WAIMAKARIRI
DISTRICT COUNCIL

Supplementary Council Agenda

Tuesday 5 October 2021

1pm

Kaikanui Room
Ruataniwha Kaiapoi Civic Centre
176 Williams Street
Kaiapoi

Members:

Mayor Dan Gordon (Chair)
Cr Neville Atkinson
Cr Kirstyn Barnett
Cr Al Blackie
Cr Robbie Brine
Cr Wendy Doody
Cr Niki Mealings
Cr Philip Redmond
Cr Sandra Stewart
Cr Joan Ward
Cr Paul Williams

The Mayor and Councillors

WAIMAKARIRI DISTRICT COUNCIL

SUPPLEMENTARY AGENDA for a meeting of the **WAIMAKARIRI DISTRICT COUNCIL** to be held in the **KAIKANUI ROOM, RUATANIWHA KAIAPOI CIVIC CENTRE, 176 WILLIAMS STREET, KAIAPOI** on **TUESDAY 5 OCTOBER 2021,** commencing at **1PM**

Sarah Nichols
GOVERNANCE MANAGER

Recommendations in reports are not to be construed as Council policy until adopted by the Council.

BUSINESS

1.1 Whistler Bridge Protection – Lees Valley – Joanne McBride (Roading and Transport Manager) and Don Young (Senior Roading Engineer)

RECOMMENDATION *4-11*

THAT the Council

(a) **Receives** Report No. 210922152878;

(b) **Notes** that the cost of the bridge protection works at Whistler Bridge in Lees Valley of approximately $300,000 can be carried out within the overall budget, but that some budget has needed reallocating from slope stability works on several minor washouts to achieve this;

(c) **Acknowledges** that the bridge protection methodology to achieve this involves using open-topped shipping containers filled with gravel, supplemented by rock and gabions (see attachments i), ii), and iii);

(d) **Notes** that this will provide a stronger and more resilient solution than traditional rock and gabion solutions, which have not been successful in the past;

(e) **Notes** that this river is in a high natural values area, and so the aesthetics need to be carefully considered

(f) **Notes** that ECan accept this approach, provided the effects are mitigated by the following;

a. Bedding the containers approx. 1.0-1.5m below river bed level

b. Installing gabions along the top to minimise the visual impact

c. Banking up material along the front face to minimise the impact

d. Applying for a retrospective resource consent

(g) **Notes** that staff are continuing discussions with Waka Kotahi about emergency works funding and will seek additional budget for the slope stability works on several minor washouts. Staff will report separately on any additional Council funding share required;

(h) **Notes** that staff will provide an update to the Lees Valley residents of the next steps for their information.

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR DECISION

FILE NO and TRIM NO:	RDG-22-01 / 210930158405
REPORT TO:	COUNCIL
DATE OF MEETING:	5th October 2021
AUTHOR(S):	Joanne McBride, Roading and Transport Manager Don Young, Senior Engineering Advisor
SUBJECT:	Whistler Bridge Protection - Lees Valley
ENDORSED BY: (for Reports to Council, Committees or Boards)	Department Manager / Chief Executive

1. SUMMARY

1.1. This report is to advise the Council about the proposed methodology to provide bridge protection at Whistler Bridge, and the funding implications.

1.2. The recommended approach is to install shipping containers, supplemented with rock and gabion baskets. This provides a more robust solution than more traditional methods, and can be carried out within the current budget, provided some other works are deferred.

1.3. There is a risk of poor aesthetics, but this is being mitigated by getting ECan agreement in advance and looking to bury or hide the containers as much as is practical.

1.4. In addition, it is noted that the majority of the re-allocation has been taken from approximately $115,000 that had been intended for 'willow walls'. (Note this while this amount is included in the additional flooding budget advised to the Council previously, the Waka Kotahi funding has yet to be confirmed). These are small natural retaining walls made from growing willows that are used to stabilise small washout areas. It was originally intended that the installation of these would reduce the risk in 8 locations of more significant washouts occurring at a much higher cost to repair. However this is deemed a lower risk than the Whistler Bridge protection which is at risk of ongoing washouts.

1.5. It is important to note that these rivers are very mobile and active, and that whatever the expenditure, there remains a risk of further flood damage in future events.

Attachments:

i. May 2021 flood - Report to Council Attachment 1 Whistler Bridge protection - plan W2B (Trim 210930158415)
ii. May 2021 flood - Report to Council Attachment 2 Whistler Bridge protection - cross-section through container W3B (Trim 210930158419)
iii. May 2021 flood - Report to Council Attachment 3 Whistler Bridge protection cross-section through Abutment Rock Protection W4 (Trim 210930158430)

2. RECOMMENDATION

THAT the Council:

(a) **Receives** Report No. 210922152878;

(b) **Notes** that the cost of the bridge protection works at Whistler Bridge in Lees Valley of approximately $300,000 can be carried out within the overall budget, but that some budget has needed reallocating from slope stability works on several minor washouts to achieve this;

(c) **Acknowledges** that the bridge protection methodology to achieve this involves using open-topped shipping containers filled with gravel, supplemented by rock and gabions (see attachments i), ii), and iii);

(d) Notes that this will provide a stronger and more resilient solution than traditional rock and gabion solutions, which have not been successful in the past;

(e) Notes that this river is in a high natural values area, and so the aesthetics need to be carefully considered

(f) Notes that ECan accept this approach, provided the effects are mitigated by the following;

a. Bedding the containers approx. 1.0-1.5m below river bed level

b. Installing gabions along the top to minimise the visual impact

c. Banking up material along the front face to minimise the impact

d. Applying for a retrospective resource consent

(g) **Notes** that staff are continuing discussions with Waka Kotahi about emergency works funding and will seek additional budget for the slope stability works on several minor washouts. Staff will report separately on any additional Council funding share required;

(h) **Notes** that staff will provide an update to the Lees Valley residents of the next steps for their information.

3. BACKGROUND

3.1. In the May 2021 rainfall event, there was significant damage caused to a number of bridges in the Lees valley. The Council has been carrying out remedial repairs on these bridges since that time. This has included opening the roads, carrying out river training, and reinstating ‘soft’ protection elements (such as plantings, flow corridors, etc.).

3.2. The main outstanding work to be completed relates to bridge protection at both bridge abutments, and the western bridge approach at Whistler Bridge. At the time of budgeting for the repairs, a sum of $170,000 was allocated in the Council budgets and submitted to Waka Kotahi for consideration. The work budgeted included an allowance of $120,000 for a new gabion wall along the southern approach, and a nominal $40,000 for rock at each abutment.

3.3. Since that time, the Council has engaged a bridge engineer to advise on the scale and scope of the required works. This advice has been received, and despite further discussions to optimise the work and associated costs, the rough order cost estimate was revised to be in the order of $400,000 (being approximately $200,000 for gabions and $200,000 for rock).

3.4. Since that time, the eastern bridge approach has washed out again, reinforcing the need for a robust bridge protection system.

3.5. In reviewing other uncompleted work, staff have reallocated a number of other budgets that will either be underspent, or delayed. This has freed up additional funds, such that there is now $300,000 available.

3.6. However, this has meant that other planned resilience work is now being curtailed or delayed and will need applying for in future years. In particular approximately $115,000 of

budget has been taken off the stabilisation of several minor washouts (noting this this funding approval for this has not been received from Waka Kotahi), with the subsequent risk of these becoming major washouts at considerably extra cost. This is considered an appropriate reflection of the immediate risks, but the staff will continue to look at opportunities to reinstate this budget.

3.7. On further consideration of options for bridge protection, staff have investigated the option of using shipping containers for part of the protection, supplemented by rock and gabions where appropriate. This has been scoped by the Council's consulting engineers, and priced by the contractor.

3.8. In addition initial discussions have been held with ECan, who have given their tentative approval, subject to a number of mitigation measures which will be implemented

3.9. Please note that the critical timing issue is the need to provide certainty of forward scope to the contractor. They are currently completing works in the Valley (for both the Council and the local landowners). However this works ends in the near future. Therefore the Council needs to confirm a clear scope and price in the short term in order to keep those resources busy and therefore available).

4. ISSUES AND OPTIONS

4.1. The Council could choose to only carry out the amount of work that was originally covered by the budget of $170,000, while continuing to engage with Waka Kotahi. This would keep the Council's costs to budget, and keep all other works happening. However this would provide a poor solution, as well as increasing the overall costs due to re-establishment costs. This is not the recommended option.

4.2. The Council could instruct the staff to carry out the protection works at Whistler Bridge using the customary rock and gabion solution at a cost of approximately $400,000. This would be more in keeping with usual repair methods, and could be carried out with minimal environmental approvals. However it would require additional funding of $100,000 over the $300,000 that has been reallocated, which does not have Waka Kotahi approval at this stage. In addition it would be repeating the design methodology that has failed on a number of instances previously at this site. This option is not recommended.

4.3. The Council could instruct staff to proceed with the shipping container approach, supplemented with rock and gabions for a cost of $300,000. This would be within the allocated budget, and would provide a more robust protection system. However there are aesthetic issues that would need mitigating. Providing these are mitigated as per the recommendations above, then ECan accept the concept. This is the recommended option.

4.4. The Council could request that the staff look at investigating alternative options, such as additional concrete work around the abutments to reduce rock quantities. Given the time constraints and the uncertainty of a positive outcome, and as such this is not recommended.

4.5. It should be noted that for all of the options, the project includes river retraining to improve the channel flow, as well as work to create a flow bypass to try to divert high flows before they reach a damaging level.

4.6. Staff will continue to work with Waka Kotahi on funding approvals for the emergency works and will seek additional co-funding for the works that has been deferred to balance budgets. If there is any positive movement on this which has budget implications for the Council, the staff will bring a report back.

Implications for Community Wellbeing

There are implications on community wellbeing by the issues and options that are the subject matter of this report. Each time washouts occur, it affects the local community who rely on this roading link for their livelihood and general access.

4.7. The Management Team has reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Mana whenua

Te Ngāi Tūāhuriri hapū are not likely to be affected by, or have an interest in the subject matter of this report.

5.2. Groups and Organisations

There are groups and organisations likely to be affected by, or to have an interest in the subject matter of this report – in particular the local Lees Valley community. They will be kept informed about the approach through regular emails. In addition the Mayor will plan a visit to catch up about any concerns.

5.3. Wider Community

The wider community is likely to be affected by, or to have an interest in the subject matter of this report, as further washouts will affect the ability of the public to travel through the area, and they will have a view on the aesthetics of any solution...

6. OTHER IMPLICATIONS AND RISK MANAGEMENT

6.1. Financial Implications

There are financial implications of the decisions sought by this report.

The recommended approach does not have any additional requirement for rates funding, as the allocated budget of $300,000 will be obtained by reallocating existing budgets. Some of this reallocated budget has come from savings, but there is also a reallocation of priorities.

The decision to reallocate some funds means that other resilience work (such as providing better resilience to 8 minor washouts by installing willow walls) is delayed (noting that this work had yet to be approved by Waka Kotahi).

6.2. Sustainability and Climate Change Impacts

The recommendations in this report do not have sustainability and/or climate change impacts.

6.3 Risk Management

There are risks arising from the adoption/implementation of the recommendations in this report.

The primary risk to be considered is continuing frequent washouts of the bridge approaches during high river flows. This would prevent access to the valley and could cause safety issues.

In addition there are consenting risks, aesthetic risks and funding risks.

6.3 Health and Safety

There are health and safety risks arising from the adoption/implementation of the recommendations in this report, as there is a higher risk of a loss of access to the valley.

7. CONTEXT

7.1. Consistency with Policy

This matter is not a matter of significance in terms of the Council's Significance and Engagement Policy.

7.2. Authorising Legislation

This matter is covered under the Local Government Act and the Resource Management Act.

7.3. **Consistency with Community Outcomes**

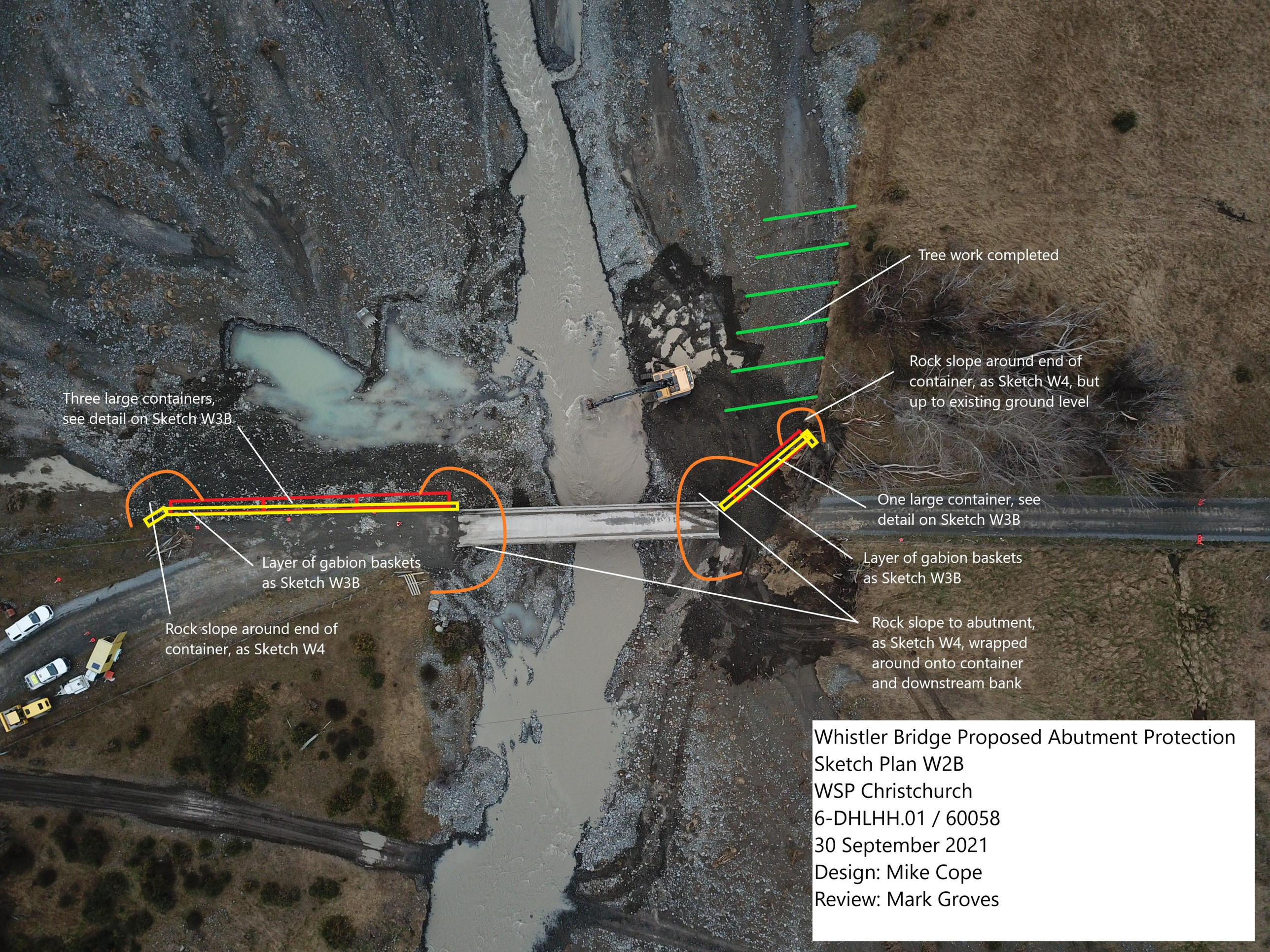
The Council's community outcomes are relevant to the actions arising from recommendations in this report.

Transport is accessible, convenient, reliable and sustainable

- Communities in our District are well linked with each other and Christchurch is readily accessible by a range of transport modes

7.4. **Authorising Delegations**

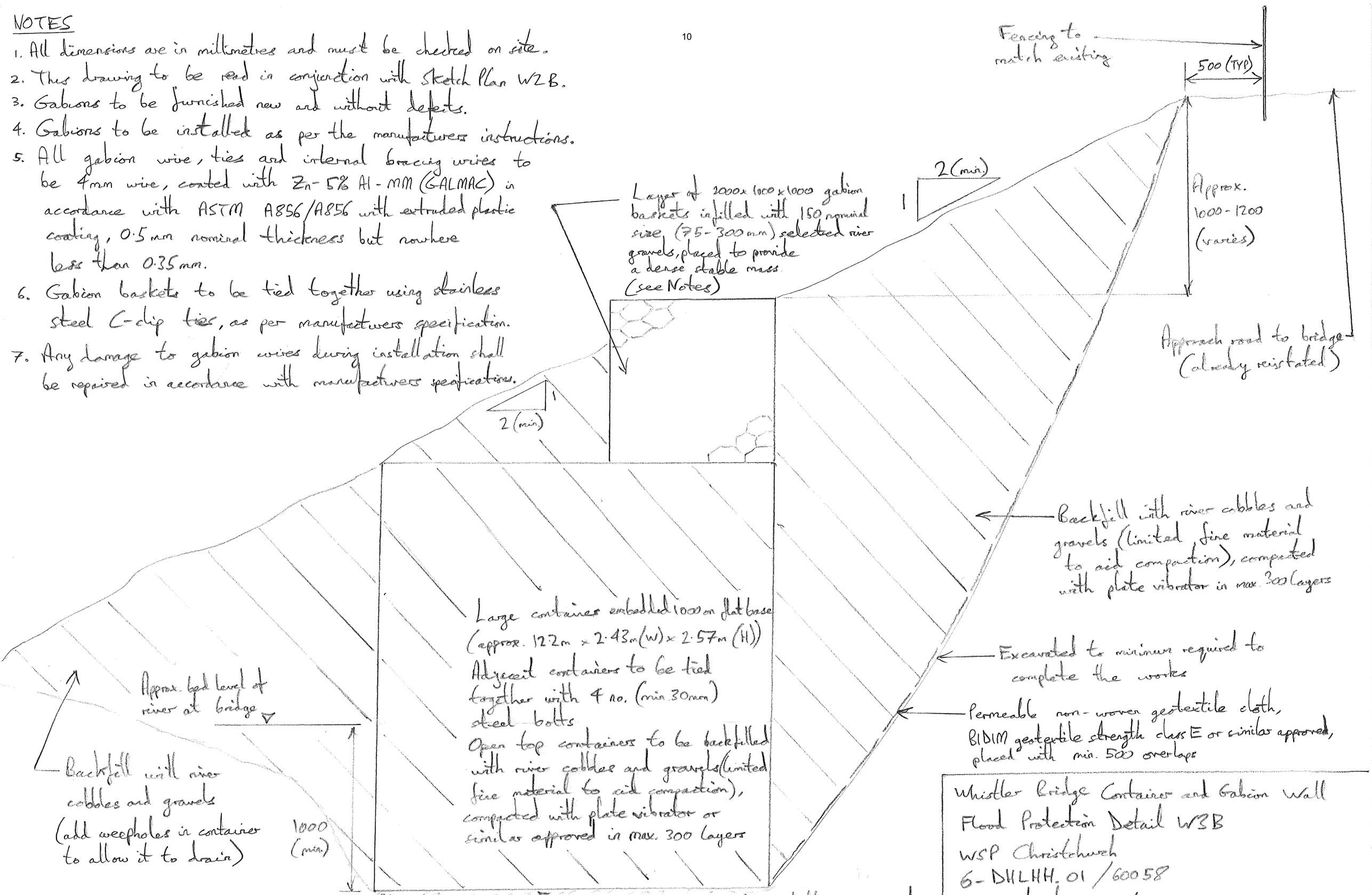
This matter is appropriately considered by the Council.



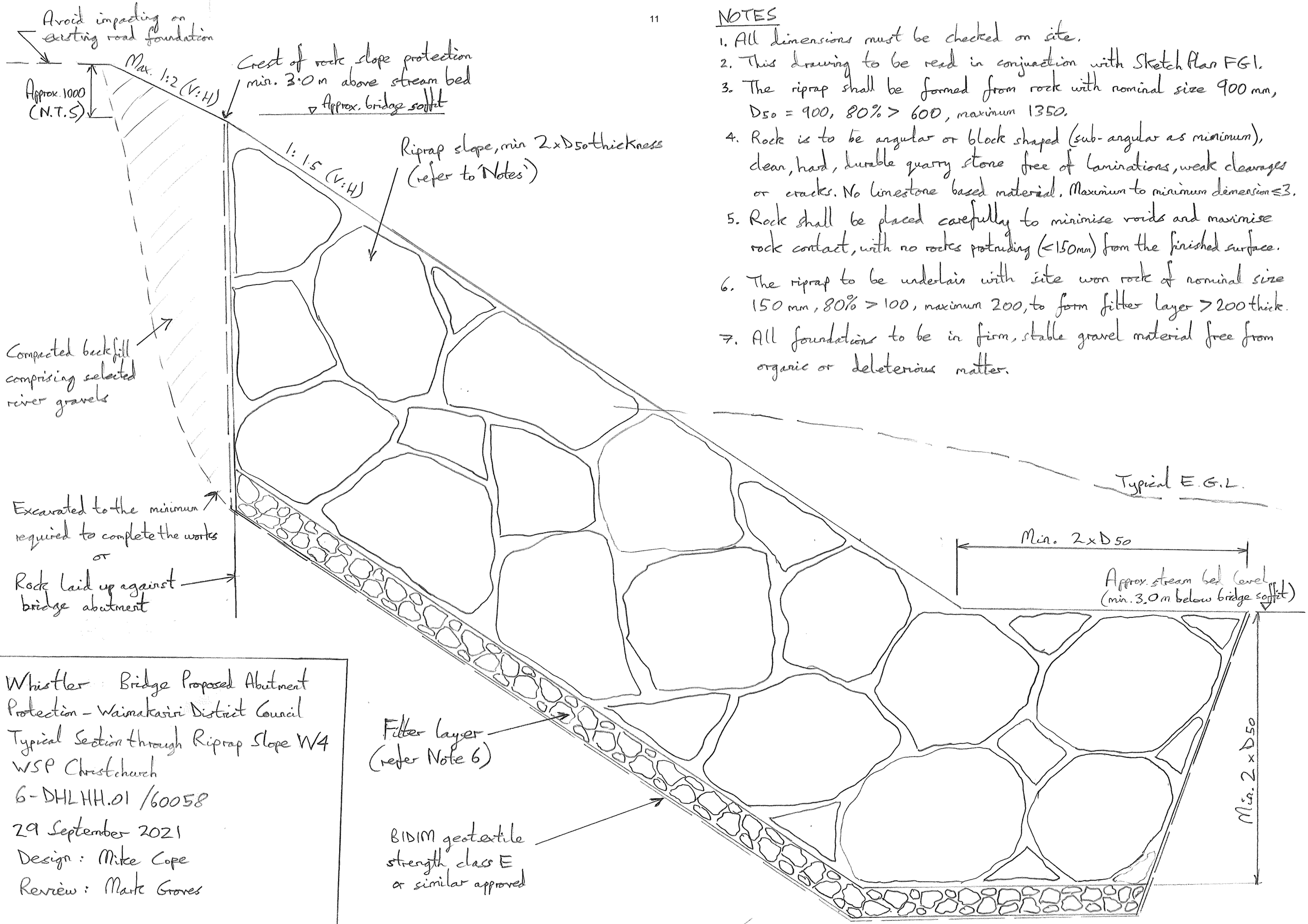
Whistler Bridge Proposed Abutment Protection
Sketch Plan W2B
WSP Christchurch
6-DHLHH.01 / 60058
30 September 2021
Design: Mike Cope
Review: Mark Groves

NOTES

1. All dimensions are in millimetres and must be checked on site.
2. This drawing to be read in conjunction with Sketch Plan W2B.
3. Gabions to be furnished new and without defects.
4. Gabions to be installed as per the manufacturers instructions.
5. All gabion wire, ties and internal bracing wires to be 4mm wire, coated with Zn-5% Al-MM (GALMAC) in accordance with ASTM A856/A856 with extruded plastic coating, 0.5mm nominal thickness but nowhere less than 0.35mm.
6. Gabion baskets to be tied together using stainless steel C-clip ties, as per manufacturers specification.
7. Any damage to gabion wires during installation shall be repaired in accordance with manufacturers specifications.



Whistler Bridge Container and Gabion Wall
Flood Protection Detail W3B
WSP Christchurch
6-DHLHH.01/60058
29 September 2021
Design: Mike Cope
Review: Mark Groves



Whistler Bridge Proposed Abutment Protection – Waimakariri District Council
Typical Section through Riprap Slope W4
WSP Christchurch
6-DHLHH.01 /60058
29 September 2021
Design: Mike Cope
Review: Mark Groves

NOTES

1. All dimensions must be checked on site.
2. This drawing to be read in conjunction with Sketch Plan FG1.
3. The riprap shall be formed from rock with nominal size 900 mm, D_{50} = 900, 80% > 600, maximum 1350.
4. Rock is to be angular or block shaped (sub-angular as minimum), clean, hard, durable quarry stone free of laminations, weak cleavages or cracks. No limestone based material. Maximum to minimum dimension ≤3.
5. Rock shall be placed carefully to minimise voids and maximise rock contact, with no rocks protruding (<150mm) from the finished surface.
6. The riprap to be underlain with site won rock of nominal size 150 mm, 80% > 100, maximum 200, to form filter layer > 200 thick.
7. All foundations to be in firm, stable gravel material free from organic or deleterious matter.