
Public / SBU / FOUO

Comment Report: All Comments

Project: Fargo Moorhead Metro - Reach 4 Design by MVK

Review: DTR - ATR 65%

Displaying 98 comments for the criteria specified in this report.

Id	Discipline	DocType	Spec	Sheet	Detail
5111585	Real Estate	Design Memorandum or Report	n/a	n/a	n/a

Comment Classification: **Public (Public)**

I have reviewed and have no comments.

Submitted By: [Rick Noel](#) (402-995-2832). Submitted On: Apr 01 2013

1-0 Evaluation Concurred

Thank you for reviewing the documents.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Apr 23 2013

1-1 Backcheck Recommendation Close Comment

Agree with your evaluation

Submitted By: [Rick Noel](#) (402-995-2832) Submitted On: Jul 16 2013

Current Comment Status: **Comment Closed**

5112984	Structural	Plans	n/a	n/a	n/a
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Comment Classification: **Public (Public)**

S-501. Lengths of fillet welds are shown on weld symbols. Consider welding all around to seal against moisture.

Submitted By: [Lyle Peterson](#) (402-995-2161). Submitted On: Apr 01 2013

1-0 Evaluation Concurred

Lengths are no longer specified for fillet welds.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: Apr 02 2013

1-1 Backcheck Recommendation Close Comment

I find your evaluation acceptable and close the comment.

Submitted By: [Lyle Peterson](#) (402-995-2161) Submitted On: Jul 17 2013

Current Comment Status: **Comment Closed**

5112989 Structural Plans n/a n/a n/a

Comment Classification: **Public (Public)**

S-501 Note 2. Define what is included in the "connection assembly." Does this require welding stainless steel to mild carbon steel?

Submitted By: [Lyle Peterson](#) (402-995-2161). Submitted On: Apr 01 2013

1-0 Evaluation For Information Only

Only the bolts that are installed into the concrete will be stainless steel; no other element of the trashrack will be stainless steel. This note will be updated to make this clear.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: Apr 01 2013

1-1 Backcheck Recommendation Close Comment

I find your evaluation acceptable and close the comment.

Submitted By: [Lyle Peterson](#) (402-995-2161) Submitted On: Jul 17 2013

Current Comment Status: **Comment Closed**

5112995 Structural Plans n/a n/a n/a

Comment Classification: **Public (Public)**

S-503. Contractor Joint Detail notes say "both sides" and "soil side." Clarify what is intended here.

Submitted By: [Lyle Peterson](#) (402-995-2161). Submitted On: Apr 01 2013

1-0 Evaluation Concurred

These notes have been updated to read "GEOTEXTILE FABRIC SHALL BE PLACED TO COVER 18" ON EACH SIDE OF THE JOINT ON THE SOIL SIDE OF THE WALL" & "GEOTEXTILE FABRIC SHALL BE PLACED TO COVER 18" ON EACH SIDE OF THE JOINT ON THE SOIL SIDE OF THE SLAB" for the wall joint and slab joint, respectively.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: Apr 01 2013

1-1 Backcheck Recommendation Close Comment

Verified that changes have been made and agree with changes.

Submitted By: [Lyle Peterson](#) (402-995-2161) Submitted On: Jul 17 2013

Current Comment Status: **Comment Closed**

5115874 Planning - Plan Formulation Quality Control Plan n/a n/a n/a

Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: [Appendix L: Quality Control](#))

Coordinating Discipline(s): Planning - Plan Formulation

I recommend that the Quality Control Appendix include tables that list the current team members and their technical discipline for the PDT, DQC, ATR and IEPR Teams in Section L2, under the respective sections. A very brief new section would need to be added to introduce the list of the PDT members.

Submitted By: [Mark Nelson](#) (402-995-2703). Submitted On: Apr 03 2013

1-0 Evaluation Non-concurred

The format for Appendix L was set by the Reach 1 team. The Reach 4 team will continue with this format until directed otherwise by the MVP team.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

As the comment was offered as a suggestion, it can be rejected. The rejection of the comment to the quality control plan will not impact the integrity of the design.

Submitted By: [Mark Nelson](#) (402-995-2703) Submitted On: Oct 24 2013

Current Comment Status: **Comment Closed**

5116027	Environmental	Design Memorandum or Report	n/a	n/a	n/a
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Comment Classification: **Public (Public)**

Section K.3 on page K-2 of the environmental appendix: change the title to read "Reach 4" rather than "Reach 5" and mention that fish passage is also a mitigation feature for Reach 4 in your intro text under K.3.

Submitted By: [Aaron Quinn](#) (402-995-2669). Submitted On: Apr 03 2013

1-0 Evaluation Concurred
changes made.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Apr 22 2013

Backcheck not conducted

Current Comment Status: **Comment Open**

5118978	Hydraulics	Design Memorandum or Report	n/a	p. 3, Sect. 2.1, 5th paragraph	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

Since the overflow embankment is functioning as a spillway, have we looked at downstream impacts in accordance with ER 1110-2-1451, as this would be part of the project? Nothing is presently mentioned in this regard.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

This issue has been discussed at many project meetings, but it has yet to be investigated in detail. The overflow embankment is expected to only have minor impacts on Reaches 1 - 6 downstream of the Maple River so a study of the overflow embankment is not considered necessary for Reach 4.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 13 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5118995 Hydraulics	Design Memorandum or Report	n/a	p. 10, Sect. 3.3, Table 1	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

Since these are new values to the design, compared to previous submissions, is there a writeup describing the hydrology work that's gone into deriving these values?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

These values come from unsteady HEC-RAS model runs using the hydrology that has been provided previously. The unsteady HEC-RAS model has been reviewed extensively, but there are not any specific reports that provide the computed discharge along the entire diversion channel. The DDR is our method of documenting these results.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Okay, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119075 Hydraulics Design p. 10, Sect. 3.4, 1st
Memorandum or n/a paragraph, last n/a
Report sentence

Comment Classification: **For Official Use Only (FOUO)**
Coordinating Discipline(s): Project Management

Please clarify - what uncertainty do you have with the 1% flood with 90% assurance profile?
Doesn't that already include all of your uncertainty?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

The existing hydrologic analysis was completed in 2009 so the existing analysis is based on provisional data for 2009 and does not include the large floods in 2010 and 2011. A preliminary analysis that includes the final 2009 data and data from 2010 and 2011 indicates that the 90% assurance 1% event discharge would be somewhat different, and if it ends up being greater than about 62,000 cfs, we're not exactly sure how much flow we're going to let in the diversion for this large of an event. Regardless, the estimated maximum flood fight flow in the diversion is high enough to assure that the levee will meet accreditation standards even if the 90% assurance 1% flow goes up to about 100,000 cfs (it won't go up nearly that high, but it could and we'd still be able to meet accreditation requirements).

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Very good, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119080 Hydraulics Design p. 10, Sect. 3.4, 1st
Memorandum or n/a paragraph, last n/a
Report sentence

Comment Classification: **For Official Use Only (FOUO)**
Coordinating Discipline(s): Project Management

Please clarify - does your design levee profile provide 90% assurance of containing the 1% event?
Where is the analysis to show this? This will be needed for FEMA accreditation (mentioned in last sentence of this section on next page).

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation Concurred

By using the estimated maximum flood fight flow, which is what we estimate will be in the diversion if we were to have about 100,000 cfs coming into the staging area, we are being very conservative in setting our diversion levee elevation. The Reach 1 DDR has been updated to better explain how the levee is being designed and the Reach 1 updates will also be included in the updated Reach 4 DDR. The following explanation has been added:

The large volume of material that will be excavated to create the diversion channel will be placed along both sides of the diversion channel in linear features called Excavated Material Berms (EMBs). Given the size and profile of the diversion, the 1% floodplain would not increase over existing conditions even if the diversion channel did not have EMBs. For this reason and because the left-bank (looking downstream) EMB will have openings to accommodate tributary flow into the diversion, the left-bank EMB will not contain a levee. The right-bank (looking downstream) EMB will contain a levee.

At a minimum, the right-bank EMB must contain a levee section which contains the 1% flood with 90% assurance so that the levee is ultimately accredited by FEMA. If material was scarce, it would make sense to optimize the size of the levee, but less than 5% of the total excavated material will be needed to construct the levee. The excavated material is also good material for a levee. With good and abundant levee material, the Project Delivery Team (PDT) has determined that the cost of constructing a levee section within the right-bank EMB is relatively low. Given the relatively low levee cost and the uncertainty associated with the 1% flood with 90% assurance profile, the top elevation of the levee section located on the right bank of the diversion channel is being set at the expected water surface profile for the estimated maximum flood fight flow in the diversion channel, plus an allowance for settlement of the embankment.

This maximum flood fight flow condition has also been called the "diversion levee design event" in other project documents. The use of the term "design" when referring to the estimated maximum flood fight flow in the diversion is improper since the levee is not being designed for that flow condition. Setting the levee at the expected profile just prior to giving up on flood fighting efforts (just prior to opening up the Red and Wild Rice River control structures), plus an allowance for settlement, will assure that the levee is ultimately high enough to be accredited by FEMA and gives the local sponsor greater confidence that the right-bank EMB/levee will require minimal attention while flood fighting efforts are in effect.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119097 Hydraulics	Design Memorandum or Report	n/a	p. 11, Sect. 3.5	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

As the design has progressed, have we looked at what the probability of exceeding the estimated maximum flood fight profile by more than a foot? This would be important to know for determining how likely floodwaters would be to flow down a roadway or railway into the protected area.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

Please see the response to Comment 5119080. We are being very conservative with our crossing elevations; this is what the local sponsor wants, and the cost is relatively small given the availability of material.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119106 Hydraulics	Design Memorandum or Report	n/a	p. 11, Sect. 3.6	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

How long before we have a design on the aqueducts? This would seem to be one of the key design issues outstanding and could potentially affect the level of protection currently being designed in the reaches below Maple River.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

Physical and numerical modeling of the Maple River aqueduct will not be complete until early 2014. The design flows are reasonably conservative to account for any changes in flow that might occur with the final design of the aqueducts.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 13 2013

1-1 Backcheck Recommendation Close Comment

Thanks for the response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119128 Hydraulics Design
 Memorandum or n/a p. 13, Sect. 4.4 n/a
 Report

Comment Classification: **For Official Use Only (FOUO)**
Coordinating Discipline(s): Project Management

What is the further design effort? These issues are not mentioned in App. C.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

That section will be rewritten. It will state that riprap sizing and design was based on the guidance in EM-1110-2-1601 and the standard riprap gradation chart which will be included in the next submittal.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Open Comment

Okay, I will look for the gradation in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Information stated above has been included, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119147 Hydraulics Design
 Memorandum or n/a p. 16, Sect. 5.3.1 n/a
 Report

Comment Classification: **For Official Use Only (FOUO)**
Coordinating Discipline(s): Project Management

The n-value of existing diversions is presented as 0.028 in App. C of Reach 2 design, please resolve the discrepancy between the reaches in design discussion.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

I was originally provided with the following information: "Recent calibration efforts of existing area diversions along the Sheyenne River indicate that the roughness values could be somewhat lower, around 0.027". That was the basis for the statement made in section 5.3.1 of the DDR and Section C.2.1.3 of Appendix C. The 0.027 will be changed to 0.028 in those two locations of the Reach 4 report to agree with App. C of Reach 2 and prevent future confusion.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Thanks for clarifying

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119153 Hydraulics	Design Memorandum or Report	n/a	p. 17, Sect. 5.4	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

Missing discussion on structure for Rush River, please include in future reports.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Description has been added.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Requested text added, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

1-2 Backcheck Recommendation Close Comment

Requested text added, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119294 Hydraulics	Design Memorandum or Report	n/a	p. 22-23, Sect. 11	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

This comment is not specifically for this reach, but once these undulations are in place, what restrictions are going to be placed on use of these EMBs? I'm not sure locals fully appreciate how large these EMBs are going to be, and I can see that sometime in the future there may be a demand for leveling some of the undulations and creating ball fields, for instance (especially on reaches closer to Fargo). Are there going to be any restrictions placed on irrigation, placement of posts, light poles, vehicular traffic, etc. within the EMB (outside of the embedded levee zone)?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

The Local Sponsor has prepared a Recreation Plan with guidance for undulations to meet the intent of their future recreation features. The Local Sponsor has also provided the current undulation design to incorporate into the project. The Project Cooperation Agreement (PCA) between the Corps and Local Sponsor will reference the Operation and Maintenance (O&M) manual which will include the list of restrictions for the project including the Excavated Material Berms (EMBs). These restrictions will include maintenance on vegetation free and management zones, minimum cover over the levee, and maximum heights for geotechnical stability as well as cultural viewshed. The O&M manual also includes language requiring USACE review and permission for proposed project modifications.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 23 2013

1-1 Backcheck Recommendation Close Comment

Thank for the clarification

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119320 Hydraulics	Design Memorandum or Report	n/a	p. 31-32, Table 7	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Project Management

Please include all ATR team members in report

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

All ATR team members listed in ProjNet have been added to the DDR.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Jul 15 2013

1-1 Backcheck Recommendation Close Comment

ATR team now all listed, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119331	Hydraulics	Design Memorandum or Report	n/a	n/a	n/a
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Comment Classification: **For Official Use Only (FOUO)**
(Document Reference: [App. C](#))

Coordinating Discipline(s): Hydraulics

Please include design water surface profile plots for design features (diversion and Rush River drop) in accordance with Regs.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Both profiles are now included in Appendix C.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Aug 06 2013

1-1 Backcheck Recommendation Close Comment

Fig. C.2 addresses WSP for Diversion, Fig. C.21 and C.22 marginally address WSP for Rush River drop , concu

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119332	Hydraulics	Design Memorandum or Report	n/a	p. C-2, Sect. C.1.2.3, last sentence	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please clarify - Is there any hydrologic uncertainty accounted for with the additional height?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

Please see the resposne for Comment 5119080. This information will also be added to the Reach 4 hydraulic appendix.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119336	Hydraulics	Design Memorandum or Report	n/a	p. C-2, Sect. C.1.2.3, last sentence	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please clarify - the additional height for uncertainty is added to the 1% design profile or the extreme flood profile? Not clear as stated.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Please see the resposne for Comment 5119080. This information will also be added to the Reach 4 hydraulic appendix.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119351	Hydraulics	Design Memorandum or Report	n/a	p. C-4	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Recommend putting Stations in the title of both Tables C-1 and C-2, just to make it more clear which applies where.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Table C-1: Sta. 350+00 to 403+47 in Volume 1

Table C-2: Sta. 456+00 to 521+00 in Volume 2

Note: Transition occurs in Volume 2 at the Rush River inlet.

Will be added as requested.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119353 Hydraulics	Design Memorandum or Report	n/a	p. C-4	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

With the slightly smaller channel top and bottom width upstream of Rush River, can you get a slight increase in sinuosity? Or does the final slope (0.8 ft/mile) of the low-flow channel control sinuosity for all reaches?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation For Information Only

To develop the low flow channel alignment, a series of templates with varying lengths and sinuosities were placed end to end to create the channel in order to simulate a non-cyclical sinuous pattern. A different set of templates with increased sinuosities were developed and used for the 46' bottom width channel. However, the differences in sinuosity were so small that the variability of the sinuosity between templates essentially made up the difference. Also, because the templates vary from 500' to 1500' in overall length, only a few of the templates can be placed in the 6500' reach of volume 3. In other words, in order to create a noticeable increase in sinuosity, the same two templates would have to be used over and over, which does not comply with the intent to make the channel appear natural.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 07 2013

1-1 Backcheck Recommendation Close Comment

Okay, thanks for the response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119365 Hydraulics	Design Memorandum or Report	n/a	p. C-5	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please clarify how the "certified" level of conveyance was set - 1% event profile with 90% assurance, or ????

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Please see the response for Comment 5119080. This information will also be added to the Reach 4 hydraulic appendix.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 14 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119380 Hydraulics	Design Memorandum or Report	n/a	p. C-6	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydrology

In determining potential inundation of various species of plants, wouldn't it be more appropriate to compute monthly or seasonal duration values, rather than (or in addition to) annual values? What is the most critical season for inundation of these various plant species?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Inundation during the growing season which typically occurs in May - September is more of a concern. There isn't much concern about inundation during the dormant season which typically occurs Oct - April. The critical time would be during the growing season May - September.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

1-1 Backcheck Recommendation Close Comment

Thanks for the clarification, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 26 2013

Current Comment Status: **Comment Closed**

5119384 Hydraulics	Plans	n/a	CS101, CS 311	n/a
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Comment Classification: **Public (Public)**

Coordinating Discipline(s): Hydraulics

The separation berm would appear to be subject to overtopping flows from either the main channel or Rush River. Please review the rock extent and verify that sufficient erosion protection is provided for a combination of flow events from different sources.

Submitted By: [Dan Pridal](#) ((402)995-2336). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Additional riprap protection was added to the separation berm to the top of the channel bench.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Aug 06 2013

1-1 Backcheck Recommendation Close Comment

Concur with response and action.

Submitted By: [Dan Pridal](#) ((402)995-2336) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119386 Hydraulics	Design Memorandum or Report	n/a	p. C-7	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Agree that vegetation tends to lie down, so adjustment for unmaintained vegetation is not needed (as long as woody vegetation is not allowed to establish) for capacity calcs, but did you look at lower values (0.027 or lower) for velocity in assessing channel stability?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Additional RAS model runs with n-values of 0.028 and 0.032 were made to address sensitivity. The 0.2% (500-yr) Event Peak channel velocities increased slightly from 5.65 ft/s to 5.80 ft/s when reducing the n-value from 0.030 to 0.028. There may be an additional slight increase in velocities if n-values were changed to 0.027 or lower, however, the velocity profile should remain below 6 ft/s which would be permissible for an infrequent and short duration event such as the 500-yr.

Submitted By: [Alexander Nelson](#) (651-290-5789) Submitted On: May 23 2013

1-1 Backcheck Recommendation Close Comment

Thanks for the response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119398 Hydraulics	Design Memorandum or Report	n/a	p. C-8, Table C-4	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Values for depth of low-flow channel in Table C-4 do not match depth values in Tables C-1 and C-2, please clarify.

Geotechnical slopes are shown as 4 1V:_H, please change to 4H:1V to make more clear your intent in displaying this slope.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The following changes will be made: The 90 ft. top width channel will be changed to 5.1 ft. deep and the 100 ft. top width channel will be changed to 5.5 ft. deep. The slope will be changed from 4 1V:-H to 4H:1V.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119402 Hydraulics	Design Memorandum or Report	n/a	p. C-9, Table C-5	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please clarify table notes #3 and #4 - when you reference a 10- and 100-yr Red River unsteady event, do you mean there will be a 10-yr/100-yr flow into the diversion from the Red River, or is this just referring to the coincident flows from all the other drains into the diversion when there's a 100-/500-yr event on Rush River?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

For a 100-yr event on the Rush, the coincident analysis results in using a diversion inlet flow resulting from a 10-yr event on the Red River and other coincident inflows from the other drains entering the diversion.

For a 500-yr event on the Rush, the coincident analysis results in using a diversion inlet flow resulting from a 100-yr event on the Red River and other coincident inflows from the other drains entering the diversion.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 17 2013

1-1 Backcheck Recommendation Close Comment

Thank for clarifying

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119411 Hydraulics	Design Memorandum or Report	n/a	p. C-12	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Text indicates that critical depth over end sill was chosen to be conservative, but on next page, normal depth on 2% slope has a greater velocity, indicating supercritical flow below the end sill. Please clarify what criteria was used to size the riprap.

I'm not familiar with R-200 riprap, please include gradation in report to clarify what size this is.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Your observation is correct. However, the range of Manning "n" values recommended for a riprap lined channel is between 0.023 to 0.033 and in my analysis I used 0.025. That is within that range and using that value results in the velocity of 7.4 fps. Had I used an "n" of .0273 (also within that range) it would have resulted in a velocity value of 7.04 fps matching that value computed using the critical depth calculation. I will change the velocity value indicated in the discharge channel data to 7.04 fps to eliminate any confusion. It should be noted that this has no effect on the design.

The required riprap gradation was determined using EM 1110-2-1601, Appendix F, entitled "Report on Standardization of Riprap Gradations". That report, prepared by LMVD (MVD), includes the methodology for the determination of the correct riprap gradation, and thickness, for a given flow condition. A standard riprap gradation chart, also prepared by LMVD (MVD) and recommended for use by all districts within LMVD (MVD), is included in the report. A complete Standard Riprap Gradation Chart, attached, will be included in the next submittal.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

(Attachment: [Standard Riprap Gradation Chart.pptx](#))

1-1 Backcheck Recommendation Close Comment

Very good, thanks for the response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119417 Hydraulics	Design Memorandum or Report	n/a	p. C-10, Fig. C.6	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Based on phone conversation with Marneshia on 4/4/13, the stilling basin will be reduced to having one end sill, rather than the two shown here, per previous review comments, is that your understanding? Will that change your design for riprap in any way?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Yes, there will only be one end sill. There will be no change to the riprap design.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119418 Hydraulics	Design Memorandum or Report	n/a	p. C-14	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Is riprap for grade control based on previous section design (critical depth)? Please clarify - if so, the riprap may be undersized.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

No. The key section of the riprap blanket is designed for grade control only. It is to provide for a volume of stone to launch in the event bottom degradation progresses from downstream. No degradation is expected but if it should occur the key section would prevent it from progressing further. The velocities in the diversion and low flow channels will be well below that required to move the R-200 riprap.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Thanks for the response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119422 Hydraulics	Design Memorandum or Report	n/a	p. C-15	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please include Fig. C-9 and C-10.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Will be included.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for those in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

It appears numbering is different, but no missing figures are noted, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119432	Hydraulics	Design Analysis	n/a	n/a	n/a
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Comment Classification: **Public (Public)**

(**Document Reference: App C , C2.2 Low-Flow Channel**)

Coordinating Discipline(s): Hydraulics

The low flow channel described in design analysis and shown on the plans remains concerning. The stability of the channel (erosion / deposition), high number of curves, curve radius to main channel bottom width, and etc. Constructability is also a concern. Further evaluation of the low flow channel is recommended.

Submitted By: [Dan Pridal](#) ((402)995-2336). Submitted On: Apr 05 2013

1-0 Evaluation Check and Resolve

The next submittal will include the meander belt width analysis which concluded that the proposed meandering pattern will not pose a significant threat to the overall stability of the diversion channel.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 17 2013

1-1 Backcheck Recommendation **Close Comment**

Concur with response and referral to meander belt analysis.

Submitted By: [Dan Pridal](#) ((402)995-2336) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119454 Hydraulics	Design Memorandum or Report	n/a	p. C-16, Sect. C.4.1	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

For the design event (1% ACE), what level of assurance do we have of passing it without exceeding the top of levee?

Likewise, for the max flood fight flow (terminology in this appendix does not match main report, please correct), what level of assurance do we have of passing that event?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation **Check and Resolve**

The next submittal will clarify the levee design.

By using the estimated maximum flood fight flow, which is what we estimate will be in the diversion if we were to have about 100,000 cfs coming into the staging area, we are being very conservative in setting our diversion levee elevation. The Reach 1 DDR has been updated to better explain how the levee is being designed and the Reach 1 updates will also be included in the updated Reach 4 DDR. The following explanation has been added:

The large volume of material that will be excavated to create the diversion channel will be placed along both sides of the diversion channel in linear features called Excavated Material Berms (EMBs). Given the size and profile of the diversion, the 1% floodplain would not increase over existing conditions even if the diversion channel did not have EMBs. For this reason and because the left-bank (looking downstream) EMB will have openings to accommodate tributary flow into the diversion, the left-bank EMB will not contain a levee. The right-bank (looking downstream) EMB will contain a levee.

At a minimum, the right-bank EMB must contain a levee section which contains the 1% flood with 90% assurance so that the levee is ultimately accredited by FEMA. If material was scarce, it would make sense to optimize the size of the levee, but less than 5% of the total excavated material will be needed to construct the levee. The excavated material is also good material for a levee. With good and abundant levee material, the Project Delivery Team (PDT) has determined that the cost of constructing a levee section within the right-bank EMB is relatively low. Given the relatively low levee cost and the uncertainty associated with the 1% flood with 90% assurance profile, the top elevation of the levee section located on the right bank of the diversion channel is being set at the expected water surface profile for the estimated maximum flood fight flow in the diversion channel, plus an allowance for settlement of the embankment.

This maximum flood fight flow condition has also been called the "diversion levee design event" in other project documents. The use of the term "design" when referring to the estimated maximum flood fight flow in the diversion is improper since the levee is not being designed for that flow condition. Setting the levee at the expected profile just prior to giving up on flood fighting efforts (just prior to opening up the Red and Wild Rice River control structures), plus an allowance for settlement, will assure that the levee is ultimately high enough to be accredited by FEMA and gives the local sponsor greater confidence that the right-bank EMB/levee will require minimal attention while flood fighting efforts are in effect.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: May 17 2013

1-1 Backcheck Recommendation Open Comment

Recommend for next submittals, we include the level of assurance of passing the design events, in accordance with EM 1110-2-1619 reporting requirements.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Open Comment

Information is either not presented, or not readily found, please update.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

3-0 Evaluation Concurred

Level of assurance is discussed in Section C.1.2.3 (the response to comment 5119080 indicates what has been added to Section C.1.2.3).

The following sentence has been added to the end of Section C.4.1 so that the reader knows which section to read for the level of assurance discussion:

"See Section C.1.2.3 for the discussion regarding level of assurance and FEMA accreditation."

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: Nov 13 2013

Backcheck not conducted

Current Comment Status: **Comment Open**

5119497 Hydraulics	Design Memorandum or Report	n/a	p. C-26, Fig. C-19	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please see attached, may need to expand area of riprap coverage to something along these lines (just approx guess) to dissipate turbulent energy during high flows, as flow will "spill over" the sides of the rock ramp into the main diversion channel and be relatively turbulent. Would be better to address now, rather than through O&M later.

(Attachment: [RushRiver.jpg](#))

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation Concurred

Additional riprap protection was added to the separation berm to the top of the channel bench.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Aug 06 2013

1-1 Backcheck Recommendation Open Comment

The worst case would appear to be a mid- to high-flow on Rush River with no other inflow to diversion channel; does your design for riprap coverage take this into account? Please verify u/s tailwater under this scenario and what flows over the 'divide' may be. This could set up undesirable flow circulation on opposing low-flow channel bank, which would induce erosion.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Open**

5119499 Hydraulics	Design Memorandum or Report	n/a	p. C-25	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Please include actual gradation for R7 riprap for those of us unfamiliar with the size or designation.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Riprap designator was changed to fit standard R(W50min) format. R7 was changed to R30 throughout the appendix. Table C-9 was added to show the MVP standard gradations.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Actual gradation shown in Table C-9, concur.

(just a note, there are now 2 Table C-9)

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119503 Hydraulics	Design Memorandum or Report	n/a	p. C-25	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Hydraulics

Text refers to Little Rush in two locations, please correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

"Lower" removed in two locations.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Text has been changed, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119507 Hydraulics	Plans	n/a	CS 502	n/a
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Comment Classification: **Public (Public)**

Coordinating Discipline(s): Hydraulics

Note 7 indicates that river rock is suitable. Verify that rock diameter has been increased by 25% for river rock as stated in EM 1601, Sec 3-2.

Submitted By: [Dan Pridal](#) ((402)995-2336). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Section C5.2.6 of the H&H appendix was updated to clarify that the rock diameter was increased by 25%. The following sentences were added to this section:

A 25% rock diameter increase was added to allow for the use of rounded stone. This increased the required gradation from R20 to R30.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Concur with response and action.

Submitted By: [Dan Pridal](#) ((402)995-2336) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119514 Hydraulics	Design Memorandum or Report	n/a	p. D-5, Sect. D.4.1.2	n/a
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Comment Classification: **For Official Use Only (FOUO)**
([Document Reference: App. D2](#))

Coordinating Discipline(s): Geotechnical

Description of Meandering Low Flow Channel is not consistent with description in Appendix D1 and elsewhere in main report and appendices, please change/correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The text will be updated to maintain consistency with main report and appendices.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Jun 04 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Text is now not inconsistent with other locations, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119521 Hydraulics	Design Memorandum or Report	n/a	p. E-2	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Civil

Values for sinuosity do not match those found in main report and App. C, please rectify which is correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Updated matching sinuosity values will be included in the 95% submittal.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 20 2013

1-1 Backcheck Recommendation Close Comment

Concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119526 Hydraulics	Design Memorandum or Report	n/a	p. E-1	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Civil

For ease of description, would it be easier to refer to these three segments as Reach 4a, 4b, and 4c, rather than Volume 1, Volume 2, and Volume 3?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Non-concurred

The plans are split into volumes because it worked best with different COE Regional Teams (MVK and MVS) designing different segments within the same Reach. The current plan is to put all of Reach 4 (Volumes 1,2 and 3)out for bid under one contract. Therefore, we decided to go with Volumes, which is standard MVP Practice. If, in the future, it is decided to break these up into multiple contracts, then we may go with a different terms (such as 4a, 4b, 4c) at that time.

Submitted By: [Gary Wolf](#) (651-290-5288) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Okay, I understand, no problem.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119598 Hydraulics	Design Analysis	n/a	n/a	n/a
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Comment Classification: **Public (Public)**
(Document Reference: [App C 5.2.5 Upstream Rock Structures](#))
Coordinating Discipline(s): Hydraulics

The design relates a decrease of 3.6 feet in the 100-yr elevation even after the upstream structures are built. The text asserts that velocities are acceptable. Recommend presenting a table of existing and project condition velocities for a range of flows events. Assuming that existing Rush River stability is for a 2-yr to 5-yr event, suggest reviewing the acceptable velocity increase.

Submitted By: [Dan Pridal](#) ((402)995-2336). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The Rush River Inlet geometry was added to the FMM system model to determine the resulting shear change in the Rush River upstream of the inlet. Figures C.19 and C.20 were added to Appendix C to demonstrate that the for the 10% ACE flood, the shear is below the lowest erosion threshold. At the 1% ACE flood, some erosion is expected. This is consistent with the approach of monitoring the erosion that was agreed upon with the North Dakota DNR.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Jul 31 2013

1-1 Backcheck Recommendation Close Comment

Concur with response and action.

Submitted By: [Dan Pridal](#) ((402)995-2336) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119605 Hydraulics	Design Analysis	n/a	n/a	n/a
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Comment Classification: **Public (Public)**
(Document Reference: [App C 5.2.5 Upstream Rock Structures](#))
Coordinating Discipline(s): Hydraulics

The orientation of the rock structures appears reasonable and effective in reducing bank erosion. However, the orientation is also expected to generate sediment deposition within the dike field. Recommend modeling evaluate a condition for the dike field filled with material, potential impacts on velocity, rock size, and upstream velocity drawdown for a range of flow conditions.

Submitted By: [Dan Pridal](#) ((402)995-2336). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

The HEC-RAS model was modified to include a fully blocked condition from rock structure peak to rock structure peak. Peak velocity, associated with rare events, increased from 9.3 to 10.7 ft/s. Recall that these velocities represent conditions during diversion construction when there would be little to no additional flow in the diversion to create backwater during rare events. It is unlikely that the area between the rock structures would fully fill with material. After the diversion is complete, rare events would be met with a high tailwater resulting in greatly reduced velocities through the inlet structure. No change was made to the documents relating to this comment.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Concur with response, no document revision needed.

Submitted By: [Dan Pridal](#) ((402)995-2336) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119707 Hydraulics Plans n/a RR001, Vol. I and III n/a

Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Real Estate

Please include acreages, as was done in Vol 2

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Acreages will be included in the next submittal.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Requested information has been included, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119714 Hydraulics Plans n/a RR001, Vol. II n/a

Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Real Estate

I believe this first sheet of Vol. 2 real estate is incorrectly labelled as C-101, rather than RR001, in accordance with the drawing index on this sheet.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Incorrect sheet ID label has been updated to RR001.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Apr 08 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Apr 12 2013

Current Comment Status: **Comment Closed**

5119742	Hydraulics	Plans	n/a	Vol. I, II, and III	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Real Estate

Labeling of limits (work limits, grading limits, easement, etc.) is not consistent between the three volumes, please coordinate to be consistent.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Labeling of limits will be corrected for consistency in the 95% ATR submittal.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Open Comment

Vol. 3, RR101, 'Fee Title' is shown to include areas of 'Temporary Easement', still not corrected.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

2-0 Evaluation Concurred

The "FEE TITLE" callout on V3 RR101 has been corrected such that it no longer is including areas of temporary easement.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Nov 08 2013

Backcheck not conducted

Current Comment Status: **Comment Open**

5119757	Hydraulics	Plans	n/a	Vol. I	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Civil

Sheet CS603 is incorrectly labelled as CS601, please correct

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The sheet ID in the title block of CS603 (Volume 1) has been corrected. It now reads "CS603".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119814	Hydraulics	Plans	n/a	CD102	n/a
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Comment Classification: **For Official Use Only (FOUO)**

(**Document Reference: Vol. I**)

Coordinating Discipline(s): Civil

There is no note indicating the fate of the north-south road that currently intersects CR32. Please indicate whether the road is to be removed as part of this contract, or to be done by others.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

An annotation has been added to Volume 1 CD102 at the location of the north-south road that currently intersects CR32 which reads "EXISTING 168TH AVE SE TO BE REALIGNED BY OTHERS".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Requested change has been made, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119818	Hydraulics	Plans	n/a	CS101 and CS102	n/a
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Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: Vol. I)

Coordinating Discipline(s): Civil

Both sheets are labelled as plan and profile, but no profile is shown, please relabel

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

"AND PROFILE" has been removed from the title blocks of sheets CS101 and CS102 in Volume 1.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119831	Hydraulics	Plans	n/a	CS101 and CS102	n/a
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Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: Vol. I)

Coordinating Discipline(s): Civil

Embedded levee alignment is not shown on the sheets, should it be?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

A tabulation of the horizontal alignment of the embedded levee will be included on the C-600 sheets in the next submittal. The embedded levee cannot be shown in the plan view, however, as it is located directly under the crown of the EMB and the features lie on top of one another. A note will be added to C-101 and C-102 stating "FOR CLARITY, THE EMBEDDED LEVEE IS NOT SHOWN IN PLAN VIEW" as was done in Reach 1.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Close Comment

Concur with this approach

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119839	Hydraulics	Plans	n/a	CS201	n/a
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Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. I](#))

Coordinating Discipline(s): Civil

There are three sheets labelled CS201, please correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The two profile sheets in volume 1 that were incorrectly labeled as CS201 have been relabeled as "CS202" and "CS203".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119844	Hydraulics	Plans	n/a	CS201	n/a
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Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. I](#))

Coordinating Discipline(s): Civil

On the first of the three CS201 sheets, there are 4 profiles shown, but they are not labelled so as to distinguish from one another, please label.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The issue that caused the profile annotations on CS201 to not print to the PDF has been resolved. The next submittal will show four annotations, one for each profile, which read (top to bottom) "EMBEDDED LEVEE PROFILE", "TOP OF CHANNEL", "MAIN CHANNEL INVERT", and "LOW FLOW CHANNEL INVERT".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation **Close Comment**

Changes were made, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119855 Hydraulics Plans n/a CS301 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. I](#))

Coordinating Discipline(s): Civil

Is the embedded levee to be placed at a particular location within the EMB? Drawing is not clear as to where the levee should be.

Why does the stripping not extend to under the levee? Please indicate whether or not the existing ground is to be stripped under the levee alignment.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation **Concurred**

The embedded levee is located directly under the edge of the EMB maintenance road corridor. However, a diversion levee control line tabulation will be included in the next submittal to clarify this issue. Stripping has been added under the diversion levee.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation **Close Comment**

Issues resolved, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119887 Hydraulics Plans n/a CS601-603 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. I](#))

Coordinating Discipline(s): Civil

Do we need a levee alignment control line? How else will contractor know where to build?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation **Concurred**

A horizontal control tabulation will be added to the C-600 sheets for the levee alignment control line before the next submittal.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for that in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Resolved, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119900 Hydraulics Plans n/a CD101 n/a

Comment Classification: **For Official Use Only (FOUO)**

(**Document Reference: Vol. II**)

Coordinating Discipline(s): Civil

168th Ave SE is not noted as to whether the portion of this road is to be removed and relocated by this contract or by others, please add appropriate note.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Call out indicating 168th Ave SE to be removed and relocated by others has been added.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Apr 23 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Change has been made, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119907 Hydraulics Plans n/a CS101 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Embedded levee alignment is not shown, please show.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Horizontal control line data table for Embedded Levee was included on sheet CS601. Corresponding Point ID labels and a callout for the embedded levee control line have also been added to plan sheet ID CS101.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Changes made, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119921 Hydraulics	Plans	n/a	CS301	n/a
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Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Depth and extent of stripping shown do not match up with depth and extent shown in Vol. I and III. Please coordinate to have similar depth and extent, unless there is a valid reason not to.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Stripping is no longer shown the way it was depicted in the 65% plans. The only stripping that is now required is under the diversion levee. Notes on the plans and the specifications say that the contractor is responsible for determining the amount of stripping required to provide enough topsoil for the topsoil requirements.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Close Comment

Consistency between Volumes, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119923 Hydraulics Plans n/a CS301 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Is the embedded levee to be designated at a certain point at all sections throughout this part of the reach? Not clear from this drawing if location remains same/changes.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Consistent with Reach 1, the CS301 typical section refers the contractor to the embedded levee detail on CS501. The CS501 detail shows the location of the embedded levee control line. Sheet CS601 provides a table with the embedded levee horizontal control data for layout purposes. A callout for the embedded levee control line was also added to CS101.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks for the response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119932 Hydraulics Plans n/a CS302 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Recommend removing elevation note from B), since these are typical sections.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Elevation removed from typical section B).

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119934 Hydraulics Plans n/a CS304 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Please verify that there are not missing lines in cross-section for 413+47

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Missing lines (due to cross section being cut at edge of proposed DTM) has been corrected for Sta 413+47.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Fixed, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119939 Hydraulics Plans n/a CS305 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Drawing needs to be cleaned up so embedded levee intersects ground, appears to be "floating" inside EMB (applies to several other sheets as well).

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Levee slope intersections with existing ground have been corrected.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Jul 12 2013

1-1 Backcheck Recommendation Close Comment

Fixes made, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119946 Hydraulics Plans n/a CS304 thru CS327 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Please show limits of stripping on cross-section to clarify what is being removed and where (especially for under the levee).

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Per Gary Wolf (MVP), it was decided that we will eliminate the stripping shown in the channel. The only required stripping shown will be under the embedded levee. The following note will be added to the CS301 typical section:

"STRIPPING IS REQUIRED UNDER THE EMBEDDED LEVEE AS SHOWN. ADDITIONAL TOPSOIL REQUIRED SHALL BE OBTAINED WITHIN THE PROJECT FOOTPRINT, WITH EXACT LOCATIONS TO BE DETERMINED BY THE CONTRACTOR. EXISTING TOPSOIL DEPTHS WITHIN THE REACH ARE APPROXIMATELY 0.9 FT."

With this new approach, showing the required stripping under the embedded levee on the typical section only should be sufficient.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 07 2013

1-1 Backcheck Recommendation Close Comment

Thanks, concur with your approach

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119947 Hydraulics	Plans	n/a	CS318	n/a
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Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Part of the levee is missing for 456+00

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Miscellaneous cross section lines were truncated due to section being cut at the very end of the design model DTM. Missing cross section lines have been corrected.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 07 2013

1-1 Backcheck Recommendation **Close Comment**

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119952 Hydraulics Plans n/a CS404 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Civil

Will there be detail sheets for the 3-36" and 2-24" CMP and flapgates? Would current guidance call for RCP, rather than CMP?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation **For Information Only**

Detail sheets for the CMP drains have been provided on sheet ID's CS404 and Reference drawing NDDOT D714-04. Horizontal coordinates have been added to upstream and downstream pipe ends on CS404 as well. The specifications will also provide additional requirements for the CMP and flapgates.

Regarding use of RCP in lieu of CMP:

- EM is for CMP pipes through levees, the spoil banks adjacent to the Lower Rush River are not considered levees.
- Local drainage pipe size and material type were determined by the local sponsor in their Local Drainage Plan.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Jul 15 2013

1-1 Backcheck Recommendation **Close Comment**

Comment has been addressed satisfactorily, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119961 Hydraulics Plans n/a CS502 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. II](#))

Coordinating Discipline(s): Hydraulics

If each drop contains 48 boulders (as shown), then total drop will require over 1100 5-ft boulders. Are there that many available that are river rock, as Note 6 calls for? If my math is correct, each boulder weighs roughly 5 tons, how are these going to be transported to the site? (not to mention all the other riprap called for) Is this design really feasible?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

Response from Jeff Hansen (FMM Cost and Specs Lead POC):

"During the feasibility and at the start of design I did some calling around to gravel pit operators about pricing and availability of large 5-foot diameter boulders. I asked if there would be several thousand available for the diversion channel work and for Drayton Dam Mitigation. The response that I got back was that they should be able to supply that many as long as they had some lead time and it was spread out over several months or years and not all at the same time. The large boulders can be transported by gated flatbed truck with a cherry picker arm to unload."

Submitted By: [Alexander Nelson](#) (651-290-5789) Submitted On: Jul 02 2013

1-1 Backcheck Recommendation Close Comment

Concur with response

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119969 Hydraulics Plans n/a CS603 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. III](#))

Coordinating Discipline(s): Civil

Sheet is mislabelled as CS601, please correct

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The sheet identification in the title block on CS603 in volume 1 has been corrected. It now reads "CS603".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119981 Hydraulics Plans n/a CD101 and CD102 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. III](#))

Coordinating Discipline(s): Civil

Part of the Work Limits extent is not shown at the top of both of these sheets - can we adjust the layout slightly so we show all work limits?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The extents of the plan views on CD101 and 102 as well as CS101 and 102 have been modified such that all of the work limits are visible for the portion of the channel that each view is intended to show.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119985 Hydraulics Plans n/a CS101 and CS102 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. III](#))

Coordinating Discipline(s): Civil

Please show embedded levee alignment in plan view

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Non-concurred

The embedded levee cannot be shown in the plan view as its features fall directly under the crown of the EMB, making them indistinguishable from one another. A note will be added to the CS100 sheets stating "FOR CLARITY, THE EMBEDDED LEVEE IS NOT SHOWN IN PLAN VIEW." as was done for Reach 1.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Close Comment

Thanks, I concur with this approach

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119993 Hydraulics Plans n/a CS102 n/a

Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol. III](#))

Coordinating Discipline(s): Civil

Part of the right bank drain ditch (between RD 30+00 and 40+00) appears to be missing from the plan (or C/L misaligned from grading plan), please correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation Concurred

The misalignment in the right drainage ditch between stations RD 30+00 and RD 40+00 has been corrected. The centerline of the ditch is now shown along the centerline that is annotated in the plan view.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Fixed, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119996 Hydraulics Plans n/a CS201 n/a

Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: Vol. III)

Coordinating Discipline(s): Civil

There are 4 profiles shown, but they are not labelled as to what they signify, please add labels.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation Concurred

The issue that caused the profile annotations on CS201 to not print to the PDF has been resolved. The next submittal will show four annotations, one for each profile, which read (top to bottom) "EMBEDDED LEVEE PROFILE", "TOP OF CHANNEL", "MAIN CHANNEL INVERT", and "LOW FLOW CHANNEL INVERT".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5119998 Hydraulics Plans n/a CS301 n/a

Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: Vol. III)

Coordinating Discipline(s): Civil

Is embedded levee to be located at a specific location within the section, or does it vary? It is not clear from these drawings.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation Concurred

The location of the embedded levee is constant: the interior crown of the levee lies directly beneath the interior crown of the EMB. However, this is not clear from the cross section alone. For consistency with Reach 1, a horizontal control tabulation for the embedded levee will be added to the C-600 sheets, and a control line designator will be added to the center of the embedded levee on CS301.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Open Comment

Thank you, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Designation has been added, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5119999 Hydraulics	Plans	n/a	CS301	n/a
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Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: Vol III)

Coordinating Discipline(s): Civil

Please explain why stripping does not extend to underneath the embedded leave.

Please coordinate with Vol. I and Vol II designers to ensure the depth and extent of stripping is consistent throughout.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

Stripping has been added under the diversion levee on CS301.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Close Comment

Change made, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5120002	Hydraulics	Plans	n/a	CS309	n/a
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Comment Classification: **For Official Use Only (FOUO)**

(Document Reference: Vol III)

Coordinating Discipline(s): Structural

Design for this structure is changing (to remove the second end sill back to the first end sill), correct?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

Revised Apr 05 2013.

1-0 Evaluation For Information Only

Per our phone conversation, the second end sill has been removed. The structure now shows an end sill with a slab extending from the impact basin. The design is a modified specification for the concept of the impact basin, but does not affect the hydraulic function of the basin. This design is the designer's preference from a structural standpoint for stability purposes.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: May 03 2013

1-1 Backcheck Recommendation Close Comment

Drawings look good, thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5120006	Hydraulics	Plans	n/a	CS309	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Civil

Recommend that riprap immediately below the end sill be depressed below top of end sill to prevent rock from being pulled back into the basin.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

It is the intent of the designers to have the top of the riprap at the same elevation as the top of the slab extending from the basin (as you have suggested); this will prevent rock from being pulled back. Drawings will be updated, and a cross section of the riprap will be provided in the plan set.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: May 03 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Open Comment

It appears (CS407 now) that the top of riprap is higher than the slab immediately U/S, please verify. If riprap is higher, it needs to be lowered to top of slab (or lower).

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

3-0 Evaluation For Information Only

The top of the riprap is not higher than the slab. See S-504 for a cross section of this riprap section for further clarification.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: Oct 04 2013

3-1 Backcheck Recommendation Close Comment

Thanks for clarifying, comment has been addressed.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 04 2013

Current Comment Status: **Comment Closed**

5120009 Hydraulics	Plans	n/a	CS405	n/a
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Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Civil

Please reevaluate extent of riprap upstream of drainage structure headwall, as it seems excessive.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Non-concurred

The riprap coverage upstream of the drainage structure headwall was designed to provide adequate protection for the structure considering the potential disruption of flow by inflow to the main channel from two drains on opposite sides of the channel. It is not considered excessive.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

1-1 Backcheck Recommendation Close Comment

Okay, thanks for the clarification

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5120017 Hydraulics Plans n/a CS405 n/a

Comment Classification: **For Official Use Only (FOUO)**

Coordinating Discipline(s): Civil

Please clarify - why is the far extent of riprap below the impact basin so unbalanced (i.e. small portion extends across meander belt to channel toe, while majority only goes to top of low flow channel)?

What measures, if any, are being taken to prevent the meandering of the low-flow channel from endangering the endsill of the impact basin?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation For Information Only

The riprap that extends beyond the right top bank of the low flow channel is designed to provide for grade control only. It has a thicker section of riprap in it which is designed to launch in the event degradation migrates from downstream up to that point. That between the impact basin end sill and the right top bank of the low flow channel is wider to contain flow from the structure. See attachment.

No measures were taken for the specific purpose of preventing the meandering of the low flow channel from endangering the end sill of the impact basin. Due to the unpredictability of any potential movement of the low flow channel, the completed project will require monitoring. If such a problem should develop it can be addressed appropriately.

Submitted By: [Raymond Wilson](#) (601-631-5738) Submitted On: May 08 2013

(Attachment: [Reach_4_Grade_Control_Extension1.pptx](#))

1-1 Backcheck Recommendation Close Comment

Okay, thank you!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5120069 Hydraulics Plans n/a CS501 n/a

Comment Classification: **For Official Use Only (FOUO)**

(**Document Reference: Vol III**)

Coordinating Discipline(s): Civil

Sheet is incorrectly labelled as CS302, please correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The sheet identification in the title block of Volume 3 sheet CS501 has been corrected. It now reads "CS501".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5120071	Hydraulics	Plans	n/a	CS502	n/a
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Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol III](#))

Coordinating Discipline(s): Civil

Sheet incorrectly labelled as CS504, please correct

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The sheet identification in the title block of volume 3 sheet CS502 has been corrected. It now reads "CS502".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5120075	Hydraulics	Plans	n/a	CS503 and CS504	n/a
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Comment Classification: **For Official Use Only (FOUO)**

([Document Reference: Vol III](#))

Coordinating Discipline(s): Civil

Both sheets are incorrectly labelled as CS502, please correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

The sheet identification in the title blocks of volume 3, sheets CS503 and CS504 have been corrected. They now read "CS503" and "CS504", respectively.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

5120080 Hydraulics Plans n/a CS601 thru CS603 n/a

Comment Classification: **For Official Use Only (FOUO)**

(**Document Reference: Vol III**)

Coordinating Discipline(s): Civil

There are no control points/alignment shown for the levee, please include.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Apr 05 2013

1-0 Evaluation Concurred

A horizontal control tabulation for the embedded levee will be added to the CS600 sheets.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

2-0 Evaluation Concurred

The information is ready for your review.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 20 2013

2-1 Backcheck Recommendation Close Comment

Control points added, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 30 2013

Current Comment Status: **Comment Closed**

5124049 Construction Management Design Memorandum or Report n/a n/a n/a

Comment Classification: **For Official Use Only (FOUO)**

All comments at 35% were incorporated to my satisfaction in the 65% design document.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Apr 09 2013

1-0 Evaluation Concurred

Thank you for reviewing the documents.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Jul 02 2013

1-1 Backcheck Recommendation Close Comment

You are welcome.

Submitted By: [Kathleen Englert](#) (402-995-2038) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5131442 Civil	Specifications	Page E-6 of 7	n/a	n/a
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Comment Classification: **Public (Public)**
([Document Reference: Appendix E: Civil Site](#))

Reference should be made to the most current edition of "A Policy on Geometric Design of Highways and Streets, 6th edition , 2011.

Submitted By: [Michael Jerina](#) (402-995-2202). Submitted On: Apr 12 2013

1-0 Evaluation Concurred

The updated reference section in the 95% ATR submittal will include a reference for "A Policy on Geometric Design... 2011"

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Close Comment

Changes were made to the documents as recommended above

Submitted By: [Michael Jerina](#) (402-995-2202) Submitted On: Oct 31 2013

Current Comment Status: **Comment Closed**

5133720 Hydrology	Design Memorandum or Report	Appendix C	C-9 of 28	n/a
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Comment Classification: **For Official Use Only (FOUO)**
Coordinating Discipline(s): Hydrology

This ties into the PER open comment 4832589, on Table C-5, regarding the coincident Rush River and Red River Unsteady Event modeling.

I reviewed the HMG Nov 2012 Memorandum and was able to determine the local drainage 100-year event was computed using the ND USGS regional regression equation (A) as a maximum of 318 cfs. However, there was no coincident probability analysis to satisfy why the 100-yr Rush River event is coincident with the 10-yr Red R. event, etc. to match Table C-5 in Appendix C.

Also, please clarify the third sentence "However, it was later determined by the HMG that ... for the 1-percent Rush River event due to breakout flow from adjacent river systems."

Is the breakout flow from adjacent river systems only tied to a 1-percent Rush River event, or can adjacent system breakout flows occur at different Rush R frequencies with the same impact to local drainage?

Submitted By: [Ron Beyer](#) (402-995-2339). Submitted On: Apr 15 2013

1-0 Evaluation For Information Only

Ray Wilson and Aaron Buesing are actively working with Ron Beyer to resolve this comment.

Submitted By: [Jonathan Boone](#) (601-631-5502) Submitted On: Aug 26 2013

Backcheck not conducted

2-0 Evaluation Check and Resolve

The coincidental flows were chosen based on a review of the historic gage records. Conservative coincidental conditions were used for sizing the structure.

The sentences "The Reach 4 Drainage Structure was originally going to be a dual pipe structure. However, it was later determined by the HMG that ... for the 1-percent Rush River event due to breakout flow from adjacent river systems." will be modified to read "The Reach 4 Drainage Structure was originally going to be a dual pipe structure since the 100 year peak discharge was thought to be lower prior to fully understanding the extent of breakout flow from the Rush River. Flow begins to break out of the Rush River in this area for events slightly larger than the 10 year event, reaching 520 cfs for the 100 year event on the Rush River."

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: Aug 28 2013

2-1 Backcheck Recommendation Close Comment

Thank you for rewording. Changes have been verified in the FTR.

Submitted By: [Ron Beyer](#) (402-995-2339) Submitted On: Sep 09 2013

Current Comment Status: **Comment Closed**

5134351	Geotechnical	Plans	n/a	n/a	n/a
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Comment Classification: **Public (Public)**
([Document Reference: Volume 1 plans](#))

Include a boring location plan sheet or reference boring locations in the general plan or site plan sheets

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

There is only one boring each in Volumes 1 and 3, so a boring location plan similar to the one in Volume 2 isn't really a feasible addition to the plan set for such a limited number of borings. However, the boring locations have been added to both the civil plan sheets and the demolition sheets in Volumes 1 and 3.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Open Comment

There are actually 4 boring logs provided in Volume 1 and 3 boring logs in volume 3. This information is only relevant for the sampled locations. Suggest that a small boring location plan be inset on sheet B-202 on each volume.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Open**

5134352 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**

(Document Reference: [Volume 1 removal plans sheets](#))

clarify if removal of 168th ave SE will be removed by others or under this contract

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

An annotation has been added to Volume 1 CD102 at the location of the north-south road that currently intersects CR32 which reads "EXISTING 168TH AVE SE TO BE REALIGNED BY OTHERS".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification has been provided.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 11 2013

Current Comment Status: **Comment Closed**

5134353 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**

(Document Reference: [Volume 1 removal plans sheets](#))

It is not clear if a temporary right ditch will pre-exist this contract. Ditch is shown on Sheets CD101 and CD102, but not reflected in cross sections.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

Due to ongoing coordination efforts with the bridge design team, the final alignment of the ditch associated with the bridge contract has not been determined. It was not shown in the cross sections for this submittal due to the fact that the current design (the contours of which are shown in the plan view) show the ditch running beneath the proposed footprint of the Reach 4 EMB, which is not desirable. The ditch will be shown in the cross sections in future submittals.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 15 2013

1-1 Backcheck Recommendation Open Comment

Ditch is now reflected in cross sections, however, there is still confusion regarding which contract is responsible for final grading and topsoiling of the right ditch. Volume 1 and 2 both include the ditch within the grading limits of this contract, however, volume 2 does not include a grading profile for a large portion of the right ditch as provided in volume 1.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 11 2013

Current Comment Status: **Comment Open**

5134354 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**

(Document Reference: [Volume 1 removal plans sheets](#))

End of reach 4 is mislabeled as reach 3 on sheet CD102.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

The annotation on volume 3, sheet CS102 has been corrected. It now reads "END REACH 4 VOLUME 1 - STA. 403+47".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 11 2013

Current Comment Status: **Comment Closed**

5134356 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**

(Document Reference: [Volume 1 profile sheets](#))

Design profiles should be labeled.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

The issue that caused the profile annotations on CS201 and CS202 to not print to the PDF has been resolved. The next submittal will show four annotations per profile on CS201, one for each design profile, which read (top to bottom) "EMBEDDED LEVEE PROFILE", "TOP OF CHANNEL", "MAIN CHANNEL INVERT", and "LOW FLOW CHANNEL INVERT". The profiles on CS202 are labeled (top to bottom) "EXTERIOR CONTAINMENT BERM" and "DITCH BOTTOM".

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 11 2013

Current Comment Status: **Comment Closed**

5134358 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
([Document Reference: All profile sheets](#))

Embedded levee elevations on all profiles should specify if elevations include overbuild to account for settlement, and how much overbuild is specified.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Non-concurred

The elevations shown in the profiles do include an overbuild for settlement (18 inches), but that information is not necessary to the contractor. Adding that information would not add any value to construction plans in terms of clarity.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Open Comment

Agreed that it is of no significance to Contractor, however, it may be useful to document clearly what that elevation signified for future inclusion in the final O&M Manual.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 11 2013

Current Comment Status: **Comment Open**

5134364 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
([Document Reference: Vol 1 and Vol 3 typical section sheets](#))

Stripping limits should extend below embedded levee section

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

Stripping has been added under the embedd levee footprint.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 05 2013

1-1 Backcheck Recommendation Close Comment

Clarification has been provided.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5134371 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
(Document Reference: Vol 2 sheet cs102)

Verify section cut labels; there are dual "C" sections shown.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

Section cut reference ID's have been corrected.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification has been provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5134378 Geotechnical	Plans	n/a	n/a	n/a
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Comment Classification: **For Official Use Only (FOUO)**
(Document Reference: Vol 2 sheet cs101)

The horizontal alignment of the embedded levee section is not clear and appears to differ from Vol 1 and Vol 3 in relation to EMB height. Consider adding horizontal control line to avoid discontinuity in levee sections within transition zones adjacent to volume 1 and 3.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

Consistent with Reach 1, the CS301 typical section refers the contractor to the embedded levee detail on CS501. The CS501 detail shows the location of the embedded levee control line. Sheet CS601 provides a table with the embedded levee horizontal control data for layout purposes. A callout for the embedded levee control line was also added to CS101.

For the bridge reach, the AE is adjusting the alignment of the maintenance road and corresponding embedded levee alignment to meet up horizontally and vertically with Vol 2 per previous Dr. Checks comment provided on their 90% submittal. Vol 3 should also provide a transition within their reach to meet up horizontally and vertically with the Vol 2 maintenance road / embedded levee alignment.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5134380 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
(Document Reference: Vol 2 CS301 through CS303)

Consider adding elevations along the vertical axis

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

Elevations have been added to the vertical axes.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5134381 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
(Document Reference: Vol 2 CS501 detail 3)

Define embedded levee control line location.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation For Information Only

Horizontal control line data table for Embedded Levee was included on sheet CS601.
Corresponding Point ID labels have also been added to plan sheet ID CS101.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: May 06 2013

1-1 Backcheck Recommendation Close Comment

Clarification provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5134382 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
(Document Reference: Vol 3 CS202)

Is the 1 ft step in left ditch at station 18+39 necessary

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

The 1 ft step in the ditch bottom elevation has been removed.

Submitted By: [Colby Bankston](#) (601-631-5327) Submitted On: Aug 20 2013

1-1 Backcheck Recommendation Close Comment

Clarification provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

5134386 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
([Document Reference: Vol 3 S-100](#))

Extent of sheet pile should be better defined in plan view. Consider flaring back ends toward end-sill to avoid flanking or installing the sheets closer to the structure to minimize materials.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation For Information Only

The sheet pile is in place only as a secondary measure to protect the channel slope. Flanking is not a concern in this case.

The extent of the sheet pile will be better defined in the plan view.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: May 20 2013

1-1 Backcheck Recommendation Open Comment

It appears that the sheet pile is being used to prevent lateral erosion of the low flow channel from encroaching into the basin's foundation. Intent of earlier comment was to see if scour due to the protrusion of the structure into a higher diversion channel flow was considered, and if it would be prudent to extend the line of sheet pile to protect the south side of the basin from being undermined by potential scouring due to flows into the side of the structure .

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

2-0 Evaluation Check and Resolve

The velocity of flow impacting the south side of the structure is not high enough to warrant more than riprap protection. The 85' width of the riprapped area is sufficiently wide to prevent significant erosion where the pipe flow and diversion flow will mix.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: Nov 08 2013

Backcheck not conducted

Current Comment Status: **Comment Open**

5134388 Geotechnical Plans n/a n/a n/a

Comment Classification: **Public (Public)**
(Document Reference: Vol 3 S-100)

Will any drainage of the select granular fill be provided?

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation For Information Only

No drainage of the select granular will be provided. The select granular fill is being placed beneath the structure to minimize frost heave. No significant pressure is expected to build up to warrant drainage.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: May 09 2013

1-1 Backcheck Recommendation Open Comment

Saturated granular materials can result in greater frost heave potential.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

2-0 Evaluation For Information Only

Based on the seasons at the project location, there is very little chance that the select granular fill would be saturated.

Submitted By: [Marneshia Richard](#) (601-631-7055) Submitted On: Oct 08 2013

2-1 Backcheck Recommendation Open Comment

I have attached sheet specific to comment. The granular materials will form a bathtub effect within the surrounding natural impervious soils. Given their location just beneath the drainage ditch, it is likely that they will become saturated and could be shallow enough to freeze and result in upward heave. If the expected frost heave cannot be tolerated structurally, than adequate drainage or alterante frost footings should be considered. The granular zone beneath the center headwall monolith appears to be the most vulberable location, but the lower pad should be evaluated as well.

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Nov 05 2013

(Attachment: [Pages from FMMDR4_FTR_ATR_VOL3_PLANS.pdf](#))

Current Comment Status: **Comment Open**

5134391 Geotechnical	Engineering Appendix	n/a	n/a	n/a
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Comment Classification: **Public (Public)**

Verify that the estimated settlement and rebound has been factored into design of the drainage structure. Offsetting the alignment of the structure slightly to the south to avoid the existing drainage ditch could minimize settlement, easily allow for overbuild and faciliate construction.

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Apr 15 2013

1-0 Evaluation Concurred

Settlement and rebound were factored into the design of the drainage structure. The existing ditch is only about 3.5 ft deep so it was not considered necessary to offset the alignment of the structure. Settlement at the structure was calculated to be less than a foot.

Submitted By: [Heather Sibley](#) (601-631-5917) Submitted On: Apr 29 2013

1-1 Backcheck Recommendation Close Comment

Information provided. Thank You

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Sep 12 2013

Current Comment Status: **Comment Closed**

Public / SBU / FOUO

Patent 11/892,984 [ProjNet](#) property of ERDC since 2004.
