERVIEW CONNECTION PROJECT SH16 / SH20**

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 3**

**FOR CONSENT NOT FOR CONSTRUCTION**

Base Level: **MSL AUCK. VERT. DATUM 1946**  
 Grid Reference:  
**Mt Eden 2000**

Originator No.  
 Project No. **20.111-3-D-D-350-103**  
 Rev. **B**



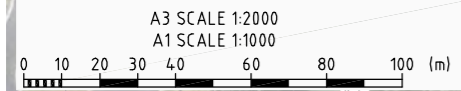
**CD3A - PARTIKI OFF-RAMP CARTRIDGE FILTER VAULT**  
 CATCHMENT AREA: 0.23ha  
 690mm CARTRIDGE UNITS: 6No.  
 VAULT DIMENSIONS: 3.0 x 1.8m  
 OUTLET: WINGWALL IN ROCK REVETMENT

**TEMPORARY TREATMENT DEVICE 3D:**  
 CD3D - YARD 2 (PATIKI) WETPOND  
 VOLUME: 83m<sup>3</sup>  
 CATCHMENT: 0.37ha  
 OUTLET: WINGWALL WITH ROCK ARMOUR

**ROSEBANK PARK DOMAIN**

**LIMIT OF PROJECT**

**PATIKI RD**



**FOR CONSENT  
 NOT FOR CONSTRUCTION**

Base Level: MSL AUCK. VERT. DATUM 1946  
 Grid Reference: Mt Eden 2000  
 Originator No.  
 Project No. 20.111-3-D-D-350-104  
 Rev. B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	TM	JB	JH	27.07.10
A	FOR REVIEW	TM	JB	JH	30.03.10

Drawing Originator:  
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Original Scale (A1): 1:1000  
 Reduced Scale (A3): 1:2000  
 Design Engineer: [Blank]  
 Review Engineer: [Blank]  
 Drafting Checked: [Blank]  
 Consultant Approval: [Blank]  
 Reviewed by Beqa: [Blank]



Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 4**

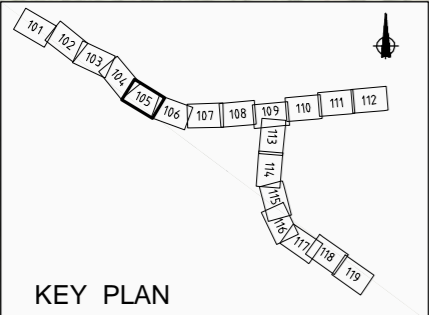




**TREATMENT CATCHMENT LEGEND**

CATCHMENT BOUNDARY CD3B

CATCHMENT BOUNDARY CD3C



**CD3B - ROSEBANK OFF-RAMP CARTRIDGE FILTER VAULT**  
 CATCHMENT AREA: 0.08ha  
 690mm CARTRIDGE UNITS: 2No.  
 VAULT DIMENSIONS: 1.2m $\phi$  MANHOLE  
 OUTLET: WINGWALL IN ROCK REVETMENT

**FOR CONSENT  
 NOT FOR CONSTRUCTION**

Base Level: MSL AUCK. VERT. DATUM 1946  
 Grid Reference: Mt Eden 2000  
 Originator No. \_\_\_\_\_  
 Project No. 20.111-3-D-D-350-105  
 Rev. B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	TM	JB	JH	27.07.10
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Drawing Originator:  
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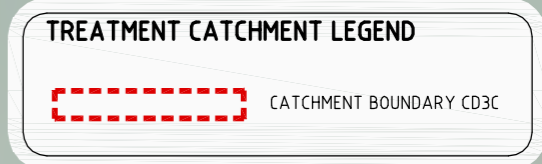
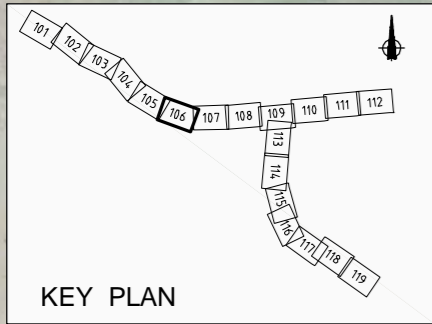
Original Scale (A1): 1:1000  
 Reduced Scale (A3): 1:2000

Design Engineer: \_\_\_\_\_  
 Review Engineer: \_\_\_\_\_  
 Drafting Checked: \_\_\_\_\_  
 Consultant Approval: \_\_\_\_\_  
 Received by Beza: \_\_\_\_\_



Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
 SHEET 5



**CD3C - ROSEBANK ON-RAMP CARTRIDGE FILTER VAULT**  
 CATCHMENT AREA: 0.22ha  
 690mm CARTRIDGE UNITS: 5No.  
 VAULT DIMENSIONS: 1.8m $\phi$  MANHOLE  
 OUTLET: WINGWALL IN ROCK REVETMENT

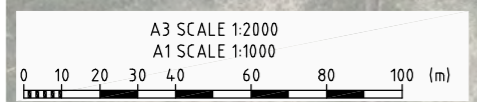
**CD4C - EASTBOUND 3m BIO-FILTER STRIP**  
 CATCHMENT AREA: 2.91ha  
 CATCHMENT WIDTH: 16m  
 GRASSED WIDTH: 3m  
 REFER TO DWG: 20.1.11-3-D-D-350-201

**CD4A - EASTBOUND OUTER SAND FILTER TRENCH**  
 CATCHMENT AREA: 4.24ha  
 CATCHMENT WIDTH: 24m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 60m C/C ON ROCK REVETMENT  
 REFER TO DWG: 20.1.11-3-D-D-350-201

**CD4B - EASTBOUND INNER SAND FILTER TRENCH**  
 CATCHMENT AREA: 1.59ha  
 CATCHMENT WIDTH: 9m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 120m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.1.11-3-D-D-350-201

**CD4D - WESTBOUND INNER SAND FILTER TRENCH**  
 CATCHMENT AREA: 2.33ha  
 CATCHMENT WIDTH: 14m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 100m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.1.11-3-D-D-350-201

**CD4E - WESTBOUND OUTER SAND FILTER TRENCH**  
 CATCHMENT AREA: 3.18ha  
 CATCHMENT WIDTH: 20m  
 TRENCH DIMENSIONS: 1.5 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 100m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.1.11-3-D-D-350-201



No.	Revision	By	Chk	Appd	Date
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	Released by Becca

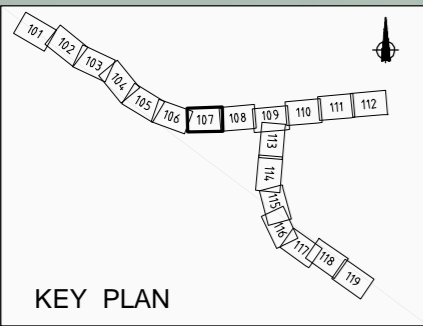
Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
 SHEET 6

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base Level: **MSL AUCK. VERT. DATUM 1946**  
 Grid Reference: **Mt Eden 2000**

Originator No. \_\_\_\_\_  
 Project No. **20.1.11-3-D-D-350-106** Rev. **B**



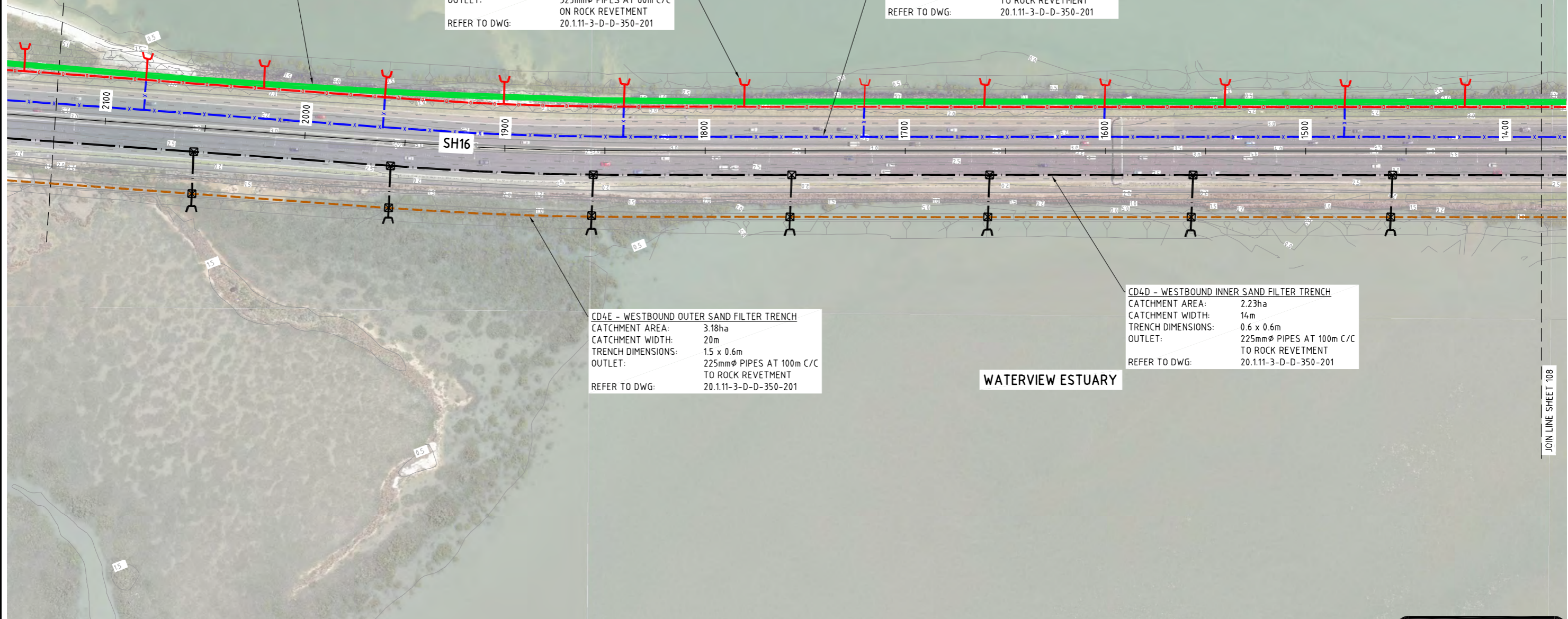
WAITEMATA HARBOUR

JOIN LINE SHEET 106

**CD4C - EASTBOUND 3m BIO-FILTER STRIP**  
 CATCHMENT AREA: 2.91ha  
 CATCHMENT WIDTH: 16m  
 GRASSED WIDTH: 3m  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4A - EASTBOUND OUTER SAND FILTER TRENCH**  
 CATCHMENT AREA: 4.24ha  
 CATCHMENT WIDTH: 24m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 325mm $\phi$  PIPES AT 60m C/C ON ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4B - EASTBOUND INNER SAND FILTER TRENCH**  
 CATCHMENT AREA: 1.59ha  
 CATCHMENT WIDTH: 9m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 120m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

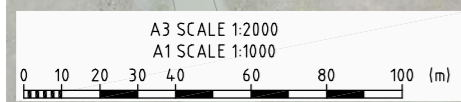


**CD4E - WESTBOUND OUTER SAND FILTER TRENCH**  
 CATCHMENT AREA: 3.18ha  
 CATCHMENT WIDTH: 20m  
 TRENCH DIMENSIONS: 1.5 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 100m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4D - WESTBOUND INNER SAND FILTER TRENCH**  
 CATCHMENT AREA: 2.23ha  
 CATCHMENT WIDTH: 14m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mm $\phi$  PIPES AT 100m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

WATERVIEW ESTUARY

JOIN LINE SHEET 108



No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	TM	JB	JH	27.07.10
A	FOR REVIEW	TM	JB	JH	30.03.10

Drawing Originator:  
**aurecon**  
 Aurecon New Zealand Limited  
 139 Carlton Gore Road (PO Box 9762) Newmarket, Auckland New Zealand  
 Telephone: +64 9 520-8018  
 Facsimile: +61 9 524-7816  
 Email: auckland@aurecongroup.com

Original Scale (A1) 1:1000	Design Engineer
Reduced Scale (A3) 1:2000	Review Engineer
	Drafting Checked
	Consultant Approval
	Reviewed by Becca

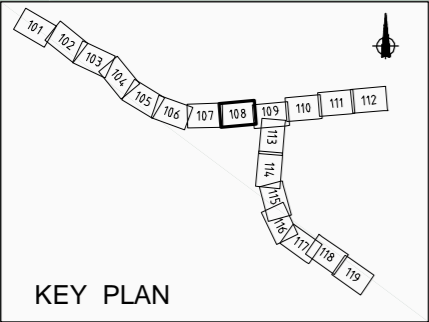
Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
 SHEET 7

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base Level: **MSL AUCK. VERT. DATUM 1946**  
 Grid Reference: **Mt Eden 2000**

Originator No. \_\_\_\_\_  
 Project No. **20.111-3-D-D-350-107** Rev. **B**



WAITEMATA HARBOUR

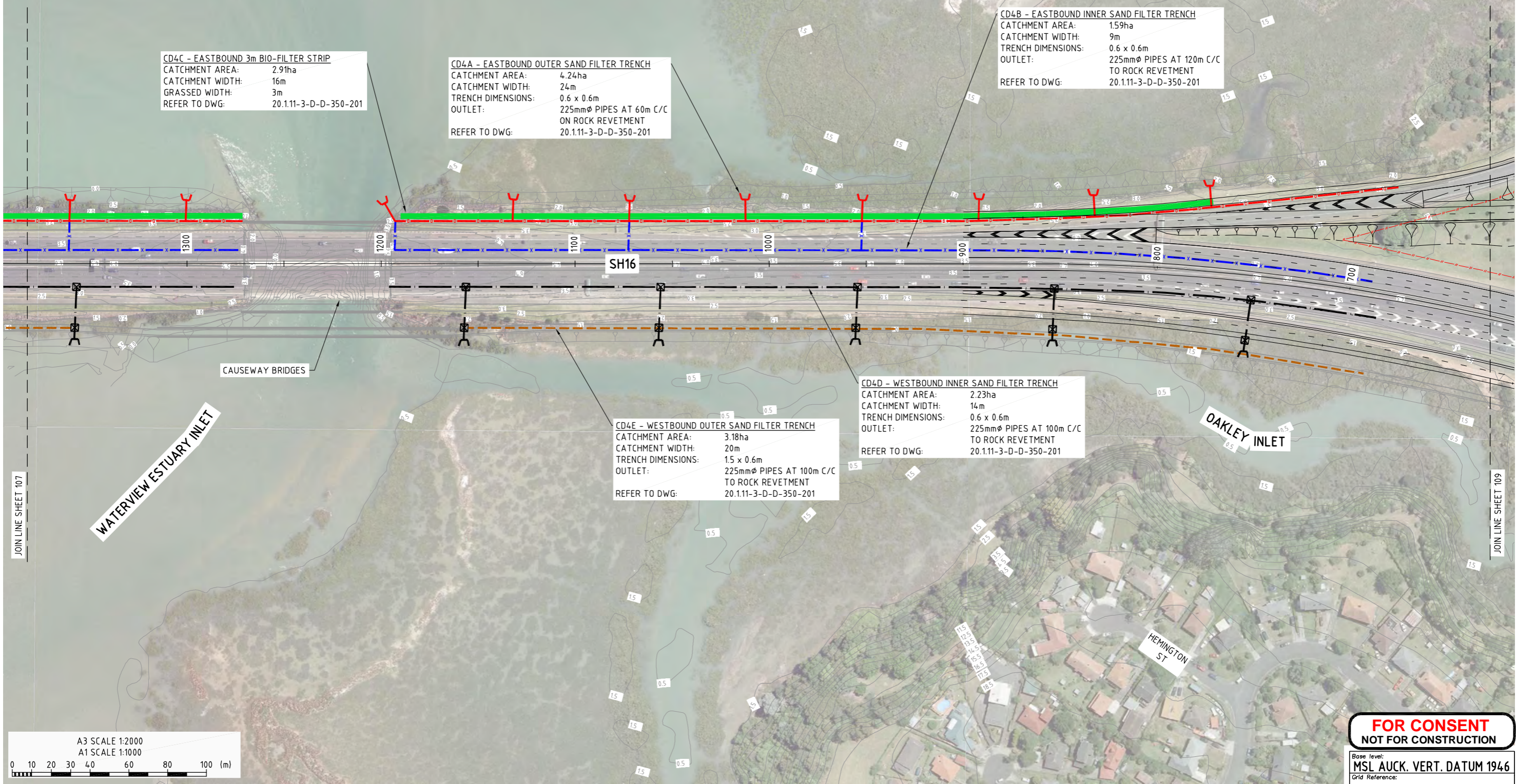
**CD4C - EASTBOUND 3m BIO-FILTER STRIP**  
 CATCHMENT AREA: 2.91ha  
 CATCHMENT WIDTH: 16m  
 GRASSED WIDTH: 3m  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4A - EASTBOUND OUTER SAND FILTER TRENCH**  
 CATCHMENT AREA: 4.24ha  
 CATCHMENT WIDTH: 24m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mmØ PIPES AT 60m C/C ON ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4B - EASTBOUND INNER SAND FILTER TRENCH**  
 CATCHMENT AREA: 1.59ha  
 CATCHMENT WIDTH: 9m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mmØ PIPES AT 120m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4D - WESTBOUND INNER SAND FILTER TRENCH**  
 CATCHMENT AREA: 2.23ha  
 CATCHMENT WIDTH: 14m  
 TRENCH DIMENSIONS: 0.6 x 0.6m  
 OUTLET: 225mmØ PIPES AT 100m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201

**CD4E - WESTBOUND OUTER SAND FILTER TRENCH**  
 CATCHMENT AREA: 3.18ha  
 CATCHMENT WIDTH: 20m  
 TRENCH DIMENSIONS: 1.5 x 0.6m  
 OUTLET: 225mmØ PIPES AT 100m C/C TO ROCK REVETMENT  
 REFER TO DWG: 20.111-3-D-D-350-201



WATERVIEW ESTUARY INLET

OAKLEY INLET

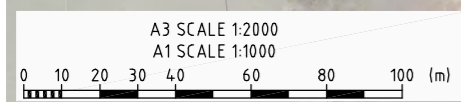
SH16

CAUSEWAY BRIDGES

HEMINGTON ST

JOIN LINE SHEET 107

JOIN LINE SHEET 109



**FOR CONSENT  
NOT FOR CONSTRUCTION**

Base Level: MSL AUCK. VERT. DATUM 1946  
 Grid Reference: Mt Eden 2000  
 Originator No. \_\_\_\_\_  
 Project No. 20.111-3-D-D-350-108  
 Rev. B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	TM	TM	JH	27.07.10
A	FOR REVIEW	TM	JB	JH	30.03.10

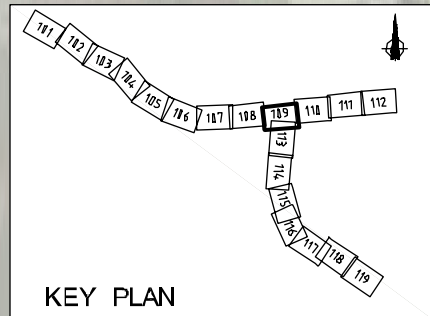
Drawing Originator:  
**aurecon**  
 Aurecon New Zealand Limited  
 139 Carlton Gore Road (PO Box 9762) Newmarket, Auckland New Zealand  
 Telephone: +64 9 520-8018  
 Facsimile: +61 9 524-7816  
 Email: auckland@aurecongroup.com

Original Scale (A1): 1:1000	Design Engineer
Reduced Scale (A3): 1:2000	Review Engineer
	Drafting Checked
	Consultant Approval
	Reviewed by Becca

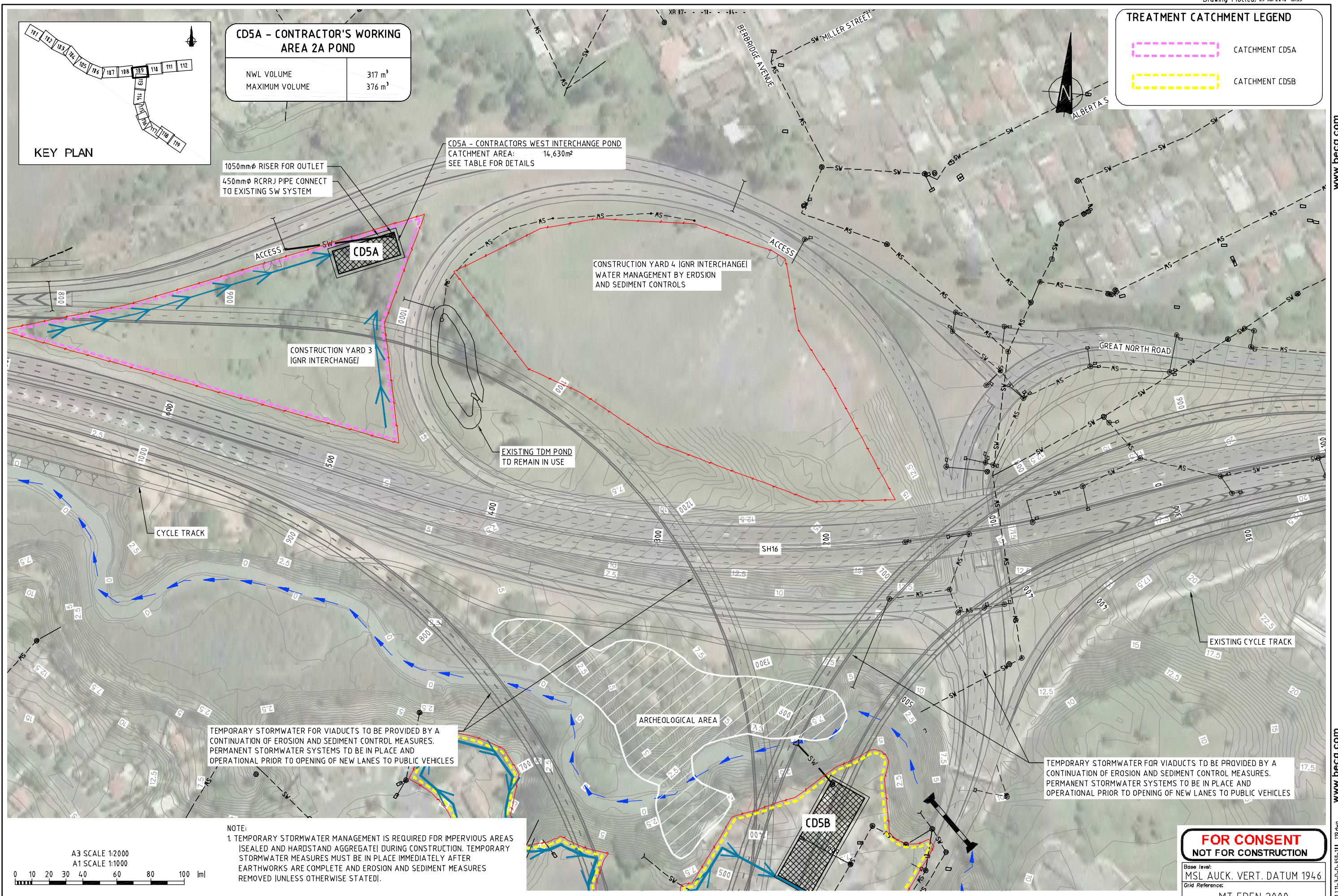
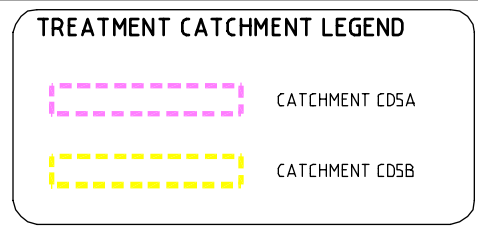


Project: **WATERVIEW CONNECTION PROJECT  
SH16 / SH20**

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE  
SHEET 8**



CD5A - CONTRACTOR'S WORKING AREA 2A POND	
NWL VOLUME	317 m <sup>3</sup>
MAXIMUM VOLUME	376 m <sup>3</sup>



CD5A - CONTRACTORS WEST INTERCHANGE POND  
CATCHMENT AREA: 14,630m<sup>2</sup>  
SEE TABLE FOR DETAILS

1050mm $\phi$  RISER FOR OUTLET  
450mm $\phi$  RCRRJ PIPE CONNECT TO EXISTING SW SYSTEM

CONSTRUCTION YARD 4 (IGNR INTERCHANGE)  
WATER MANAGEMENT BY EROSION AND SEDIMENT CONTROLS

CONSTRUCTION YARD 3 (IGNR INTERCHANGE)

EXISTING TDM POND TO REMAIN IN USE

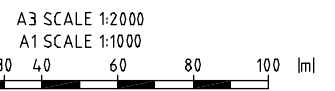
CYCLE TRACK

ARCHEOLOGICAL AREA

TEMPORARY STORMWATER FOR VIADUCTS TO BE PROVIDED BY A CONTINUATION OF EROSION AND SEDIMENT CONTROL MEASURES. PERMANENT STORMWATER SYSTEMS TO BE IN PLACE AND OPERATIONAL PRIOR TO OPENING OF NEW LANES TO PUBLIC VEHICLES

TEMPORARY STORMWATER FOR VIADUCTS TO BE PROVIDED BY A CONTINUATION OF EROSION AND SEDIMENT CONTROL MEASURES. PERMANENT STORMWATER SYSTEMS TO BE IN PLACE AND OPERATIONAL PRIOR TO OPENING OF NEW LANES TO PUBLIC VEHICLES

NOTE:  
1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).



**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level:	MSL AUCK. VERT. DATUM 1946
Grid Reference:	MT EDEN 2000
Originator No.	
Project No.	20.111-3-D-D-350-109
Rev.	B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
Environmental and Engineering Consultants

Original Scale (A1)	3:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
WAKA KOTAHU

Project: **WATERVIEW CONNECTION PROJECT**  
SH16 / SH20

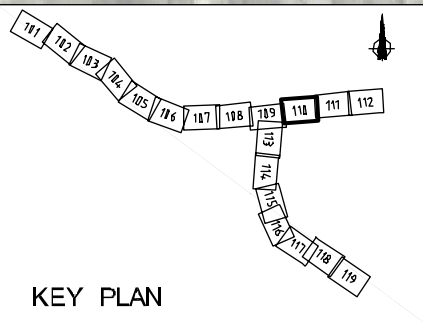
Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
SHEET 9

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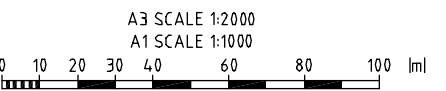
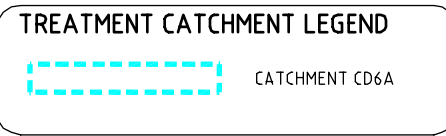


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Document No. 20.111-3-D-D-350-111\_119.dwg

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NOTE:  
 1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).

TEMPORARY STORMWATER TO BE PROVIDED BY A CONTINUATION OF EROSION AND SEDIMENT CONTROL MEASURES. PERMANENT STORMWATER SYSTEMS TO BE IN PLACE AND OPERATIONAL PRIOR TO OPENING OF NEW LANES TO PUBLIC VEHICLES

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
 Environmental and Engineering Consultants

Original Scale (A1)	3:1001	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHU

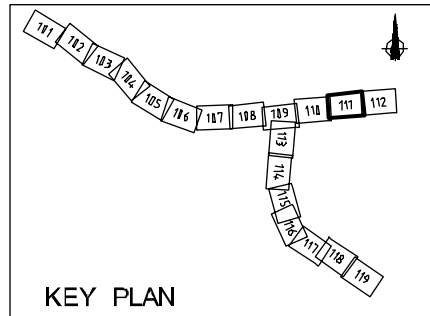
Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
 SHEET 10

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

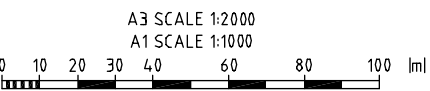
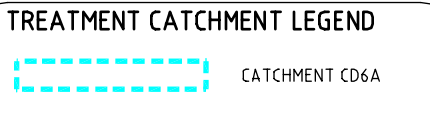
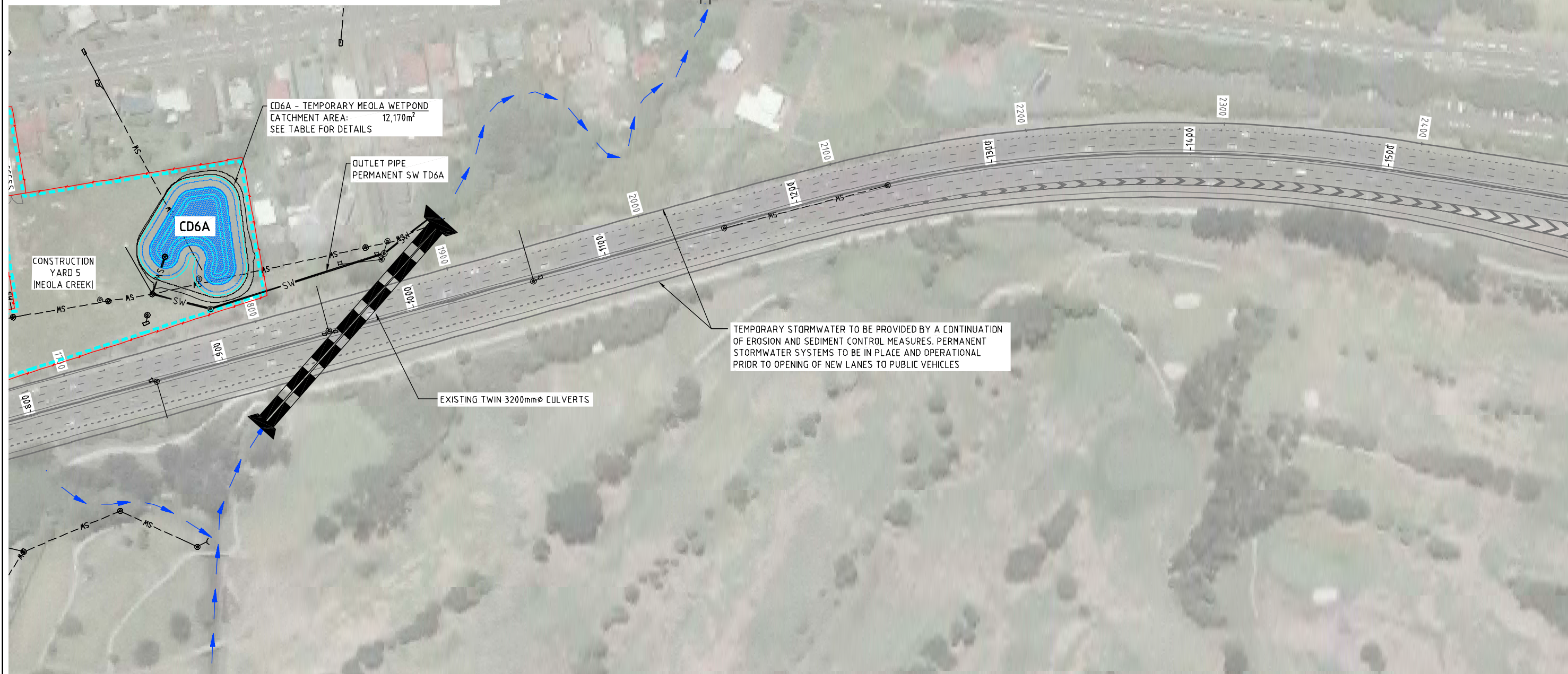
Base level: **MSL AUCK. VERT. DATUM 1946**  
 Grid Reference: **MT EDEN 2000**

Project No. **20.111-3-D-D-350-110** Rev. **B**



CD6A - TEMPORARY MEOLA WETPOND	
NWL VOLUME	309 m <sup>3</sup>
EXTENDED DETENTION	674m <sup>3</sup>
MAXIMUM VOLUME	933 m <sup>3</sup>

x TO BE USED WHEN PERMANENT STORMWATER INFRASTRUCTURE COMPLETE



NOTE:  
1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED UNLESS OTHERWISE STATED.

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
 Environmental and Engineering Consultants

Original Scale (A1)	3:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHU

Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 11**

**FOR CONSENT NOT FOR CONSTRUCTION**

Base level: MSL AUCK. VERT. DATUM 1946  
 Grid Reference: MT EDEN 2000

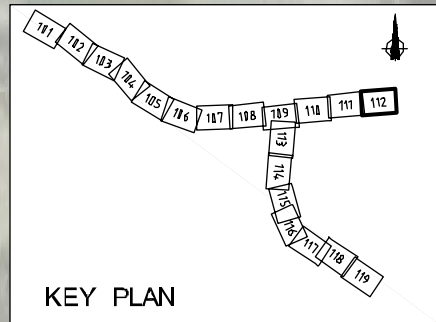
Project No. 20.111-3-D-D-350-111 Rev. B

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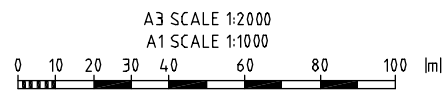
Document No. 20.111-3-D-D-350-111\_119.dwg



TEMPORARY STORMWATER TO BE PROVIDED BY A CONTINUATION OF EROSION AND SEDIMENT CONTROL MEASURES. PERMANENT STORMWATER SYSTEMS TO BE IN PLACE AND OPERATIONAL PRIOR TO OPENING OF NEW LANES TO PUBLIC VEHICLES

GREAT NORTH ROAD

ST LUKES ROAD



A3 SCALE 1:2000  
A1 SCALE 1:1000

NOTE:  
1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED UNLESS OTHERWISE STATED.

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level:	MSL AUCK. VERT. DATUM 1946
Grid Reference:	MT EDEN 2000
Originator No.	
Project No.	20.111-3-D-D-350-112
Rev.	B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:

**Tonkin & Taylor**  
Environmental and Engineering  
Consultants

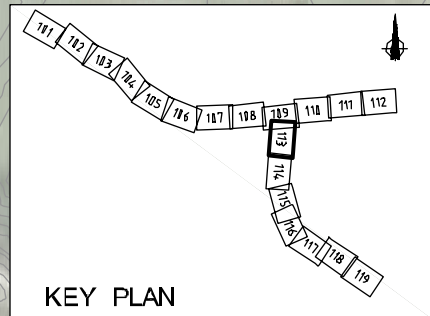
Original Scale (A1)	1:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
WAKA KOTAHI

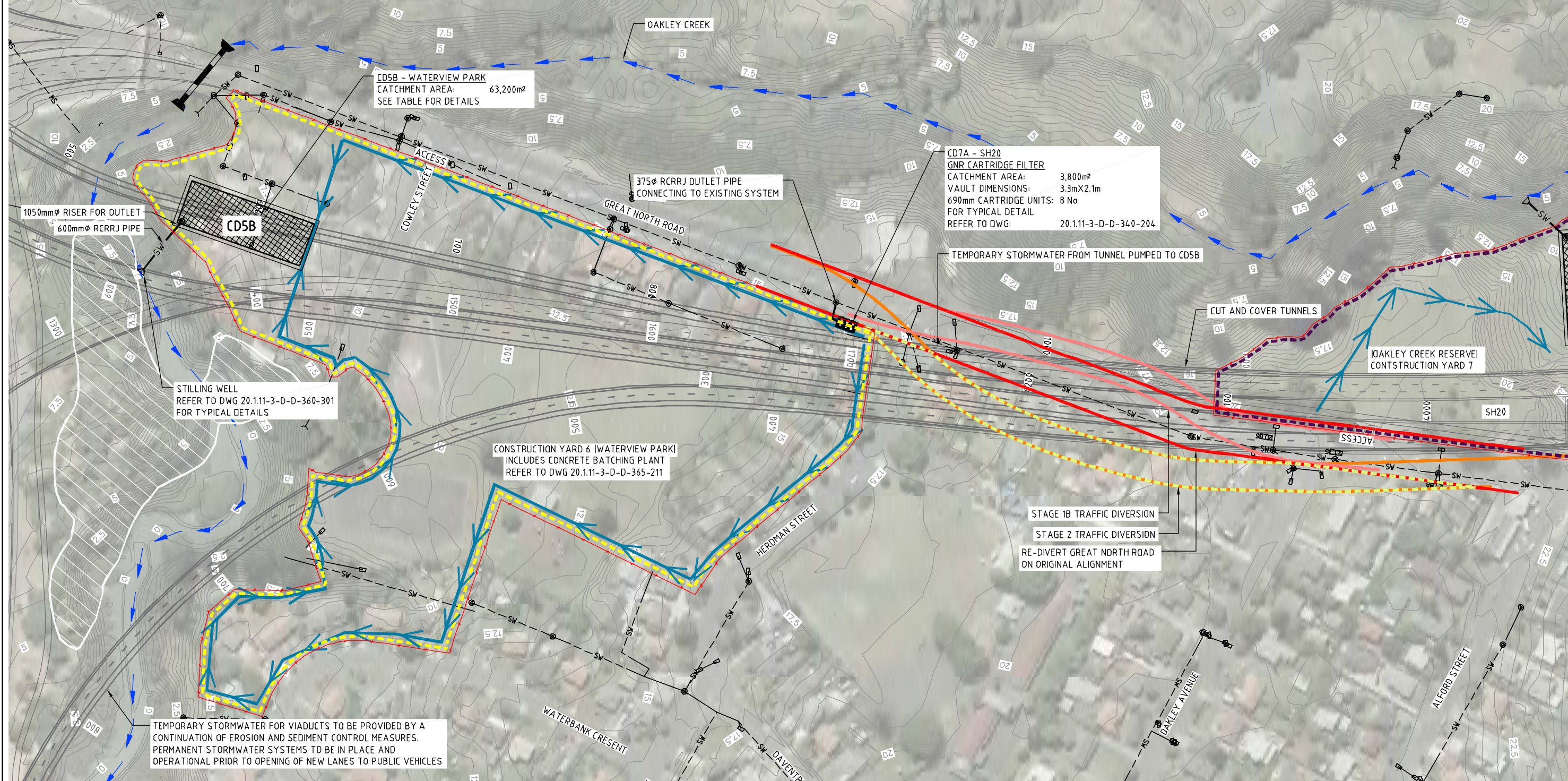
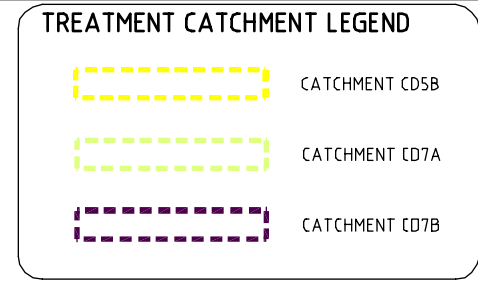
Project: **WATERVIEW CONNECTION PROJECT**  
SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
SHEET 12





CD5B - TEMPORARY NORTHERN PORTAL WETPOND	
NWL VOLUME	685 m <sup>3</sup>
MAXIMUM VOLUME	1,963 m <sup>3</sup>



STILLING WELL  
REFER TO DWG 20.111-3-D-D-360-301  
FOR TYPICAL DETAILS

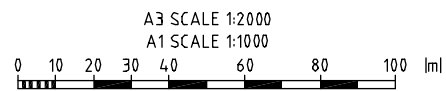
CD5B - WATERVIEW PARK  
CATCHMENT AREA:  
63,200m<sup>2</sup>  
SEE TABLE FOR DETAILS

CD7A - SH20  
GNR CARTRIDGE FILTER  
CATCHMENT AREA:  
3,800m<sup>2</sup>  
VAULT DIMENSIONS:  
3.3mX2.1m  
690mm CARTRIDGE UNITS: 8 No  
FOR TYPICAL DETAIL  
REFER TO DWG:  
20.111-3-D-D-340-204

CONSTRUCTION YARD 6 [WATERVIEW PARK]  
INCLUDES CONCRETE BATCHING PLANT  
REFER TO DWG 20.111-3-D-D-365-211

TEMPORARY STORMWATER FOR VIADUCTS TO BE PROVIDED BY A CONTINUATION OF EROSION AND SEDIMENT CONTROL MEASURES. PERMANENT STORMWATER SYSTEMS TO BE IN PLACE AND OPERATIONAL PRIOR TO OPENING OF NEW LANES TO PUBLIC VEHICLES

STAGE 1B TRAFFIC DIVERSION  
STAGE 2 TRAFFIC DIVERSION  
RE-DIVERT GREAT NORTH ROAD ON ORIGINAL ALIGNMENT



NOTE:  
1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS [SEALED AND HARDSTAND AGGREGATE] DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level:	MSL AUCK. VERT. DATUM 1946
Grid Reference:	MT EDEN 2000
Originator No.	
Project No.	20.111-3-D-D-350-113
Rev.	B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
Environmental and Engineering Consultants

Original Scale (A1)	1:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
WAKA KOTAHI

Project: WATERVIEW CONNECTION PROJECT  
SH16 / SH20

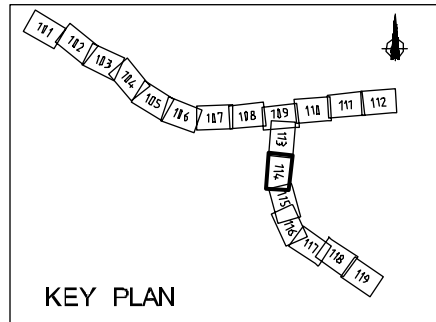
Title: STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 13

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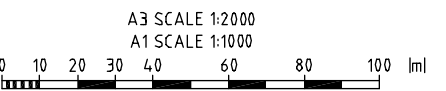
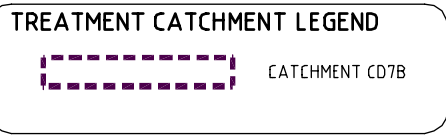
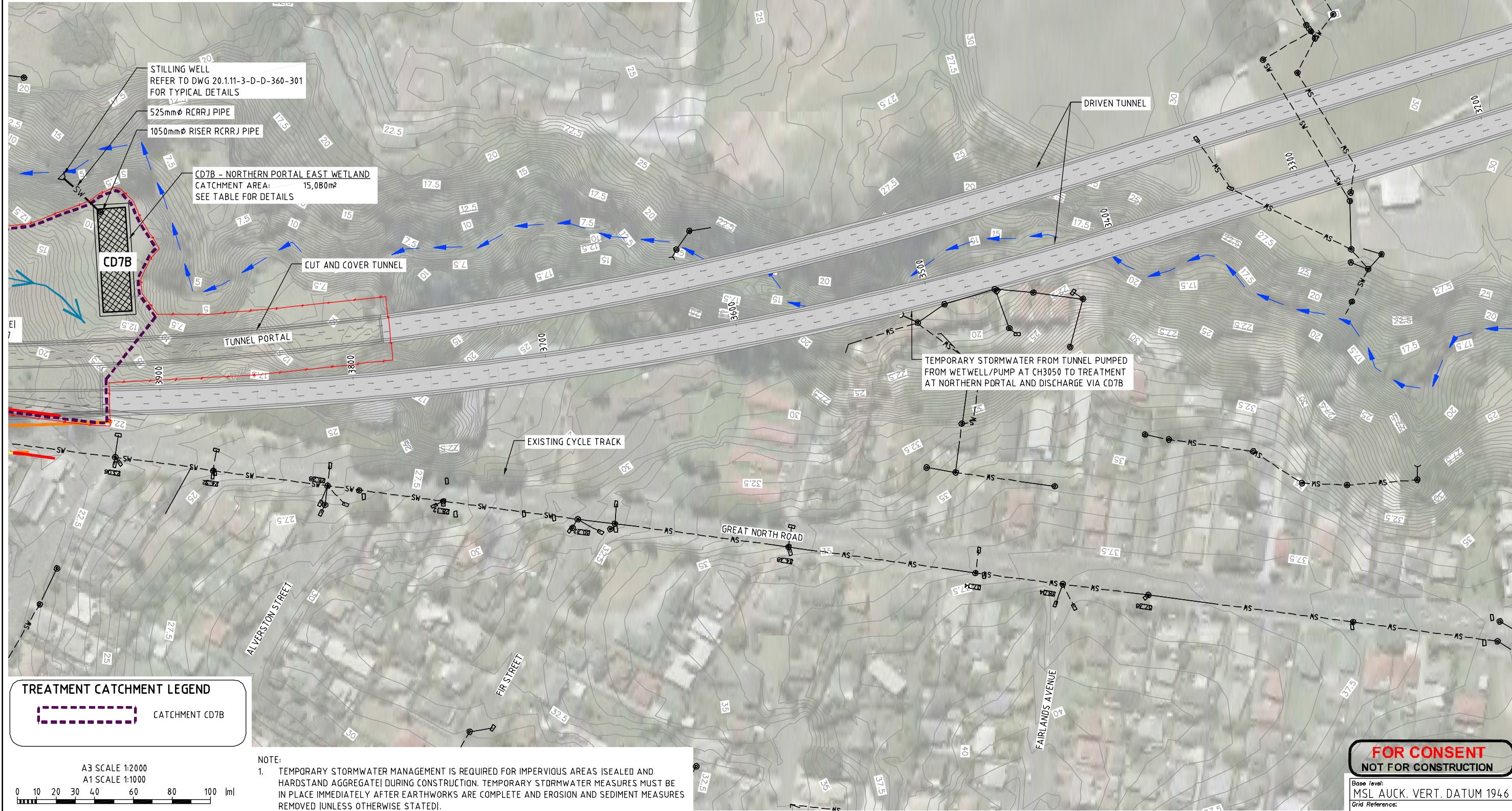
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Document No. 20.111-3-D-D-350-113\_119.dwg



CD7B - NORTHERN PORTAL EAST WETPOND	
NWL VOLUME	4.63 m <sup>3</sup>
MAXIMUM VOLUME	1126 m <sup>3</sup>

- TO TREAT:
- TREATMENT FOR CONSTRUCTION YARD 7
  - CONSTRUCTION STORMWATER FROM TUNNEL AFTER PRETREATMENT IN ESC DEVICE (300 m<sup>3</sup>/day)
  - TEMPDRARY STORMWATER FROM TUNNEL (16.4 m<sup>3</sup>/day)



NOTE:  
 1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11



Drawing Originator:	Original Scale (A1): 1:1000	Design Engineer:	SMR
Review Engineer:	Reduced Scale (A3): 1:2111	Review Engineer:	TSRF
Drafting Checked:		Drafting Checked:	-
Consultant Approval:		Consultant Approval:	-
Received by Beca:		Received by Beca:	RM



Project: WATERVIEW CONNECTION PROJECT SH16 / SH20

Title: STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 14

**FOR CONSENT NOT FOR CONSTRUCTION**

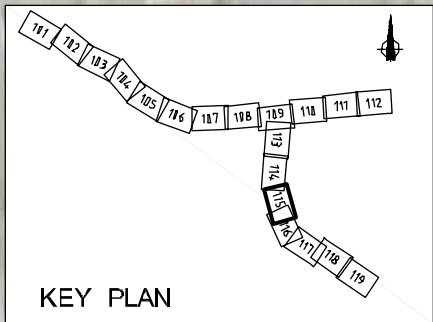
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 Project No.: 20.111-3-D-D-350-114 Rev. B

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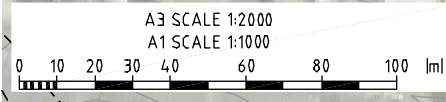
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Document No. 20.111-3-D-D-350-114\_119.dwg



**NOTE:**  
 1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).



**FOR CONSENT  
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Base level:  
 MSL AUCK. VERT. DATUM 1946  
 Grid Reference:  
 MT EDEN 2000  
 Originator No.  
 Project No. 20.1.11-3-D-D-350-115  
 Rev. B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
 Environmental and Engineering Consultants

Original Scale (A1)	1:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by	Beca RM

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHĀ

Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

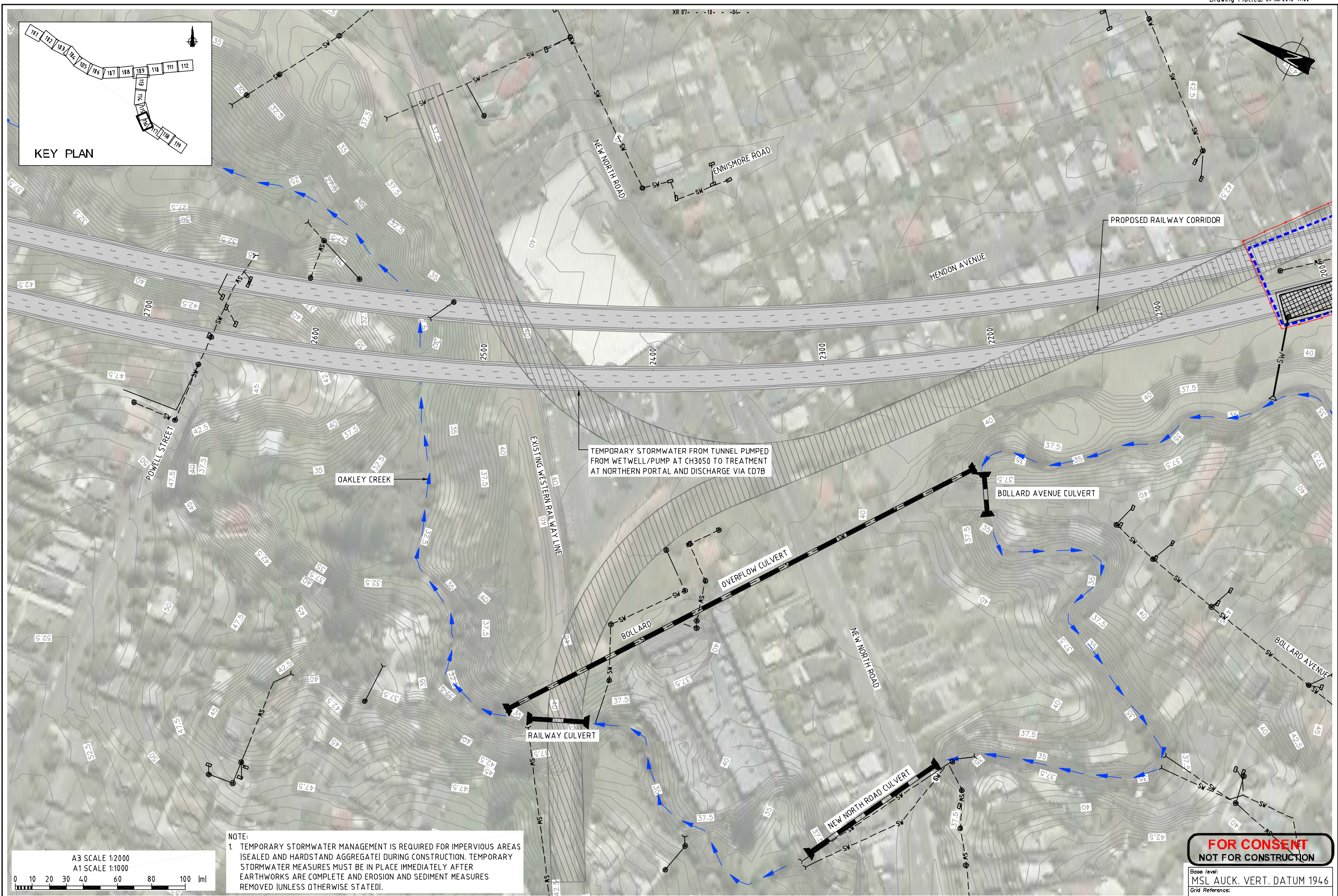
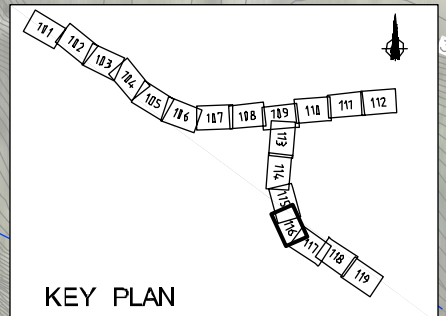
Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 15**

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Document No. 20.1.11-3-D-D-350-111\_119.dwg



NOTE:  
 1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).



**FOR CONSENT  
 NOT FOR CONSTRUCTION**

Base level: MSL AUCK. VERT. DATUM 1946  
 Grid Reference: MT EDEN 2000  
 Originator No.:  
 Project No.: 20.111-3-D-D-350-116  
 Rev: B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
 Environmental and Engineering Consultants

Original Scale (A1)	1:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by	Beca
			RM

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHU

Project: WATERVIEW CONNECTION PROJECT  
 SH16 / SH20

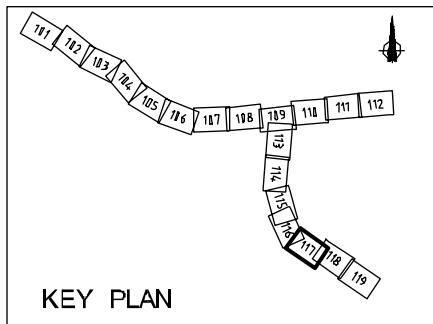
Title: STORMWATER & STREAMWORKS CONSTRUCTION PHASE  
 SHEET 16

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Document No. 20.111-3-D-D-350-116.dwg

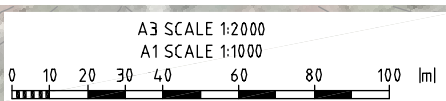
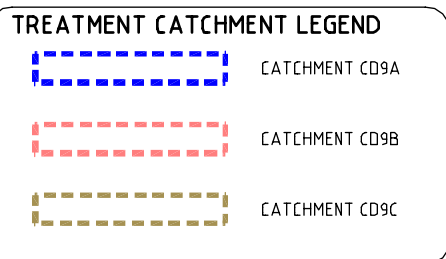
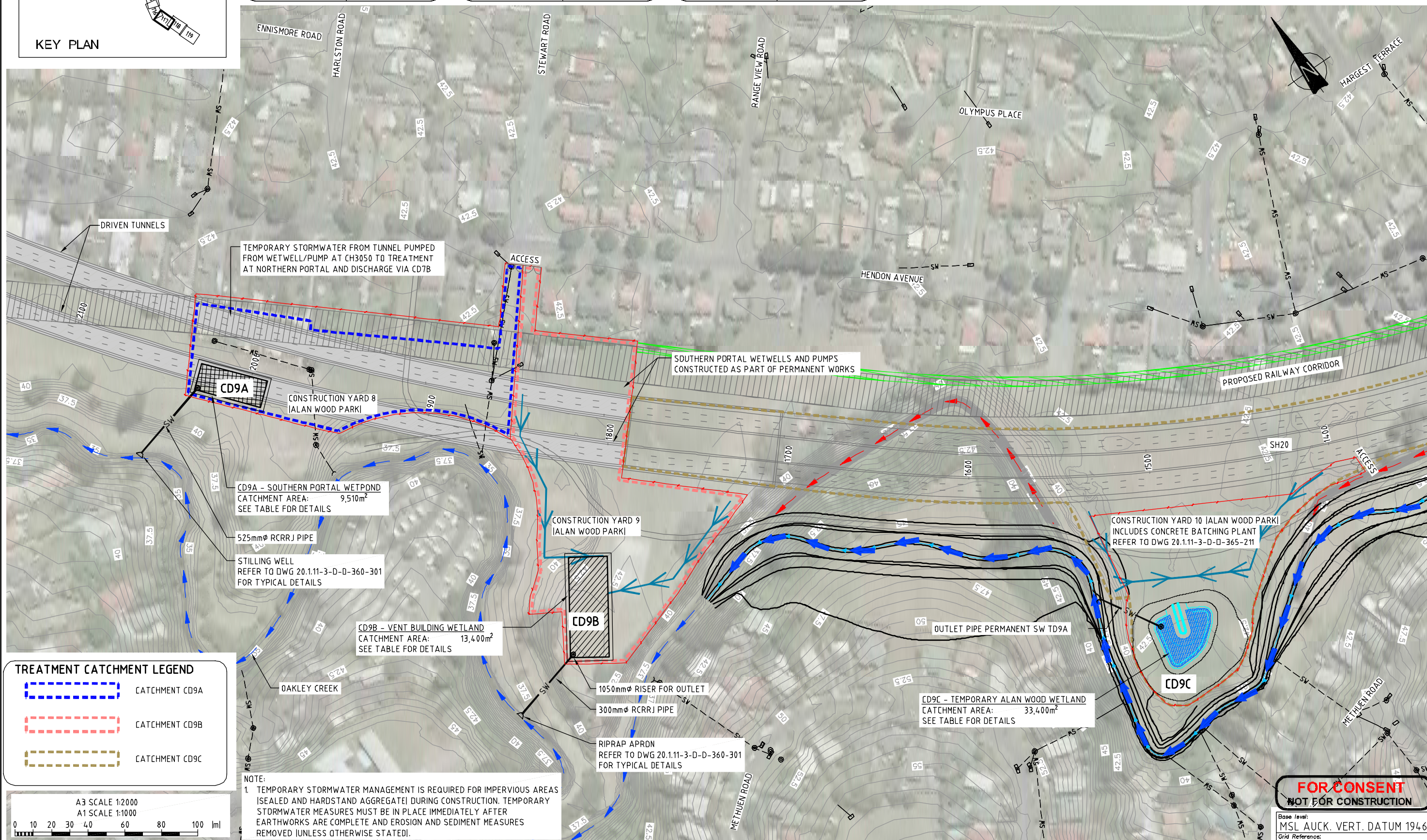


CD9A - SOUTHERN PORTAL WETPOND	
NWL VOLUME	132 m <sup>3</sup>
MAXIMUM VOLUME	750 m <sup>3</sup>

CD9C - TEMPORARY ALANWOOD WETLAND	
NWL VOLUME	439 m <sup>3</sup>
MAXIMUM VOLUME	2,850 m <sup>3</sup>

CD9B - VENT BUILDING WETLAND	
NWL VOLUME	438 m <sup>3</sup>
MAXIMUM VOLUME	1,439 m <sup>3</sup>

- CD9C NOTES:
- TREATMENT FOR CONTRACTOR'S YARD 9
  - CONSTRUCTION STORMWATER FROM TUNNEL AFTER PRETREATMENT IN ESC DEVICE (300 m<sup>3</sup>/day)
  - TEMPORARY STORMWATER FROM TUNNEL (MAXIMUM 10 l/s = 864 m<sup>3</sup>/day)



NOTE:  
 1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level: MSL AUCK. VERT. DATUM 1946  
 Grid Reference: MT EDEN 2000

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:

Environmental and Engineering Consultants

Original Scale (A1)	1:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by	Beca
			RM

WAKA KOTAHU

Project: WATERVIEW CONNECTION PROJECT  
 SH16 / SH20

Title: STORMWATER & STREAMWORKS CONSTRUCTION PHASE  
 SHEET 17

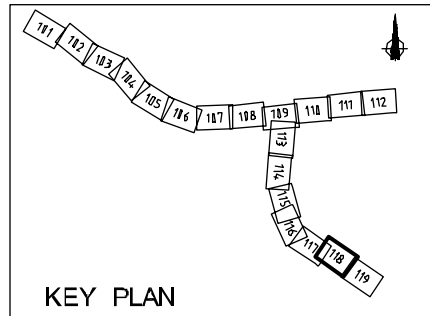
Project No.	20.111-3-D-D-350-117	Rev.	B
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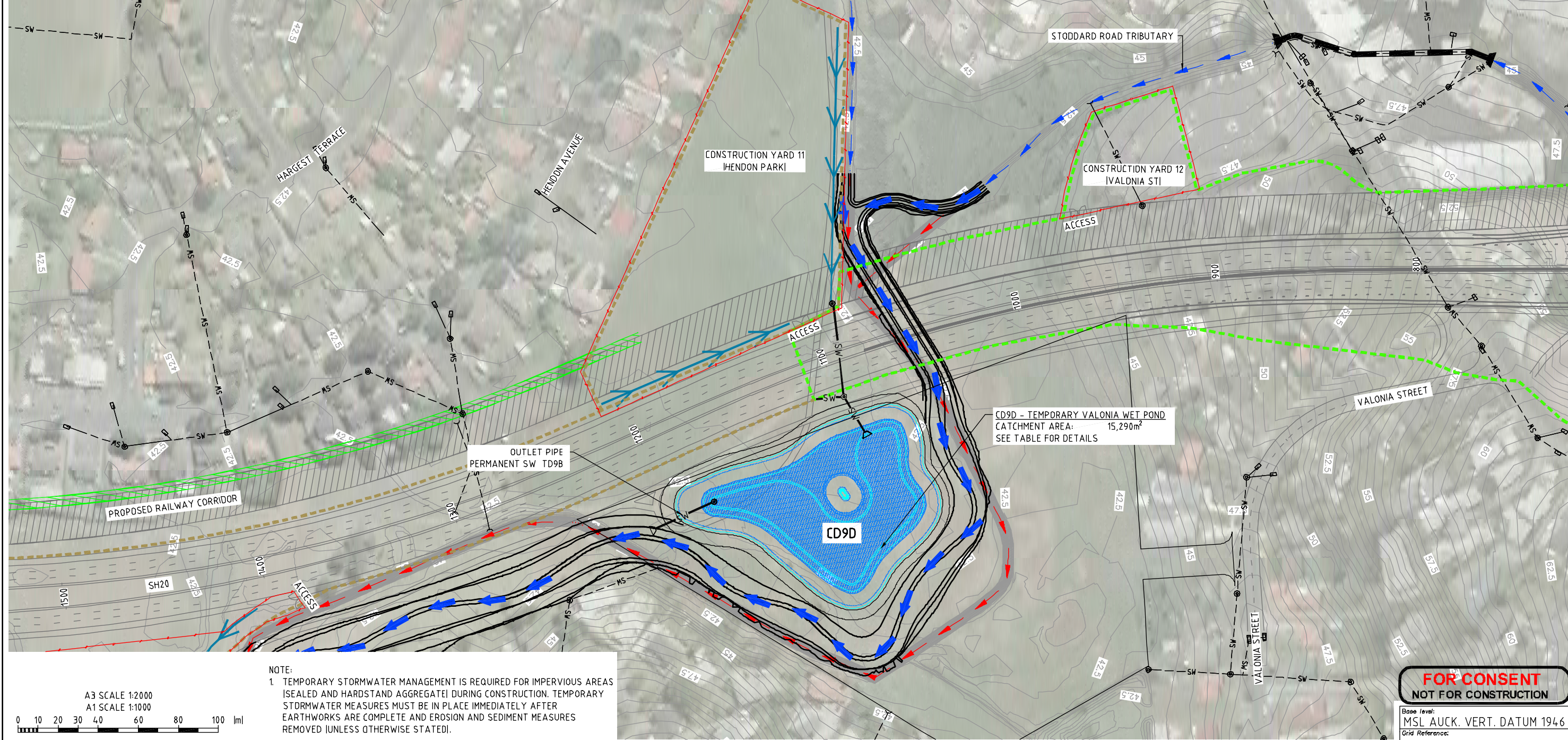
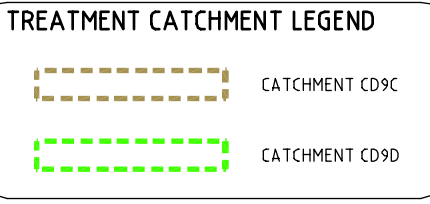
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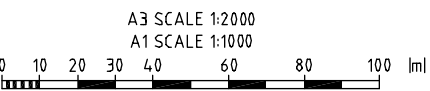
Document No. 20.111-3-D-D-350-117\_119.dwg



CD9D - TEMPORARY VALONIA WET POND	
NWL VOLUME	1,174 m <sup>3</sup>
MAXIMUM VOLUME	10,206 m <sup>3</sup>



NOTE:  
 1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).



**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level:	MSL AUCK. VERT. DATUM 194.6
Grid Reference:	MT EDEN 2000
Originator No.	
Project No.	20.111-3-D-D-350-118
Rev.	B

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
 Environmental and Engineering Consultants

Original Scale (A1)	3:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHU

Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

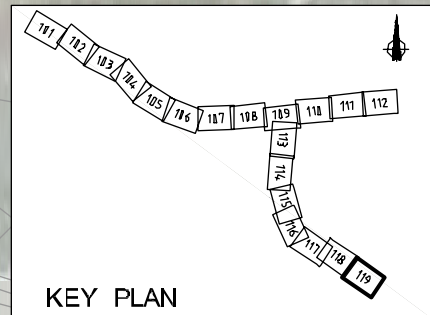
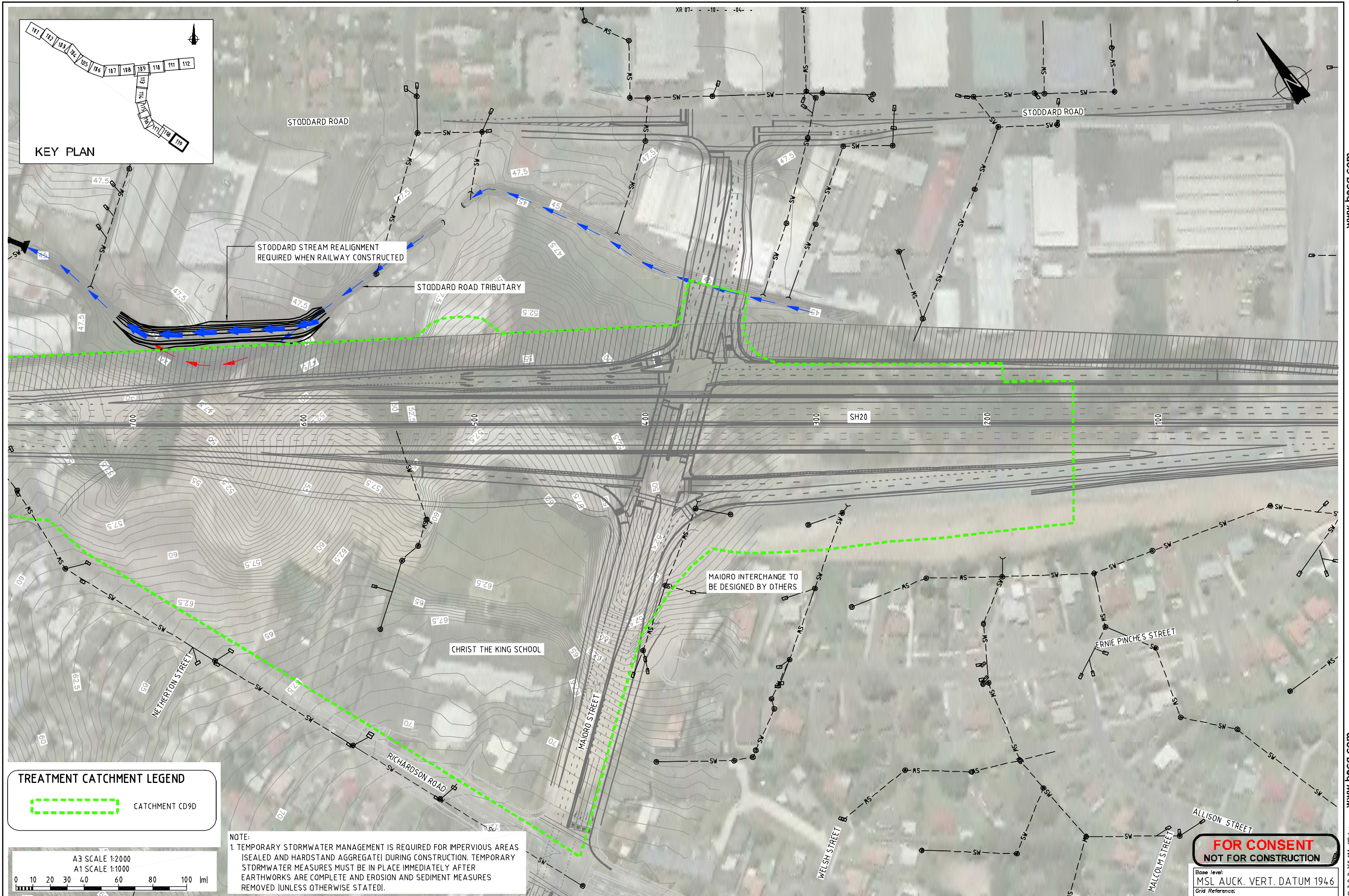
Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE**  
 SHEET 18

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Document No. 20.111-3-D-D-350-118.dwg

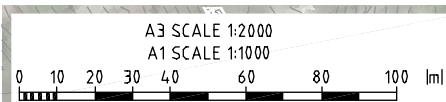
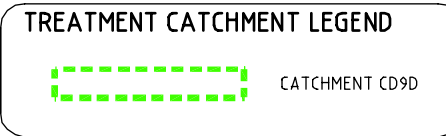


STODDARD STREAM REALIGNMENT  
REQUIRED WHEN RAILWAY CONSTRUCTED

STODDARD ROAD TRIBUTARY

MAIORO INTERCHANGE TO  
BE DESIGNED BY OTHERS

CHRIST THE KING SCHOOL



NOTE:  
1. TEMPORARY STORMWATER MANAGEMENT IS REQUIRED FOR IMPERVIOUS AREAS (SEALED AND HARDSTAND AGGREGATE) DURING CONSTRUCTION. TEMPORARY STORMWATER MEASURES MUST BE IN PLACE IMMEDIATELY AFTER EARTHWORKS ARE COMPLETE AND EROSION AND SEDIMENT MEASURES REMOVED (UNLESS OTHERWISE STATED).

**FOR CONSENT  
NOT FOR CONSTRUCTION**

Base level:  
MSL AUCK. VERT. DATUM 1946  
Grid Reference:  
MT EDEN 2000

No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	30.03.11

Drawing Originator:  
**Tonkin & Taylor**  
 Environmental and Engineering  
 Consultants

Original Scale (A1)	1:1000	Design Engineer	SMR
Reduced Scale (A3)	1:2111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Beca	RM

**NZ TRANSPORT AGENCY**  
 WAKA KOTAHĀ

Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **STORMWATER & STREAMWORKS CONSTRUCTION PHASE SHEET 19**

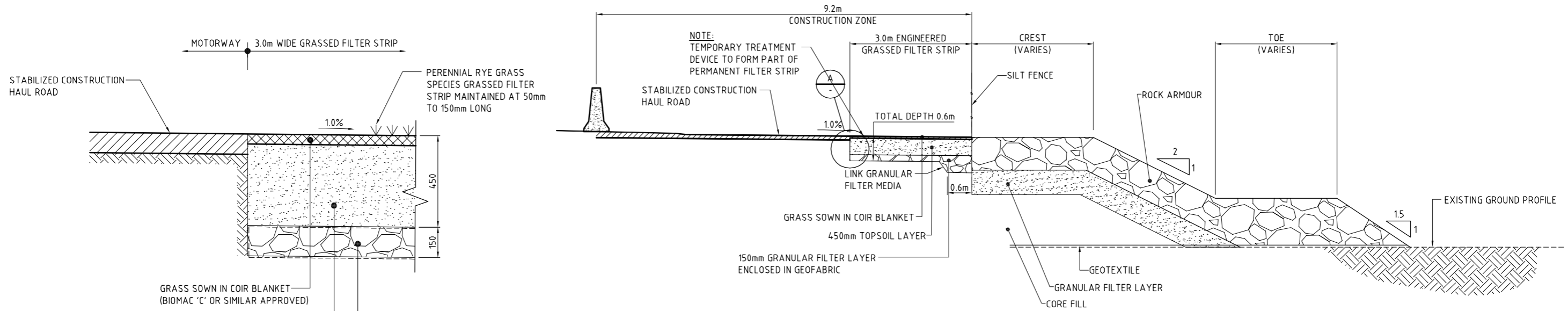
Project No.	20.1.11-3-D-D-350-119	Rev.	B
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Document No. 20.1.11-3-D-D-350-119.dwg

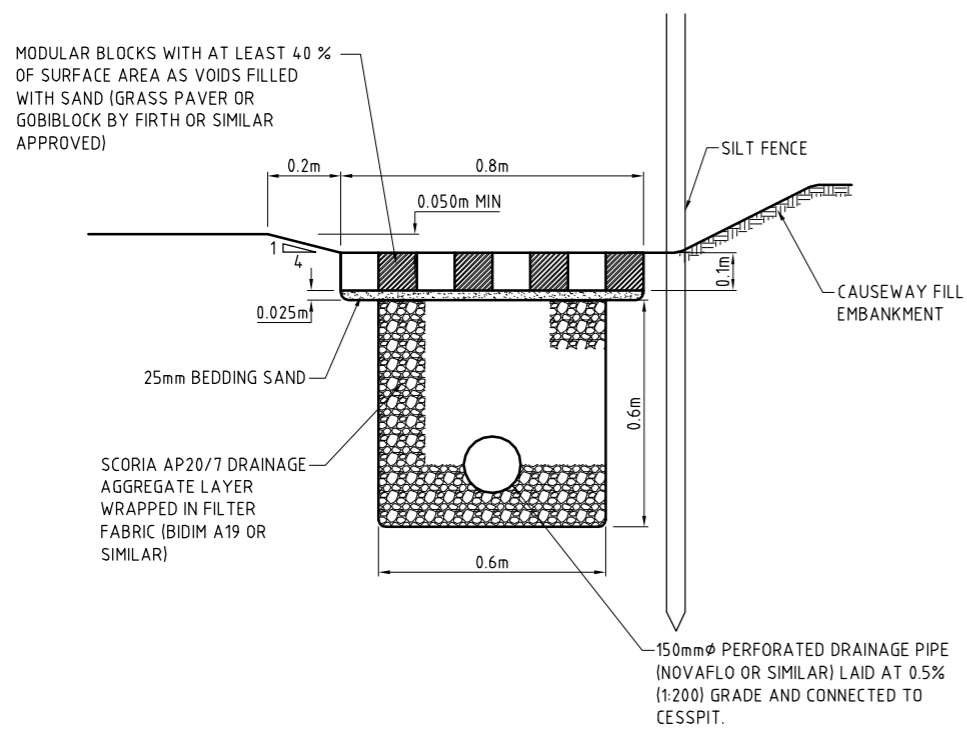


**TYPICAL TEMPORARY STORMWATER DRAINAGE DETAILS FOR 3m FILTER STRIPS - (CD4C)**

1:50 @ A1  
1:100 @ A3

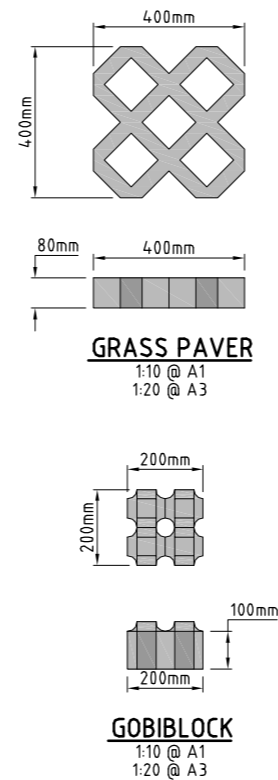
GRASS SOWN IN COIR BLANKET (BIOMAC 'C' OR SIMILAR APPROVED)  
450mm TOPSOIL LAYER LIGHTLY COMPACTED  
150mm GRANULAR FILTER LAYER (SCORIA AP20/7) ENCLOSED IN GEOFABRIC (BIDIM A29 OR SIMILAR APPROVED)

**DETAIL A**  
1:20 (A3)



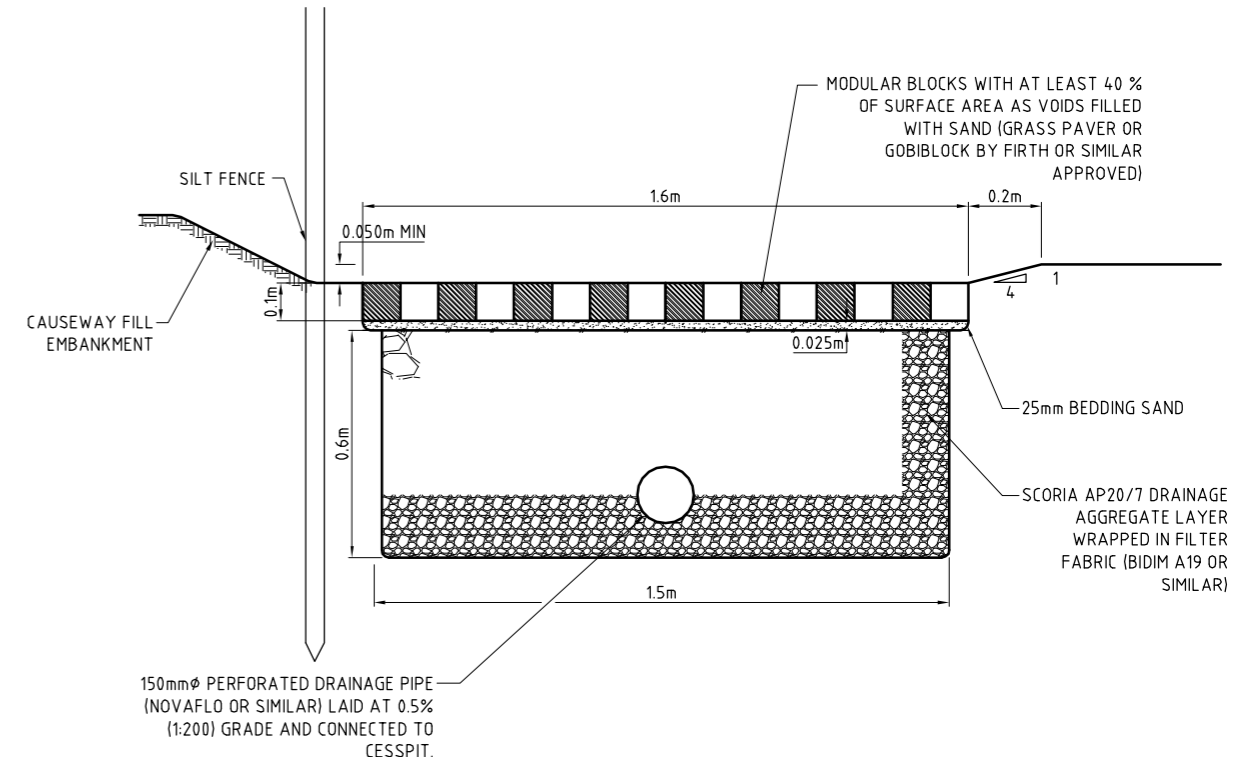
**TYPICAL DETAIL A: SAND FILTER TRENCH AS TEMPORARY TREATMENT DEVICES**  
**CD4A, CD4B & CD4D**

1:10 @ A1  
1:20 @ A3



**TYPICAL MODULAR BLOCK DETAILS**

1:10 @ A1  
1:20 @ A3



**TYPICAL DETAIL B: SAND FILTER TRENCH AS TEMPORARY TREATMENT DEVICES**

**CD4E**  
1:10 @ A1  
1:20 @ A3

**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base Level:  
**MSL AUCK. VERT. DATUM 1946**  
Grid Reference:

**MT EDEN 2000**

Originator No.

Project No.  
**20.1.11-1-D-D-350-200**

Rev.  
**A**

No.	Revision	By	Chk	Appd	Date
A	CONSENT ISSUE	TM	JB	JH	27.07.10

Drawing Originator:  
**aurecon**  
Aurecon New Zealand Limited  
139 Carlton Gore Road (PO Box 9762) Newmarket, Auckland, New Zealand  
Telephone: +64 9 520-8019  
Facsimile: +61 9 524-7816  
Email: auckland@aurecongroup.com

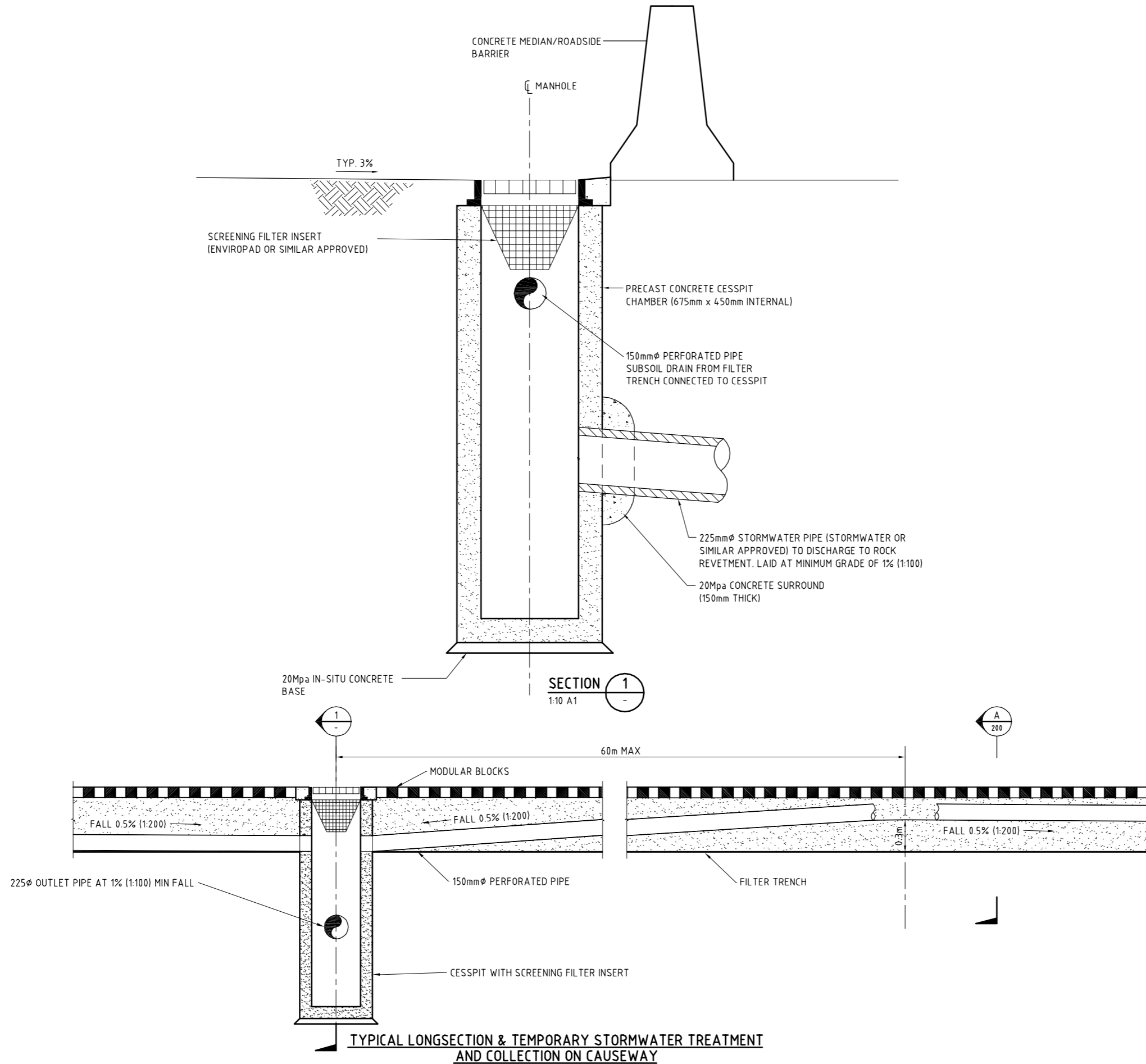
Original Scale (A1) AS SHOWN  
Reduced Scale (A3) AS SHOWN  
Design Engineer  
Review Engineer  
Drafting Checked  
Consultant Approval  
Retained by Beqa



Project:  
**WATERVIEW CONNECTION PROJECT**  
**SH16 / SH20**

Title:  
**TEMPORARY STORMWATER DRAINAGE**  
**TYPICAL DETAILS & SECTIONS:**  
**FILTER STRIPS & SAND FILTER TRENCHES**





**TYPICAL LONGSECTION & TEMPORARY STORMWATER TREATMENT AND COLLECTION ON CAUSEWAY**

1:10 @ A1  
1:20 @ A3

**FOR CONSENT  
NOT FOR CONSTRUCTION**

Base Level:	MSL AUCK. VERT. DATUM 1946
Grid Reference:	MT EDEN 2000
Originator No.	
Project No.	20.1.11-1-D-D-350-201
Rev.	A

No.	Revision	By	Chk	Appd	Date
A	CONSENT ISSUE	TM	JB	JH	27.07.10

Drawing Originator:

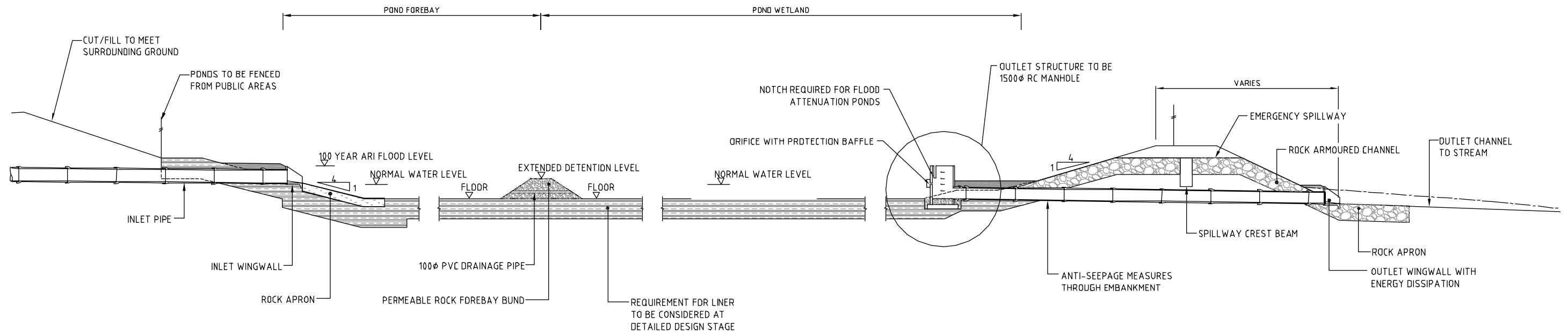
Aurecon New Zealand Limited  
139 Carlton Gore Road (PO Box 9762) Newmarket Auckland New Zealand  
Telephone: +64 9 520-8019  
Facsimile: +61 9 524-7816  
Email: auckland@aurecongroup.com

Original Scale (A1) AS SHOWN	Design Engineer
Reduced Scale (A3) AS SHOWN	Review Engineer
	Drafting Checked
	Consultant Approval
	Received by Becca

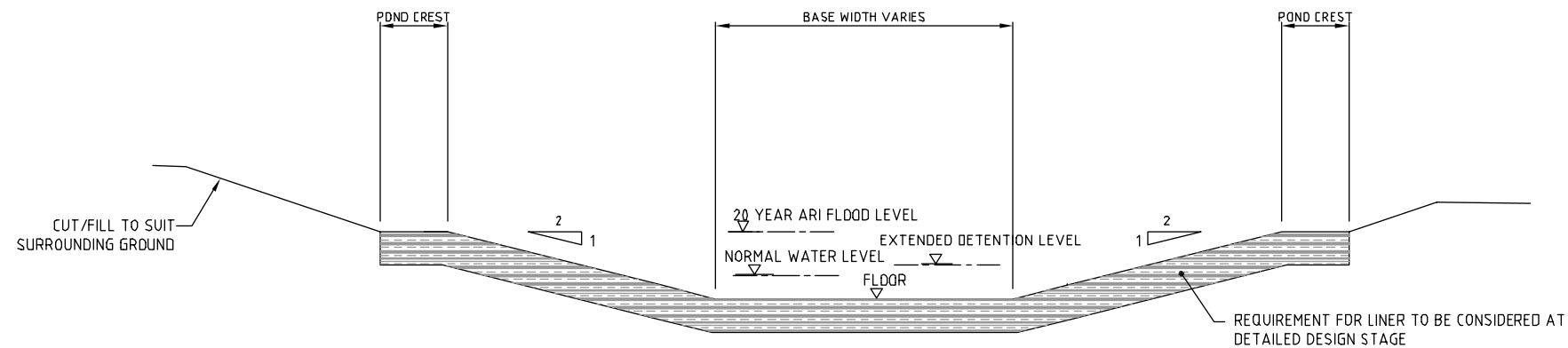
NZ TRANSPORT AGENCY  
WAKA KOTAHĪ

Project: **WATERVIEW CONNECTION PROJECT**  
SH16 / SH20

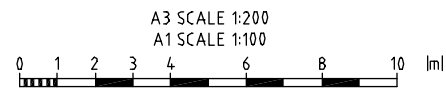
Title: **TEMPORARY STORMWATER DRAINAGE TYPICAL DETAILS & SECTIONS: FILTER STRIPS & SAND FILTER TRENCHES**



**A TYPICAL POND - DEVELOPED SECTION**  
 SCALE 1: 111 [A1]  
 1:200 [A3]



**B TYPICAL POND CROSS-SECTION**  
 SCALE 1: 111 [A1]  
 1:200 [A3]



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No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	19.14.10

Drawing Originator:  
  
**Tonkin & Taylor**  
 Environmental and Engineering  
 Consultants

Original Scale (A1)	1:111	Design Engineer	KANM
Review Engineer	TSRF	Drafting Checked	-
Reduced Scale (A3)	1:200	Consultant Approval	-
Received by Beca	RM		

  
**NZ TRANSPORT AGENCY**  
 WAKA KOTAHU

Project: **WATERVIEW CONNECTION PROJECT**  
 SH16 / SH20

Title: **SW & STREAMWORKS - CONSTRUCTION PHASE**  
 TYPICAL WETPOND CROSS-SECTION

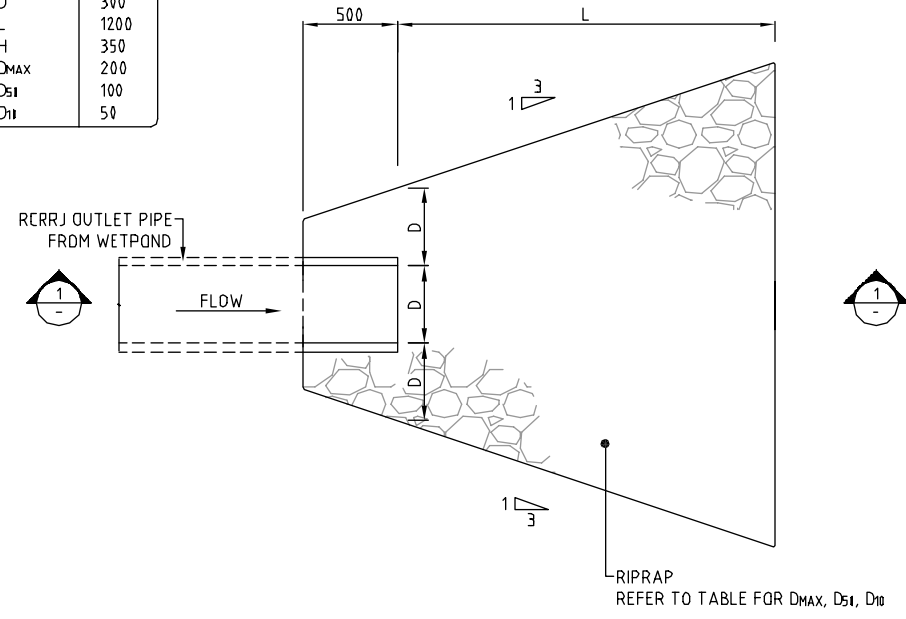
**FOR CONSENT**  
**NOT FOR CONSTRUCTION**

Base level:	MSL AUCK. VERT. DATUM 194.6
Grid Reference:	MT EDEN 2000
Originator No.	
Project No.	20.1.11-3-D-D-360-201
Rev.	B

NOTES:  
1. DIMENSIONS IN MILLIMETER UNLESS NOTED OTHERWISE

RIPRAP APRON DIMENSIONS

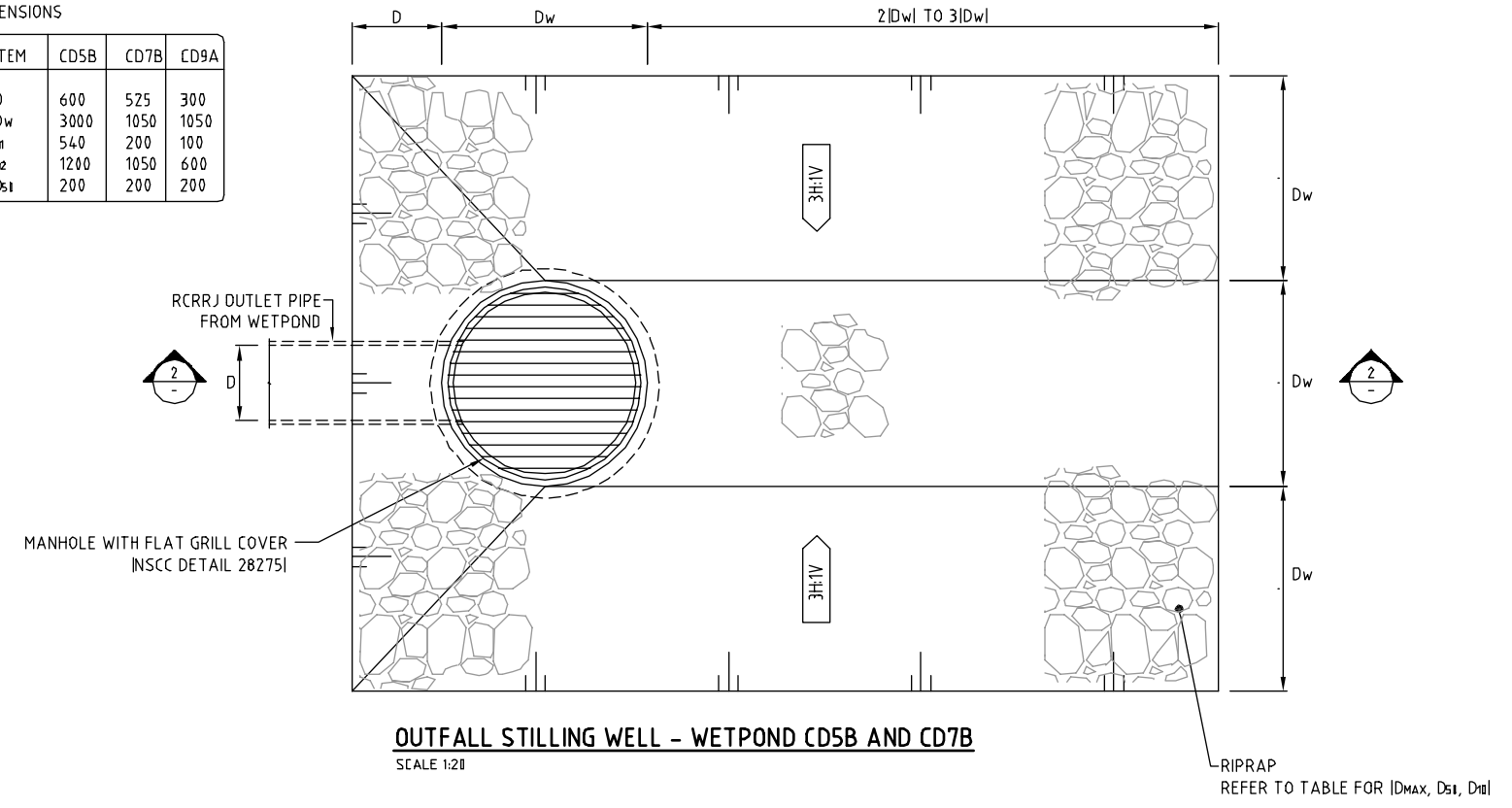
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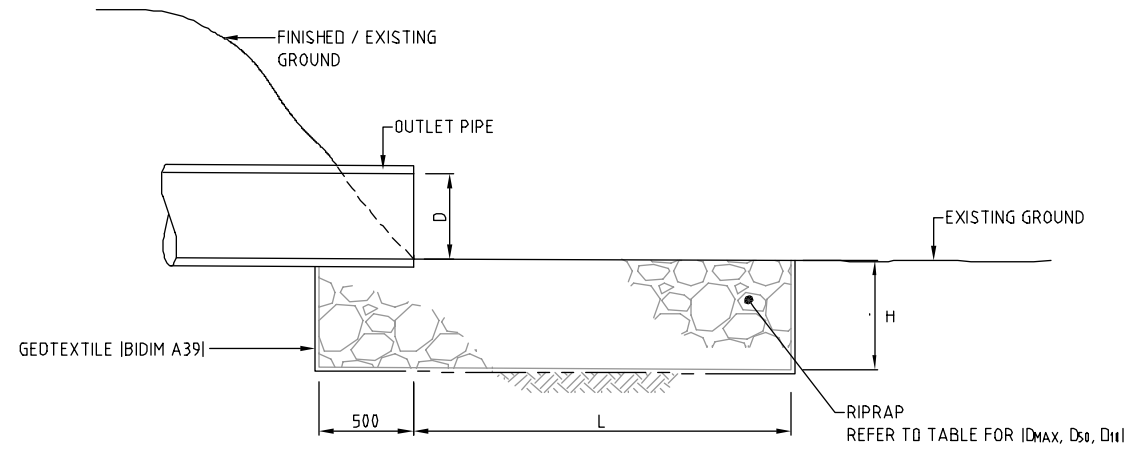
**RIPRAP APRON OUTFALL - WETPOND CD5A AND CD9A**  
SCALE 1:20

OUTFALL STILLING WELL DIMENSIONS

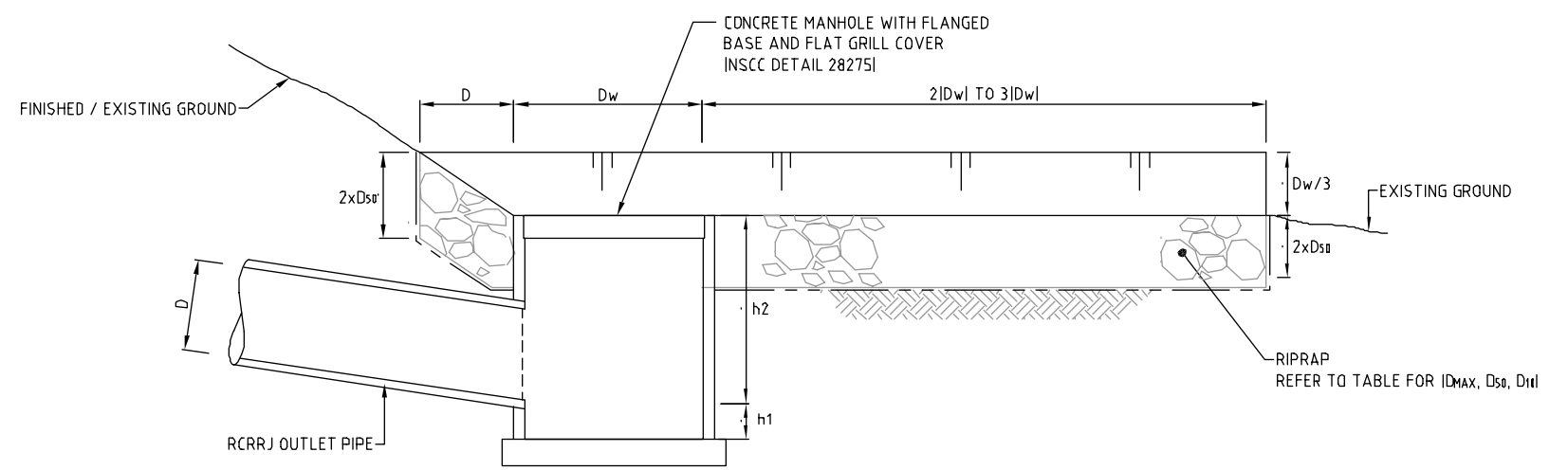
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h <sub>1</sub>	540	200	100
h <sub>2</sub>	1200	1050	600
D <sub>50</sub>	200	200	200



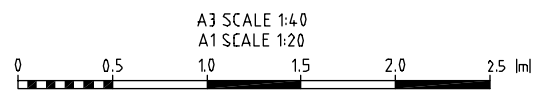
**OUTFALL STILLING WELL - WETPOND CD5B AND CD7B**  
SCALE 1:20



**SECTION 1 RIPRAP APRON OUTFALL SECTION**  
SCALE 1: 20



**SECTION 2 OUTFALL STILLING WELL SECTION**  
SCALE 1: 20



No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	19.14.10

Drawing Originator: **Tonkin & Taylor** Environmental and Engineering Consultants

Original Scale (A1) 1:20	Design Engineer SWB
Reduced Scale (A3) 1:41	Review Engineer TSRF
	Drafting Checked -
	Consultant Approval -
	Received by Beco RM



Project: **WATERVIEW CONNECTION PROJECT SH16 / SH20**

Title: **SW & STREAMWORKS - CONSTRUCTION PHASE TYPICAL WETPOND TYPICAL OUTFALL DETAILS**

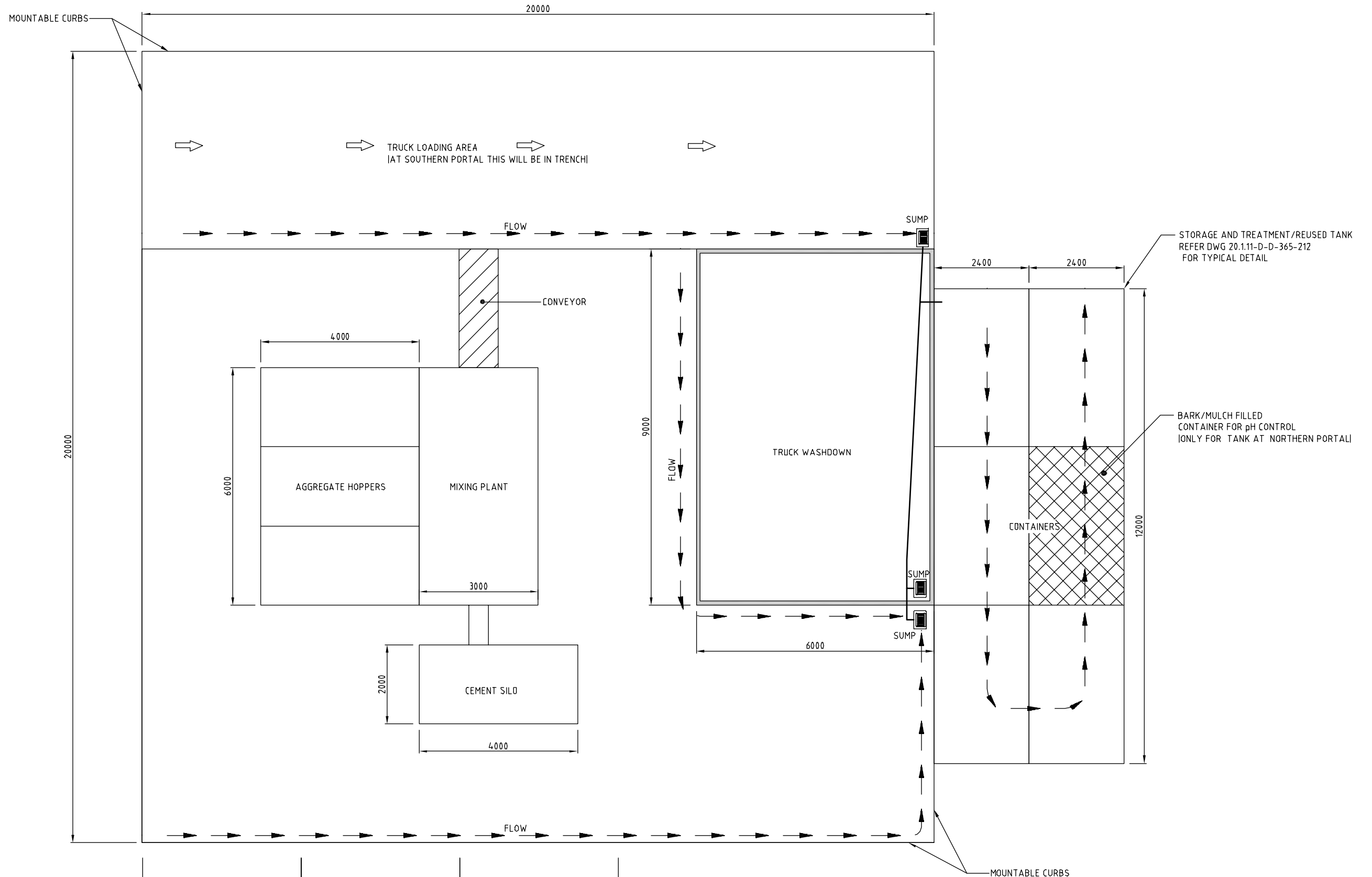
**FOR CONSENT NOT FOR CONSTRUCTION**

Base level: **MSL AUCK. VERT. DATUM 194.6**  
Grid Reference: **MT EDEN 2000**

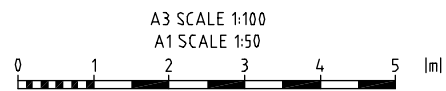
Project No. **20.111-3-D-D-360-301** Rev. **B**

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Document No. 20.111-3-D-D-360-301.dwg



NOTE:  
 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.  
 2. CONCRETE BATCHING PLANTS TO BE LOCATED IN CONSTRUCTION YARD 6 AT NORTHERN PORTAL AND CONSTRUCTION YARD 10 AT SOUTHERN PORTAL.



No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	19.14.10

Drawing Originator: **Tonkin & Taylor** Environmental and Engineering Consultants

Original Scale (A1)	1:51	Design Engineer	SMR
Reduced Scale (A3)	1:111	Review Engineer	TSRF
		Drafting Checked	-
		Consultant Approval	-
		Received by Becca	RM



Project: WATERVIEW CONNECTION PROJECT SH16 / SH20

Title: SW & STREAMWORKS - CONSTRUCTION PHASE CONCRETE BATCHING PLANT PLAN

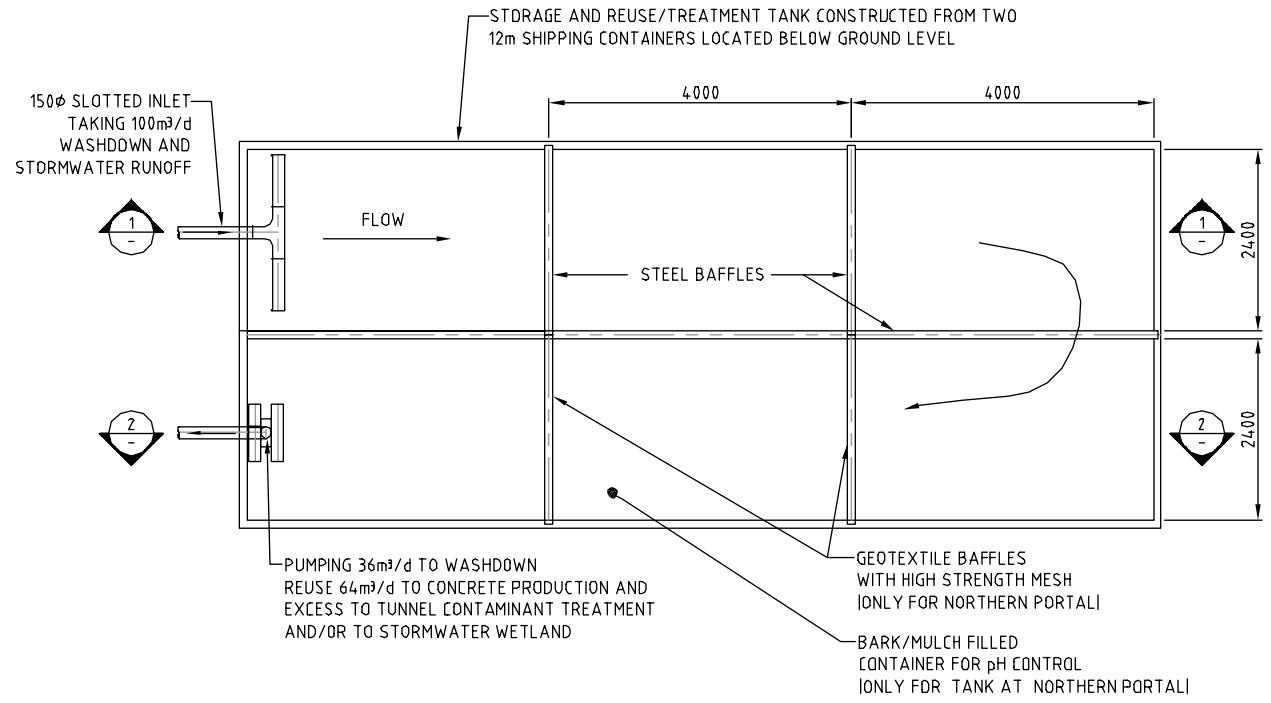
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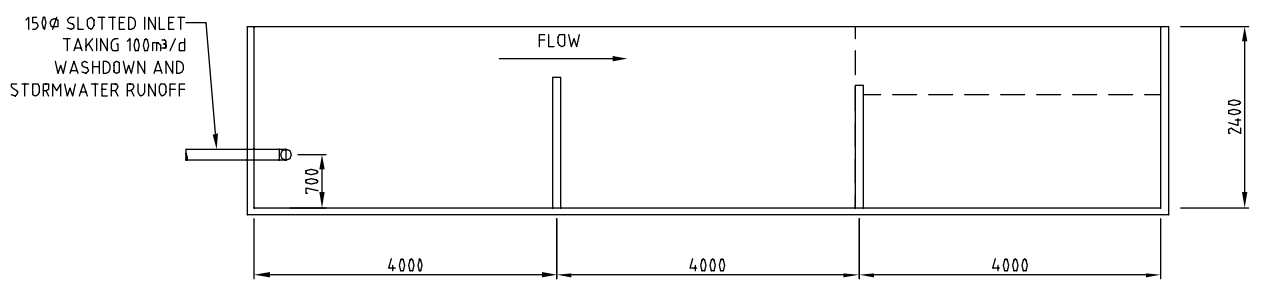
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Project No.	20.1.11-3-D-D-365-211
Rev.	B

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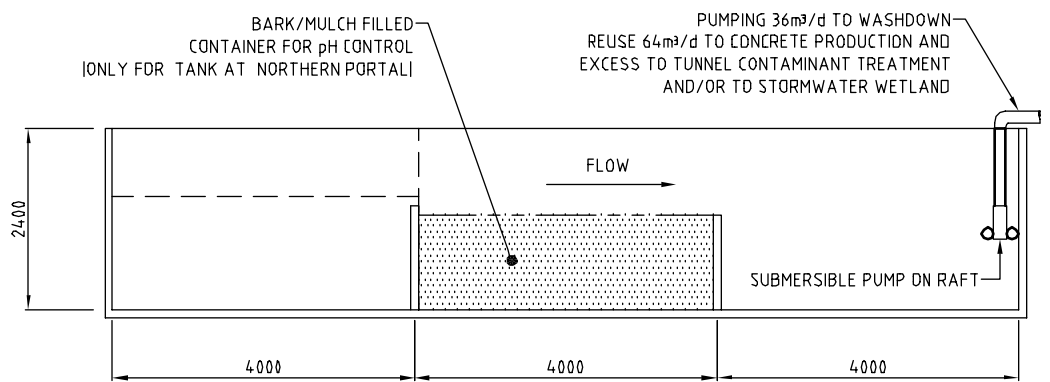
Document No. 20.1.11-3-D-D-365-211\_212.dwg



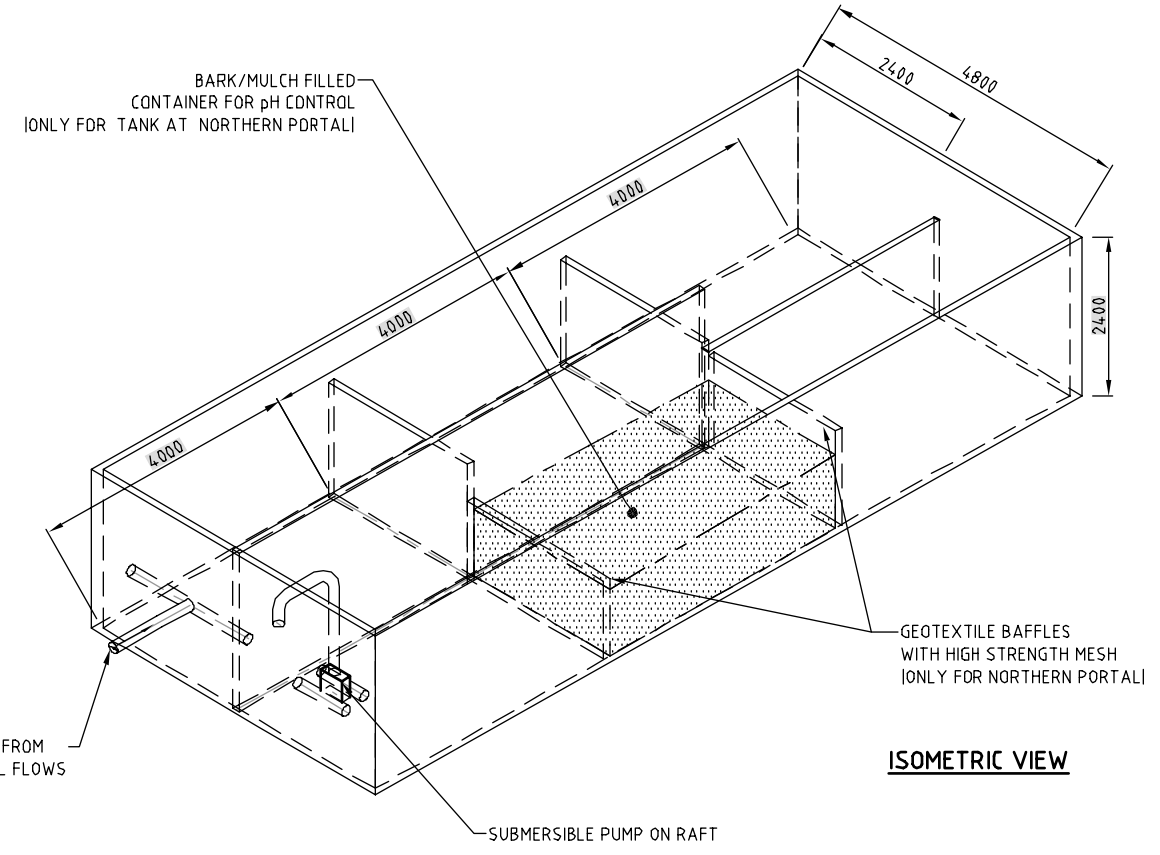
**PLAN**  
SCALE 1:50



**SECTION 1**  
SCALE 1:50

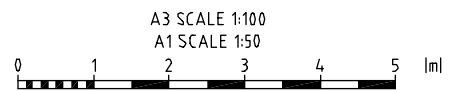


**SECTION 2**  
SCALE 1:50



**ISOMETRIC VIEW**

NOTE:  
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



No.	Revision	By	Chk	Appd	Date
B	CONSENT ISSUE	JATG	KANM	KJD	30.07.11
A	FOR REVIEW	JATG	KANM	KJD	19.14.10

Drawing Originator: <b>Tonkin &amp; Taylor</b> Environmental and Engineering Consultants		Original Scale (A1) 1:51	Design Engineer SMR
		Reduced Scale (A3) 1:111	Review Engineer TSRF
			Drafting Checked -
			Consultant Approval -
			Received by Beco RM



Project: WATERVIEW CONNECTION PROJECT  
SH16 / SH20

Title: SW & STREAMWORKS - CONSTRUCTION PHASE  
CONCRETE BATCHING PLANT  
STORAGE TANK TYPICAL DETAIL

FOR CONSENT  
NOT FOR CONSTRUCTION

Base level:  
MSL AUCK. VERT. DATUM 1946

Grid Reference:  
MT EDEN 2000

Originator No. \_\_\_\_\_

Project No. 20.111-3-D-D-365-212

Rev. B

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