

Monday 8 May 2023

OIA IRO-392

Name: [REDACTED]

Email: [REDACTED]@com

Kia ora [REDACTED]

Official information request regarding stormwater drain works on Main Road, Tawa.

Thank you for your official information request dated Saturday 25 March 2023.

The Local Government Official Information and Meetings Act 1987 (the Act) requires that we advise you of our decision on your request no later than 20 working days after the day we received it. Unfortunately, we cannot meet the original timeframe and must extend the time to make our decision to Friday 12 May 2023.

The reason for this extension is that in passing our response through the approval process, we have identified some gaps which prevent us from providing you with a fulsome response. We are extending the time in accordance with [Section 14\(1\)\(b\)](#) of the Act to allow time to consult with Subject Experts and to finalise our response to you.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Ngā mihi,

[REDACTED]

Governance Coordinator

For the latest news and updates, follow us on our social channels:

 /wellingtonwater  @wgtwaternz & @wgtwateroutage  @wellington_water

www.wellingtonwater.co.nz

Our water, our future.

Thursday 11 May 2023

OIA IRO-392

Name: [REDACTED]

Email: [REDACTED].com

Kia ora [REDACTED]

Official information request regarding stormwater drain works on Main Road, Tawa.

Thank you for your official information request dated Saturday 25 March 2023. Following our request, on Wednesday 5 April 2023 you clarified your request.

We have considered your request in accordance with the Local Government Official Information and Meetings Act 1987 (the Act) and determined that we are able to grant your request in part.

Please see our response in the Appendix of this letter which details why we are providing only part of the information you have requested.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Ngā mihi,

[REDACTED]

Team Lead, Communications and Engagement

For the latest news and updates, follow us on our social channels:

 /wellingtonwater  @wgtwaternz & @wgtwateroutage  @wellington_water

www.wellingtonwater.co.nz

Our water, our future.

Appendix

In your initial request, you noted that the drain appeared to be a simple structure and asked for the project brief, costings, timeframes, and plans from Council and/or Wellington Water. Upon clarifying your request for 'plans', you requested the following:

1. Initial construction plans and amendments to plans;
2. Budget and Cost over runs; and,
3. Estimated timeframe.

Please see in our response email, the Project Brief, Approved Plans, Programme of Works dates and structural sketches.

The drain is part of a wider stormwater improvement programme which when completed, will mitigate the flooding of the floor levels in the vicinity of 68-72 Main Road, Tawa.

Initially, dis-establishment of the site was planned prior to Easter. At the specific request of some business owners the works were postponed. After Easter, dis-establishment was to take place on 20 April 2023 concurrently with other works being undertaken in the area. However, a band seal is required to connect the joins of the old road to the new and the need to re-do the asphalt in the easement has pushed out the finalisation date. We cannot determine a final end date as the works are weather-dependent and therefore, we decline that part of your request in accordance with [Section 17\(e\)](#). Please note that the planned easement and band seal works will not impact on the businesses.

In accordance with [Section 7\(2\)\(b\)](#) of the Act, the expected estimates of the project on page 4 of the Brief have been withheld as it is commercially sensitive. Some information on pages 5 and 11 has been withheld in accordance with [Section 7\(2\)\(a\)](#) of the Act as it is personal information about private individuals.

The total budget for the project is **\$1,557,994.29** (inclusive of a contingency of \$144,283.50).

WCC: Main Road (68-74) Stormwater Improvements (2018-2019) PROJECT BRIEF

Purpose

The purpose of the Main Road (68-74) Stormwater Improvements project is to mitigate the flooding of the floor levels in the vicinity of 68-72 Main Road in Tawa.

Link with Wellington Water Service Goals

Primary		<p>This project is intended to protect commercial buildings in the vicinity of 68-72 Main Road in Tawa during rain events up to and including the 1 in 10-year rainfall event. Currently, two commercial buildings experience floor-level flooding during events smaller than the 1 in 10-year event.</p>
Secondary		<p>This project will minimize the safety risks associated with flooding to pedestrians and local vehicles. However, we have not identified any high or extreme risks such as high velocities or exposed culverts.</p>

Background

There is a history of flooding in commercial buildings in the vicinity of 68-72 Main Road in Tawa. As part of this history, the floor levels of the businesses at 72 Main Road were reportedly flooded during the May 2015 rainfall event. Shortly after the May 2015 event, Cardno NZ Limited (Cardno) was engaged to investigate the cause of the flooding and propose a solution. A report of this investigation is found within the larger Cardno report “Flood Event Summary – Wellington City & Tawa Events 12th and 14th May 2015,” 10 August 2015. As a separate measure, new sumps were installed on either side of Main Road adjacent to 72 Main Road to improve drainage into the existing network in the latter half of 2015.



Figure 1. Looking at 72 Main Rd Tawa on 14 May 2015



Figure 2. Looking at 72 Main Road after May 2015 flood had subsided a bit

Later, Opus International Consultants, Ltd (Opus) was engaged to determine if the new sumps had addressed the flooding and investigate options to mitigate residual flooding. Opus found and reported that, even with the new sumps, the existing stormwater network remains under capacity during the predicted 10-year rainfall event. Opus reported this and proposed flood mitigation options in the report “72 Main Road Stormwater Upgrade – Concept Design Report,” March 2016.

Concurrently, a hydraulic model was developed in the Tawa area, which includes the catchment contributing to this flooding. The model was developed originally by Opus Consultants in 2015, and revised by Jacobs in 2017 using InfoWorks ICM, v6.5. With this hydraulic model, the Wellington Water modelling and investigations teams tested the solutions proposed by Opus. The results from the hydraulic model showed that Opus’ proposed solutions did not eliminate floor-level flooding during the predicted 10-year flood event. Wellington Water refined Opus’ Option 1 to include three high-capacity sumps and larger pipes. The model results for this refined option showed no flooding in the commercial floors during the predicted 100-year rain event. This refined option will be developed into the stormwater improvement project. The hydraulic modelling results are included in the brief package as “08. Concept design modelling results.”

Supplemental Background - Options Analysis

Wellington Water explored three different options to refine Opus’ Option 1, as summarized in Table 1 below. The first (and selected) option was simply to install three high-capacity sumps to drain to a new outfall pipe. The second and third options include an attenuation bund in addition to the improvements in the first option. The attenuation bund would increase the flood protection and detain the stormwater, slowing the entry into Porirua Stream. For reasons discussed below, the second and third options were not selected, and the bund will not be installed as part of this project.

Option 1 (selected option) includes two proposed high-capacity sumps on the west side of Main Road and one on the east side, all draining to the proposed 900-mm outfall pipe (Figure 1). This option protects the adjacent commercial buildings from floods up to and including the 1 in 10 year event.



Figure 3. Wellington Water's Option 1: High-capacity sumps and new outfall pipe only

The unselected second and third options added an additional attenuation bund to the assets proposed in Option 1. The attenuation bund was investigated as an option to detain flood waters, while increasing the flood protection of the commercial buildings. Detaining flood waters slows the entry of stormwater into Porirua Stream during extreme rainfall events, which could provide downstream benefits by lowering the water level in Porirua Stream during the peak of the rainfall event. Attenuation was added in Option 2 by proposing an attenuation bund on the east side of the field belonging to St. Francis Xavier School (Figure 2). Of the three options, this option provides the most protection to the commercial buildings. However, the St. Francis Xavier School board will not approve this option.

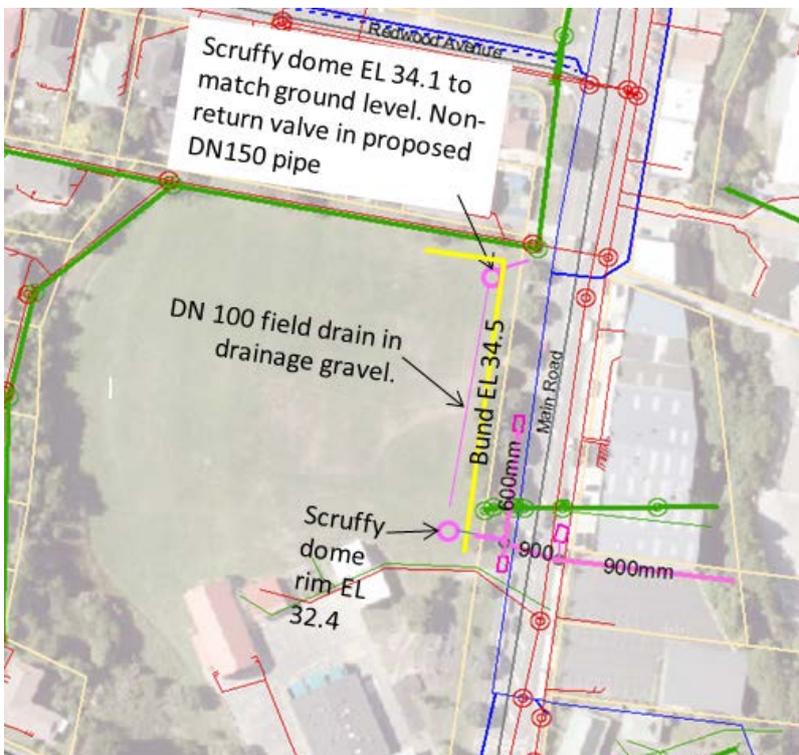


Figure 4. Wellington Water's Option 2: Bund on east side of field in addition to proposed assets in Option 1

The third option is similar to option two with the bund on the west side of the school field (Figure 3). This option was investigated as an option to provide stormwater attenuation without increasing the flooding on the school field. The St. Francis Xavier School board will support this option. However, the high cost decreased the benefit/cost ratio significantly so that this option was not selected. That said, should WCC seek to attain stormwater here in the future, this is an option agreeable to the school.

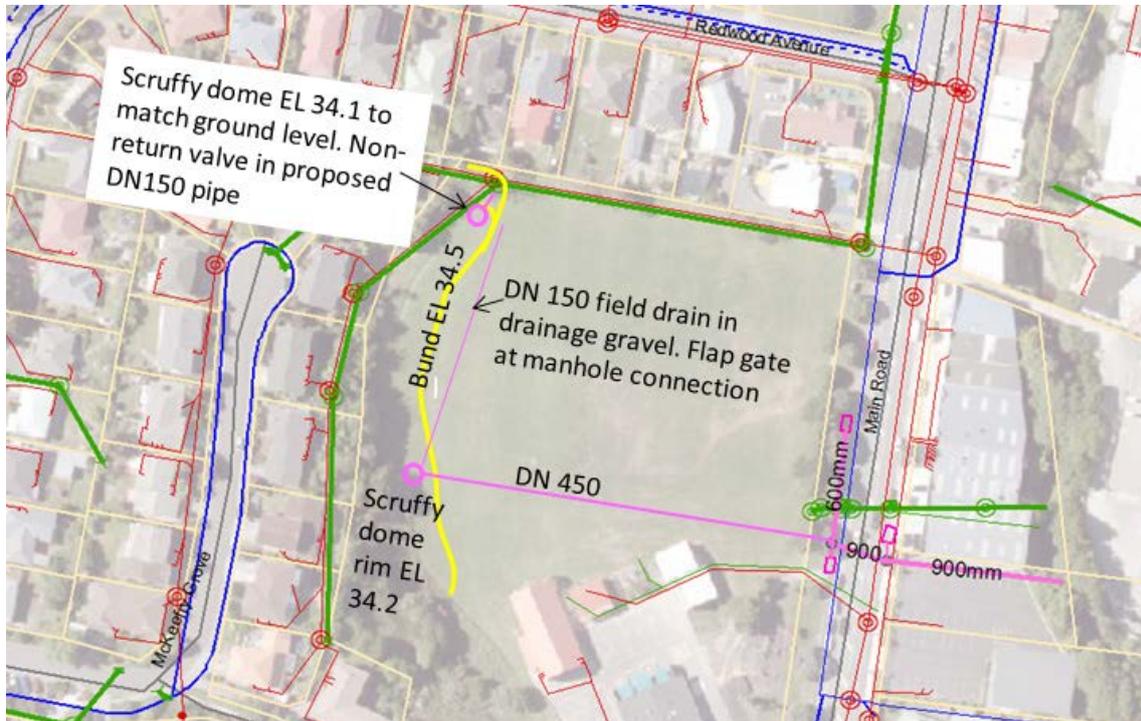


Figure 5. Wellington Water's Option 3: Bund on west side of field in addition to proposed assets in Option 1

In summary, Option 2 was eliminated because it could not be approved by the school. The remaining option (Option 3) to add stormwater attenuation is too costly to justify the benefits. As a result Option 1 was selected as the preferred option to mitigate the flooding in the commercial buildings.

Furthermore, it should be noted that the achievable volume of attenuation by the bund options was determined only by the hydraulic model. Due to assumptions in the model about where stormwater enters the catchment area, the modeled attenuation at these locations may not be accurate. Should a bund option be explored in the future, the volume of stormwater that can actually be attenuated at these locations should be verified.

Table 1. Wellington Water's Flood Mitigation Options

Option	10-yr protection	Expected Estimate	Notes
High-Capacity Sumps Only	Yes	████████	No attenuation. Quicker flows to Porirua Stream
Bund on East side of field, plus sumps	Yes	████████	Not allowed by St. Francis Xavier School
Bund on West side of field, plus sumps	Yes	████████	Modelling results are uncertain

Project Details

To collect the floodwaters along Main Road, two high-capacity sumps will be installed on the West side of Main Road and one will be installed on the east side the road. Each high-capacity sump will drain to a 600-mm sump lead. The high-capacity sumps shall be Humes HUSH pits or approved equivalents. The high-capacity sumps shall have an intake capacity of 500 l/s or greater, unless otherwise approved by Wellington Water.

The new sump leads will connect to one of the two new manholes. The new 900-mm pipe under Main Road will convey the water from the two western sumps to the second new manhole. Ultimately, the new 900-mm outfall pipe will convey all the water from the new sumps to Porirua Stream.

A viable overland flow path would be beneficial should the other improvements fail. This could be accomplished by creating an opening in the wall around the car park and shaping the car park to create an overland flow path to Porirua Stream. This may require purchasing a drainage easement from the property owners.

Preliminary Communications with Property Owners

The proposed outfall pipe is located on property owned by Main Road Tawa Gospel Hall Trust. Wellington Water shared the concept level design with Main Road Tawa Gospel Hall Trust by mailing a letter. Wellington Water met [REDACTED] from the Trust on the project site on 28 July to discuss the proposed improvements. Afterwards, [REDACTED] met with the other trustees to discuss the proposal. The trustees agreed with the proposal, but they would like to discuss later any potential drainage easements, the potential to build over or near the proposed pipe, and the potential effects on the land value. The email communication is saved in the brief package as "16c. Concept level agreement from Main Road Tawa Gospel Hall Trust."

The input from St. Francis Xavier School on the proposed options was obtained through communications with various entities associated with the school. The previously proposed attenuation for Options 2 and 3 (not the preferred option) is located on a field on the property of St. Francis Xavier School, which is owned by the Archbishop of the Archdiocese of Wellington. During the options analysis stage, Wellington Water shared the concept level design of the attenuation bund on the east side of the school field with the Archbishop of the Archdiocese of Wellington (Cardinal [REDACTED]) and the Schools Property Advisor ([REDACTED]). In response, [REDACTED] and [REDACTED] gave Wellington Water approval to proceed with the storm water improvements on the land at St Francis Xavier School, Tawa. An email communication expressing this support is saved in the brief package as "16b. Concept-level approval from Archbishop of Archdiocese of Wellington." Later, the St. Francis Xavier School board communicated a different position. On the contrary, the school board will not approve the installation of a bund on the east side of the school field. They will only approve a bund on the west side of the school field. An email communication expressing this position is saved in the brief package as "16e. St. Francis Xavier School board's position to options."

Preliminary Investigation Work

The following preliminary investigation work has been completed prior to preparing this project brief:

Desktop study

Desktop study and site visit

Extensive site investigations



Extensive investigations and previous reports



Scope of Work

The scope of work includes the following:

General

1. Obtain Wellington Water approval prior to commencing subsequent stages of work.
2. Liaise with other parties only as directed by Wellington Water.
3. Conduct project management and reporting.
4. Where beneficial for this work, refer to any applicable sections of relevant guides, documents, and standards, including those listed in this brief;

Stage 1 – Design

Note that the preferred option was selected during the investigations stage. The investigation and options analysis work already completed shall not be repeated as part of this design.

1. Begin resource consenting applications as soon as reasonable. During the scoping stage, coordinate with WWL to determine if this work will be completed by Wellington Water or the consultant.
2. In coordination with WWL, begin property negotiations as soon as reasonable with the Main Road Tawa Gospel Hall Trust and any other affected properties.
3. Locate any utilities or services that may conflict with the proposed design as soon as reasonable. Liaise with service providers in the project area as soon as reasonable.
4. Investigate opportunities to include stormwater treatment into the design.
5. Coordinate with WWL to optimize the design of the stormwater improvements, while keeping the estimated construction cost within the allocated budget.
6. Coordinate with WWL to select the optimum design based on the optimization step above for
 - reduction of flooding of floor levels,
 - ease of maintenance,
 - safety, and
 - cost.
7. Discuss design with Main Road Tawa Gospel Hall Trust (via or as directed by WWL) and adjust the design if necessary.
8. Discuss the proposed design with the WWL operations team and, if necessary, NZTA or WCC Roding, about maintenance of the assets. Adjust the design if appropriate.
9. Undertake all necessary inspection, survey, calculations, and design to prepare the documentation to install the infrastructure as optimized and selected by the steps above. This brief is only a guideline towards that process. The process shall include the preparation of:
 - construction plans,
 - construction cost estimate,
 - Specifications, and a
 - design report.

10. Prepare and submit the 30% and 80% draft design to Wellington Water for review and comment before starting the subsequent design. The design includes the construction plans, specifications, design report, and construction cost estimate.
11. Prepare the final design report, including construction drawings, specifications, and construction cost estimates to +/- 10% accuracy.
12. Provide design calculations upon request.

Stage 2 – Tendering and construction monitoring

1. Liaise with Wellington Water to confirm timing and preferred project packaging, and obtain approval to proceed with construction.
2. Manage the tender process and contract award via Wellington Water.
3. Assess tenders and recommend award of contract.
4. Carry out contract administration and construction monitoring.
5. Submit progress reports and other reporting to Wellington Water.
6. Administer the contract during the defects liability period.
7. Prepare and submit as-built drawings.
8. Prepare and submit the project completion report.

Design Considerations

1. The locations of the high-capacity sumps in the concept design were only determined based on visual inspection of the topography and modelling results. Optimal locations for the sumps shall be determined during the design optimisation stage.
2. According to GIS records, the proposed stormwater pipes cross an existing potable water line, an existing stormwater pipe, and two existing sewer pipes as detailed in the Table 2 below. The Wellington Water Information Directorate was not able to find any as-builts with elevations of the existing assets. The existing elevations will need to be confirmed to not conflict with the proposed stormwater pipe.

Table 2. Three Water Assets crossing proposed stormwater pipes per GIS records

Pipe Type	Asset ID Number	Diameter (mm)
Potable Water	R197303000079	375
Stormwater	SWP042652	300
Stormwater	SWP028469	225
Wastewater	WWP018110	750
Wastewater	WWP019552	225

3. This work includes a new outfall into Porirua Stream. A resource consent will be required.
4. The proposed outfall pipe is located mostly on property belonging to Main Road Tawa Gospel Hall Trust. The Trust has agreed to allow Wellington Water to move forward with the proposal on the condition that the details will be further discussed and agreed upon during the design phase. This project will include coordination with the Trust to agree on the detail, including exact location of the pipe, type of easement, etc.

For example, the pipe may be designed to allow for future connections from the adjacent property as way compensate for any lost land value.

Other Considerations

1. As this project mitigates the flooding on Main Road, there could be opportunities to coordinate with WCC Roding or NZTA.
2. The existing sumps at this location frequently become blocked with leaves and other debris. This project includes clear communication with the WWL operations team and, if necessary, NZTA or WCC Roding to minimise the risk of blockage of the new assets.

Codes, Specifications and Relevant Documents

Relevant documents for this work include:

- Beveridge, G. and Worth, Z. (March 2016). 72 Main Road Stormwater Upgrade – Concept Design Report. Opus International Consultants Ltd.
- Stokes, K. & Sutherland, L. (August 2015). Flood Event Summary – Wellington City & Tawa Events 12th and 14th May 2015. Cardo NZ Ltd.
- Correspondences with affected parties listed in this report.

Design phase and construction shall be completed in accordance with Council and Wellington Water's standards and procedures. Relevant documents include:

- Updated Regional Standard for Water Services,
- WCC Code of Practice for Land Development,
- National Code of Practice for Utility Operators Access to Transport Corridors,
- Wellington Water H&S standards and procedures and,
- Wellington Water Cost Estimation Manual.

Health and Safety

For health and safety risks related to the ongoing use and maintenance of the installed assets, refer to the Health and Safety Risk Assessment within the appendices to this design brief.

The key health and safety risks are also highlighted below:

- Death or injury to a person struck by vehicles or mobile equipment at the construction site,
- Traffic collision,
- Loss of consciousness or drowning by falling into Porirua Stream, or
- Collapse of excavation when installing high-capacity sumps.

The Consultant shall consider these hazards and any other hazards identified during each stage of the work. The Consultant shall communicate H&S risks and proposed control measures as per Wellington Water's Safety in Design policy.

Environmental Risks

Potential environment impacts shall be considered and managed in both the design and construction stages of the project. The following potential risks have been identified during the project briefing stage:

- Trench dewatering discharges,
- Silt and debris from physical works washing down to Porirua Stream,
- Storage of fuel and oils,
- Noise,
- Dust,
- Spillages of construction materials into Porirua Stream, and
- Surplus construction materials causing litter.

Project Risks

A few potential risks to the completion of the project are highlighted below:

- Unidentified utility conflicts,
- Inaccurate cost estimate, and
- Delay in obtaining resource consent.

For a more complete and detailed assessment of likely project risks and any mitigation measures that will be taken, please refer to the Project Risk Register in Appendix Three.

Required Outcomes

The required outcome is a well designed and constructed stormwater system using approved materials and construction methods to:

- Meet all Wellington Water's standards, procedures, and operations requirements,
- Comply with Wellington Water's Health & Safety requirements,
- Meet the requirements of the project design brief,
- Cause the minimum practical disruption and inconvenience to the community,
- Achieve a high standard of public relations,
- Work within the agreed budget for the work,
- Comply with all the legislative and Council requirements, and
- Design an easily maintainable and operable system.

Woogle Location

[https://woogle.wellingtonwater.co.nz/project/MainRoad\(6874\)TawaSt/projdocs/Forms/aByName.aspx](https://woogle.wellingtonwater.co.nz/project/MainRoad(6874)TawaSt/projdocs/Forms/aByName.aspx)

Project Program

This project is currently listed in the Long Term Programme for design and consenting during the 2018-2019 financial year and construction during the 2019-2020 financial year.

Reporting and Consultation requirements

The Wellington Water Project Management and Investigations teams shall be consulted for any major design changes. Additionally, draft designs shall be submitted to the Project Management and Investigations Team for review for the 30%, and 80% designs. The draft designs are made up of the construction plans, specifications, design report, and the construction cost estimate.

A project completion report is required and shall include:

- A summary of the construction cost estimate as per the final detailed design report, accepted tender price, and final construction cost, including a brief analysis and explanation of any significant differences between each,
- The final construction progress payment schedule in excel format,
- A summary of the Consultant's accepted fee proposal amount, and final invoice amount (RFP contract value) following completion of construction, including brief analysis and explanation of any differences between each,
- Contractor performance, adherence to methodology and quality,
- Project performance against time, budget, scope and quality (reasons for any variances and the lessons learnt should be included),
- Public compliments and/or complaints,
- Contractual issues, and
- The updated Safety in Design risk register, as per Wellington Water's Safety in Design process.

Electronic versions of detailed design and assessment reports shall be uploaded to the project location in Woogle.

Quality Information

Prepared by:

[Redacted]
Engineer / Senior Engineer, Investigations

Date: 23 March 2018

Contact telephone number:

[Redacted]

Operations Team Input / Review:

Network and Customer Operations

Date: 23/3/18

(Review by Network and Customer Operations confirms that the project brief addresses the asset functional requirements, that the proposed asset can be operated and maintained safely (so far as can be determined at the briefing stage), and that the initial Health and Safety Risk Assessment for Design and Project Risk Register identify Operation and Maintenance Risks appropriately for the assets being replaced, renewed or developed).

Reviewed by:

[Redacted]
Engineer / Senior Engineer, Investigations, Potable Water / Wastewater - Stormwater

Date: 23/3/18

Endorsed for release by:

[Redacted]
Chief Advisor – Potable Water / Wastewater / Stormwater

Date: 23/3/18

WCC: Main Road (68-74) Stormwater Improvements (2018-2019)

APPENDIX 1 Safety in Design Risk Assessment

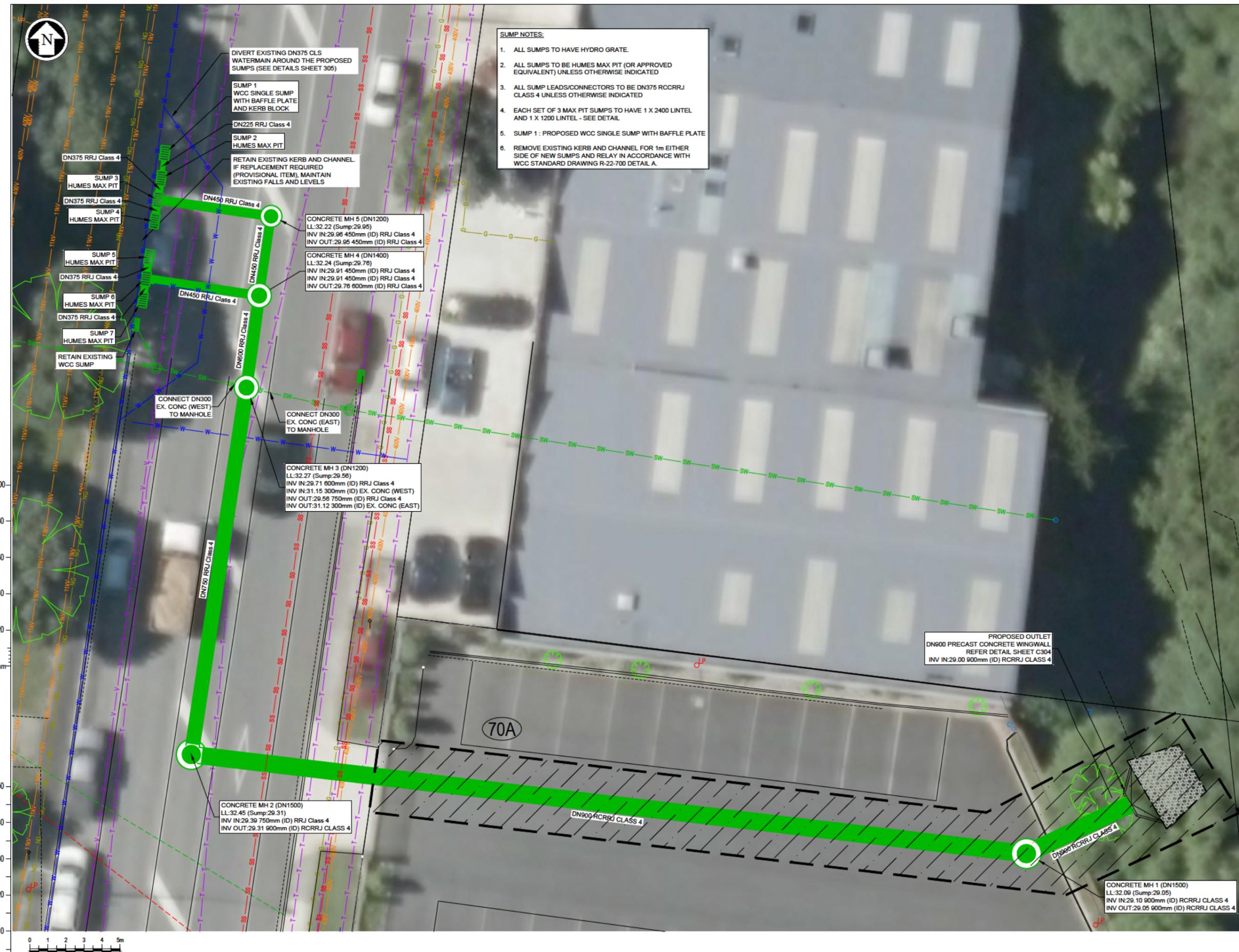
(also to be supplied with Project Brief as a separate attachment, using the MS Excel spreadsheet template)

**WCC: Main Road (68-74) Stormwater Improvements
(2018-2019)
APPENDIX 2
RISK REGISTER**

(also to be supplied with Project Brief as a separate attachment, using the MS Excel spreadsheet template)

**WCC: Main Road (68-74) Stormwater Improvements
(2018-2019)
APPENDIX 3
SUPPORTING INFORMATION**

- NOTES:**
- DO NOT SCALE OFF DRAWINGS.
 - REFER TO GENERAL AND STANDARD NOTES AND LEGENDS ON DRAWINGS: 3-WW018.21_C003
 - PIPE BEDDING IN ACCORDANCE WITH WELLINGTON WATER REGIONAL SPECIFICATION FOR WATER SERVICES.
 - PIPE INSTALLATION IN ACCORDANCE WITH WELLINGTON WATER REGIONAL SPECIFICATION FOR WATER SERVICES DR03.



A1 REPRODUCTION SCALE
A2 REPRODUCTION SCALE

0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE

No.	Revision	By	Chk	Appd	Date
C	ISSUED FOR APPROVAL				17/12/2019
B	ISSUED FOR APPROVAL				6/09/2019
A	ISSUED FOR INFORMATION				15/08/2019

Connect Water
PO box 12 003 Thorndon Wellington 6142 T 64 4 471 7000

Original Scale (A1) AS SHOWN Reduced Scale (A2) 1/2 SHOWN

Design Drawn Dwg Verifier Dwg Check

Approved For Construction Date



Client: WELLINGTON WATER
68 MAIN RD, TAWA, WELLINGTON
Project: MAIN ROAD STORMWATER UPGRADE

Title: MAIN ROAD STORMWATER UPGRADE
Site Plan

Discipline:	CIVIL
Drawing No.:	3-WW018.21_C300
Rev.:	C

WW SERVICES LEGEND

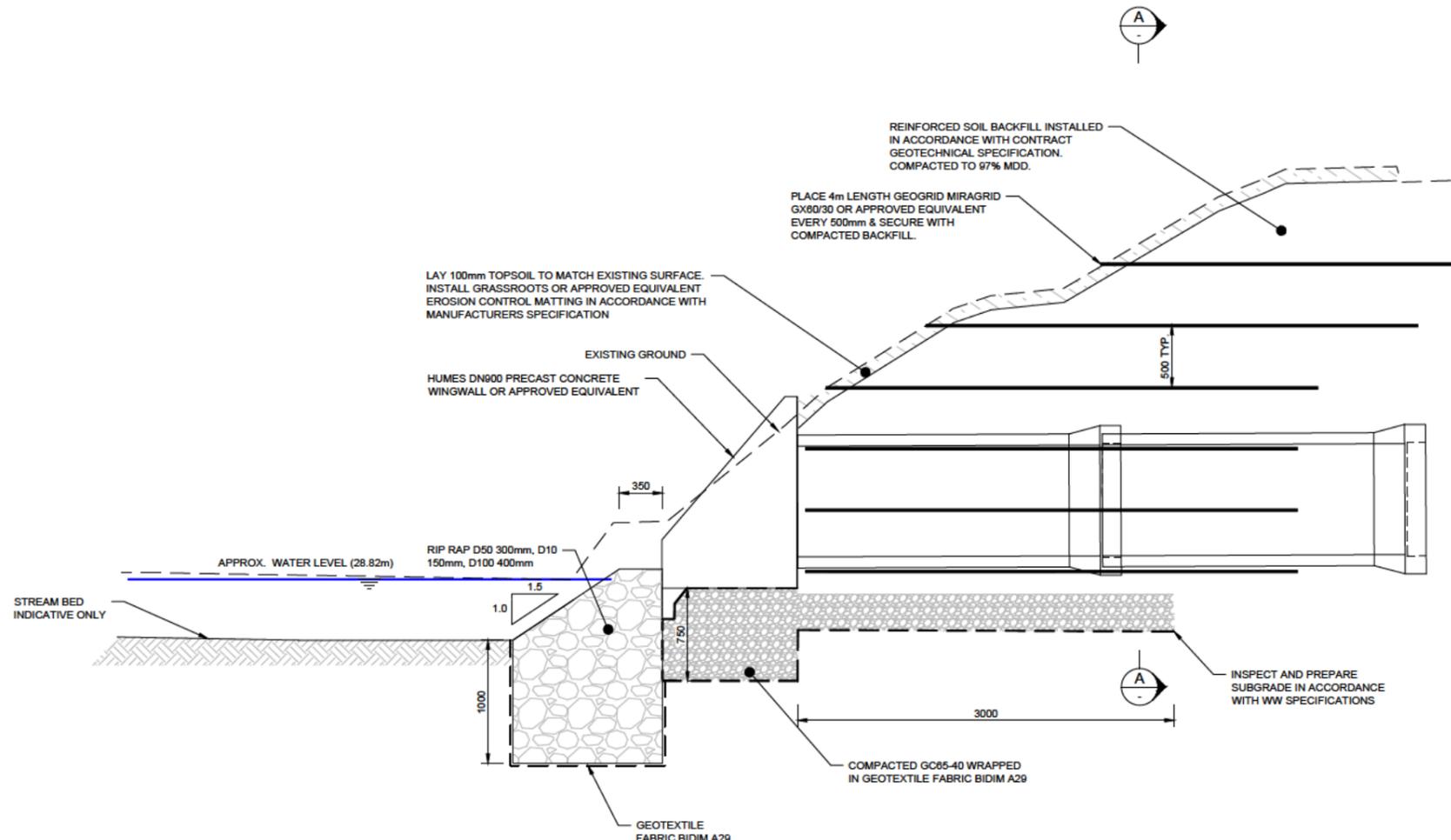
NEW WATER MAIN	— W —
EXISTING WATER MAIN	- W -
NEW STORMWATER	— SW —
EXISTING STORMWATER	- SW -
NEW WASTEWATER	— SS —
EXISTING WASTEWATER	- SS -
ABANDONED SERVICE	- X - X - X -
PRIVATE WATER	- - - W - - -
PRIVATE STORMWATER	- - - SW - - -
PRIVATE WASTEWATER	- - - SS - - -
KERBS	— K —
CONTOURS MAJOR	— C —
CONTOURS MINOR	- C -
PARCEL BOUNDARY	- - - P - - -
VALVE NEW OR EX. / REDUNDANT	⊕ ⊕
BOUNDARY VALVE	⊙
HYDRANT NEW OR EX. / REDUNDANT	⊕ ⊕
MANIFOLD NEW / EXISTING	⊕ ⊕
EXISTING TOBY	⊗
PUMP	⊕
NEW SS/SW MANHOLE	⊙
EXISTING SS/SW MANHOLE	⊙
EXISTING SS/SW LHCE	⊙
EXISTING SW SUMP	⊙
PROPERTY NUMBER	①

UTILITIES LEGEND

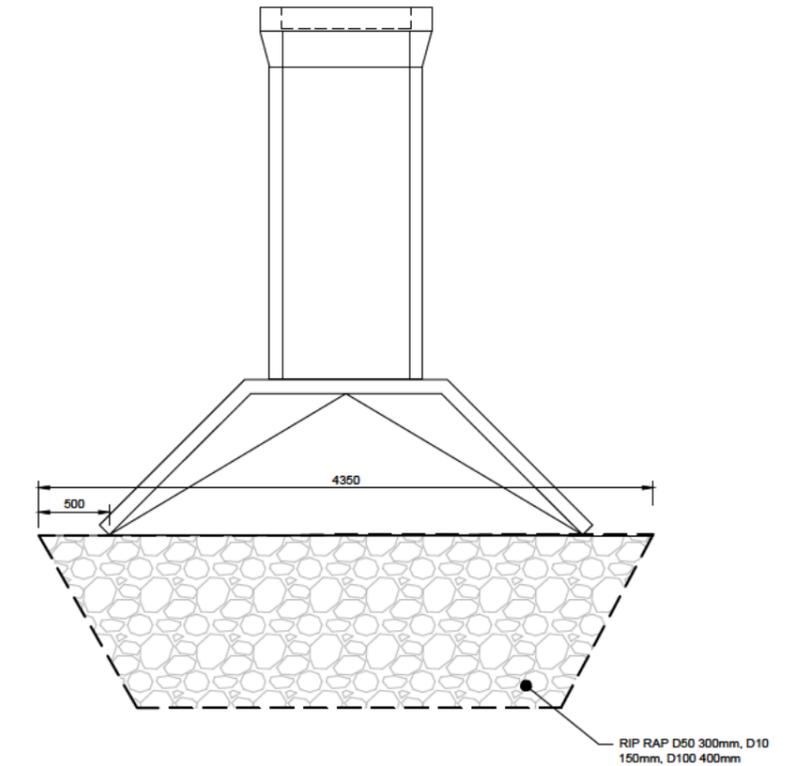
GAS - POWERCO	— G —
GAS - NOVA	— NG —
UIG POWER	— UP —
400V UIG POWER	— 400V —
11kV UIG POWER	— 11kV —
33kV UIG POWER	— 33kV —
OIH POWER / TROLLEY WIRE	— OP —
TELECOMMS / CHORUS	— T —
VODAFONE	— V —
FIBRE OPTIC	— FO —
CITYLINK BROADBAND	— B —
VECTOR COMMS	— VC —
OIL	— OIL —
LINZ SURVEY MARK	⊙ SM
POLE	⊙

ORIGINAL DRAWING
IN COLOUR

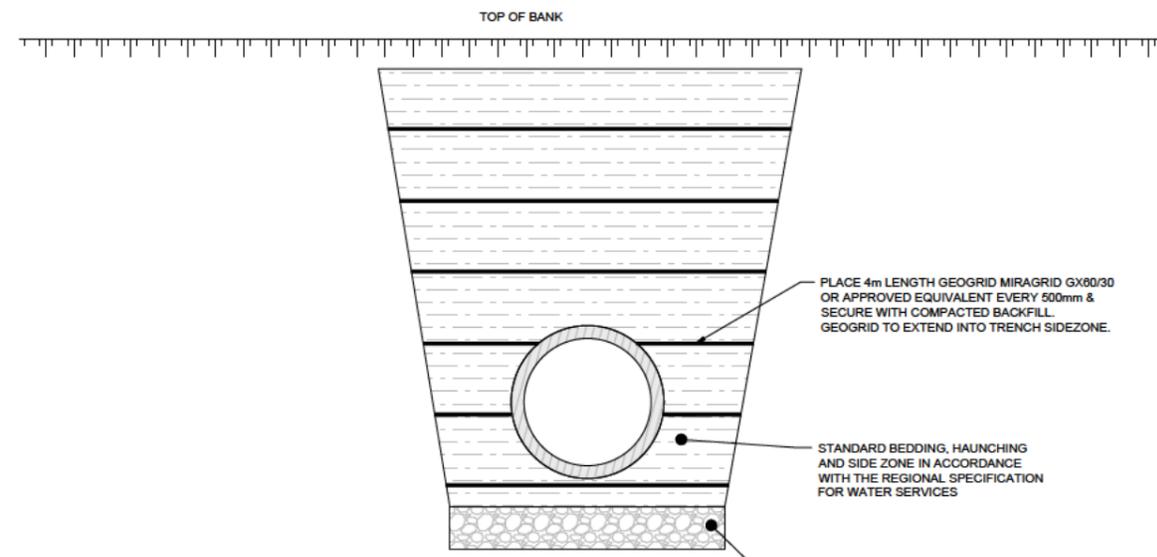
FOR REVIEW
NOT FOR CONSTRUCTION



1 OUTFALL SECTION VIEW
SCALE: 1:25



OUTFALL PLAN
SCALE: 1:25



A OUTFALL SECTION
SCALE: 1:25

A1 REPRODUCTION SCALE
0mm
20
40
60
80
100

A3 REPRODUCTION SCALE
0mm
10
20
30
40
50

No.	Revision	By	Chk	Appd	Date
C	ISSUED FOR APPROVAL				17/12/2019
B	ISSUED FOR APPROVAL				6/09/2019
A	ISSUED FOR INFORMATION				15/08/2019

Connect Water
of WSP
PO box 12 003 Thomson
Wellington 6144
T 64 4 471 7000

Original Scale (A1)
AS SHOWN
Reduced Scale (A3)
1/2 SHOWN

Design
Drawn
Dwg Verifier
Dwg Check
Dwg Check

Approved For Construction
Date

*Refer to Revision 1 for Original Signature

Wellington Water

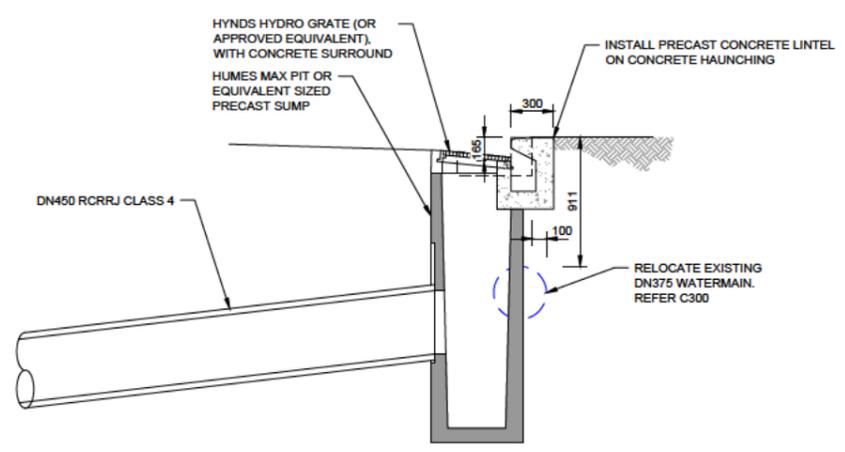
Client
WELLINGTON WATER
68 MAIN RD, TAWA, WELLINGTON
STORMWATER UPGRADE

Title
**MAIN ROAD
OUTFALL DETAIL**

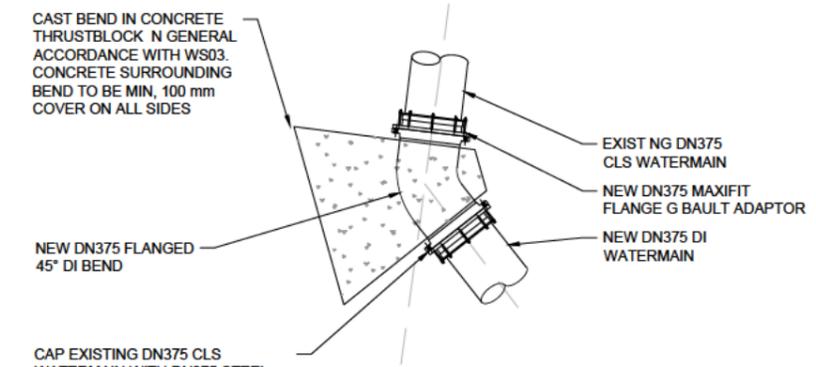
Discipline	Rev.
CIVIL	C
Drawing No.	3-WW018.21_C304

**ORIGINAL DRAWING
IN COLOUR**

**FOR REVIEW
NOT FOR CONSTRUCTION**

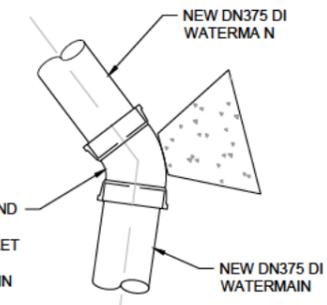


2 DN375 WATERMAIN CROSSING DETAIL AT STR-1 AND STR-2
300 SCALE: 1:25

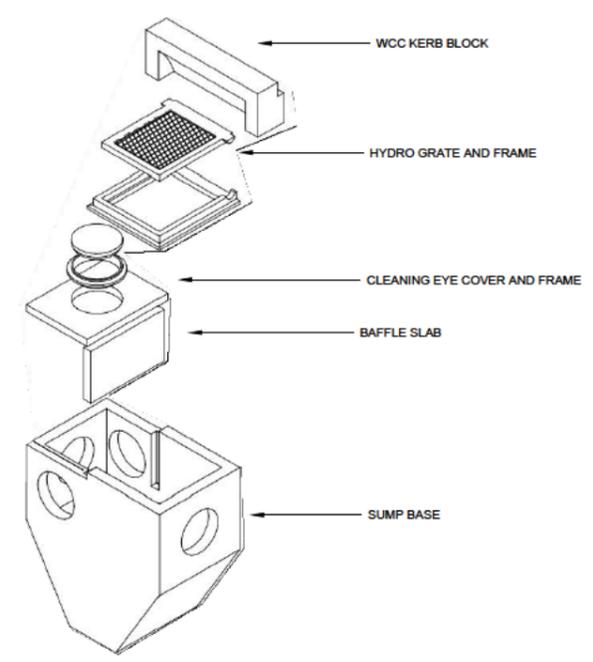


CAP EXISTING DN375 CLS WATERMAIN WITH DN375 STEEL BLANK FLANGE, TEMPORARILY RESTRAINED FOR TESTING PURPOSES. AFTER SUCCESSFUL TESTING, REMOVE BLANK FLANGE AND INSTALL BEND WITH CONCRETE BLOCK AS DRAWN AND CONNECT WITH EXISTING MAIN.

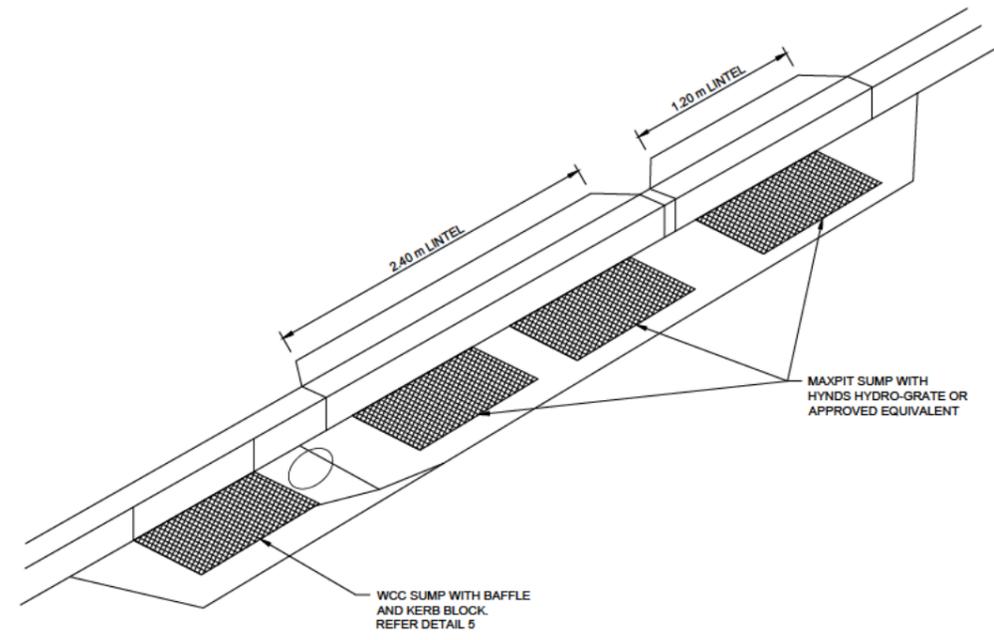
3 CONNECTION TO EXISTING DN375 CLS
301 SCALE: 1:25



4 HORIZONTAL BEND DETAIL
301 SCALE: 1:25



5 WCC SUMP
N.T.S.



6 TYPICAL SUMP ARRANGEMENT
N.T.S.

A1 REPRODUCTION SCALE
0mm
20
40
60
80
100

A3 REPRODUCTION SCALE
0mm
10
20
30
40
50

No.	Revision	By	Chk	Appd	Date
B	ISSUED FOR APPROVAL				17/12/2019
A	ISSUED FOR INFORMATION				15/08/2019

 Drawing Originator Connect Water of WSP PO box 12 003 Thomson Wellington 6144 T 64 4 471 7000	Original Scale (A1) AS SHOWN Reduced Scale (A3) 1/2 SHOWN	Design Drawn Dag Verifier Dag Check	Approved For Construction Date
---	--	--	-----------------------------------



Client
Wellington Water

Project
WELLINGTON WATER
68 MAIN RD, TAWA, WELLINGTON
STORMWATER UPGRADE

Title
MAIN ROAD
SUMP DETAILS

Discipline CIVIL	Rev. B
Drawing No. 3-WW018.21_C305	

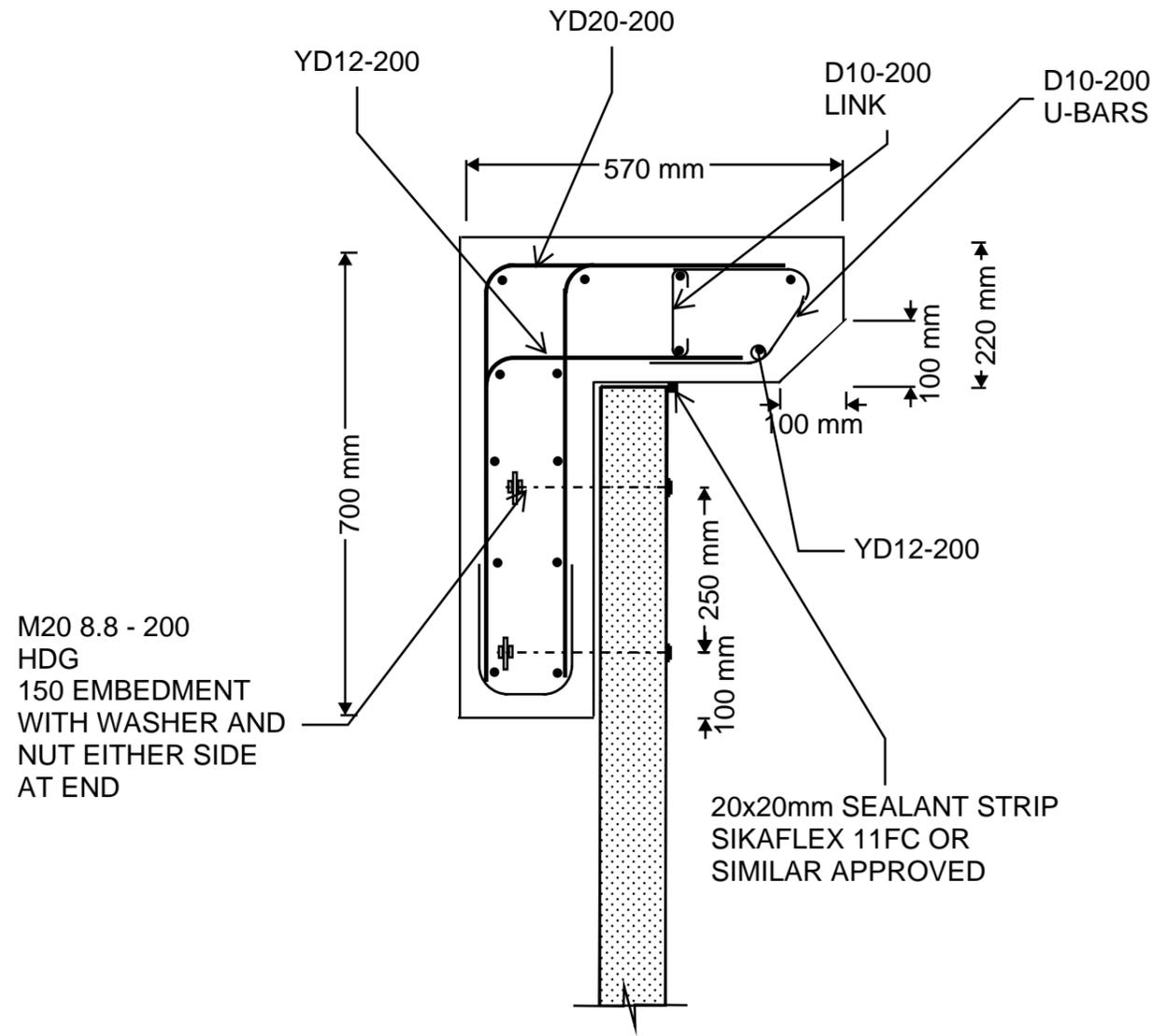
ORIGINAL DRAWING
IN COLOUR

FOR REVIEW
NOT FOR CONSTRUCTION

ALTERNATIVE DETAIL: 50mm
EXTENSION

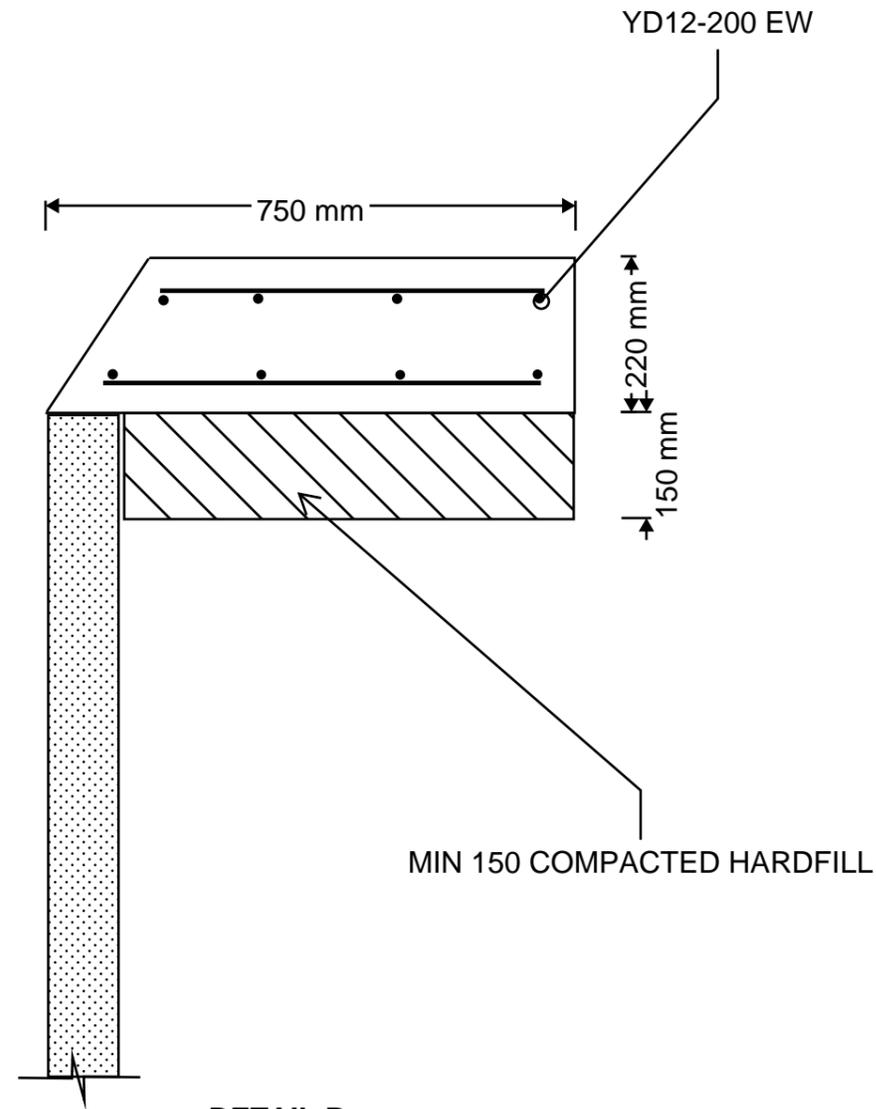
NOTES:

1. COVER TO REINFORCING TO BE 50mm
2. CONCRETE STRENGTH:
f_c = 30MPa AT 28 DAYS
3. ALLOW 10 DAYS BEFORE LOADING
4. DESIGNED FOR H0 LOADING 120kN PER WHEEL,
3.5kPa



DETAIL A

NOTE: LENGTH TO EXTEND
200mm PAST SUMP EACH SIDE



DETAIL B

NOTE: LENGTH TO EXTEND 200mm
PAST PIT LINTEL EACH SIDE



Wellington Office
+64 4 471 7000

PO Box 12 003
Wellington 6144
New Zealand

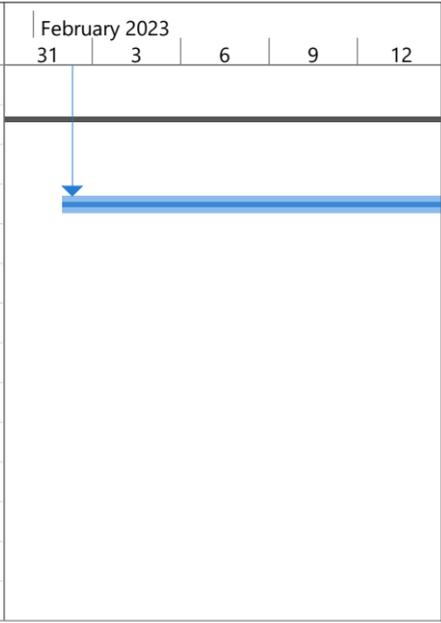
SCALE	ORIGINAL SIZE	
DRAWN	DESIGNED	APPROVED
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE
PROJECT		
TITLE		
WSP PROJECT NO.	SUITABILITY	
PROJ-ORIG-VOL-LVL-TYPE	SHEET NO.	REVISION

ID	Task Name	Duration	Start	Finish	Predecessors	February 2023				
						31	3	6	9	12
1										
2										
3	Pre-establishment Activities	49 days	Fri 16/09/22	Thu 24/11/22						
4	Resource consent	0 days	Fri 16/09/22	Fri 16/09/22						
5	Delievery of resource	28 days	Thu 6/10/22	Tue 15/11/22						
6	TMP for VSM	3 days	Fri 28/10/22	Tue 1/11/22						
7	Noise notification Letter	1 day	Thu 6/10/22	Thu 6/10/22						
8	Construction noise Notification CNN	1 day	Fri 7/10/22	Fri 7/10/22	7					
9	TMP for Road work	15 days	Mon 10/10/22	Mon 31/10/22	8					
10	EMP	0 days	Fri 16/09/22	Fri 16/09/22						
11	SSSP	5 days	Fri 30/09/22	Thu 6/10/22						
12	Quality plan approval	5 days	Fri 7/10/22	Thu 13/10/22						
13	Water Shut down approval	5 days	Thu 13/10/22	Wed 19/10/22						
14	Construction traffic Plan	10 days	Mon 10/10/22	Fri 21/10/22						
15	Comprehensive update of program	0 days	Tue 18/10/22	Tue 18/10/22	23SF-9 days					
16	Program submitted	0 days	Tue 25/10/22	Tue 25/10/22	23SF-5 days					
17	Preconstruction meeting with WRC	0 days	Tue 25/10/22	Tue 25/10/22	23SF-5 days					
18	FRAP (Flood response action plan)	20 days	Mon 3/10/22	Mon 31/10/22						
19	Ngati Toa de-fishing	15 days	Fri 4/11/22	Thu 24/11/22	34SS-15 days					
20	CMO to be advised of start	0 days	Fri 28/10/22	Fri 28/10/22	23SF-2 days					
21										
22	Site Establishment	2 days	Tue 1/11/22	Wed 2/11/22						
23	Establish Site compound and traffic control	1 day	Tue 1/11/22	Tue 1/11/22	18					
24	Services potholing	1 day	Wed 2/11/22	Wed 2/11/22	23					
25										
26	TMP Before XMAS	6 days	Thu 3/11/22	Thu 10/11/22						
27	Carpark Entrance & MH2	6 days	Thu 3/11/22	Thu 10/11/22						
28	Install MH2	2 days	Thu 3/11/22	Fri 4/11/22	24					
29	Install 900 pipes from MH2	4 days	Mon 7/11/22	Thu 10/11/22	28					
30										
31	900 dia Carpark Enterance to Outlet	27 days	Fri 11/11/22	Mon 19/12/22						
32	Install 900 pipes to carpark entrance	6 days	Fri 11/11/22	Fri 18/11/22	29					
33	Install stream fence	4 days	Mon 21/11/22	Thu 24/11/22	32					
34	De-fish stream& est enviro control	2 days	Fri 25/11/22	Mon 28/11/22	33					
35	Install creek diversion	5 days	Tue 29/11/22	Mon 5/12/22	34					
36	Install outlet structure	7 days	Tue 6/12/22	Wed 14/12/22	35					
37	Remove flow diversion & Fish controls	2 days	Thu 15/12/22	Fri 16/12/22	36					
38	Reinstate car-park	1 day	Mon 19/12/22	Mon 19/12/22	37					
39										
40	TMP After XMAS	63 days	Tue 20/12/22	Thu 20/04/23						
41	Divert Existing 375 Watermain	16 days	Tue 20/12/22	Fri 27/01/23						
42	Delievery (Asmuss)	0 days	Tue 20/12/22	Tue 20/12/22						
43	Install new CLS main & thrust blocks	5 days	Tue 10/01/23	Mon 16/01/23	38FS+3 days					
44	Drop off notice to affected parties	0 days	Tue 10/01/23	Tue 10/01/23	45SF-2 days					
45	Trial shutdown Night shift	0 days	Thu 12/01/23	Thu 12/01/23						
46	Cure thrust blocks	4 days	Tue 17/01/23	Fri 20/01/23	43					
47	Pressure test & disinfect	2 days	Tue 24/01/23	Wed 25/01/23	46					
48	Complete cut-in and connect	2 days	Thu 26/01/23	Fri 27/01/23	47					
49										
50	MH5 to MH4	4 days	Thu 12/01/23	Tue 17/01/23						
51	Install 450 pipes to MH4	1 day	Thu 12/01/23	Thu 12/01/23	45					
52	Install MH5	3 days	Fri 13/01/23	Tue 17/01/23	51					
53										
54	MH4 to MH3	4 days	Wed 18/01/23	Tue 24/01/23						
55	Install 600 Pipes to MH3	1 day	Wed 18/01/23	Wed 18/01/23	52					
56	Install MH4	3 days	Thu 19/01/23	Tue 24/01/23	55					
57										
58	MH3 to MH2	50 days	Wed 18/01/23	Thu 30/03/23						
59	Install 750 Pipes to MH2	4 days	Tue 24/01/23	Fri 27/01/23	56					
60	Install MH3	4 days	Fri 27/01/23	Wed 1/02/23	59					

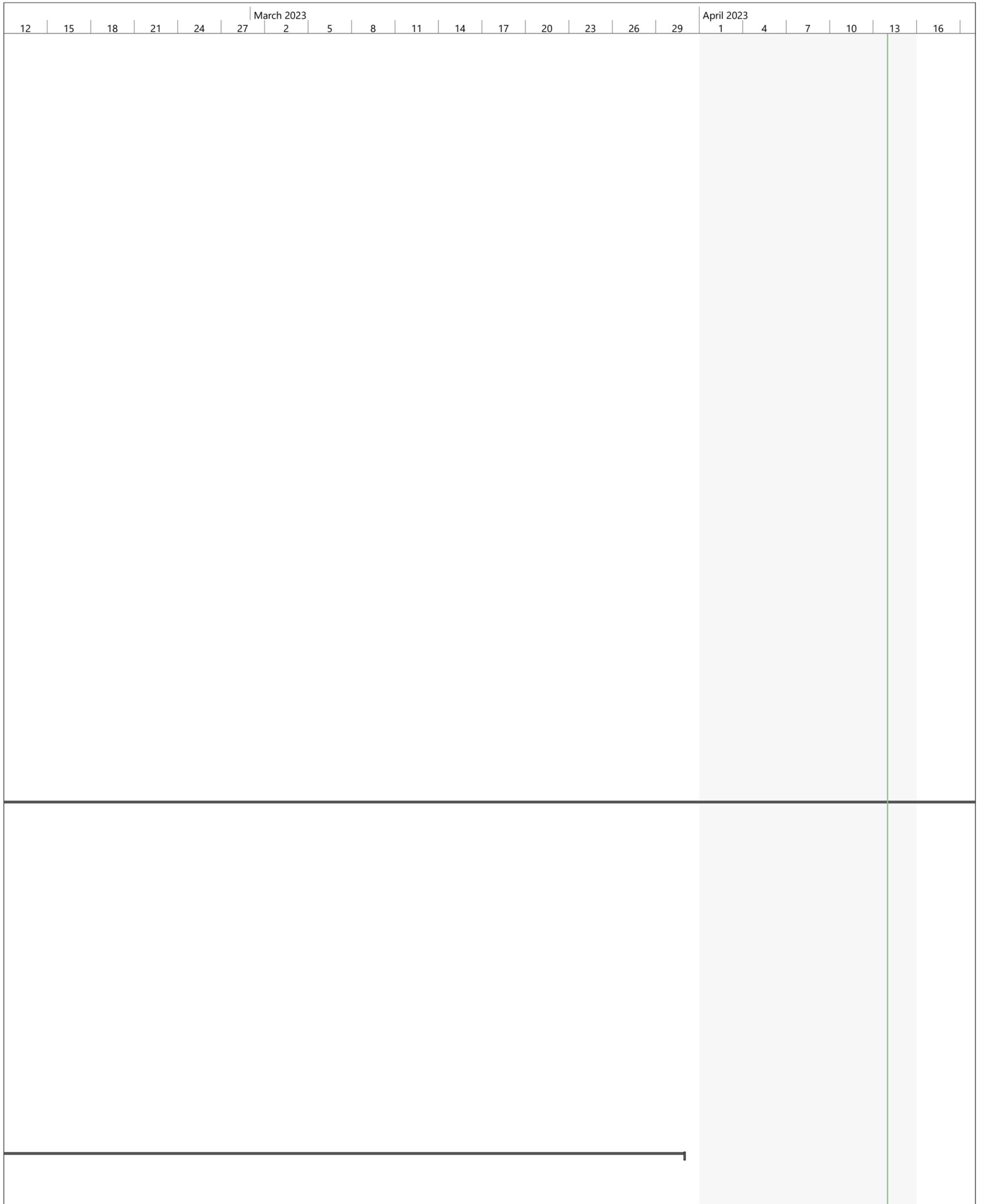
Project: TawaCP V20230223
Date: Fri 14/04/23

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Critical	
Project Summary		Manual Summary		Critical Split	
Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress	

ID	Task Name	Duration	Start	Finish	Predecessors	February 2023				
						31	3	6	9	12
61										
62	Install 450 pipe Crossing & Sump	50 days	Wed 18/01/23	Thu 30/03/23						
63	Delievry (Humes)	0 days	Wed 18/01/23	Wed 18/01/23						
64	Install Sumps	9 days	Thu 2/02/23	Wed 15/02/23	60					
65	Install 450 pipes to sumps	8 days	Thu 16/02/23	Mon 27/02/23	64					
66	Steel work for sumps	18 days	Tue 28/02/23	Thu 23/03/23	65					
67	Remove Water main	5 days	Fri 24/03/23	Thu 30/03/23	66					
68										
69	Final Stage	4 days	Fri 31/03/23	Thu 20/04/23						
70	Reinstatement works	2 days	Fri 31/03/23	Tue 18/04/23	67					
71	Reinstate carpark	2 days	Wed 19/04/23	Thu 20/04/23	70					
72	Reinstate sump sidewalk	1 day	Wed 19/04/23	Wed 19/04/23	70					
73	Testing	2 days	Tue 18/04/23	Wed 19/04/23	70FS-1 day					
74	Dis-establish site	1 day	Thu 20/04/23	Thu 20/04/23	73					

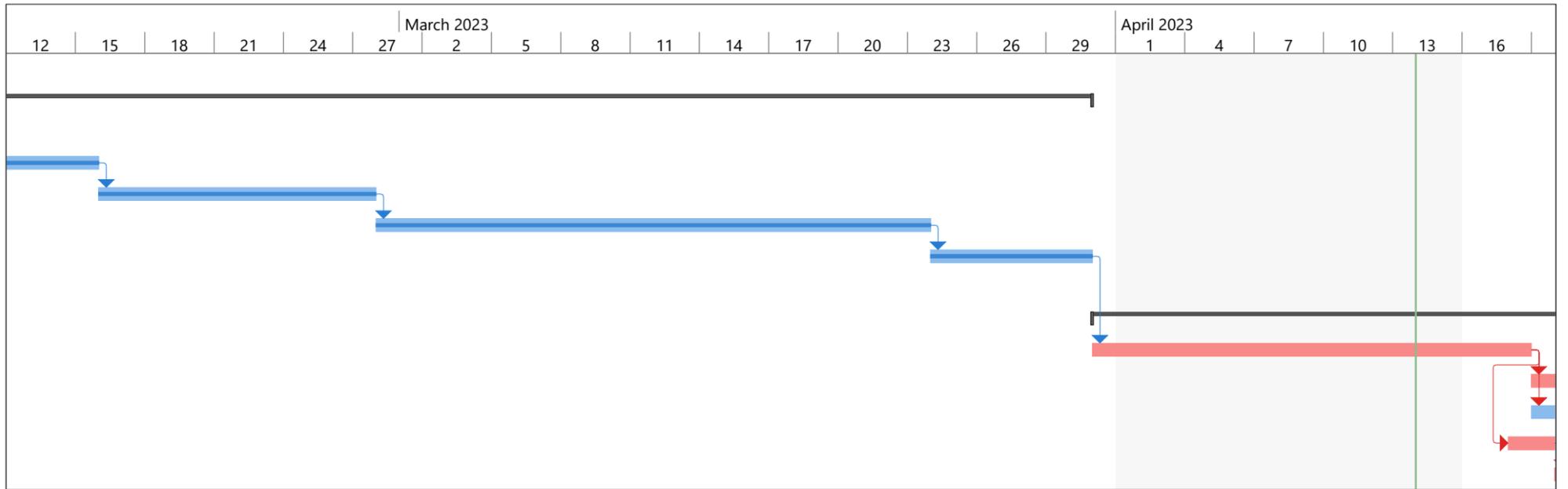


Project: TawaCP V20230223 Date: Fri 14/04/23	Task		Inactive Summary		External Tasks	
	Split		Manual Task		External Milestone	
	Milestone		Duration-only		Deadline	
	Summary		Manual Summary Rollup		Critical	
	Project Summary		Manual Summary		Critical Split	
	Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress		



Project: TawaCP V20230223
Date: Fri 14/04/23

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Critical	
Project Summary		Manual Summary		Critical Split	
Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress	

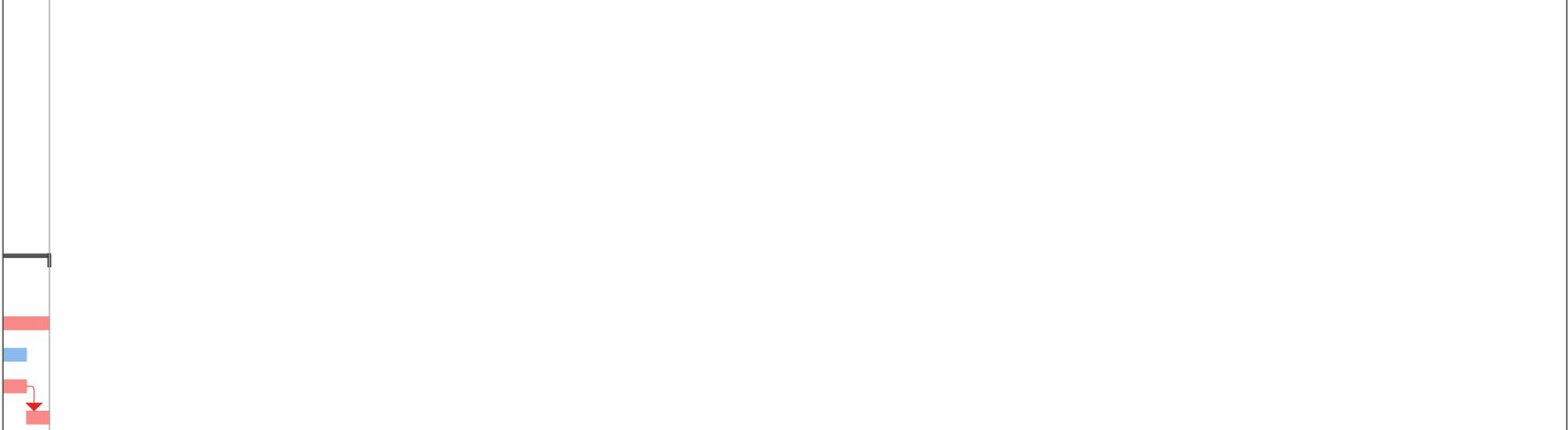


Project: TawaCP V20230223
Date: Fri 14/04/23

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Critical	
Project Summary		Manual Summary		Critical Split	
Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress	

Project: TawaCP V20230223
Date: Fri 14/04/23

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Critical	
Project Summary		Manual Summary		Critical Split	
Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress	



Project: TawaCP V20230223 Date: Fri 14/04/23	Task		Inactive Summary		External Tasks	
	Split		Manual Task		External Milestone	
	Milestone		Duration-only		Deadline	
	Summary		Manual Summary Rollup		Critical	
	Project Summary		Manual Summary		Critical Split	
	Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress		