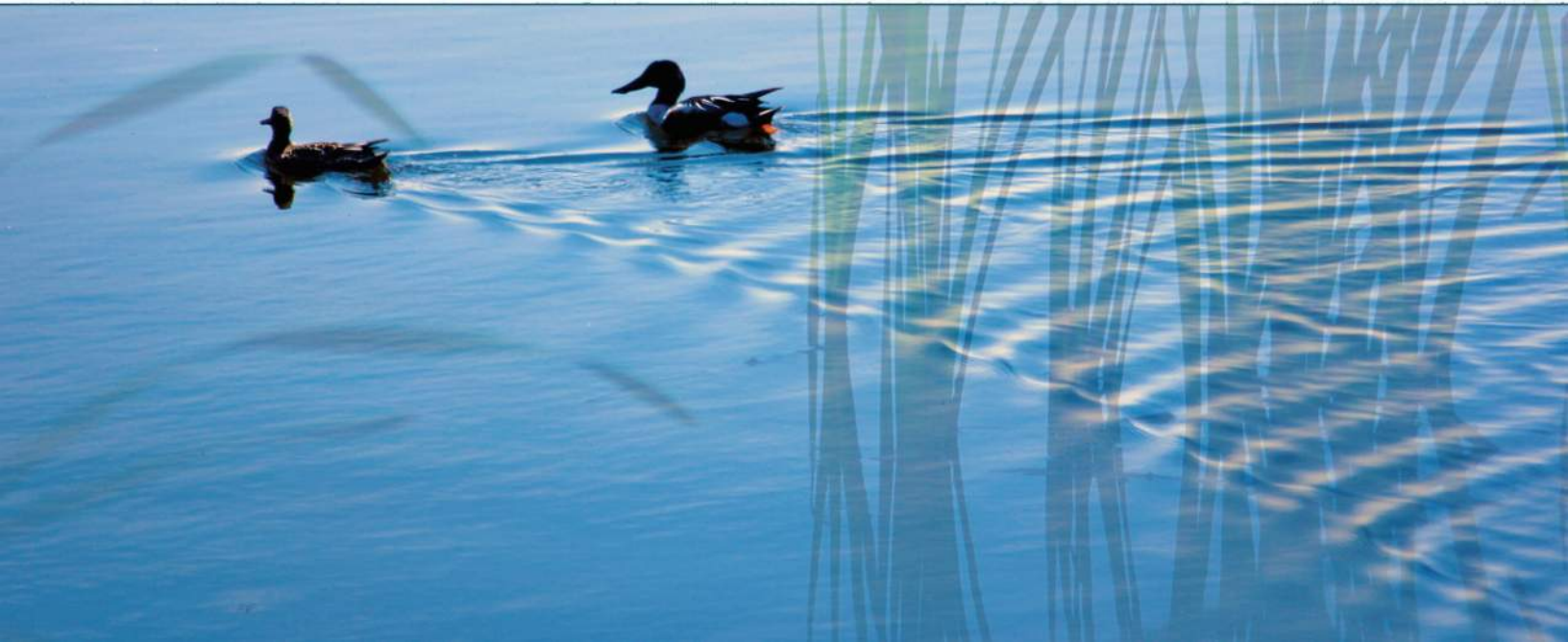


APR 19

# SYSTEM WIDE IMPROVEMENT FRAMEWORK

## FOR THE SOURIS RIVER BASIN

COMBINED 2019 INTERIM SWIF CONTINUATION  
REPORT AND 2018 ANNUAL SWIF PROGRESS REPORT



APR 19

# SYSTEM WIDE IMPROVEMENT FRAMEWORK

Prepared for:

**City of Minot**



Ward County Water Board



Prepared by:



## Statement of Purpose

In December 2016 the City of Minot, Ward County Water Board, and the Souris River Joint Board submitted a System Wide Improvement Framework for the Souris River Basin (Original SWIF). On April 27, 2017 the USACE issued a memorandum accepting the Souris River Basin SWIF Interim Report and granted temporary rehabilitation eligibility under P.L. 84-99 for a two-year period. The memorandum stated that further extension of rehabilitation eligibility beyond the two-year period would require an additional submittal. This Interim SWIF Continuation Report is being submitted to demonstrate the progress made by the project sponsors during the past 2 years and to request that temporary rehabilitation eligibility under P.L. 84-99 be extended for another two-year period. The following sections provide updates to Section 3.0 Proposed Improvements of the Original SWIF. The section headers below are numbered 3.0, 3.1, 3.1.1, 3.1.2, and 3.2 so they can be correlated to the section in the Original SWIF.

## 3.0 Proposed Improvements

The proposed improvements are actions that the project sponsors plan to undertake to directly address the known deficiencies in the existing levee systems as well as implement the MREFPP. Corrective actions were prioritized by risk and rectification work is focused on correcting the deficiencies that pose the greatest risk to life safety first. This section provides a high-level description for the prioritization methodology and the plan for accomplishing the deficiency remediation work, along with levee modifications planned as part of the MREFPP. In addition, costs and funding mechanisms/sources associated with the proposed improvements will be described.

### 3.1 Existing Federal System

The Ward County and Minot Systems are managed and operated by separate government agencies that fund projects and operations through differing mechanisms. In addition, the nature of the deficiencies identified by the USACE and the corresponding risks associated with the potential levee failures are distinct between the Minot and Ward County Systems. Therefore, the activities, milestones/schedules, and decisions associated with proposed improvements to the various levee systems have been separated into the Ward County Systems and Minot Systems within Appendix A and Appendix B, respectively.

The USACE 2014 Routine Inspections were utilized by the project sponsors as a baseline to identify the SWIF actions necessary to address the existing deficiencies. In addition, the 2013 Periodic Inspection Reports for the Minot Right and Left Bank Systems and the results of various site visits were used to prepare an implementation strategy to address the deficiencies identified by the USACE.

### 3.1.1 Ward County Systems Update

A system was developed to prioritize the USACE-identified levee deficiencies in Ward County that combines the relative levee failure risk associated with each deficiency as well as the practicability of deficiency resolution. This risk prioritization system is described in detail in Appendix A, Section A.1. The risk associated with an individual deficiency was evaluated and classified in a qualitative assessment using engineering judgement and the population at risk should the levee fail.

Upon completion of the exercise, the results follow a general pattern. The highest priority deficiencies are related to existing erosion problems that impact the levee prism while the deficiencies associated with typical maintenance activities (Megger testing of pumps, mowing of the levee grass, etc.) were scored with the lowest priority.

Each deficiency was also assessed to determine the necessary actions required by the project sponsor to address and resolve the issue. Since the corrective actions associated with the various deficiencies require actions that vary in the degree of complexity, deficiencies were categorized based upon sponsor action type and resolution timeframe. This deficiency remediation implementation strategy is described in detail in Appendix A, Section A.1. Deficiencies were categorized into three distinct groups; Maintenance, Capital Improvement Projects, and Encroachments/Obstructions. If, during executing the SWIF, a deficiency is found to threaten the primary function of the levee system and pose an imminent risk to the life and safety, that deficiency will be addressed as soon as reasonable.

*Additional data found in the Ward County System USACE levee inspection reports from 2016 through 2018 were reviewed to determine the number of past deficiencies, new deficiencies, and resolved deficiencies. Deficiencies were tracked through these three inspection years to determine the number and percentage of deficiencies satisfactorily resolved. Complete deficiency tables are in Appendix A2-3. Table A2-1 on the following page shows progress made on the Burlington to Minot Ward County Systems.*

**Table A2-1. Deficiency Resolution**

<b>Levee System</b>	<b>Total Deficiencies (2016-2018)<sup>1</sup></b>	<b>Total Deficiencies Resolved<sup>2</sup></b>	<b>2017 Resolved (%)<sup>3</sup></b>	<b>2018 Resolved (%)</b>	<b>MREFPP Replacement Scheduled</b>
<i>Johnson Addition</i>	50	9	24	18	2018-2020
<i>Brooks Addition</i>	46	9	24	20	2024-2027
<i>Country Club Acres/Robinwood Estates</i>	125	15	8	13	2024-2027
<i>Talbotts Nursery</i>	31	4	20	13	2031-2032
<i>Kings Court/Rostad Addition<sup>4</sup></i>	58	4	9	7	2032-2034
<i>Tierrecita Vallejo</i>	20	1	6	6	2019-2022

1-Repeating deficiencies are counted as single deficiencies. Monitor or Typical Conditions were excluded from total.

2-Corrective Action has been taken or the deficiency was no longer observed or noted as deficient.

3-Resolved percentages do not include newly observed deficiencies from that inspection year.

4-Kings Court/Rostads Addition Encroachment/Obstruction Documentation Project is on-going. Additional deficiencies should be resolved prior to 2019 USACE Annual Inspections.

### 3.1.1.1 Maintenance Activities

Procedures and activities that are specifically identified in the O&M Plan for each levee system is considered a Maintenance Activity. In addition, deficiencies that require repeated attention and care were categorized as maintenance. Due to the similarities of the various maintenance activities, cost savings and effort efficiencies will be realized by combining all maintenance activities for the six (6) Ward County Levee Systems. A revised Levee System Maintenance Cost Estimate was generated for the WCWRD's and the SRJB's use and is included below.

**Table A2-2 Levee System Maintenance (Revised 4/19)**

<b>Item</b>	<b>Maintenance Item</b>	<b>First Year Cost*</b>	<b>Annual Costs*</b>
1	Levee Mowing/Riprap Weed Spraying	\$50,000	\$50,000
2	Pump Megger Testing	\$3,000	\$1,500
3	Culvert/Structure Televising & Jetting	\$70,000	\$15,000
4	Pump Station Mechanical Repairs	\$10,000	\$10,000
5	Piping/Valve Corrosion Removal and Painting	\$6,000	\$2,500
6	Reseed or Sod Bare Grass Areas	\$15,000	\$7,000
7	Project Inspection/Training	\$10,000	\$8,000
8	O&M Log Production	\$6,000	\$1,000
	<b>Totals</b>	<b>\$170,000</b>	<b>\$95,000</b>

\*-all costs in 2019 dollars (actual budgeted costs will need to be adjusted annually)

## Vegetation Management

Levee mowing and some woody vegetation removal was conducted throughout the Ward County levee systems. The northern portion of the Talbott's Nursery levee system did not appear to have been mowed during the growing season. Some grassed levee tops and crowns within the levee systems appeared to have been sprayed during vegetation management operations (these areas are noted within the 2017 USACE Levee Inspections).

*In 2018, DL Barkie Construction of West Fargo was awarded the non-pump related levee maintenance by Ward County Water Resource District which primarily consists of vegetation management. No contract or scope of services related to this work was provided by WCWRD.*

## Pump Megger Testing

*Ward County levee system pumps were megger tested in November 2017 by Burlington Electric (see Appendix A-1, 2017 Annual SWIF Progress Report, Appendix A). Ward County system pumps will be due for retesting in late 2019.*

## Pump Maintenance & Flap and Gate Valve Operational Testing

WCWRD maintenance staff (Clint Cogdill) conducted the following maintenance tasks during 2017:

- Install pumps;
- Check pumps;
- Refueling pumps;
- Repair pumps;
- Replaced storm sewer manhole;
- Open and close gate valve and river closures at Tierrecita Vallejo; and
- Open all locks on pump stations and drainage structures (for pipe televising project).

These activities are documented in Appendix A2-1, 2017 Annual SWIF Progress Report, Appendix B.

WCWRD contracted with Clint Cogdill to perform the following maintenance tasks during 2018:

- Install pumps;
- Check pumps;
- Refueling pumps;
- Repair pumps;
- Open and close gate valve and river closures at Tierrecita Vallejo; and
- Open all locks on pump stations and drainage structures (for pipe televising project).

The contract for Clint’s services is in Appendix A2-2, Ward County Systems Pump Maintenance Contract.

**Culvert/Structure Televising**

The Souris River Joint Board (SRJB) and WCWRD contracted with Pace, a pipe inspection contractor, to conduct video inspection services of 13,000 LF of culverts and discharge pipes within the existing levee systems’ (Mouse River Park, Burlington to Minot systems, Sawyer, and Velva) drainage infrastructure. This work was conducted during the fall of 2017. Some of the remaining culverts will be televised in the spring. Houston Engineering has been managing this work for both the levee systems within Minot and Ward County.

The report is included in Appendix A2-1, 2017 Annual SWIF Progress Report, Appendix C.

**Project Structure Maintenance Repair**

Project structure locks were to be replaced after WCWRD’s April 2017 meeting.

(Excerpt from April WCWRD meeting minutes):

Maintenance of pump stations between Burlington & Minot: An investigation resulting from complaints from area residents showed that pumps were not in place and not operating, and the lift stations were not locked. Foley made a motion authorizing the Chairman to purchase new locks for the lift stations for the Souris River Flood Control Project between Burlington and Minot. Peterson seconded the motion. The motion carried unanimously.

Most of the structures were unlocked during the USACE inspections conducted in September 2017.

*Some structures had their locks cut and removed during the 2018 USACE levee inspection (see Table A2-3 below). These deficiencies, along with installing Operations & Maintenance Manuals & Training Logs, will be addressed by the WCWRD in 2019.*

**Table A2-3 – Gatewell Security Inspection Items**

<b>Inspect_Id</b>	<b>Remarks</b>	<b>Action</b>	<b>Rating</b>
USACE_CEMVP_BMKC_2018_a_0028	Locks on fence around gatewell cut. Lock on gatewell latch missing.	Replace locks on fence and gatewell latch	Unacceptable
USACE_CEMVP_BMBN_2018_a_0032	Unable to observe slide gates within gate well. Point placed for future inspections.	Coordinate opening fence and locking mechanisms around gate well structure with Corps inspection	Unacceptable
USACE_CEMVP_BMTN_2018_a_0015	The chainlink fence and grate to enter the lift station is not secured.	Replace lock if necessary; secure fence and grate	Unacceptable

Additional information related to the local maintenance sponsor's existing system maintenance and other activities can be found by reviewing the Ward County Water Resource District Board's Meeting Minutes located in Appendix A2-2.

Due to the similarities of the various maintenance activities, cost savings and effort efficiencies can be realized by combining all maintenance activities for the six (6) Ward County Levee Systems. Some maintenance activities are required on an annual basis while some are required less frequently. In instances where maintenance activities are less frequent, the completion or funding of these activities have been pro-rated throughout the entire timeframe for all six (6) Ward County Levee Systems.

### **3.1.1.2 Capital Improvement Projects (CIP)**

The proposed CIPs include projects that involve engineering design and/or a contractor to correct. CIP tasks were grouped together into projects within each levee system. CIPs of a similar nature (bank and slope repair and restoration) were also consolidated into larger projects to realize efficiencies. The schedule for implementation of each CIP is based on the highest risk rating associated with a single deficiency, meaning that the highest risk deficiencies will be addressed first. Cost estimates have been generated for addressing these deficiencies and presented to the WCWRD and the SRJB for review and are included in Appendix A, Section A.5 – A.10.

The Ward County Water Resource District completed CIP Project BMCC-01 between 2016 (Design) and 2017/2018 construction seasons. Project related documents can be reviewed in Appendix A2-1, 2017 Annual SWIF Progress Report, Appendix E – Mouse River Robinwood Bank Stabilization.

Additional SWIF CIP projects are planned for the coming years. Table A.4-3, 20 Year Cost Loaded Schedule, on the following page, notes the proposed SWIF CIP project timeline.



**Table A.4-3 20-Year Cost Loaded Schedule**

		Burlington to Minot Mouse River Implementation Timeframe (4) (5)																		
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
<b>Ordinary O&amp;M - Burlington to Minot (\$Million) (1)</b>		\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08		
Additional Maintenance Subtotal (\$Million) (1)		\$0.06																		
Interim Risk Reduction Measures (\$Million) (1)		\$0.25																		
SWIF Actions (Burlington to Minot)	Capital Improvement Projects	Johnson Addition	BMBN-01	BMBN-02	BMBN-03 (3)	BMBN-04 (3)	BMBN-05 (3)													
		Brooks Addition		BMBA-01	BMBA-02															
		Country Club Acres		BMCC-02	BMCC-03	BMCC-04														
		Talbott's			BMTN-01	BMTN-02	BMTN-03	BMTN-04												
		King's Court	BMKC-01	BMKC-02																
		Tierrecita Vallejo			BMTV-01 (3)	BMTV-02 (3)	BMTV-03 (3)													
		CIP Subtotal (\$Million) (1)	\$0.09	\$0.65	\$0.07	\$0.45	\$0.37													
		SWIF Actions (Burlington to Minot)	Encroachments (6) (7) (8) (9)	All Systems	Inventory															
					Encroachments															
				Johnson Addition	Type A Obstructions (3)															
	Type B Obstructions (3)																			
Brooks Addition	Type A Obstructions			Type B Obstructions (3)																
Country Club Acres	Type A Obstructions			Type B Obstructions(3)																
Talbott's	Type A Obstructions			Type B Obstructions (3)																
King's Court	Type A Obstructions			Type B Obstructions (3)																
Tierrecita Vallejo	Type A Obstructions (3)		Type B Obstructions (3)																	
Encroachment Subtotal (\$Million) (2)	\$0.05	\$0.05	\$0.05	\$0.05	\$ 0.05	\$ 0.05														
MREFPP Actions (Burlington to Minot)	Burlington	Burlington																		
	Tierrecita Vallejo	Tierrecita Vallejo																		
	Varden (10)						Varden													
	King's Court														King's Court					
	Talbott's													Talbott's						
	MREFPP Subtotal (\$Million) (1)	\$8.90	\$21.40	\$15.70	\$3.40	\$0.00	\$3.00	\$3.00	\$6.00	\$6.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3.50	\$5.20	\$11.90			

**Notes:**

- (1) Preliminary opinions of cost are based on the feasibility level of design for the project scope at this time. Costs will require adjustment as the scope of work is further defined. All costs are presented in 2015 dollars.
- (2) An annual allowance of \$50,000 has been included for addressing encroachments not addressed by the MREFPP.
- (3) SWIF action will be completed concurrently with adjacent MREFPP action.
- (4) The implementation schedules shown for each activity include the timeframe anticipated for planning, engineering, design and construction, as applicable.
- (5) Implementation schedules for the MREFPP actions will be adjusted based on detailed design and appropriation of funds.
- (6) The encroachment/obstruction inventory will determine the classification of encroachments or obstructions throughout the existing federal project from Burlington to Minot.
- (7) Encroachments are those encroachment deficiencies that are not permitted or documented and are within recorded easements for the existing federal project.
- (8) Type A Obstructions are those deficiencies that are not permitted or documented and are not within recorded easements for the existing federal project.
- (9) Type B Obstructions are those deficiencies that are permitted or documented.
- (10) The Varden segment of the MREFPP is intended to modify and consolidate the Brooks Addition and Country Club Acres segments of the existing federal project.

**Action Legend:**

- Urgent and Compelling SWIF CIP Action
- Urgent SWIF CIP Action
- High Priority SWIF CIP Action
- Priority SWIF CIP Action
- Normal SWIF CIP Action
- SWIF Encroachment Action
- MREFPP Action

HDR Engineering was contracted by the Ward County Water Resource District Board to conduct a Levee Inspection Assessment of the Kings Court and Sawyer levee systems. Their assessment can be reviewed in Appendix A2-2, 2018 HDR Kings Court/Sawyer Levee Inspection Assessment Memo.

### **3.1.1.3 Encroachments/Obstructions**

Several encroachments/obstructions have been documented on the levee systems. Encroachments include alterations or additions within the levee prism or recorded project easement. In several instances, the recorded easements for the project do not correspond with the easements identified in the as-built plans for the project. In general, the recorded easements are smaller in size than those identified on the as-built plans, meaning that many of the "encroachments" are on property that is not properly encumbered to prevent or enforce encroachments. Therefore, those deficiencies identified by the USACE as encroachments, but were agreed to by the USACE and project sponsor during the implementation of the existing federal project or are located outside of the recorded project easement are considered obstructions. To systematically address encroachments/obstructions, an encroachment/obstruction inventory will be completed by examining the property and project records along the existing federal projects.

During the encroachment/obstruction inventory, those encroachments/obstructions which present imminent threats to life safety will be prioritized and addressed by the sponsor in the most expeditious legal manner available. Life safety threats will be addressed by the sponsor through existing legal authorities, whereas those encroachments that do not pose an imminent threat to life safety will be addressed as outlined in SWIF Appendix A, Section A.1.

During the implementation of the SWIF, the WCWRD will incorporate funding the various portions of the SWIF into the budgeting cycle. A SWIF budget breakdown can be found in SWIF Appendix A, Section A.4. The rough estimated total cost for the rectification work is \$4.5 million. Annual spending on SWIF related CIP's is anticipated to be between \$500,000 and \$600,000. Maintenance spending is estimated to be between \$80,000 and \$140,000 annually. Any shortfall of funding to complete rectification work will be obtained from future WCWRD budget cycles or the MREFPP funding.

Details regarding the plan to rectify existing deficiencies, administer a maintenance program, and implement the MREFPP are in SWIF Appendix A, Section A.1. Project timing and funding may delay official corrective actions of all identified deficiencies in the Ward County Levee Systems.

### *2019 Interim SWIF Updates:*

*Beginning in 2017, WCWRD's legal counsel, McGee, Hankla, Backes, P.C., began the effort to document all the encroachments and obstructions along the Ward County levee systems. Encroachment and obstruction Information from previous USACE levee inspections was provided to McGee, Hankla, Backes in October 2017.*

*Early in 2019, letters were sent out to landowners adjacent to two Ward County levee systems (Kings Court/Rostads Addition and Sawyer East) that Ackerman Surveying would be staking the existing systems easement bounds. A sample of the notification letter is in Appendix A2-2. Additional email correspondence discussing encroachment progress with WCWRD's legal counsel is also in Appendix A2-2.*

#### **3.1.1.4 Interim Maintenance Standards (IMS)**

Project timing and funding availability to correct noted deficiencies require the need for Interim Maintenance Standards (IMS). Levee system IMS will provide specific guidance regarding deferred, deficiency repairs. Repairs were prioritized based on life and safety risk, project risk, availability of funding/budgetary constraints, and availability of qualified contractors to perform the repairs. The purpose for IMS are to prevent further degradation and deterioration of the levee systems, as well as preserve life and safety, though proactive monitoring of deficiencies and taking necessary corrective actions. Deficiencies, which over time would create the need for an increased repair scope or threaten the primary functionality of the levee, will be addressed as soon as reasonable.

Information specific to the IMS for the Ward County Systems and Minot Systems is within SWIF Appendix A, Section A.2 and Appendix B, Section B.4, respectively.

A set of Interim Maintenance Standards (IMS) have been prepared to prevent further degradation and deterioration of the levee systems due to a delayed deficiency remediation action. Details regarding the proposed IMS are in SWIF Appendix A, Section A.2. Their labels are consistent with their original location in SWIF Appendix A, Section A.2.

#### **A.2.1 Inspections**

Ackerman-Estvold, representing the SRJB, conducted an IMS inspections concurrent with the 2017 & 2018 USACE annual inspections. Deficiencies listed in the 2016 USACE inspection reports will be used as a benchmark for future IMS inspections with the full SWIF inspection schedule commencing Spring 2019.

### A.2.2 Woody Vegetation

SRJB plans to address woody vegetation management by including tree removal in all planned levee system capital improvement projects. Areas with 2016 USACE annual inspection-identified woody vegetation deficiencies that are not included in planned 2019 CIP projects will be evaluated (per SWIF Appendix A, Section A.2.2 - IMS for Woody Vegetation) concurrent with the first 2019 IMS inspection.

### A.2.3 Erosion Issues

Currently, the CIPs addressing project-related erosion deficiencies are planned to be completed within four (4) years. If the further degradation of the deficiency results in exposure of the levee prism to the elements, the project's current schedule will be revised accordingly.

### A.2.4 Levee Slope/Profile Issues

Currently, the CIPs addressing levee slope and profile deficiencies are planned to be completed within five (5) years. If the further degradation of the deficiency results in exposure of the levee prism to the elements, the CIP's current schedule will be revised accordingly.

### A.2.5 Interior Drainage Issues

Currently, the CIPs addressing interior deficiencies are planned to be completed within four (4) years. If the further degradation of the deficiency results in a reduced capacity of the interior drainage system, the CIP's current schedule will be revised accordingly.

### A.2.6 Insufficient Sod Cover Issues

Currently, the CIPs addressing sod cover deficiencies are planned to be completed within five (5) years. If the further degradation of the deficiency results in an increase in erosion of the levee system, the CIP's current schedule will be revised accordingly.

### A.2.7 Structure Obstruction Issues (sediment and vegetation)

Currently, the CIPs addressing these obstruction deficiencies are planned to be completed within four (4) years. If the further degradation of the deficiency results in a reduced capacity of the interior drainage system, the CIP's current schedule will be revised accordingly.

### A.2.8 Discontinuous Levee Issues (emergency embankment tie-in)

Tierrecita Vallejo's existing levee system ties back to an older emergency levee. It is anticipated that this deficiency will be resolved within three (3) years when the Mouse River Enhanced Flood Protection Plan (MREFPP) project elements for Tierrecita are constructed.

### A.2.9 Channel Control Structure Issues

Two channel control structures (one at Talbotts and one at Tierrecita Vallejo) are planned to be addressed by MREFPP within seven (7) years. If the further degradation of the deficiency results

in a reduced capacity of the riverine system, the CIP's current schedule will be revised accordingly.

#### A.2.10 Maintenance

See Section 3.1.1.1 for annual maintenance performed.

#### A.2.11 CIP

The project sponsors will complete a series of Capital Improvement Projects (CIP) to address 64 deficiencies that were documented during the 2014 USACE inspection of the Ward County Levee Systems. These CIPs will be completed over the course of eight (8) years. Since these deficiencies are expected to remain until a CIP is finished, an IMS will need to be utilized that is specific to the nature of the deficiency.

See SWIF Appendix A for more information on planned CIP projects. Some planned SWIF CIP will be resolved by elements of the MREFPP (see Section 3.2).

#### A.2.12 Encroachments/Obstructions

McGee, Hankla & Backes, PC, WCWRD attorney, requested encroachment/obstructions deficiency and property owner information from Ackerman-Estvold in October 2017. They have been contacted to determine if any correspondence has been issued to the owners of identified encroachments/obstructions. The three (3) types of encroachments/obstructions described in SWIF Section A.1.2 will be addressed over the course of many years. If the further degradation of the structural integrity of the levee system is identified during the monitoring period, the project sponsors will accelerate the remedial actions planned. In addition, during the creation of the EAP, the existence and retention of these encroachments/obstructions will be noted, and emergency actions will be planned accounting for these deficiencies.

Research related to encroachments and obstructions continued during 2018. Easements in the Kings Court subdivision have been staked (completed February 2019), WCWRD has notified the property owners of the surveying effort. They will follow up with landowners with survey verified encroachments requiring the removal of encroachments. The Sawyer levees are planned for similar easement staking in March or April 2019 depending on weather conditions.

Documentation related to these activities is in Appendix A2-2.

#### **3.1.1.5 Interim Risk Reduction Measures (IRRM)**

In addition, IMS will be utilized in conjunction with the Interim Risk Reduction Measures Plan (IRRMP) to provide a basis for interim actions and standards for the sponsor to follow while the IRRMP is implemented.

A series of Interim Risk Reduction Measures (IRRM) will be utilized to reduce the inundation risk posed by the Ward County Levee Systems. Both nonstructural and structural IRRM alternatives were considered. These include the development of a flood-specific emergency action plan (EAP) to inform community leaders regarding the actions necessary during an emergency to prevent loss of life. A flood-specific emergency action plan will outline the actions needed for differing levels of floodwaters. The project sponsors intend to execute the nonstructural IRRM alternatives throughout the SWIF and the design life of the MREFPP and the Federal Project. Information regarding IRRM Alternatives considered is in SWIF Section 8.0 and details regarding the IRRM Alternatives implemented in Ward County is in SWIF Appendix A, Section A.3.

This section contains recommended Structural and Nonstructural Interim Risk Reduction Measures (IRRM) for the WCWRD Sponsored Levee Systems (Johnson, Brooks, Country Club, Tierrecita Vallejo, and Talbotts Nursery). Additional information about to the overall IRRMP can be found in SWIF Section 8.0.

#### A.3.1 Recommended Nonstructural IRRMs

The Potential Nonstructural IRRM Alternatives listed in SWIF Section 8.4 were considered and the following section provides project specific details on the recommended application of these IRRMs for the WCWRD Sponsored Levee Systems.

##### Nonstructural IRRM 1 (NS1) - Develop Emergency Action Plan

*The SRJB contracted Ackerman-Estvold to develop a Mouse River County-wide flood specific Emergency Action Plan (EAP) based on the Emergency Action Plan Guidebook (USACE Silver Jackets, 2015). Funding for the development of the EAP is in the process of being secured by the SRJB through a cost-share agreement with the NDSWC. The completed Ward County Flood-Specific Emergency Action Plan (EAP) was delivered to Ward County Emergency Management for final approval through the various stakeholder agencies and departments in April 2019.*

The EAP addresses who, what, when, where and how the flood warning and emergency responses will be executed, flood warning procedures, emergency notification, evacuation routes, trigger elevations, monitoring, detection and flood fighting. In addition, the EAP will incorporate other IRRMs (Nonstructural and Structural). The EAP also serves as an EOP (Emergency Operation Plan) to identify structural protection actions that need to be implemented at different trigger elevations (i.e. closure outfall gates, installation of emergency closure, etc.).

##### Nonstructural IRRM 2 (NS2) - Conduct Additional Engineering Investigations and Analysis

This IRRM will involve inspection and documentation of all the outlet pipes located through along the levee alignment (both existing and emergency alignments). This will involve a combination of visual inspections on larger pipe and televising of smaller culverts. During these

inspections, the general pipe condition, material type, closure structure device, and elevations will be recorded. This information will be utilized to determine the need for future repairs, replacements, and/or other modifications. The tasks for the actual modifications is included in the *Structural IRRM (S1) for Discharge Pipe Outlets*.

*The Souris River Joint Board (SRJB) and WCWRD contracted with Pace, a pipe inspection contractor, to conduct video inspection services of 13,000 LF of culverts and discharge pipes within the existing levee systems' (Mouse River Park, Burlington to Minot systems, Sawyer, and Velva) drainage infrastructure. This work was conducted during the fall of 2017. Some of the remaining culverts will be televised in the spring. Houston Engineering has been managing this work for both the levee systems within Minot and Ward County.*

*An updated version (December 2018) of the final Ward County Levee System's Inspection Report has been included in Appendix A2-1, 2017 Annual SWIF Progress Report, Appendix C.*

Any pipe outlet modifications will be designed as CIP tasks. In future annual reports, these pipe improvements will be included in the *Structural IRRM (S1) for Discharge Pipe Outlets*.

#### Nonstructural IRRM 3 (NS3) - Planning for Installation of Emergency Closures and Triggers

This IRRM will involve improving the planning for installation of the emergency closures along all the Ward County Levee System alignments. Following the 2011 flood, an effort was undertaken by the USACE and NDSWC to develop water surface and levee profile data to help the communities within the Mouse River Basin to be better prepared for emergency actions during future floods. Discharges on the Mouse River between 5,000 and 15,000 cfs were simulated and profiles were prepared to illustrate the impacts of flooding on the levee alignment. A copy of the report associated with this effort will be included in the final EAP, in Appendix A, Section A.11.

Using this information, required emergency embankment volumes needed at each flood profile have also been calculated. This information will help the WCWRD to better identify the location of required resources during future flooding events.

*This information is included in the Ward County Flood Specific EAP, including quantities of fill and/or sandbags to construct road closures or emergency levee raises, along with proposed borrow areas. A Ward County Flood-Specific EAP table top exercise was conducted by Ward County Emergency Management in February 2019.*

#### Nonstructural IRRM 4 (NS4) - Pre-position Emergency Supply Materials

Pre-positioning of emergency levee embankment at all required locations along the Mouse River is not feasible. However, this IRRM will involve the identification of appropriate emergency

material sources and obtaining agreements on the terms and conditions of usage so that appropriate material is available during future flood emergencies for transporting to the required locations.

*The Ward County Flood-Specific EAP addresses quantities of fill and/or sandbags to construct road closures or emergency levee raises, along with proposed borrow areas. The Ward County Emergency Operations Plan states that the Ward County Emergency Management Office will request price quotes from various suppliers annually. This cost information is available at the Ward County Emergency Management Office.*

#### Nonstructural IRRM 5 (NS5) - Review and Document Existing Project R/W

This IRRM will involve researching and reviewing existing R/W documents to allow the development of detailed maps of the existing project R/Ws. This will involve review of all recorded easement documents for tracts of property along the project corridors. Having accurate R/W limits will assist the city in determining future repair options and for future flood fight planning.

*As discuss previously in IMS A2.12 Encroachments/Obstructions, in order to determine encroachment/obstruction category, McGee, Hankla & Backes, PC, WCWRD attorney, requested encroachment/obstructions deficiency and property owner information from Ackerman-Estvold. All three (3) types of encroachments/obstructions described in Section A.1.2 will be addressed over the course of many years. If the further degradation of the structural integrity of the levee system is identified during the monitoring period, the project sponsors will accelerate the remedial actions planned. In addition, during the creation of the EAP, the existence and retention of these encroachments/obstructions will be noted, and emergency actions will be planned accounting for these deficiencies.*

*Research related to encroachments and obstructions continued during 2018. Easements in the Kings Court subdivision have been staked (completed February 2019), WCWRD has notified the property owners of the surveying effort. They will follow up with landowners with survey verified encroachments requiring the removal of encroachments. The Sawyer levees are planned for similar easement staking in March or April 2019 depending on weather conditions.*

Documentation related to these activities is in Appendix A2-2.

#### Nonstructural IRRM 6 (NS6) - Communication Plan

This IRRM will create and implement a communication plan to actively advise people about the levee condition and potential inundation risk. This communication plan will also include information about flood insurance, flood risk, floodplain management, and evacuation.



*Details of the Communication Plan are also provided in Appendix A2-1, 2017 Annual SWIF Progress Report - Appendix D.*

### A.3.2 Recommended Structural IRRMs

The Potential Structural IRRM Alternatives listed in SWIF Section 8.5 were considered and the following section provides project specific details on the recommended application of these IRRMs for the Ward County Levee Systems.

#### Structural IRRM 1 (S1) - Outlet Pipe Modifications

This IRRM will involve completing necessary field modifications based on the finding of *Non-Structural IRRM (NS2) - Conduct Additional Engineering Investigations and Analysis – Outlet Pipes*.

It is anticipated that this IRRM will involve repair/replacement of outlet pipes that show deterioration and/or have significant leakage. This will also involve modification to outlet pipe closure devices that do not open or close and/or have operators that do not function. Where required for flood risk management, closure devices will be installed on pipes that don't currently have them.

*Utilizing the 2018 pipe inspection report, the SRJB and WCWRD will determine what outlet pipe modifications are necessary and include them in future CIP or maintenance activity projects.*

#### Structural IRRM 2 (S2) - Address Encroachments/Obstructions

As part of *Nonstructural IRRM 5 (NS5) - Review and Document Existing Projects R/Ws*, detailed maps of the existing projects R/Ws will be developed.

Under this IRRM, the encroachments and obstructions will be addressed using the following phased approach.

- Phase 1 will involve marking the R/W limits from NS5 in the field and identifying whether the encroachments/obstructions are within or outside the existing R/W. Encroachments and obstructions will then be categorized as follows:
  - Encroachment – An Encroachment is an addition or alteration that has not been permitted or approved by the USACE or the sponsor and is located within the existing recorded R/W.
  - Type A Obstruction – A Type A Obstruction is an obstruction that has not been permitted or approved by the USACE or the sponsor and is located outside of existing recorded R/W.
  - Type B Obstruction – A Type B Obstruction is an obstruction that has been previously permitted or approved by the USACE or the sponsor. In many instances, these obstructions are indicated on the USACE as-builts for the project.

- Phase 2 will involve developing plans to address encroachments and obstructions identified in Phase 1. Encroachments will be relatively easy to remedy and will be addresses immediately. Type A and Type B obstructions will be more difficult to remedy as they are either outside of an existing recorded easement or were previously permitted by the USACE or the sponsor. Encroachments and obstructions will be prioritized based on risk. Encroachments or obstructions that impede emergency operations and encroachments or obstructions that have the potential to increase seepage will be given the highest priority. Where possible, the sponsor will work towards acquiring additional R/W that will allow them to remove the encroachments and obstructions that are determined to be high risk.
- Phase 3 will involve removing as many of the existing encroachments and obstructions identified in Phase 2 as possible.

*IMS A2.12 describes current progress on addressing the existing encroachments and obstructions in the Ward County systems.*

#### Structural IRRM 3 (S3) - Address Unwanted Vegetation

As part of *Nonstructural IRRM 5 (NS5) - Review and Document Existing Project R/W* detailed maps of the existing project R/W will be developed.

Under this IRRM, the Unwanted Vegetation Growth will be addressed using the approach detailed in SWIF Section A.2.3.

*Woody vegetation removal in areas to be addressed by CIP projects will be included in the scope of the bid advertisements. In addition, woody vegetation will be inspected annually during the IMS levee inspection process. All remaining woody vegetation will be assigned a tree hazard rating (see SWIF Table A.8, Section A.2.3). Trees with a combined hazard rating of 5 or less may be left until the next annual inspection. This process will be repeated annually until all woody vegetation is removed from the vegetation-free zone (VFZ).*

#### Structural IRRM 4 (S4) - Increase Erosion Protection at Waterside Toe Where Necessary

This IRRM will involve installing additional erosion protection in areas where current channel erosion poses a threat to the levee system. The addition of added erosion protection under this IRRM will provide added protection until a more permanent solution can be implemented.

A bank stabilization project was completed in 2017 along part of the Country Club Acres/Robinwood levee system. Information regarding that project is available for review in Appendix A2-1, 2017 SWIF Annual Progress Report – Appendix E.

#### Structural IRRM 5 (S5) - Setback Levee Segments and Landside Stability Berms

The WCWRD continues to acquire previously flood impacted property along the Mouse River in various locations. Where feasible, this IRRM will involve construction of setback levee segments

or landside stability-berms to strengthen weak areas of the levee system that are currently considered deficient as a result of erosion, stability, unwanted vegetation, or other criteria.

*No setback levee segment or landside stability berm projects were initiated in 2017 or 2018.*

*Current progress on these IRRMs is shown on Table A.4-4 Ward County Levee Systems IRRM Schedule and Cost Table below.*

**Table A.4-4 Ward County Levee Systems IRRM Schedule and Cost Table (Revised 2019)**

Interim Risk Reduction Measure	IRRM Code	Initiation Date <sup>5</sup>	Implementation or Completion Date <sup>1</sup>	Estimated Cost
<b>Nonstructural Interim Risk Reduction Measures</b>				
Develop Emergency Action Plan	NS1	Dec 2017	Complete April 2019	\$100,000
Conduct Additional Engineering Investigations & Analysis - Outlet Pipes	NS2	May 2017	Complete November 2018	\$75,000
Planning for Installation of Emergency Closures & Triggers	NS3	May 2014	Complete 2014	N/A <sup>2</sup>
Pre-Position Emergency Supply Materials	NS4	Mar 2017	May 2017	\$5,000
Review & Document Existing Project R/W	NS5	Mar 2017	December 2019	\$150,000
Communication Plan	NS6	Mar 2017	Complete December 2017	\$50,000
<b>Structural Interim Risk Reduction Measures</b>				
Outlet Pipe Modifications	S1	Mar 2017	November 2022	TBD <sup>3</sup>
Address Obstructions	S2	Mar 2017	March 2024 <sup>6</sup>	TBD <sup>3</sup>
Address Unwanted Vegetation	S3	April 2016	Annually (completion within 72 months)	TBD <sup>3</sup>
Increase Erosion Protection at Waterside Slope	S4	Dec 2016	August 2023	N/A <sup>4</sup>
Setback Levee Segments & Landside Stability Berms	S5	Mar 2017	August 2023	N/A <sup>4</sup>

<sup>1</sup>Implementation Durations listed for Structural IRRMs have been approximated. Durations are dependent upon results of the Nonstructural IRRMs and may need to be adjusted at a future date.

<sup>2</sup>This work was completed by the USACE

<sup>3</sup>Costs for these items depend on the results of Nonstructural IRRMs

<sup>4</sup>Costs for these items will be included in the Capital Improvement Projects

<sup>5</sup>Initiation Date provided is dependent on funding availability and subject to revision

<sup>6</sup>Type B Obstructions that are planned to be addressed concurrently with the MREFPP are not included

### 3.1.2 Minot Systems Update

The proposed improvements and optimized flood risk reduction plan developed as part of the Original SWIF was prioritized to address the deficiencies which pose the highest risk of loss of life first. This prioritization was based on review of potential inundation in the event of levee failure along with data from the USACE St. Paul District Levee Safety Office in which they outlined their recommended prioritization actions for the Minot Levee System deficiencies. Based on this information along with data obtained during recent field inspections, each deficiency was reviewed and assigned a prioritization action. Table B.3.1-1 from the Original SWIF provided a summary of the prioritized Minot left and right bank levee deficiencies. This table has been reproduced below with a summary of progress made on the prioritized deficiencies.

Prioritization Action Classification <sup>1</sup>	Number of Left Bank Deficiencies	Number of Resolved/In Progress Left Bank Deficiencies	Number of Right Bank Deficiencies	Number of Resolved/In Progress Right Bank Deficiencies
1	-	-	-	-
2	-	-	-	-
3	4	4	13	11
4	19	14	24	6
5	18	11	17	8
6	5	2	-	-
7	13	11	1	1
8	10	4	10	3
9	17	8	7	5
10	1	1	4	2
<b>Total</b>	<b>87</b>	<b>55 (63%)</b>	<b>76</b>	<b>36 (47%)</b>

<sup>1</sup>See Section B.3.1 of Original SWIFF for Prioritization Action Classification Definitions

The Original SWIF then evaluated and grouped the deficiencies into 6 remediation categories; Maintenance, MREFPP Phase 1-3, Minot Water Treatment Plant HMGP Project, Capital Improvement Projects, Encroachments/ Obstructions, and Future MREFPP Phase. The following sections provide a progress updated on the 6 remediation categories.

#### Maintenance Activities

The Original SWIF identified 24 deficiencies within both Minot Levee Systems that could be resolved by routine maintenance activities. The City of Minot has been performing routine maintenance actives on the system. As a result, 21 of the 24 deficiencies identified have either been resolved or are in progress of being resolved. Additional details of the status of these

deficiencies can be found in Figure B.8.10 – Minot Left Bank System Deficiency Table (Updated April 2019) and Figure B.8.11 – Minot Right Bank System Deficiency Table (Updated April 2019) included in Appendix B-1 of this report. Maintenance records were included in the 2017 and 2018 Annual SWIF Progress Reports. These reports have been included in Appendix B-2 of this report for reference.

### **MREFPP Phase 1-3 (MRP 1-3)**

The first 3 phases of the MREFPP are currently under construction and are planned to be completed in 2020. The Original SWIF identified 24 deficiencies located within the proposed limits of these phases. As a result of these projects, 21 of the 24 deficiencies identified have been resolved. Additional details of the status of these deficiencies can be found in Figure B.8.10 – Minot Left Bank System Deficiency Table (Updated April 2019) and Figure B.8.11 – Minot Right Bank System Deficiency Table (Updated April 2019) included in Appendix B-1 of this report.

### **Minot Water Treatment Plant HMGP Project (HMGP)**

A project to provide flood protection for the Minot Water Treatment Plant's critical infrastructure began construction in 2016 and was completed in 2017. The Original SWIF identified 4 deficiencies located within the proposed limits of this project. As a result of this project, all 4 deficiencies have been resolved. Additional details of the status of these deficiencies can be found in Figure B.8.10 – Minot Left Bank System Deficiency Table (Updated April 2019) and Figure B.8.11 – Minot Right Bank System Deficiency Table (Updated April 2019) included in Appendix B-1 of this report.

### **Capital Improvement Projects (CIP)**

The Original SWIF outlined a series of Capital Improvement Project as a method of resolving higher priority deficiencies located in areas that did not need to wait for the completion of Nonstructural IRRM 5 (NS5) – Review and Document Existing Project R/W. There were 45 deficiencies that fell into this category in the Original SWIF. Over the past 3 years the City of Minot completed 3 CIPs. These were identified as SWIF Action A, SWIF Action B, and SWIF Action C. SWIF Action A was a bank stabilization project, SWIF Action B was a pipe televising project, and SWIF Action C was a bank stabilization, tree removal, and levee project. A 4<sup>th</sup> CIP, SWIF Action D, has been bid and began construction in the fall of 2018. SWIF Action D is an outfall pipe rehabilitation project and incorporates pipes identified as being deficient during the SWIF Action B project. As a result of these CIPs, 32 of the 45 deficiencies identified under this category in the Original SWIF have either been resolved or are in progress. Record drawings of the 3 completed CIP projects and bid documents for SWIF Action D were included in the 2017

and 2018 Annual SWIF Progress Reports. These reports have been included in Appendix B-2 of this report for reference.

The City is currently developing a SWIF CIP project for 2019 to address additional bank stabilization, tree, and pipe deficiencies. Table B.6-2 20 Year Cost Loaded Schedule (Updated April 2019), on the following page, notes the proposed SWIF CIP project timeline. Additional SWIF CIP projects may be necessary to address encroachments/obstructions but the timing of these is dependent upon securing adequate project R/W to resolve these deficiencies. Progress on these items will be reported in the Annually SWIF Progress Reports.

Table B.6-2 20-Year Cost Loaded Schedule (Updated April 2019)

		Minot Levee Systems Implementation Timeframe (6) (7)																				
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
<b>Ordinary O&amp;M - Minot Levee Systems (\$Million) (1)</b>		\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	
<b>SWIF Actions (Minot Levee Systems)</b>	Interim Risk Reduction Measures (\$Million) (2)	\$0.29	\$0.09																			
	Capital Improvement Projects																					
	CIP 1	SWIF A																				
	CIP 2		SWIF B																			
	CIP 3		SWIF C																			
	CIP 4			SWIF D																		
	CIP 5				SWIF E																	
	CIP Subtotal (\$Million) (2)	\$0.23	\$1.21	\$2.74	\$2.00																	
	Inventory Obstructions (8) (Nonstructural IRRM 5 (NS5))					Area 1																
	Address Encroachments / Obstructions (8) (9) (10) (11) (Structural IRRM 2 (S2))						Area 2															
							Encroachments - Area 1															
	Address Unwanted Vegetation (12) (13) (Structural IRRM 3 (S3))							Encroachments - Area 2														
									Type B Obstructions (5)													
	Encroachment/Obstruction Subtotal (\$Million) (3)					\$0.08	\$0.13	\$0.05	\$0.05	\$0.05	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
	Minot WTP HMGP Project	HMGP Project																				
		\$ 14.60	\$ 14.60																			
	MREFPP Phase 1-3			MREFPP Phase 1-3																		
			\$ 40.83	\$ 40.83	\$ 40.83																	
	Current MREFPP Phases Subtotal (\$Million) (4)	\$14.60	\$55.43	\$40.83	\$40.83																	
	Minot - Maple Diversion						Minot - Maple Diversion															
Minot N - Rodeo Road						Minot N - Rodeo Road																
Minot N - Roosevelt Park													Minot N - Roosevelt Park									
Minot S - Roosevelt Park														Minot S - Roosevelt Park								
Minot - 27th Street Diversion																						
Minot N - Valker Road																						
Minot S - Valker Road																						
Minot S - Downtown Floodwalls																						
Minot S - Keller																						
Minot S - Leites Brekke																						
Future MREFPP Phases Subtotal (\$Million) (2)	\$14.60	\$55.43	\$62.15	\$66.15	\$21.32	\$21.32	\$17.32	\$17.32	\$16.30	\$22.90	\$22.90	\$12.10	\$35.73	\$23.63	\$23.63	\$32.43	\$8.80	\$3.35	\$3.35	\$0.00		

Notes:

- (1) Costs for ordinary maintenance items have already been included in the City's annual Public Works budget and will continue to be included in the budget in future years.
- (2) Preliminary opinions of cost are based on the feasibility level of design for the project scope at this time. Costs will require adjustment as the scope of work is further defined. All costs are presented in 2015 dollars.
- (3) Estimated costs for inventory of encroachments/obstructions have been included for 2016 and 2017. Costs to address encroachments/obstructions and unwanted vegetation are dependant on the results of the encroachment/obstruction inventory work.
- (4) Estimated costs for current MREFPP Phases are based on the current project design phase. These costs will required adjustment once the final design is complete for these phases.
- (5) SWIF action will be completed concurrently with adjacent MREFPP action.
- (6) The implementation schedules shown for each activity include the timeframe anticipated for planning, engineering, design and construction, as applicable.
- (7) Implementation schedules for the MREFPP actions will be adjusted based on detailed design and appropriation of funds.
- (8) The encroachment/obstruction inventory will determine the classification of encroachments/obstructions throughout the existing federal project in Minot.
- (9) Encroachments are those encroachments that are not permitted or documented and are within recorded easements for the existing federal project.
- (10) Type A Ostructions are those obstructions that are not within recorded easements for the existing federal project.
- (11) Type B Obstructions are those obstructions that are permitted or documented on the as-built plans.
- (12) Type 1 Vegetation is unwanted vegetation located within recorded easements for the existing federal project.
- (13) Type 2 Vegetation is unwanted vegetation located outside of recorded easements for the existing federal project.
- (14) IRRM Area 1 consists of the area downstream of the 3rd Steet NE bridge. IRRM Area 2 consists of the area upstream of the 3rd Street NE bridge.

Action Legend:

- Capital Improvement Project
- IRRM Area 1 (14)
- IRRM Area 2 (14)
- IRRM Area 1 & 2 (14)
- Current MREFPP Phase
- Future MREFPP Phase

### **Encroachments/Obstructions (ENC/OBS)**

Unwanted vegetation and other encroachments/obstructions adjacent to private property which require verification of existing project R/W were categorized as encroachments/obstructions in the Original SWIF. There were 62 deficiencies that fell into this category in the Original SWIF. As previously stated, resolution of these deficiencies is dependent on accurately identifying the existing project R/W. As outlined in the Minot IRRMs, they City completed a comprehensive review of existing R/W documents to establish the existing recorded project R/W. This review identified several areas where there is insufficient R/W to resolve these deficiencies. As a result, removal of these deficiencies was mainly limited to property owned by the City of Minot and the Minot Park District. Despite these limitations, the City was still able to remove 13 of the 62 deficiencies. The remaining deficiencies will continue to be monitored until sufficient R/W can be acquired to remove the remaining deficiencies. Additional details of the status of these deficiencies can be found in Figure B.8.10 – Minot Left Bank System Deficiency Table (Updated April 2019) and Figure B.8.11 – Minot Right Bank System Deficiency Table (Updated April 2019) included in Appendix B-1 of this report.

### **Future MREFPP Phases (Future MREFPP)**

There were only 4 deficiencies that fell into this category in the Original SWIF. Three of these deficiencies are discontinuous levee sections. After the Minot - Maple Diversion Phase of the MREFPP is complete, these portions of the channel will only be required to pass 5,000 cfs flows. The existing ground at the discontinuous levee sections is currently higher than the planned 5,000 cfs flow and therefore these will no longer be classified as deficiencies. The risks associated with these deficiencies will continue to be mitigated by measures outlined the completed EAP. The forth deficiency in this category is related to channel bank erosion. There are no levees at this location and therefore the bank erosion does not pose an immediate threat to life safety. This deficiency will be resolved by the Minot S - Downtown Floodwalls Phase of the MREFPP.

### **Interim Maintenance Standards (IMS)**

The Original SWIF developed a set of interim maintenance standards to prevent further degradation and deterioration of the levee system until such time that remediation actions are implemented. The City has been conducting levee system inspections both independent of and in cooperation with the USACE. The City will continue to conduct these inspections and other IMS activities outlined in the Original SWIF to ensure unresolved deficiencies to not deteriorate further until they can be resolved.



## Interim Risk Reduction Measures (IRRM)

The Original SWIF developed a set of structural and nonstructural interim risk reduction measures for the Minot Levee Systems designed to mitigate the risk of existing deficiencies until they can be resolved. Additional information about these IRRMs can be found in section B.5 – Interim Risk Reduction Measures Plan (IRRMP) of the Original SWIF. Table B.6-3 Minot Levee Systems IRRM Schedule and Cost Table was included in Section B.6 – Schedule and Milestones of the Original SWIF to outline the proposed schedule for implementing these IRRMs. A revised version of this table that provides the estimated start and completion dates and percent complete as of April 2019 is included below.

### Minot Levee Systems IRRM Schedule and Status Update

Interim Risk Reduction Measure	IRRM Code	Original Estimated Start Date	Original Estimated Completion Date	Revised Estimated Completion Date	% Complete as of April 2019
<b>Nonstructural Interim Risk Reduction Measures</b>					
Develop Emergency Action Plan	NS1	May 2015	May 2016	Completed	100%
Conduct Additional Engineering Investigations & Analysis - Outlet Pipes	NS2	June 2016	June 2017	Completed	100%
Planning for Installation of Emergency Closures & Triggers	NS3	May 2014	Completed Prior to Final SWIF	Completed	100%
Pre-Position Emergency Supply Materials	NS4	May 2016	May 2017	Completed	100%
Review & Document Existing Project R/W	NS5	May 2016	December 2017	April 2021	90%
Communication Plan	NS6	May 2106	May 2017	April 2021	0%
<b>Structural Interim Risk Reduction Measures</b>					
Outlet Pipe Modifications	S1	July 2017	July 2020	July 2021	25%
Address Encroachments/Obstructions	S2	May 2017	May 2020	May 2023	15%
Address Unwanted Vegetation	S3	May 2017	May 2020	May 2023	25%
Increase Erosion Protection at Waterside Slope	S4	May 2017	May 2020	May 2021	50%
Setback Levee Segments & Landside Stability Berms	S5	May 2017	May 2020	May 2021	20%

The City of Minot completed a pipe televising project in 2017 and 2018 to visually inspect outfall pipes along the Minot Levee Systems. The results of the televising project were then reviewed and each outfall pipe was rated as Acceptable, Minimally Acceptable, or Unacceptable. A technical memorandum was completed that provides a summary of the televising project as well as detailed information about each outfall pipe. The technical memorandum has been included in the 2017 Annual SWIF Progress Report which is attached to this report in Appendix B-2.

In 2016 the City hired a consultant to review and document the existing R/W along the Minot levee systems. As part of this review all available R/W documents were reviewed and R/W boundaries were developed. During the review there were several gaps identified in the R/W where easements were either never obtained or not recorded. As a result, the scope of this task has been modified to include obtaining easements for the R/W gaps. Due to the change in scope of this task the estimated completion date has been extended. Since the Structural Interim Risk Reduction Measures listed in the table above are dependent on project R/W, the estimated completion dates of those items have been extended as well. Maps showing the existing system R/W identified to date were included in the 2017 Annual SWIF Progress Report which is attached to this report in Appendix B-2.

A joint SWIF Communication Plan covering the Minot reaches as well as the reaches outside of Minot is planned to be developed jointly with the SRJB. As part of the on-going outreach for in-progress projects and the design of new projects, the City is completing required communications planned in the overall SWIF. The plan outlines using TV interviews, newspapers, online media, and other types of communication to convey information regarding the system. As part of Phases 1-3 of the MREFPP, the consultants hired as Public Relations Coordinators provide information to the public and those effected by the projects with door to door communication, letters, and informational brochures. Also, as part of the City of Minot's participation in FEMA's CRS program for awareness and flood insurance reduction, the City sends out storm water management and flood related information to homeowners within the city. The City will continue to use joint efforts with the CRS program requirements and the SWIF to make homeowners aware of the risks and updated policies regarding safety and levee encroachments. Since the formal Communication Plan is still being developed, the estimated completion date for this IRRM has been extended as noted in the table above.

### **Project Cost Schedule**

SWIF CIP Project cost estimates, along with the planned MREFPP system replacement plan, are noted on Table B.6-2 20 Year Cost Loaded Schedule (Updated April 2019) in this Interim SWIF Report's Capital Improvements Project Section.

## **Project Funding**

Every year the City of Minot Public Works Department advocates for SWIF funding during their annual budgeting process. This funding is used for levee maintenance and CIPs aimed at resolving unacceptable deficiencies. The City also applies for ND State Water Commission (SWC) funding to fund eligible portions of the SWIF CIPs. The City plans to continue advocating for SWIF funding in their annual budget and plans to continue seeking funding assistance from the ND SWC to fulfill its SWIF obligations.

## **Future Deficiency Tracking**

In order to track deficiency resolution status over the next couple years, the unacceptable deficiencies identified in the 2017 USACE Annual Inspection Report will be utilized. Left and Right Bank Deficiency Tracking Tables summarizing the unacceptable deficiencies from the 2017 USACE Annual Inspection Report have been developed and are included in Appendix B-3 of this report. The sponsor will continue to utilize the technics outlined in the Original SWIF to correct unacceptable deficiencies over the next couple years. Progress will be tracked and reported in subsequent Annual SWIF Progress Reports.

## 3.2 Mouse River Enhanced Flood Protection Project (MREFPP) Update

### 2016 SWIF

The MREFPP is a diverse program of initiatives intended to reduce the risk of damage due to flooding for properties throughout the Mouse River valley in North Dakota. The project was initiated by the NDSWC in cooperation with the SRJB and the City of Minot (local agency stakeholders) immediately following the 2011 flood.

The initial focus of the local agency stakeholders was to develop a Preliminary Engineering Report (PER) for the urbanized portions of the valley in North Dakota. The basic criteria adopted by the local agency stakeholders were to design a flood-risk-reduction system to the flood of record (approximately 27,400 cfs) with three feet of freeboard, while limiting social impacts to homes within the valley and water surface profile impacts upstream and downstream of the proposed improvements.

Significant stakeholder involvement was solicited to determine other project constraints which included minimizing property acquisitions, minimizing impacts to existing critical infrastructure, and reducing impacts to key community resources. Through an iterative process that included extensive public input, hydraulic modeling, engineering analysis and design and publication of working drafts of the various alignments, the local agency stakeholders published the PER for the urban reaches of the valley on February 29, 2012.

A series of modifications to the existing levee systems are necessary to (1) accommodate the design flow increase from 5,000 to 27,400 cfs, (2) meet current USACE design criteria to obtain USACE Section 408 permission, and (3) obtain future FEMA accreditation for the flood risk management system. These modifications generally consist of the following: new levee alignments, new gatewell control structures, levee access ramps, improved interior drainage pumping stations, road closure structures, municipal infrastructure improvements, tieback levees, and greenway implementation.

Within the PER, the design calls for approximately 22 miles of levees, 3 miles of floodwalls, 30 transportation closure structures, and 2 high-flow diversions. The features included in the PER were estimated to cost \$820 million, with approximately two-thirds of that cost (\$543 million) associated with improvements within the City of Minot. The PER currently serves as the master plan for flood risk reduction measures within Minot and the surrounding communities. The PER is included on a DVD in Appendix C (2016 SWIF).

## **2019 MREFPP Update**

### *Minot System*

*Minot Milestone 1 which includes the following MREFPP (or MREFPP-related) construction projects, along with their project status: US Highway 83 Bridge (completed), 4<sup>th</sup> Avenue NE Floodwalls (under construction), Forest Road (under construction), Napa Valley (under construction), Maple Diversion (pending Federal funding authorization/appropriation), CP Rail Bridge (in design phase), and Rodeo Road (aka. NE Tieback) (90% design completed).*

### *Ward County MREFPP Progress*

*The SRJB has completed design work on the Burlington – Colton Avenue Bridge (BU-1A). The construction project has been awarded to Swingen Construction of Grand Forks, North Dakota. Design work on the MREFPP Burlington Levee (Phase BU-1) is 99% complete and is expected to be bid in Fall 2019. Design work on the Tierrecita Vallejo Levee (Phase WC-1) is at 60% and is also expected to be out for bids in Fall 2019.*

*A revised Figure 3.1 Mouse River Implementation Strategy – Gantt Chart (Revised 4/2019) is on the following page. Figure 3.1 has been revised to reflect the current MREFPP scheduling plan.*

**Figure 3.1 Mouse River Implementation Strategy - Gantt Chart Revised 4/2019**

		Projected Time Frame (Fiscal Year)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	Reach (System)	Subproject (Segment) Description																				
	Burlington to Minot	Lands and Easements	█	█	█	█	█	█	█	█	█											
	Burlington to Minot	Rural Acquisition / Relocation / Ring Dikes	█	█	█	█	█	█	█	█	█											
Minot Milestone 1	Minot	Hwy 83 Bypass Bridge	█	█	█	█																
	Minot	N - 4th Avenue NE Floodwalls			█	█	█	█														
	Minot	N - Forest Road			█	█	█															
	Minot	N - Napa Valley			█	█	█															
	Minot	CP Rail Bridge				█	█	█	█	█	█											
	Minot	Maple Diversion				█	█	█	█	█	█											
	Minot	N - Rodeo Road					█	█	█	█												
Minot Milestone 2	Minot	Burdick Expressway Bridge										█	█	█								
	Minot	S - Roosevelt Park (Zoo)										█	█	█								
	Minot	S - Valker Road											█	█								
	Minot	S - Downtown Floodwalls										█	█	█								
Minot Milestone 3	Minot	N - Roosevelt Park													█	█						
	Minot	27th Street Diversion														█	█	█	█			
	Minot	N - Valker Road																		█	█	
	Minot	S - Keller																			█	█
Minot	S - Leite Brekke Buyout					█	█															
Burlington	Des Lacs Levees & Floodwalls				█	█	█															
Burlington	Mouse Levees				█	█	█															
Burlington	Colton Avenue Bridge				█	█	█															
Tierracita Vallejo	T.V. Levees						█	█														
Tierracita Vallejo	T.V. Railroad Closure						█	█	█													
Varden	Robinwood/Country Club Acres Levee											█	█									
Varden	Brooks Addition Levee												█	█								
Varden	Varden Club Levee													█	█							
Apple Grove	Apple Grove Levee															█	█					
Eastside Estates	Eastside Estates Levee																	█	█			
Talbotts	Talbotts Levee																		█	█		
Minot	Hwy 2 Bypass Bridge																			█	█	█
Kings Court	Kings Court Levee / Rechannelization																				█	█

1. Prioritization of tasks and subprojects is based on the feasibility level of design for the project scope at this time (April, 2019). Future investigations and detailed design will require adjustments to the proposed timeline. Any schedule slippage in critical path tasks or changes to key assumptions could require modifications to the schedule set forth in the estimated timeline and could require reevaluation of estimated funding.
2. The proposed sequence is based on the assumption that land acquisition is completed for each phased subproject prior to the bidding and construction phases of the subproject.

## **Project Cost Schedule**

SWIF CIP Project cost estimates, along with the planned MREFPP system replacement plan, are noted on Table A.4-3 20-Year Cost Loaded Schedule (Rev. 4/2019) is in Section 3.1.1.2 Capital Improvement Projects.

## **Project Funding**

During the implementation of the SWIF, the WCWRD will incorporate funding the various portions of the SWIF into the budgeting cycle. A SWIF budget breakdown can be found in Appendix A, Section A.4. The rough estimated total cost for the remaining rectification work is \$2.5 million. Two existing levee systems will be replaced in the next two to three years (Johnsons Addition and Tierrecita Vallejo) by MREFPP elements. Annual spending on SWIF related CIP's is anticipated to be between \$100,000 and \$650,000. Maintenance spending is estimated to be between \$95,000 and \$170,000 annually. Any shortfall of funding to complete rectification work will be obtained from future WCWRD budget cycles or the MREFPP funding (as noted in SWIF Section 6.0).

## Appendix A2-1

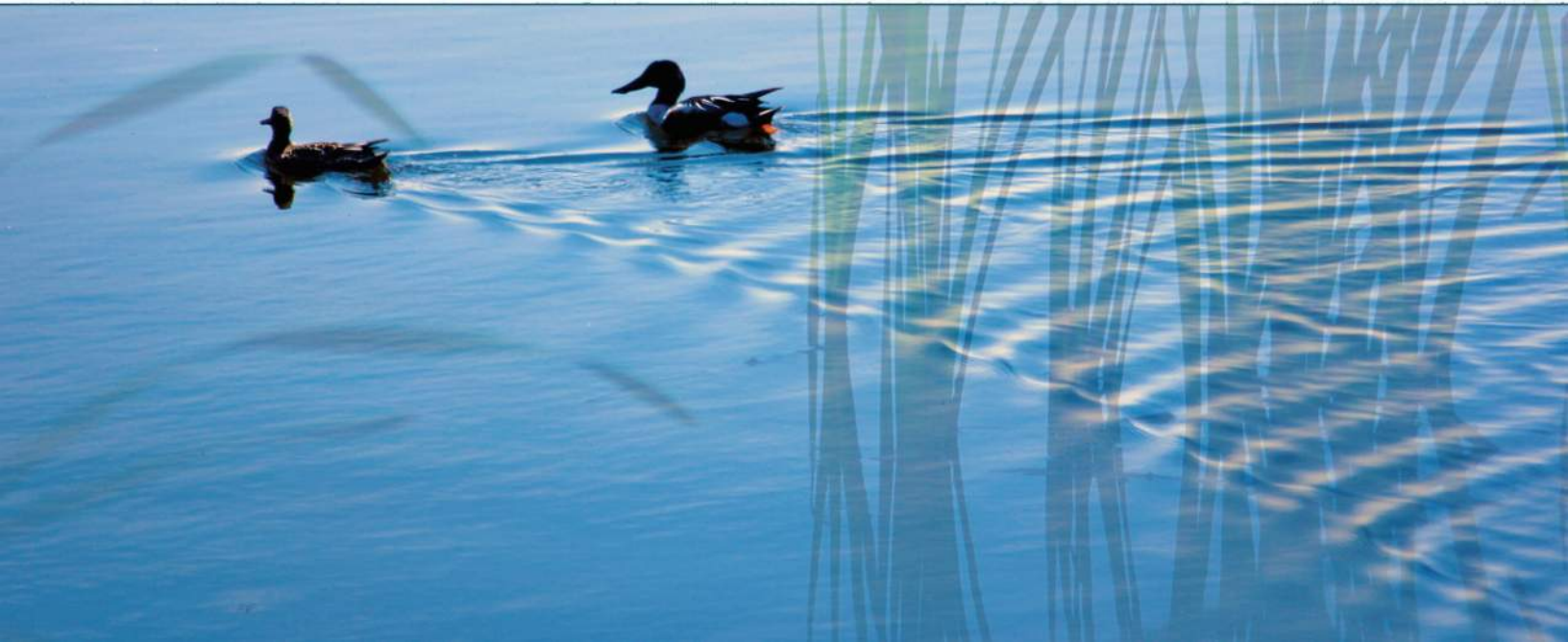
# 2017 Annual SWIF Progress Report – Ward County Levee Systems



FEB2018

# SYSTEM WIDE IMPROVEMENT FRAMEWORK FOR THE SOURIS RIVER BASIN

2017 ANNUAL SWIF PROGRESS REPORT  
WARD COUNTY LEVEE SYSTEMS



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## List of Appendices

- Appendix A System Pump Megger Testing Documentation
- Appendix B System Operational Testing & Maintenance Documentation
- Appendix C Storm Sewer Outfall Investigation
- Appendix D SWIF Communications Plan
- Appendix E Country Club / Robinwood Bank Stabilization CIP Project

## 1.0 Introduction

The Souris River Joint Water Resources Board (SRJB) and the Ward County Water Resources District (WCWRD) are the sponsors for eight (8) levee systems along the Souris (Mouse) River from Burlington, ND through Minot, ND. The SRJB is comprised of one representative from each of the Souris (Mouse) River Basin counties (Bottineau, McHenry, Renville, and Ward) and one representative from the City of Minot. The SRJB is the sponsor for the levee systems located upstream of Minot, ND that include the Johnsons Addition (Johnson); Brooks Addition (Brooks); Country Club Acres, including Robinwood Estates (Country Club); Talbotts Nursery; Kings Court; and Tierrecita Vallejo levee systems. The WCWRD is responsible for operations and maintenance activities associated with the levee systems outside of the City of Minot.

The 2016 Systemwide Improvement Framework (SWIF) for the Souris River Basin document was submitted to the USACE for review and comment in December 2016. The project sponsor has not received final USACE approval for the SWIF document.

The SWIF committed the sponsors to providing USACE with annual reports listing and describing maintenance and capital improvement projects that were initiated and/or completed during the year.

## 2.0 Standard Operations and Maintenance Performed

### Vegetation Management

Levee mowing, riprap spraying, and some woody vegetation removal was conducted throughout the Ward County levee systems. The northern portion of the Talbott's Nursery levee system did not appear to have been mowed during the growing season. Some grassed levee tops and crowns within the levee systems appeared to have been sprayed during vegetation management operations (these areas are noted within the 2017 USACE Levee Inspections). These areas will be reseeded as part of the 2018 levee maintenance cycle.

### Pump Megger Testing

Ward County levee system pumps were megger tested in November 2017 by Burlington Electric (see Appendix A).

### Pump Maintenance & Flap and Gate Valve Operational Testing

WCWRD maintenance staff conducted the following maintenance tasks during 2017:

- Install pumps;
- Check pumps;
- Refueling pumps;
- Repair pumps;
- Replaced storm sewer manhole;
- Open and close gate valve and river closures at Tierrecita Vallejo; and
- Open all locks on pump stations and drainage structures (for pipe televising project).

Notes documenting these activities are included as Appendix B.

### Culvert/Structure Televising

The Souris River Joint Board (SRJB) and WCWRD contracted with Pace, a pipe inspection contractor, to conduct video inspection services of 13,000 LF of culverts and discharge pipes within the existing levee systems' (Mouse River Park, Burlington to Minot systems, Sawyer, and Velva) drainage infrastructure. This work was conducted during the fall of 2017. Some of the remaining culverts will be televised in the spring. Houston Engineering has been managing this work for both the levee systems within Minot and Ward County.

The final report is included in Appendix C.

## Project Structure Maintenance Repair

Project structure locks were to be replaced after WCWRD's April 2017 meeting.

(Excerpt from April WCWRD meeting minutes):

Maintenance of pump stations between Burlington & Minot: An investigation resulting from complaints from area residents showed that pumps were not in place and not operating, and the lift stations were not locked. Foley made a motion authorizing the Chairman to purchase new locks for the lift stations for the Souris River Flood Control Project between Burlington and Minot. Peterson seconded the motion. The motion carried unanimously.

Most of the structures were unlocked during the USACE inspections conducted in September 2017.

## 3.0 Interim Maintenance Standards

### SWIF Appendix A Section A.2.1 Inspections

Ackerman-Estvold, representing the SRJB, conducted an IMS inspection concurrent with the 2017 USACE annual inspections. Deficiencies listed in the 2017 USACE inspection reports will be used as a benchmark for future IMS inspections with the full inspection schedule from the SWIF commencing in the Spring of 2018.

### SWIF Appendix A Section A.2.2 Woody Vegetation

SRJB plans to address woody vegetation management by including tree removal in all planned levee system capital improvement projects. Areas with 2017 USACE annual inspection-identified woody vegetation deficiencies that are not included in planned 2018 CIP projects will be evaluated (per SWIF Appendix A, Section A.2.2 - IMS for Woody Vegetation) concurrent with the first annual IMS inspection.

### SWIF Appendix A Section A.2.3 Erosion Issues

Currently, the CIPs addressing erosion deficiencies are planned to be completed within four (4) years. If the further degradation of the deficiency results in exposure of the levee prism to the elements, the project's current schedule will be revised accordingly.

### SWIF Appendix A Section A.2.4 Levee Slope/Profile Issues

Currently, the CIPs addressing levee slope and profile deficiencies are planned to be completed within six (6) years. If the further degradation of the deficiency results in exposure of the levee prism to the elements, the CIP's current schedule will be revised accordingly.

### SWIF Appendix A Section A.2.5 Interior Drainage Issues

Currently, the CIPs addressing interior deficiencies are planned to be completed within five (5) years. If the further degradation of the deficiency results in a reduced capacity of the interior drainage system, the CIP's current schedule will be revised accordingly.

### SWIF Appendix A Section A.2.6 Insufficient Sod Cover Issues

Currently, the CIPs addressing sod cover deficiencies are planned to be completed within six (6) years. If the further degradation of the deficiency results in an increase in erosion of the levee system, the CIP's current schedule will be revised accordingly.

### SWIF Appendix A Section A.2.7 Structure Obstruction Issues (sediment and vegetation)

Currently, the CIPs addressing these obstruction deficiencies are planned to be completed within five (5) years. If the further degradation of the deficiency results in a reduced capacity of the interior drainage system, the CIP's current schedule will be revised accordingly.

### SWIF Appendix A Section A.2.8 Discontinuous Levee Issues (emergency embankment tie-in)

Tierrecita Vallejo's existing levee system ties back to an older emergency levee. It is anticipated that this deficiency will be resolved within eight (8) years when the Mouse River Enhanced Flood Protection Project (MREFPP) elements for Tierrecita are constructed.

### SWIF Appendix A Section A.2.9 Channel Control Structure Issues

Two channel control structures (one at Talbotts and one at Tierrecita Vallejo) are planned to be addressed by MREFPP within eight (8) years. If the further degradation of the deficiency results in a reduced capacity of the riverine system, the CIP's current schedule will be revised accordingly.

### SWIF Appendix A Section A.2.10 Maintenance

See Section 2.0 Standard Operations and Maintenance Performed.

### SWIF Appendix A Section A.2.11 CIP

The project sponsors will complete a series of Capital Improvement Projects (CIP) to address 64 deficiencies that were documented during the 2014 USACE inspection of the Ward County Levee Systems. These CIPs will be completed over the course of eight (8) years. Since these deficiencies are expected to remain until a reach-specific CIP is finished, SWIF IMS tasks will need to be implemented for deficiencies that are not addressed by a CIP each year.

See Section 5.0 Capital Improvement Projects for more information.

### SWIF Appendix A Section A.2.12 Encroachments/Obstructions

McGee, Hankla, & Backes, PC, WCWRD attorney, requested encroachment/obstructions deficiency and property owner information from Ackerman-Estvold in October 2017. They intend to begin correspondence with property owners. The three (3) types of encroachments/obstructions described in Section A.1.2 will be addressed over the course of many years. If the further degradation of the structural integrity of the levee system is identified during the monitoring period, the project sponsors will accelerate the remedial actions planned. In addition, during the creation of the EAP, the existence and retention of these encroachments/obstructions will be noted, and emergency actions will be planned accounting for these deficiencies.



## 4.0 Interim Risk Reduction Measures

### SWIF Appendix A Section A.3.1 Recommended Nonstructural (NS) IRRMs

#### [IRRM NS1 – Develop Emergency Action Plan \(EAP\) for Ward County existing levee systems](#)

The Ward County Flood-fighting EAP (Non-structural IRRM 8.3.1) is currently being completed by Ackerman-Estvold in collaboration with the Ward County Emergency Management (WCEM) Department. This document will substantially document specific flood preparations, operations, and recovery processes based on the USACE Silver Jackets EAP template. The draft text is currently under review and revision by WCEM.

The final EAP is planned to be completed in early 2018.

#### [IRRM NS2 - Conduct Additional Engineering Investigations and Analysis](#)

This IRRM will involve inspection and documentation of all the outlet pipes located through along the levee alignment (both existing and emergency alignments). This will involve a combination of visual inspections on larger pipe and televising of smaller culverts. During these inspections, the general pipe condition, material type, closure structure device, and elevations will be recorded. This information will be utilized to determine the need for future repairs, replacements, and/or other modifications.

The Souris River Joint Board (SRJB) and WCWRD contracted with Pace, a pipe inspection contractor, to conduct video inspection services of 13,000 LF of culverts and discharge pipes within the existing levee systems' (Mouse River Park, Burlington to Minot systems, Sawyer, and Velva) drainage infrastructure. This work was conducted during the fall of 2017. Some of the remaining culverts will be televised in the spring. Houston Engineering has been managing this work for both the levee systems within Minot and Ward County.

The final report is included in Appendix C.

Any pipe outlet modifications will be designed as CIP tasks. In future annual reports, these pipe improvements will be included in the *Structural IRRM (S1) for Discharge Pipe Outlets*.

#### [IRRM NS3 - Planning for Installation of Emergency Closures and Triggers](#)

This IRRM will involve improving emergency closure installation planning along all the Ward County Levee System alignments. Following the 2011 flood, an effort was undertaken by the USACE and NDSWC to develop water surface and levee profile data to help the communities within the Mouse River Basin to be better prepared for emergency actions during future floods.

Discharges on the Mouse River between 5,000 and 15,000 cfs were simulated and profiles were prepared to illustrate the impacts of flooding on the levee alignment.

Using this information, required emergency embankment volumes needed at each flood profile have also been calculated. This information will help the WCWRD to better identify the location of required resources during future flooding events.

This information is included in the Ward County Flood Specific EAP, including quantities of fill and/or sandbags to construct road closures or emergency levee raises, along with proposed borrow areas.

#### [IRRM NS4 - Pre-position Emergency Supply Materials](#)

Pre-positioning of emergency levee embankment at all required locations along the Mouse River is not feasible. However, this IRRM will involve the identification of appropriate emergency material sources and obtaining agreements on the terms and conditions of usage so that appropriate material is available during future flood emergencies for transporting to the required locations.

The Ward County Flood Specific EAP will address quantities of fill and/or sandbags to construct road closures or emergency levee raises, along with proposed borrow areas. The Ward County Emergency Operations Plan states that the Ward County Emergency Management Office will request price quotes from various suppliers annually. This cost information will be available at the Ward County Emergency Management Office.

#### [IRRM NS5 - Review and Document Existing Project R/W](#)

This IRRM will involve researching and reviewing existing R/W documents to allow the development of detailed maps of the existing project R/Ws. This will involve review of all recorded easement documents for tracts of property along the project corridors. Having accurate R/W limits will assist the project sponsors in determining future repair options and for future flood fight planning.

This IRRM will be implemented during annual CIP project planning and design.

#### [IRRM NS6 - Communication Plan](#)

This IRRM will create and implement a communication plan to actively advise people about the levee condition and potential inundation risk. This communication plan will also include information about flood insurance, flood risk, floodplain management, and evacuation.

Additional details of the SWIF Communication Plan are also provided in Appendix D.

## **SWIF Appendix A Section A.3.2 Recommended Structural IRRMs**

### [IRRM S1 - Outlet Pipe Modifications](#)

This IRRM will involve completing necessary field modifications based on the finding of *Non-Structural IRRM (NS2) - Conduct Additional Engineering Investigations and Analysis – Outlet Pipes*.

It is anticipated that this IRRM will involve repair/replacement of outlet pipes that show deterioration and/or have significant leakage. This will also involve modification to outlet pipe closure devices that do not open or close and/or have operators that do not function. Where required for flood risk management, closure devices will be installed on pipes that don't currently have them.

Since the system pipe inspection project is on-going, no outlet pipe modifications projects were initiated in 2017.

### [IRRM S2 - Address Encroachments/Obstructions](#)

McGee, Hankla, & Backes, PC, WCWRD attorney, requested encroachment/obstructions deficiency and property owner information from Ackerman-Estvold in October 2017. They intend to begin contacting property owners. The three (3) types of encroachments/obstructions described in Section A.1.2 will be addressed over the course of many years. If the further degradation of the structural integrity of the levee system is identified during the monitoring period, the project sponsors will accelerate the remedial actions planned. In addition, during the creation of the EAP, the existence and retention of these encroachments/obstructions will be noted, and emergency actions will be planned accounting for these deficiencies.

### [IRRM S3 - Address Unwanted Vegetation](#)

Woody vegetation removal in areas to be addressed by CIP projects will be included in the scope of the bid advertisements. In addition, woody vegetation will be inspected annually during the September levee inspection process. All remaining woody vegetation will be assigned a tree hazard rating (see Table A.8, Section A.2.3). Trees with a combined hazard rating of 5 or less may be left until the next annual inspection. This process will be repeated annually until all woody vegetation is removed from the vegetation-free zone (VFZ).

### [IRRM S4 - Increase Erosion Protection at Waterside Toe & Waterside Slope](#)

This IRRM will involve installing additional erosion protection in areas where current channel erosion poses a threat to the levee system. The addition of added erosion protection under this IRRM will provide added protection until a more permanent solution can be implemented.

One CIP project was completed to provide additional erosion protection along the riverside. This project is discussed in the following Section 5.0 Capital Improvement Projects Completed.

#### [IRRM S5 - Setback Levee Segments and Landside Stability Berms](#)

The SRJB & WCWRD continue to acquire previously flood impacted property along the Mouse River in various locations. Where feasible, this IRRM will involve construction of setback levee segments or landside stability-berms to strengthen weak areas of the levee system that are currently considered deficient because of erosion, stability, unwanted vegetation, or other criteria.

No setback levee segment or landside stability berm projects were initiated in 2017.

## 5.0 Capital Improvement Projects Completed

One of the levee safety deficiencies is in the section of levee adjacent to the Robinwood Estates residential development within Ward County outside the city limits of Minot, North Dakota. The project addressed the urgent and compelling condition at this Robinwood levee site as part of the SWIF effort to rectify deficiencies identified by USACE. Approximately 250 feet of bank adjacent to the levee was eroded and was threatening the levee prism. The project provides bank stabilization of the Mouse River in this reach to protect the federal levee system. Slope stability analyses using Slope/W and hydraulic tractive stress analyses using HEC-RAS resulted in developing a rock riprap and bedding armoring solution to stabilize the Mouse River bank in this reach. Construction drawings and specifications, construction cost estimating, grant application assistance, land rights assistance, environmental analysis and mitigation, permitting, coordination with USACE, engineering services during bidding, and construction management services were all deliverables on this contract.

The Mouse River Robinwood Bank Stabilization Project was completed in late 2016 with some items carrying over to 2017. The State Water Commission Agreement for Cost-Share Reimbursement was submitted following the January 2017 Ward County Water Resource District (WCWRD) meeting. Project hydroseeding, to reestablish ground cover, was conducted during 2017.

Information detailing this CIP project is in Appendix E.

## **6.0 Summary**

This document is intended to summarize the 2017 SWIF operations, maintenance, and capital improvements on the Ward County existing levee systems.

The SRJB and WCWRD are committed to restoring the levee systems to current USACE operations and maintenance standards and respectfully provide this SWIF status update.

## Appendix A

### System Pump Megger Testing Documentation

# Proposal Letter



3301 101 ST NW  
Burlington ND 58722  
September 29, 2017

Ackerman Estvold  
Kevin.Ploof@ackerman-estvold.com  
1907 17<sup>th</sup> Street SE  
Minot, ND 58701  
701-837-8737

Dear Kevin Ploof,

This Proposal is to:

- Megger Testing and documentation of Pump Stations, motor cables, windings, and power cables
- Talbotts, Robinwood/Country Club, Burlington, Brooks, Velva, Sawyer East, and Kings Court

Labor:	\$3360.00
Mileage	\$100.00
Total:	\$3460.00

There will be additional costs for any change orders during work progress. All power company charges are at owners expense. Payments will be due as work progresses.

Sincerely,

Andy Fimrite  
Burlington Electric Inc.

*Please remove Velva  
from work scope.  
- AP*

Acceptance of proposal:

  
\_\_\_\_\_  
Signature

*10/9/17*  
\_\_\_\_\_  
Date

Proposals may be withdrawn from us if not accepted within 30 days from date on proposal.





**BURLINGTON  
ELECTRIC**

3301 101 St NW  
Burlington, ND 58722

# Invoice

Date	Invoice #
11/30/2017	11825

Bill To
Ackerman-Estvoid 1907 17th Street SE Minot, Nd 58701

P.O. No.	Terms	Due Date	Project
	Net 30	12/30/2017	

Qty	Description	Rate	Amount
1	Bid to Megger Testing & document of pump stations, motor cables, windings, and power cables Talbotts, Robinwood/Coutry Club, Burlington, Brooks, Sawyer East, Kings Court	2,965.72	2,965.72
<p>New Credit Card Policy: if you are paying by credit card and the balance is less than \$1,000.00 there will be no charge. If your balance is \$1,001.00- \$5,000.00 there will be a 2.5% charge will be added to your balance. If you balance is higher than \$5,000.00 there will be a 5% charge added to your balance.</p>			

Please pay from this invoice. This invoice reflects a 10% discount when paid within the terms. Past due invoices will be charge the 10% plus 1 1/2% service charge per month, 30 days from invoice date. You have 30 days to dispute this invoice, otherwise both parties agree to the total amount due.			<b>Total</b>	\$2,965.72
			<b>Payments/Credits</b>	\$0.00
<b>Phone #</b>	<b>E-mail</b>	<b>Fax #</b>	<b>Balance Due</b>	\$2,965.72
701-852-4967	bel@minot.com	(701852-4967		

Burlington

Test	First	Second	Third	Fourth
Insulation wire 1	0.7G			
Insulation wire 2	0.7G			
Insulation wire 3	0.7G			
Wire 1 with wire 2	0.0M			
Wire 1 with wire 3	0.0M			
Wire 2 with wire 3	0.0M			

**NOTES:**

45 Degrees

Sunny

## Sawyer East

Test	First-Right	Second-Left	Third	Fourth
Insulation wire 1	109M	1.1G		
Insulation wire 2	109M	1.1G		
Insulation wire 3	109M	1.1G		
Wire 1 with wire 2	0.0	0.0		
Wire 1 with wire 3	0.0	0.0		
Wire 2 with wire 3	0.0	0.0		

**NOTES:**

47 Degrees

Sunny

Robinwood/Country Club

Test	First	Second	Third	Fourth
Insulation wire 1	2.2G			
Insulation wire 2	2.2G			
Insulation wire 3	2.2G			
Wire 1 with wire 2	0.0M			
Wire 1 with wire 3	0.0M			
Wire 2 with wire 3	0.0M			

**NOTES:**

## King Court

Test	First-Pump 1	Second-Pump 2		
Insulation wire 1	2.2G	2.2G		
Insulation wire 2	2.2G	2.2G		
Insulation wire 3	2.2G	2.2G		
Wire 1 with wire 2	0.0M	0.0M		
Wire 1 with wire 3	0.0M	0.0M		
Wire 2 with wire 3	0.0M	0.0M		

**NOTES:**

## Talbots

Test	First	Second	Third	Fourth
Insulation wire 1	2.2G			
Insulation wire 2	2.2G			
Insulation wire 3	2.2G			
Wire 1 with wire 2	0.0M			
Wire 1 with wire 3	0.0M			
Wire 2 with wire 3	0.0M			

**NOTES:**

41 Degrees

Sunny

## Brooks

Test	First	Second	Third	Fourth
Insulation wire 1	2.2G			
Insulation wire 2	2.2G			
Insulation wire 3	2.2G			
Wire 1 with wire 2	0.0M			
Wire 1 with wire 3	0.0M			
Wire 2 with wire 3	0.0M			

**NOTES:**

45 Degrees  
Sunny

## Appendix B

### System Operational Testing & Maintenance Documentation



2017

(2) July 18 - open gates Tersido

(4) 7/20 = open all locks - test stations  
for emptying cankering lines + manholes

(2) 8/2 → ~~Open + drain Gates~~ Close River gate  
8/1 → Open drainage gate  
at Ter. to drain  
Channel for inspection.

(2) Open gate to River at Ter. V.

Wood County 2017

3/29 - Install Pumps - 4 HRS  
3/30 Check Pumps (Burlington + Talbot) 2 HRS (Tripped)  
3/31 " " " 2 HRS 7d Tripped  
4/3 Check Pumps 2 HRS

4/7 Install Pumps - (New Hope) 3 HR.  
Re feed - (3)

4/8 Re feed Pump (3) 4 HR.

4/9 Re feed Pump - (1) Remove Pump.  
Reset Burlington 3 HR.

5/26 Replace Storm Sewer Manhole.  
Pull + Dissmb. Pump at Redwood. 6 HR.  
was coked up - Repair + Replace

Billed 5/30/17

33 HRS - 65<sup>00</sup>

\$ 2145<sup>00</sup>

## Appendix C

### Storm Sewer Outfall Investigation Documentation

# Technical Memorandum

---

**To:** City of Minot/Souris River Joint Board  
**From:** Houston Engineering, Inc.  
**Subject:** Final Inspection Report  
**Date:** December 10, 2018  
**Project:** City of Minot Storm Sewer Outfall Investigation – SWIF Action B (3135.2B)

## INTRODUCTION

In recent Routine Inspections of Minot Levee Systems, the United States Army Corps of Engineers (USACE) has rated the “Culverts/Discharge Pipes” Rated Item as unacceptable due to the lack of inspections by television camera videotaping or visual inspection methods. The USACE requires that inspections of culverts and discharge pipes be completed every 5 years.

In November of 2016, the City of Minot (City) entered into contract with Pace, a pipe inspection contractor, to complete television camera videotaping of approximately 17,500 LF of culverts and discharge pipes crossing or adjacent to the Minot Levee Systems line of protection. In May of 2017, a change order was completed by the City through an agreement with the Souris River Joint Board (SRJB) which added an additional 13,000 LF of culverts and discharge pipes that are part of flood control projects for Mouse River Park, Burlington to Minot (Burlington, Brooks Addition, Talbotts, Country Club Acres, Robinwood, Kings Court, Terracita Vallejo), Sawyer, and Velva.

The majority of pipes were inspected in 2017. However, during the inspections, some pipes were found to contain sediment at levels higher than the levels that required the contractor to clean then inspect the pipes. Through consultation with the USACE, it was determined that as an alternate, these pipes could be inspected by a diver. The diver’s written deficiency reports and audio/video recordings replace the video and deficiency reports produced by CCTV inspection. On June 1, 2018, a change order was completed that reduced the quantity for “Television Inspection of Sewers” Bid Items for the pipes that were not able to be inspected by CCTV. Additional Pay Items were added for “Diver Inspection” of the remaining structures. Pace subcontracted with AE2S Construction to complete the diver inspections. All work in Mouse River Park was also removed from the contract as part of this change order.

This Technical Memorandum provides a summary of the results of all inspections completed by both CCTV and diver as part of the project. The inspection deliverables provided by Pace and AE2S Construction were reviewed by Houston Engineering, Inc. Based on deficiencies identified in this review, a rating of either “Acceptable”, “Minimally Acceptable”, or “Unacceptable” was assigned to each pipe in accordance with USACE inspection nomenclature. Recommendations for remediation actions were also provided for pipes rated “Minimally Acceptable” or “Unacceptable”.

## WORK COMPLETED

### *CITY OF MINOT*

In Minot, inspections were completed for 134 pipe segments. CCTV inspections were completed for 109 segments, while the remaining 25 segments were inspected by diver. Some outfall pipes scheduled to be removed as part of the Mouse River Enhanced Flood Protection (MREFP) Phases MI-1, MI-2, MI-3, MI-4, and MI-5 or City of Minot System Wide Improvement Framework (SWIF) projects were not inspected.

### *OUTSIDE OF MINOT*

Outside of Minot, inspections were completed for 89 pipe segments. CCTV inspections were completed for 85 segments, while the remaining 4 segments were inspected by diver.

## FUTURE INSPECTIONS

Upon completion of the diver inspections, Houston Engineering, Inc. provided sample diver report provided by AE2S Construction to the USACE to determine acceptability of the reports. The report was reviewed by Luke Schmidt, with comments forwarded to Houston Engineering, Inc. in an email message from Nathan Wallerstedt on September 27, 2018.

Luke Schmidt noted that the diver inspection deliverables would be acceptable, however, the following items should be provided in all future inspections completed by diver:

- Each joint should be inspected. The joint inspections should cover all 360 degrees of the joint. The amount of separation should be identified by the diver so that further joint separation can be monitored in future inspections.
- The size and location of all defects should be noted by the diver.
- A map should be provided with the report of each pipe showing the location of the pipe and notes on the maps identifying the approximate location of the deficiencies along the length of the pipe.
- All measurements should be referenced along the culvert from the edge of outlet/inlet headwall to the nearest 0.5'. All references to defects and/or lateral locations along the culvert should be accurate to +/- 2'.

## INSPECTION RESULTS

### *CITY OF MINOT*

Of the 134 pipe segments inspected in Minot, 66 of the segments are rated "Acceptable", 34 are rated "Minimally Acceptable", and 34 are rated "Unacceptable". Pipe segments rated as "Minimally Acceptable" contain deficiencies including minor to moderate corrosion and minor to moderate joint separation and should be monitored. Pipe segments rated as "Unacceptable" contain deficiencies including excess sedimentation and complete pipe failure and are in need of repair or replacement.

## **City of Minot SWIF Action D**

In 2018, the City of Minot entered into contract with Park Construction to remediate deficiencies for several of the pipes inspected in 2017 that were rated as “Minimally Acceptable” or “Unacceptable”. This project is identified as SWIF Action D, and is partially complete, with the remaining improvements scheduled to be complete in 2019.

### *OUTSIDE OF MINOT*

Of the 89 pipe segments inspected outside of Minot, 70 of the segments are rated “Acceptable”, 13 are rated “Minimally Acceptable”, and 6 are rated “Unacceptable”. Pipe segments rated as “Minimally Acceptable” contain deficiencies including minor to moderate corrosion and minor to moderate sedimentation and should be monitored or cleaned. Pipe segments rated as “Unacceptable” contain deficiencies including excess sedimentation and complete pipe failure and are in need of repair or replacement.

### *INSPECTION TABLES*

Tables are attached to this technical memorandum that include inspection results, description of deficiencies, and recommended remediation actions for each pipe segment in the project. The rating of each pipe is also designated by the color of the table row. Green rows represent pipes that were rated as “Acceptable”, while yellow and red rows represent pipes that were rated as “Minimally Acceptable” and “Unacceptable”, respectively. Pipes that were not inspected as part of this project are identified as gray and contain descriptions of their inspection status. The year in which the inspections were completed and designations of the inspection type, CCTV or diver, are also included in the table.

Pipes that are designated for repair as part of the City of Minot SWIF Action D project are noted in the “Recommended Deficiency Remediation” column of the tables.

### *INSPECTION MAPS*

Maps indicating the approximate location of each pipe are attached to this technical memorandum. The pipes are color coded on the maps to match the rating identification color scheme of the inspection tables. Callout notes are provided for the pipe segments not inspected as part of the project.

### *INSPECTION REPORTS, PHOTO, AND VIDEO*

The inspection reports, photos, and videos provided by Pace, and the reports and audio/video recordings provided by AE2S Construction are included in this submittal.

The deliverable is split between “Minot\_Inspections” and “SRJB\_Inspections”. In each folder there is a unique folder for each pipe segment, regardless if the pipe was televised or not. In each pipe folder there is the report documentation provided by the contractors and the deliverable media files.

Mouse River Park, Burlington to Minot, Velva and Sawyer Inspection Tables

1 of 2

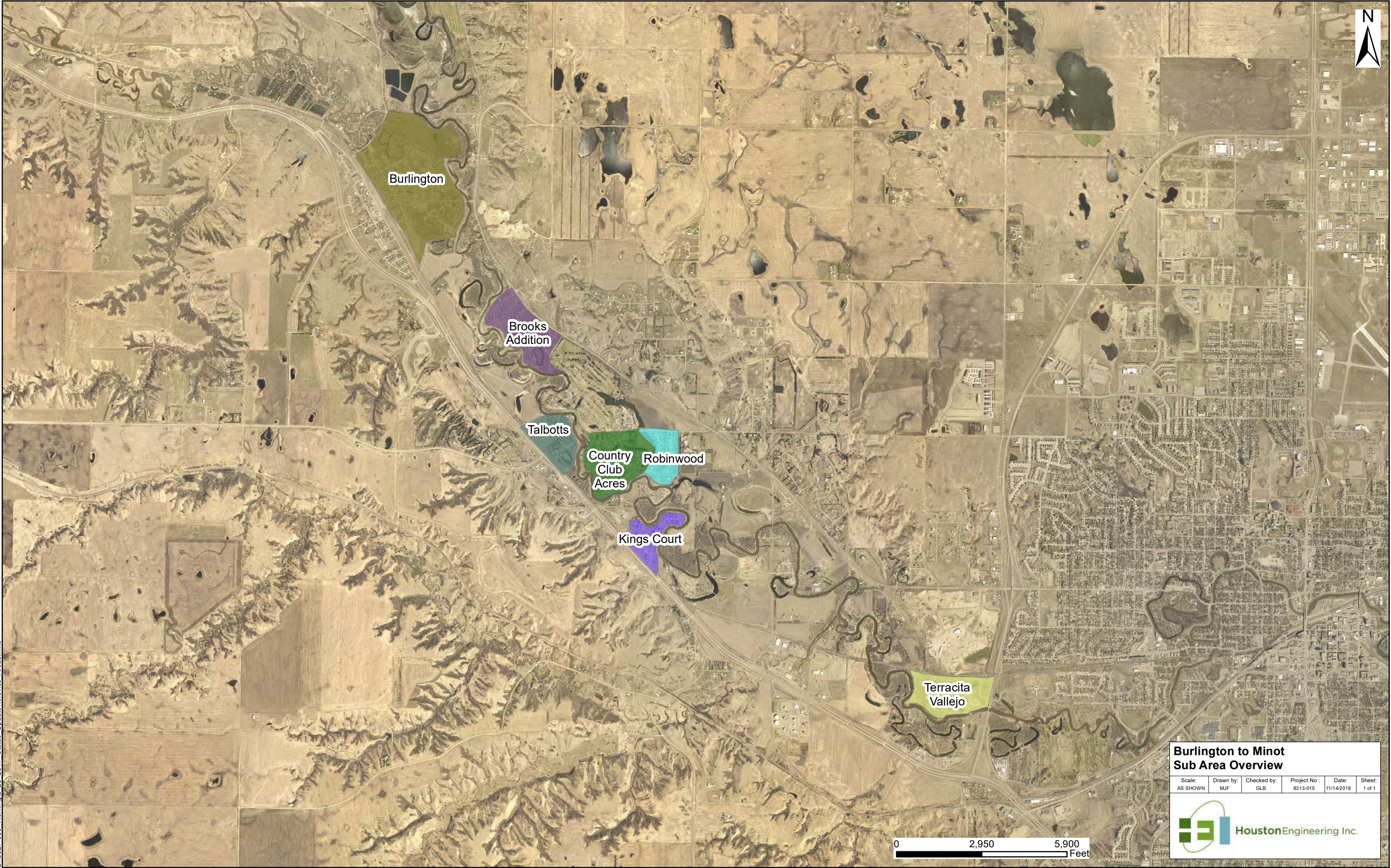
For Reference	Sub Area	Location Map	Pipe Segment ID	Upstream Structure	Downstream Structure	Material	Diameter (in)	Inspection Status	Inspection Method	Inspection Year	Inspection Status Comment	Pipe Condition	Deficiency Comment	Recommended Deficiency Remediation
1	Mouse River Park	-	MP0012	MP0012	MP0010	RCP	90	Incomplete			MRP Loop Outfall. CCTV contractor experienced dewatering complications. Pipe was removed from contract as part of Change Order #3.	N/A		
2	Burlington	1	BM0012	BM0012	BM0010	RCP	30	Complete	CCTV	2017		Acceptable		
3	Burlington	1	BM0013	BM0013	BM0012	RCP	18	Complete	CCTV	2017		Acceptable	Minor crack in pipe at BM0012.	Monitor crack.
4	Burlington	1	BM0014	BM0014	BM0012	RCP-RCP	30-24	Complete	CCTV	2017		Acceptable	Minor sedimentation.	
5	Burlington	1	BM0020	BM0020	BM0018	RCP	24	Complete	CCTV	2017		Acceptable		
6	Burlington	1	BM0024	BM0024	BM0022	RCP	36	Complete	CCTV	2017		Unacceptable	Gap in joint US of flap gate with noticable erosion and infiltration.	Repair pipe.
7	Burlington	1	BM0028	BM0028	BM0026	RCP	36	Complete	CCTV	2017		Acceptable	Minor sedimentation.	
8	Brooks Addition	2	BM0112	BM0112	BM0110	RCP	36	Complete	CCTV	2017		Acceptable	Minor crack at pipe connection to end section.	Monitor crack.
9	Brooks Addition	2	BM0114	BM0114	BM0112	RCP-RCP	36-24	Complete	CCTV	2017		Acceptable	Minor sedimentation.	
10	Brooks Addition	2	BM0116	BM0116	BM0114	RCP	36	Complete	CCTV	2017		Acceptable		
11	Brooks Addition	2	BM0120	BM0120	BM0118	CMP	24	Incomplete			Evidence suggests that the pipe does not exist.	N/A		
12	Brooks Addition	2	BM0124	BM0124	BM0122	CMP	24	Complete	CCTV	2017		Acceptable	CMP is corroded with minor deformations but no obvious holes	Monitor corrosion.
13	Brooks Addition	2	BM0128	BM0128	BM0126	CMP	18	Complete	CCTV	2017		Minimally Acceptable	Minor holes with no evidence of erosion or infiltration and minor corrosion.	Monitor holes and corrosion.
14	Talbotts	3	BM0212	BM0212	BM0210	RCP	24	Complete	CCTV	2017		Acceptable	Minor debris.	
15	Talbotts	3	BM0312	BM0312	BM0310	RCP	24	Complete	CCTV	2017		Acceptable		
16	Talbotts	3	BM0314	BM0314	BM0312	RCP	24	Complete	CCTV	2017		Acceptable	Minor debris.	
17	Talbotts	3	BM0316	BM0316	BM0314	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
18	Talbotts	3	BM0320	BM0320	BM0318	CMP	18	Complete	CCTV	2017		Minimally Acceptable	Moderate corrosion nearly through pipe bottom.	Monitor corrosion.
19	Country Club Acres	4	BM0412	BM0412	BM0410	DIP	6	Complete	CCTV	2017		Unacceptable	Pipe is deformed and camera cannot fit. Inspection contractor unable to find outfall.	Replace pipe.
20	Country Club Acres	4	BM0416	BM0416	BM0414	RCP	18	Complete	CCTV	2017		Minimally Acceptable	Minor sedimentation. Small hole in pipe.	Monitor sedimentation and monitor hole for material loss.
21	Country Club Acres	4	BM0512	BM0512	BM0510	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
22	Country Club Acres	4	BM0514	BM0514	BM0512	RCP	24	Complete	CCTV	2017		Acceptable		
23	Country Club Acres	4	BM0515	BM0515	BM0514	RCP	24	Complete	CCTV	2017		Acceptable		
24	Country Club Acres	4	BM0516	BM0516	BM0514	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
25	Country Club Acres	4	BM0520	BM0520	BM0518	RCP	18	Complete	CCTV	2017		Acceptable		
26	Country Club Acres	4	BM0521	BM0521	BM0520	PVC	10	Complete	CCTV	2017		Minimally Acceptable	Minor sags. Unable to locate upstream structure.	Locate upstream structure.
27	Country Club Acres	4	BM0522	BM0522	BM0520	RCP	18	Complete	CCTV	2017		Acceptable		
28	Country Club Acres	4	BM0524	BM0524	BM0522	RCP	18	Complete	CCTV	2017		Acceptable		
29	Country Club Acres	4	BM0526	BM0526	BM0524	RCP	18	Complete	CCTV	2017		Acceptable	Minor Joint separation.	Monitor joints.
30	Country Club Acres	4	BM0528	BM0528	BM0526	RCP	18	Complete	CCTV	2017		Acceptable		
31	Robinwood	4	BM0532	BM0532	BM0530	RCP	30	Complete	CCTV	2017		Acceptable	Minor sedimentation	
32	Robinwood	4	BM0534	BM0534	BM0532	RCP	24	Complete	CCTV	2017		Acceptable		
33	Robinwood	4	BM0538	BM0538	BM0536	RCP	18	Complete	CCTV	2017		Acceptable		
34	Robinwood	4	BM0542	BM0542	BM0540	RCP	18	Complete	CCTV	2017		Unacceptable	Outfall plugged with sediment and debris	Clean outfall and pipe.
35	Robinwood	4	BM0546	BM0546	BM0544	RCP	18	Complete	CCTV	2017		Minimally Acceptable	Minor hole in pipe	Monitor hole for material loss.
36	Kings Court	5	BM0612	BM0612	BM0610	RCP-RCP	30-24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
37	Kings Court	5	BM0614	BM0614	BM0612	RCP-RCP	30-24	Complete	CCTV	2017		Acceptable		
38	Kings Court	5	BM0616	BM0616	BM0614	RCP	30	Complete	CCTV	2017		Acceptable	Minor sedimentation	
39	Kings Court	5	BM0617	BM0617	BM0616	RCP	30	Complete	CCTV	2017		Acceptable	Minor sedimentation	
40	Kings Court	5	BM0618	BM0618	BM0616	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
41	Kings Court	5	BM0620	BM0620	BM0618	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
42	Kings Court	5	BM0621	BM0621	BM0620	RCP	24	Incomplete			Pipe is inaccessible.	N/A	Upstream structure has no pipe present, and the Downstream manhole cover has been paved over.	
43	Kings Court	5	BM0622	BM0622	BM0620	RCP	24	Complete	CCTV	2017		Acceptable	Minor corrosion	
44	Kings Court	5	BM0623	BM0623	BM0622	RCP	18	Complete	CCTV	2017		Acceptable		
45	Kings Court	5	BM0624	BM0624	BM0622	RCP	24	Complete	CCTV	2017		Acceptable		
46	Kings Court	5	BM0626	BM0626	BM0624	RCP	24	Complete	CCTV	2017		Acceptable	Minor rebar exposure and corrosion.	Monitor joints.
47	Kings Court	5	BM0627	BM0627	BM0626	RCP	18	Complete	CCTV	2017		Acceptable	Moderate growth around outfall.	
48	Kings Court	5	BM0628	BM0628	BM0626	RCP	21	Complete	CCTV	2017		Acceptable	Minor rebar exposure and corrosion.	Monitor joints.
49	Kings Court	5	BM0630	BM0630	BM0628	RCP	21	Complete	CCTV	2017		Acceptable	Minor corrosion at joints.	
50	Kings Court	5	BM0631	BM0631	BM0630	PVC	12	Complete	CCTV	2017		Acceptable		
51	Kings Court	5	BM0632	BM0632	BM0630	RCP	21	Complete	CCTV	2017		Acceptable		
52	Kings Court	5	BM0634	BM0634	BM0632	RCP	18	Complete	CCTV	2017		Acceptable		
53	Kings Court	5	BM0638	BM0638	BM0636	RCP	18	Complete	CCTV	2018		Unacceptable	Irrigation lines running through pipe.	Remove irrigation lines.

Mouse River Park, Burlingon to Minot, Velva and Sawyer Inspection Tables

2 of 2

For Reference	Sub Area	Location Map	Pipe Segment ID	Upstream Structure	Downstream Structure	Material	Diameter (in)	Inspection Status	Inspection Method	Inspection Year	Inspection Status Comment	Pipe Condition	Deficiency Comment	Recommended Deficiency Remediation
54	Terracita Vallejo	6	TV0119C	TV0119	TV0118ES	RCP	48	Complete	Diver	2018		Acceptable		
55	Terracita Vallejo	6	TV0120C	TV0120ES	TV0119	RCP	48	Complete	Diver	2018		Minimally Acceptable	Sediment in pipe within 2' of the top of the pipe.	Remove sediment.
56	Terracita Vallejo	6	TV0128	TV0128	TV0127	RCP	12	Complete	CCTV	2017		Acceptable	Minor sedimentation	
57	Terracita Vallejo	6	TV0127	TV0127	TV0126	RCP	12	Complete	CCTV	2017		Acceptable	Minor sedimentation	
58	Keller	1	KE0020	KE0020SAG	KE0020OL	CMP-RCP	36-36	Complete	CCTV	2017		Minimally Acceptable	Small hole near downstream end of pipe. Upstream 10' of pipe is deformed but structurally sound.	Monitor hole and deformations.
59	Keller	1	AG0020C	AG0020ES	AG0010OF	CMP	24	Complete	CCTV	2017		Acceptable		
60	Sawyer	1	SR0012	SR0012	SR0010	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
61	Sawyer	2	SR0112	SR0112	SR0110	RCP	36	Complete	CCTV	2017		Acceptable	Minor sedimentation	
62	Sawyer	2	SR0114	SR0114	SR0112	RCP	24	Complete	CCTV	2017		Minimally Acceptable	Minor surface spalling of pipe.	Monitor pipe surface condition.
63	Sawyer	2	SR0118	SR0118	SR0116	RCP	24	Complete	CCTV	2017		Acceptable		
64	Sawyer	3	SR0212	SR0212	SR0210	CMP	15	Complete	CCTV	2017		Unacceptable	Pipe crushed and plugged	Repair crushed segment of pipe and remove sediment.
65	Sawyer	3	SR0312	SR0312	SR0310	CMP	18	Complete	CCTV	2017		Unacceptable	Hole in pipe 31' from US end (under levee) with noticable erosion and infiltration	Repair segment of pipe with hole.
66	Sawyer	3	SR0412	SR0412	SR0410	RCP	24	Complete	CCTV	2017		Minimally Acceptable	Moderate sedimentation	Remove sediment.
67	Sawyer		SR0512	SR0512	SR0510	RCP	24	Complete	CCTV	2017		Minimally Acceptable	Moderate sedimentation	Remove sediment.
68	Velva	1	VA0012	VA0012	VA0010	RCP	90	Complete	Diver	2018		Acceptable	Minor sedimentation	
69	Velva	2	VA0112	VA0112	VA0110	RCP	90	Complete	Diver	2018		Acceptable	Minor sedimentation	
70	Velva	2	VA0114	VA0114	VA0112	RCP	90	Complete	CCTV	2018		Acceptable	Pipe connection from pumpstation. Minor sedimentation present.	Monitor or remove sedimentation.
71	Velva	2	VA0212	VA0212	VA0210	RCP	48	Complete	CCTV	2017		Minimally Acceptable	Moderate sedimentation. Moderate joint separation.	Remove sediment. Monitor pipe joints.
72	Velva	2	VA0214	VA0214	VA0212	RCP	48	Complete	CCTV	2017		Minimally Acceptable	Moderate sedimentation	Remove sediment.
73	Velva	2	VA0216	VA0216	VA0214	RCP	36	Complete	CCTV	2017		Acceptable	Minor debris.	
74	Velva	2	VA0218	VA0218	VA0216	RCP	24	Complete	CCTV	2017		Acceptable	Minor debris.	
75	Velva	2	VA0220	VA0220	VA0218	RCP	24	Complete	CCTV	2017		Acceptable		
76	Velva	2	VA0222	VA0222	VA0220	RCP	24	Complete	CCTV	2017		Acceptable	Minor sedimentation	
77	Velva	2	VA0224	VA0224	VA0222	RCP	24	Complete	CCTV	2017		Acceptable		
78	Velva	2	VA0226	VA0226	VA0224	RCP	24	Complete	CCTV	2017		Acceptable		
79	Velva	2	VA0228	VA0228	VA0226	RCP	24	Complete	CCTV	2017		Acceptable		
80	Velva	2	VA0230	VA0230	VA0328	RCP	24	Complete	CCTV	2017		Acceptable		
81	Velva	3	VA0312	VA0312	VA0310	RCP	24	Complete	CCTV	2017		Acceptable		
82	Velva	3	VA0314	VA0314	VA0312	RCP	24	Complete	CCTV	2017		Acceptable		
83	Velva	3	VA0330	VA0330	VA0328	RCP	24	Complete	CCTV	2017		Acceptable	Minor debris.	
84	Velva	3	VA0334	VA0334	VA0332	RCP	24	Complete	CCTV	2017		Acceptable	Minor debris.	
85	Velva	3	VA0336	VA0336	VA0334	RCP	24	Complete	CCTV	2017		Minimally Acceptable	Pipe joints cracked and displaced with evidence of erosion and infiltration in US 18' of pipe. No impact to line of protection.	Monitor for material loss and replace pipes when able.
86	Velva	4	VA0318	VA0318	VA0316	RCP	36	Complete	CCTV	2017		Acceptable	Minor debris.	
87	Velva	4	VA0320	VA0320	VA0318	RCP	36	Complete	CCTV	2017		Acceptable		
88	Velva	4	VA0322	VA0322	VA0320	RCP	36	Complete	CCTV	2017		Acceptable		
89	Velva	4	VA0324	VA0324	VA0322	RCP	36	Complete	CCTV	2017		Acceptable		
90	Velva	4	VA0326	VA0326	VA0324	RCP	24	Complete	CCTV	2017		Acceptable		
91	Velva	4	VA0412	VA0412	VA0410	RCP	36	Complete	CCTV	2017		Acceptable	Minor debris.	
92	Velva	4	VA0512	VA0512	VA0510	RCP	24	Complete	CCTV	2017		Acceptable		

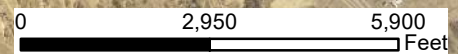




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**Burlington to Minot  
Sub Area Overview**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No : 8313-015	Date: 11/14/2018	Sheet: 1 of 1
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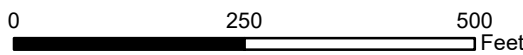
**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**



**Burlington Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No : 8313-015	Date: 11/14/2018	Sheet: 1 of 6
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**\*Pipes lengths shown are approximate and should be field verified.**

**Pipe does not exist.**

**Brooks Addition**

**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**



0 250 500 Feet

Brooks Addition Inspection Location Maps					
Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No: 8313-015	Date: 11/14/2018	Sheet: 2 of 6



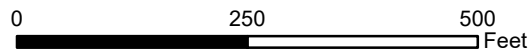
\*Pipes lengths shown are approximate and should be field verified.



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

Pipe Segment ID  
Node ID



Talbotts Inspection Location Maps					
Scale:	Drawn by:	Checked by:	Project No.:	Date:	Sheet:
AS SHOWN	MJF	GLB	8313-015	11/14/2018	3 of 6



**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**



0 250 500 Feet

**Country Club Acres and Robinwood Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No.: 8313-015	Date: 11/14/2018	Sheet: 4 of 6
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\*Pipes lengths shown are approximate and should be field verified.



Pipe is not accessible.

**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**

**Node ID**

0 250 500 Feet

N

**Kings Court Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No: 8313-015	Date: 11/14/2018	Sheet: 5 of 6
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HoustonEngineering Inc.

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**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**

N

0 250 500 Feet

**Terracita Vallejo  
Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No : 8313-015	Date: 11/14/2018	Sheet: 6 of 6
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 **HoustonEngineering Inc.**

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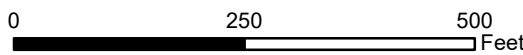
\*Pipes lengths shown are approximate and should be field verified.



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

Pipe Segment ID  
Node ID



**Keller  
Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No.: 8313-015	Date: 11/14/2018	Sheet: 1 of 1
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**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**


**Node ID**

0 250 500 Feet

N

**Sawyer Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No: 8313-015	Date: 11/14/2018	Sheet: 1 of 3
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 **HoustonEngineering Inc.**

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\*Pipes lengths shown are approximate and should be field verified.

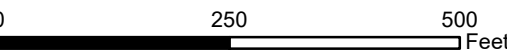



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection


**Pipe Segment ID**

**Node ID**



**Sawyer Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No: 8313-015	Date: 11/14/2018	Sheet: 2 of 3
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HoustonEngineering Inc.

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\*Pipes lengths shown are approximate and should be field verified.

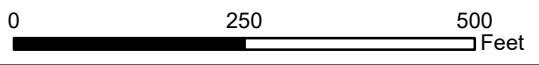


**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**

**Node ID**



**Sawyer Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No : 8313-015	Date: 11/14/2018	Sheet: 3 of 3
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**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID** (text in pink)

**Node ID** (text in yellow)

N

0 250 500 Feet

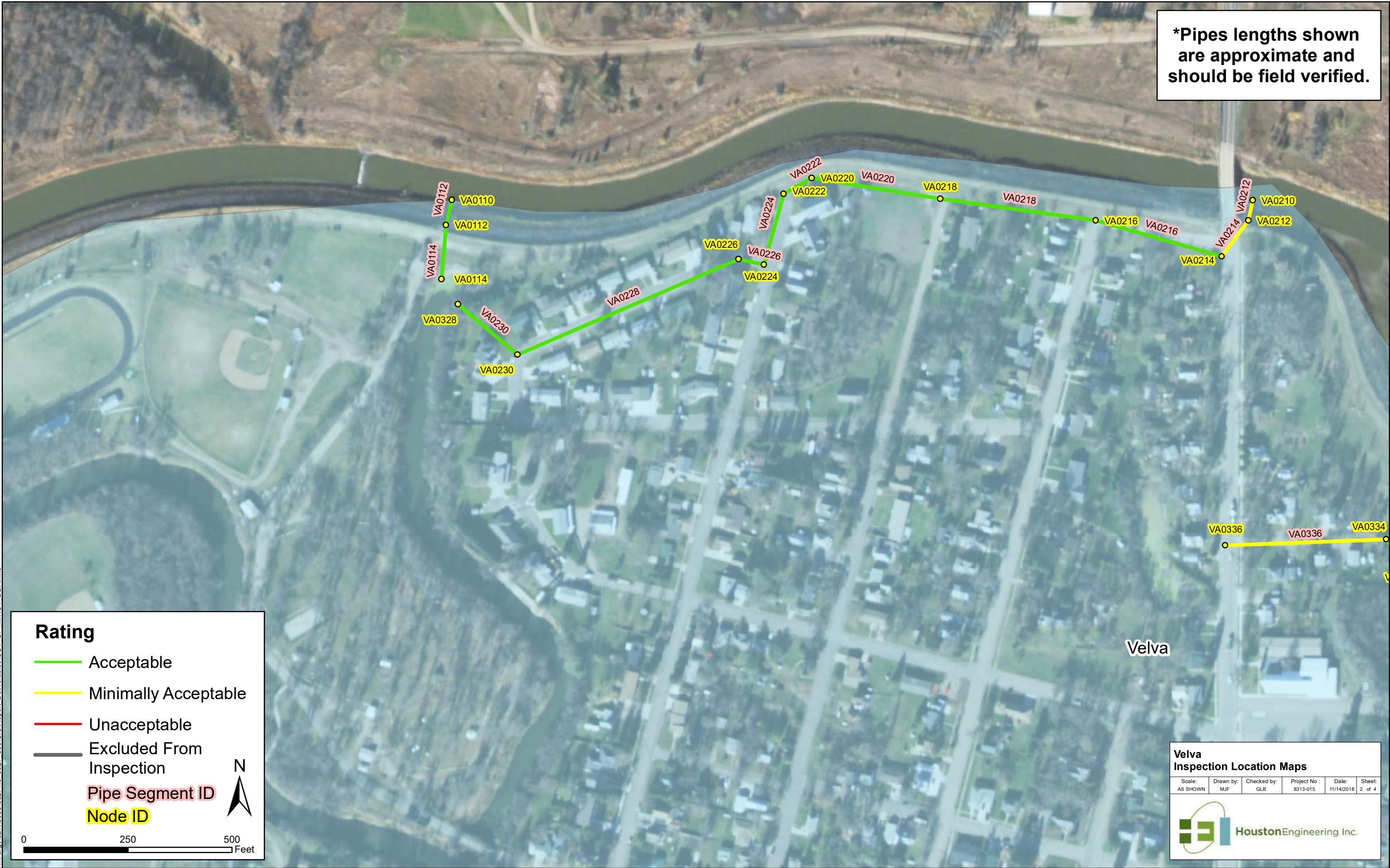
**Velva Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No : 8313-015	Date: 11/14/2018	Sheet: 1 of 4
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HoustonEngineering Inc.

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**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**



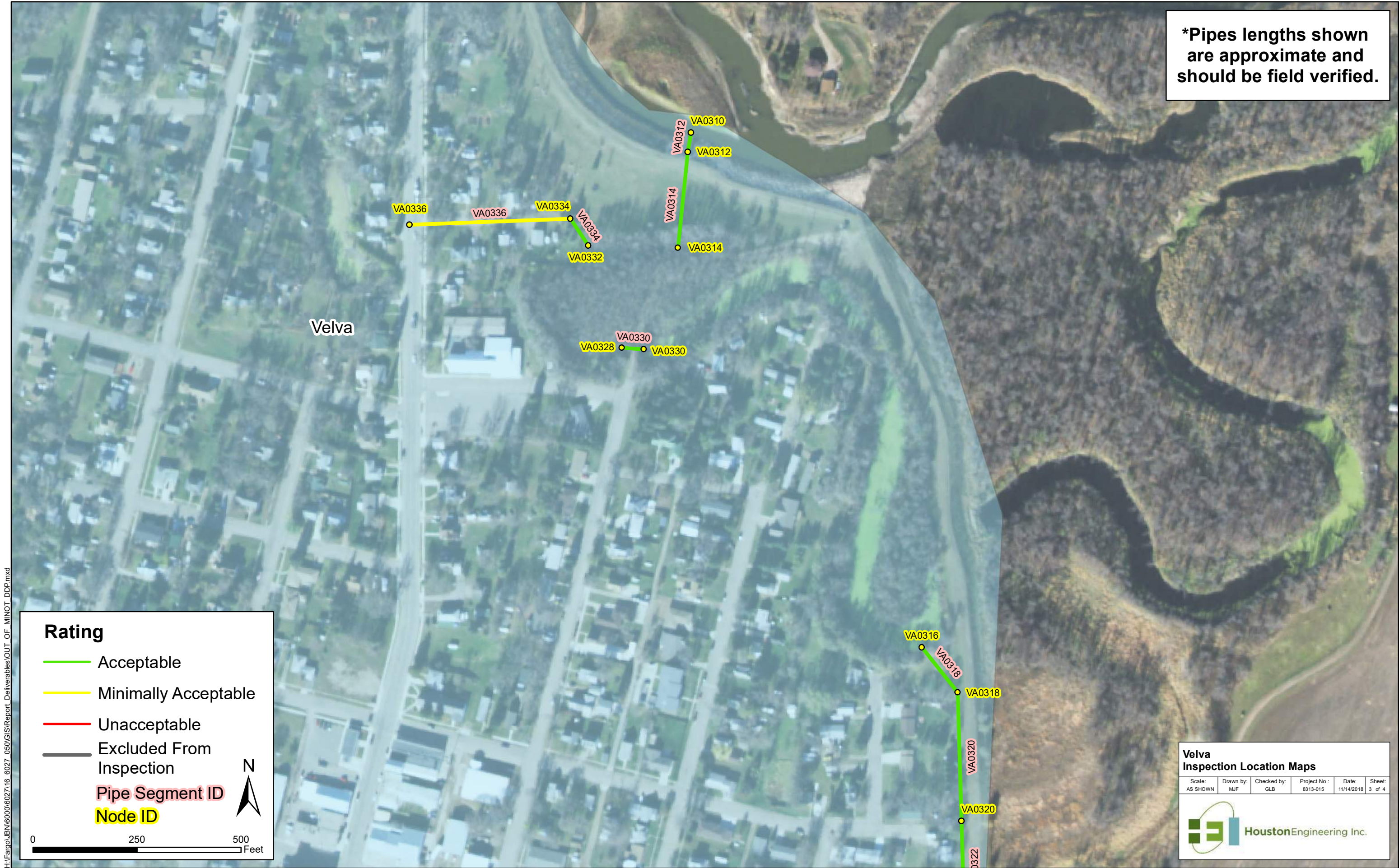
0 250 500 Feet

**Velva Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No.: 8313-015	Date: 11/14/2018	Sheet: 2 of 4
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**\*Pipes lengths shown are approximate and should be field verified.**



Velva

**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**

N  
↑

0      250      500  
Feet

**Velva Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No : 8313-015	Date: 11/14/2018	Sheet: 3 of 4
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**HoustonEngineering Inc.**

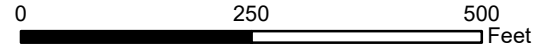
**\*Pipes lengths shown are approximate and should be field verified.**



**Rating**

- Acceptable
- Minimally Acceptable
- Unacceptable
- Excluded From Inspection

**Pipe Segment ID**  
**Node ID**



**Velva Inspection Location Maps**

Scale: AS SHOWN	Drawn by: MJF	Checked by: GLB	Project No.: 8313-015	Date: 11/14/2018	Sheet: 4 of 4
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## Appendix D

### SWIF Communication Plan



**Appendix D SWIF Communications Plan**

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## Appendix D SWIF Communications Plan

A number of parallel, yet similar initiatives are being advanced to reduce and communicate flood risk within the Mouse River Basin. These include, but are not limited to:

Lead Agency/Agencies	Initiative Description
Federal Emergency Management Agency	RiskMAP program to revise 100-year Flood Insurance Rate Maps
United States Army Corps of Engineers	Souris River Feasibility Study
International Joint Commission/International Souris River Board	Plan of Study to evaluate reservoir operational modifications at Rafferty Reservoir, Alameda Reservoir, and Lake Darling
City of Minot	National Disaster Resilience Competition activities
Souris River Joint Board	Mouse River Enhanced Flood Protection Project (MREFPP)
Souris River Joint Board / Ward County Water Resource District	System-wide Improvement Framework (SWIF)

Because these and other initiatives are being pursued in parallel, it is important that public communications be developed to describe each initiative, demonstrate the differences between the initiatives, and communicate important milestones associated with each initiative. Additionally, the audience for the communications will likely differ, with some communications being intended for a larger regional audience and others catered specifically to neighborhoods or properties that would have a specific interest in the initiative.

Numerous communication methods will be utilized over the course of the SWIF implementation

Public meetings and direct mail provide educational opportunities for residents and property owners regarding flood risks, levee maintenance, capital improvements, and other flood risk reduction activities. Physical reminders, such as easement marker posts and signage, are intended to provide residents with a visual indicator of the limits of the levee right of way, within which activities are restricted. Additionally, information regarding flood insurance and related information is very important to the residents of the Mouse River valley. Additional modes of communication which are planned to be utilized to inform the public include: television, radio, print media, [www.mouseriverplan.com](http://www.mouseriverplan.com), and social media.

It is the intent of the project sponsors to engage the public through these methods of communication to allow the public to provide feedback, disseminate flood risk information, and encourage public participation.

## **D.1 Public Meetings**

Project sponsor public meetings are held monthly. Area residents can attend these meetings to discuss questions or concerns related to the existing levee systems. Annually, the SRJB will hold a public hearing to allow for additional public input and facilitate the transfer of information between the various stakeholders including area residents. This hearing will be held during a regularly scheduled SRJB meeting after the receipt of the annual USACE levee inspection documentation.

This informational session serves several purposes including flood/levee risk education, flood insurance information, emergency preparedness planning, floodplain management, evacuation planning, flood protection project updates, describe the activities planned by the sponsors to address the existing deficiencies, explain the proper operation and maintenance of the levee systems, and serve as a reminder that certain activities are prohibited on or immediately adjacent to the levee.

Special effort will be taken to obtain contact information (email addresses and phone numbers) from public meeting participants so they can be informed of future meetings and levee/river related information, through direct contact or mass mailings.

## **D.2 Direct Mail**

On an annual basis, a direct mailing will be sent to the property owners within the leveed areas to notify them that certain activities are prohibited along the levee alignment. It is anticipated that the first correspondence will be mailed to property owners in spring 2017. After the initial spring 2017 mailing, the annual mailing would be moved to the fall and include an invitation to the annual hearing.

The American Society of Civil Engineers (ASCE), [ASCE "So, You Live Behind a Levee" Guide](#), would be an example of some of the information that will be shared with the community in these mailings. Copies of transmitted letters, informational web links, and pamphlets are anticipated to be available for review on [www.mouseriverplan.com](http://www.mouseriverplan.com) and at locations in the community (see Section D.4 – Passive Communication below for proposed locations).

A phone number and E-mail address for the project sponsors will be provided to residents/property owners to allow them to notify the project sponsors of potentially hazardous/inappropriate activities occurring within the levee easements. At this time, the project sponsors intend to provide this contact information in all written communication with the public. The public will be encouraged to communicate levee maintenance needs and other project related information through the contact number, email address and social media.

### D.3 Media

Media outlets will be contacted to inform the public about the annual hearing and the mailing of the encroachment/obstruction communications. Regional media outlets consist of area television stations, radio stations, and local newspapers. The media will also be invited to interview the presenters and/or the project sponsors regarding levee system improvements or other related information. Contacts numbers for local media outlets are provided in Table D.3-1 below.

**Table D.3-1 Media Contacts**

Media Name	Phone Number	E-Mail	Media Type
KMOT-TV	701-852-4101	<a href="mailto:news@kmot.com">news@kmot.com</a>	Television Station
KXMC-TV	701-852-2104	<a href="mailto:jolson@xmcnews.com">jolson@xmcnews.com</a>	Television Station
KXND-TV	701-858-0024	<a href="mailto:baha.eldin@westdakotafox.com">baha.eldin@westdakotafox.com</a>	Television Station
iHeartMedia, Inc. (KCJB-AM, KIZZ-FM, KMXA-FM, KRRZ-AM, KYYX-FM, KZPR-FM)	701-852-4646	<a href="mailto:allisonbostow@clearchannel.com">allisonbostow@clearchannel.com</a>	Radio Station
KHRT-AM	701-852-3789	<a href="mailto:office@khrt.com">office@khrt.com</a>	Radio Station
Programmer's Broadcasting (KTZU-FM, KWGO-FM)	701-852-7449	<a href="mailto:jeanschemp@prt.com">jeanschemp@prt.com</a>	Radio Station
Minot Daily News	1-800-735-3229	<a href="mailto:news@minotdailynews.com">news@minotdailynews.com</a>	Daily Newspaper

### D.4 Passive Communication

Passive communication includes the placement of important documents in public spaces, available for the public's review and perusal.

#### SWIF Locations

Depending on the needs of the community, hard copies of the SWIF may be made available for public review, as well as at [www.mouseriverplan.com](http://www.mouseriverplan.com). It is important to allow the public to stay informed on levee maintenance progress and future activities. The SWIF would be available at locations determined to be convenient for area residents and where additional river management information (flood insurance, MREFPP, and building policy/regulations) may be obtained. Locations where the SWIF may be available for review include:

- Ward County Highway Department – 900 13<sup>th</sup> Street SE, Minot
- Burlington City Hall – 225 Wallace Street, Burlington
- Minot Public Works Department - 1025 31st Street SE, Minot

Once the SWIF document has been approved and finalized these hard copies will be distributed to these locations.

### Visible Markers

Since most property owners do not fully understand the extent of the existing levee easements and VFZ, the project sponsors intend to embark on a basin-wide effort to mark the recorded levee easements. This marking would be completed over the course of several years and includes the following:

1. Verification of the recorded flowage/drainage easements on a lot-level;
2. Verification of existing permanent survey pins or placement of permanent survey pins (with caps) at each change in easement direction/lot corner;
3. Placement of an above-ground marker at each permanent survey pin (i.e. carsonite or concrete);

It is also anticipated that during the 2017 budgeting cycle, monies will be budgeted to begin the physical marking efforts.

## D.5 Communication Accomplishments

The project sponsors have been communicating with the local officials and public regarding the current condition of the levee systems and the associated flood risks. The SRJB, WCWRD and the City of Minot hold monthly meetings which are open to the public.

### Project Sponsor Public Meetings

The City of Minot City Council and the city's Public Works & Safety have had numerous meetings where existing levee/SWIF related topics were discussed:

- *April 27th, 2016 – Public Works & Safety Committee – SWIF Engineering Contract Approved*
- *May 2nd, 2016 – City Council – SWIF Engineering Contract Approved*
- *August 31st, 2016 – Public Works & Safety Committee – Approve Plans and Specs – 3rd Ave and 10th St SWIF Actions*
- *August 31st, 2016 – Public Works & Safety Committee – Approve SWIF Engineering Amendment*
- *September 6th, 2016 – City Council - Approve Plans and Specs – Storm Sewer Outfall Investigation*
- *September 6th, 2016 – City Council - Approve Plans and Specs – 3rd Ave and 10th St SWIF Actions*
- *September 28th, 2016 – Public Works & Safety Committee – Approved Emergency Action Plan for Flood Fighting*
- *October 3rd, 2016 – City Council – Approve Emergency Action Plan for Flood Fighting*
- *November 2nd, 2016 – Public Works & Safety Committee – Approve SWIF Engineering Amendment*
- *November 7th, 2016 – City Council – Approve SWIF Engineering Amendment*

Both the Ward County Water Resources District Board and the Souris River Joint Board hold monthly public meetings. Existing levee system repairs and the SWIF have been discussed at numerous meetings throughout 2016.

- *January 14th, 2016 – SRJB – SWIF submittal update*
- *February 11th, 2016 – SRJB - SWIF submittal update*
- *April 14th, 2016 – SRJB - SWIF submittal update*
- *May 7th, 2016 – WCWRD Meeting – Robinwood Bank Stabilization Engineering Update*
- *August 8<sup>th</sup>, 2016 – WCWRD Meeting – Robinwood Bank Stabilization Bid Package Approval*
- *September 12<sup>th</sup>, 2016 – WCWRD Meeting – Robinwood Bank Stabilization Bid Update*
- *October 10<sup>th</sup>, 2016 – WCWRD Meeting – Robinwood Bank Stabilization Project Awarded*
- *October 13th, 2016 – SRJB – Ward County Systems Culvert Televising Approved*
- *November 10th, 2016 – SRJB – Ward County Systems Culvert Televising Update*

## **D.6 Planned SWIF Communications**

One SWIF priority is informing the general public, in addition to, the directly adjacent property owners about levee ratings and safety. The project sponsors will utilize the various methods of communication noted previously.

These efforts will consist of two primary communication types, education/prevention and encroachment/obstruction remediation notifications. Education and prevention communications will inform the general public (in levee protected areas) about levee conditions, activities allowed on the levee, and flood risk information. Encroachment/obstruction notifications will be sent directly to property owners with previously identified (in USACE or project sponsor inspections) to remove any encroachment/obstructions from on or near the levee. This process is discussed in greater detail in Appendix A, Section A.1.2 and Appendix B, Section B.4, respectively.

To illustrate the anticipated use of this communication plan, Table D.6-1 on the following page lists the expected methods of communication for common river management topics.

**Table D.6-1 Anticipated Communications**

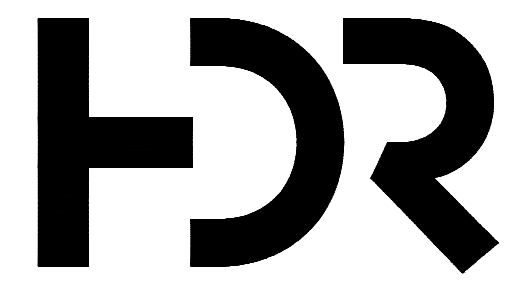
Levee/River Subject	Intent	Contact Person/Agency	Communication Methods Employed	Communications Timing
SWIF Maintenance and Levee CIP	Inform public of existing levee system maintenance repairs and ongoing activities	Project Sponsors	Direct mail, public hearing, & media	<ul style="list-style-type: none"> <li>• Project sponsor annual hearing</li> <li>• Annual direct mailing with proposed SWIF-related maintenance and CIP project schedule</li> <li>• Update social media sites – as needed</li> </ul>
Activities Allowed on or near the levees	Public awareness	Project Sponsors	Direct mail	<ul style="list-style-type: none"> <li>• Annually.</li> </ul>
Encroachment/Obstruction Notices	Notices to remove encroachments/obstructions;	SWIF/Project Sponsors	Direct mail	<ul style="list-style-type: none"> <li>• Encroachment/Obstruction notices - Biannually</li> </ul>

The activities listed in Table D.6-1, are a series of annual communications are expected to keep the public informed on all river and levee system information.

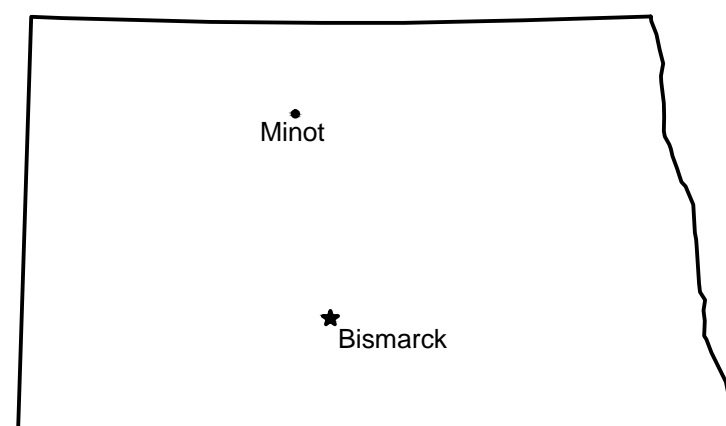
## Appendix E

### Mouse River Robinwood Bank Stabilization





**NORTH DAKOTA**



Contract Drawings For

# Ward County Water Resource District

## Mouse River Robinwood Bank Stabilization

Project No.  
10027309

Minot, North Dakota  
September 2016

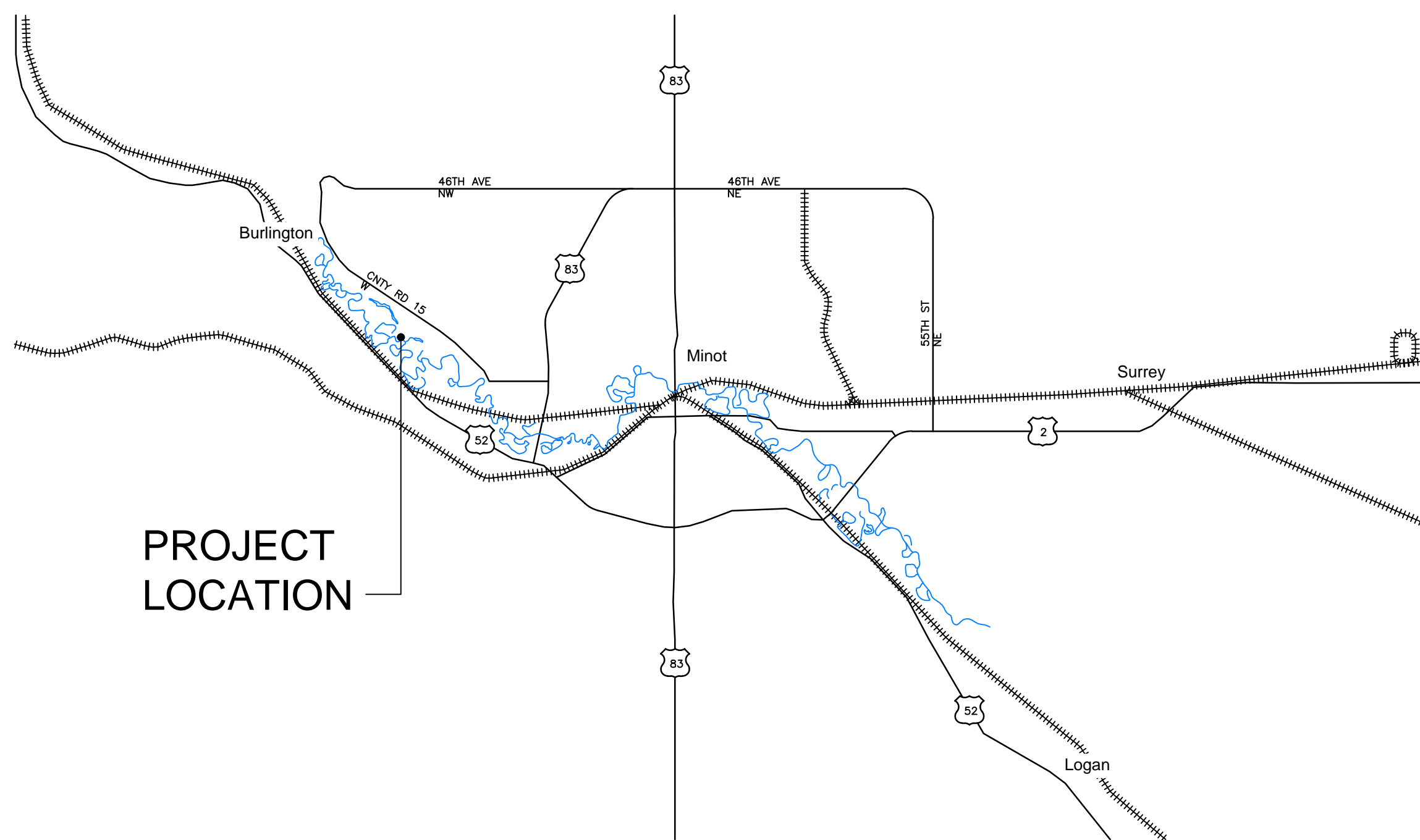
**INDEX OF DRAWINGS**

**GENERAL**

- 00G000 COVER SHEET AND INDEX
- 00G001 GENERAL LEGEND, SYMBOLS AND PROJECT NOTES
- 00V101 EXISTING CONDITIONS

**SITE WORK**

- 00X101 DEMOLITION PLAN
- 00C101 SITE PLAN
- 00C301 TYPICAL SECTIONS
- 00C501 CIVIL DETAILS
- 00C502 EROSION CONTROL PLAN
- 00C503 EROSION CONTROL NOTES AND DETAILS



Construction Start Date: October 18, 2016  
 Substantial Completion Date: November 21, 2016  
 Construction Completion Date: June 5, 2017

Original Contract Value: \$178,742.00  
 Costs Due to Contract Modifications: \$60,197.38  
 Total Revised Contract Value: \$238,939.38

Contractor: D.L. Barkie

**As-Built Plans**

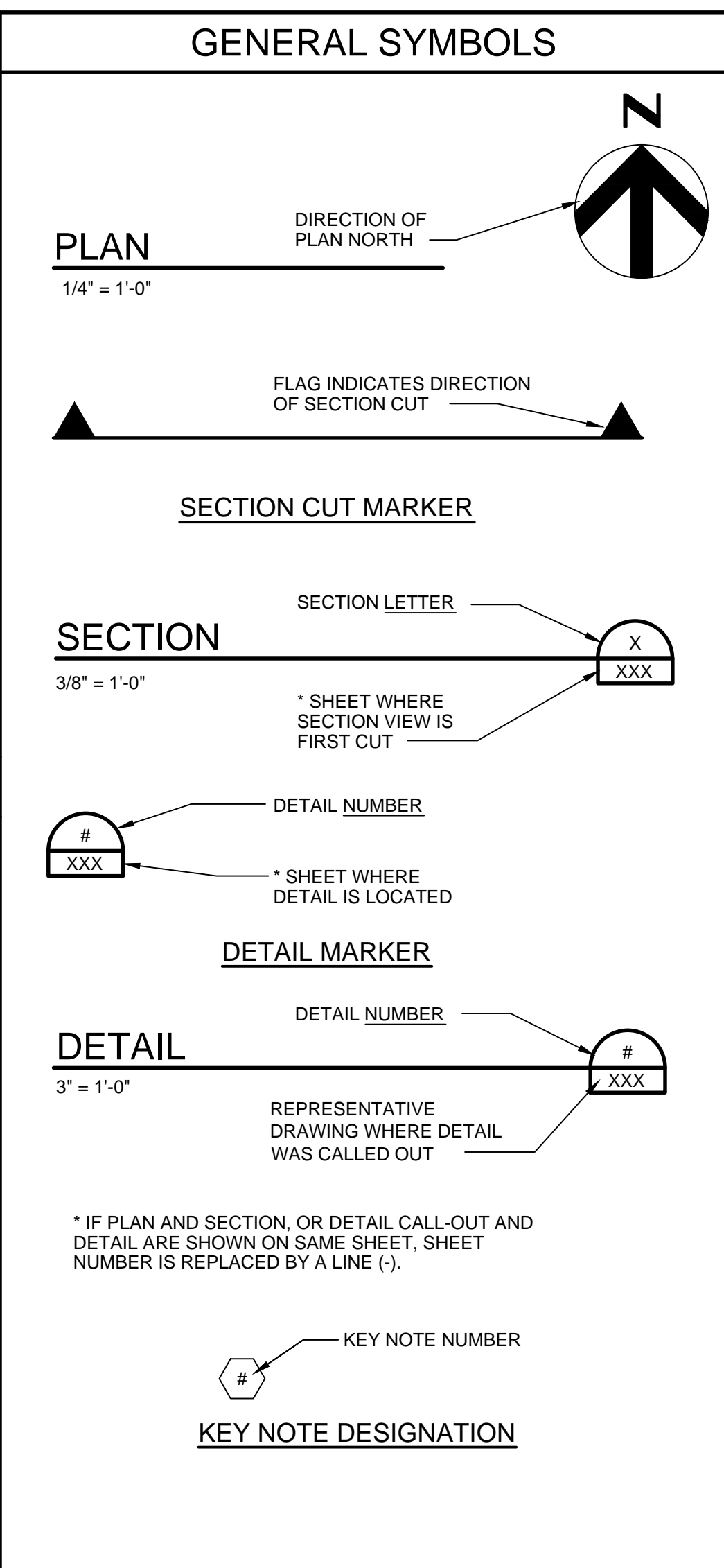
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND SEALED  
 BY VICKI B TWERDOCHLIB,  
 REGISTRATION NUMBER  
 PE-10308, ON 9/12/2016 AND THE  
 ORIGINAL DOCUMENT IS STORED  
 AT HDR ENGINEERING, INC.  
 BISMARCK, NORTH DAKOTA.

### SURVEY LEGEND/SYMBOLOLOGY

	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	RIVER/WATERS EDGE
	STRUCTURE
	FENCE LINE
	CONCRETE
	OVERHEAD POWER LINE
	UNDERGROUND POWER LINE
	POWER POLE
	POST
	UNKNOWN PIPE
	TREE
	WOODS LINE
	CONCRETE RUBBLE

### PLAN LEGEND/SYMBOLOLOGY

	RIVER CENTERLINE
	LEVEE CENTERLINE
	FLOATING SILT CURTAIN
	SILT FENCE
	ROCK BERM
	PARCEL LIMITS
	WORK LIMITS
	RIPRAP BANK STABILIZATION
	BEDDING
	GRANULAR FILL
	LAYDOWN AREA
	CONSTRUCTION ENTRANCE
	BUILDING REMOVED BY OTHERS
	CLEAR AND GRUB
	REMOVAL ITEM

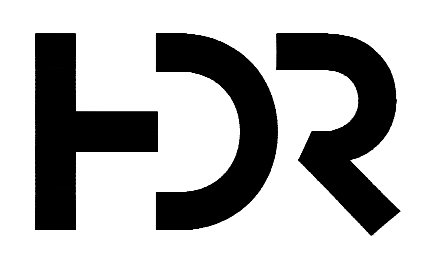


- ### GENERAL NOTES:
- THIS IS A STANDARD SHEET SHOWING COMMON SYMBOLOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
  - SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

### ABBREVIATIONS

BLDG	BUILDING
BOT	BOTTOM
CD	CHECK DAM
¢	CENTERLINE
CONC	CONCRETE
DR	DRIVE
DTL	DETAIL
E	EASTING
EST	ESTIMATE
EXST	EXISTING
GR	GRAVEL
LF	LINEAR FEET
N	NORTHING
OHP	OVERHEAD POWER/TELEPHONE LINE
RD	ROAD
R/W	RIGHT-OF-WAY
SF	SILT FENCE
STA	STATION
SY	SQUARE YARDS
TEMP	TEMPORARY
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRICAL
WSE	WATER SURFACE ELEVATION

- ### PROJECT NOTES
- #### GENERAL NOTES:
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS PROJECT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
  - THIS PROJECT INVOLVES CONSTRUCTION ADJACENT TO A FLOOD PROTECTION LEVEE. IN ORDER TO MAINTAIN THE INTEGRITY OF THE EXISTING FLOOD PROTECTION SYSTEM, DO NOT EXCAVATE WITHIN THE FOOTPRINT OF THE LEVEE PRISM EXCEPT AS SPECIFICALLY DOCUMENTED WITHIN THESE PLANS AND AS AUTHORIZED BY WARD COUNTY.
  - AVOID DAMAGING VEGETATION ON THE SURFACE OF THE LEVEE EMBANKMENT AND AVOID CREATION OF TIRE RUTS IN THE TOP OF THE LEVEE DUE TO CONSTRUCTION TRAFFIC. RUTTING ON TOP OF THE LEVEE OR DAMAGE TO THE LEVEE VEGETATION WILL REQUIRE REPAIR AT NO COST TO WARD COUNTY. PERFORM HAULING OF MATERIALS WHEN SOILS AT TOP OF LEVEE ARE DRY AND FIRM ENOUGH TO SUPPORT TRAFFIC LOADS WITHOUT RUTTING OR PROVIDE AGGREGATE SURFACE HAUL ROAD.
  - TRAVEL ON LEVEE SIDE SLOPES IS PROHIBITED UNLESS SPECIFICALLY APPROVED BY WARD COUNTY.
  - TURNING MOVEMENTS BY TRUCKS CONTAINING AGGREGATE OR RIPRAP ARE NOT PERMITTED ON TOP OF THE LEVEE.
  - REPAIR OR REPLACE, AT NO EXTRA EXPENSE TO WARD COUNTY, ALL PAVEMENTS, VEGETATION, OR OTHER SURFACES THAT ARE DAMAGED BY CONSTRUCTION ACTIVITIES.
  - NOTIFY PROPERTY OWNERS 48 HOURS IN ADVANCE OF ACCESSING JOB SITE THROUGH EASEMENTS. CLOSING OF PRIVATE DRIVES OR IMPEDING ACCESS TO PRIVATE PROPERTY IS PROHIBITED.
  - ALL HOLES, TRENCHES, AND OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY BARRICADES, LIGHTS OR OTHER PROTECTIVE DEVICES.
  - ALL ROCKS, BRUSH, TIMBER, AND OTHER DEBRIS THAT IS CLEARED FROM THE PROJECT LIMITS AND EASEMENTS SHALL BE REMOVED FROM THE PREMISES AND SHALL NOT BE BURIED WITHIN THE RIGHT-OF-WAY OR EASEMENT OR PLACED ON ADJOINING LANDS, EXCEPT WHERE ARRANGEMENTS FOR SUCH PLACEMENT OR DISPOSAL ARE MADE WITH THE APPROPRIATE PROPERTY OWNERS.
  - ANY AGREEMENT BETWEEN THE CONTRACTOR AND PROPERTY OWNERS SHALL BE MADE IN WRITING AND COPIED TO THE OWNER.
  - THE HORIZONTAL DATUM IS BASED ON NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE. THE VERTICAL DATUM IS BASED ON NGVD29.
- #### GENERAL UTILITY NOTES:
- LOCATION OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE NOT INTENDED TO BE EXACT OR COMPLETE. COORDINATE WITH UTILITY COMPANIES AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, STOP WORK IMMEDIATELY. TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. RESTORE/REPAIR ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS AT NO COST TO OWNER.
  - UTILITY ADJUSTMENTS/RELOCATIONS WILL BE PERFORMED BY THE UTILITY OWNER. COORDINATE WORK WITH UTILITY OWNERS SO AS NOT TO ADVERSELY AFFECT THE PROJECT SCHEDULE.
  - FOR UTILITY LOCATE MEMBERS, CALL NORTH DAKOTA ONE-CALL @ 1-800-795-0555. FOR LOCATES OF UTILITIES NOT MEMBERS OF NORTH DAKOTA ONE-CALL CONTACT THE SPECIFIC UTILITY COMPANY.
  - COORDINATE WITH POWER AND TELEPHONE COMPANIES FOR RELOCATING OR STABILIZING ANY EXISTING POLES WHICH COULD BE DISTURBED BY CONSTRUCTION.
  - ANTICIPATE HAND EXCAVATION AROUND EXISTING WATER SERVICES, SANITARY SEWER LATERALS, AND OTHER UTILITIES.
- #### WATER AND SANITARY SEWER NOTES:
- THE MOST CURRENT EDITION OF THE THE CITY OF MINOT TECHNICAL SPECIFICATIONS AND DETAIL DRAWINGS FOR WATER LINE AND SANITARY SEWER LINE CONSTRUCTION WILL GOVERN ALL WATER AND SANITARY SEWER CONSTRUCTION, UNLESS OTHERWISE SPECIFIED HEREIN.
  - DENSITY TESTS BY AN INDEPENDENT TESTING LAB ARE TO BE MADE AS DIRECTED BY THE ENGINEER.
  - USE CARE WHEN WORKING AROUND SANITARY SEWERS AND WATER LINES. SHOULD THE CONTRACTOR DAMAGE EXISTING SEWER OR WATER LINES, HE SHALL IMMEDIATELY REPLACE THE LINE AT HIS EXPENSE WITH DUCTILE IRON PIPE. REPLACE SANITARY SEWER AND/OR WATER LINE, WITH A MINIMUM TEN FOOT SECTION OF DUCTILE IRON PIPE WHEN DRAINAGE PIPE COMES WITHIN TWO FEET OF SAID LINES, VERTICALLY OR HORIZONTALLY, UNLESS OTHERWISE DIRECTED.
- As-built Drawings - No Changes**



ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND SEALED  
 BY VICKI B TWERDOCHLIB,  
 REGISTRATION NUMBER  
 PE-10308, ON 9/12/2016 AND THE  
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 BISMARCK, NORTH DAKOTA.



**MOUSE RIVER  
 ROBINWOOD BANK STABILIZATION  
 MINOT, NORTH DAKOTA**

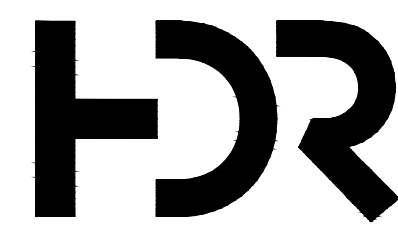
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 SHEET | 00G001



As-built Drawings - No Changes



ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

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 AT HDR ENGINEERING, INC.  
 BISMARCK, NORTH DAKOTA.



**MOUSE RIVER  
 ROBINWOOD BANK STABILIZATION  
 MINOT, NORTH DAKOTA**

**EXISTING CONDITIONS**



FILENAME | 00V101.dwg  
 SCALE | 1" = 30'

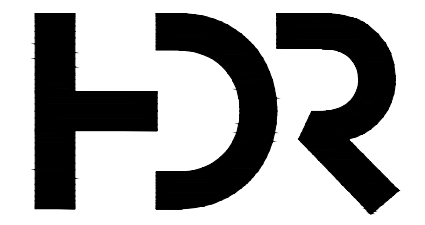
SHEET  
**00V101**



NOTES:  
 1. FIELD VERIFY EXTENTS OF EXISTING UNKNOWN UTILITIES. IF IT IS FOUND THAT A UTILITY EXTENDS UNDER LEVEE EMBANKMENT, ALERT THE OWNER AND ENGINEER AND AWAIT RESPONSE PRIOR TO PROCEEDING WITH REMOVAL.

CLEAR AND GRUB LIMITS POINT TABLE		
POINT NO.	NORTHING	EASTING
1	457144.67	1752528.35
2	457023.85	1752352.76
3	456967.28	1752502.78
4	456991.76	1752528.56
5	457135.89	1752540.63

As-built Drawings - No Changes



ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

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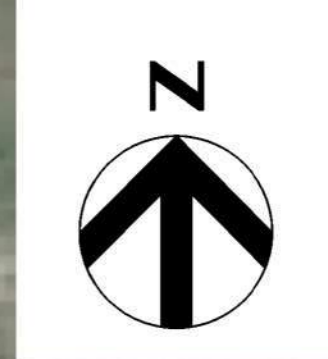
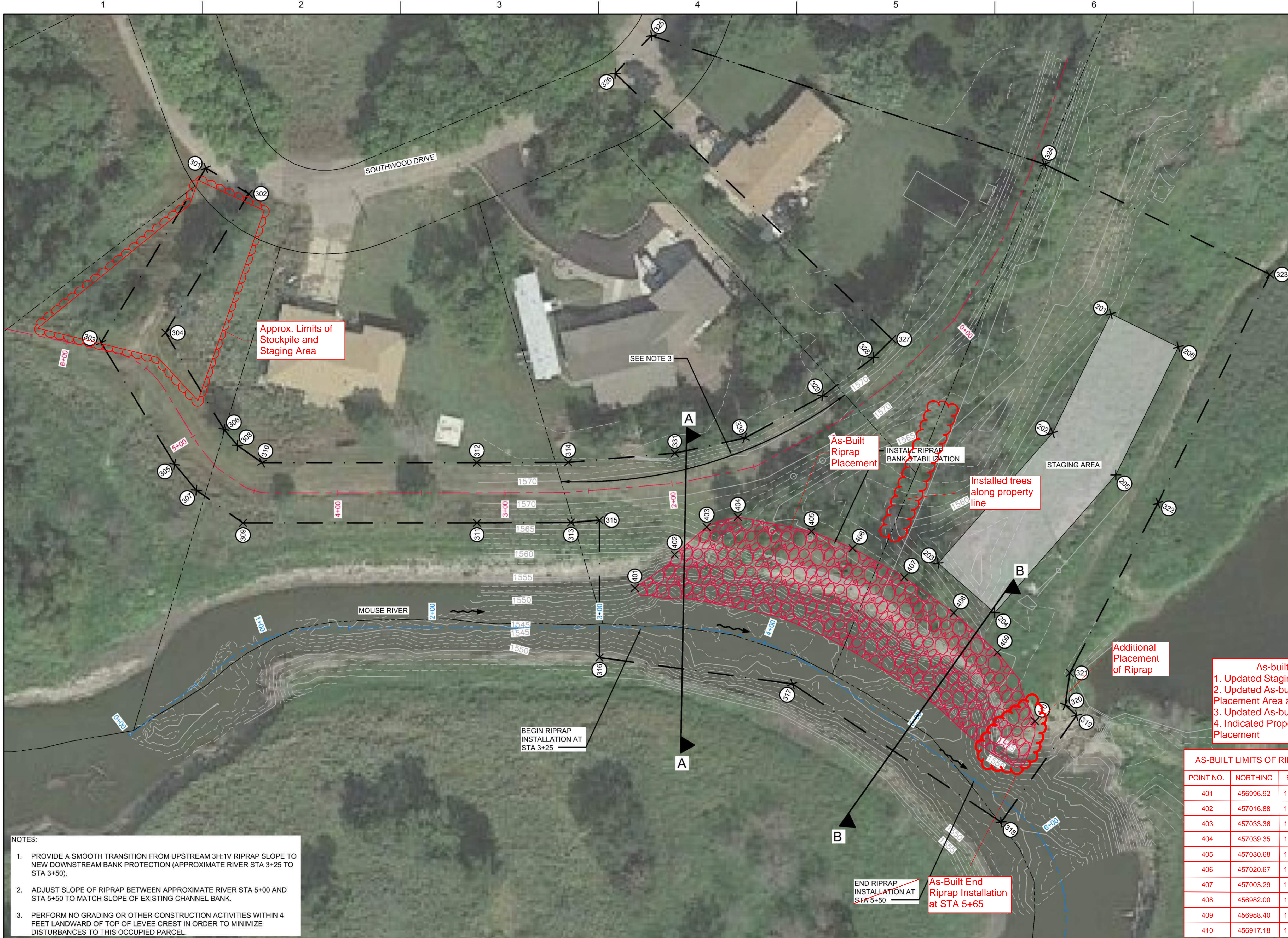
**MOUSE RIVER ROBINWOOD BANK STABILIZATION**  
 MINOT, NORTH DAKOTA

**DEMOLITION PLAN**



FILENAME | 00X101.dwg  
 SCALE | 1" = 30'

SHEET  
**00X101**



WORK LIMITS POINT TABLE		
POINT NO.	NORTHING	EASTING
301	457248.03	1752065.10
302	457232.60	1752090.83
303	457143.59	1752002.48
304	457149.48	1752041.00
305	457070.84	1752046.53
306	457091.82	1752075.91
307	457055.35	1752059.45
308	457082.09	1752084.03
309	457035.80	1752087.36
310	457071.80	1752098.71
311	457035.80	1752227.22
312	457071.80	1752227.16
313	457036.01	1752283.38
314	457072.00	1752281.76
315	457037.48	1752300.43
316	456955.31	1752300.43
317	456939.56	1752415.78
318	456856.93	1752540.59
319	456920.76	1752585.68
320	456926.90	1752578.86
321	456946.12	1752581.63
322	457047.68	1752634.33
323	457184.36	1752701.18
324	457250.27	1752566.44
325	457327.15	1752331.48
326	457304.58	1752309.81
327	457145.66	1752475.35
328	457134.63	1752464.12
329	457111.69	1752433.87
330	457086.44	1752387.21
331	457077.51	1752345.49

LIMITS OF STAGING AREA POINT TABLE		
POINT NO.	NORTHING	EASTING
201	457160.78	1752606.16
202	457089.56	1752571.32
203	457011.77	1752502.91
204	456982.06	1752536.71
205	457064.47	1752609.14
206	457141.01	1752646.58

AS-BUILT LIMITS OF RIPRAP POINT TABLE			
POINT NO.	NORTHING	EASTING	ELEVATION
401	456996.92	1752321.62	1551.42
402	457016.88	1752345.39	1558.99
403	457033.36	1752364.56	1564.04
404	457039.35	1752383.19	1564.80
405	457030.68	1752427.17	1564.99
406	457020.67	1752451.80	1564.32
407	457003.29	1752482.72	1563.45
408	456982.00	1752512.22	1562.01
409	456958.40	1752538.36	1561.79
410	456917.18	1752560.80	1557.51

<del>LIMITS OF RIPRAP POINT TABLE</del>			
<del>POINT NO.</del>	<del>NORTHING</del>	<del>EASTING</del>	<del>ELEVATION</del>
<del>101</del>	<del>457004.81</del>	<del>1752325.43</del>	<del>1554.89</del>
<del>102</del>	<del>457026.89</del>	<del>1752351.42</del>	<del>1563.84</del>
<del>103</del>	<del>457041.05</del>	<del>1752388.47</del>	<del>1566.91</del>
<del>104</del>	<del>457030.42</del>	<del>1752423.75</del>	<del>1565.19</del>
<del>105</del>	<del>457015.47</del>	<del>1752457.40</del>	<del>1564.55</del>
<del>106</del>	<del>456996.24</del>	<del>1752482.83</del>	<del>1564.99</del>
<del>107</del>	<del>456982.84</del>	<del>1752503.97</del>	<del>1563.69</del>
<del>108</del>	<del>456966.02</del>	<del>1752522.70</del>	<del>1561.14</del>
<del>109</del>	<del>456946.35</del>	<del>1752539.41</del>	<del>1560.67</del>
<del>110</del>	<del>456916.48</del>	<del>1752548.92</del>	<del>1557.99</del>

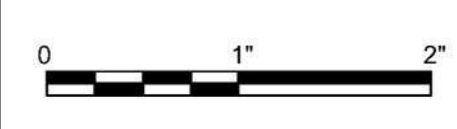
- NOTES:
1. PROVIDE A SMOOTH TRANSITION FROM UPSTREAM 3H:1V RIPRAP SLOPE TO NEW DOWNSTREAM BANK PROTECTION (APPROXIMATE RIVER STA 3+25 TO STA 3+50).
  2. ADJUST SLOPE OF RIPRAP BETWEEN APPROXIMATE RIVER STA 5+00 AND STA 5+50 TO MATCH SLOPE OF EXISTING CHANNEL BANK.
  3. PERFORM NO GRADING OR OTHER CONSTRUCTION ACTIVITIES WITHIN 4 FEET LANDWARD OF TOP OF LEVEE CREST IN ORDER TO MINIMIZE DISTURBANCES TO THIS OCCUPIED PARCEL.

PROJECT MANAGER DENNIS REEP		
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS
ISSUE	DATE	DESCRIPTION
PROJECT NUMBER 10027309		

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MOUSE RIVER ROBINWOOD BANK STABILIZATION MINOT, NORTH DAKOTA

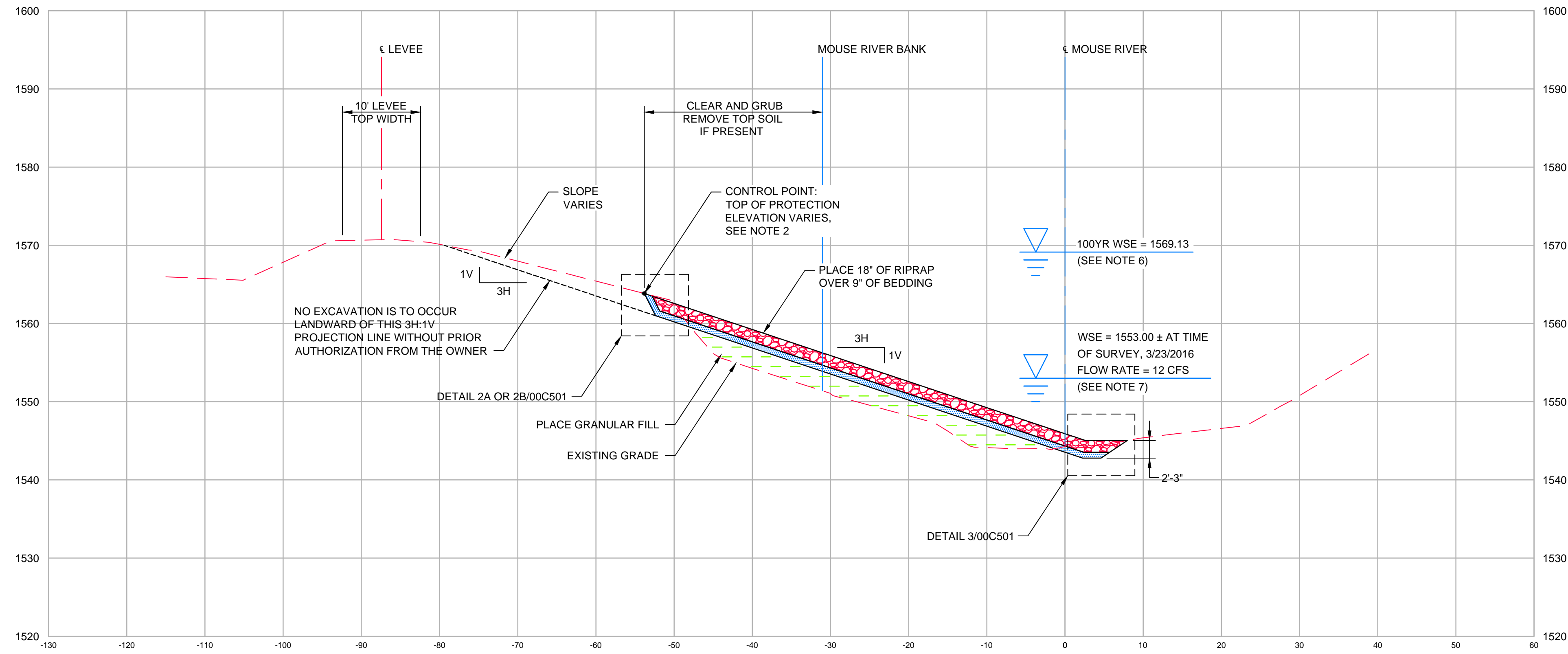


SITE PLAN

FILENAME 00C101 - 2.dwg  
SCALE 1" = 30'

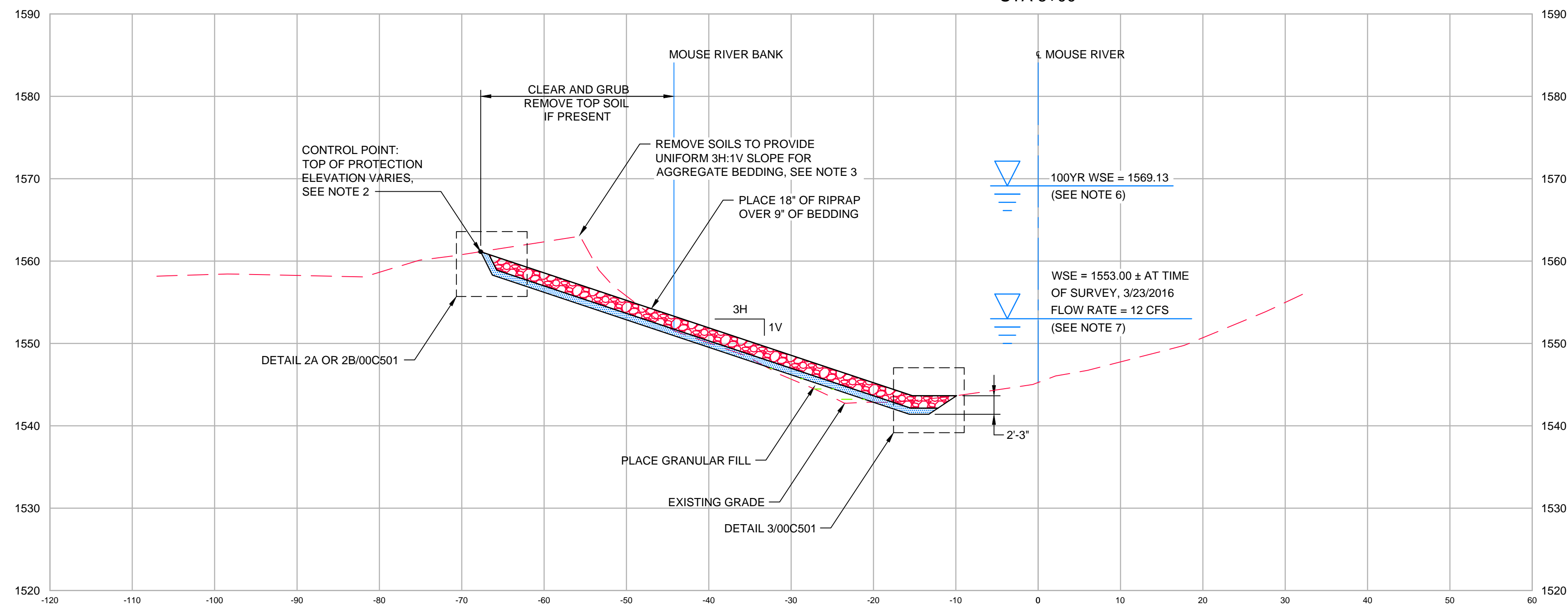
SHEET  
00C101

SECTION A  
STA 3+50



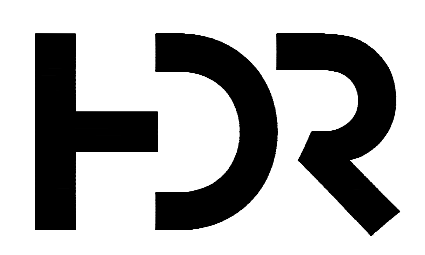
- NOTES:
1. CENTERLINE OF RIVER, CENTERLINE OF LEVEE AND RIVER BANK LOCATIONS ARE APPROXIMATE.
  2. SEE CONTROL TABLE ON SHEET 00C101 FOR TOP OF PROTECTION ELEVATIONS.
  3. WASTE EXCAVATED SOILS WITHIN THE LAYDOWN AREA OR REMOVE EXCAVATED SOILS FROM THE SITE. SOILS WASTED IN LAYDOWN AREA ARE TO BE GRADED TO DRAIN, COVERED WITH TOPSOIL AND SEEDED.
  4. PREPARE SUBGRADE TO DRAIN TOWARDS THE RIVER.
  5. COHESIVE SOIL SHALL BE PLACED AND COMPACTED IN LOW SPOTS NOT ABLE TO DRAIN.
  6. 100 YEAR WSE SHOWN IS BASED ON 2013 MODEL DEVELOPED FOR THE MOUSE RIVER ENHANCEMENT FLOOD PROTECTION PROJECT AND IS CONSIDERED THE BEST AVAILABLE INFORMATION.
  7. WATER LEVEL SHOWN IS WHAT WAS PRESENT AT THE TIME OF THE SURVEY ON 3/23/2016. ASSUMED FLOW RATE FOR THE DATE IS BASED ON PROVISIONAL GAGE DATA FOR USGS GAGE 05117500. WATER LEVEL DURING CONSTRUCTION WILL VARY AND MAY NOT MATCH THE WATER LEVEL AT THE TIME OF SURVEY.

SECTION B  
STA 5+00



As-built Drawings - No Changes

SCALE IN FEET



ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

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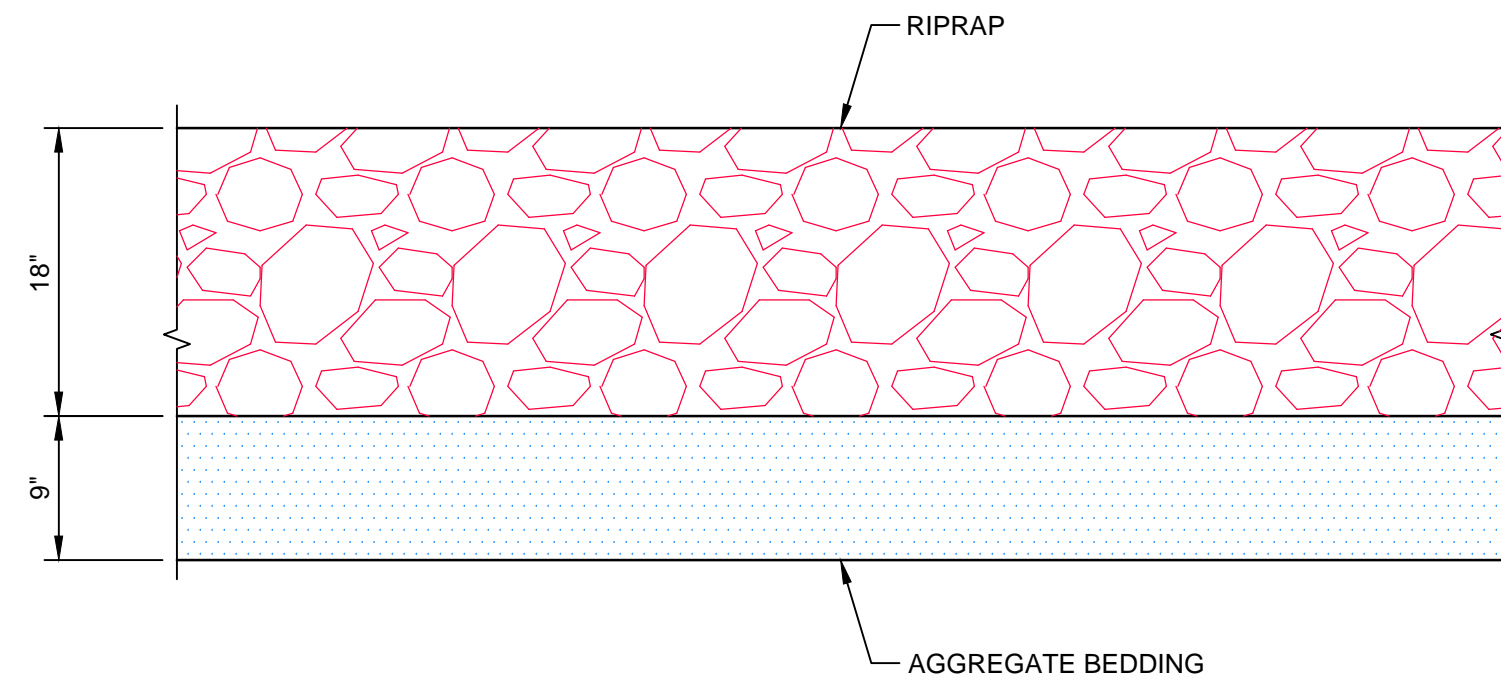


MOUSE RIVER  
ROBINWOOD BANK STABILIZATION  
MINOT, NORTH DAKOTA

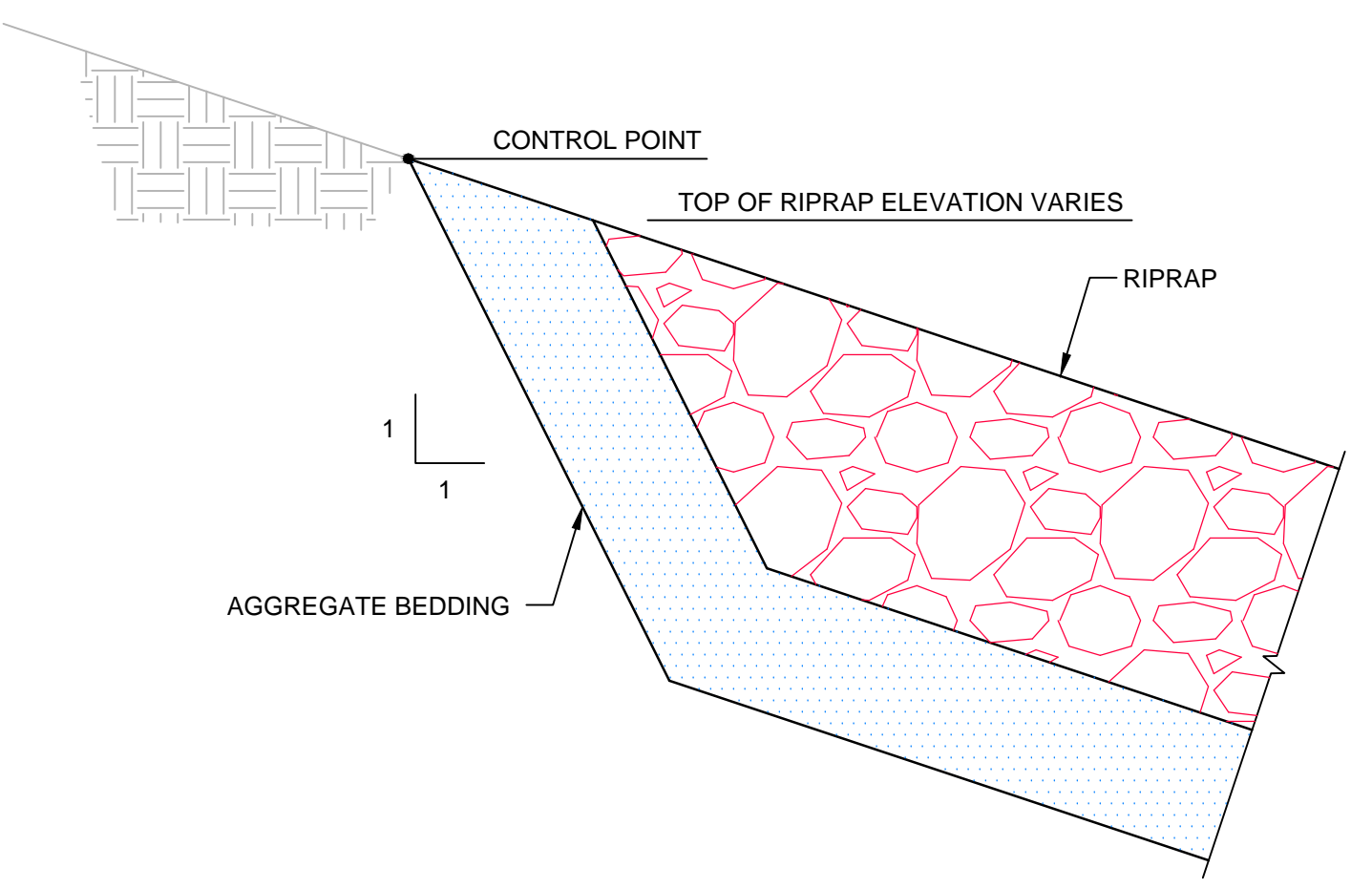
TYPICAL SECTIONS

SCALE 1" = 10'

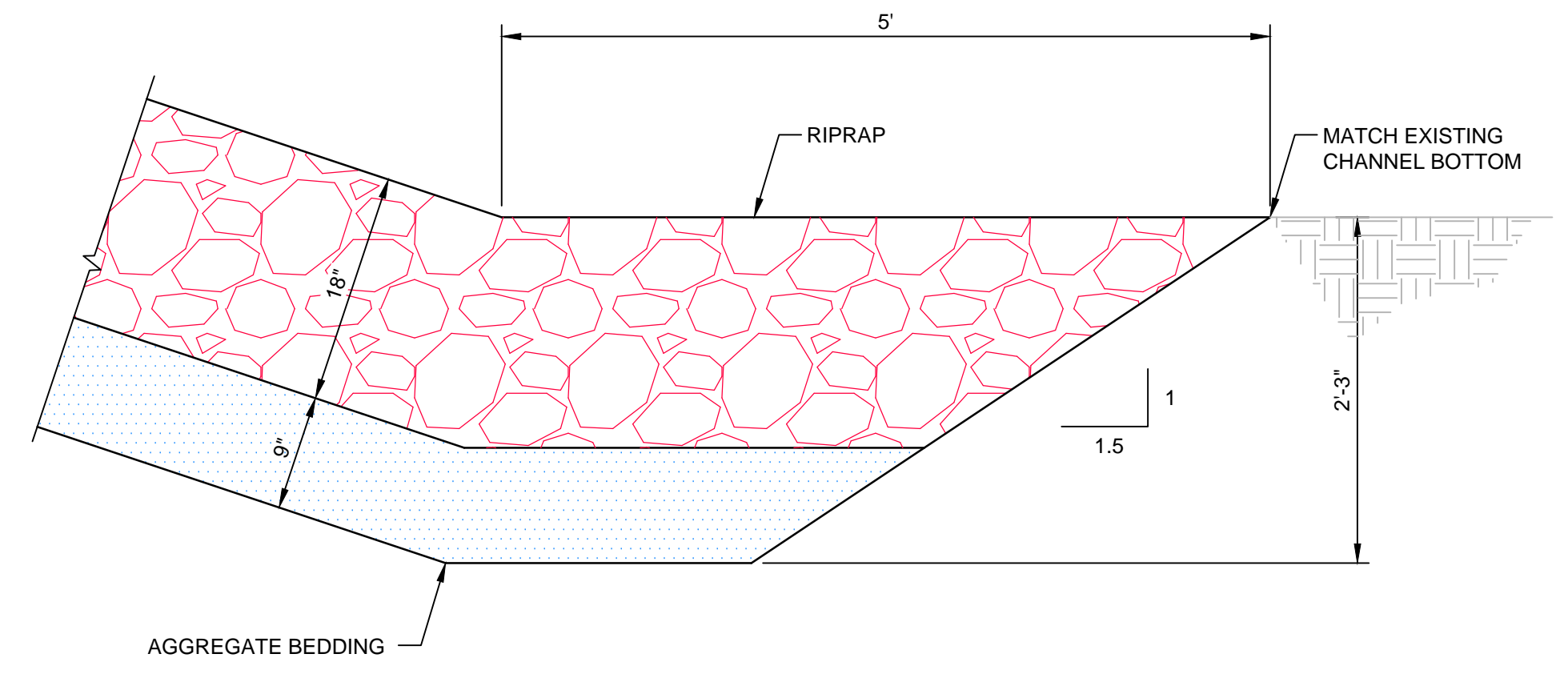
FILENAME 00C301.dwg  
SHEET 00C301



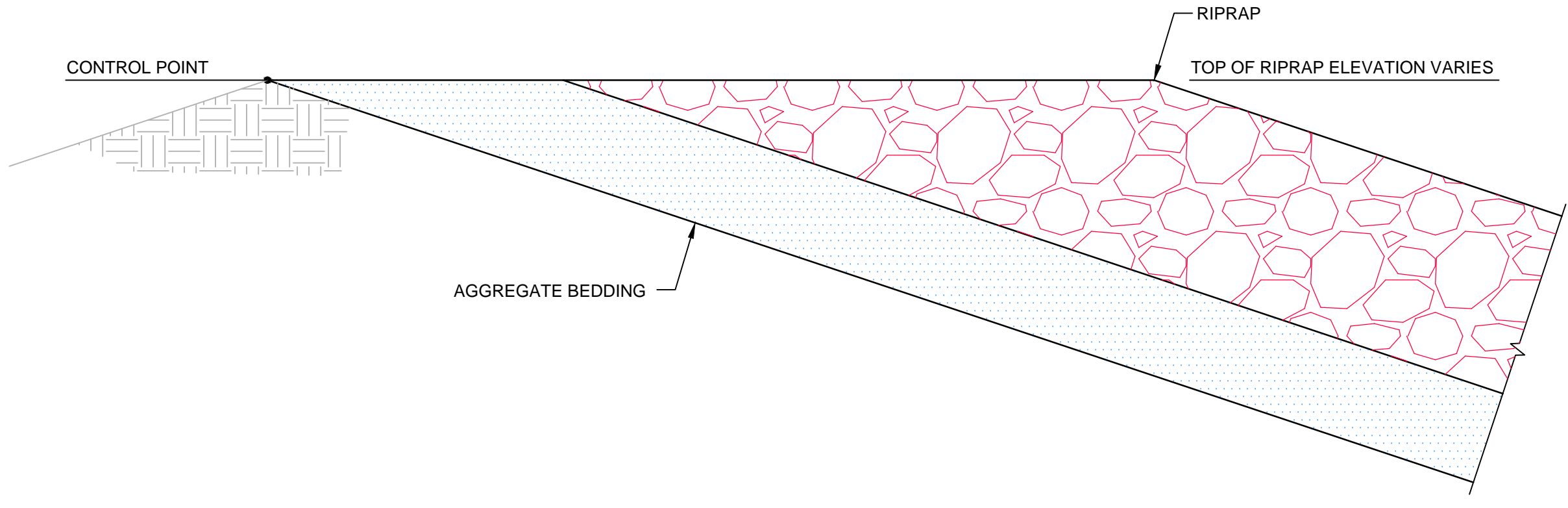
**RIPRAP SECTION**  
NOT TO SCALE



**RIPRAP TOP OF PROTECTION DETAIL**  
NOT TO SCALE

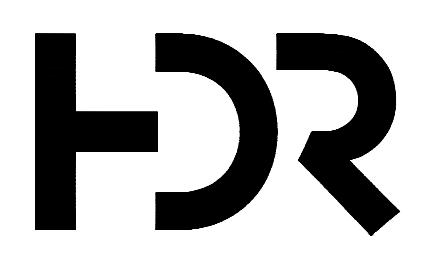


**RIPRAP TOE OF PROTECTION DETAIL**  
NOT TO SCALE



**RIPRAP TOP OF PROTECTION DETAIL (ALTERNATE)**  
NOT TO SCALE

As-built Drawings - No Changes



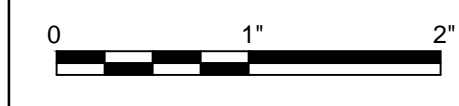
ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

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BISMARCK, NORTH DAKOTA.



**MOUSE RIVER  
ROBINWOOD BANK STABILIZATION  
MINOT, NORTH DAKOTA**



**CIVIL DETAILS**

FILENAME | 00C501.dwg  
SCALE | AS NOTED

SHEET  
**00C501**

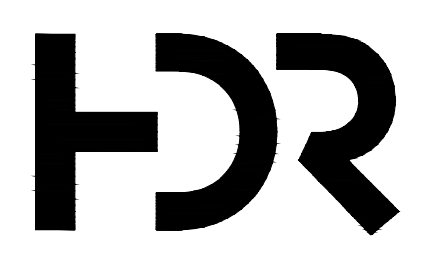


WETLAND LIMITS POINT TABLE		
POINT NO.	NORTHING	EASTING
401	457319.40	1752666.51
402	457304.09	1752650.61
403	457280.89	1752630.06
404	457262.67	1752619.02
405	457239.59	1752604.47
406	457218.32	1752593.96
407	457196.76	1752592.71
408	457176.31	1752590.11
409	457159.48	1752588.64
410	457144.43	1752585.93
411	457133.48	1752578.35
412	457122.48	1752568.36
413	457110.83	1752555.39
414	457096.89	1752548.47
415	457091.46	1752546.77
416	457075.14	1752540.49
417	457068.25	1752525.63
418	457062.51	1752508.34
419	457056.89	1752497.05
420	457054.84	1752484.49
421	457045.63	1752470.63
422	457039.19	1752467.02
423	457037.24	1752468.38
424	457034.86	1752470.40
425	457030.75	1752473.78
426	457029.10	1752479.31
427	457025.93	1752485.96
428	457018.74	1752488.74
429	457012.14	1752488.65
430	457001.43	1752491.49
431	456998.23	1752496.17
432	456993.08	1752502.42
433	456988.56	1752507.35
434	456983.19	1752513.82
435	456977.15	1752519.44
436	456969.77	1752524.41

WETLAND LIMITS POINT TABLE		
POINT NO.	NORTHING	EASTING
437	456968.57	1752530.15
438	456966.55	1752539.20
439	456968.65	1752545.31
440	456971.81	1752549.86
441	456977.62	1752554.80
442	456984.07	1752558.85
443	456993.23	1752566.58
444	457003.91	1752572.97
445	457013.95	1752581.12
446	457024.10	1752586.39
447	457062.62	1752606.13
448	457099.69	1752630.01
449	457148.29	1752660.86
450	457182.98	1752685.98
451	457214.23	1752718.96
452	457235.62	1752738.94
453	457256.37	1752757.14
454	457271.03	1752770.05
455	457285.98	1752767.96
456	457296.71	1752764.15
457	457306.14	1752755.56
458	457316.27	1752733.33
459	457317.96	1752712.31
460	457020.66	1752609.34
461	457008.69	1752604.08
462	456994.46	1752595.57
463	456983.83	1752591.16
464	456978.92	1752587.74
465	456974.42	1752582.11
466	456965.54	1752577.67
467	456953.85	1752575.27
468	456942.82	1752572.84
469	456936.00	1752572.54
470	456927.28	1752576.23
471	456921.87	1752602.70
472	457016.87	1752628.97

- NOTES:
- SEE DETAILS OF THE CONSTRUCTION ENTRANCE AND SILT CURTAIN ON SHEET 00C503.
  - SEE SHEET 00C503 FOR MORE SPECIFIC NOTES ON THE EROSION CONTROL PLAN FOR THIS SITE.
  - MINIMIZE IMPACTS TO WETLAND AREA. NO PERMANENT FILL OR SPOIL SHALL BE PLACED WITHIN THE DELINEATED WETLAND AREA. RESTORE DISTURBED AREAS WITHIN THE WETLAND AREA WITH WETLAND SEEDING MIX.

As-built Drawings - Indicated Erosion Control Features Not Utilized



ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

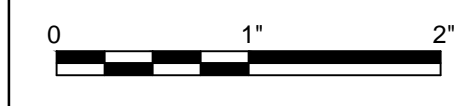
PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

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MOUSE RIVER ROBINWOOD BANK STABILIZATION MINOT, NORTH DAKOTA

EROSION CONTROL PLAN



FILENAME | 00C502.dwg  
SCALE | 1" = 30'

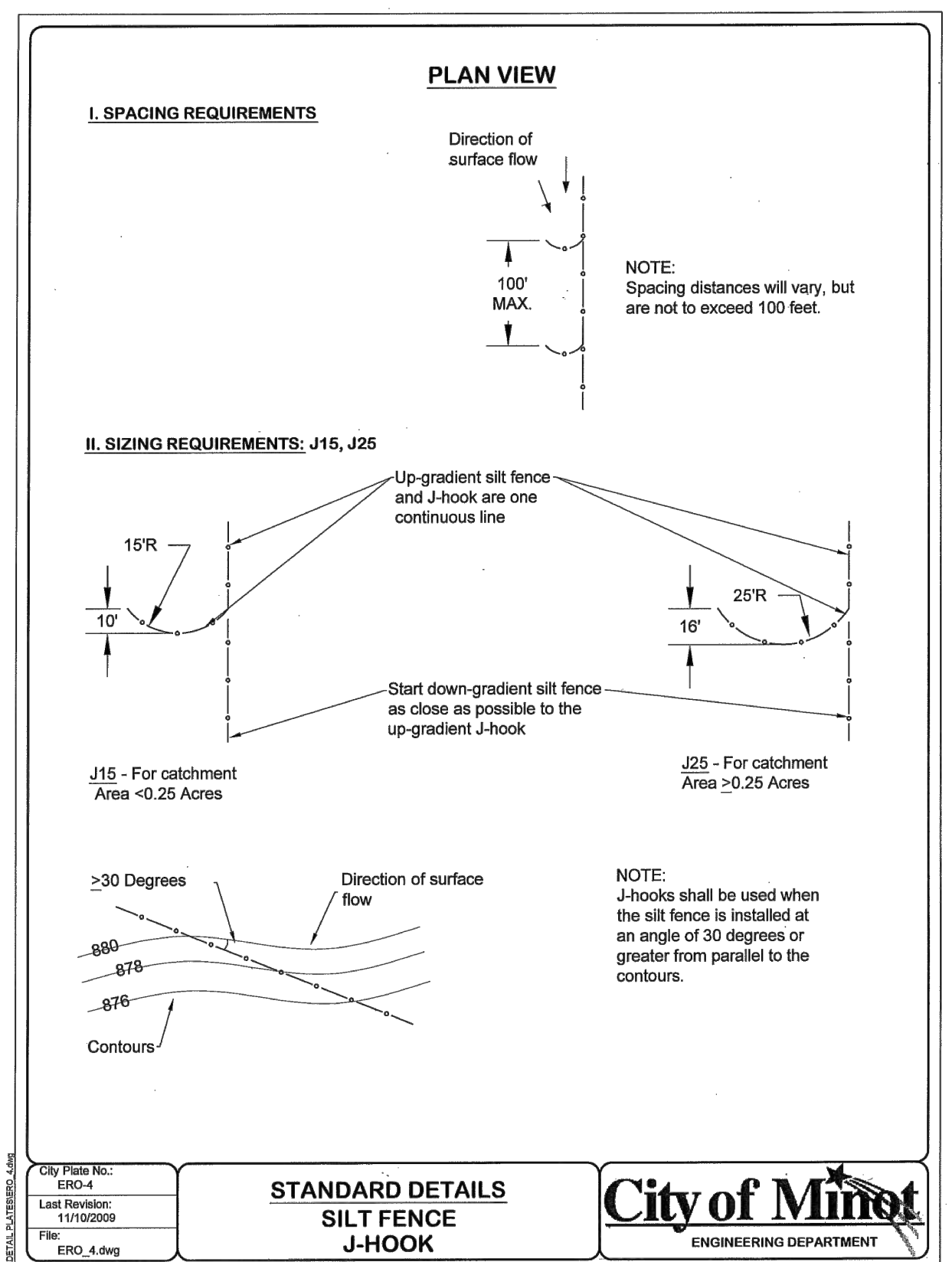
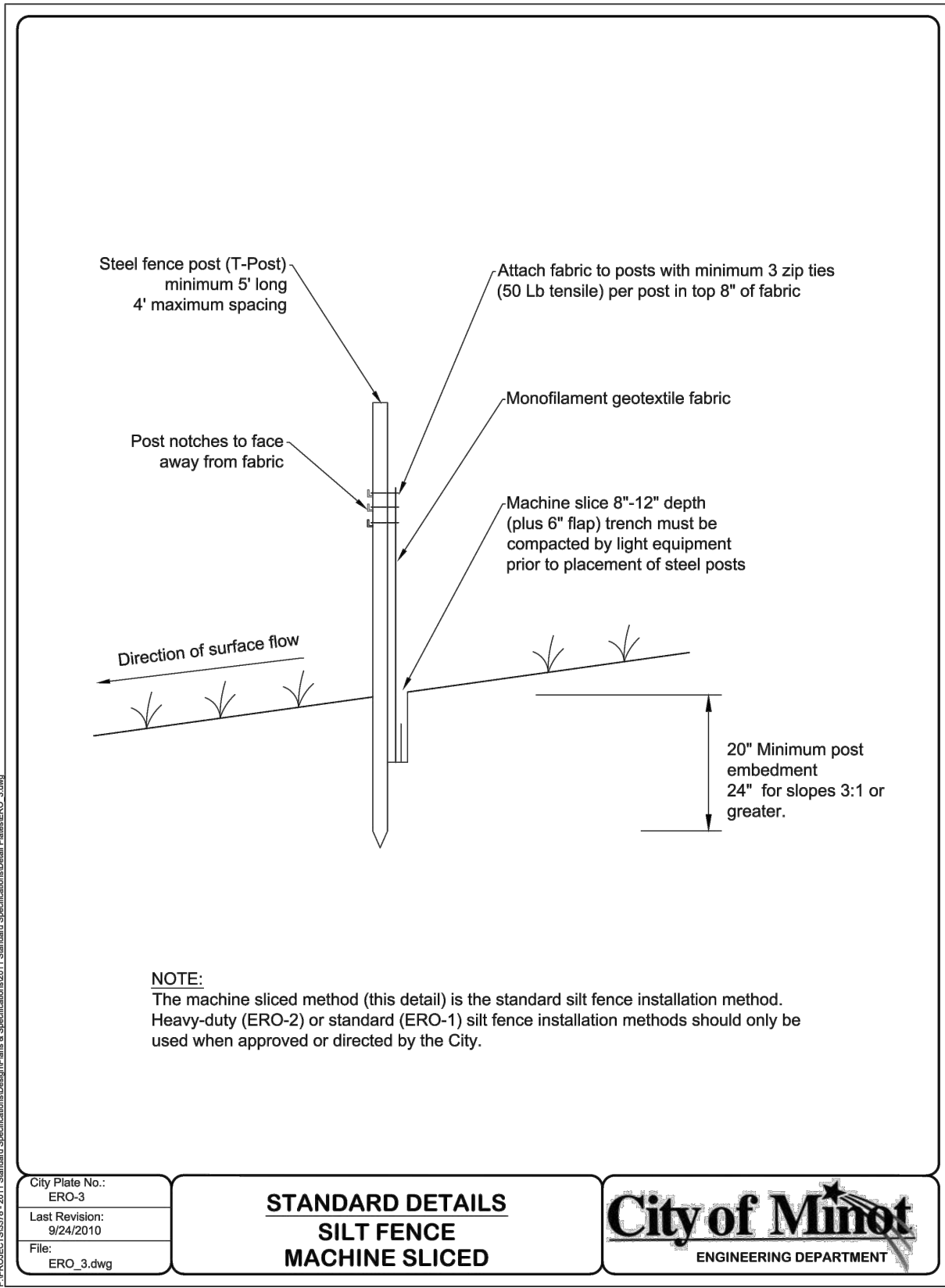
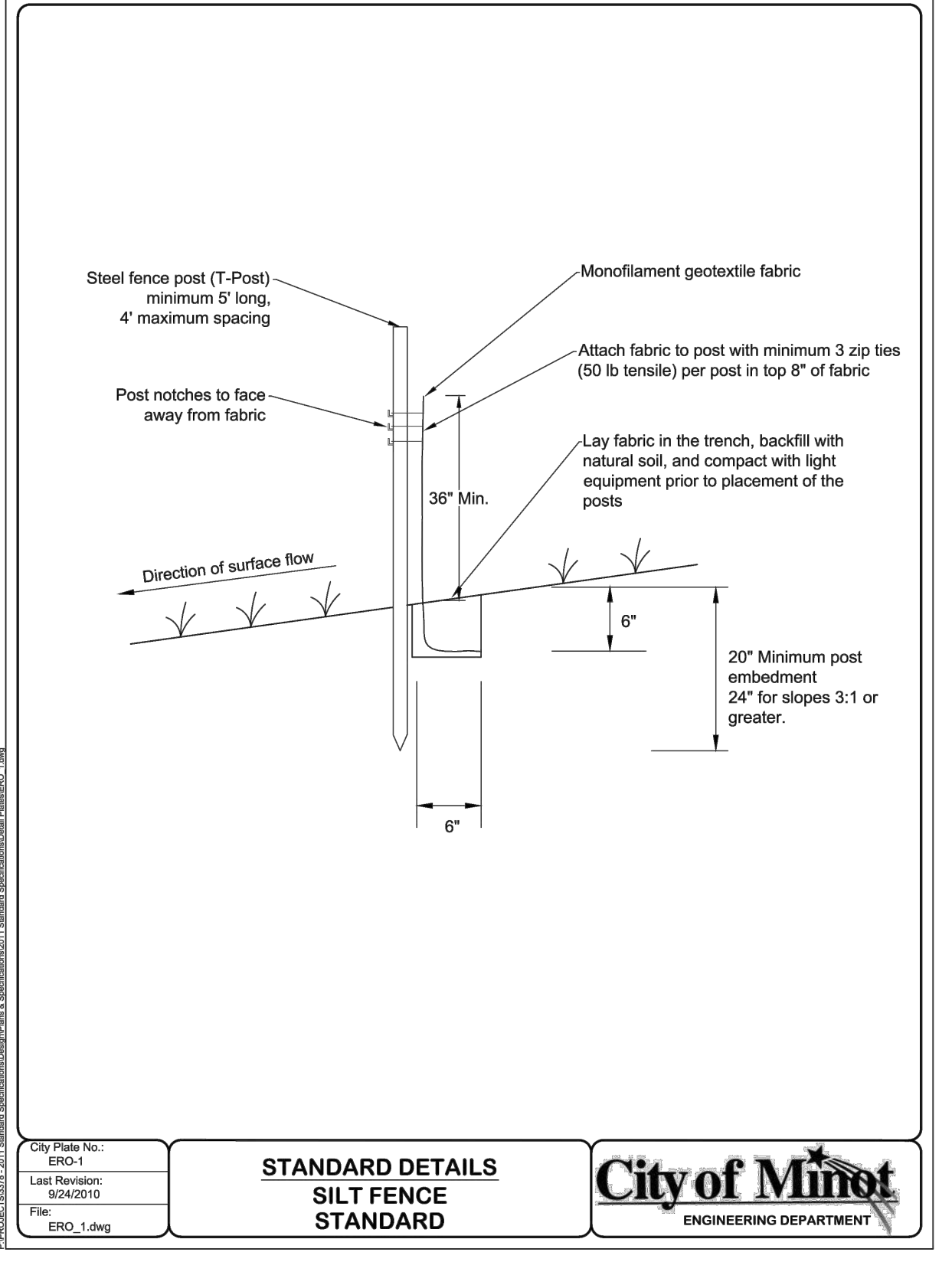
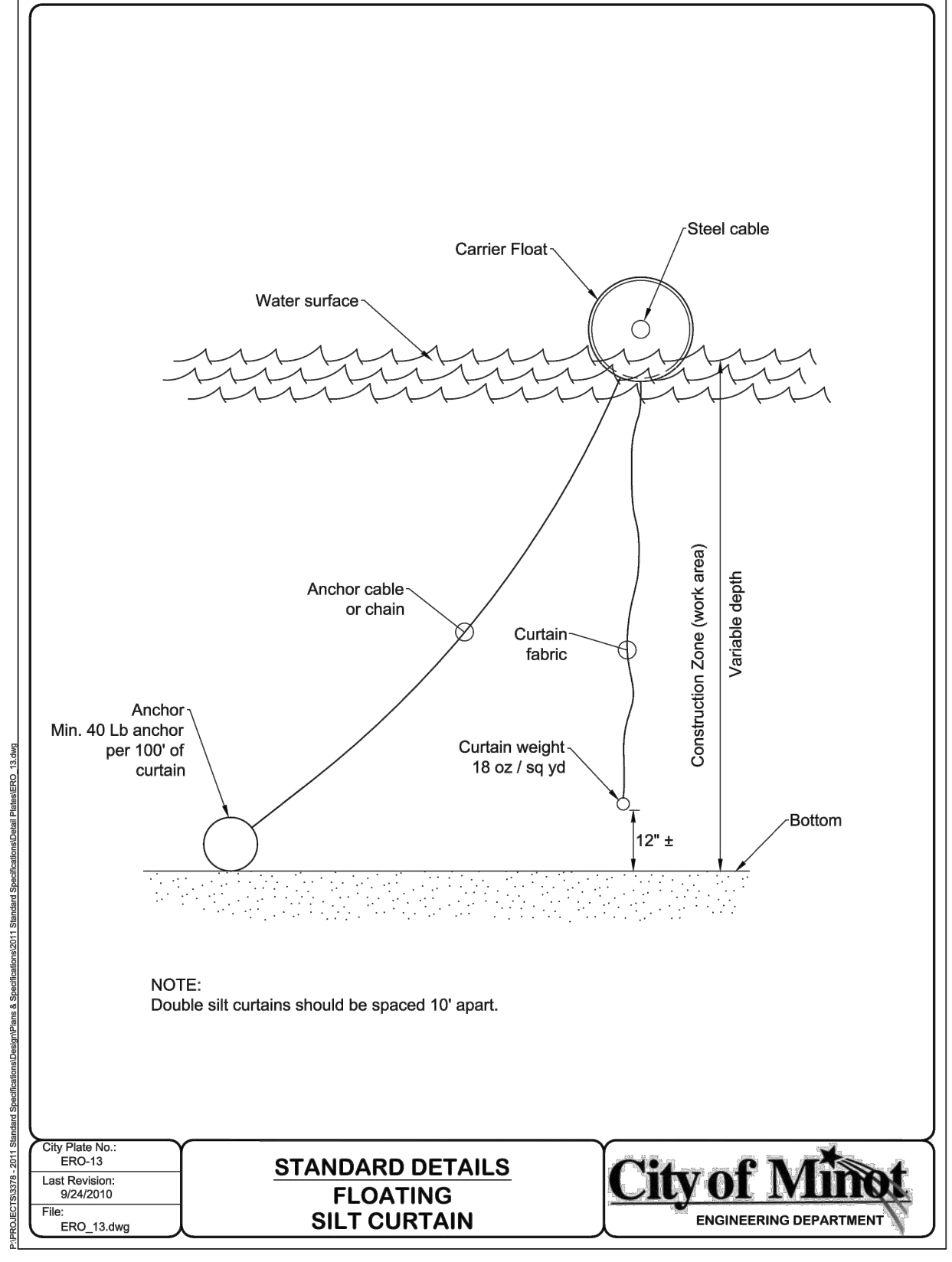
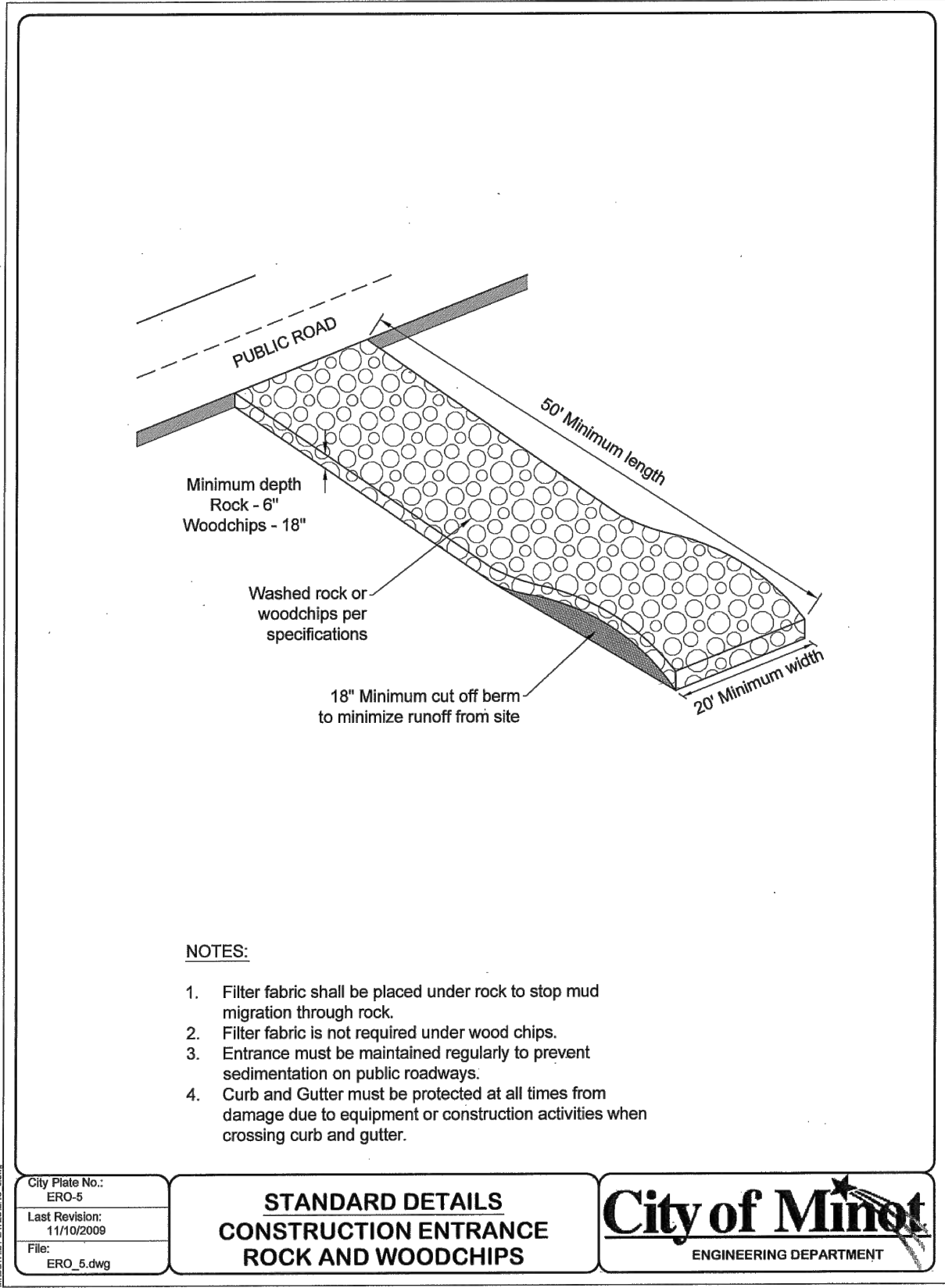
SHEET  
**00C502**



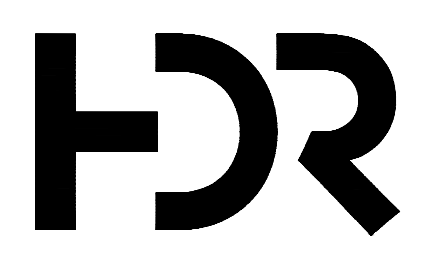
**EROSION CONTROL NOTES**

**GENERAL EROSION CONTROL NOTES**

1. INSTALL CONSTRUCTION ENTRANCES IN LOCATIONS SHOWN IN ACCORDANCE WITH STATE STANDARDS AND WITH MINIMAL DISTURBANCE TO SURROUNDING VEGETATION AND TREES. CONTRACTOR SHALL RECEIVE PRIOR APPROVAL FROM ENGINEER BEFORE TREE REMOVAL. ADDITIONAL EROSION CONTROL MEASURES MAY BE NECESSARY BASED ON SITE CONDITIONS AND CONTRACTOR'S PRACTICES.
2. ANY DITCH LINES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED AND STABILIZED BY THE CONTRACTOR.
3. GRUBBING SHALL BE PERFORMED DURING PREDICTED PERIODS OF DRY WEATHER.
4. GROUND STABILIZATION SHALL BE ACHIEVED CONSISTENT WITH ND GENERAL PERMIT NDR10-0000 EFFECTIVE AS OF AUGUST 2, 2011. WHERE LAND DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, ALL DISTURBED AREAS SHALL BE PROVIDED WITH TEMPORARY OR PERMANENT STABILIZATION WITH HAY WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY EXCEPT FOR ALL SWALES, DITCHES AND ALL SLOPES BETWEEN 3:00 AND 4:50 OR STEEPER THAN OR EQUAL TO 3H:1V, WHICH SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER WITHIN 7 CALENDAR DAYS FROM THE LAND DISTURBING ACTIVITY. THE CONTRACTOR SHALL REFER TO GENERAL PERMIT NDR10-0000 FOR SPECIFIC CONDITIONS, EXEMPTIONS AND DEFINITIONS FOR MEETING THE STABILIZATION REQUIREMENTS.
5. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAINS MUST BE REMOVED.
6. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, FENCING, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE PLANS.
7. INSTALL EROSION CONTROL MEASURES PRIOR TO BEGINNING CONSTRUCTION. MAINTAIN SEDIMENT CONTROL UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION.
8. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
9. ON-SITE STOCKPILING OF SOIL IS ALLOWED WITHIN THE LIMITS OF DISTURBANCE SUBJECT TO PLACING APPROPRIATE EROSION CONTROL DEVICES TO PREVENT SOIL LOSS DURING RAIN EVENTS. LOCATIONS SHALL BE PRE-APPROVED BY THE INSPECTOR OR ENGINEER.
10. CHANGES TO THE EROSION CONTROL PLAN WILL BE DOCUMENTED AND SHOWN ON THE CONTRACTOR'S FIELD MAINTAINED AS-BUILT DRAWINGS. A SET OF CONSTRUCTION DRAWINGS MUST BE ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE ENGINEER UPON REQUEST.
11. DISTURBED AREA WILL BE APPROXIMATELY 0.65 ACRES. MODIFY EROSION CONTROL PLANS AS REQUIRED TO MEET REGULATORY REQUIREMENTS OR CHANGING SITE CONDITIONS.
12. PROVIDE NOTIFICATION TO ALL AFFECTED PROPERTY OWNERS PRIOR TO CONSTRUCTION, AS APPLICABLE.
13. ANY OFF-SITE BORROW REQUIRED FOR THIS PROJECT MUST COME FROM AN APPROVED EROSION CONTROL PLAN SITE REGULATED UNDER THE MINING ACT OF 1971. ANY WASTE TAKEN OFF-SITE MUST BE DELIVERED TO A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. DEBRIS FROM DEMOLITION ACTIVITIES SHOULD BE DISPOSED OF AT AN APPROVED FACILITY.
14. INSPECT THE SEDIMENT AND EROSION CONTROL MEASURES AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. SELF-INSPECTION REPORTS ARE REQUIRED.



As-built Drawings - No Changes



ISSUE	DATE	DESCRIPTION
B	7/2017	AS-BUILT
A	9/2016	ISSUED FOR BIDS

PROJECT MANAGER	DENNIS REEP
PROJECT NUMBER	10027309

THIS DOCUMENT WAS  
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BY VICKI B TWERDOCHLIB,  
REGISTRATION NUMBER  
PE-10308, ON 9/12/2016 AND THE  
ORIGINAL DOCUMENT IS STORED  
AT HDR ENGINEERING, INC.  
BISMARCK, NORTH DAKOTA.



**MOUSE RIVER  
ROBINWOOD BANK STABILIZATION  
MINOT, NORTH DAKOTA**

**EROSION CONTROL NOTES AND DETAILS**

0 1' 2'

FILENAME | 00C503.dwg  
SCALE | AS NOTED

SHEET  
**00C503**

## Appendix A2-2

- 2017 Ward County Water Resource District Board Meeting  
Minutes
- 2018 Ward County Water Resource District Board Meeting  
Minutes
- 2018 HDR Kings Court/Sawyer Levee Inspection Assessment  
Memo
  - Ward County Systems Pump Maintenance Contract
  - Encroachment/Obstruction Verification Documentation
  - Kings Court/Sawyer Landowner Communication
  - Why You Need Flood Insurance Pamphlet

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
JANUARY 9, 2017

Nominations were opened for Chairman. Tom Klein was nominated and unanimously elected Chairman.

Nominations were opened for Vice Chairman. Loren Johnson was nominated and unanimously elected Vice Chairman.

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep. Tyler Bakke, with McGee Law Firm, was in attendance filling in for Bryan Van Grinsven.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda with additions. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of December 12, 2016 and special meeting minutes from December 19, 2016. Johnson seconded the motion. The motion carried unanimously.

Bills: Johnson made a motion to approve payment of the bills as presented. Zimmerman seconded the motion. The motion carried unanimously.

Bruce Peterson joined the meeting.

Margaret Township Drainage Permit: Amanda Schooling, Ward County Emergency Manager joined the meeting. Schooling reported that five different families are having continual flooding issues in Margaret and Tatman Townships, due to a culvert size change in 2011. There would be cost share assistance to alleviate the flooding issues from the State Water Commission. Foley made a motion authorizing the Water Board Engineer to assist Schooling in filling out a Surface Drain Permit with the SWC. Peterson seconded the motion. The motion carried: Foley-yes, Peterson-yes, Johnson-no, Zimmerman-yes, Klein-yes.

2<sup>nd</sup> Larson Coulee Detention Project: Ryan Ackerman appeared before the Board and updated the Board regarding reconstruction of the 30<sup>th</sup> Street SW embankment. The process of securing easements for the project has begun.

Water Board Attorney, Bryan Van Grinsven joined the meeting.

Drainage Complaint DC16 006 Poleschook/Krueger: The following appeared before the Board: Dennis Krueger, Jeff Krueger, Kaylon Faul, Cordell Poleschook and Carl Poleschook. Following discussion from all participants of the complaint, Johnson made a motion that the complaint be dismissed without merit. Zimmerman seconded the motion. The motion carried..

Robinwood Bank Stabilization Project: Discussion was held regarding an Agreement for Cost-Share Reimbursement with the State Water Commission. Foley made a motion authorizing Van Grinsven to notify the State Water Commission that as the project has been completed, the Water Board would not be able to satisfy the insurance and indemnification requirements of the agreement. Johnson seconded the motion. The motion carried.

Drainage Complaint DC16 007 Zietz/Henke: The following appeared before the Board: Robin Zietz, Paige Zietz, Eric Henke and Randy Henke by telephone. Zietz's complaint contends that Henke has constructed a dam/diversion that will cause flooding on his property in Section 17 of Newman Township. Foley made a motion authorizing the Water Board Engineer to do a visual field inspection as soon as weather conditions permit. Johnson seconded the motion. The motion carried.

Drainage Complaint DC16 004 Jundt/Heintz: A Notice to Remove Obstruction and Affidavit of Service was sent by registered mail to Doug Heintz. Water Board Engineer had requested watercourse determination from the Office of the State Engineer – no response has been received at this time.

Drainage Complaint DC14-009 Melius/Ehr: Water Board Engineer Reep presented a scope and fee document to perform analysis, design and permitting services to repair the eroded area associated with this complaint. The cost for the engineering services to design a permanent repair of a channel to eliminate erosion would be approximately \$31,000.00. Foley made a motion authorizing the Water Board Attorney to forward the proposal to the City of Minot and landowners with a request for City cost sharing, and that the Ward County Water Board will construct and turn over to the landowners. Peterson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Zimmerman made a motion to accept and adopt comments provided by the Water Board Engineer, regarding the City of Minot Planning Commission Packet, and that based on review and recommendation of the Water Board Engineer that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: *Gene & Patricia Eggen-Afton Township, Galen Larson Living Trust-Ryder Township, Albert & Grace Irwin-Freedom Township and Leon & Linda Borud-Tolgen Township.* Johnson seconded the motion. The motion carried unanimously.

Foley made a motion authorizing the Water Board Engineer to assist the Chairman in filling out the Reservoir Water Use Survey from the ND State Water Commission and the Surety Status Inquiry on DL Barkie concerning the Robinwood Bank Stabilization Project.

Johnson seconded the motion. The motion carried unanimously.

Johnson made a motion that a statement from McGee Law Firm in the amount of \$2478.50 be added to the approved list of bills. Zimmerman seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, February 13, 2017 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

#7227 Ward County Parks	18,300.00
#7228 Tom Klein	1,021.72
#7229 Bruce Peterson	2,106.74
#7230 Jason Zimmerman	748.03
#7231 XCEL	75.99
#7232 Nedrose SSD	1,318.62
#7233 Ramkota	297.00
#7234 Walmart	24.37
#7235 SRT	90.83
#7236 VOID	
#7237 VOID	
#7238 Maurice Foley	801.36
#7239 ND WRDA	475.00
#7240 HDR Engineering	21,542.59
#7241 Job Service, ND	43.36
#7242 Cogdill Construction	400.00
#7243 Artnson, Stewart Wegner	1,118.18
#7244 Lowes Printing	81.30
#7245 Ottertail	18.41
#7246 McGee Law Firm	2,478.50
#7247 Nancy Kramer	<u>2,032.07</u>
	\$52,974.07

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
FEBRUARY 13, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven. See attached for others in attendance.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda with additions. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of January 9, 2017. Zimmerman seconded the motion. The motion carried unanimously.

Bills: Zimmerman made a motion to approve payment of the bills as presented. Johnson seconded the motion. The motion carried unanimously.

Bruce Peterson joined the meeting.

1<sup>st</sup> Larson Sanitary Sewer Project West:

Foley made a motion that a new checking account be opened for the 1<sup>st</sup> Larson Sanitary Sewer Project West, and that Jason Zimmerman be authorized to be a signer on the account, and other Water Board accounts, along with Chairman Tom Klein and Secretary Nancy Kramer. Johnson seconded the motion. The motion carried unanimously.

Water Board Attorney Van Grinsven reviewed the revised easements and settlement agreement with the Aga's. Johnson made a motion authorizing the Chairman and Secretary to sign and execute the documents. Zimmerman seconded the motion. The motion carried unanimously.

Justin Ahmann, Ackerman Estvold reported notification had been received from Robert Gibb & Sons that an error had been made in Pay Application #7 and an additional \$55,985.55 was owed to Gibb. Ackerman Estvold reviewed the pay app and confirmed the error. This amount was included in the total project costs approved by the Water Resource Board and the funding received from SRF reimbursements so it would not require the Water Resource Board to pay more than what was approved. Foley made a motion approving payment of \$55,985.55 to Robert Gibb & Sons for the Corrected Pay Application #7. Johnson seconded the motion. The motion carried unanimously.

Discussion was held regarding connection/hookup fees for properties outside the project area. Zimmerman made a motion that future hookup fees for such properties be set at \$22,047.00 per benefit unit, the same as current assessed properties. Johnson seconded the motion. The motion carried unanimously. The Water Board Attorney was directed to draft a connection agreement for use with properties outside the project area.

Johnson suggested the Water Board may want to consider reconciling accounts where project funds were deposited, to determine what expenditures have been covered and which (if any) still require payment.

Drainage Complaint DC17 001 Gene Kraft/Ward County Water Resource: Following review of the complaint Johnson made a motion authorizing the Water Board Attorney to issue a letter to Mr. Kraft informing him that the Water Board finds no violation of water law as alleged by the complaint. It was noted that the Water Board does not have access rights across landowner's property to restore a block, which was constructed in approximately

2009. Mr. Kraft later appeared before the Board and was encouraged to request permission for access from the current landowner to restore the block.

Drainage Complaint DC17 002 Gene Kraft/Unknown: Mr. Kraft alleges that a culvert installed at 33<sup>rd</sup> Ave SE and 50th St SE has been plugged and will cause flooding. Following review of the complaint, the Water Board Attorney was directed to issue a letter Mr. Kraft informing him that the Water Board finds no violation of water law as alleged. Because the culvert is located in a township road, this would be a township matter. The Chairman reported his investigation had determined that the culvert was not plugged.

Drainage Complaint DC14 009 Melius-Ehr: Reep reported there has been no response from the City or landowners. Peterson made a motion that HDR Engineering be authorized to proceed with the project design if the landowners agree to accept responsibility for the project upon completion. Johnson seconded the motion. The motion carried unanimously.

Ward County CDBG-DR Program: Foley made a motion to receive and file, with no comment, a letter dated January 17, 2017 from SRF Consulting Group regarding the raising of the grade of township roadways in Rushville Township and Spencer Township. Zimmerman seconded the motion. The motion carried unanimously.

Afton Township (Aaron Faken) Drain Permit: Notice was received from Office of the State Engineer that no permit was required. The Water Board had previously indicated it would have no objection to the project if OSE concluded no permit was required. Foley made a motion to receive and file the notice. Zimmerman seconded the motion. The motion carried unanimously.

SB2047 Quick Take Authority: Water Board Attorney Van Grinsven reviewed SB 2047 relating to the authority of water resource board's to exercise power of quick take of eminent domain. There are concerns of possible delays imposed by negotiation timelines.

Robinwood Bank Stabilization Project: Foley made a motion authorizing the Chairman and Secretary to execute the cost-share agreement with the State Water Commission. Johnson seconded the motion. The motion carried unanimously. Reep reminded the Board that there is still some remaining work to be completed following the snow melt.

Planning Commission Packet and Plat Applications. Johnson made a motion to accept and adopt comments provided by the Water Board Engineer, regarding the City of Minot Planning Commission Packet, and that based on review and recommendation of the Water Board Engineer that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: *Carol and Robert Schwan-Surrey Township, Des Lacs Four Season-Des Lacs Township and Larry & Sharla Nesson-Rice Lake Township (also noting that development of properties adjacent to Rice Lake should meet Ward County minimum elevation guidelines to account for the natural overflow elevation of Rice Lake and for wave runoff).* Zimmerman seconded the motion. The motion carried unanimously.

Margaret Township Drain Permit: Reep reported he is continuing to work with Amanda Schooling regarding this permit.

US Highway 83 Bypass Replacement Project: Zimmerman made a motion to receive and file a letter from the US Army Corps of Engineers to ND Department of Transportation regarding this project. Peterson seconded the motion. The motion carried unanimously

East Side Estates: Foley reported he had been contacted by a property owner regarding high flood insurance premiums. Foley also reported that a dike to protect East Side Estates is part of a long-range plan, but is too far out in the future. He is recommending that the Water Board look into construction of a protective dike, consistent with USACE specifications. The question was raised whether or not the project would result in insurance premium savings for homeowners and whether or not property owners would participate in any project costs. Ward County Engineer Dana Larsen reported there are approximately 13 homes that would have to be acquired for the project. It was also suggested that the issue be discussed with the Souris River Joint Board before given further consideration.

The next regular meeting will be Monday, March 13, 2017 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

IRS-941	958.28
NDPERS	404.97
Verendrye	122.00
#7248 XCEL	84.83
#7249 Walmart	26.84
#7250 HDR Engineering	6976.79
#7251 Nedrose SSD	660.80
#7252 1 <sup>st</sup> Western Insurance	6910.00
#7253 SRT	90.21
#7254 Nancy Kramer	2556.25
#7255 Ottertail	15.04
#7256 Staples	105.44
#7257 1 <sup>st</sup> Larson SSP W	21570.67
#7258 1 <sup>st</sup> Larson SSP W	20747.75
#7259 WSI	259.04
#7260 McGee Law Firm	3647.50
#7261 Robert Gibb & Sons	<u>55985.55</u>
	\$121111.96
Nedrose SSD #2	
#7503 Bank of ND	\$2925.00

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman



WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
MARCH 13, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven. See attached for others in attendance.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda with additions. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of February 13, 2017. Zimmerman seconded the motion. The motion carried unanimously.

Bills: Zimmerman made a motion to approve payment of the bills as presented. Foley seconded the motion. The motion carried unanimously.

1<sup>st</sup> Larson Sanitary Sewer Project West: Regarding WC WRD v. Aga/Deer Creek Properties, LLC, Water Board Attorney Van Grinsven reported the following: The order of Dismissal was 02/24/2017; the easements were recorded on March 8, 2017 as Documents Nos. 3006460, 6006461 and 3006462; the WC WRB payment of \$62,703.00 was issued on 02/15/2017 and the Ward County Clerk of Court mailed out the remaining on 03/02/2017.

Notice of the \$44,094.00 connection fee was sent to Bill's Motorsports on 02/24/2017. Van Grinsven also reported there is a pending lawsuit against Bill's Motorsport by Graham Construction Services. Foley made a motion authorizing the Water Board Attorney to look into the Board's rights to terminate service and/or impost lien in the event of none payment. Zimmerman seconded the motion. The motion carried unanimously.

Justin Ahmann joined the meeting, and discussion was held regarding funding reimbursements for the project from the City of Minot and SRF funding. Foley made a motion directing the Water Board Attorney to work with the bond counsel and Justin Ahmann to ensure that full compensation is received from the City and that all SRF loan funds have been accessed. Johnson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Johnson made a motion to accept and adopt comments provided by the Water Board Engineer, regarding the City of Minot Planning Commission Packet, and that based on review and recommendation of the Water Board Engineer that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: *John Pietsch-Freedom Township and Robert Finken-Cameron Township.* Zimmerman seconded the motion. The motion carried unanimously.

Verendrye Electric: The utility provided notification that they intend to move a cable under the Souris River on the US 83 Bypass. Foley made a motion authorizing the Water Board Engineer draft a letter to Verendrye indicating the Water Board has no objection providing the condition that any damages will be repaired. Zimmerman seconded the motion.

Drainage Complaint DC14 009 Melius-Ehr: Water Board Attorney Van Grinsven reported a response has been received from the landowner's attorney stating they are not willing to pay for any repair or maintenance, but are willing to consider an easement in favor of the Water Board. Chairman Klein appointed the following committee: Water Board Engineer, Water Board Attorney, Jason Zimmerman and himself, to continue working with the landowners.

Margaret Township Drainage Permit: Water Board Engineer reported he has assisted Ward County Emergency Manager Amanda Schooling with completing the application and is waiting to see if the Township has any questions.

Chuck Miller-Black Water Coulee: Chuck Miller and Travis Miller appeared before the Board and reported there has been an increase in water discharge, causing erosion, due to two box culverts that were installed under County Road 18. Miller would like the Water Board to consider installing additional riprap downstream from the box culverts, and also possibly some water retention areas upstream to help slow the flow of water. The Water Board Attorney was directed to investigate whether the Water Board can make contributions to erosion control efforts. Miller will be notified of these findings.

East Side Estates Protection Project: Water Board Engineer reported the Souris River Joint Board was receptive to the idea of the Water Board being a partner in the project. However, the Water Board does not have the financial resources to undertake the project based on the 2012 estimates of \$8-million. Foley reported the project could qualify for flood control cost share funding from the State Water Commission, assuming the funds are available.

Afton Township (Aaron Faken) Drain Permit: Aaron Faken and Chad Anderson-NDREC-NDSU appeared before the Board. Faken reported the NRCS has determined the watershed to be approximately 63 acres. The total estimated price for the project construction is \$35,595. However, Nienow Properties is willing to donate labor costs, and pipe does not need to be purchased, as it is already available. This would leave an estimated cost of \$3595. The project would include a line that would be six feet deep and located within the township right-of-way along 30<sup>th</sup> Ave SW. Beaver Creek controls the maintenance of 30<sup>th</sup> Ave. Foley made a motion that the Water Board participate in cost share funding up to \$4000, provided all easements and permits are in place. Zimmerman seconded the motion. The motion carried unanimously.

NDDOT US Highway 52 Project: The NDDOT is proposing a roadway improvement on US Highway 52 that would include adding a left turn lane for southbound traffic on US Highway 52 at the intersection of 79<sup>th</sup> Avenue SE. Johnson made a motion to receive and file the notice. Zimmerman seconded the motion. The motion carried unanimously.

Robinwood Estates Storm Sewer: Notification was received from Jeff McElwain-Ackerman Estvold that a storm sewer manhole cover was disturbed by the township's snow removal this winter. He has contacted Clint Cogdill to repair the cover as soon as weather allows.

Snagging and Clearing Quotes: The following quotes from DL Barkie were presented to the Board for snagging and clearing trees, along with removal.

Puppy Dog Coulee from Highway 52 to the river: \$37,500.

Talbott's Nursery: \$13,700.

Johnson made a motion to accept both quotes from DL Barkie. Zimmerman seconded the motion. The motion carried unanimously.

Pumping by Townships: Foley recommended that a letter be issued to each township in Ward County requesting notification to the Ward County Water Board before artificial pumping of water over roads takes place. No action was taken.

The next regular meeting will be Monday, April 10, 2017 at 9:00 a.m. The meeting adjourned.

**BILLS REVIEWED AND PAID:**

IRS-941	835.48
NDPERS	513.13
Verendrye	108.00
#7262 Wayne & Karen Aga & Deer Creek Properties	62,703.00
#7263 Walmart	39.40
#7264 XCEL	78.20
#7265 SRT	91.53
#7266 Nancy Kramer	2,050.75
#7267 1 <sup>st</sup> Larson SSP	60,090.09
#7268 Nedrose SSP	8,803.49
#7269 HDR Engineering	3,115.00
#7270 Ottertail	35.63
#7271 Staples	75.96
#7272 McGee Law Firm	<u>3,105.49</u>
	\$78,942.15

Submitted by:

Approved: \_\_\_\_\_(date)

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Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / APRIL 10, 2017

Acting Chairman Loren Johnson called the meeting to order. Other Board members present were Maurice Foley, Bruce Peterson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven. See attached for others in attendance.

Agenda: Zimmerman moved and Peterson seconded to approve the agenda. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of March 13, 2017. Zimmerman seconded the motion. The motion carried unanimously.

Bills: Foley made a motion to approve payment of the bills as presented. Peterson seconded the motion. The motion carried unanimously.

Foley made a motion authorizing the Secretary to look into interest rates for purchasing a \$500,000 CD. Peterson seconded the motion. The motion carried.

Nedrose Sanitary Sewer District #2: Water Board Attorney Van Grinsven reported that he has been notified by the Ward County Treasurer's office that they have been unable to complete their investigation into specials assessments for three parcels that Water Resource Board records do not show as paid but, according to county records, have been paid in full. It could be June of this year before they can investigate further. They cautioned that they may not be able to find further information regarding the payments as they have been through two software conversions.

Planning Commission Packet and Plat Applications. Zimmerman made a motion to accept and adopt comments provided by the Water Board Engineer, regarding the City of Minot Planning Commission Packet, and that based on review and recommendation of the Water Board Engineer that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: *St. Paul's Luthern Church-Tatman Township and Ronald Grant Anderson-Tatman Township*. Peterson seconded the motion. The motion carried unanimously.

1<sup>st</sup> Larson Sanitary Sewer Project (West): Water Board Attorney Van Grinsven reported the following.

The full loan amount of \$2,777,878.36, (approved by the Water Resource Board at its October 21, 2016 special meeting), was approved by the ND Public Finance Authority.

SRF Request #11 payment was decreased by \$1468.73 for legal fees and work related to obtaining easements before October 1, 2014 and easements related to First Larson (East) project, which was defeated.

The lawsuit with the Aga's has been resolved and the easements recorded.

Drainage Complaint DC14 009 Melius-Ehr: Water Board Attorney Van Grinsven reported he had a conference call the Melius-Ehr family attorney, who indicated they prefer not to pursue a lawsuit with the Water Board. They would like to utilize the frontage property, but cannot

get across the watercourse. The question was raised whether or not the water could be rerouted along the CHS property. Van Grinsven will continue to be in contact with the

Melius-Ehr attorney, and try to arrange a meeting with the Water Board Engineer and the property owners.

Eric Kotaska Drainage Concern in Beaver Creek Estates: Water Board Engineer Reep reported this appears to be a road/culvert issue. Imagery shows localized water retention occurred pre-development. Kotaska was informed he could contact the township.

Paul Engeldinger appeared before the Board regarding the following water issues in the Project Road area at Burlington.

Mr. Engeldinger is concerned about foaming on the Des Lacs River. It was suggested that he check with the First District Health District regarding the foaming.

Mr. Engeldinger also indicated that the South Project Road needs riprap, and was advised to contact the township.

Mr. Engeldinger reported that the creek near the TC Nursery needs cleanup.

Maintenance of pump stations between Burlington & Minot: An investigation resulting from complaints from area residents showed that pumps were not in place and not operating, and the lift stations were not locked. Foley made a motion authorizing the Chairman to purchase new locks for the lift stations for the Souris River Flood Control Project between Burlington and Minot. Peterson seconded the motion. The motion carried unanimously.

Black Water Coulee/Chuck Miller: Discussion was held regarding Miller's request of the Water Board for assistance with the installation of rip rap. Foley made a motion directing the Water Board Attorney to draft a letter to Mr. Miller informing him that the Water Resource Board will not be participating at this time. Zimmerman seconded the motion. The motion carried unanimously.

Drainage Complaint DC17 003 Weston v City of Minot: Water Board Attorney Van Grinsven reported he had been in contact with Sean Weeks, Estvold Engineering, regarding the complaint. Weeks reported the Storm Water Management Plan shows there should be a culvert along 20<sup>th</sup> Ave SE, east of 55<sup>th</sup> St., and will follow up with the owner about installation of the culvert. Peterson made a motion authorizing the Water Board Engineer to further investigate the complaint. Zimmerman seconded the motion. The motion carried unanimously.

Denmark Township Drainage Issue: Johnson reported that a landowner in Section 14 of Denmark Township had a complaint of snow in the township ditch causing drainage issues. The township contacted a contractor to have the snow removed. No action was required by the Water Board.

Drainage Complaint DC16 007 Zietz V Henke: Water Board Engineer Reep reported he still needs to investigate this complaint.

Drainage Complaint DC16 004 Jundt v Heintz: Zimmerman made a motion directing the Water Board Attorney to draft a letter from the Water Resource Board to the Office of the

State Engineer requesting determination of whether a watercourse is constituted. Peterson seconded the motion. The motion carried unanimously.

Snagging & Clearing:

Foley reported the Puppy Dog cleanout is completed and caused a seven foot water level drop. The Talbot Nursery cleanout is also completed.

A proposal was received from DL Barkie for snagging and clearing behind the former KOA Campgrounds in the amount of \$28,500.00. Permission was given for this debris removal. Zimmerman made a motion to approve the proposal. Peterson seconded the motion. The motion carried unanimously.

Foley made a motion authorizing the Water Board Engineer to proceed with applying for cost sharing through the State Water Commission, for snagging and clearing upstream through Meadowbrook Estates. Zimmerman seconded the motion. The motion carried unanimously.

Mogren Complaint: Johnson reported that Mrs. Mogren, Kenmare had a complaint that Farmers Union of Kenmare had cut a trench in a road to drain water. The trench was making traveling on the road difficult. Johnson contacted Farmers Union and had them fill the trench back in.

Bill Hoium: Mr. Hoium and Steve Eberle-Estvold Engineering appeared before the Board regarding the hook up fee (\$44094), for Magic City Harley Davidson to the 1<sup>st</sup> Larson Sanitary Sewer Project West. Van Grinsven explained the amount and basis of connection fees to the sewer project. Mr. Hoium indicated he cannot make the whole payment at one time, and was asked to submit a proposed payment plan to the Water Resource Board by May 1, 2017 for consideration by the Water Resource Board at its May meeting.

Tom Klein and Jim Redding joined the meeting.

Jim Redding-ND DOT reported they are planning to replace an 18 inch culvert with a 24 inch culvert near county road 18 and US High 83. No action was required by the Board.

30<sup>th</sup> Street SW/2<sup>nd</sup> Larson Coulee Detention Project: Ryan Ackerman-Estvold Engineering joined the meeting and provided a progress update regarding this project. The City of Minot has requested that the project be postponed until funding sources can be identified. The cost to move the project to the bidding phase would be approximately \$142,000.00. Foley recommended that the Water Board take over lead of the project, as there is approximately \$700,000 of SWC funding available. Klein made a motion directing the Water Board Engineer to consult with Ryan Ackerman and review project data, and that the Water Board pursue the project based on his satisfaction. Zimmerman seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, May 8, 2017 at 9:00 a.m.

The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	849.50
IRS-941	628.18
NDPERS	407.11
ND State Tax	194.88
Verendrye	108.00
#7273 XCEL	78.26
#7274 Staples	202.97
#7275 SRT	90.27
#7276 VOID	
#7277 Nancy Kramer	2050.75
#7278 Loren Johnson	746.93
#7279 Job Service	52.11
#7280 VOID	
#7281 WSI	250.00
#7282 HDR Engineering	1500.00
#7283 1 <sup>st</sup> Larson SSP	66,253.06
#7284 Nedrose SSD	9,510.62
#7285 Ottertail	19.88
#7286 Thomas Klein	826.82
#7287 Maurice Foley	401.89
#7288 Jason Zimmerman	374.02
#7289 DL Barkie	<u>65,200.00</u>
	\$149,745.25

1<sup>st</sup> Larson SSP Account:  
#5000 WC Water Resource \$9136.41

Submitted by:

Approved: \_\_\_\_\_(date)

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Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / MAY 8, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson and Bruce Peterson. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven. See attached for others in attendance.

Agenda: Johnson moved and Peterson seconded to approve the agenda with additions. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of April 10, 2017. Peterson seconded the motion. The motion carried unanimously.

Bills: Johnson made a motion to approve payment of the bills as presented. Peterson seconded the motion. The motion carried unanimously.

CD Rates: Foley made a motion to transfer \$500,000 from the savings account to a 12 month CD at First Western Bank at an interest rate of 1.1%. Johnson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Johnson made a motion to accept and adopt comments provided by the Water Board Engineer, regarding the City of Minot Planning Commission Packet, and that based on review and recommendation of the Water Board Engineer, that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: *Robert and Brenda Hustad-Sundre Township and Ronald Grant Anderson-Tatman Township.* Foley seconded the motion. The motion carried unanimously.

Drainage Complaint DC14 009 Melius-Ehr: Water Board Engineer Reep and Attorney Van Grinsven summarized the results of an April 21, 2017 meeting with representatives of the Melius and Ehr families. Foley made a motion authorizing Water Board Engineer Reep to proceed with preparation of a project design to repair the eroded area associated with this complaint and provide access to property owned by the complainant. Peterson seconded the motion. The motion carried unanimously.

1<sup>st</sup> Larson Sanitary Sewer Project (West):

Lori and Mike Lizotte appeared before the Board. They expressed concerns regarding special assessment fees to their lots, #1 and #2 Dalin Addition. It was explained to them that the two commercial lots were each assessed two benefit units, (as were all other commercial lots in the project area), with each assessment being \$44,093. The two lots were combined into a single parcel, for tax purposes, but were not replatted into one lot. Since they remain two separate commercial lots, each lot remains subject to assessment.

Bill Houim Proposal: The Board considered a proposal received from Mr. Houim to pay the connection fee of \$44,094 for Outlot 3 of the NW1/4NW1/4, Section 13, T154N, R83W over a 10 year period, making monthly payments of \$440.27 at 3.75%. Foley made a motion directing the Water Board Attorney to draft a note from Countryside Investments LP to the Water Resource Board in the amount of \$44,094 requiring monthly payments of \$440.27 with interest at the rate of 3.75% per annum and acknowledging that service may be disconnected



in the event of default, and a mortgage encumbering Outlot 3 of the NW1/4NW1/4, Section 13, T154N, R83W, to secure the promissory note Peterson seconded the motion. The motion carried unanimously.

Drainage Complaint DC17 003 Weston v City of Minot: Following investigation, Water Board Engineer Reep determined the berm constructed in connection with the 55<sup>th</sup> Crossing project does block the natural drain path. Johnson made a motion that the Water Board adopt HDR's findings and direct the Water Board Attorney to send notice to the developer, (with copy to the City of Minot), requiring removal of the berm or installation of a culvert, as called for by the storm water management plan, which was approved by the City and Water Resource Board, no later than May 31, 2017. Peterson seconded the motion. The motion carried unanimously.

Drainage Complaint DC16 007 Zietz V Henke: Water Board Engineer presented his findings following his investigation of the complaint. Based on his observations, it is apparent that some excavation has taken place and grading was recently performed along the common border of the Henke and Zietz properties. This grading and excavation created an artificial diversion of water, resulted in blockage of a watercourse, and deepened and widened a watercourse (drain) without a permit or the consent of the Ward County Water Resource Board. Johnson made a motion to adopt HDR's findings and direct the Water Board Attorney to send notice to Henke requiring the removal of the berm and restoration of the watercourse to the former condition by June 15, 2017. Peterson seconded the motion. The motion carried unanimously.

Drainage Complaint DC16 004 Jundt v Heintz: Water Board Attorney Van Grinsven submitted a letter to the Office of the State Engineer, on April 17, 2017 requesting determination if a watercourse is constituted pursuant to N.D.C.C. 61-01-06. To date, no response has been received. The Board will review the matter again at its June meeting.

Snagging & Clearing: A proposal was received from DL Barkie for \$89,000 for snagging and clearing and loading out trees at Meadow Brook Addition. The Water Board Engineer estimated a cost of approximately \$91,000, for the reach from County Road 19 to a short distance upstream of County Road 14. Foley made a motion to approve the proposal from DL Barkie conditioned on a cost share request being approved by the State Water Commission. Johnson seconded the motion. The motion carried unanimously. Ward County Emergency Manager Amanda Schooling has also indicated a FEMA grant of \$25,000 would be allowed.

Rice Lake: Peterson made a motion that the Water Board contribute \$1,500 for a telemetry gauge at Rice Lake. Johnson seconded the motion. The motion carried unanimously.

Foley made a motion authorizing the Water Board Engineer to review data and use engineer's stamp to assist with FEMA application. Peterson seconded the motion. The motion carried unanimously.

East Side Estates Flood Protection: Foley made a motion directing the Water Board Engineer to study flood control at East Side Estates. Peterson seconded the motion. The motion carried unanimously. Foley will contact Craig Saugstad regarding acquiring property needed for the proposed project.

CP Rail @ KOA Campground: Foley reported there is high water on the west side of the railroad track, and there is a 60" culvert that could be blocked. Foley will contact the railroad regarding this matter.

The next regular meeting will be Monday, June 12, 2017 at 9:00 a.m.

The meeting adjourned.

**BILLS REVIEWED AND PAID:**

BCBS	849.50
IRS-941	1,270.45
NDPERS	407.11
#7290 McGee Law Firm	3,445.46
#7291 XCEL	192.48
#7292 Walmart	44.19
#7293 SRT	91.21
#7294 1 <sup>st</sup> Larson SSP	33,921.41
#7295 Nedrose SSD	340.31
#7296 HDR Engineering	2,475.00
#7297 Ackerman Estvold	6,240.00
#7298 Nancy Kramer	2,077.24
#7299 DL Barkie	<u>28,500.00</u>
	\$79,854.36

Submitted by:

Approved: \_\_\_\_\_(date)

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Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / JUNE 12, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Jason Zimmerman and Bruce Peterson. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven. See attached for others in attendance.

Agenda: Johnson moved and Peterson seconded to approve the agenda as presented. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of May 8, 2017. Zimmerman seconded the motion. The motion carried unanimously.

Bills: Reep reported that included in the list of bills was Contractor's Application for Payment No. 2 to DL Barkie, in the amount of \$46,232.47, for the Robinwood Bank Stabilization project. Zimmerman made a motion to approve payment of the bills as presented. Johnson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Peterson made a motion, that based on review and recommendation of the Water Board Engineer, that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: *Travis and Paula Bohl-Rice Lake Township, Johnson et.al-Sundre Township, Charles and Mavis Cummings-Berthold Township, James and Sandra Moon-McKinley Township, Darlene Brandt-Ryder Township, Renner/Streeper-Sawyer Township, Arnold Family Trust-Mayland Township.* Zimmerman seconded the motion. The motion carried unanimously.

Drainage Complaint DC14 009 Melius-Ehr: The Water Board Engineer is continuing preparation of project estimates. The Water Board Attorney will be following up with the landowner's attorney regarding contact with HDR Engineering.

1<sup>st</sup> Larson Sanitary Sewer Project-Countryside Investments, LLP connection fee: Water Board Attorney reported a letter along with a promissory Note, Mortgage and yearly payment schedule were sent to Countryside Investments. To date, no response has been received. Zimmerman made a motion directing the Water Board Attorney to follow up with Countryside Investments, LLP. Foley seconded the motion. The motion carried unanimously.

Drainage Complaint DC16 004 Jundt v Heintz: Water Board Attorney Van Grinsven reported he is still waiting for a response from the Office of the State Engineer, regarding determination if a watercourse is constituted pursuant to N.D.C.C. 61-01-06. Foley made a motion directing the Water Board Attorney to issue a Notice to Remove the obstruction, within 20 days to Heintz. Peterson seconded the motion. The motion carried unanimously.

East Side Estates Flood Protection: Water Board Engineer Reep reported the Task Order for the Eastside Estates Flood Study has been signed, and he will proceed.

Souris River Overflow Canal (54<sup>th</sup> Avenue): Debris has been blocking the flow of the canal near 54<sup>th</sup> Ave. SE. Johnson made a motion directing the Water Board Engineer to inspect the site and report back to the Water Board. Zimmerman seconded the motion. The motion carried unanimously. Foley made a motion to hire Ackerman Estvold to conduct a drone flight of the area, with an estimated cost being \$500. Peterson seconded the motion. The motion carried unanimously.

NW Area Project Hayland: Russ Rogne has expressed interest in haying the property. Johnson made a motion authorizing Chairman Klein to negotiate a price for haying with Rogne. Foley

seconded the motion. The motion carried unanimously.

Drainage Complaint DC17 003 Weston v City of Minot: Foley made a motion to grant 55<sup>th</sup> Crossing, LLP's request for a hearing extension to the July Water Board meeting; however, the Board will only proceed with the hearing if a culvert has not been installed. Johnson seconded the motion. The motion carried unanimously.

2<sup>nd</sup> Larson Coulee Detention Project: Ryan Ackerman, Ackerman Estvold, joined the meeting and reported he is working continuing work on the project. Ackerman is waiting for concurrence regarding the hazard classification.

Drainage Complaint DC16 007 Zietz V Henke: At 10:58 a.m. a hearing at the request of Randy Henke was held. Present for the hearing was Randy Henke, Eric Henke, Robin Zietz and Paige Zietz. Water Board Attorney Van Grinsven explained the purpose of the hearing and the procedures to be followed. After considering information submitted by Mr. Zietz and Mr. Henke, as well as the Water Board Engineer, Johnson made a motion that the Water Board adopt the following findings: (a) that the natural drain identified by the drainage complaint constitutes a watercourse under North Dakota law; (b) that the watercourse has been obstructed by the actions of Mr. Henke or persons under his direction and (c) that the obstruction should be removed by Mr. Henke within 20 days of this hearing and, if not removed, that the Board remove the obstruction at Mr. Henke's expense. Zimmerman seconded the motion. The motion carried unanimously.

Sue and Scott Westin joined the meeting and were informed the hearing request from 55<sup>th</sup> Crossing, LLP has been postponed until the July Water Board meeting, provided the culvert questioned in the complaint has not been installed by then.

The meeting adjourned. The next regular meeting will be Monday, July 10, 2017 at 9:00 a.m.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	668.81
NDPERS	417.72
#7300 XCEL	69.74
#7301 McGee Law Firm	3,560.25
#7302 SRT	91.73
#7303 Ottertail	31.27
#7304 Nancy Kramer	2,536.38
#7305 Ackerman Estvold	17,892.50
#7306 Clint Cogdill	2,145.00
#7307 Staples	117.28
#7308 HDR Engineering	5,300.00
#7309 DL Barkie	45,900.00
#7310 McGee Law Firm	3,953.13
#7311 DL Barkie	46,232.47
#7312 Televent DTN	1,698.00
#7313 Tom Klein	<u>1,021.72</u>
	\$132,649.10

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / JULY 10, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven.

Agenda: Zimmerman moved and Johnson seconded to approve the agenda as presented. The motion carried unanimously.

Previous Minutes: Johnson moved to approve the previous minutes of the regular meeting of June 12, 2017 and the special meeting on June 23, 2017. Zimmerman seconded the motion. The motion carried unanimously.

Bills: Johnson made a motion to approve payment of the bills. Foley seconded the motion. The motion carried unanimously.

SWC Cost Share Agreement-Meadowbrook Creek: Foley made a motion authorizing the Chairman to sign the cost-share agreement between the ND SWC and the WC Water Board for the Meadowbrook Creek Snagging & Clearing. The SWC will provide cost-share not to exceed \$33,000, contingent on availability of funds and conditions of the agreement. Zimmerman seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Zimmerman made a motion to adopt the Water Board Engineer's recommendations regarding Minot City Planning Packets for June 26 and July 31, 2017; and that based on review and recommendation of the Water Board Engineer, that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: Zablötney/Fettig-McKinley Township. Foley seconded the motion. The motion carried unanimously.

DC14 009 Melius-Ehr: Water Board Engineer Reep reported work has been delayed. The Hydrology has been determined and crossing requirements for pipe sizing have been evaluated.

1<sup>st</sup> Larson Sanitary Sewer Project-Countryside Investments, LLP connection fee: A check has been received from Country side Investments for the June and July payment. A signed note and mortgage have not been received. Foley made a motion directing the Water Board Attorney to notify Countryside Investments in writing that sewer service will be terminated, unless the note and mortgage are executed and delivered to the Water Resource Board by July 31, 2017. Johnson seconded the motion. The motion carried unanimously. The check will be deposited once the letter has been sent out.

Foley reported that there are still some final items of the project that need to be followed up on. Ackerman Estvold will be contacted regarding the unfinished items.

DC16 004 Jundt v Heintz: A letter was received on June 29, 2017 from Doug Heintz in response to his receipt of the Notice to Remove Obstruction. Foley made a motion directing the Water Board Engineer to contact the State Engineer's Office to indicate that the Water Resource Board considers Heintz's letter an appeal to the OSE. Zimmerman seconded the motion. The motion carried unanimously.

DC16 007 Zietz v Henke: A Notice to Remove Obstruction was issued to Mr. Henke on June 14, 2017. Water Board Engineer Reep was contacted by Henke after the Notice was issued and Reep will follow up as needed.

Robinwood Bank Stabilization: Water Board Engineer Reep reported cost share funding of \$119,470 has been received from the SWC. Reep will follow up on final items of the project. Foley made a motion authorizing the Water Board secretary to issue payment upon receipt of documentation from the landowner that trees have been planted. Johnson seconded the motion. The motion carried unanimously.

Souris River Overflow Canal (54<sup>th</sup> Avenue): HDR Engineering visited the site on June 12 and June 21, 2017, noting only one of three existing culverts was able to be observed. A quote was received from DL Barkie in the amount of \$11,500 for clearing and grubbing behind the former KOA Campgrounds and from the south side of the RR tracks to 54<sup>th</sup> Ave. Johnson made a motion to accept the quote from DL Barkie. Zimmerman seconded the motion. The motion carried unanimously.

Rice Lake: FEMA toured 10 properties that would be part of the FEMA grant for home raises. A follow-up evaluation is likely, including reevaluation of cost-benefit of the project.

Cenex Pipeline Application #S-2073: Foley made a motion directing the Water Board Engineer to draft a response to the Office of State Engineer solicitation, confirming the Water Board assumption that a scour analysis be conducted as part of the permitting process. Johnson seconded the motion. The motion carried unanimously.

Ward County CDBG-DR Program: Zimmerman made a motion to receive and file a notice from SRF Engineering regarding the Ward County CDBG-DR Program for a township road grade raise improvement project in Rushville Township. Johnson seconded the motion. The motion carried unanimously.

Drainage Complaint DC17 003 Weston v City of Minot: Sue and Scott Weston and Nathan Smith appeared before the Board. Smith reported the project is still under construction and the pipe should be put in place this week. Johnson made a motion to postpone a hearing on the drainage complaint until the August 14, 2017 meeting, if necessary. Foley seconded the motion. The motion carried unanimously.

DC17 004 Mike Smith v Willis Township: Johnson made a motion directing the Water Board Engineer to investigate the complaint and the Water Board Attorney to make an open records request to Willis Township for meeting minutes, payment documentation, engineering data, survey data, etc. Zimmerman seconded the motion. The motion carried unanimously.

Foley made a motion directing the Water Board Engineer to establish a section line and investigate the complaint for stream crossing standards.. Johnson seconded the motion. The motion carried unanimously.

CHS Boom Deployment Training: The Water Board consented to boom deployment training by CHS on the Souris River provided CHS executes a written release agreement. To date, no response has been received.

DL Barkie Quote: A quote was received from DL Barkie, in the amount of \$8500.00, for mowing and shaping in Whispering Meadows. Zimmerman made a motion to accept the quote as presented. Johnson seconded the motion. The motion carried unanimously.

The meeting adjourned.

The next regular meeting will be Monday, August 14, 2017 at 9:00 a.m.

Page #3  
July 10, 2017

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	1265.84
NDPERS	513.13
#7314 ND WRD	290.00
#7315 XCEL	69.49
#7316 Walmart	42.86
#7317 SRT	91.94
#7318 Nancy Kramer	2054.33
#7319 HDR Engineering	4192.92
#7320 Ackerman Estvold	205.00
#7321 Nedrose SSD	6893.65
#7322 Ottertail	10.50
#7323 Postmaster	70.00
#7324 Maurice Foley	<u>803.78</u>
	\$17434.54

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / AUGUST 14, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Stephanie Williams – HDR Engineering and Water Board Attorney Bryan Van Grinsven.

Agenda: Peterson moved and Johnson seconded to approve the agenda with additions. The motion carried unanimously.

Previous Minutes: Foley moved to approve the previous minutes of the regular meeting of July 10, 2017. Zimmerman seconded the motion. The motion carried unanimously.

Bills: Johnson made a motion to approve payment of the bills. Peterson seconded the motion. The motion carried unanimously.

2018 Budget: Foley made a motion that the Water Resource Board request a 4 mil levy for the 2018 budget. Zimmerman seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Zimmerman made a motion to accept the Water Board Engineer's recommendations regarding Minot City Planning Packets for August 28, 2017. Foley seconded the motion. The motion carried unanimously. There were no county plat applications.

DC14 009 Melius-Ehr: Stephanie Williams-HDR reviewed two open channel alignment alternatives to alleviate erosion in a channel upstream of a culvert crossing on Valley Street, near the CHS Sun Prairie grain elevator. Option One has an estimated construction cost of \$412,000 and Option Two has an estimated cost of \$630,000. A meeting will be set up with all affected parties to discuss a solution.

At 9:25 a.m. Ward County Engineer Dana Larsen joined the meeting.

DC16 004 Jundt v Heintz: Water Board Engineer reported that on July 14, 2017 ND SWC staff representing the Office of the State Engineer conducted a site visit. It is their opinion that due to changes in the watershed, it probably does not meet the definition of a watercourse (NDCC 61-01-06). A written opinion from the State Engineer's office is expected. Foley made a motion that the Water Board will not pursue any enforcement at this time, until the OSE written response is received. Johnson seconded the motion. The motion carried unanimously. The Water Board Attorney will notify the landowner that there is potential that the Notice to Remove Obstruction could be withdrawn (to prevent unnecessary work).

DC16 007 Zietz v Henke: Water Board Engineer reported on July 11 he and Maurice Foley visited the site. It appears the area has been restored to its prior condition as well as can be discernible. The Water Board Attorney was directed to forward Reep's memo to both parties of the complaint.

DC17 005 Nett v Ward County: Drainage complaint was received from Wayne and Anita Nett regarding erosion of their land along the Des Lacs River. Foley made a motion directing the Water Attorney to research who the landowner was when the Foxholm bridge was built in 1954. Zimmerman seconded the motion. The motion carried unanimously.

Souris River Overflow Canal (54<sup>th</sup> Avenue): A quote in the amount of \$38,900 was received from DL Barkie to install two 36 inch culverts on 54<sup>th</sup> Ave SE. Peterson made a motion that the cost of a 72 inch pipe be priced through Ward County and to continue with the project. Foley seconded the motion.



Johnson made a motion to amend the previous motion requesting the township to participate with cost of the project. Peterson seconded the motion. The motion carried unanimously.

Peterson's motion, as amended, carried unanimously.

Zimmerman made a motion to request a new quote form DL Barkie with specs to include a 72 inch culvert. Johnson seconded the motion. Zimmerman-yes, Johnson-yes, Foley-no, Peterson-no, Klein-no. The motion did not carry. Chairman Klein then called DL Barkie and asked for a revised quote for the larger culvert. . Johnson seconded the motion. The motion carried unanimously.

Ward County Engineer reported the cost of the larger pipe would be approximately \$8127.00.

Johnson made a motion to table any further discussion until the revised quote is received. Zimmerman seconded the motion. The motion carried unanimously.

DC17 004 Mike Smith v Willis Township: Brock Mikkelson, Brian Boppre and Mike Smith appeared before the Board. Boppre opened the discussion by reporting that the township has jurisdiction over a section line as long as it is graded and maintained. The Water Board Engineer had investigated the complaint and determined that a watercourse was obstructed by the actions of Willis Township outside of section line Right-of-way lines, and the crossing installed does not meet North Dakota Stream Crossing Standards. Peterson made a motion that the township be required to remove the obstruction outside of the right of way. Johnson seconded the motion. The motion carried unanimously. The Water Board Attorney will draft a notice to Smith and Willis Township.

DC16 005 Graff v FU Oil Berthold: Mr. and Mrs. Dale Graff appeared before the Board. The Water Board Engineer reviewed his findings from his evaluation of December 13, 2016. It was his determination that a diversion of water more than 50 acre-feet had not occurred. Mr. Graff questioned whether or not he could raise his property two feet. Mr. Graff was advised to address his question to NCRS.

DC17 005 Nett v Ward County: Wayne Nett appeared before the Board, and reported he had purchased the land in the spring of 1996. Following further discussion, Johnson made a motion that the drainage complaint be dismissed without merit. Zimmerman seconded the motion. The motion carried unanimously.

Rice Lake: Water Board Engineer Reep reported that NDDDES had been notified by FEMA to look at other options regarding buyouts.

1<sup>st</sup> Larson Sanitary Sewer Project: Water Board Attorney reported Countryside Investments had made a payment of \$42,769.95 to pay off their hook up fee. This left a balance owing of \$441.35, which was all interest. Zimmerman made a motion that the interest fees of \$441.35 be waived. Johnson seconded the motion. The motion carried unanimously.

A memo was received from Justin Ahmann, Ackerman Estvold recommending that the withheld amount of \$15,000 from Pay App #10 be paid. Following discussion, Johnson made a motion to delay paying the \$15,000 until final inspections are complete. Zimmerman seconded the motion. The motion carried unanimously. The Ward County Engineer Dana Larsen will research prices for chip sealing on 54<sup>th</sup> Avenue. The SRF will be contacted to see if Ward County would be allowed to do the chip sealing and bill the Water Resource Board for the work.

CHS Boom Deployment Training: Water Board Attorney Van Grinsven provided a Non-Exclusive Authorization, Release and Indemnification to CHS Inc. regarding boom deployment training on the Souris River west of US Highway 83 Bypass. To date, no response has been received.

Robinwood Bank Stabilization: Water Board Engineer Reep provided an email from Grant Wentz. Wentz reported the low bid for tree replacement was from TC Nursery just under \$1400.00. Some areas that were hydro seeded will need to be re-seeded and watered. Grant is willing to take care of

all of the re-seeding and taking care of the trees, with reimbursement of \$2500 to cover all expenses. Foley made a motion directing the Water Board Attorney to notify Wentz the Water Board is willing to pay him \$2500 for refurbishing the trees and grass in exchange for a full release from Wentz. Peterson seconded the motion. The motion carried unanimously.

DC17 003 Weston v City of Minot: Water Board Engineer Reep reported the pipe was installed, and it appears it is at the proper grade and appropriate location. Zimmerman made a motion that the complaint has been satisfied and is considered closed. Peterson seconded the motion. The motion carried unanimously.

Letter from West River Water District: Notice was received from the West River that there is a camper in the backwash in Robinwood Estates. It has been there since the 2011 flood and now the water is low enough that it is now exposed. The owner is Lloyd Ann Caston. Foley made a motion directing the Water Board Attorney to notify Caston's that the camper must be removed with 30 days. Johnson seconded the motion. The motion carried unanimously.

Peterson made a motion to receive and file Office of State Engineer Solicitation of Views Application S-2085. Zimmerman seconded the motion. The motion carried unanimously.

30<sup>th</sup> Street Road Raise: Foley recommended that this project be put on hold until the City of Minot decides to move forward with the 16<sup>th</sup> Street portion, then funding could be used towards the East Side Estates flood relief project.

The meeting adjourned. The next regular meeting will be Monday, September 11, 2017 at 9:00 a.m.

**BILLS REVIEWED AND PAID:**

BCBS	931.10
IRS-941	955.55
NDPERS	409.23
#7325 McGee Law Firm	2774.38
#7326 XCEL	73.11
#7327 SRT	91.68
#7328 Walmart	18.58
#7330 Nedrose SSD #2	478.04
#7331 1 <sup>st</sup> Larson SSP	3266.37
#7332 Nancy Kramer	2523.36
#7333 Rath & Mehrer	3500.00
#7334 Kim Hunt	200.00
#7335 HDR Engineering	7097.50
#7336 ND Water Education	120.00
#7337 Ottetail	9.78
#7338 McGee Law Firm	2894.40
#7339 Nedrose SSD	1091.81
#7340 DL Barkie	<u>40,100.00</u>
	\$66,598.89

Nedrose Sanitary Sewer District #2	
#7504 BND	\$47,812.50
1 <sup>st</sup> Larson Sanitary Sewer Project	
#5001 BND	\$136,900.02

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / SEPT. 11, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Bruce Peterson. Jason Zimmerman was present per speakerphone. Also present was Stephanie Williams-HDR Engineering, Water Board Attorney Bryan Van Grinsven and Ward County Engineer Dana Larsen.

Agenda: Johnson moved and Peterson seconded to approve the agenda as amended. The motion carried unanimously.

Previous Minutes: Foley made a motion to approve the previous minutes of August 14, 2017. Johnson seconded the motion. The motion carried unanimously.

Johnson made a motion to approve the minutes of the special meeting of September 1, 2017. Foley seconded the motion. The motion carried unanimously.

Bills: Zimmerman made a motion to approve payment of the bills. Johnson seconded the motion. The motion carried unanimously.

2016 Audit: Foley made a motion to approve the 2016 audit report. Johnson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Johnson made a motion to adopt the Water Board Engineer's recommendations regarding Minot City Planning Packet for September 25, 2017; and that based on review and recommendation of the Water Board Engineer, that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: Patrick & Lynda Lee Davy-Des Lacs Township and Adam & *Kelsey Lee-Lund Township*. Peterson seconded the motion. The motion carried unanimously.

DC14 009 Melius-Ehr: Water Board Attorney Van Grinsven reported he is still trying to arrange a meeting with all parties. The NDDOT would not support a structure parallel to the highway or a sharp turn that would be required to move water into it and another sharp turn to move water into the highway centerline pipe. Chairman Klein appointed Zimmerman and himself to meet with the Water Attorney and the Water Board Engineer to review all information regarding the complaint.

DC17 004 Mike Smith v Willis Township: Notice to Remove Obstruction was issued on August 24, 2017. Stephanie Williams reported that as of August 22<sup>nd</sup>, no obstructions had been removed outside the statutory right of way.

Souris River Overflow Canal (54<sup>th</sup> Avenue): Ward County Engineer Larsen reported Ward County would be delivering corrugated pipe today, with the cost being \$8287.12. Sundre Township has contributed \$500 toward the cost. Zimmerman made a motion to approve the purchase of the pipe from Ward County. Peterson seconded the motion. The motion carried unanimously

Robinwood Bank Stabilization: Water Board Attorney Van Grinsven reported Grant and Kathy Wentz have signed a Release and a \$2500 check was issued to them, along with a copy of the fully executed agreement. Cost share reimbursement of \$18,238.00 has been received from the State Water Commission.

Rice Lake: Williams-HDR Engineering reported HDR will be providing a revised scope of work cost estimate and project update to FEMA for the relocation of two homes and raising of seven homes. The project could be eligible for a 75% cost share reimbursement. FEMA will allow two years for the work to be completed.

1<sup>st</sup> Larson Sanitary Sewer Project:

CWSRF will accept billings from Ward County to the Water Resource Board for road work as documentation for reimbursement from CWSRF loan funds. The Ward County Highway Department submitted an invoice for \$81,940.03 for pavement repair on 54<sup>th</sup> Avenue SW. The Water Board can submit the invoice to SRF for reimbursement and issue payment to the County, which will complete the 54<sup>th</sup> Avenue SW work in 2018, in conjunction with other County projects. Foley made a motion to approve the payment of the pavement repair invoice from Ward County and request for SRF distribution. Peterson seconded the motion. The motion carried unanimously.

NDSU Extension Connection Fee: A Letter of Intent and letter to NDSU Experiment Station were emailed to Chad Anderson, by Steve Eberle on March 2, 2016. The Water Board Attorney wrote to Anderson on March 4, 2016 indicating NDSU could pay the connection fee before it physically connected to the sewer system. NDSU has not paid the connection fee nor connected to the system.

Certification of Special Assessments: Water Board Attorney presented a preliminary list of assessments to be certified by Ward County. Chairman Klein appointed Zimmerman and Van Grinsven to serve on a committee to review the assessment list, maintenance fund, etc.

East Side Estates Flood Control Project: Williams reported that using the proposed levee alignment, HDR has identified 44 properties to be impacted by the levee. This includes 35 in Eastside Estates and 9 in the Apple Grove area. The 2017 Market Value for all 44 properties is approximately \$6.2M. HDR estimated the percentage of each property that would be affected by the levee. Applying this percentage to the 2017 Market Value provides an estimated buy-out cost as follows: For Eastside estates-\$2 M and for Apple Grove-\$1.5M. HDR will continue work on determining an estimated construction cost and developing a plan for when items should be completed.

CHS Boom Deployment Training: Water Board Attorney reported CHS has reviewed the revised Authorization and Release Agreement and has no additional comments or concerns. They are waiting to sign the agreement until they obtain access to the north and south banks of the river by the bypass bridge. If access cannot be obtained, there will be no need for the agreement.

Kings Court Levee: King's Court levees are higher than levees in Minot and need core samples to get USACE certification. There are some encroachments that also need to be addressed.

DC17 006 Marshall v Haugen: A drainage complaint from Gregory and Margie Marshall against Delos Haugen was received in today's mail. Foley made a motion directing the Water Board Engineer to investigate the complaint. Johnson seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, August 14, 2017 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	830.23
NDPERS	508.89
#7341 XCEL	70.29
#7342 SRT	92.23
#7343 HDR Engineering	4600.24
#7344 Grant & Kathy Wentz	2500.00
#7345 Ottertail	9.55
#7346 Nancy Kramer	2041.77
#7347 VOID	
#7438 Staples	84.66
#7349 Thomas Klein	1522.05
#7350 DL Barkie	27500.00
#7351 Nedrose SSD	117.90
#7352 1 <sup>st</sup> Larson SSP	6717..62
#7353 McGee Law Firm	<u>3654.23</u>
	\$51180.76

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / OCTOBER 9, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Bruce Peterson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda as amended. The motion carried unanimously.

Previous Minutes: Foley made a motion to approve the previous minutes of September 11, 2017. Johnson seconded the motion. The motion carried unanimously.

Bills: Johnson made a motion to approve payment of the bills. Zimmerman seconded the motion. The motion carried unanimously.

ACCOUNTS: The secretary reported the Water Board savings account was closed and transferred to a Money Market Savings account, earning 0.7% interest

Planning Commission Packet and Plat Applications. Foley made a motion to adopt the Water Board Engineer's comments regarding Minot City Planning Packet for October 30, 2017; and that based on review and recommendation of the Water Board Engineer, that the following county plats for *Lou Ann Hamre-Sawyer Township* and *Drew Haner-Freedom Township* be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows; and that the plat application for *Thomas Erie-Rice Lake Township* be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided, (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows or (c) development of properties adjacent to Rice Lake should meet Ward County minimum elevation guidelines to account for the natural overflow elevation of Rice Lake and for wave runup. Peterson seconded the motion. The motion carried unanimously.

DC14 009 Melius-Ehr: The Water Board Attorney will contact all parties to set up a meeting on October 30<sup>th</sup>.

Souris River Overflow Canal (54<sup>th</sup> Ave SE): Chairman Klein reported the culvert has not been installed, but is scheduled to be on Monday, October 16<sup>th</sup>. A detour road has to be installed first.

Second Larson Detention Project (30<sup>th</sup> Street): Ryan Ackerman-Ackerman Estvold joined the meeting and reported the State has classified the project as a high-hazard dam. Foley made a motion directing the Water Board Engineer to work with Ackerman-Estvold on the 2<sup>nd</sup> Larson Detention Pond project. Zimmerman seconded the motion. The motion carried unanimously.

DC17 006 Marshall v Haugen: Todd Tranby, Burt Township and Delos Haugen appeared before the Board. Per investigation by HDR Engineering, it was determined Burt Township had installed a culvert on a township road between Sections 17 and 18, T154N, R84W. Notice of this installation had not been provided to the Ward County Water Board. However, it appears that no drainage outside of the right of way was conducted in conjunction with this culvert installation, and therefore, no drainage violation has occurred. Tranby reported the culvert was installed in a natural waterway as part of FEMA hazard mitigation, and the township was not aware they were to notify the county water board. Zimmerman made a motion that the complaint be dismissed. Peterson seconded the motion. The motion carried.

1<sup>st</sup> Larson Sanitary Sewer Project:

Special Assessment Certification: Water Board Attorney presented the list of properties to be certified with Ward County. Discussion was held regarding properties that have been paid in full. Peterson made a motion that these payoff amounts be applied to reduce the term length of the loan. Foley seconded the motion. The motion carried unanimously.

Foley made a motion authorizing the Water Board Attorney to certify the assessments for 2018 with the Ward County Auditor's office. Zimmerman seconded the motion. The motion carried unanimously.

Rice Lake: Water Board Engineer reported the FEMA grant was approved with the local share to be covered by homeowners. HDR Engineering will manage the bidding and construction management. Engineering fees will be reimbursable from FEMA grant funds. Reep will arrange a meeting with the Ward County Commission Committee to resolve final details.

East Side Estates Flood Control Project: Handouts were provided by the Water Board Engineer showing a draft of properties that would be impacted. Total construction cost is currently estimated to be \$8.4m. Reep will coordinate a meeting with the Souris River Joint Board.

Storm Water Management Guidelines: Reep reported he had spoken with Ward County Engineer Dana Larsen, and the current Ward County ordinances do not require that the Water Resource Board review SWMP plans. Further discussion was tabled until the November 13 Water Board meeting. Larsen and Ward County Planning and Zoning Administrator Nancy Simpson will be asked to participate in the discussion.

Johnson made a motion directing the Water Board Engineer to review a SWMP for CPS Agricultural Warehouse, Out 11, Section 31, T156N, R82W.

Central Power Electric: Foley made a motion to receive and file notification from Central Power regarding a pedestrian survey for an electrical system improvement project. Zimmerman seconded the motion. The motion carried unanimously.

Mace and Lloyd Ann Caston: Water Board Attorney Van Grinsven reported a notice to remove a camper from the backwash in Robinwood Estates had been issued to the Caston's. The Caston's responded and said that it was not their camper. Caston's were then notified to disregard the original notice. Foley made a motion directing Van Grinsven to contact the Ward County Sheriff's office and request that they check to see if the camper has a serial number. Peterson seconded the motion. The motion carried unanimously.

Frontier Gardens: Foley reported that a drainage channel behind Frontier Gardens (OLT 2 NE1/4SE1/4 Section 4 T154N R82W) needs to be cleaned out. DL Barkie Construction provided an estimate of \$19,500 to do the work. The matter was tabled pending further information.

Levee Inspection (Kings Court/Sawyer): Foley made a motion that HDR Engineering follow up on the USACE inspection of Kings Court and Sawyer and determine what needs to be completed to be in compliance and obtain USACE certification. Johnson seconded the motion. The motion carried unanimously. The Water Board Attorney is to review recorded documents for James Movchan (1100 65<sup>th</sup> St NW-Del Nor Drive) and determine whether Movchan is authorized to maintain a garden on the levee.

The next regular meeting will be Monday, November 13, 2017 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	1212.17
NDPERS	407.11
ND State Tax	254.10
Job Service, ND	16.01
#7354 Robert Gibb & Sons	15,000.00
#7355 XCEL	74.63
#7356 HDR Engineering	28,857.54
#7357 True North Steel	8,587.12
#7358 VOID	
#7359 VOID	
#7360 Nancy Kramer	2,054.33
#7361 Walmart	55.36
#7362 Jason Zimmerman	872.71
#7363 SRT	91.34
#7364 Marco	3,000.00
#7365 VOID	
#7366 Loren Johnson	1,369.74
#7367 Maurice Foley	703.31
#7368 Postmaster	70.00
#7369 McGee Law Firm	<u>1,660.83</u>
	\$65,217.40

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman



WARD COUNTY WATER RESOURCE BOARD  
MINUTES / NOVEMBER 13, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Bruce Peterson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep, Water Board Attorney Bryan Van Grinsven and Ward County Engineer Dana Larsen.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda as amended. The motion carried unanimously.

Previous Minutes: Foley made a motion to approve the previous minutes of October 9, 2017. Peterson seconded the motion. The motion carried unanimously.

Money Market Savings: Johnson made a motion to approve changing the Water Board savings account to a money market savings account. Foley seconded the motion. The motion carried unanimously.

Bills: Johnson made a motion to approve payment of the bills as presented. Zimmerman seconded the motion. The motion carried unanimously.

2017 Audit: Zimmerman made a motion to accept the proposal from Rath & Mehrer to conduct the 2017 audit at a cost not to exceed \$2500.00. Johnson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Johnson made a motion to adopt the Water Board Engineer's comments regarding Minot City Planning Packet for November 8, 2017; and that based on review and recommendation of the Water Board Engineer, that the following county plats for *uAngela Bergeson-Lund Township, MacKenzie Hansen-Maryland Township and Nichole Degenstein-Mayland Township* be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows. Zimmerman seconded the motion. The motion carried unanimously.

DC14 009 Melius-Ehr: The Water Board Attorney reported that he, Tom Klein, Jason Zimmerman and Dennis Reep met with representatives of NDDOT, CHS and the Melius and Ehr landowners to discuss the three options outlined in the HDR memo. CHS is not opposed to construction of a channel on a portion of its property as long as there are assurances that it will not flood their property. NDDOT had some concerns regarding option #2, as it would require water to be turned at a 90-degree angle at least twice. The landowners maintain that the problem is from upstream development, but the City insists that is not the case as the water is property metered out of upstream retention ponds. Neither CHS nor NDDOT expressed any willingness to contribute (financially) to any project. The landowners were informed that the Water Resource Board is not willing to fund any project on its own. No action is required from the Water Board at this time.

DC 17 004 Mike Smith v Willis Township: Water Board Engineer Reep reported there is no evidence that no work has been done regarding the order to remove an obstruction. Reep will perform a follow-up check. Johnson made a motion directing the Water Board Attorney to

request on update from Willis Township. Peterson seconded the motion. The motion carried unanimously.

Souris River Overflow Canal (54<sup>th</sup> Ave SE): Zimmerman made a motion to accept a proposal from DL Barkie, in the amount of \$5500 to remove sediment upstream and downstream. Peterson seconded the motion. The motion carried unanimously.

SWMP Guidelines: Nancy Simpson, Ward County Planning and Zoning joined the meeting and discussion was held regarding guidelines for requiring storm water management plans. The Water Board has previously followed guidelines set by the City of Minot. Chairman Klein appointed Loren Johnson, Water Board Engineer Reep and Water Attorney Van Grinsven to meet with Dana Larsen and Nancy Simpson to draft language defining when a SWMP should be required.

CPS Agricultural Warehouse SWMP: Water Resource Board Engineer Reep reported that the SWMP provided will meet the intent of maintaining or reducing peak discharges if all features are implemented as planned. Foley made a motion to adopt HDR Engineering recommendations. Johnson seconded the motion. The motion carried unanimously.

Rice Lake: Water Board Engineer Reep reported the Ward County Commission plans to request that landowners, participating in the house raise project, be responsible for 25% cost share. An agreement is being prepared to this effect.

East Side Estates Flood Control Project: Water Board Engineer Reep is finalizing a memo regarding this project, and input will be requested from the Souris River Joint Board.

Kings Court/Sawyer Levee Inspection: HDR Engineering has been reviewing the 2016 USACE inspection results and have started identifying acceptable and unacceptable areas of the levees. Cost estimates will be prepared.

Frontier Gardens Drainage Channel: No action was taken and discussion was tabled.

Souris River Flood Control Project: Chairman Klein reported Clint Cogdill had contacted him regarding his contract for maintenance. The matter was tabled until Klein is able to get further information from Cogdill.

City of Minot Wastewater Treatment Facility Improvements (Apex Engineering): Zimmerman made a motion to receive and file a report from Apex Engineering regarding this project. Peterson seconded the motion. The motion carried unanimously.

Minot System Wide Improvement Framework (Houston Engineering): Zimmerman made a motion to receive and file a solicitation of views from the Office of the State Engineer for this project. Johnson seconded the motion. The motion carried unanimously.

Water Resource Board Insurance: Foley made a motion directing the Water Board Attorney to request quotes for \$5m and \$10m coverage through the ND Insurance Reserve Fund for Water Board members. Zimmerman seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, December 11, 2017 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	1224.72
NDPERS	409.23
#7370 XCEL	81.50
#7371 Walmart	47.91
#7372 SRT	91.57
#7373 Souris River Joint Board	66,750.68
#7374 Cogdill Construction	1,355.00
#7375 HDR Engineering	8,543.90
#7376 Nancy Kramer	2,193.79
#7377 Clute Office Equipment	62.70
#7378 Schock's	418.88
#7379 McGee Law Firm	3,576.00
#7380 DL Barkie	64,400.00
#7381 ND Water Users	<u>600.00</u>
	\$150,686.98

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / DECEMBER 11, 2017

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Bruce Peterson and Jason Zimmerman. Also present was Water Board Engineer Dennis Reep and Water Board Attorney Bryan Van Grinsven.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda as amended. The motion carried unanimously.

Previous Minutes: Foley made a motion to approve the previous minutes of November 13, 2017. Johnson seconded the motion. The motion carried unanimously.

Bills: Zimmerman made a motion to approve payment of the bills as presented. Peterson seconded the motion. The motion carried unanimously. The Water Board Engineer reported cost share reimbursement from the SWC is available for the invoice from DL Barkie for snagging and clearing at Meadowbrook. Chairman Klein also reported there is also reimbursement available from the Ward County Emergency Manager's office.

Ward County Employee Salary Increase: Johnson made a motion to approve a 1% salary increase for the Secretary/Treasurer, as authorized by the Ward County Commission for all Ward County employees. Foley seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Peterson made a motion that based on review and recommendation of the Water Board Engineer, that the following county plats for *Rosalie and Keith Martelle-Maryland Township*, *James Johnson-Sawyer Township* and *Sheldon Haner-Freedom Township* be returned without objection, but with the following recommendation: (1) That a storm water management plan may be required if a special use permit has been applied for the subject property, and (2) That no development as a result of this plat should obstruct any watercourse or divert surface water flows. Johnson seconded the motion. The motion carried unanimously.

Plat Applications: Water Board Engineer Reep reported that a conference call was held on November 16, 2017 with Reep, Water Board Attorney Van Grinsven and Ward County Engineer Dana Engineer to discuss Water Resource Board review and recommendation regarding plat applications submitted to the county. Discussion included potential "triggers" for requiring storm water management plans.

DC14 009 Melius-Ehr: Landowners, pertaining to this complaint, appearing before the Board were Darlene Melius, Lynda Langseth, Bruce Langseth and Jim Ehr. Mike Melius was present by telephone conference call. The Landowners requested that the Water Resource Board make a determination with respect to their drainage complaint; specifically whether a permit for drainage upstream was required. Foley made a motion directing the Water Board Engineer and Water Board Attorney to investigate ownership of developed property upstream and a timeline of potential development, and report the findings to the Water Resource Board at the January 8, 2018 meeting. Zimmerman seconded the motion. The motion carried unanimously.

DC 17 004 Mike Smith v Willis Township: An update was requested from Willis Township, but no response has been received. There is no indication that any material has been removed by the township.

East Side Estates Flood Control Project: Water Board Engineer Reep is continuing to finalize a memo regarding this project.

Rice Lake: An agreement outline has been circulated, and drafting of the actual agreement is in process, and should be available to the Ward County Commission for comments at the December 19, 2017 meeting.

Kings Court/Sawyer Levee Inspection: Water Board Engineer Reep reported cost estimates are being prepared for the 2016 USACE inspection results.

DC17 007 Todd Haskins v Dave Gowan: This complaint was submitted on November 21, 2017. An email was received on December 7, 2017 indicating that the parties involved in the complaint had resolved the issue and were withdrawing the complaint.

Souris River Joint Board: Chairman Klein appointed Maurice Foley to represent the Ward County Water Board and attend upcoming coordination meetings of the Souris River Joint Board.

2<sup>nd</sup> Larson Snagging and Clearing: Zimmer made a motion to accept a proposal from DL Barkie, in the amount of \$54,000 to snagging and clearing of 2<sup>nd</sup> Larson Coulee from County Road 14 through Meadowbrook. Johnson seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, January 8, 2018 at 9:00 a.m. The meeting adjourned.

**BILLS REVIEWED AND PAID:**

BCBS	931.10
IRS-941	690.07
NDPERS	438.92
#7382 WC Highway Department	81,890.92
#7383 XCEL	62.35
#7384 Walmart	80.00
#7385 Bruce Peterson	1653.33
#7386 Loren Johnson	986.09
#7387 HDR Engineering	6390.00
#7388 Nancy Kramer	2041.77
#7389 SRT	93.77
#7390 Jason Zimmerman	498.69
#7391 DL Barkie	89,000.00
#7392 DL Barkie	8,500.00
#7393 Tom Klein	1,338.22
#7394 Nedrose SSD	574.83
#7395 1 <sup>st</sup> Larson SSP	3,451.26
#7396 McGee Law Firm	<u>2390.50</u>
	\$201,011.82

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES / JANUARY 8, 2018

Nominations were opened for Chairman and Vice Chairman. Tom Klein was unanimously elected Chairman. Loren Johnson was unanimously elected Vice Chairman.

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Jason Zimmerman Darren Dobrinski. Also present was Water Board Engineer Dennis Reep, Water Board Attorney Bryan Van Grinsven and Ward County Engineer Dana Larsen.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda as amended. The motion carried unanimously.

Previous Minutes: Foley made a motion to approve the previous minutes of December 11, 2017. Johnson seconded the motion. The motion carried unanimously.

Bills: The bills were reviewed. Johnson made a motion to approve payment of the bills. Zimmerman seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Zimmerman made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for January, 2018, and that based on review and recommendation of the Water Board Engineer, that the following county plats for *Wes Haugen and Russell Hadler-Surrey Township, Keith Deutsch-Lund Township, Bradley Gossen-Sawyer Township, Peter and Debora Sigurdson-Sawyer Township and Darrel Wilkerson II-Sawyer Township* be returned without objection, but with the following recommendation: (1) That a storm water management plan may be required if a special use permit has been applied for the subject property, and (2) That no development as a result of this plat should obstruct any watercourse or divert surface water flows. Foley seconded the motion. The motion carried unanimously.

Board Insurance Coverage: Foley made a motion that the Ward County Water Board increase insurance coverage to \$5,000,000. Zimmerman seconded the motion. The motion carried.

DC 17 004 Mike Smith v Willis Township: Water Board Attorney Van Grinsven received information from Willis Township indicating that the watercourse obstruction has been removed outside the section line right of way. The Township also provided a copy of their minutes from January 3, 2018, claiming that as of 12/31/2017 the fill dirt has been removed. Following an inspection of the site, Water Board Engineer Reep reported nothing had been done as of December 19, 2017. Johnson made a motion directing the Water Board Attorney to send a copy of the correspondence received by the Township to the complainant, and to direct the Water Board Engineer to view the property again to confirm removal of the obstruction. Zimmerman seconded the motion. The motion carried unanimously.

DC14 009 Melius-Ehr: Water Board Engineer Reep and Attorney Van Grinsven reviewed historical aerial imagery of the area west of 13<sup>th</sup> St SE to identify activity that may have required drainage permits. That review suggested that a ditch may have been established beyond the natural channel in 2000 in the NE1/4SE1/4 of Section 25, T155N R83W. Hydrological data indicated that the watershed area likely exceeded 80 acres. Based upon this information, it was determined a drainage permit was required to improve and expand the existing watercourse in approximately 2000, but one was not obtained. Foley made a motion directing the Water Board Attorney and Water Board Engineer to contact the Office of the State Engineer to determine what corrective action can be required given that the record title owner of the property in 2000 no longer owns the property.. Johnson seconded the motion. The motion carried unanimously.

East Side Estates Flood Control Project: Water Board Engineer Reep provided a draft report for the Eastside Estates Flood Study. Total cost estimates, including construction costs, were \$15.4 million for Eastside Estates and \$16.2 million for Apple Grove.

Rice Lake: HDR Engineering Task Order 09 for Rice Lake Home Raises-Construction Bid Documents and Construction Management was presented and reviewed. Under the cost-sharing agreement between the County and the property owners, the Water Resource Board would be reimbursed with grant funds and owner payments. Foley made a motion that Task Order 09 be approved. Johnson seconded the motion. The motion carried unanimously

Kings Court/Sawyer Levee Inspection: Water Board Engineer Reep provided a review, by HDR Engineering, of USACE inspection reports and prepared an action plan and cost estimates to address the noted deficiencies and meet the acceptable criteria. A prioritized list of the corrective actions necessary was requested.

Gasman Coulee: Maurice Foley was authorized to contact Ackerman Estvold Engineering and request a cost for a drone flight of the coulee from Hwy 2 & 52 West, north to the Souris River.

Johnson made a motion to receive and file a letter dated January 2, 2018 from Interstate Engineering regarding a transmission line project from Reservoir 10 to Reservoir 9 for North Prairie Rural Water District. Zimmerman seconded the motion. The motion carried unanimously.

1<sup>st</sup> Larson Sanitary Sewer Project: Chad Mosser, 5212 4<sup>th</sup> St SW owns Lots 2 and 3 of Korslien Subdivision. The tax levy assessment for the 1<sup>st</sup> Larson Sanitary Sewer Project (West) is attached to Lot 2. Mosser has requested that the assessment be changed to Lot 3, as that is the parcel his home is on. Foley made a motion authorizing the Water Board Attorney to notify the Ward County Auditor's office that the Ward County Water Resource Board consents to changing the levy of the First Larson (West) sanitary Sewer assessment, for Chad Mosser, from Lot 2 to Lot 3. Zimmerman seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, February 12, 2018 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	1523.31
NDPERS	407.11
Job Service, ND	86.54
Ottertail	18.85
#7397 SRT	91.64
#7398 XCEL	50.25
#7399 ND WRDA	675.00
#7400 Lowe's Printing	29.95
#7401 HDR Engineering	4537.62
#7402 HDR Engineering	2282.50
#7403 Ramkota	495.00
#7404 Nancy Kramer	2087.89
#7405 Maurice Foley	942.99
#7406 ND WRDA	120.00
#7407 DL Barkie	54000.00
#7408 Minot Restaurant Supply	82.55
#7409 Staples	44.98
	\$66371.47

Submitted by:

Approved: \_\_\_\_\_ (date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD

FEBRUARY 12, 2018, 9:00 a.m.

Board members present: Tom Klein, Loren Johnson, Darren Dobrinski, Jason Zimmerman, Maurice Foley. Others: Dennis Reep (HDR Engineering), Stephanie Williams (HDR Engineering), Bryan Van Grinsven (Water Resource Board Attorney).

Chairman Tom Klein called the meeting to order at 9:00 AM. Jason Zimmerman moved to approve the agenda with two additions: water application #6963 and February 14, 2018 Ward County Ag Improvement Association meeting; second by Darren Dobrinski. Motion passed 5-0.

**Minutes of the Board's previous meetings of January 8, 2018 and January 15, 2018** were reviewed. Loren Johnson moved to approve the minutes as presented; second by Jason Zimmerman. Motion passed 5-0.

**Bills** were reviewed (see attached). Maurice Foley moved to approve the bills as presented; second by Darren Dobrinski. Motion passed 5-0.

**Meadowbrook Snagging and Clearing Project.** The Board was advised that the Water Resource District received \$25,000 from the 2011 Hazard Mitigation Grant. No action required.

**City Planning Packet / County Plat Applications:**

- Outlot 1, Section 5, Twp. 158, Range 87 (Carbondale Township): HDR Engineering recommended that the application be returned without objection but with the following recommendations: (1) a storm water management plan may be required if the subject property is the subject of a special use permit application; and (2) no development should obstruct any watercourse or divert surface water flows.
- Outlot 1, Section 27, Township 159, Range 88 (Baden Township): HDR Engineering recommended that the application be returned without objection but with the following recommendations: (1) a storm water management plan may be required if the subject property is the subject of a special use permit application; and (2) no development should obstruct any watercourse or divert surface water flows.
- Bel Air Commons, Lots 1 & 2 (Bel Air Twinhomes 2<sup>nd</sup> Addition, Lot 1 and a portion of vacated 5<sup>th</sup> Ave. NW and remaining unplatted portion of the SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>, Section 15, Township 155, Range 83): HDR Engineering recommended that a SWMP should be required if one does not exist; if a SWMP exists it should be checked to assure the new plan for development will still meet the requirements.
- Livingston Valley South 2<sup>nd</sup> Addition, Lot 1 (unplatted portion of the SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> and NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>, Section 36, Township 155, Range 83): HDR Engineering recommended that the existing SWMP be checked to ensure that it still meets the requirements since the area contributes directly to Puppy Dog Coulee upstream of 13<sup>th</sup> St. SE.



- Outlot 14, Section 21, Township 155, Range 83: HDR Engineering recommended that a SWMP should be required if one does not exist; if a SWMP exists it should be checked to assure the new plan for development will still meet the requirements.

Loren Johnson moved to accept and adopt the HDR Engineering recommendations; second by Maurice Foley. Motion passed 5-0.

**Gasman Coulee and Carpio UAV drone inspections.** Ryan Ackerman (Ackerman-Estvold Engineering) summarized proposals to conduct UAV drone flights of Gasman Coulee and the Des Lacs River near Carpio (see January 17, 2018 and January 22, 2018 proposals). The Gasman Coulee flight would cover approximately 0.8 miles from US Highway 2 to the Mouse River main channel at an estimated cost of \$1,150. The Des Lacs River flight would cover approximately 1.4 miles from North Dakota Highway 28 N. to the main channel of the Mouse River at an estimated cost of \$1,750. Maurice Foley moved to accept the Ackerman-Estvold proposal with the modification that the Des Lacs River flight not to go west of Highway 28; second by Loren Johnson. Motion passed 5-0.

**East side estates flood control project.** Stephanie Williams reviewed the flood study. Maurice Foley stated his position that the project would be beneficial provided the Board can find money to pay for it. Perhaps the Souris River Joint Board may be willing to assist in the cost of the project? No action taken.

**Drainage complaint DC 17-004 (Smith v. Willis Township).** Stephanie Williams reported that HDR Engineering attempted to inspect the site to verify that material was removed from the watercourse as reported by Willis Township but there was too much snow cover. No action taken.

**Kings Court / Sawyer Levee.** Stephanie Williams reviewed HDR Engineering's February 6, 2018 memo addressing levee deficiencies. The costs of addressing identified items is estimated to be:

high priority items	\$104,460
medium priority items	\$ 66,495
low priority items	\$ 5,307

It was also recommended that the Board obtain a survey to verify easement locations. Jason Zimmerman stated that the Board's efforts should not duplicate those of the Souris River Joint Board. Loren Johnson moved that HDR Engineering proceed with the plan to address deficiencies as outlined in HDR Engineering's February 6, 2018 memo; second by Maurice Foley. Motion passed 5-0.

**Rice Lake relocation/elevation project.** Stephanie Williams reported that HDR Engineering held a meeting with property owners on January 25, 2008. Owners of 7 of the 9 potential properties were present and were provided cost-sharing agreements to be submitted by February 15, 2008. At this time, the owner of 1 property has returned the cost-sharing agreement, owners of 2 of the properties have dropped out of the project and 2 more properties may also withdraw. The participating properties will be surveyed, pending signed cost-share agreements, and HDR Engineering is continuing to coordinate with FEMA. The cost-benefit of the project

may need to be reevaluated depending upon the number owners still participating in the project. No action taken.

**State Water Commission Water Development Plan (2019-2021).** As part of its water management efforts, the State Water Commission is developing a Water Development Plan for the 2019-2021 biennium. The State Water Commission requested that the Board identify potential water development projects. The following projects were identified: Puppy Dog diversion project and Makoti Lake/Hiddenwood Lake outlet. The Board requested HDR Engineering compile a list of projects and fill out the forms for their consideration at the March Meeting.

**State Water Commission Application to Construct or Modify Dike (Section 22, Township 137, Range 49 (Pleasant Township)).** Following its initial review, the Office of State Engineer forwarded the application to the Board as required by N.D.C.C. §61-16.1-38. The Board must consider the application within 45 days and suggest changes, conditions or modifications. Loren Johnson moved to file the letter without action; second by Jason Zimmerman. Motion passed 4-0 (Darren Dobrinski absent).

**Ward County Ag Improvement Association meeting (February 14, 2018).** Tom Klein appointed Loren Johnson to attend and observe and report any useful information at the Board’s March 2018 meeting.

**Drainage Application #6963.** Maurice Foley moved that HDR Engineering draft a procedure for the Board to handle subsurface drainage applications; second by Jason Zimmerman. Motion passed 5-0. Loren Johnson moved that, in the interim, the Water Resource Board Secretary immediately forward any subsurface drainage applications to HDR Engineering and the Water Resource Board Attorney for review; second by Jason Zimmerman. Motion passed 5-0.

**Drainage complaint DC 14-009 (Melius-Ehr v. City of Minot).** On January 22, 2018 the Board issued a Notice requiring removal of an unpermitted drain located in the NE¼SE¼ of Section 25, Township 155, Range 83. On February 6, 2018 the City of Minot requested a hearing on the Board’s notice. Following presentation of information and documentation by the Water Resource Board Engineer, representatives of the complainants and representatives of the City of Minot, Loren Johnson moved that the City be required to remove the drain identified in the Board's prior notice; second by Jason Zimmerman. Motion passed 3-2 (Maurice Foley and Tom Klein opposed). Maurice Foley moved to allow the City 6 months to remove the drain; second by Jason Zimmerman. Motion passed 5-0.

There being no further business the meeting was adjourned without objection.

Submitted by:

Approved: \_\_\_\_\_, 2018

\_\_\_\_\_  
Water Resource Board Attorney

\_\_\_\_\_  
Chairman

February 12, 2018

**BILLS PAID:**

**Ward County Water Resource:**

#7410 McGee Law Firm	5935.50
#7411 XCEL	50.25
#7412 Walmart	75.70
#7413 SRT	91.99
#7414 Nedrose SSD	2337.84
#7415 1 <sup>st</sup> Larson SSP	36978.56
#7416 Clute Office Equip	77.79
#7417 HDR Engineering	11685.28
#7418 Postmaster	100.00
#7419 1 <sup>st</sup> Western Insurance	9040.00
#7420 WSI	250.00
#7421 Nancy Kramer	2671.35
#7422 Staples	<u>109.25</u>
	\$69403.51

**1<sup>st</sup> Larson Sanitary Sewer Project:**

#5003 Bank of North Dakota	31337.25
#5004 ND Guaranty & Title (Payoff refund)	<u>84.80</u>
	\$31422.05

**Nedrose Sanitary Sewer District**

#7505 Bank of North Dakota	\$2250.00
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WARD COUNTY WATER RESOURCE BOARD  
MINUTES / MARCH 12, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Jason Zimmerman Darren Dobrinski. Also present was Stephanie Williams-HDR Engineering and Water Board Attorney, Bryan Van Grinsven.

Agenda: Johnson made a motion to approve the agenda with additions. Zimmerman seconded the motion. The motion carried unanimously.

Previous Minutes: Johnson made a motion to approve the previous minutes of February 12, 2018 with the following corrections: Plat applications for Tyler Anderson in Baden Township and Scott Myers in Carbondale Township were not approved in February-they are on the agenda for this March 12<sup>th</sup> meeting, and the SWC Application to Construct No. 2505 should have had the legal description of Section 22 and Section 23, T155N, R83W, Ward County. Zimmerman seconded the motion. The motion carried unanimously.

Bills: The bills were reviewed. Foley made a motion to approve payment of the bills. Johnson seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Dobrinski made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for March, 2018, and that based on review and recommendation of the Water Board Engineer, that the following county plats for *Tyler Anderson-Baden Township and Scott Myers-Carbondale Township* be returned without objection, but with the following recommendation: (1) That a storm water management plan may be required if a special use permit has been applied for the subject property, and (2) That no development as a result of this plat should obstruct any watercourse or divert surface water flows; and that Special Use Application for *Strata Corp, in Section of Tatman Township* be returned without objection with the following recommendation that a storm water management plan will be required and no development as a result of this plat should obstruct any water course or divert surface water flows. Foley seconded the motion. The motion carried unanimously.

DC14 009 Melius-Ehr: There being no new developments, and no action is required of the Board at this time.

DC 17 004 Mike Smith v Willis Township: Due to the snow, the Water Board Engineer has still not been able to do any further investigations.

Kings Court/Sawyer Levee Inspection: Williams-HDR Engineering reviewed capital improvement projects covered under the Mouse River FPP SWIF. Costs estimates for repair of deficiencies based on 2017 inspections are \$94,000 for engineering, \$74,000 for general contractor work and \$8,000 for special work contractors. Zimmerman made a motion directing HDR Engineering to continue to prepare for bids and identify projects that only require general contractor and those that require engineering. Johnson seconded the motion. The motion carried unanimously.

Rice Lake Relocation/Elevation Project: Williams reported there three properties that will be participating with the elevation portion of the project. The participating homeowners are Nesdahl, Mindt/Hood and Hargrave. HDR is finalizing survey of the properties and will be continuing development of construction plans and specifications.

SWC Development Plan: Williams-HDR Engineering identified four projects for the ND SWC Water Development Plan for future Biennia. (1-Des Lacs River Diversion Channel, 2-30<sup>th</sup> Ave SW, 3-Puppy Dog Coulee Bypass Channel and 4-Makoti Lake Stabilization.) Johnson made a motion directing HDR Engineering to submit the list of proposed projects to the SWC. Dobrinski seconded the motion. The motion carried unanimously.

Johnson reported he had attended the Ward County Ag Improvement Association meeting.

Subsurface Tile Drainage Permits: The Board reviewed a Subsurface Drainage Permit Process drafted by HDR Engineering. Johnson made a motion to approve the written permit process with the following changes: That the \$150 application fee be non-refundable, and that review of the application for completeness, by the Water Board Engineer, be completed within three business days. Dobrinski seconded the motion. The motion carried unanimously.

Prairie Rose Pipeline: Foley made a motion to receive and file information received regarding this pipeline. Zimmerman seconded the motion. The motion carried.

Pre-Construction Meeting for the Souris River Flood Project: Foley reported he had attended a pre-construction meeting for the Mouse River Enhanced Flood Protection Project-Phase MI-1.

The next regular meeting will be Monday, February 12, 2018 at 9:00 a.m. The meeting adjourned.

**BILLS REVIEWED AND PAID:**

BCBS	931.10
IRS-941	927.58
NDPERS	546.15
Ottertail	9.99
#7323 McGee Law Firm	5691.90
#7324 SRT	94.30
#7425 XCEL	50.25
#7426 HDR Engineering	22491.06
#7427 Nedrose SSD	6805.93
#7428 1 <sup>st</sup> Larson SSP W	57008.46
#7429 Nancy Kramer	2098.25
#7430 WSI	250.00
#7431 Nedrose SSD	6905.04
#7432 1 <sup>st</sup> Larson SSP W	41600.81
#7434 Tom Klein	1007.81
#7433 McGee Law Firm	<u>3191.12</u>
	\$149,609.75

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
APRIL 9, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Loren Johnson, Jason Zimmerman Darren Dobrinski. Also present was Dennis Reep-HDR Engineering.

Agenda: Johnson made a motion to approve the agenda. Zimmerman seconded the motion. The motion carried unanimously.

Previous Minutes: Foley moved and Zimmerman seconded to approve the previous minutes of March 12, 2018. The motion carried unanimously.

Bills: The bills were reviewed. Johnson made a motion to approve payment of the bills. Zimmerman seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Johnson made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for April, 2018; and that based on review and recommendation of the Water Board Engineer, that the following county plat for Robert and Nancy Gasman-Gasman Township be returned without objection, but with the recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows. Zimmerman seconded the motion. The motion carried unanimously.

Drone Flight: Troy Kostek with Ackerman Estvold appeared before the Board and presented a video of the drone flights they conducted over Gasman Coulee and Carpio Coulee. DVD's of the flights were also provided to the Board.

Kings Court/Sawyer Levee Inspection: Water Board Engineer Reep provided General Contractor Work Items for Stage 1 and Stage 2. A quote from DL Barkie Construction for this work was also provided. The quote included \$57,400 for Stage 1 and \$12,000 for Stage 2. Zimmerman made a motion to accept the quote from DL Barkie for Stage 1 work items, and to approve the encroachment easement survey as presented by HDR Engineering, and to direct HDR Engineering to coordinate with DL Barkie to accomplish the Corps of Engineer's requirements. Johnson seconded the motion. The motion carried. HDR will contact the City of Sawyer to inform them of the work.

At 10:00 a.m. Water Board Attorney Bryan Van Grinsven joined the meeting.

DC14 009 Melius-Ehr: Van Grinsven reported the City of Minot has appealed and claims they did not establish an unpermitted drain. The City also claims that it has authority to manage surface waer runoff under its zoning powers. The State Engineer's office will now review the appeal.

Rice Lake Relocation/Elevation Project: Reep reported letters have been issued to the three remaining project participants asking for confirmation that they intend to remain in the project. HDR was directed to submit engineering bills for reimbursement as incurred.

Foley made a motion to receive and file notice from CDM Smith regarding City of Minot CDBG-DR Program: Northern Sanitary Sewer Project Modification of Project Scope. Zimmerman seconded the motion. The motion carried.

The next regular meeting will be Monday, May 14, 2018 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	953.00
NDPERS	411.21
Ottertail	9.62
Verendrye Electric	124.00
#7435 XCEL	50.25
#7436 SRT	94.00
#7437 Nancy Kramer	2103.53
#7438 HDR Engineering	15154.02
#7439 Nedrose SSD	1408.80
#7440 Loren Johnson	751.57
#7441 Maurice Foley	<u>713.00</u>
	\$21062.02

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
MAY 14, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley and Loren Johnson. Also present was Water Board Attorney Bryan Van Grinsven and Stephanie Williams-HDR Engineering.

Agenda: Johnson made a motion to approve the agenda with additions. Foley seconded the motion. The motion carried unanimously.

Dan Jonasson, City of Minot Public Works Director appeared before the Board with a request from the City that the Ward County Water Board cost share construction expenses for the City of Minot 2018 Outfall Pipe Rehabilitation Project located in the SE corner of Olt 35 of SWNW SENW NWSW NESW LS RD S29-155-82, east of 27<sup>th</sup> St SE on an oxbow of the Mouse River just south of the Holiday Village Mobile Home Court. The estimated cost is \$55,000 and is currently out for bids. The City will also be submitting a cost share application to the SWC. Foley made a motion that the Ward County Water Board fund 50% of the installation cost, following SWC cost share, including updates that are required by USACE. Johnson seconded the motion. The motion carried unanimously.

Previous Minutes: Johnson moved and Foley seconded to approve the previous minutes of May 14, 2018. The motion carried unanimously.

Bills: The bills were reviewed. Foley made a motion to approve payment of the bills, including an invoice coming from HDR Engineering, approximately 14,000, for the Rice Lake house raise project. Foley seconded the motion. The motion carried unanimously.

Chairman Klein reported he will attend a meeting of the Ward County Comprehensive Plan Task Force

Planning Commission Packet and Plat Applications. Johnson made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for May, 2018; and that based on review and recommendation of the Water Board Engineer, that the following county plats for be returned without objection, but with the recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows:

- Dennis Andreson-New Prairie Township
- Brian Bonness-Eureka Township
- Cunningham Family Partners-Ryder Township
- Rick and Denver Haugen-Des Lacs Township
- Daryl and JoAnne Rademacher-St. Mary's Township

Foley seconded the motion. The motion carried unanimously.

Kings Court/Sawyer Levee Inspection: HDR Engineering has completed draft maps indicating deficiencies in the levees of the SRFCP. DI Barkie should be able to begin work on the levees by July 1<sup>st</sup>.

Rice Lake Relocation/Elevation Project: Stephanie Williams-HDR reported two of the three homeowners have submitted their letter of credit. The bid opening is scheduled for June 13<sup>th</sup>. Ward County has extended the LoC deadline until May 26, 2018.



MOU-Ward County Parks: Johnson made a motion to approve the annual Service and Maintenance of Water Board Properties Memorandum of Understanding with the Ward County Park Board, in the amount of \$18,300. Foley seconded the motion. The motion carried unanimously.

DC16 004 Jundt/Heintz: Foley made a motion to Receive and File notice from the Office of the State Engineer indicating that no watercourse was located at the requested location in the SW1/4 of Section 20-T155N R83W. Johnson seconded the motion. The motion carried unanimously.

Low Head Dam Identification: The SWC will be free low head dam signs for four dams in Ward County: Burlington City Park, Burlington Dam #3, Minot Country Club Dam and Minot Water Supply Dam. It was noted that there are additional coffer dams at Roosevelt Park, Oak Park and Tierrecita Vallejo. Johnson made a motion directing HDR to coordinate with the SWC to get the necessary signs and have them installed. Foley seconded the motion. The motion carried unanimously.

Foley made a motion to Receive and File OSE Solicitation of Views for Applications to Construct a Project within Islands and Beds of Navigable Streams or Waters of the State of North Dakota for the US 83 NW Bypass Bridge Project over the Mouse River. Johnson seconded the motion. The motion carried unanimously.

Proposal for Maintenance and Operation of Flood Pumps in Ward County: Clint Cogdill submitted a proposal of \$10,000 per year, which includes the installation and removal of pumps, inspection of pumps and electrical panels, periodic inspection of pump sites, gate inspections, etc. and maintaining a master log and record books. Johnson made a motion directing the Water Board Attorney to draft a contract for maintenance and operation of the flood pumps within the Souris River Flood Control Project, to include duties identified by Cogdill, to be reviewed at the June 11<sup>th</sup> Water Board meeting. Foley seconded the motion. The motion carried unanimously.

Chaparelle Levee: Foley reported a portion of the levee need to be filled where an electrical box was removed, and the east/west levee needs to be raised if there is enough room on the easement. Foley made a motion directing HDR to review the easement and determine whether there is enough room to increase the levee height. Johnson seconded the motion. The motion carried unanimously.

DC18 001 R. W. Burdick: Mr. Burdick appeared before the Board and reported that other residents of the Minot Mobile Estates Condo Association had placed dirt into a drainage ditch, within Minot Mobile Estates, and plugged his culvert. Mr. Burdick had submitted a complaint to the Condo Association Board, but did not receive any satisfaction. Johnson made a motion directing the Water Board Attorney to notify Mr. Burdick that no action will be taken by the Water Board. Foley seconded the motion. The motion carried unanimously.

SRJB/MADC Clay Contract: Water Board Attorney Van Grinsven reported the MADC asked him to draft an agreement between the MADC and the Souris River Joint Board for the sale/purchase of clay for flood protection. Johnson made a motion permitting the Water Board Attorney to draft the contract as requested by MADC. Foley seconded the motion. The motion carried unanimously.

2019 Budget: Johnson made a motion directing the Water Board Engineer to prepare a preliminary budget for current and future projects in the next five years. Foley seconded the motion. The motion carried unanimously.

2017 Audit: Johnson made a motion that the 2017 audit report be approved. Foley seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, June 11, 2018 at 9:00 a.m. The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	995.40
NDPERS	415.49
Ottertail	9.62
Verendrye Electric	99.00
ND State Tax	229.95
#7442 XCEL	50.25
#7443 Walmart	72.52
#7444 SRT	91.89
#7445 Nedrose SSD	416.44
#7446 1 <sup>st</sup> Larson SSP	35575.95
#7447 Nancy Kramer	2841.32
#7448 VOID	
#7449 VOID	
#7450 VOID	
#7451 HDR Engineering	22176.37
#7452 McGee Law Firm	4322.50
#7453 Ackerman Estvold	1622.50
#7454 Rath & Mehrer	2500.00
#7455 HDR Engineering	18423.79
#7456 HDR Engineering	14842.89
#7457 Ward County Parks	<u>18300.00</u>
	\$121,916.98

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
JUNE 11, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley Loren Johnson, Darren Dobrinski and Jason Zimmerman. Also present was Water Board Attorney Bryan Van Grinsven and Water Board Engineer Dennis Reep

Agenda: Johnson made a motion to approve the agenda. Zimmerman seconded the motion. The motion carried unanimously.

Previous Minutes: Dobrinski moved and Johnson seconded to approve the previous minutes of May 14, 2018. The motion carried unanimously.

Bills: The bills were reviewed. Zimmerman approved payment of the bills. Dobrinski seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Johnson made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for June, 2018; and that the following county plats for North Prairie Rural Water-Gasman Township, Douglas Miller-Baden Township, Strata/Robert Rice-Eureka Township and Edward Aberle-Surrey Township be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows; and that the plat application for Scott Schuster-Rice Lake Township be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided, (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows or (c) development of properties adjacent to Rice Lake should meet Ward County minimum elevation guidelines to account for the natural overflow elevation of Rice Lake and for wave runup. Zimmerman seconded the motion. The motion carried unanimously.

Kings Court/Sawyer Levee Inspection: Water Board Engineer Reep and Water Board Attorney Van Grinsven are continuing with easement research. The US Army Corps of Engineers will be contacted if necessary.

Rice Lake Relocation/Elevation Project: Reep reported there has been a site showing with contractors, however, there were not as many contractors as expected. The bid opening will be June 13, 2018. All current engineering bills paid by the Water Board have been submitted to NDDDES for reimbursement.

DC18 001 R. W. Burdick: The Water Board Attorney provided a letter from Burdick in response to a Notice of Dismissal from the Water Board to Burdick. Foley made a motion that the Water Board Attorney draft a response to the letter from Burdick. The motion died due to lack of a second. No further action was taken.

SRFCP Maintenance Contract: Water Board Attorney Van Grinsven drafted a contract for Cogdill Construction for maintenance services regarding the SRFCP, for review. Compensation payments would be made in two payments of \$5000 each, one to be paid by June 15 and the other to be paid by December 15. Megger testing will be added to the list of duties. Zimmerman made a motion to approve the contract. Johnson seconded the motion. The motion carried unanimously.

2019 Budget: The Board reviewed a five year budget plan prepared by the Water Board Engineer. Funding for the Souris River Joint Board was also discussed. The Souris River Joint Board could potentially request additional funding to aid in the Mouse River Enhanced Flood Control Project. Foley made a motion to request a 4 mil levy for the 2019 budget along with the submission of the five year plan. Zimmerman seconded the motion. The motion carried unanimously.

30<sup>th</sup> Street/2<sup>nd</sup> Larson Detention Project: Ryan Ackerman and Tom Larson with Ackerman Estvold joined the meeting. Ackerman provided a status report stating that the project has been declared a medium-hazard dam project by the OSE. The pre-bid engineering costs have been estimated at \$245,000 (excluding easement access). Total lands and easements, without land cost are estimated at \$65,000. Foley made a motion that Ackerman Estvold establish elevations and determine easements needed to proceed with the project. Zimmerman seconded the motion. The motion carried unanimously.

Chaparelle Berm: Water Board Engineer Reep reported on easement restrictions on raising the berm. The current berm is now two feet higher than a 100 year event (according to preliminary 100-year flood FEMA maps). Foley made a motion directing HDR to analyze the existing easement compared to the 2011 flood event. Johnson seconded the motion. The motion carried unanimously.

Burt Township: Shannon Hanson, Burt Township Chairman appeared before the Board and reported on a landowner drainage dispute involving a section line road between Sections 16 & 17 and 20 & 21 in Burt Township. The Township is concerned the section line road could be washed out. Hanson was given a Drainage Complaint form to be filled out and submitted to the Water Resource Board.

OSE Applications:

Oakland Properties #S2121: Application for water intake on the Souris River to withdraw water for dust control—was received and filed.

Gravel Products #S2124: Application to construct single span steel bridge over the Souris River to provide access to gravel quarry. Water Board Engineer recommended that precautions be taken to prevent erosion. Foley made a motion directing the Water Board Engineer to relay his recommendations to the OSE. Zimmerman seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, July 9, 2018 at 9:00 a.m. The meeting adjourned.

Page #3  
June 11, 2018

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	799.76
NDPERS	548.29
Ottertail	9.62
Verendrye Electric	72.00
#7458 SRT	96.10
#7459 XCEL	50.25
#7460 HDR Engineering	2422.50
#7461 Staples	58.99
#7462 Nancy Kramer	2283.37
#7463 Lowe's Printing	61.05
#7464 Ackerman Estvold	1277.50
#7465 DL Barkie	53500.00
#7466 McGee Law Firm	<u>1067.50</u>
	\$63,178.03

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
JULY 9, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley Loren Johnson, Darren Dobrinski and Jason Zimmerman. Also present was Water Board Attorney Bryan Van Grinsven and Water Board Engineer Dennis Reep

Agenda: Johnson made a motion to approve the agenda. Dobrinski seconded the motion. The motion carried unanimously.

Previous Minutes: Johnson moved and Foley seconded to approve the previous minutes of June 11, 2018. The motion carried unanimously.

Bills: The bills were reviewed. Dobrinski approved payment of the bills. Zimmerman seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Foley made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for July, 2018; and that the following county plats for *Paulette Zietz-Newman Township; Peggy Ann Rostad-Afton Township and Marlys Hanson & Jody Reinisch-Ryder Township* be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows. Zimmerman seconded the motion. The motion carried unanimously.

Rice Lake Relocation/Elevation Project: Reep reported Ward County has rejected the bids for this project. Ward County has been in contact with FEMA regarding a mitigation-construction grant for demolition of structures and rebuilding. If FEMA would reject the proposal, acquisition may be necessary. Reimbursement of \$14,206.14 for engineering fees has been received from NDDDES.

Chaparelle Levee: Reep reported the top of the berm is at the elevation of the 2011 flood event, and recommended that no change be made to the berm. FEMA does not recognize the berm, as it was not built to FEMA standards, and neighboring landowners do not receive any flood insurance benefits as a result of the berm.

SRFCP Maintenance Contract: Clint Cogdill signed the System Maintenance Contract with the removal of the Megger testing requirement. Any Megger testing will be the Water Board's expense. Klein reported there are problems with the pump in Delnor Drive. The pump was not replaced after the 2011 flood. Zimmerman made a motion authorizing Cogdill to inspect the pump and initiate any necessary repairs. Johnson seconded the motion. The motion carried unanimously.

Kings Court/Sawyer Levee Inspection: The Board reviewed recommendations from HDR Engineering for snagging and clearing at Sawyer and Kings Court. DL Barkie had previously provided a quote of \$69,400. HDR estimated costs of \$119,000. Foley made a motion to accept the proposal from DL Barkie, minus tree removal and encroachment removal pending easement investigation. Zimmerman seconded the motion. The motion carried unanimously. Water Board Engineer Reep will advise DL Barkie that the tree removal and encroachment removal are to be postponed.

30<sup>th</sup> Street/2<sup>nd</sup> Larson Detention Project: Tom Larson with Ackerman Estvold joined the meeting. The Board reviewed a handout showing areas of inundation easement, temporary construction easement and acquisitions. Foley made a motion directing Ackerman Estvold to arrange a meeting between the Water Board and Afton Township to discuss maintenance of the township road. Zimmerman seconded the motion. The motion carried unanimously.

Duane Anderson, Carpio: Anderson reported there is erosion along the Des Lacs River channel that borders his property. Anderson is proposing to place rock on the west side of the channel for stabilization and to remove built up areas on the east side. The Water Board Engineer recommended that Anderson contact the Corps of Engineers to see if a Nationwide or 404 Permit would be required. A Sovereign Land Permit might also be required from the State of ND.

The next regular meeting will be Monday, August 13, 2018 at 9:00 a.m. The meeting adjourned.

**BILLS REVIEWED AND PAID:**

BCBS	931.10
IRS-941	705.24
NDPERS	454.05
Ottertail	9.62
Verendrye Electric	72.00
ND State Tax	178.50
#7467 ND WRDA	145.00
#7468 Clint Cogdill	5000.00
#7469 DTN	1794.00
#7470 XCEL	56.65
#7471 Nedrose SSD	362.46
#7472 Nancy Kramer	2090.27
#7473 HDR Engineering	27408.17
#7474 Jason Zimmerman	748.03
#7475 Postmaster	71.00
#7476 Walmart	28.25
#7477 Maurice Foley	407.94
#7478 Tom Klein	1033.82
#7479 Staples	63.95
#7480 McGee Law Firm	<u>2205.00</u>
	\$43765.05

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
AUGUST 13, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley Loren Johnson and Jason Zimmerman. Also present was Water Board Attorney Bryan Van Grinsven, Water Board Engineer Dennis Reep and Ward County Engineer Dana Larsen.

Chairman Klein appointed Maurice Foley to attend a SWIF meeting for the Souris River Joint Board.

Previous Minutes: Foley moved and Zimmerman seconded to approve the previous minutes of July 9, 2018 and July 25, 2018. The motion carried unanimously.

Bills: The bills were reviewed. Johnson approved payment of the bills. Zimmerman seconded the motion. The motion carried unanimously.

Planning Commission Packet and Plat Applications. Foley made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for July, 2018; and that the following county plat for *Sawyer Disposal Services-Newman Township* be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows. Johnson seconded the motion. The motion carried unanimously.

Rice Lake Relocation/Elevation Project: Ward County Commissioner Alan Walter and Ward County Assistant Engineer Travis Schmidt joined the meeting. Reep reported two of the three remaining property owners have requested to withdraw from the FEMA project. The third property owner is interested in acquisition.

Zimmerman made a motion that the Water Board pay HDR Engineering invoices without requesting reimbursement of local cost share from NDDDES pending review by legal counsel. Foley seconded the motion. The motion carried unanimously.

Chaparelle Levee: Reep reported a portion of the berm had been damaged during work being by DL Barkie Construction. The damages have since been repaired.

Kings Court/Sawyer Levee Inspection: HDR has met with DL Barkie regarding work that needs to be completed to satisfy COE requirements. Work at Sawyer should begin within one to two weeks, and work at Kings Court will take place later in the year.

Al Dunker/River Bank Stabilization: Mr. Dunker appeared before the Board regarding erosion of the river bank near his property caused by the 2011 flood event. Water Board Engineer provided information for the Corps of Engineers Streambank and Shoreline Protection Program for the protection of public properties/facilities. The Program provides 100% coverage of a feasibility study and 65/35 cost share of design and construction.

Foley made a motion directing HDR to prepare an application for the COE Streambank and Shoreline Protection Project. Johnson seconded the motion. The motion carried unanimously.

Zimmerman made a motion directing HDR to inspect Dunker's complaint regarding his property. Foley seconded the motion. The motion carried unanimously.



30<sup>th</sup> Street/2<sup>nd</sup> Larson Detention Project Steve Eberle and Tom Johnson, Ackerman Estvold joined the meeting and presented easement/purchase costs totaling \$41,720.27. They are currently working on memorandums of agreement for the property owners.

Foley made a motion that the Water Board Attorney work with Ackerman Estvold to develop option agreements to present to the landowners, and that the Water Board Secretary be authorized to issue payment for options upon execution of option agreement by the landowners. Zimmerman seconded the motion. The motion carried unanimously.

Johnson made a motion to amend to set the option price at 20% of the easement price. Zimmerman seconded the motion. The motion carried unanimously.

The next regular meeting will be Monday, September 10, 2018 at 9:00 a.m. The meeting adjourned.

**BILLS REVIEWED AND PAID:**

BCBS	931.10
IRS-941	1305.21
NDPERS	411.21
Ottertail	10.02
Verendrye Electric	67.00
#7481 XCEL	66.02
#7482 SRT	90.45
#7483 HDR Engineering	22910.02
#7484 Nedrose SSD	460.88
#7485 Nancy Kramer	2591.78
#7486 Minot Daily News	11.68
#7487 DL Barkie	25000.00
#7488 Lowe's Printing	94.75
#7489 McGee Law Firm	3631.50
#7490 Nedrose SSD	1070.88
#7491 1 <sup>st</sup> Larson SSP	<u>6717.63</u>
	\$65,370.13

**Nedrose Sanitary Sewer Account:**

#7506 Bank of ND \$52,125.00

**1<sup>st</sup> Larson Sanitary Sewer Account:**

#5007 Bank of ND \$137,932.33

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
SEPTEMBER 10, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Darren Dobrinski, Loren Johnson and Jason Zimmerman. Also present was Water Board Attorney Bryan Van Grinsven, Water Board Engineer Dennis Reep and Ward County Engineer Dana Larsen.

Agenda: Johnson moved and Zimmerman seconded to approve the agenda with additions. The motion carried unanimously.

Previous Minutes: Foley moved and Johnson seconded to approve the previous minutes of August 13, 2018. The motion carried unanimously.

Bills: The bills were reviewed. Johnson approved payment of the bills. Dobrinski seconded the motion. The motion carried unanimously.

CD Renewals: Discussion was held regarding two CD's at Bremer Bank that will mature this month. Foley made a motion to renew both CD's at a 12 month term. Johnson seconded the motion.

After discussion on the motion, Johnson moved to amend the previous motion to direct that a total of \$500,000 (comprised of the maturing CD's at Bremer Bank and additional funds from the Water Resource Board's money market account) be invested in a 9-month CD. Foley seconded the motion. The amendment carried 4-0: Johnson-yes, Foley-yes, Zimmerman-abstained, Dobrinski-yes, Klein-yes.

The motion (as amended) carried 4-0: Johnson-yes, Foley-yes, Zimmerman-abstained, Dobrinski-yes, Klein-yes.

Johnson made a motion that the new 9 month CD be acquired through First Western Bank. Foley seconded the motion. The motion carried 4-0: Johnson-yes, Foley-yes, Zimmerman-abstained, Dobrinski-yes, Klein-yes.

Planning Commission Packet and Plat Applications. Zimmerman made a motion to adopt the Water Board Engineer's comments regarding the Minot City Planning Packet for August, 2018; and that the following county plats be returned without objection, but with recommendation that a storm water management plan may be required if the subject property is (a) developed or subdivided or (b) if application is made for a building permit; and that any development as a result of this plat should not obstruct watercourses or divert surface water flows: Matthew and Anne Williamson-Rice Lake Township, Diane Aarseth-Mayland Township and Justin Buee-Kiekelee Township. Johnson seconded the motion. The motion carried unanimously.

Rice Lake Relocation/Elevation Project: The Board considers the project terminated now that the County has rejected all contractor bids and all owners have withdrawn from the project. Therefore, the Board has no objection if Ward County chooses to release letters of credit to the Hargraves, the Nesdahls and Hood. The Water Board Attorney and Engineer will work together to draft a letter to the Ward County Commission to that effect. The Board was informed that one of the homeowners (Cobi Hood) is interested in having his property acquired by the County. The Board is of the opinion that the project did not include any acquisition. Its involvement in any acquisition project would be a new issue.

1<sup>st</sup> Larson Sanitary Sewer Project: Foley reported the pavement around a manhole on 4<sup>th</sup> St SW has been sinking. Foley made a motion asking the Ward County Engineer to inspect the areas of pavement that are bad and take whatever steps necessary to have them corrected. Johnson seconded the motion. The motion carried unanimously.

Johnson made a motion that a list of assessments provided by the Water Board Attorney (see attached) be submitted to Ward County for collection in 2019. Zimmerman seconded the motion. The motion carried unanimously.

30<sup>th</sup> Street/2<sup>nd</sup> Larson Detention Project: Tom Johnson and Steve Eberle, Ackerman Estvold joined the meeting and provided a list of landowners and summary of positions. Three remaining property owners have yet to agree to sign an easement for the project. Foley made a motion authorizing Ackerman Estvold to get the landowner's signatures on options to acquire easements at a total cost of \$9,386.85, and authorizing the Water Board Chairman to approve additional reasonable compensation if necessary to obtain landowner consent of the three remaining landowners. Zimmerman seconded the motion. The motion carried unanimously.

Ackerman Estvold was requested to submit an invoice for project-related work that has been completed to date.

Kings Court/Sawyer Levee Inspection: DL Barkie has cleaned out sediment and vegetation, but additional clearing near Sawyer (not covered under the current contract) has been proposed, by DL Barkie, at an estimated cost of \$17,000. Foley made a motion to accept the quote from DL Barkie in the amount of \$17,000 for snagging and clearing Sawyer east. Zimmerman seconded the motion. The motion carried unanimously. HDR will clarify work to be done and cost with DL Barkie.

Al Dunker/River Bank Stabilization: Notice was received from the Corps of Engineers that the Dunker property is not eligible for the CAP Program, because there is no active erosion, no public infrastructure or property at issue. Zimmerman made a motion that the Dunker property be surveyed to identify the location of the Water Resource Board's easement. Foley seconded the motion. The motion carried unanimously.

Corp of Engineer's Levee Inspection: Klein reported that the Corps of Engineers will be conducting their inspection next week. Foley made a motion that HDR accompany the COE during their inspection. Dobrinski seconded the motion. The motion carried unanimously.

A notice regarding a City of Minot street improvement project along 31<sup>st</sup> Ave SE, from Broadway to 13<sup>th</sup> St SE was received and filed without comment.

The next regular meeting will be Monday, October 8, 2018 at 9:00 a.m.

The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	841.81
NDPERS	520.44
Ottertail	10.02
Verendrye Electric	69.00
#7492 XCEL	65.47
#7493 Walmart	51.99
#7494 SRT	89.91
#7495 Darren Dobrinski	872.71
#7496 Nancy Kramer	2150.22
#7497 VOID	
#7498 HDR	4362.54
#7499 VOID	
#7500 Postmaster	121.00
#7501 DL Barkie	17000.00
#7502 Alton Township	577.01
#7503 VOID	
#7504 Paul Albertson	806.82
#7505 LaVerne Albertson	806.82
#7506 Joseph and Jessica Funk	308.04
#7507 Diocese of Bismarck	2014.76
#7508 Tom Klein	1143.42
#7509 Beau Albertson and Tiffany Albertson	<u>1086.40</u>
	\$33,829.48

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman

WARD COUNTY WATER RESOURCE BOARD

October 8, 2018

Board members present: Tom Klein, Maurice Foley, Loren Johnson, Jason Zimmerman, Darren Dobrinski. Also present were Water Board Attorney Bryan Van Grinsven and Water Board Engineer Dennis Reep.

Chairman Tom Klein called the meeting to order at 9:00 a.m. Foley moved to approve the agenda; second by Zimmerman. Motion passed 5-0.

1. **September 10, 2018 meeting minutes.** Johnson moved to approve the minutes of the September 10, 2018 meeting; second by Dobrinski. Motion passed 5-0.
2. **Bills.** Dennis Reep (HDR Engineering) presented an invoice (\$661.29) to close out the Rice Lake elevation / relocation project. Johnson moved to approve the bills, including the HDR invoice (\$661.29); second by Zimmerman. Motion passed 5-0.
3. **City Planning.** Reep reported that the City of Minot had not sent a packet out as of the time of the meeting.
4. **Plat Applications.** Reep reviewed the three (3) plat applications filed with the county (Derek Miller (Sundre Township), Amy Buechler (Willis Township) and Harold Wald (Surrey Township)) and recommended the Board return the plats without objection but with recommendations that (1) a storm water management plan be required if the subject property has a special use permit applied for and (2) that no development as a result of the plat obstruct any watercourse or divert surface water flows. Motion by Foley to approve and adopt HDR Engineering recommendations; second by Johnson. Motion passed 5-0.
5. **Rice Lake elevation / relocation project.** Reep reported that a letter had been forwarded to the Ward County Commission indicating that the Water Resource Board considered the project concluded and had not authorized further work on the project. The County Engineer's office requested some of the information / documentation compiled by HDR Engineering. Reep also reported that the last reimbursement request, in the amount of \$47,386.19, was submitted to NDDDES for processing. If approved, \$35,539.64 of the invoice would be reimbursed by FEMA.
6. **King's Court / Sawyer Levee / USACE levee inspection.** HDR Engineering provided an update regarding the USACE levee inspection and recommended that maintenance contractors submit inspection reports as part of their duties. Physical location of Water Resource Board easements must be identified to verify whether landowner improvements actually encroach. Motion by Foley to authorize HDR Engineering to prepare maintenance / inspection logs for use by maintenance contractors; second by Dobrinski. Motion passed 5-0. Motion by Foley to authorize HDR Engineering to conduct surveys of areas where USACE identified levee easement encroachments; second by Zimmerman. Motion passed 5-0.
7. **Al Dunker (Lot A, Outlot 23).** Reep reported that the majority of the land subject to the Water Resource Board's flood control easement was eroded in the 2011 flood. Efforts to repair or reconstruct the river embankment could be very expensive and would likely require permitting from USACE and the State Engineer. Johnson moved to authorize HDR Engineering to contact USACE and inquire as to the potential impact to the flood control system (if any) if the Water Resource Board's easements were terminated or abandoned; second by Zimmerman. Motion passed 5-0.

8. **30<sup>th</sup> Street / 2<sup>nd</sup> Larson Detention Project.** Tom Johnson (Ackerman Estvold) reported that three (3) landowners have not executed agreements granting the Water Resource Board options to acquire flowage easements (Schumaker, the Diocese of Bismarck and Opland). The Diocese consulted its tenants, which requested some type of low-flow crossing of a ravine for ag equipment. While not categorically opposed to construction of some type of low flow crossing, the Board needs more information about the type of crossing the tenant is contemplating and is not interested in assuming any maintenance or repair obligations with respect to any such crossing. Ackerman Estvold will follow-up with the three remaining landowners and report back to Water Resource Board at its November meeting.
  
9. **City of Minot Open Space Preservation.** Water Resource Board received a September 20, 2018 letter from the City of Minot requesting a statement of intent by the Water Resource Board to maintain ownership of various properties owned by the Water Resource Board in the floodplain that have been identified as open space. The statement of intent will help Minot residents obtain flood insurance at more affordable rates. Motion by Foley to authorize Chairman Klein to sign the Statement of Intent and return it to the city; second by Zimmerman. Motion passed 5-0.
  
10. **First Larson (West) Sanitary Sewer Project.** Johnson reported that aa developer, Moure Equipment, LLP had entered into an agreement with the City of Minot to allow certain property (Township 154, Range 83, Section 11: Outlot 2) to connect to the City’s sanitary sewer system. Johnson moved to direct the Water Resource Board attorney to review the agreement between the Water Resource Board and the City of Minot to determine whether the landowner would be required to pay a connection fee to the Water Resource Board; second by Zimmerman. Motion passed 5-0.
  
11. **DC18-002 (Mikkelson v. Haugen).** Mikkelson accused Haugen of modifying a natural watercourse and constructing a dam / dike in the NE¼ of Section 20, Township 154, Range 84 (Burt Township), resulting in the diversion of water onto Mikkelson’s property in the SW¼ of Section 16, Township 154, Range 84. Haugen claims that the natural flow of the watercourse is to the northeast, across Mikkelson’s property and only the section line road prevents that from occurring. Motion by Zimmerman directing HDR Engineering to investigate the allegations of the complaint and report to the Water Resource Board at its next meeting; second by Johnson. Motion passed 5-0. Motion by Foley to authorize HDR Engineering to survey the areas in question if necessary; second by Zimmerman. Motion passed 5-0. HDR Engineering will also consult other resources including (but not limited to) aerial photos to identify the historical path of the waterway and to compare culvert sizes on the north-south versus east-west roads.
  
12. **November 2018 meeting.** The November regular meeting will be held on Tuesday, November 13, 2018 due to the Veteran’s Day holiday.

Motion to adjourn by Dobrinski; second by Zimmerman. Motion passed 5-0.

Submitted by:

Approved: \_\_\_\_\_, 2018

\_\_\_\_\_  
Water Resource Board Attorney

\_\_\_\_\_  
Chairman

**Ward County Water Resource Board Meeting  
November 13, 2018**

Board members present: Tom Klein, Loren Johnson, Maurice Foley, Jason Zimmerman

Board members absent: Darren Dobrinski

Other present: Dennis Reep (HDR Engineering), Bryan Van Grinsven (McGee, Hankla & Backes), Steve Eberle (Ackerman Estvold)

Chairman Klein called the meeting to order at 9:00 AM. Zimmerman moved to approve the agenda; second by Johnson. Motion passed 4-0.

**October 8, 2018 meeting minutes.** Foley moved to approve the minutes as presented; second by Johnson. Motion passed 4-0.

**Bills.** Foley moved to remove the Ackerman-Estvold bill for the 30<sup>th</sup> St./Second Larson Detention Project pending verification that it includes all project time to date; second by Johnson. Motion passed 4-0. Zimmerman moved to approve the remaining bills as presented; second by Johnson. Motion passed 4-0.

**Plat applications.** The following plat applications were reviewed:

- Outlot 1 (10.92 acres) (Berthold Township, Connie Hagen, et al)
- NW¼ and N½SW¼ of Section 16, Township 155, Range 83 (Ward County, Minot Park District)

Reep recommended that the applications be returned without objection but with the following recommendations: a storm water management plan should be required if one does not exist; if a storm water management plan exists it should be checked to verify that the proposed use will still meet the requirements. Motion by Foley to approve and adopt HDR Engineering recommendations; second by Johnson. Motion passed 4-0.

**Rice Lake Relocation/Elevation Project.** Reep reported that Payment Request #3 was submitted to the County and Payment Request #2 had been approved.

**King's Court/Sawyer Levee USACE inspection.** Reep reported that HDR Engineering surveyors will be identifying trees inside the District's flood control easements for removal. Reep also presented the Board with a draft inspection form. The form has already been submitted to Cogdill Construction for input. Reep also informed the Board that keys to pump stations have not been working.

**Al Dunker property.** Reep presented imagery showing the location of the District's flood control easements in relation to the existing river channel and Mr. Dunker's property. The as-built plans show work upstream and downstream of Mr. Dunker's property but, for some reason, not on his property. HDR Engineering will contact USACE to request clarification of whether it considers the riverbank along Mr. Dunker's property a "levee improvement."

**30<sup>th</sup> St./2<sup>nd</sup> Larson Detention Project.** Eberle reviewed modifications to the option agreement requested by the Diocese of Bismarck. The modifications include additional compensation of \$3,000 for a low-flow crossing and supplying excess earthen material from the project for construction of the low-flow crossing. The diocese will be responsible for locating, designing, constructing, maintaining, repairing, replacing and removing the low-flow crossing. Motion by Foley to approve changes to the option agreement; second by Zimmerman. Motion passed 4-0.

Eberle reported that Mr. Schumacher requested additional compensation of \$5,000 for tree replacement; Schumacher will plant and care for the trees. Motion by Johnson to approve additional payment of \$5,000 to Mr. Schumacher for tree replacement; second by Zimmerman. Motion passed 4-0. Eberle reported that Ackerman-Estovld will be visiting with the only remaining landowner who has not signed an option agreement.

The Board questioned whether the Ackerman-Estovld bill included all time on the project. Eberle agreed to inquire further and contact the Board Chair. Eberle later sent a text message to the Chair indicating that the Ackerman-Estovld bill includes all work on the project. Motion by Foley to pay the Ackerman-Estovld bill; second by Zimmerman. Motion passed 4-0.

**DC18-002 (Mikkelson v. Haugen).** Reep reported that he had conducted a field review of the area in question. There are 3 culverts located on 128<sup>th</sup> St., Southwest. The most-southern of the culverts is plugged (he was unable to find the outlet). HDR Engineering still needs to survey the property. Reep will provide further information after HDR Engineering surveyors have completed their work.

**First Larson (West) Sanitary Sewer Project.** Van Grinsven reported that the Sanitary Sewer Service Agreement between the District and the City permits the City to allow sewer connections to properties outside the project area with the District's written consent and payment of a connection fee to the District. The agreement also requires the City to verify that the district's written consent has been obtained and a connection fee paid before a sewer permit is issued to the property owner. The agreement also calls for the District and City to exchange annual reports identifying requests for connection of properties (inside and outside the project area) during the previous calendar year. Motion by Foley to direct the Board Attorney and Secretary to develop an annual report form and submit it to the City for review and comment; second by Zimmerman. Motion passed 4-0.

**Whispering Meadows channel / culvert cleaning.** The Board reviewed a channel and culvert cleaning proposal for Whispering Meadows presented by DL Barkie Construction. DL Barkie would clean cattails and weeds out of the channel bottom and clean and clear plugged culverts over a ¾ mile distance at a cost of \$16,850. Zimmerman moved to accept the quote; second by Johnson. Motion passed 4-0.

There being no further business, the meeting was adjourned without objection.

Submitted by:

Approved: 12/10, 2018



Water Resource Board Attorney



Water Resource Board Chair



WARD COUNTY WATER RESOURCE BOARD  
MINUTES  
DECEMBER 10, 2018

Chairman Tom Klein called the meeting to order. Other Board members present were Maurice Foley, Darren Dobrinski, and Loren Johnson. Also present was Water Board Attorney Bryan Van Grinsven, Water Board Engineer Dennis Reep and Ward County Engineer Dana Larsen.

Agenda: Dobrinski moved and Johnson seconded to approve the agenda with additions. The motion passed 4-0.

Previous Minutes: Foley moved and Johnson seconded to approve the previous minutes of November 13, 2018. The motion passed 4-0.

Bills: The bills were reviewed. Johnson approved payment of the bills including payment to Loren Johnson and Darren Dobrinski. Foley seconded the motion. The motion passed 4-0.

2018 Audit: Johnson made a motion to approve a proposal from Rath and Mehrer to conduct the 2018 audit for a fee not to exceed \$2700.00. Johnson seconded the motion. The motion passed 4-0.

County Employee Salary Increase: Foley made a motion to approve a 2% salary increase for the Secretary/Treasurer, as authorized by the Ward County Commission for all Ward County employees. Johnson seconded the motion. The motion passed 4-0.

2019 Budget: The 2019 budget request authorized by the Ward County Commission was reviewed. The tax levy authorized for the Ward County Water Board is \$962,775. Foley made a motion that the Water Board make payment of \$300,000 to the Souris River Joint Board for a portion of Ward County's participation of the Joint Board's flood project. Johnson seconded the motion. The motion passed 4-0.

Plat Applications. The following plat applications were reviewed: Premier LLC, Afton Township; Allen Hulberg, Freedom Township; Blaire Olafson, Margaret Township, Nolan Stromberg, St. Mary's Township; Reuben Sanders, Waterford Township; and Robert Gasmann, Gasman Township.

The Water Board Engineer recommended that the applications be returned without objection but with the following recommendations: A storm water management plan may be required if the subject property has a special use permit applied for, and that no development as a result of this plat should obstruct any watercourse or divert surface water flows. Johnson made a motion to approve and adopt the Engineer's recommendations; seconded by Dobrinski. The motion passed 4-0.

Rice Lake Elevation Project: The Ward County Auditor's office has received \$35,539.65 from the ND Department of Emergency Services as reimbursement for engineering expenses relating to this project. The Water Board Engineer will follow up with the Auditor's office to insure the funds are transferred to the Water Board account.

King's Court/Sawyer Levee/USACE Inspection: HDR Engineering will be unable to complete the easement surveys until after January 1, 2019. Johnson made a motion directing Reep to coordinate with Ackerman Surveying regarding the easement surveys and encroachment lines at King's Court. Foley seconded the motion. The motion passed 4-0.

Al Dunker Property Erosion: Foley made a motion that the Water Board Engineer and Water Board Attorney work with the US Army Corps of Engineers regarding the past erosion that has taken place. Johnson seconded the motion. The motion passed 4-0.

30<sup>th</sup> Street/2<sup>nd</sup> Larson Detention Project: Steve Eberle and Tom Johnson with Ackerman Estvold appeared before the Board. Eberle reviewed the following project schedule: Geotechnical work is expected to begin in January of 2019, plans and specifications work should continue through mid-April 2019, permitting is expected to occur mid-April through mid-July, final easements and bidding is expected mid-July with construction at the end of August, 2019. All property owners have signed an option agreement.

DC18 002 Mikkelson v Haugen: The Water Board Engineer provided an update regarding the status of his investigation into the complaint. Reep will gather and review additional information and submit a final report at the Board's January 2019 meeting.

First Larson Sewer Project. The Water Board Attorney prepared a draft of a yearly sewer connection report for the Water Board and the City of Minot. This report is required as indicated in the Sanitary Sewer Service Agreement between the Water Board and the City of Minot, on or before January 15 of each year. The Water Board report includes request for service for properties *inside* the Project Area, and the City's report includes requests for service to properties *outside* the Project Area. It was suggested by the Water Board Attorney that the following two items be permanently added to the Water Board's agenda: (1) The Water Board should review all connections to the system at its December meeting every year and approve submission of a report to the City; and (2) the City report should be reviewed by the Water Board at its February meeting every year.

Notice of a ND Department of Transportation and Federal Highway Administration project, regarding a roadway improvement between Ward and McHenry Townships was received and filed.

East Side Estates: Discussion was held regarding a potential flood control project to protect East Side Estates. The proposed location of a levee protecting against 27,400 cfs includes properties that were not flooded in 2011. Foley made a motion that HDR Engineering work with Souris River Joint Board engineers to determine acreage necessary for a levee to provide 10,000 cfs protection with a levee constructed to 27,400 cfs. Dobrinski seconded the motion. Motion passed 3-1 (Foley-yes, Johnson-no, Dobrinski-yes, Klein-yes).

The next regular meeting will be Monday, January 14, 2019 at 9:00 a.m.

The meeting adjourned.

BILLS REVIEWED AND PAID:

BCBS	931.10
IRS-941	815.36
NDPERS	514.02
Ottertail	9.62
Verendrye Electric	90.00
#7538 XCEL	58.16
#7539 SRT	91.26
#7540 Donald Schumacher	2771.00
#7541 Diocese of Bismarck	2614.76
#7542 Adam Opland	561.00
#7543 Jason Zimmerman	872.71
#7544 Nancy Kramer	2090.27
#7545 Walmart	55.52
#7546 Postmaster	250.00
#7547 HDR Engineering	6680.00
#7548 McGee Law Firm	1692.00
#7549 Clint Cogdill	5000.00
#7550 Thomas Klein	964.91
#7551 Darren Dobrinski	748.03
#7552 Loren Johnson	992.87
#7553 Souris River Joint Board	300,000.00
#7554 Darren Dobrinski (replace lost ck #7495)	<u>872.71</u>
	\$328,675.29

Submitted by:

Approved: \_\_\_\_\_(date)

\_\_\_\_\_  
Secretary/Treasurer

\_\_\_\_\_  
Chairman



# Memo

Date: Tuesday, February 06, 2018

Project: Ward County WRD MSA

To: Ward County Water Resource District (WRD)

From: Stephanie Williams, HDR Engineering Inc.  
Dennis Reep, HDR Engineering Inc.

Subject: Task Order 08 – Kings Court / Sawyer Levee Inspection Assessment

## Introduction

The most recent inspections of the Kings Court and Sawyer levees, located in Ward County, North Dakota, indicate levee system ratings of 'Unacceptable' and 'Minimally Acceptable'. The Ward County WRD contracted HDR Engineering to review the most recent and available USACE inspection reports and prepare an action plan and cost estimate to address noted deficiencies and meet 'Acceptable' criteria.

Through coordination with the USACE, HDR obtained copies of the finalized 2016 inspection (conducted on Sept. 27 and Sept. 29, 2016) reports and draft versions of the 2017 inspections (conducted on Sept. 19 and Sept. 21, 2017). The USACE indicated that although the 2017 inspection reports are not expected to change as they are finalized, there is a possibility they will. For the purpose of this assessment, the draft 2017 inspection reports were utilized.

Items identified in the USACE inspections were designated as High, Medium, or Low priority based on the following criteria:

High	Items Impacting Levee Integrity, Impact on Overall Segment/System Rating, Complexity of Solution
Medium	Items with Less Impact on Levee Embankment, Impact on Overall System Performance and Operation
Low	Items with Little to No Impact on the Levee System Performance, Items Currently Scheduled or Part of Existing O&M



# High Priority Items

The following section lists items of high priority for remediation. Deficiencies were assigned a high priority ranking based on the overall impact to the levee's integrity. The items have further been organized by cost and complexity.

	Issue	Solution(s)	Cost
1	Large encroachments including large structures, utility poles and other debris are located within the levee ROW.	<ul style="list-style-type: none"> <li>Conduct survey to verify and mark the easement boundary.</li> <li>The survey will verify whether or not an encroachment has occurred.</li> <li>Landowners found having an encroachment should be notified and given a reasonable time period to a) remove the encroachment or b) provide sufficient information to obtain a variance.</li> </ul>	\$ 11,550.00
2	Logs and downed trees in the stream channel at Sawyer East levee.	<ul style="list-style-type: none"> <li>Remove the debris from the channel.</li> </ul>	\$ 9,000.00
3	Several locations appear steeper than 3H:1V. Other locations appear to have raised the levee embankment.	<ul style="list-style-type: none"> <li>Survey observed locations that appear steeper or higher in elevation than the designed slope.</li> <li>Additional work may be required to determine the cause of deformation and repair extent.</li> </ul>	\$ 3,600.00
4	Megger testing has not been conducted in the past two years.	<ul style="list-style-type: none"> <li>Conduct Megger testing at all pump station locations.</li> </ul>	\$ 6,000.00
5	Pump stations are not maintained in fully operable condition. This includes observed gatelifter deficiencies at the Sawyer East pump station and electrical issues at the Sawyer West pump station.	<ul style="list-style-type: none"> <li>Conduct maintenance at all pump station locations to ensure operability.</li> <li>This includes conducting an electrical inspection and repair of the panel at Sawyer West levee.</li> </ul>	\$ 2,060.00
6	Trees with diameters larger than 2" are located on the levee embankment along each levee segment.	<ul style="list-style-type: none"> <li>Remove large trees and woody vegetation at critical locations on the levee embankment, including the levee toe.</li> </ul>	\$ 25,650.00
7	Sod appears to have been placed over riprap as an erosion barrier and has died.	<ul style="list-style-type: none"> <li>Repair riprap in locations where riprap has been damaged.</li> </ul>	\$ 21,600.00
8	Seepage has been observed at two locations along the Sawyer levee units, specifically during the 2011 flood event.	<ul style="list-style-type: none"> <li>Conduct seepage evaluations at locations where seepage was observed in 2011.</li> <li>Evaluations should be provided to the USACE.</li> </ul>	\$ 25,000.00
<b>High Priority Item Subtotal</b>			<b>\$104,460.00</b>



## Medium Priority

The following section lists items of medium priority for remediation.

	<b>Issue</b>	<b>Solution(s)</b>	<b>Cost</b>
1	Tall grasses, woody vegetation was found in several locations on the levee and within the riprap.	<ul style="list-style-type: none"> <li>Spray and remove woody vegetation and mow heavily vegetated areas.</li> <li>This item can be incorporated into the current O&amp;M schedule.</li> </ul>	\$ 10,400.00
2	Sediment and debris was found to be blocking part of the interior culverts.	<ul style="list-style-type: none"> <li>Remove sediment from culverts.</li> </ul>	\$ 4,670.00
3	Small encroachments including lawn decorations, unauthorized levee crossings and small fences were observed to be within the levee ROW.	<ul style="list-style-type: none"> <li>Remove smaller encroachments.</li> <li>Under the assumption that the survey to verify the easement has been conducted, homeowners with minor encroachments including debris piles, fences and other items should be notified and given a reasonable time period to a) remove the encroachment or b) provide sufficient information to obtain a variance.</li> </ul>	\$ 16,500.00
4	Some culverts have been damaged from mowing. Additionally, inlet structures have been modified from the original design which might decrease the systems performance.	<ul style="list-style-type: none"> <li>Restore interior drainage features. This includes modified inlets and damaged culverts.</li> </ul>	\$ 15,925.00
5	Trees with diameters larger than 2" are located within the 15' vegetation-free zone along each levee segment.	<ul style="list-style-type: none"> <li>Remove trees and woody vegetation from within the vegetation-free zone extending 15 feet beyond the levee toe.</li> </ul>	\$ 19,000.00
<b>Medium Priority Item Subtotal</b>			<b>\$66,495.00</b>



# Low Priority

The following section lists items of low priority for remediation.

	<b>Issue</b>	<b>Solution(s)</b>	<b>Cost</b>
1	At both the Kings Court and Sawyer East levee segments, culverts have not been visually inspected or videotaped.	<ul style="list-style-type: none"> <li>Provide the USACE with video inspections (to be conducted by the Souris River Joint Board).</li> </ul>	\$ -
2	Insufficient sod cover was found on the levee crown.	<ul style="list-style-type: none"> <li>Reseed the levee where sod is deteriorated.</li> <li>This can be incorporated into the current O&amp;M schedule.</li> </ul>	\$ 5,325.00
3	Minor parts including locks, bolts and discharge hoses are missing. Additionally, log books and manuals are not kept at the pump stations and safety training should be conducted.	<ul style="list-style-type: none"> <li>Replace minor parts at the pump station.</li> <li>Maintain manuals and O&amp;M logs at each station in weather-safe containers.</li> <li>Keep accurate record of safety training.</li> </ul>	\$ 32.00
4	At Station 5+75 along Kings Court levee, minor longitudinal cracks have formed.	<ul style="list-style-type: none"> <li>Incorporate monitoring of the observed crack into the regular O&amp;M schedule.</li> </ul>	\$ -
<b>Low Priority Item Subtotal</b>			<b>\$5,357.00</b>

**April 30,2018**

**Proposal for Maintence and Operation of Flood Pumps for Ward County**

I have been maintaining Flood Control pumps and gates for about 10 years.

Therefore, I feel that I will be able perform the proper O &M on the flood pumps and gates that is required by the various government agencies.

I am currently licensed by the State of North Dakota as:  
Licensed and Insured General Contractor.

Therefore, I am proposing the following actions:

Install pumps in spring of the year, April or May depending on snow pack, weather conditions including spring runoff.

Remove pumps and hang from chains in fall of year, September or October depending on water conditions.

Pumps and electrical panels will be visually inspected, manually operated.

Make arrangements to have all cords MEGA tested annually by established electrical contractor.

Annually Inspect and remove debris from pump chambers, as well as inlets and outlets of pumps systems. Water Board will be notified is there is large amounts of debris that needs to be removed.

Inspect pump sites periodically throughout season, more if pumps are active run times due to high runoff.

Perform any necessary repairs to gates,pumps, and control stuctures.

All gates will be manually inspected and operated minimum 2X a year, open and close different gates as directed by Board though out the year.



All gates and pump station are to be secured and locked at all times.

Record books will be kept at each pump site, there will be a Master Log book in possession of contractor in which all actions will be noted. Copies of Master Log will be turned in to Water Board at end of each year.

Copies of any and all reports and records done by others will be shared in timely matter

Pumps that need too extensive repair will be replaced with spare pump in storage.

Damaged unit will be sent in for repair at the expense of the Water Board.

In case if major flood event and excess of additional time is needed to maintain system, matter will be brought to the attention and discussed with the Water Board.

Proposed Cost of Said Services Annually \$10,000.00

1/2 Due June 15<sup>th</sup>

1/2 Due December 15<sup>th</sup>

Sincerely Clint Cogdill

701-725-4832

## Kevin Ploof

---

**From:** Kevin Ploof  
**Sent:** Thursday, October 26, 2017 3:06 PM  
**To:** ngeer@mcgeelaw.com  
**Cc:** Emily Huettl  
**Subject:** Encroachments.xlsx  
**Attachments:** Encroachments.xlsx

Noni,

Here are the compiled encroachments from the 2016 Minot to Burlington, and Sawyer levee inspections. The Burlington buyout lots didn't have an owner or mailing address for them on the Ward County GIS site, fyi. Let Emily or I know if you have any other questions.

Regards,

Kevin Ploof, REHS/RS  
*Environmental Specialist*  
**Ackerman-Estvold**  
1907 17<sup>th</sup> Street SE  
Minot, ND 58701  
Office: 701.837.8737  
Direct: 701.857.9165

[www.ackerman-estvold.com](http://www.ackerman-estvold.com)

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## Kevin Ploof

---

**From:** Kevin Ploof  
**Sent:** Friday, June 29, 2018 9:55 AM  
**To:** 'Bryan Van Grinsven'  
**Cc:** Dennis Reep (Dennis.Reep@hdrinc.com); Williams, Stephanie; Noni Geer  
**Subject:** RE: Levee encroachments

Bryan,

That encroachment is located at 325 2<sup>nd</sup> St NW, Sawyer, ND. It was mistakenly identified on the previously provided spreadsheet. Apologies for the error.

---

### Ward County Parcels: CAMERON, TYLER D & CIERRA P

Parcel ID SW110100200037  
Acreage 0.00  
School District Sawyer School District  
Owner Name CAMERON, TYLER D & CIERRA P  
Legal Description RUTHS ADDN TO SAWYER N110'OF S660'L3 B2 SAWYER-A .70  
ADDRESS 325 2ND ST NW

Regards,

Kevin Ploof, REHS/RS  
*Environmental Specialist*

**Ackerman-Estvold**

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---

**From:** Bryan Van Grinsven <bvangrinsven@mcgeelaw.com>

**Sent:** Wednesday, June 20, 2018 1:52 PM

**To:** Kevin Ploof <Kevin.Ploof@ackerman-estvold.com>

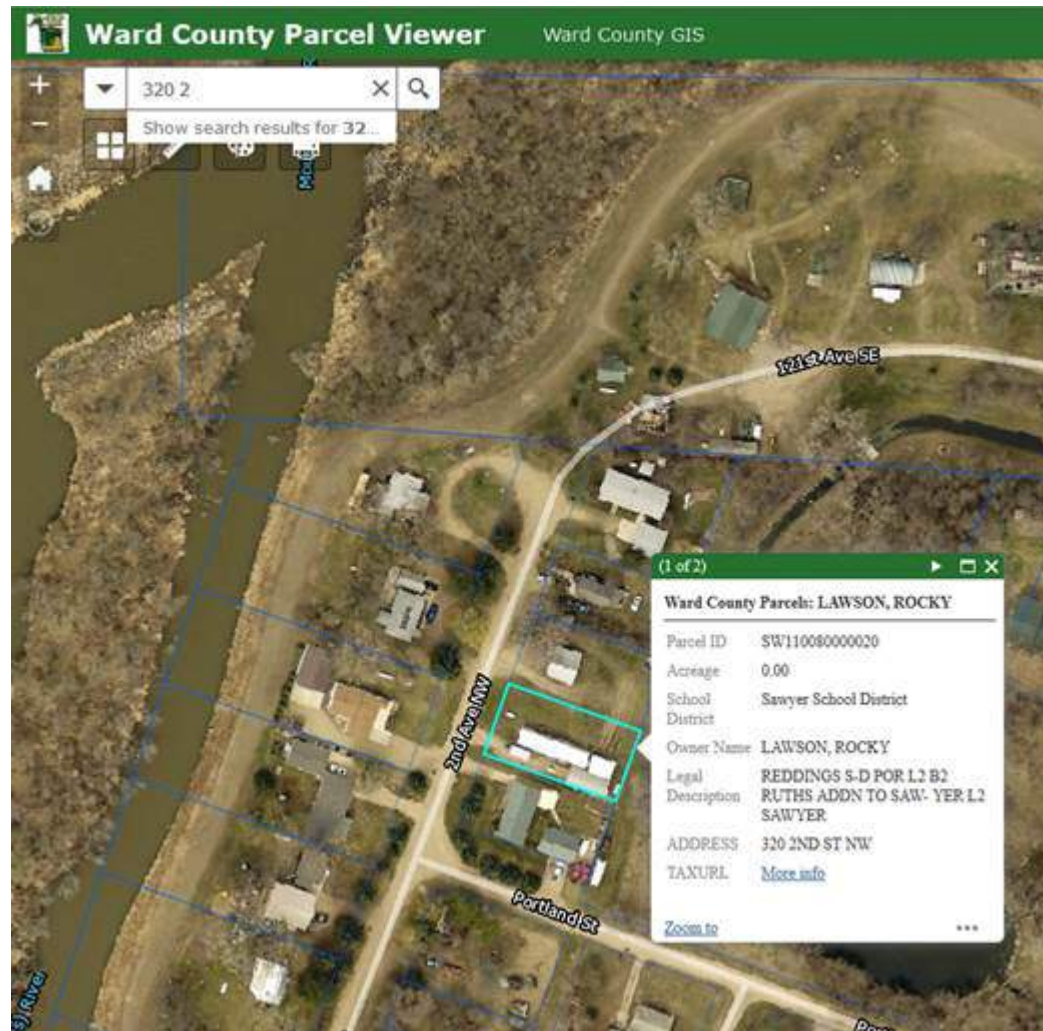
**Cc:** Dennis Reep (Dennis.Reep@hdrinc.com) <Dennis.Reep@hdrinc.com>; Williams, Stephanie <Stephanie.Williams@hdrinc.com>; Noni Geer <ngeer@mcgeelaw.com>

**Subject:** Levee encroachments

Kevin:

We're confirming the existence and extent of Water Resource Board easements before removal notices are sent to owners of parcels with encroachments (as identified by the 2017 USACE inspection). It appears that some of the parcels may be incorrectly identified.

For example, 320 2<sup>nd</sup> St. NW, Sawyer, ND (Reddings S-D Por L2 B2 Ruth's Addition to Sawyer) is identified as a parcel with a "fence located at the landside levee toe." The Ward County parcel ID for this property is SW110080000020 and, according to the Ward County parcel viewer, it doesn't appear to be river-adjacent or levee-adjacent:



Before we proceed further, can you confirm that we are reading the list correctly? If not, what are we doing wrong?

*Bryan Van Grinsven*

[bvangrinsven@mcgeelaw.com](mailto:bvangrinsven@mcgeelaw.com)

McGee, Hankla & Backes, P.C.

2400 Burdick Expy East, Suite 100

PO Box 998

Minot, ND 58701

701-852-2544 (Phone)

701-838-4724 (Fax)



## Kevin Ploof

---

**From:** Bryan Van Grinsven <bvangrinsven@mcgeelaw.com>  
**Sent:** Thursday, March 14, 2019 3:20 PM  
**To:** Kevin Ploof  
**Cc:** Reep, Dennis; Tom Klein; Ryan Ackerman; Noni Geer  
**Subject:** RE: Levee Encroachment and Obstruction work progress report

Kevin:

In order to verify the existence of encroachments, the Water Resource Board had Ackerman Surveying stake the easement locations. Without "on-the-ground" verification of easement boundaries, the Water Resource Board was not comfortable sending notice to property owners alleging the existence and requiring removal of encroachments.

Ackerman Surveying finished staking easements in Kings Court on or about February 11, 2019. Ackerman Surveying will also be staking easement locations in the Sawyer area this month (weather permitting).

Surveying is being coordinated by HDR Engineering. I've copied Dennis Reep on this email in case there has been a change in the status of easement identification.

*Bryan Van Grinsven*  
[bvangrinsven@mcgeelaw.com](mailto:bvangrinsven@mcgeelaw.com)  
McGee, Hankla & Backes, P.C.  
2400 Burdick Expy East, Suite 100  
PO Box 998  
Minot, ND 58701  
701-852-2544 (Phone)  
701-838-4724 (Fax)



---

**From:** Kevin Ploof <Kevin.Ploof@ackerman-estvold.com>  
**Sent:** Thursday, March 14, 2019 9:56 AM  
**To:** Bryan Van Grinsven <bvangrinsven@mcgeelaw.com>; Noni Geer <ngeer@mcgeelaw.com>

**Cc:** Reep, Dennis <Dennis.Reep@hdrinc.com>; Tom Klein <thokle@srt.com>; Ryan Ackerman <Ryan.Ackerman@ackerman-estvold.com>

**Subject:** Levee Encroachment and Obstruction work progress report

Bryan and Noni,

I am working on the 2018 System-wide Improvement Framework (SWIF) Annual Progress report and an update to the 2017 SWIF report. Can I please get an information related to progress on the encroachments and obstructions within the existing Ward County levee project easements, etc.? Any information you have related to progress addressing Corps inspection noted deficiencies would be greatly appreciated and should be incorporated into these reports.

Regards,

Kevin Ploof, REHS/RS  
*Environmental Specialist*  
**Ackerman-Estvold**  
1907 17<sup>th</sup> Street SE  
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Office: 701.837.8737  
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January 17, 2019

Dear Property Owner:

In connection with construction of the Souris River levee system by the U.S. Army Corps of Engineers (USACE) easements were acquired by the Ward County Water Resource District (WRD) for operation and maintenance of the system. Through an agreement with USACE, the WRD is responsible for operation and maintenance of the levee system to USACE standards under the USACE Rehabilitation and Inspection Program. Participation in that program provides many benefits, including the avenue for the USACE to provide technical and financial assistance in the event of flooding damages. However, in order to maintain the system's "Acceptable" status under the Rehabilitation and Inspection Program, the WRD – the holder of the easements – must verify the easement locations, identify any encroachments within the easement, and facilitate their removal.

The purpose of this letter is to inform you that the WRD has contracted with an engineering firm to survey the levee and easement boundaries. Survey crews will be working on the levee and adjacent to your property in the next few weeks to identify the easement boundaries and any encroachments. Encroachments include trees, landscaping, irrigation features, and other items deemed detrimental to the operation and maintenance of the levee system by the USACE.

If the surveys identify any easement encroachments, you will receive an additional notice identifying the encroachment and providing further information about its removal.

We appreciate your cooperation in maintaining the integrity of the levee system. It has provided significant benefits in the past and, with your help, can continue to do so into the future. Please call our office at 701-839-6840 if you have any concerns or questions.

Sincerely,

Tom Klein, Chairman  
Ward County Water Resource

cc: Dennis Reep (email)  
Water Board Engineer  
Bryan Van Grinsven (email)  
Water Board Attorney

**Be Proactive when it comes to purchasing insurance. Ask your Realtor, Lender, and Insurance Agent the following questions:**

- What flood zone is my property located in? What is my property's flood risk?
- Is flood insurance mandatory for my property? Will the lender require it?
- Do I qualify for a Preferred Risk Policy?
- Does my community participate in the NFIP Community Rating System (CRS)?
- Does my community's CRS rating mean that I qualify for a CRS rating discount?
- What will and won't be covered in case of flood damage?
- How will my premium costs be affected if I get Building Only, Contents Only, or Building & Contents?
- How will my premium costs be affected if I choose a higher deductible?
- Are there additional expenses or fees I should be aware of?
- What is Replacement Cost Value and Actual Cash Value?
- If I have a claim, whom do I call?
- How will my policy be renewed?

**BENEFITS TO FLOOD INSURANCE**

- Flood Insurance Claims may be filed with your Insurance Agent or Company at Any Time Flood Damage Occurs.
- Payments are Not Dependent on the Availability of Federal Disaster Assistance.
- Living in a Low - to - Moderate - Flood - Risk Area does not mean you are safe from Flooding. More than 20% of NFIP flood damage claims are made from areas mapped outside of high-risk zones
- Flood insurance claim payments do not have to be paid back

- NFIP Flood Insurance policies cannot be canceled or non-renewed because of repeat losses.
- Flood Insurance pays claims for covered losses up to the policy limits.
- Renters are able to purchase Contents Coverage Flood Insurance
- Flood Insurance can help you avoid the financial consequences of a flood - and gain peace of mind.

**Different Methods To Be Notified**

- Sign up to receive Emergency Notifications and Weather and Emergency Notifications at [www.wardnd.com](http://www.wardnd.com) (CodeRED)
- Ensure you cell phone can receive emergency notifications from IPAWS
- Tune in to your local media stations
- Visit our webpage for updates at [www.wardnd.com](http://www.wardnd.com)
- Follow us on Facebook under Ward County Emergency Management



**It Takes 30 Days After Purchase Date for a Policy to Take Effect.**

**To Assess your Flood Risk, Contact your Insurance Agent.**

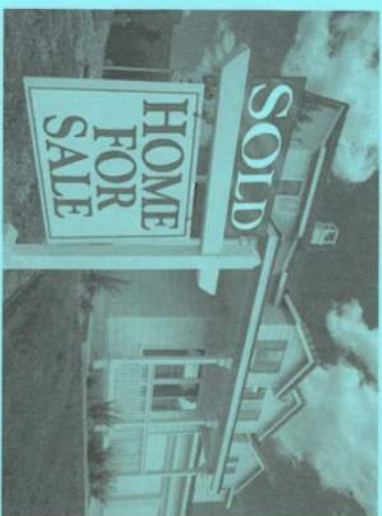
**For Addition Information, Visit**

[www.floodsmart.gov](http://www.floodsmart.gov)

[www.ready.gov/floods](http://www.ready.gov/floods)

[www.fema.gov/national-flood-insurance-program](http://www.fema.gov/national-flood-insurance-program)

**WHY YOU NEED FLOOD INSURANCE**



**For More Information Contact Your Flood Plain Administrator:**

Burlington - 852-5233

Carpio - 468-5487

Donnybrook - 720-7288

Minot - 857-4100

Sawyer - 720-7298

Ward County - 838-0767

**Proposed Floodplain map:**  
<http://www.wardnd.com/468/Flood-Information>

**Your input is needed for a short survey regarding flood insurance:**

**Residents:**

<https://www.surveymonkey.com/r/wardresidentsurvey>

**Businesses:**

<https://www.surveymonkey.com/r/wardbusinesssurvey>

## Why should I check for flood hazards?



Flooding and other surface drainage problems can occur living well away from a river, lake, or stream.

Here are some of the reasons why:

- The force of moving water can destroy a house.
- The force of moving water can, with ease, move large, heavy objects such as decks, hot tubs, BBQ grills, lawn furniture, and propane gas tanks.
- Slow-moving waters can float & move vehicles.
- Standing water can float a building, collapse basement walls, or buckle a concrete floor.
- Water-soaked contents, such as carpeting, upholstered furniture, mattresses, and clothing may have to be thrown away after a flood.
- Family heirlooms and photographs may never be restored to their original condition.
- Floodwater Is Not Clean: floods carry mud, farm chemicals, road oil, and other noxious substances that cause health hazards.
- The impact of a flood—cleaning up, making repairs, and the personal losses—can cause great stress to you, your family, and your finances.

## How do I check for the flood hazard?

Before you commit yourself to buying property:

- Ask the real estate agent if the property is in a floodplain, if it has ever been flooded, and if it is subject to any other hazards, such as sewer backup or subsidence.
- Ask the seller and the neighbors if the property is in a floodplain, how long they have lived there, if the property has ever been flooded, and if it is subject to any other hazards.
- Ask the County's Flood Plain Manager/Planning & Zoning Dept. if the property is in a floodplain; if it has ever been flooded; what the flood depth, velocity, and warning time are; if it is subject to any other hazards; and what building or zoning regulations are in effect.

**NOTE: Disclosure of Impact Property is on the Honor System. Review the Property Disclosure Statement carefully and thoroughly.**

## Why Flood Insurance is Important?

***Flood Insurance is Not Covered Under A Standard Home Owners Insurance Policy.***

The National Flood Insurance Program (NFIP) makes federally backed flood insurance available

for all buildings, whether they are in a floodplain or not.

Flood insurance covers direct losses caused by surface flooding, including a river or stream flowing over its banks and local drainage problems. The NFIP insures buildings



with two types of coverage: structural and contents. Structural coverage is for the walls, floors, insulation, furnace, and other items permanently attached to the structure. Contents coverage may be purchased separately provided the contents are located in an insurable building.

## Is There Mandatory Flood Insurance Purchase Requirement?

The mandatory purchase requirement applies to all forms of federal or federally related financial assistance for buildings located in a Special Flood Hazard Area (SFHA). The SFHA is determined by the FIRM, a Flood Insurance Rate Map. The FIRM is the official map of a community on which FEMA has delineated both the Special Hazard Areas and the Risk Premium Zones applicable to the community.

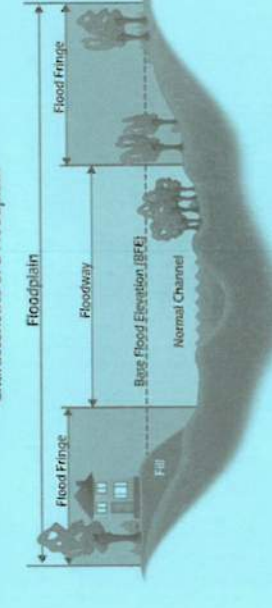
The requirement affects secured mortgage loans from financial institutions, such as commercial lenders, savings and loan associations, savings banks, and credit unions that are regulated, supervised or insured by Federal agencies such as the Federal Deposit Insurance Corporation. This requirement also affects loans and grants for the purchase, construction, repair, or improvement of any publicly or privately owned building in the

SFHA, including machinery, equipment, fixtures, and furnishings contained in such buildings. Financial assistance programs affected include loans and grants from agencies such as the Department of Veterans Affairs, Farmers Home Administration, Federal Housing Administration, Small Business Administration, and Federal Emergency Management Agency.

## What is an Elevation Certificate?

An **Elevation Certificate** is a National Flood Insurance Program requirement. This certificate verifies the elevation of your house/buildings at its lowest floor/basement, compared to the ground. The Elevation Certificate is required to properly rate certain structures for flood insurance premiums. All new and substantially improved structures may require this Certificate.

Characteristics of a Floodplain



If an Elevation Certificate has been prepared for your property, you may obtain it from the property owner. You can also contact your local floodplain officials or the planning and zoning office to see if a Certificate already exists for your property.



If one does not exist, an Elevation Certificate must be prepared and certified by a Licensed Land Surveyor, Registered Professional Engineer or Registered Architect who is authorized to certify elevation information/certificates. - Having an Elevation Certificate may reduce your flood insurance premiums.

## Appendix A2-3

### EXISTING LEVEE SYSTEMS DEFICIENCY PROGRESS TRACKING WORKSHEETS

Johnson's Addition (BMBN) Deficiency Progress

Brooks Addition (BMBA) Deficiency Progress

Country Club Acres/Robinwood (BMCC) Deficiency Progress

Talbotts Nursery (BMTN) Deficiency Progress

Kings Court/Rostad's Addition (BMKC) Deficiency Progress

Tierrecita Vallejo (BMTV) Deficiency Progress

BMBN Levee		USACE Inspection Year			Remarks	Action	Rating	Rated Item	April 2019 Status	Deficiency Completion / Year	MREFPP Scheduled Replacement
Original ID	2016	2017	2018								
USACE_CEMVP_BMBN_2010_a_0001	USACE_CEMVP_BMBN_2016_a_0033	#N/A	#N/A	Trees greater than 2 inches in diameter, shrubs, and tall grass on landward levee slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	A	Unwanted Vegetation Growth	Resolved / not observed during 2017 & 2018 USACE inspections	Yes/2017	2020/2021	
USACE_CEMVP_BMBN_2010_a_0003	USACE_CEMVP_BMBN_2016_a_0031	USACE_CEMVP_BMBN_2017_a_0034	USACE_CEMVP_BMBN_2018_a_0034	Culvert inlet (from low area to manhole no.1) is about one foot higher than the invert of the ponding area, which does not allow the pond to be fully drained. Culvert has been inspected by Houston Engineering Inc. in 2017 and has no obvious blockage	Complete an evaluation of drainage at the culvert to ensure proper functioning and perform remedial actions as necessary	M	Ponding Areas	Unresolved	NA	2020/2021	
USACE_CEMVP_BMBN_2010_a_0008	USACE_CEMVP_BMBN_2016_a_0019	USACE_CEMVP_BMBN_2017_a_0023	USACE_CEMVP_BMBN_2018_a_0026	Power pole and underground power feed through the levee embankment	Evaluate needed for underground power feed. Power pole to be relocated outside of levee easement	M	Encroachments	Unresolved	NA	2020/2021	
USACE_CEMVP_BMBN_2010_a_0010	USACE_CEMVP_BMBN_2016_a_0018	USACE_CEMVP_BMBN_2017_a_0021	USACE_CEMVP_BMBN_2018_a_0024	Irrigation pressure tank and bird houses on levee crown have been removed; however, underground pipes remain in levee	Verify levee easement. Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	NA	2020/2021	
USACE_CEMVP_BMBN_2010_a_0025	USACE_CEMVP_BMBN_2016_a_0011	USACE_CEMVP_BMBN_2017_a_0013	USACE_CEMVP_BMBN_2018_a_0016	TYPICAL CONDITIONS: Overgrown grass and brush growing within the sediment that has built up on the riprap revetted riverside levee slope	Remove all woody vegetation from riprapped areas and spray grasses. Ensure environmental compliance with all appropriate agencies prior to removal	M	Unwanted Vegetation Growth	Unresolved	NA	2020/2021	
USACE_CEMVP_BMBN_2010_a_0027	USACE_CEMVP_BMBN_2016_a_0010	USACE_CEMVP_BMBN_2017_a_0010	USACE_CEMVP_BMBN_2018_a_0013	Fence and gate crossing over the levee embankment and an unauthorized levee ramp on landside	Verify levee easement. Relocate fence and gate outside of levee easement. Conduct engineering evaluation for impact of earthen ramp on levee. Submit evaluation to Corps for approval	U	Encroachments	Unresolved	NA	2020/2021	

USACE_CEMVP_ BMBN_2010_a_0029	USACE_CEMVP_ BMBN_2016_a_0008	USACE_CEMVP_ BMBN_2017_a_0009	USACE_CEMVP_ BMBN_2018_a_0012	Irrigation system with underground line through the levee embankment	Relocate encroachments outside of levee easement	U	Encroachments	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0030	USACE_CEMVP_ BMBN_2016_a_0007	USACE_CEMVP_ BMBN_2017_a_0008	USACE_CEMVP_ BMBN_2018_a_0011	Overgrown grass and brush growing within the riprap revetted riverside levee slope. Sponsor has sprayed levee but not consistent	Remove all woody vegetation from riprapped areas and spray grasses. Ensure environmental compliance with all appropriate agencies prior to removal	M	Riprap Revetments & Bank Protection	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0033	USACE_CEMVP_ BMBN_2016_a_0005	#N/A	#N/A	Miscellaneous residential encroachments including a shed, fence, irrigation line, and garage addition on landward levee toe	Verify levee easement, relocate encroachments outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0041	USACE_CEMVP_ BMBN_2016_a_0035	USACE_CEMVP_ BMBN_2017_a_0040	USACE_CEMVP_ BMBN_2018_a_0040	Flap gates emptying into Ditch No. 3 from culverts beneath Colton Avenue are obstructed by sediment and cut willows in front of the gates. Vegetation obstructing culvert.	Continue to monitor for vegetation and sedimentation obstructions within the drainage features	U	Vegetation and Obstructions	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0042	USACE_CEMVP_ BMBN_2016_a_0036	USACE_CEMVP_ BMBN_2017_a_0038	USACE_CEMVP_ BMBN_2018_a_0038	Sedimentation is obstructing less than 10 percent of the culvert inlets that pass beneath Colton Avenue.	Remove sediment from the culvert	M	Vegetation and Obstructions	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0043	USACE_CEMVP_ BMBN_2016_a_0037	USACE_CEMVP_ BMBN_2017_a_0039	USACE_CEMVP_ BMBN_2018_a_0039	Hole above separated culvert joint at Colton Avenue culvert	Complete a culvert inspection to determine extent of culvert separations and make repairs	U	Culverts/ Discharge Pipes	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0044	USACE_CEMVP_ BMBN_2016_a_0039	USACE_CEMVP_ BMBN_2017_a_0042	USACE_CEMVP_ BMBN_2018_a_0042	Brush and overgrown grass are blocking less than 10 percent of Culvert No. 1 at both the inlet and outlet under the Texas crossing	Remove vegetation from the drainage feature. Ensure environmental compliance with all appropriate agencies prior to removal	U	Vegetation and Obstructions	Unresolved	NA	2020/2021
USACE_CEMVP_ BMBN_2010_a_0045	USACE_CEMVP_ BMBN_2016_a_0040	USACE_CEMVP_ BMBN_2017_a_0043	USACE_CEMVP_ BMBN_2018_a_0043	Culvert under Texas crossing at Elm Street extension has been inspected by Houston Engineering Inc. in 2017	Continue to perform video or visual inspection of the project culverts and provide documentation to USACE every 5 years	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2020/2021

USACE_CEMVP_BMBN_2010_a_0046	USACE_CEMVP_BMBN_2016_a_0028	USACE_CEMVP_BMBN_2017_a_0032	USACE_CEMVP_BMBN_2018_a_0031	Project levee embankment culverts (from gate well to riverside) have been inspected via video by Houston Engineering Inc. in 2017, in 2018 the reports were sent to the Corps.	Continue to perform video or visual inspection of the project culverts and provide copies of documentation to USACE	A	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Resolved - Monitor	Yes/2017	2020/2021
USACE_CEMVP_BMBN_2010_a_0047	USACE_CEMVP_BMBN_2016_a_0038	#N/A	#N/A	Flap gates emptying into Ditch No. 3 from culverts beneath Colton Avenue have minor corrosion	Remove corrosion, clean, and repaint	M	Flap Gates/ Flap Valves/ Pinch Valves	Resolved / not observed during 2017 & 2018 USACE inspections	Yes/2017	2020/2021
USACE_CEMVP_BMBN_2010_a_3001	USACE_CEMVP_BMBN_2016_a_0022	USACE_CEMVP_BMBN_2017_a_0027	USACE_CEMVP_BMBN_2018_a_0003	Johnsons Addition Pump Station O&M and inspection records are maintained in a common log book by staff performing the inspection. Training is performed annually prior to flooding conditions. 2017 NOTE: Scans of handwritten records emailed to inspectors	Maintain copies of O&M and inspection records at the Johnsons Addition Pump Station and note names and training dates on O&M and inspection records copy	M	Pump Stations Operating, Maintenance, Training, & Inspection Records	Unresolved	2019 Improvement Item	2020/2021
USACE_CEMVP_BMBN_2010_a_3002	USACE_CEMVP_BMBN_2016_a_0021	USACE_CEMVP_BMBN_2017_a_0026	USACE_CEMVP_BMBN_2018_a_0002	Johnsons Addition Pump Station O&M manuals and operating instructions are available at the Ackerman-Estvold office. Operating instructions were not posted at the pump station; 2017 NOTE: Record located at Ackerman-Estvold office	Laminate the Johnsons Addition pump station operating instructions and post inside the pump station control cabinet on the door with the latch	M	Pump Station Operations and Maintenance Equipment Manuals	Unresolved	2019 Improvement Item	2020/2021
USACE_CEMVP_BMBN_2010_a_3003	USACE_CEMVP_BMBN_2016_a_0024	USACE_CEMVP_BMBN_2017_a_0029	USACE_CEMVP_BMBN_2018_a_0028	Johnsons Addition Pump Station staff attend annual safety training provided by www.nd.gov and www.workforcesafety.com. Records of safety training attendance and pump station safety conditions were not available for review. 2017 NOTE: No records provided	Maintain records of safety training attendance and pump station safety conditions on existing Johnsons Addition visit recording documents	M	Safety Compliance	Unresolved	2019 Improvement Item	2020/2021
USACE_CEMVP_BMBN_2010_a_3004	USACE_CEMVP_BMBN_2016_a_0023	USACE_CEMVP_BMBN_2017_a_0028	USACE_CEMVP_BMBN_2018_a_0004	Gate lifter has light levels of corrosion which does not pose an immediate risk to the lifter but corrective actions are necessary to prevent additional corrosion	Sand and repaint	M	Sluice/ Slide Gates	Unresolved	No	2020/2021

USACE_CEMVP_BMBN_2010_a_3005	USACE_CEMVP_BMBN_2016_a_0026	USACE_CEMVP_BMBN_2017_a_0031	USACE_CEMVP_BMBN_2018_a_0030	Megger testing has not been conducted within the past two years for the Johnsons Addition Pump Station pump motors SPONSOR NOTE: Megger Testing Completed Nov 2017	Johnsons Addition pumping features are being repaired as part of ongoing post-flood rehabilitation work. Condition of pumping features and completion of megger testing will be verified on the next inspection. Provide megger test documentation to USACE	A	Megger Testing on Pump Motors and Critical Power Cables	Resolved - Monitor	Yes/2017	2020/2021
USACE_CEMVP_BMBN_2010_a_3006	USACE_CEMVP_BMBN_2016_a_0025	USACE_CEMVP_BMBN_2017_a_0030	USACE_CEMVP_BMBN_2018_a_0029	Submersible pump for Johnsons Addition is not tightly coupled to the discharge pipe; 2018 NOTE: Could not observe	Johnsons Addition pumping station features are being repaired as part of ongoing post-flood rehabilitation work. Repaired condition of pumping features will be verified on the next inspection if sponsor provides method of opening pump station hatch	U	Pumps	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2012_p_0008	USACE_CEMVP_BMBN_2016_a_0002	#N/A	#N/A	Shoaling on both banks of river. Riprap on the right bank is covered with sediment. It appears that the riprap is still in place under the sediment	Cross sections should be surveyed and compared to as-built design cross sections. Using cross section information, an engineering evaluation should be completed to assess changes to the stage-discharge relationship	A	Shoaling (sediment deposition)	Resolved / not observed during 2017 & 2018 USACE inspections	Yes/2017	2020/2021
USACE_CEMVP_BMBN_2012_p_0048	USACE_CEMVP_BMBN_2016_a_0032	USACE_CEMVP_BMBN_2017_a_0035	USACE_CEMVP_BMBN_2018_a_0036	Scour hole caused by temporary pumping discharge	Locate end of discharge hose away from levee. Repair eroded levee section using same type of material as levee, compact in 6 inch lifts, and reseed with grass	U	Erosion/ Bank Caving	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2012_p_0052	USACE_CEMVP_BMBN_2016_a_0034	USACE_CEMVP_BMBN_2017_a_0037	USACE_CEMVP_BMBN_2018_a_0037	Downstream Tie-in - Levee now ties into raised ground. Photo of closure area is shown. Ditch is next to raised ground.	Equipment, materials, and procedures should be made readily available. Survey to see if the raised ground is A	A	Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	Typical Conditions	N/A	2020/2021

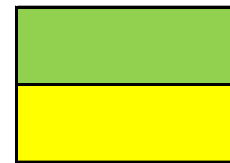


USACE_CEMVP_ BMBN_2013_a_0013	USACE_CEMVP_ BMBN_2016_a_0014	USACE_CEMVP_ BMBN_2017_a_0015	USACE_CEMVP_ BMBN_2018_a_0018	Power pole in levee prism	Verify levee easement. Relocate power pole outside of levee easement	M	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_ BMBN_2014_a_0005	USACE_CEMVP_ BMBN_2016_a_0003	#N/A	#N/A	Scour hole caused by temporary pumping discharge	Locate end of discharge hose away from levee. Repair levee section with same type of material as levee, compact in 6 inch lifts, and reseed with grass. Fill vehicle ruts along levee crest	M	Erosion/ Bank Caving	Monitor	No	2020/2021
USACE_CEMVP_ BMBN_2014_a_0013	USACE_CEMVP_ BMBN_2016_a_0012	USACE_CEMVP_ BMBN_2017_a_0012	USACE_CEMVP_ BMBN_2018_a_0015	Landward slope of entire levee system is steep in multiple locations. In this location in particular, slope sloughing is occurring.	Further evaluation needed to determine appropriate levee slope. Remedial action required to restore levee slope	U	Slope Stability	Unresolved	No	2020/2021
USACE_CEMVP_ BMBN_2014_a_0032	USACE_CEMVP_ BMBN_2016_a_0030	USACE_CEMVP_ BMBN_2017_a_0035	#N/A	Erosion from a discharge hose on riverside levee slope approximately 12 inches deep; 2016 Note: Could not locate any erosion at this point	Action Taken	U	Erosion/ Bank Caving	Unresolved	No	2020/2021
USACE_CEMVP_ BMBN_2015_a_0004	USACE_CEMVP_ BMBN_2016_a_0001	USACE_CEMVP_ BMBN_2017_a_0002	USACE_CEMVP_ BMBN_2018_a_0006	Fire hydrant on land side levee slope	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	U	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_ BMBN_2015_a_0014	USACE_CEMVP_ BMBN_2016_a_0013	USACE_CEMVP_ BMBN_2017_a_0014	USACE_CEMVP_ BMBN_2018_a_0017	Fire hydrant located at landside levee toe	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_ BMBN_2015_a_0016	USACE_CEMVP_ BMBN_2016_a_0015	USACE_CEMVP_ BMBN_2017_a_0016	USACE_CEMVP_ BMBN_2018_a_0020	Stump remaining in levee after tree removal	Remove root ball, backfill, compact in lifts, and reseed with grass	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_ BMBN_2015_a_0017	USACE_CEMVP_ BMBN_2016_a_0016	USACE_CEMVP_ BMBN_2017_a_0018	USACE_CEMVP_ BMBN_2018_a_0022	Irrigation line passes through landside slope, through levee crown, and through riverside toe	Verify levee easement. Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	No	2020/2021

USACE_CEMVP_BMBN_2015_a_0018	USACE_CEMVP_BMBN_2016_a_0017	USACE_CEMVP_BMBN_2017_a_0020	USACE_CEMVP_BMBN_2018_a_0023	Trees (> 2 inches in diameter) located on landside levee slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2015_a_0023	USACE_CEMVP_BMBN_2016_a_0020	USACE_CEMVP_BMBN_2017_a_0022	USACE_CEMVP_BMBN_2018_a_0025	Trees (> 2 inches in diameter) located within 15 ft of levee landside toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2015_a_0034	USACE_CEMVP_BMBN_2016_a_0027	#N/A	#N/A	About a 1 foot diameter hole was found at the pump station located at the levee toe; 2016 NOTE: Resolved	Action Taken	A	Depressions/Rutting	Resolved - Monitor	Yes/2017	2020/2021
USACE_CEMVP_BMBN_2015_a_0035	USACE_CEMVP_BMBN_2016_a_0029	USACE_CEMVP_BMBN_2017_a_0033	USACE_CEMVP_BMBN_2018_a_0033	Long vegetation and weeds on both slopes of levee	Mow grass on a routine basis and maintain in compliance with operation and maintenance manual manual (A=0-6", M=6"-12", U=12"+)	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2016_a_0004	USACE_CEMVP_BMBN_2016_a_0004	USACE_CEMVP_BMBN_2017_a_0045	#N/A	More than 50% sod missing from levee crown	Reestablish sod cover	U	Sod Cover	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2016_a_0006	USACE_CEMVP_BMBN_2016_a_0006	USACE_CEMVP_BMBN_2017_a_0007	USACE_CEMVP_BMBN_2018_a_0010	No trespassing signs and fence on levee	Verify levee easement. Relocate encroachments outside of levee easement	M	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0004	#N/A	USACE_CEMVP_BMBN_2017_a_0004	USACE_CEMVP_BMBN_2018_a_0005	Multiple depressions of varied sizes noted along levee slopes and crown which may be due to tree root ball removal. Previous reports indicated these depressions may be due to scour caused by temporary pumping discharge	Repair levee section with same type of material as levee, compact in 6 inch lifts, and reseed with grass	U	Depressions/Rutting	Unresolved	No	2020/2021

USACE_CEMVP_BMBN_2017_a_0011	#N/A	USACE_CEMVP_BMBN_2017_a_0011	USACE_CEMVP_BMBN_2018_a_0014	Drilling mud located at levee crown, giving the appearance of cracking. Sponsor did not have information about reason for drilling mud's presence on top of levee crown. Sod Cover missing.	Monitor for signs of additional cracking. Provide information to Corps about reason for drilling mud on top of levee crown and if a soil boring occurred.	M	Sod Cover	Monitor	N/A	2020/2021
USACE_CEMVP_BMBN_2017_a_0017	#N/A	USACE_CEMVP_BMBN_2017_a_0017	USACE_CEMVP_BMBN_2018_a_0019	Depression noted on levee crown and landside slope. Unwanted vegetation on levee crown and slope.	Repair levee section with same type of material as levee, compact in 6 inch lifts, and reseed with grass. Mow levee grasses at regular intervals to control the weed height.	M	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0019	#N/A	USACE_CEMVP_BMBN_2017_a_0019	USACE_CEMVP_BMBN_2018_a_0021	Pocket gopher holes located on riverside slope near levee crown	Improve animal burrow control program. Fill burrow holes.	M	Animal Control	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0024	#N/A	USACE_CEMVP_BMBN_2017_a_0024	USACE_CEMVP_BMBN_2018_a_0027	ATV tracks on levee crown has removed sod cover	Restrict vehicle traffic on levee and post signs if needed. Reestablish sod cover.	U	Sod Cover	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0025	#N/A	USACE_CEMVP_BMBN_2017_a_0025	USACE_CEMVP_BMBN_2018_a_0001	Culvert no. 4 passing from ponding area to manhole no. 1 (next to pump station) has been inspected via video by Houston Engineering Inc. in 2017. Point placed for future reports	Continue to inspect culvert every five (5) years	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2020/2021
USACE_CEMVP_BMBN_2017_a_0044	#N/A	USACE_CEMVP_BMBN_2017_a_0044	USACE_CEMVP_BMBN_2018_a_0007	Shoaling on both banks of river. Riprap on right bank is covered with sediment. It appears that the riprap is still in place under the sediment. 2018 NOTE: Vegetation now present in shoal, and channel capacity is being reduced.	Cross sections should be surveyed and compared to as-built design cross sections. Using cross section information, an engineering evaluation should be completed to assess changes to the stage-discharge relationship	M	Shoaling (sediment deposition)	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0045	#N/A	USACE_CEMVP_BMBN_2017_a_0045	USACE_CEMVP_BMBN_2018_a_0008	More than 50% sod missing from levee crown because of unauthorized vehicle traffic.	Restrict traffic on the levee and post signs if needed. Reestablish sod cover.	U	Sod Cover	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0046	#N/A	USACE_CEMVP_BMBN_2017_a_0046	USACE_CEMVP_BMBN_2018_a_0009	Miscellaneous residential encroachments including a shed, fence, irrigation line, and garage addition on landward levee toe	Verify levee easement, relocate encroachments outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2020/2021

USACE_CEMVP_BMBN_2017_a_0047	#N/A	USACE_CEMVP_BMBN_2017_a_0047	USACE_CEMVP_BMBN_2018_a_0035	Trees greater than 2 inches in diameter, shrubs, and tall grass on landward levee slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_BMBN_2017_a_0048	#N/A	USACE_CEMVP_BMBN_2017_a_0048	USACE_CEMVP_BMBN_2018_a_0032	Unable to observe slide gates within gate well. Point placed for future inspections.	Coordinate opening fence and locking mechanisms around gate well structure with Corps inspection	U	Sluice/ Slide Gates	Unresolved	2019 Improvement Item	2020/2021
USACE_CEMVP_BMBN_2017_a_0049	#N/A	USACE_CEMVP_BMBN_2017_a_0049	USACE_CEMVP_BMBN_2018_a_0041	Point placed for reference to video inspection of two interior drainage culverts under road. In 2017, Houston Engineering, Inc. performed video inspections of these culverts	Continue to perform video or visual inspection of the project culverts and provide copies of documentation to USACE	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2020/2021



Resolved



Monitor/ Typical Conditions

Unresolved

Planned 2019 Improvement Item

\*-Typical Conditions or Monitor excluded

<b>Resolved Deficiencies</b>	<b>Total Deficiencies*</b>	<b>2018 Deficiencies</b>	<b>Resolution Rate</b>
9	50	0	18%
<b>Resolved Deficiencies</b>	<b>Total Deficiencies*</b>	<b>2017 Deficiencies</b>	<b>Resolution Rate</b>
9	50	12	24%

BMBA Levee		USACE Inspection Year			Remarks	Action	Rating	Rated Item	April 2019 Status	Deficiency Completion / Year	MREFPP Scheduled Replacement
Original ID	2016	2017	2018								
USACE_CEMVP_BMBA_2010_a_0003	USACE_CEMVP_BMBA_2016_a_0038	USACE_CEMVP_BMBA_2017_a_0002	USACE_CEMVP_BMBA_2018_a_0002	TYPICAL CONDITIONS: Trees greater than 2 inches in diameter, brush, long grass, and weeds on the levee slopes and within the vegetation free zone. This point illustrates typical conditions across entire landside levee.	Remove unwanted vegetation from vegetation-free zone up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0012	USACE_CEMVP_BMBA_2016_a_0021	USACE_CEMVP_BMBA_2017_a_0019	USACE_CEMVP_BMBA_2018_a_0017	Weeds and other woody vegetation within all riprapped areas	Remove all woody vegetation from riprap and spray grasses. Ensure environmental compliance with all appropriate agencies prior to removal	M	Riprap Revetments & Bank Protection	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0014	USACE_CEMVP_BMBA_2016_a_0018	USACE_CEMVP_BMBA_2017_a_0022	USACE_CEMVP_BMBA_2018_a_0023	Several unapproved irrigation lines crossing the levee and buried within the levee crown	Remove the irrigation lines from within the levee easement or seek approval from the Corps	U	Encroachments	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0016	USACE_CEMVP_BMBA_2016_a_0016	USACE_CEMVP_BMBA_2017_a_0025	USACE_CEMVP_BMBA_2018_a_0024	Levee slope has depressions (> 6 inches) from where a house was. Residential encroachments on levee crown and landside levee slope and toe, including septic tank, deck, fence, shed, gutters, picnic table, and debris have been removed	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass. Reevaluate levee crown surface	U	Depressions/ Rutting	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0024	USACE_CEMVP_BMBA_2016_a_0006	USACE_CEMVP_BMBA_2017_a_0035	USACE_CEMVP_BMBA_2018_a_0033	Levee access ramp blocked by abandoned mobile home, power pole, and other debris	Verify levee easement. Relocate encroachments outside of levee easement	U	Encroachments	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0031	USACE_CEMVP_BMBA_2016_a_0001	USACE_CEMVP_BMBA_2017_a_0042	USACE_CEMVP_BMBA_2018_a_0038	Weeds and other woody vegetation within all riprapped areas; the local sponsor has attempted spraying, but spraying has been patchy and ineffective.	Remove all woody vegetation from riprap and spray grasses. Ensure environmental compliance with all appropriate agencies prior to removal	M	Riprap Revetments & Bank Protection	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0040	USACE_CEMVP_BMBA_2016_a_0040	USACE_CEMVP_BMBA_2017_a_0045	USACE_CEMVP_BMBA_2018_a_0045	Project interior drainage system culverts have not been videotaped or visually inspected within the past 5 years. 2017 NOTE: Houston Engineering Inc. printout provided by sponsor indicates video inspection of culvert has still not been performed	Perform video or visual inspections of the project culverts. Provide USACE with documentation of inspection results. Determine if culvert actually exists at this location (as-builts do not show culvert). If culvert exists, provide design documentation	U	Culverts/ Discharge Pipes	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_0041	USACE_CEMVP_BMBA_2016_a_0023	USACE_CEMVP_BMBA_2017_a_0017	USACE_CEMVP_BMBA_2018_a_0016	This levee embankment culvert (passing from pump station through embankment) has been inspected via video recording by Houston Engineering Inc. in 2017; 2018 Report Issued to USACE.	Perform video or visual inspections of the project culverts every five years and provide USACE with documentation indicating inspection results	A	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Resolved - Monitor	Yes/2017	2025/2026	
USACE_CEMVP_BMBA_2010_a_3004	USACE_CEMVP_BMBA_2016_a_0024	USACE_CEMVP_BMBA_2017_a_0009	USACE_CEMVP_BMBA_2018_a_0007	There is a loose bolt that connects the trash guard to the drop structure at the outlet of the culvert from the pump station. Bolt not pictured	Tighten loose bolt to secure trash guard	M	Other Metallic Items	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_3005	USACE_CEMVP_BMBA_2016_a_0028	USACE_CEMVP_BMBA_2017_a_0012	USACE_CEMVP_BMBA_2018_a_0008	There are three handrail post bases that have loose or missing grout at the pump station outfall	Remove all loose/spalled concrete and re-grout the post with non-shrink grout. If railing is removed prior to a flood event, install a metal sleeve for the post to slide into	M	Fencing and Gates	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_3006	USACE_CEMVP_BMBA_2016_a_0029	USACE_CEMVP_BMBA_2017_a_0013	USACE_CEMVP_BMBA_2018_a_0013	Pump station O&M and inspection records are maintained in a log book by staff performing the inspection with the records being maintained Ackerman-Estvold office. Training is performed annually prior to flooding conditions	Maintain copies of the O&M and inspection records at the pump station. Training records should be shown in the pump station's record book	M	Pump Stations Operating, Maintenance, Training, & Inspection Records	Unresolved	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_3007	USACE_CEMVP_BMBA_2016_a_0030	USACE_CEMVP_BMBA_2017_a_0014	USACE_CEMVP_BMBA_2018_a_0014	Pump station O&M manuals and operating instructions are available at the Ackerman-Estvold office. Operating instructions are not posted at the pump station	Laminate the pump station operating instructions and tape to control the inside of the control cabinet door	M	Pump Station Operations and Maintenance Equipment Manuals	Unresolved - 2019 Planned Improvement Item	No	2025/2026	
USACE_CEMVP_BMBA_2010_a_3008	USACE_CEMVP_BMBA_2016_a_0027	USACE_CEMVP_BMBA_2017_a_0011	USACE_CEMVP_BMBA_2018_a_0012	Pump station staff attends annual safety training provided by www.nd.gov and www.workforcesafety.com. Records of safety training attendance and pump station safety conditions were not available for review	Maintain records of safety training attendance and pump station safety conditions on existing Brooks Addition visit recording documents	M	Pump Stations Operating, Maintenance, Training, & Inspection Records	Unresolved - 2019 Planned Improvement Item	No	2025/2026	

USACE_CEMVP_BMBA_2010_a_3009	USACE_CEMVP_BMBA_2016_a_0026	USACE_CEMVP_BMBA_2017_a_0010	USACE_CEMVP_BMBA_2018_a_0011	Megger testing has not been conducted within the past two years for the pump station pump motors. Note: 2018 Megger Testing available for review.	Brooks Addition pumping features are being repaired as part of ongoing post-flood rehabilitation work. Condition of pumping features and completion of megger testing will be verified on the next inspection. Provide megger test documentation to USACE	A	Megger Testing on Pump Motors and Critical Power Cables	Resolved - Monitor	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2010_a_3010	USACE_CEMVP_BMBA_2016_a_0025	#N/A	#N/A	The discharge pipe at the pump station has light levels of corrosion; 2016 NOTE: No corrosion; Point resolved	NA	A	Intake and Discharge Pipelines	Resolved	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2012_p_0008	USACE_CEMVP_BMBA_2016_a_0003	USACE_CEMVP_BMBA_2017_a_0039	USACE_CEMVP_BMBA_2018_a_0036	Erosion outside of project limits and should be monitored to ensure the erosion does not extend into project riprapped areas	No action necessary, continue to monitor taking corrective action if erosion extends into riprapped areas	M	Erosion	Monitor	N/A	2025/2026
USACE_CEMVP_BMBA_2012_p_0012	USACE_CEMVP_BMBA_2016_a_0010	USACE_CEMVP_BMBA_2017_a_0031	USACE_CEMVP_BMBA_2018_a_0031	Erosion outside of project limits and should be monitored to ensure the erosion does not extend into project riprapped areas	No action necessary, continue to monitor taking corrective action if erosion extends into riprapped areas	M	Erosion	Monitor	N/A	2025/2026
USACE_CEMVP_BMBA_2012_p_0022	USACE_CEMVP_BMBA_2016_a_0022	USACE_CEMVP_BMBA_2017_a_0018	USACE_CEMVP_BMBA_2018_a_0041	Erosion outside of project limits and should be monitored to ensure the erosion does not extend into project riprapped areas	No action necessary, continue to monitor taking corrective action if erosion extends into riprapped areas	M	Erosion	Monitor	N/A	2025/2026
USACE_CEMVP_BMBA_2012_p_0049	USACE_CEMVP_BMBA_2016_a_0034	USACE_CEMVP_BMBA_2017_a_0007	USACE_CEMVP_BMBA_2018_a_0006	Erosion outside of project limits should be monitored to ensure the erosion does not extend into project riprapped areas	No action necessary, continue to monitor taking corrective action if erosion extends into riprapped areas	M	Erosion	Monitor	N/A	2025/2026
USACE_CEMVP_BMBA_2013_a_0006	USACE_CEMVP_BMBA_2016_a_0007	#N/A	#N/A	Power pole on levee riverward slope/crest	Verify levee easement. Relocate encroachments outside of levee easement, unless approved by Corps	A	Encroachments	Resolved / not observed during 2017 & 2018 USACE inspections	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2013_a_0007	USACE_CEMVP_BMBA_2016_a_0004	USACE_CEMVP_BMBA_2017_a_0037	USACE_CEMVP_BMBA_2018_a_0035	Depression less than 6 inches in levee crown	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass	M	Depressions/ Rutting	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2013_a_0014	USACE_CEMVP_BMBA_2016_a_0019	USACE_CEMVP_BMBA_2017_a_0023	USACE_CEMVP_BMBA_2018_a_0021	Displaced riprap with exposed bedding material	Replace riprap with hard, durable rock of suitable size	M	Riprap Revetments & Bank Protection	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2014_a_0003	USACE_CEMVP_BMBA_2016_a_0002	USACE_CEMVP_BMBA_2017_a_0043	USACE_CEMVP_BMBA_2018_a_0039	Tree, home, and storage shed at landward toe of levee.	Verify levee easement. Relocate encroachments outside of levee easement, unless approved by Corps.	U	Encroachments	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2014_a_0013	USACE_CEMVP_BMBA_2016_a_0015	USACE_CEMVP_BMBA_2017_a_0026	USACE_CEMVP_BMBA_2018_a_0026	Landward slope steeper than 1V:2.5H, minimum Corps standard	Remedial actions required to restore levee slope per plan. Further evaluation is required. Solutions must be approved by Corps. Restore levee cross-section per plan	M	Slope Stability	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0007	USACE_CEMVP_BMBA_2016_a_0005	USACE_CEMVP_BMBA_2017_a_0036	USACE_CEMVP_BMBA_2018_a_0034	TYPICAL CONDITIONS: Trees greater than 2 inches in diameter, brush, long grass, and weeds on the levee slopes and within the vegetation free zone. This point illustrates typical conditions across entire landside levee.	Remove unwanted vegetation from vegetation-free zone up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0008	USACE_CEMVP_BMBA_2016_a_0008	USACE_CEMVP_BMBA_2017_a_0033	USACE_CEMVP_BMBA_2018_a_0032	Depression from excavated trees. Landside levee slope steeper than 1V:3H	Remedial actions required to restore levee slope per plan. Verify fill placement approved by the Corps. Restore levee cross-section per plan	U	Depressions/ Rutting	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0010	USACE_CEMVP_BMBA_2016_a_0011	USACE_CEMVP_BMBA_2017_a_0030	USACE_CEMVP_BMBA_2018_a_0030	Irrigation line through levee crown	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	U	Encroachments	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0011	USACE_CEMVP_BMBA_2016_a_0012	USACE_CEMVP_BMBA_2017_a_0029	USACE_CEMVP_BMBA_2018_a_0029	Irrigation lines through levee crown	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	U	Encroachments	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0012	USACE_CEMVP_BMBA_2016_a_0013	USACE_CEMVP_BMBA_2017_a_0028	USACE_CEMVP_BMBA_2018_a_0028	Depressions (< 6 inches in depth) in sod cover now have vegetation growth	Remove vegetation, backfill ruts/depression to the design grade, compact in lifts, and reseed with grass	M	Depressions/ Rutting	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0016	USACE_CEMVP_BMBA_2016_a_0017	USACE_CEMVP_BMBA_2017_a_0024	USACE_CEMVP_BMBA_2018_a_0022	Power pole and trees (> 2 inches in diameter) located within 15 ft of levee toe. (Power pole, trees, vegetation, displaced riprap, and irrigation lines all pictured.)	Verify levee easement; Relocate power pole outside of levee easement and remove trees, unless approved by the Corps	U	Encroachments	Unresolved	No	2025/2026

USACE_CEMVP_BMBA_2015_a_0019	USACE_CEMVP_BMBA_2016_a_0020	USACE_CEMVP_BMBA_2017_a_0021	USACE_CEMVP_BMBA_2018_a_0020	TYPICAL CONDITIONS: Trees greater than 2 inches in diameter, brush, long grass, and weeds on the levee slopes and within the vegetation free zone. This point illustrates typical conditions across entire landside levee.	Remove unwanted vegetation from vegetation-free zone up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal.	U	Unwanted Vegetation Growth	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0034	USACE_CEMVP_BMBA_2016_a_0032	USACE_CEMVP_BMBA_2017_a_0016	USACE_CEMVP_BMBA_2018_a_0010	Large bush in outlet structure and sedimentation	Remove vegetation and sedimentation from the drainage feature	M	Vegetation and Obstructions	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0035	USACE_CEMVP_BMBA_2016_a_0031	USACE_CEMVP_BMBA_2017_a_0015	USACE_CEMVP_BMBA_2018_a_0009	Depressions on riverside levee slope (> 6 inches deep) caused by pumping activity	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass	A	Erosion/ Bank Caving	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0036	USACE_CEMVP_BMBA_2016_a_0033	#N/A	#N/A	Trees (> 2 inches in diameter) located on landside levee slope. Long vegetation located on both levee slopes	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Mow grass on a routine basis in compliance with O&M manual	A	Unwanted Vegetation Growth	Resolved / not observed during 2017 & 2018 USACE inspections	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2015_a_0038	USACE_CEMVP_BMBA_2016_a_0036	USACE_CEMVP_BMBA_2017_a_0004	USACE_CEMVP_BMBA_2018_a_0004	Power poles on levee crown	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2015_a_0041	USACE_CEMVP_BMBA_2016_a_0037	USACE_CEMVP_BMBA_2017_a_0001	USACE_CEMVP_BMBA_2018_a_0001	Discontinuous levee section across roadway. A closure would be required to utilize protection offered by the discontinuous levee section. Point retained for future inspection purposes.	Evaluate level of protection and determine when closures need to be installed	A	Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	Monitor	N/A	2025/2026
USACE_CEMVP_BMBA_2016_a_0009	USACE_CEMVP_BMBA_2016_a_0009	#N/A	#N/A	More than 50% sod missing from levee crown. Appears to be caused from improper spraying techniques as all areas affected are along recently sprayed riprap.	Reestablish sod cover	U	Sod Cover	Unresolved	Unk	2025/2026
USACE_CEMVP_BMBA_2016_a_0035	USACE_CEMVP_BMBA_2016_a_0035	USACE_CEMVP_BMBA_2017_a_0005	USACE_CEMVP_BMBA_2018_a_0005	Significant erosion on landward side of levee due to pumping activity	Backfill erosion to the design grade, compact in lifts, and reseed with grass	U	Erosion/ Bank Caving	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2016_a_0039	USACE_CEMVP_BMBA_2016_a_0039	USACE_CEMVP_BMBA_2017_a_0003	USACE_CEMVP_BMBA_2018_a_0003	Power Pole on levee easment	Verify levee easement. Relocate encroachments outside of levee easement	U	Encroachments	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2017_a_0020	#N/A	USACE_CEMVP_BMBA_2017_a_0020	USACE_CEMVP_BMBA_2018_a_0019	3 ft deep hole on landward slope next to tree base. Inspector pictured standing in hole	Remove tree and root ball, backfill erosion to the design grade, compact in lifts, and reseed grass. Reevaluate drainage and erosion protection	U	Erosion/ Bank Caving	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2017_a_0027	#N/A	USACE_CEMVP_BMBA_2017_a_0027	USACE_CEMVP_BMBA_2018_a_0027	Sod cover on levee crown toward riverside is dead, likely as a result of overspraying herbicide	Reestablish sod cover	U	Sod Cover	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2017_a_0044	#N/A	USACE_CEMVP_BMBA_2017_a_0044	USACE_CEMVP_BMBA_2018_a_0040	Over 50% of sod cover is missing, likely due to herbicide overspraying. Note 2018: Weeds overtaking grass.	Reestablish sod cover	U	Sod Cover	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2017_a_0046	#N/A	USACE_CEMVP_BMBA_2017_a_0046	USACE_CEMVP_BMBA_2018_a_0015	This culvert (passing from ponding area to pump station) has been inspected via video recording by Houston Engineering Inc. in 2017; 2018 Report Issued to USACE.	Perform video or visual inspections of the project culverts every five years and provide USACE with documentation indicating inspection results	A	Intake and Discharge Pipelines	Resolved - Monitor	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2017_a_0047	#N/A	USACE_CEMVP_BMBA_2017_a_0047	USACE_CEMVP_BMBA_2018_a_0025	Although Houston Engineering has performed some inspections of interior drainage culverts in 2017, these interior drainage culverts do not appear on Houston Engineering's printout.	Perform video or visual inspections of the project culverts every five years and provide USACE with documentation indicating inspection results. Ensure all culverts within project are inspected	U	Culverts/ Discharge Pipes	Unresolved	No	2025/2026
USACE_CEMVP_BMBA_2017_a_0048	#N/A	USACE_CEMVP_BMBA_2017_a_0048	USACE_CEMVP_BMBA_2018_a_0042	Project interior drainage system culverts have not been videotaped or visually inspected within the past 5 years. 2018 NOTE: Houston Engineering Inc. printout provided by sponsor indicates video inspection of culvert has been performed and sent to USACE	Perform video or visual inspections of the project culverts every. Provide USACE with documentation of inspection results.	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2017_a_0049	#N/A	USACE_CEMVP_BMBA_2017_a_0049	USACE_CEMVP_BMBA_2018_a_0043	Project interior drainage system culverts have not been videotaped or visually inspected within the past 5 years. 2018 NOTE: Houston Engineering Inc. printout provided by sponsor indicates video inspection of culvert has been performed and sent to USACE	Perform video or visual inspections of the project culverts. Provide USACE with documentation of inspection results	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2025/2026

USACE_CEMVP_BMBA_2017_a_0050	#N/A	USACE_CEMVP_BMBA_2017_a_0050	USACE_CEMVP_BMBA_2018_a_0044	Although Houston Engineering has performed some inspections of interior drainage culverts in 2018, these interior drainage culverts do not appear on Houston Engineering's printout. Reports sent to USACE.	Perform video or visual inspections of the project culverts every five years and provide USACE with documentation indicating inspection results. Ensure all culverts within project are inspected	A	Culverts/ Discharge Pipes	Resolved	Yes/2017	2025/2026
USACE_CEMVP_BMBA_2018_a_0037	#N/A	#N/A	USACE_CEMVP_BMBA_2018_a_0037	Irregation line buried beneath levee crown.	Remove the irrigation lines from within the levee easement or seek approval from the Corps	U	Encroachments	Monitor	No	2025/2026
USACE_CEMVP_BMBA_2018_a_0046	#N/A	#N/A	USACE_CEMVP_BMBA_2018_a_0046	TYPICAL CONDITIONS: Trees greater than 2 inches in diameter, brush, long grass, and weeds on the levee slopes and within the vegetation free zone. This point illustrates typical conditions across entire landside levee.: Remove unwanted vegetation from veg	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and re-sod; Ensure environmental compliance with all appropriate agencies prior to removal;  Monitor vegetation on future insp	U	Unwanted Vegetation Growth	Monitor	No	2025/2026

Resolved	Unresolved
Monitor/Typical Conditions	Planned 2019 Improvement Item

\*-Typical Conditions or Monitor excluded

<b>Resolved Deficiencies</b> 9	<b>Total Deficiencies*</b> 46	<b>2018 Deficiencies</b> 2	<b>Resolution Rate</b> 20%
<b>Resolved Deficiencies</b> 9	<b>Total Deficiencies*</b> 46	<b>2017 Deficiencies</b> 8	<b>Resolution Rate</b> 24%



BMCC Levee		USACE Inspection Year			Remarks	Action	Rating	Rated Item	April 2019 Status	Deficiency Completion / Year	MREFPP Scheduled Replacement
Original ID	2016	2017	2018								
USACE_CEMVP_BMCC_2010_a_0001	USACE_CEMVP_BMCC_2016_a_0074	2017_111	#N/A	(Emergency Levee) Miscellaneous residential encroachments including fencing, new construction, log pile, and trailers on the landside levee slope and toe	Verify levee easement, relocate encroachments outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0004	USACE_CEMVP_BMCC_2016_a_0073	2017_101	#N/A	Trees greater than 2 inches in diameter and overgrown brush on the levee slopes and toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0006	USACE_CEMVP_BMCC_2016_a_0070	USACE_CEMVP_BMCC_2017_a_0095	USACE_CEMVP_BMCC_2018_a_0095	Scour hole from discharge pipe pumping. 2018 NOTE: Could not locate due to significant vegetation and encroachments in permanent access	Backfill erosion to the design grade, compact in lifts, and resod. Reevaluate drainage and erosion protection	M	Erosion/ Bank Caving	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0010	USACE_CEMVP_BMCC_2016_a_0069	2017_111	#N/A	Miscellaneous residential encroachments including stairs, fencing, and a shed on the landside levee slope and within 15 feet of the toe	Verify levee easement, relocate encroachments outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0013	USACE_CEMVP_BMCC_2016_a_0067	USACE_CEMVP_BMCC_2017_a_0091	USACE_CEMVP_BMCC_2018_a_0092	Irrigation line passing through the levee embankment	Relocate irrigation system outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0015	USACE_CEMVP_BMCC_2016_a_0063	USACE_CEMVP_BMCC_2017_a_0085	USACE_CEMVP_BMCC_2018_a_0086	Irrigation system hoses and power cords on riverside levee slope	Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations. Remove pump line, backfill, compact in lifts, and reseed with grass	U	Encroachments	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0016	USACE_CEMVP_BMCC_2016_a_0062	USACE_CEMVP_BMCC_2017_a_0084	USACE_CEMVP_BMCC_2018_a_0084	Erosion along the right channel bank. Determine if erosion is within the project limits	If channel erosion within the project limits conduct engineering evaluation to determine best method of repair. Conduct repairs	U	Riprap Revetments & Banks	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0020	USACE_CEMVP_BMCC_2016_a_0060	USACE_CEMVP_BMCC_2017_a_0080	USACE_CEMVP_BMCC_2018_a_0080	Irrigation line crossing over the levee slopes and crown	Relocate encroachment outside of levee easement	U	Encroachments	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0022	USACE_CEMVP_BMCC_2016_a_0058	USACE_CEMVP_BMCC_2017_a_0078	USACE_CEMVP_BMCC_2018_a_0076	Several irrigation lines on the levee slopes.	Relocate encroachments outside of levee easement	M	Encroachments	Unresolved	No	2024-2027	
USACE_CEMVP_BMCC_2010_a_0028	USACE_CEMVP_BMCC_2016_a_0057	#N/A	#N/A	Vegetation and leaf debris at the culvert inlet is obstructing less than 10 percent of the opening; 2016 NOTE: Vegetation has been removed	Action Taken: Vegetation has been removed	A	Vegetation and Obstructions	Resolved / not observed during 2017 & 2018 USACE inspections	Yes	2024-2027	

USACE_CEMVP_BMCC_2010_a_0029	USACE_CEMVP_BMCC_2016_a_0056	USACE_CEMVP_BMCC_2017_a_0075	USACE_CEMVP_BMCC_2018_a_0074	A 4-inch PVC pipe is discharging into the pump station culvert inlet on the landside. PVC pipe is cracked and 40% full of sediment.	4-inch PVC pipe is located on the as-built documents. Repair cracked pipe and remove sediment	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_0035	USACE_CEMVP_BMCC_2016_a_0037	#N/A	#N/A	Trees greater than 2 inches in diameter and overgrown grass on the levee crown. Trash present along toe of levee	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Discourage public from dumping trash within levee easement. Ensure environmental compliance with all appropriate agencies prior to removal.	U	Unwanted Vegetation Growth	Resolved / not observed during 2017 & 2018 USACE inspections	Yes	2024-2027
USACE_CEMVP_BMCC_2010_a_0036	USACE_CEMVP_BMCC_2016_a_0035	USACE_CEMVP_BMCC_2017_a_0053	USACE_CEMVP_BMCC_2018_a_0048	Culvert No. 10 near the sanitary lift station has sedimentation and overgrown grass obstructing less than 10 percent of the inlet opening. 2017 NOTE: Debris around opening as well	Remove vegetation and sedimentation from the drainage feature	M	Vegetation and Obstructions	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_0037	USACE_CEMVP_BMCC_2016_a_0038	USACE_CEMVP_BMCC_2017_a_0055	USACE_CEMVP_BMCC_2018_a_0051	A 6-inch PVC culvert with concrete inlet is not on the as-builts. The concrete headwall does not appear to have been built by Corps. There is exposed rebar, poor concrete consolidation during construction, and no trash guard	Replace culvert headwall with a Corps approved headwall and trash guard.	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_0044	USACE_CEMVP_BMCC_2016_a_0026	USACE_CEMVP_BMCC_2017_a_0039	USACE_CEMVP_BMCC_2018_a_0037	Depression from pumping activities. Depression is one or two feet in depth near riverward toe	Backfill depressions, compact material, reseed area with grass	U	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_0057	USACE_CEMVP_BMCC_2016_a_0007	USACE_CEMVP_BMCC_2017_a_0009	USACE_CEMVP_BMCC_2018_a_0009	Overgrown grass and brush on the riverside levee slope and toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and re-sod; Ensure environmental compliance with all appropriate agencies prior to removal	M	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_0080	USACE_CEMVP_BMCC_2016_a_0068	USACE_CEMVP_BMCC_2017_a_0093	USACE_CEMVP_BMCC_2018_a_0094	Culvert identified as No. 1 on as-builts has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Resolved	Yes	2024-2027
USACE_CEMVP_BMCC_2010_a_0081	USACE_CEMVP_BMCC_2016_a_0036	#N/A	#N/A	The project interior drainage system culverts have not been videotaped or visually inspected within the past 5 years.	Perform video or visual inspection of the project culverts.	U	Culverts/ Discharge Pipes	Resolved / not observed during 2017 & 2018 USACE inspections	Yes	2024-2027
USACE_CEMVP_BMCC_2010_a_3004	USACE_CEMVP_BMCC_2016_a_0052	USACE_CEMVP_BMCC_2017_a_0071	USACE_CEMVP_BMCC_2018_a_0069	Unwanted vegetation growth obstructing approximately 20 percent of the flow into the culvert that flows into the Country Club Acres Pump Station	Remove unwanted vegetation growth at drainage feature to reestablish flow in the culvert. Ensure environmental compliance with all appropriate agencies prior to removal	U	Vegetation and Obstructions	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2010_a_3005	USACE_CEMVP_BMCC_2016_a_0046	USACE_CEMVP_BMCC_2017_a_0051	USACE_CEMVP_BMCC_2018_a_0046	Tall grass and saplings at Flap Gate A. Further growth could prevent Flap Gate A from opening, potentially causing flooding to homes on the dry side of the levee	Remove saplings and other unwanted vegetation growth at flap gate in order to ensure proper function. Ensure environmental compliance with all appropriate agencies prior to removal	U	Vegetation and Obstructions	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_3008	USACE_CEMVP_BMCC_2016_a_0009	USACE_CEMVP_BMCC_2017_a_0011	USACE_CEMVP_BMCC_2018_a_0013	Previous inspections noted sluice gate at Country Club Acres was stuck in the closed position; then jacks had to be used to move the gate; and currently the gate operates via hand crank but squeaks when operating. 2018 NOTE: Could not observe due to lock	The sluice gate for Country Club Acres exhibits a squeak when it operates and may suggest a slight misalignment between the gate and its guides. The alignment of gateguides should be verified and corrected if necessary	M	Sluice/ Slide Gates	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_3009	USACE_CEMVP_BMCC_2016_a_0047	USACE_CEMVP_BMCC_2017_a_0052	USACE_CEMVP_BMCC_2018_a_0047	2017 NOTE: Did not observe the flap gate connected to ductile iron pipe. Previous inspection stated, "the 6-inch flap gate for Country Club Acres is not maintained and is rusting"	The 6-inch flap gate for Country Club Acres should be maintained along with the remainder of the gates.	M	Flap Gates/ Flap Valves/ Pinch Valves	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2010_a_3011	USACE_CEMVP_BMCC_2016_a_0054	USACE_CEMVP_BMCC_2017_a_0073	USACE_CEMVP_BMCC_2018_a_0066	Pump Station O&M and inspection records are maintained in a common log book by staff performing the inspection. Training is performed annually prior to flooding conditions. Records were not present at the pump station.	Maintain copies of O&M and inspection records at the Country Club Acres and Robinwood Estates Pump Station and note names and training dates on O&M and inspection records copy	M	Pump Stations Operating, Maintenance, Training, & Inspection Records	2019 Planned Improvement Item	No	2024-2027
USACE_CEMVP_BMCC_2010_a_3012	USACE_CEMVP_BMCC_2016_a_0055	USACE_CEMVP_BMCC_2017_a_0074	USACE_CEMVP_BMCC_2018_a_0067	Country Club Acres and Robinwood Estates Pump Station O&M manuals and operating instructions are available at the Ackerman-Estvold office. Operating instructions were not posted at the pump station they are working to find a location to store on-site	Find a dry location to store the O&M manuals on-site.	M	Pump Station Operations and Maintenance Equipment Manuals	2019 Planned Improvement Item	No	2024-2027
USACE_CEMVP_BMCC_2010_a_3013	USACE_CEMVP_BMCC_2016_a_0051	USACE_CEMVP_BMCC_2017_a_0070	USACE_CEMVP_BMCC_2018_a_0068	Country Club Acres and Robinwood Estates Pump Station staff attends annual safety training provided by www.nd.gov and www.workforcesafety.com. Records of training attendance and pump station safety conditions were not available for review	Maintain records of safety training attendance and pump station safety conditions on existing Country Club Acres and Robinwood Estates visit recording documents	M	Safety Compliance	2019 Planned Improvement Item	No	2024-2027
USACE_CEMVP_BMCC_2010_a_3015	USACE_CEMVP_BMCC_2016_a_0053	USACE_CEMVP_BMCC_2017_a_0072	USACE_CEMVP_BMCC_2018_a_0070	2018: Megger testing has been conducted within the past two years for the Robinwood Estates Pump Station pump motors. Robinwood Estates pumping features are being repaired as part of ongoing post-flood rehabilitation work	Condition of pumping features and completion of megger testing will be verified on the next inspection. Continue to provide megger test documentation to USACE.	A	Megger Testing on Pump Motors and Critical Power Cables	Resolved / Monitor will require retesting in late 2019	Yes	2024-2027
USACE_CEMVP_BMCC_2012_p_0003	USACE_CEMVP_BMCC_2016_a_0003	#N/A	#N/A	Depression / Rutting greater than 6 inches on landward slope of levee	Restore to design grade, compact material, and reseed with grass	U	Depressions/ Rutting	Resolved / not observed during 2017 & 2018 USACE inspections	Yes	2024-2027

USACE_CEMVP_BMCC_2012_p_0016	USACE_CEMVP_BMCC_2016_a_0018	USACE_CEMVP_BMCC_2017_a_0024	USACE_CEMVP_BMCC_2018_a_0028	Erosion on levee landside slope. Homeowner attempted to repair but erosion is still visible	Repair eroded levee section using appropriate fill material. Compact material in lifts not to exceed 1 foot depth. Reseed area with grass.	U	Erosion/ Bank Caving	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2012_p_0023	USACE_CEMVP_BMCC_2016_a_0025	2017_32	#N/A	Large trees and vegetation on levee slopes and toes. 2015 a few trees remain; the majority of the large trees have been removed by the sponsor	Remove unwanted vegetation from Vegetation Free Zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2012_p_0024	USACE_CEMVP_BMCC_2016_a_0028	USACE_CEMVP_BMCC_2017_a_0040	USACE_CEMVP_BMCC_2018_a_0038	Erosion along the right channel bank. Determine if erosion is within the project limits	If channel erosion within the project limits conduct engineering evaluation to determine best method of repair. Conduct repairs	U	Erosion	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2012_p_0034	USACE_CEMVP_BMCC_2016_a_0041	USACE_CEMVP_BMCC_2017_a_0057	USACE_CEMVP_BMCC_2018_a_0049	Discarded stair overing pumping scour hole on riverward levee slope.	Remove stairs and fill scour hole area. Backfill erosion to the design grade, compact in lifts, and reseed with grass.	U	Erosion/ Bank Caving	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2012_p_0035	USACE_CEMVP_BMCC_2016_a_0045	USACE_CEMVP_BMCC_2017_a_0050	USACE_CEMVP_BMCC_2018_a_0045	Ductile 30' - 6" iron pipe with flapgate end identified on as-builts has been buried by shoaling; 2017 NOTE: Could not locate; however, per sponsor, pipe has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Investigate to determine location. Recover ductile iron pipe from under shoaling. Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes	Unresolved/Pipe Televising Report notes that pipe is deformed and camera was unable to be deployed to outfall/Pipe should be replaced.	No	2024-2027
USACE_CEMVP_BMCC_2012_p_0067	USACE_CEMVP_BMCC_2016_a_0064	USACE_CEMVP_BMCC_2017_a_0088	USACE_CEMVP_BMCC_2018_a_0089	Erosion of the left bank and riverward slope of the levee. Erosion immediately downstream of rock bank protection. Approximately one-third of the embankment has eroded. 2017 NOTE: Significant vegetation prevents close examination	Conduct engineering evaluation to determine if levee slope can be restored or if levee relocation is required.	U	Erosion/ Bank Caving	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0003	USACE_CEMVP_BMCC_2016_a_0002	USACE_CEMVP_BMCC_2017_a_0004	USACE_CEMVP_BMCC_2018_a_0004	SRT communications box on levee slope. Need to determine location of wires. installation was approved by the Corps to service the development on the wet side of the levee shortly after the project was completed.	Verify levee easement. Relocate encroachments outside of levee easement	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0004	USACE_CEMVP_BMCC_2016_a_0004	2017_007	#N/A	Depression on levee slope, approximate area of 5ft by 3ft with a depth of 1.5ft	Backfill ruts/depression to the design grade, compact in lifts, and resod. Reevaluate levee crown surface. A resilient surface treatment is recommended for levee activities	U	Depressions/ Rutting	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2013_a_0009	USACE_CEMVP_BMCC_2016_a_0010	USACE_CEMVP_BMCC_2017_a_0012	USACE_CEMVP_BMCC_2018_a_0014	SRT box in levee slope. Installation was approved by the Corps to service the development on the wet side of the levee shortly after the project was completed.	Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by Corps	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0010	USACE_CEMVP_BMCC_2016_a_0012	USACE_CEMVP_BMCC_2017_a_0014	USACE_CEMVP_BMCC_2018_a_0016	ATV trail has been established on levee slope and crown. Sod cover missing and rutting is evident.	Restrict vehicle traffic, post signs if needed. Reseed with grass.	U	Sod Cover	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0014	USACE_CEMVP_BMCC_2016_a_0015	USACE_CEMVP_BMCC_2017_a_0019	USACE_CEMVP_BMCC_2018_a_0025	Steps and fence on levee landward slope.	Verify levee easement. Relocate encroachments outside of levee easement	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0017	USACE_CEMVP_BMCC_2016_a_0016	2017_20	#N/A	Fence on levee slope	Verify levee easement. Relocate fence outside of levee easement and remove debris outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0019	USACE_CEMVP_BMCC_2016_a_0017	2017_017	#N/A	Sprinkler system on top of levee embankment	Verify levee easement. Relocate sprinkler system outside of levee easement, unless approved by Corps	U	Encroachments	Resolved / not observed during 2017 & 2018 USACE inspections	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0020	USACE_CEMVP_BMCC_2016_a_0019	USACE_CEMVP_BMCC_2017_a_0025	USACE_CEMVP_BMCC_2018_a_0029	Ponded water with no interior drainage. 2018 NOTE: the pond was dry due to lack of rainfall	Establish drainage or fill area if not part of the project's designated ponding area	U	Ponding Areas	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0043	USACE_CEMVP_BMCC_2016_a_0043	2017_0064	#N/A	Multiple irrigation lines through levee	Verify levee easement. Relocate sprinkler system outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0074	USACE_CEMVP_BMCC_2016_a_0071	USACE_CEMVP_BMCC_2017_a_0096	USACE_CEMVP_BMCC_2018_a_0098	Scour hole from discharge pipe pumping. 2018 NOTE: Could not locate due to significant vegetation and encroachments in permanent access	Backfill erosion to the design grade, compact in lifts, and resod. Reevaluate drainage and erosion protection	M	Erosion/ Bank Caving	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2013_a_0076	USACE_CEMVP_BMCC_2016_a_0072	2017_111	#N/A	Shed and fence located at levee toe with a garden	Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by Corps	M	Encroachments	Likely unresolved but unobserved, not listed during 2017/2018 inspections	No	2024-2027
USACE_CEMVP_BMCC_2014_a_0031	USACE_CEMVP_BMCC_2016_a_0032	USACE_CEMVP_BMCC_2017_a_0045	USACE_CEMVP_BMCC_2018_a_0041	Irrigation hose on levee slope	Verify levee easement. Relocate sprinkler system outside of levee easement, unless approved by Corps	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2014_a_0071	USACE_CEMVP_BMCC_2016_a_0065	USACE_CEMVP_BMCC_2017_a_0090	USACE_CEMVP_BMCC_2018_a_0090	Partial removal of the landside levee slope for yard expansion and fire pit.	Remove landscaping, retaining wall unless approved by the Corps. Also remove all trees in the vegetation free zone.	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2014_a_0084	USACE_CEMVP_BMCC_2016_a_0006	USACE_CEMVP_BMCC_2017_a_0008	USACE_CEMVP_BMCC_2018_a_0008	Garden on riverside levee slope and dumping of grass clippings.	Reestablish grass on levee side slope. Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2015_a_0001	USACE_CEMVP_BMCC_2016_a_0001	USACE_CEMVP_BMCC_2017_a_0002	#N/A	Scattered animal burrows on levee crest and side slopes	Excavate, inspect, backfill, compact in lifts, and reseed with grass. Establish an animal abatement program.	M	Animal Control	Resolved / not observed during 2018 USACE inspections	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0009	USACE_CEMVP_BMCC_2016_a_0008	USACE_CEMVP_BMCC_2017_a_0010	USACE_CEMVP_BMCC_2018_a_0011	Discharge culvert outlet blocked >10% by sediment, vegetation, and grass clippings	Remove vegetation and sedimentation from the drainage feature. Sponsor should discourage the public from placing debris within the drainage feature	U	Vegetation and Obstructions	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0011	USACE_CEMVP_BMCC_2016_a_0011	USACE_CEMVP_BMCC_2017_a_0013	USACE_CEMVP_BMCC_2018_a_0017	Newly planted trees > 2 inches in diameter planted at the levee toe.	Remove or relocate the trees from the vegetation free zone or (15 feet from levee toe) and levee easement.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0013	USACE_CEMVP_BMCC_2016_a_0013	#N/A	#N/A	Discharge culvert outlet blocked >10% by sediment, vegetation, and grass clippings	Remove vegetation and sedimentation from the drainage feature. Sponsor should discourage the public from placing debris within the drainage feature	A	Vegetation and Obstructions	Resolved	Yes	2024-2027
USACE_CEMVP_BMCC_2015_a_0015	USACE_CEMVP_BMCC_2016_a_0014	USACE_CEMVP_BMCC_2017_a_0016	USACE_CEMVP_BMCC_2018_a_0022	Trees > 2 inches in diameter on land side of levee embankment	Verify levee easment. Remove unwanted vegetation (trees > 2 inches in diameter) from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0021	USACE_CEMVP_BMCC_2016_a_0020	2017_32	#N/A	Large trees (> 2 inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0022	USACE_CEMVP_BMCC_2016_a_0021	USACE_CEMVP_BMCC_2017_a_0031	USACE_CEMVP_BMCC_2018_a_0033	Depressions from tree/root removal	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass.	M	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0023	USACE_CEMVP_BMCC_2016_a_0022	2017_108	#N/A	Large trees (> 2 inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0024	USACE_CEMVP_BMCC_2016_a_0023	USACE_CEMVP_BMCC_2017_a_0034	USACE_CEMVP_BMCC_2018_a_0035	Irrigation line through both levee slopes and crown. 2018 NOTE: 1 to 2 inch crack has now formed through levee crown above the irrigation line	Verify levee easement. Relocate or remove irrigation systems outside of levee easement. Remedial actions are required to correct cracking	U	Encroachments	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2015_a_0026	USACE_CEMVP_BMCC_2016_a_0024	2017_108	#N/A	2018: New trees or bushes planted on the landwards slope of the levee.	Remove or relocate trees or bushes from levee slope, backfill and compact material, and reseed. Monitor project to ensure the vegetation free zone is maintained.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0031	USACE_CEMVP_BMCC_2016_a_0027	2017_108	#N/A	Large trees (> 2inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0033	USACE_CEMVP_BMCC_2016_a_0029	USACE_CEMVP_BMCC_2017_a_0042	USACE_CEMVP_BMCC_2018_a_0039	Multiple irrigation lines passing through levee and utility lines located on levee	Verify levee easement. Relocate or remove irrigation systems and utility lines outside of levee easement, unless approved by Corps.	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0034	USACE_CEMVP_BMCC_2016_a_0031	USACE_CEMVP_BMCC_2017_a_0044	USACE_CEMVP_BMCC_2018_a_0040	Irrigation system on levee slope.	Verify levee easement. Relocate or remove irrigation systems outside of levee easement	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0036	USACE_CEMVP_BMCC_2016_a_0033	USACE_CEMVP_BMCC_2017_a_0046	USACE_CEMVP_BMCC_2018_a_0042	Irrigation hose through levee.	Verify levee easement. Relocate or remove irrigation systems outside of levee easement	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0037	USACE_CEMVP_BMCC_2016_a_0034	2017_048	#N/A	Large trees (> 2inches in diameter) and long vegetation within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal. Mow grass on a routine basis	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0046	USACE_CEMVP_BMCC_2016_a_0039	USACE_CEMVP_BMCC_2017_a_0058	USACE_CEMVP_BMCC_2018_a_0052	Power poles located within 15 ft of levee toe	Verify levee easement; Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0047	USACE_CEMVP_BMCC_2016_a_0040	USACE_CEMVP_BMCC_2017_a_0059	USACE_CEMVP_BMCC_2018_a_0050	Broken sewer manhole ring located on levee crown emitting smell is above levee grade	Manhole exists on as-builts; however, ring should be replaced or repaired to prevent future crown deterioration and levee crown should be returned to as-built height (see note on Station 28+65)	U	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0049	USACE_CEMVP_BMCC_2016_a_0042	USACE_CEMVP_BMCC_2017_a_0060	USACE_CEMVP_BMCC_2018_a_0054	Steep landside slope with evidence of collapse. Note to inspection - Reason for steep slope is tree removal and contractor did not restore to design.	Further evaluation needed to determine appropriate levee slope. Remedial action required to restore levee slope.	M	Slope Stability	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2015_a_0051	USACE_CEMVP_BMCC_2016_a_0049	USACE_CEMVP_BMCC_2017_a_0066	USACE_CEMVP_BMCC_2018_a_0062	Large trees (> 2 inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0061	USACE_CEMVP_BMCC_2016_a_0050	USACE_CEMVP_BMCC_2017_a_0069	USACE_CEMVP_BMCC_2018_a_0071	Power poles located within 15 ft of levee toe	Verify levee easement; Relocate encroachments/debris outside of levee easement unless approved by the Corps	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0063	USACE_CEMVP_BMCC_2016_a_0059	USACE_CEMVP_BMCC_2017_a_0079	USACE_CEMVP_BMCC_2018_a_0077	Large trees (> 2 inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation and stumps from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0067	USACE_CEMVP_BMCC_2016_a_0061	USACE_CEMVP_BMCC_2017_a_0083	USACE_CEMVP_BMCC_2018_a_0083	Trees and bushes > 2 inches in diameter on levee	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2015_a_0071	USACE_CEMVP_BMCC_2016_a_0066	2017_101	#N/A	Large trees (> 2 inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2016_a_0030	USACE_CEMVP_BMCC_2016_a_0030	#N/A	#N/A	Electrical Box located on levee toe	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps	U	Encroachments	Resolved / not observed during 2017 & 2018 USACE inspections	Yes	2024-2027
USACE_CEMVP_BMCC_2016_a_0044	USACE_CEMVP_BMCC_2016_a_0044	USACE_CEMVP_BMCC_2017_a_0061	USACE_CEMVP_BMCC_2018_a_0055	Culvert has cracked and broken around trash rack bolt position causing trash rack to become detached	Repair concrete and secure trash rack	M	Culverts/ Discharge Pipes	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0001	#N/A	USACE_CEMVP_BMCC_2017_a_0001	USACE_CEMVP_BMCC_2018_a_0001	Minor rutting less than 6 inches deep present, likely due to vehicle traffic turning around on neighborhood roads	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass. Reevaluate levee crown surface. A resilient surface treatment is recommended for levee activities	M	Depressions/ Rutting	Unresolved	No	2024-2027



USACE_CEMVP_BMCC_2017_a_0003	#N/A	USACE_CEMVP_BMCC_2017_a_0003	USACE_CEMVP_BMCC_2018_a_0002	Minor rutting less than 6 inches deep present, likely due to vehicle traffic turning around on neighborhood roads	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass. Reevaluate levee crown surface. A resilient surface treatment is recommended for levee activities	M	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0007	#N/A	USACE_CEMVP_BMCC_2017_a_0007	USACE_CEMVP_BMCC_2018_a_0006	Multiple depressions about 3 ft in diameter, greater than 6 inches deep along levee landside slope. Cause is not readily apparent	Backfill depressions to the design grade, compact in lifts, and resod. Reevaluate levee crown surface. A resilient surface treatment is recommended for levee activities	U	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0015	#N/A	USACE_CEMVP_BMCC_2017_a_0015	USACE_CEMVP_BMCC_2018_a_0018	2018: New Sprinkler system installed at levee toe.	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations;	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0017	#N/A	USACE_CEMVP_BMCC_2017_a_0017	USACE_CEMVP_BMCC_2018_a_0019	Sprinkler system installed in levee crown	Verify levee easement. Relocate encroachments/debris outside of levee easement	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0018	#N/A	USACE_CEMVP_BMCC_2017_a_0018	USACE_CEMVP_BMCC_2018_a_0023	Shed, wood pile, and other encroachment within levee easement	Verify levee easement. Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0020	#N/A	USACE_CEMVP_BMCC_2017_a_0020	USACE_CEMVP_BMCC_2018_a_0026	Fence, shed, and other residential encroachments present at levee landside slope	Verify levee easement. Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0022	#N/A	USACE_CEMVP_BMCC_2017_a_0022	USACE_CEMVP_BMCC_2018_a_0027	Levee crown has been lowered to establish a golf tee off area. Sprinkler system on top of levee embankment	Remove encroachments outside levee easement. Remedial actions required to restore levee slope per plan. Solutions must be approved by Corps. Verify fill placement approved by Corps. Restore levee cross-section per plan	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0026	#N/A	USACE_CEMVP_BMCC_2017_a_0026	USACE_CEMVP_BMCC_2018_a_0030	Cracks up to 2 ft long, 2 to 3 inches deep located on levee crown	Monitor cracking depth. When depth exceeds 12 inches consider remedial actions	A	Cracking	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0028	#N/A	USACE_CEMVP_BMCC_2017_a_0028	USACE_CEMVP_BMCC_2018_a_0031	Trees with diameters greater than 2 inches at landside levee toe and within 15 ft vegetation free zone	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance with appropriate agencies prior to removal.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0032	#N/A	USACE_CEMVP_BMCC_2017_a_0032	USACE_CEMVP_BMCC_2018_a_0032	Large trees (> 2 inches in diameter) within 15 ft of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2017_a_0035	#N/A	USACE_CEMVP_BMCC_2017_a_0035	USACE_CEMVP_BMCC_2018_a_0036	Depressions > 6 inches deep from removal of trees on land side of levee embankment	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass.	U	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0048	#N/A	USACE_CEMVP_BMCC_2017_a_0048	USACE_CEMVP_BMCC_2018_a_0043	Large trees (> 2 inches in diameter) and long vegetation within 15 ft of levee toe, which is the vegetation free zone	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance with appropriate agencies prior to removal.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0049	#N/A	USACE_CEMVP_BMCC_2017_a_0049	USACE_CEMVP_BMCC_2018_a_0044	Significant erosion on landside levee slope near large trees	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Reevaluate drainage and erosion protection	U	Erosion/ Bank Caving	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0064	#N/A	USACE_CEMVP_BMCC_2017_a_0064	USACE_CEMVP_BMCC_2018_a_0058	Multiple irrigation lines installed through levee	Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations. Remove pump line, backfill, compact in lifts, and reseed with grass	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0065	#N/A	USACE_CEMVP_BMCC_2017_a_0065	USACE_CEMVP_BMCC_2018_a_0059	Fence passing down riverside slope	Relocate encroachments/debris outside of levee easement.	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0067	#N/A	USACE_CEMVP_BMCC_2017_a_0067	USACE_CEMVP_BMCC_2018_a_0061	Sod cover missing due to vehicle traffic.	Restrict vehicle traffic, post signs if needed. Reseed with grass.	U	Sod Cover	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0068	#N/A	USACE_CEMVP_BMCC_2017_a_0068	USACE_CEMVP_BMCC_2018_a_0060	Multiple irrigation lines pass through levee and both slopes	Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations. Remove pump line, backfill, compact in lifts, and reseed with grass	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0077	#N/A	USACE_CEMVP_BMCC_2017_a_0077	USACE_CEMVP_BMCC_2018_a_0075	Sod cover missing due to vehicle traffic.	Restrict vehicle traffic, post signs if needed. Reseed with grass.	U	Sod Cover	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0082	#N/A	USACE_CEMVP_BMCC_2017_a_0082	USACE_CEMVP_BMCC_2018_a_0081	Minor and gradual depressions along crown and slopes	Reevaluate levee crown surface. A resilient surface treatment is recommended for levee activities	M	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0086	#N/A	USACE_CEMVP_BMCC_2017_a_0086	USACE_CEMVP_BMCC_2018_a_0085	Headcutting of riverside levee slope (hidden by significant vegetation in photo) present. Extent is difficult to determine due to vegetation	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Reevaluate drainage and erosion protection. Complete an assessment and appropriate remedial action to ensure the levee integrity is not compromised	U	Erosion/ Bank Caving	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0087	#N/A	USACE_CEMVP_BMCC_2017_a_0087	USACE_CEMVP_BMCC_2018_a_0087	No trespassing sign driven into levee crown	Verify levee easement. Relocate encroachments/debris outside of levee easement	M	Encroachments	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2017_a_0101	#N/A	USACE_CEMVP_BMCC_2017_a_0101	USACE_CEMVP_BMCC_2018_a_0091	Trees and brush on levee slope and within the vegetation free zone that inhibit O&M and emergency access.	Remove unwanted vegetation from veg-free zone. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance w/ appropriate agencies prior to removal.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0104	#N/A	USACE_CEMVP_BMCC_2017_a_0104	USACE_CEMVP_BMCC_2018_a_0005	Multiple pocket gopher holes located on levee crown and both slopes	Excavate, inspect, backfill, compact in lifts, and reseed with grass animal burrow locations. Establish an animal abatement program.	M	Animal Control	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0105	#N/A	USACE_CEMVP_BMCC_2017_a_0105	USACE_CEMVP_BMCC_2018_a_0012	Gate well indicator is bent. Hand crack attachment appears rusted.	Remove corrosion and repaint. Reaffix gate well indicator vertically	M	Other Metallic Items	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0106	#N/A	USACE_CEMVP_BMCC_2017_a_0106	USACE_CEMVP_BMCC_2018_a_0021	Ruts and evidence of vehicle traffic from roadway to levee crown	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass. Reevaluate levee crown surface. Discourage vehicle traffic	M	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0107	#N/A	USACE_CEMVP_BMCC_2017_a_0107	USACE_CEMVP_BMCC_2018_a_0020	Golfing tee area built into side of levee with placed fill	Remedial actions required to restore levee slope per plan. Further evaluation is required. Solutions must be approved by Corps. Verify fill placement approved by the Corps. Restore levee cross-section per plan	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0108	#N/A	USACE_CEMVP_BMCC_2017_a_0108	USACE_CEMVP_BMCC_2018_a_0034	Large trees and vegetation on levee slopes and toes. In 2015, a few trees remained, but the majority of the large trees had been removed by sponsor. 2017 NOTE: Addition trees still need to be removed	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance with appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0109	#N/A	USACE_CEMVP_BMCC_2017_a_0109	USACE_CEMVP_BMCC_2018_a_0093	Significant construction activities have occurred within flood damage reduction channel, including riprap and alteration of channel curvature. According to nearby home owners, a construction firm, name unknown, performed construction in 2017	As-builts do not reflect flood reduction channel's current design, including portion within easement. Corps did not approve of or permit construction activities. Submit construction as built plans for Corps review.	U	Riprap Revetments & Banks	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0110	#N/A	USACE_CEMVP_BMCC_2017_a_0110	USACE_CEMVP_BMCC_2018_a_0097	Significant vegetation present at riverside and landside levee slopes along permanent access that would restrict emergency operations	Remove and cut back vegetation to allow for emergency operations within permanent access	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0111	#N/A	USACE_CEMVP_BMCC_2017_a_0111	USACE_CEMVP_BMCC_2018_a_0096	Fences and debris restricting access for O&M and emergency operations.	Verify levee easement. Relocate encroachments/debris outside of levee easement	U	Encroachments	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2017_a_0112	#N/A	USACE_CEMVP_BMCC_2017_a_0112	USACE_CEMVP_BMCC_2018_a_0063	Culvert identified as No. 8 on as-builts is 60' - 30" RCP that begins in ponding area and stretches to ditch on opposite side of Parkwood Drive. It has not been inspected by Houston Engineering Inc.	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0113	#N/A	USACE_CEMVP_BMCC_2017_a_0113	USACE_CEMVP_BMCC_2018_a_0079	Culvert identified as No. 4 on as-builts begins here. It has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0114	#N/A	USACE_CEMVP_BMCC_2017_a_0114	USACE_CEMVP_BMCC_2018_a_0082	Culvert identified as No. 3 on as-builts has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0115	#N/A	USACE_CEMVP_BMCC_2017_a_0115	USACE_CEMVP_BMCC_2018_a_0088	Culvert identified as No. 2 on as-builts has not been inspected	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0116	#N/A	USACE_CEMVP_BMCC_2017_a_0116	USACE_CEMVP_BMCC_2018_a_0078	One end of culvert identified on as-builts as No. 4 (180' - 30" RCP) is located here. This culvert has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0117	#N/A	USACE_CEMVP_BMCC_2017_a_0117	USACE_CEMVP_BMCC_2018_a_0064	Culvert identified as No. 7 on as-builts is 44' - 18" RCP. It has not been inspected by Houston Engineering Inc.	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0118	#N/A	USACE_CEMVP_BMCC_2017_a_0118	USACE_CEMVP_BMCC_2018_a_0065	Point added to represent pump station intake and discharge pipelines, including 4" PVC well drain. These pipelines have been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Intake and Discharge Pipelines	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0119	#N/A	USACE_CEMVP_BMCC_2017_a_0119	USACE_CEMVP_BMCC_2018_a_0072	Point added for 24" RCP gravity outlet from well through levee embankment. It has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0120	#N/A	USACE_CEMVP_BMCC_2017_a_0120	USACE_CEMVP_BMCC_2018_a_0057	Drainage interceptor pipe called out on as-builts is not numbered but terminates in Ditch No.11. It has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0121	#N/A	USACE_CEMVP_BMCC_2017_a_0121	USACE_CEMVP_BMCC_2018_a_0053	Culvert identified as No. 10 on as-builts has been inspected by Houston Engineering Inc.; however final report has not been issued to Corps	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes	2024-2027
USACE_CEMVP_BMCC_2017_a_0122	#N/A	USACE_CEMVP_BMCC_2017_a_0122	USACE_CEMVP_BMCC_2018_a_0099	Culvert identified as No.9 on as-builts is 48' - 30" RCP and has not been inspected by Houston Engineering Inc.	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2017_a_0123	#N/A	USACE_CEMVP_BMCC_2017_a_0123	#N/A	88' - 24" RCP called out on as-builts has no numbering, but inlet on pipe is called No.10. Following connected pipe running under Fairlane Drive is 70' - 24" RCP and is also not numbered. Neither pipe has been inspected by Houston Engineering Inc.	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0124	#N/A	USACE_CEMVP_BMCC_2017_a_0124	USACE_CEMVP_BMCC_2018_a_0007	168'-30" RCP runs through levee embankment from ponding area to gatewell No. 2 on as-builts and has not been inspected by Houston Engineering Inc.	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2017_a_0125	#N/A	USACE_CEMVP_BMCC_2017_a_0125	USACE_CEMVP_BMCC_2018_a_0010	39'-30" RCP runs from gatewell No.2 to riverside ponding area through levee embankment on as-builts. Pipe is not numbered on as-builts and has not been inspected by Houston Engineering Inc.	Perform video or visual inspection of the project culverts every 5 years. Provide inspection report of culvert conditions to Corps for review	U	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0015	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0015	ATV trail has been established on levee slope and crown. Sod cover missing and rutting is evident,	Restrict vehicle traffic, post signs if needed. Reseed with grass.	U	Depressions/ Rutting	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0024	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0024	2018: New trees or bushes planted on the landwards slope of the levee.	Remove or relocate trees or bushes from levee slope, backfill and compact material, and reseed. Monitor project to ensure the vegetation free zone is maintained.	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0056	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0056	irrigation lines through levee on entire reach	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations;	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0073	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0073	Active irrigation line installed through levee.	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0100	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0100	Irrigation lines on levee slope	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	M	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0101	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0101	Irrigation Lines on levee slope	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2024-2027

USACE_CEMVP_BMCC_2018_a_0102	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0102	Irrigation system hoses and power cords on riverside levee slope	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2024-2027
USACE_CEMVP_BMCC_2018_a_0103	#N/A	#N/A	USACE_CEMVP_BMCC_2018_a_0103	Significant vegetation along landside levee slopes, to include trees with trunks greater than 2 inches in diameter within vegetation free zone (within 15 ft of levee toe) as well as trees and brush along permanent access which would inhibit emergency ops	Verify levee easement. Remove landscaping, retaining wall, and trees. Restore landside slope to designed cross section	U	Unwanted Vegetation Growth	Unresolved	No	2024-2027



Resolved



Monitor/ Typical Conditions



Unresolved



Planned 2019 Improvement Item

\*-Typical Conditions and Monitor excluded

<b>Resolved Deficiencies</b>	<b>Total Deficiencies</b>	<b>2018 Deficiencies</b>	<b>Resolution Rate</b>
15	125	8	13%
<b>Resolved Deficiencies</b>	<b>Total Deficiencies</b>	<b>2017 Deficiencies</b>	<b>Resolution Rate</b>
6	125	45	8%

USACE INSPECTION YEAR

TALBOTTS NURSERY DEFICIENCY TRACKER

Original ID	2016	2017	2018	Remarks	Action	Rating	Rated Item	April 2019 Status	Deficiency Completion/ Year	MREFPP Scheduled Replacement
USACE_CEMVP_BMTN_2010_a_0003	USACE_CEMVP_BMTN_2016_a_0002	#N/A	#N/A	Tall grass on levee side slopes and crest	Mow grass to an appropriate height	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0004	USACE_CEMVP_BMTN_2016_a_0003	#N/A	#N/A	Overgrown brush within the riprap revetted riverside levee slope and toe	Remove all woody vegetation from riprap and spray grasses. Ensure environmental compliance with all appropriate agencies prior to removal	Minimally Acceptable	Riprap Revetments & Bank Protection	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0006	USACE_CEMVP_BMTN_2016_a_0006	USACE_CEMVP_BMTN_2017_a_0006	USACE_CEMVP_BMTN_2018_a_0005	Trees approximately 6 inches in diameter growing through the trash rack and obstructing more than 10 percent of the inlet opening.	Remove unwanted vegetation from around culvert inlet. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal.	Unacceptable	Vegetation and Obstructions	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0010	USACE_CEMVP_BMTN_2016_a_0010	USACE_CEMVP_BMTN_2017_a_0010	USACE_CEMVP_BMTN_2018_a_0011	General Comment: The flood damage reduction channel grade control structure, which was pre-existing to the project, is deteriorating	Complete an engineering evaluation of the grade control structure to assess potential impacts of a failure on the Talbott's Nursery project. Complete remedial action as necessary	Acceptable	Revetments other than Riprap	Monitor	N/A	2031/2032
USACE_CEMVP_BMTN_2010_a_0015	USACE_CEMVP_BMTN_2016_a_0013	#N/A	#N/A	Talbott's Nursery Pump Station staff attends annual safety training provided by www.nd.gov and www.workforcesafety.com. Records of safety training attendance and pump station safety conditions were not available for review	Maintain records of safety training attendance and pump station safety conditions on existing Talbott's Nursery visit recording documents	Minimally Acceptable	Safety Compliance	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0016	USACE_CEMVP_BMTN_2016_a_0014	USACE_CEMVP_BMTN_2017_a_0018	USACE_CEMVP_BMTN_2018_a_0016	Miscellaneous encroachments on landside levee slope and toe and within 15 feet of the toe, including mobile homes, cars, utility poles, and storage sheds and trees	Verify levee easement, and relocate encroachments outside of levee easement, unless approved by Corps.	Unacceptable	Encroachments	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0019	USACE_CEMVP_BMTN_2016_a_0020	USACE_CEMVP_BMTN_2017_a_0026	USACE_CEMVP_BMTN_2018_a_0022	18-inch corrugated metal pipe (CMP) has replaced Ditch No. 1 in ponding area. Houston Engineering's Culvert inspection reported "minor corrosion nearly through pipe bottom" for culvert BM 0320 - BM 0318.	Complete an engineering evaluation of drainage conditions to ensure that the culvert provides sufficient drainage capacity. Coordinate with USACE, complete remedial action as necessary, and update as-built documents	Unacceptable	Culverts/ Discharge Pipes	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0022	USACE_CEMVP_BMTN_2016_a_0022	USACE_CEMVP_BMTN_2017_a_0028	USACE_CEMVP_BMTN_2018_a_0024	Trees with diameter >2" and overgrown grass and weeds on levee side slopes and toe	Remove unwanted vegetation and mow grass to an appropriate height	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0023	USACE_CEMVP_BMTN_2016_a_0021	USACE_CEMVP_BMTN_2017_a_0027	USACE_CEMVP_BMTN_2018_a_0023	Residential structure and miscellaneous residential encroachments on the levee slopes and crown	Verify levee easement. Relocate encroachments outside of levee easement, unless approved by Corps	Minimally Acceptable	Encroachments	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0024	USACE_CEMVP_BMTN_2016_a_0011	USACE_CEMVP_BMTN_2017_a_0014	USACE_CEMVP_BMTN_2018_a_0025	Narrow drainage area does not appear to drain to ponding area, due to roadway obstructions and lack of culverts	Complete an engineering evaluation to address ponding and interior flood control. Coordinate with USACE and complete remedial action as necessary to provide ponding capacity and positive drainage	Unacceptable	Ponding Areas	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_0025	USACE_CEMVP_BMTN_2016_a_0019	USACE_CEMVP_BMTN_2017_a_0025	#N/A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years. 2017 ACTION TAKEN: Culverts inspected via video by contract with Houston Engineering, Inc.	Continue to inspect culverts every five years. Next culvert inspection due by 2022 routine inspection.	Acceptable	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2031/2032
USACE_CEMVP_BMTN_2010_a_0026	USACE_CEMVP_BMTN_2016_a_0018	USACE_CEMVP_BMTN_2017_a_0022	#N/A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years. 2017 ACTION TAKEN: Culverts inspected via video by contract with Houston Engineering, Inc.	Continue to inspect culverts every five years. Next culvert inspection due by 2022 routine inspection.	Acceptable	Intake and Discharge Pipelines	Resolved - Monitor	Yes/2017	2031/2032
USACE_CEMVP_BMTN_2010_a_3001	USACE_CEMVP_BMTN_2016_a_0007	USACE_CEMVP_BMTN_2017_a_0007	USACE_CEMVP_BMTN_2018_a_0006	Culvert looks free of most sediments.	Continue to remove sediment from drainage feature to re-establish flow in culvert.	Acceptable	Vegetation and Obstructions	Resolved - Monitor	Yes/2017	2031/2032
USACE_CEMVP_BMTN_2010_a_3002	USACE_CEMVP_BMTN_2016_a_0008	USACE_CEMVP_BMTN_2017_a_0008	USACE_CEMVP_BMTN_2018_a_0007	Flap gate A and discharge pipe at the Souris River is operable but has corrosion.	Remove corrosion and repaint with epoxy paint	Minimally Acceptable	Flap Gates/ Flap Valves/ Pinch Valves	Unresolved	No	2031/2032

USACE_CEMVP_BMTN_2010_a_3004	USACE_CEMVP_BMTN_2016_a_0017	USACE_CEMVP_BMTN_2017_a_0021	USACE_CEMVP_BMTN_2018_a_0020	Pump station inspection records are maintained in a common log book. Per sponsor, training is performed annually prior to flooding conditions. Records were not present at the pump station and were forwarded as scans from sponsor	Maintain copies of inspection records at pump station. Note names and training dates on inspection records	Minimally Acceptable	Pump Stations Operating, Maintenance, Training, & Inspection Records	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_3005	USACE_CEMVP_BMTN_2016_a_0016	USACE_CEMVP_BMTN_2017_a_0020	USACE_CEMVP_BMTN_2018_a_0019	Pump station O&M manuals and operating instructions are available at the Ackerman-Estvold Board office. Operating instructions were not posted at the pump station	Laminate pump station operating instructions and post inside pump station control cabinet on door with latch	Minimally Acceptable	Pump Station Operations and Maintenance Equipment Manuals	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2010_a_3006	USACE_CEMVP_BMTN_2016_a_0015	USACE_CEMVP_BMTN_2017_a_0019	USACE_CEMVP_BMTN_2018_a_0017	Pump station staff attends annual safety training provided by www.nd.gov and www.workforcesafety.com. Records of safety training attendance and pump station safety conditions were not available for review	Maintain records of safety training attendance and pump station safety conditions on existing Talbott's Nursery visit recording documents	Minimally Acceptable	Safety Compliance	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2012_p_0006	USACE_CEMVP_BMTN_2016_a_0005	#N/A	#N/A	Trees in landside levee slope and toe	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2015_a_0001	USACE_CEMVP_BMTN_2016_a_0001	#N/A	#N/A	Long grass and vegetation on levee crown and slopes	Mow grass on a routine basis and maintain in compliance with operation and maintenance manual (A=0-6", M=6"-12", U=12+").	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2015_a_0004	USACE_CEMVP_BMTN_2016_a_0004	USACE_CEMVP_BMTN_2017_a_0004	USACE_CEMVP_BMTN_2018_a_0004	A new fence has been installed on levee crown restricting access and preventing maintenance.	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	Unacceptable	Encroachments	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2015_a_0009	USACE_CEMVP_BMTN_2016_a_0009	#N/A	#N/A	Some trees have been removed on both levee slopes. Many large trees still remain	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2015_a_0016	USACE_CEMVP_BMTN_2016_a_0012	USACE_CEMVP_BMTN_2017_a_0016	USACE_CEMVP_BMTN_2018_a_0015	The chainlink fence and grate to enter the lift station is not secured	Replace lock if necessary; secure fence and grate	Unacceptable	Fencing and Gates	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0011	#N/A	USACE_CEMVP_BMTN_2017_a_0011	USACE_CEMVP_BMTN_2018_a_0009	Typical Conditions: Riprap shows no displacement or issues. Minor vegetation growth near riverside toe is within O&M height limits.	No action required. Line placed for future inspection purposes	Acceptable	Riprap Revetments & Bank Protection	Typical Conditions	N/A	2031/2032
USACE_CEMVP_BMTN_2017_a_0012	#N/A	USACE_CEMVP_BMTN_2017_a_0012	USACE_CEMVP_BMTN_2018_a_0010	Depression approximately 10 square feet in size and greater than 6 inches deep on levee crown. Depression holds water.	Fill depressed area to design grade, compact in lifts, and reseed. Monitor for continued settlement.	Unacceptable	Depressions/ Rutting	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0013	#N/A	USACE_CEMVP_BMTN_2017_a_0013	USACE_CEMVP_BMTN_2018_a_0012	Landside levee slope steeper than design grade	Remedial actions required to restore levee slope per plan. Further evaluation is required. Solutions must be approved by Corps. Verify fill placement approved by the Corps. Restore levee cross-section per plan	Minimally Acceptable	Slope Stability	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0015	#N/A	USACE_CEMVP_BMTN_2017_a_0015	USACE_CEMVP_BMTN_2018_a_0013	Depressions less than 6 inches deep at levee crown	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass. Reevaluate levee crown surface. A resilient surface treatment is recommended for levee activities	Minimally Acceptable	Depressions/ Rutting	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0023	#N/A	USACE_CEMVP_BMTN_2017_a_0023	USACE_CEMVP_BMTN_2018_a_0014	Landside slope is generally steeper than 1V:2H	Complete an engineering evaluation of the slope grade, and perform remedial actions as needed	Minimally Acceptable	Slope Stability	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0024	#N/A	USACE_CEMVP_BMTN_2017_a_0024	USACE_CEMVP_BMTN_2018_a_0021	Erosion and minor riprap displacement present under pump station culvert exit.	Replace riprap with hard, durable rock of suitable size. Remove vegetation from riprap	Minimally Acceptable	Riprap Revetments & Bank Protection	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0029	#N/A	USACE_CEMVP_BMTN_2017_a_0029	USACE_CEMVP_BMTN_2018_a_0001	Long grass, trees, and other vegetation on levee crown and slopes	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance with appropriate agencies prior to removal. Mow grass routinely. Maintain per O&M.	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032



USACE_CEMVP_BMTN_2017_a_0030	#N/A	USACE_CEMVP_BMTN_2017_a_0030	USACE_CEMVP_BMTN_2018_a_0002	Overgrown brush within the riprap revetted riverside levee slope and toe	Replace displaced riprap with hard, durable rock of suitable size; filter-blanket layer; and/or geotextile fabric. Contact Corps for technical assistance when installing geotextile fabric. Remove all woody vegetation from riprapped area and spray grasses.	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0031	#N/A	USACE_CEMVP_BMTN_2017_a_0031	USACE_CEMVP_BMTN_2018_a_0003	Trees on landside levee toe	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance with appropriate agencies prior to removal.	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0032	#N/A	USACE_CEMVP_BMTN_2017_a_0032	USACE_CEMVP_BMTN_2018_a_0008	Some trees have been removed on riverside levee slopes. Many large trees still remain	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance with appropriate agencies prior to removal.	Unacceptable	Unwanted Vegetation Growth	Unresolved	No	2031/2032
USACE_CEMVP_BMTN_2017_a_0033	#N/A	USACE_CEMVP_BMTN_2017_a_0033	USACE_CEMVP_BMTN_2018_a_0018	Megger testing has not been conducted within past two years. Results ready for 2018 USACE routine inspection.	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations	Acceptable	Megger Testing on Pump Motors and Critical Power Cables	Resolved - Monitor	Yes/2017	2031/2032

	Resolved
	Monitor/ Typical Conditions

	Unresolved
	Planned 2019 Improvement Item

\*-Typical Condition or Monitor excluded

<b>Resolved Deficiencies</b>	<b>Total Deficiencies*</b>	<b>2018 Deficiencies</b>	<b>Resolution Rate</b>
<b>4</b>	<b>31</b>	<b>0</b>	<b>13%</b>
<b>Resolved Deficiencies</b>	<b>Total Deficiencies*</b>	<b>2017 Deficiencies</b>	<b>Resolution Rate</b>
<b>4</b>	<b>31</b>	<b>11</b>	<b>20%</b>

BMKC Levee

USACE INSPECTION YEAR

Original ID	2016	2017	2018	Remarks	Action	Rating	Rated Item	April 2019 Status	Deficiency Completion / Year	MREFPP Scheduled Replacement
USACE_CEMVP_BMKC_2010_a_0001	USACE_CEMVP_BMKC_2016_a_0003	USACE_CEMVP_BMKC_2017_a_0049	USACE_CEMVP_BMKC_2018_a_0002	Miscellaneous residential encroachments on the levee crown and landside levee slope and toe, including statues, storage, fences, gardening, landscaping, and stairways	Verify levee easement and relocate encroachments outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0003	USACE_CEMVP_BMKC_2016_a_0002	USACE_CEMVP_BMKC_2017_a_0048	USACE_CEMVP_BMKC_2018_a_0001	Trees greater than 2 inches in diameter and overgrown brush on the slopes and toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0008	USACE_CEMVP_BMKC_2016_a_0006	USACE_CEMVP_BMKC_2017_a_0039	USACE_CEMVP_BMKC_2018_a_0011	Riprap has been sprayed. Woody vegetation debris remains	Remove all woody vegetation from riprapped areas. Ensure environmental compliance with all appropriate agencies prior to removal	M	Riprap Revetments & Bank Protection	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0014	USACE_CEMVP_BMKC_2016_a_0010	USACE_CEMVP_BMKC_2017_a_0031	USACE_CEMVP_BMKC_2018_a_0018	Trees greater than 2 inches in diameter on the levee crown	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0027	USACE_CEMVP_BMKC_2016_a_0022	USACE_CEMVP_BMKC_2017_a_0002	USACE_CEMVP_BMKC_2018_a_0047	Levee raise material has been displaced or removed, creating a steeper than 1V:3H slope	Restore levee to as-built cross sections	M	Slope Stability	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0030	USACE_CEMVP_BMKC_2016_a_0023	USACE_CEMVP_BMKC_2017_a_0001	USACE_CEMVP_BMKC_2018_a_0050	Insufficient sod cover on the levee crown	Reestablish suitable sod cover	M	Sod Cover	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0033	USACE_CEMVP_BMKC_2016_a_0028	USACE_CEMVP_BMKC_2017_a_0051	USACE_CEMVP_BMKC_2018_a_0052	Vegetation and sedimentation is obstructing less than 10% of Culvert No. 2 inlet and outlet openings. 2 irrigation pipes were discovered inside the culvert	Remove vegetation, sediment, and irrigation pipes from the drainage structure.	M	Vegetation and Obstructions	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0035	USACE_CEMVP_BMKC_2016_a_0026	USACE_CEMVP_BMKC_2017_a_0052	USACE_CEMVP_BMKC_2018_a_0058	Ditch No. 1 culvert inlet and outlet openings are being obstructed less than 10% by sediment and vegetation	Remove vegetation and sediment from the drainage structure.	M	Vegetation and Obstructions	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0036	USACE_CEMVP_BMKC_2016_a_0029	USACE_CEMVP_BMKC_2017_a_0055	USACE_CEMVP_BMKC_2018_a_0053	The beehive inlet cover near Manhole No. 6 has been replaced with a solid manhole cover and is likely blocking drainage	Complete an engineering evaluation of drainage conditions and complete remedial action as necessary to facilitate positive drainage	U	Encroachments	Unresolved	No	2032-2034

USACE_CEMVP_BMKC_2010_a_0037	USACE_CEMVP_BMKC_2016_a_0030	USACE_CEMVP_BMKC_2017_a_0056	USACE_CEMVP_BMKC_2018_a_0054	Irrigation pipe found in culvert	Verify drainage easement; Relocate encroachments/debris outside of drainage easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0038	USACE_CEMVP_BMKC_2016_a_0031	USACE_CEMVP_BMKC_2017_a_0057	USACE_CEMVP_BMKC_2018_a_0055	A wooden box has been built around inlet to Manhole No. 4 with a plant placed on top of it. Ditch No. 3 has been filled.	Verify drainage easement. Complete an engineering evaluation of drainage conditions and complete remedial action as necessary to facilitate positive drainage	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_0039	USACE_CEMVP_BMKC_2016_a_0027	USACE_CEMVP_BMKC_2017_a_0050	USACE_CEMVP_BMKC_2018_a_0051	Culvert passing through levee and pump discharge piping have been fully videotaped or visually inspected within past 5 years. 2018 NOTE: Sponsor provided 2017 Houston Engineering culvert inspection report indicating culvert still not fully inspected.	Perform video or visual inspection of all project culverts and pump station discharge pipes. Monitor for pipe corrosion and take appropriate actions to inhibit corrosion or repair/replace culvert;	A	Culverts/ Discharge Pipes	Resolved - Monitor	Yes/2017	2032-2034
USACE_CEMVP_BMKC_2010_a_0040	USACE_CEMVP_BMKC_2016_a_0013	USACE_CEMVP_BMKC_2017_a_0012	USACE_CEMVP_BMKC_2018_a_0027	Culvert passing through levee and pump discharge piping have not been fully videotaped or visually inspected within past 5 years. 2017 NOTE: Sponsor provided 2017 Houston Engineering culvert inspection report indicating culvert still not fully inspected.	Perform video or visual inspection of all project culverts and pump station discharge pipes	A	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Resolved - Monitor	Yes/2017	2032-2034
USACE_CEMVP_BMKC_2010_a_0041	USACE_CEMVP_BMKC_2016_a_0001	USACE_CEMVP_BMKC_2017_a_0047	USACE_CEMVP_BMKC_2018_a_0003	Trees with trunk diameters >2 inches and overgrown brush within riprap on riverside slope	Remove all woody vegetation from riprapped areas and spray grasses. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_3001	USACE_CEMVP_BMKC_2016_a_0014	USACE_CEMVP_BMKC_2017_a_0013	USACE_CEMVP_BMKC_2018_a_0029	Sediment is obstructing approximately 20% of concrete pipe culvert outlet that discharges from Kings Court Pump Station	Remove sediment and vegetation from drainage feature to reestablish flow in the culvert	U	Vegetation and Obstructions	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_3004	USACE_CEMVP_BMKC_2016_a_0018	USACE_CEMVP_BMKC_2017_a_0017	USACE_CEMVP_BMKC_2018_a_0034	Pump Station O&M and inspection records are maintained in log book. Training performed annually prior to flood conditions via nd.gov and workforcesafety.com. Records not present at station. 2017 NOTE: Sponsor emailed scans of log book post inspection	Maintain copies of O&M and inspection records at the Kings Court and Rostads Addition Pump Station and note staff names, trainings, locations, and dates on O&M and inspection records	M	Pump Stations Operating, Maintenance, Training, & Inspection Records	Unresolved	2019 Improvement Item	2032-2034
USACE_CEMVP_BMKC_2010_a_3005	USACE_CEMVP_BMKC_2016_a_0016	USACE_CEMVP_BMKC_2017_a_0015	USACE_CEMVP_BMKC_2018_a_0033	Kings Court and Rostads Addition Pump Station O&M manuals and operating instructions are available at Ackerman-Estvold Engineering office. Operating instructions were not posted at the pump station	Laminate the Kings Court and Rostads Addition Pump Station operating instructions and post inside the pump station control cabinet on door with latch	M	Pump Station Operations and Maintenance Equipment Manuals	Unresolved	2019 Improvement Item	2032-2034

USACE_CEMVP_BMKC_2010_a_3006	USACE_CEMVP_BMKC_2016_a_0019	#N/A	#N/A	Kings Court and Rostads Addition Pump Station O&M manuals and operating instructions are available at Ackerman-Estvold Engineering office. Operating instructions were not posted at the pump station	Laminate the Kings Court and Rostads Addition Pump Station operating instructions and post inside the pump station control cabinet on the door with the latch	M	Pump Station Operations and Maintenance Equipment Manuals	Unresolved	2019 Improvement Item	2032-2034
USACE_CEMVP_BMKC_2010_a_3007	USACE_CEMVP_BMKC_2016_a_0020	USACE_CEMVP_BMKC_2017_a_0019	USACE_CEMVP_BMKC_2018_a_0031	Sediment has collected in gateway bottom. 2017 NOTE: Could not observe closely due to OSHA confined space requirements.	Sediment in gateway should be removed. Sediment reduces the flow capacity of gateway and could inhibit operation of the sluice gate	M	Sumps/ Wet well	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2010_a_3010	USACE_CEMVP_BMKC_2016_a_0017	USACE_CEMVP_BMKC_2017_a_0016	USACE_CEMVP_BMKC_2018_a_0036	Megger testing has been conducted within the past two years for the Kings Court and Rostads Addition Pump Station pump motors	Schedule Megger testing and documentation thereof for the Kings Court and Rostads Addition Pump Station pump motor windings and power cables to ensure their reliability in future operations	A	Megger Testing on Pump Motors and Critical Power Cables	Resolved - Monitor	Yes/2017	2032-2034
USACE_CEMVP_BMKC_2012_p_0012	USACE_CEMVP_BMKC_2016_a_0007	USACE_CEMVP_BMKC_2017_a_0036	USACE_CEMVP_BMKC_2018_a_0013	Residential encroachments in the landside slope, toe, and crown, including garden, stairway, and fence	Verify levee easement. Relocate encroachments outside of the levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2013_a_0008	USACE_CEMVP_BMKC_2016_a_0004	USACE_CEMVP_BMKC_2017_a_0043	USACE_CEMVP_BMKC_2018_a_0006	Irrigation line through levee prism	Remove or relocate irrigation piping outside of the levee easement, unless approved by Corps.	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2013_a_0020	USACE_CEMVP_BMKC_2016_a_0015	USACE_CEMVP_BMKC_2017_a_0014	USACE_CEMVP_BMKC_2018_a_0032	Rip rap displacement and erosion under discharge outlet	Replace rip rap under outlet	U	Riprap Revetments of Inlet/ Discharge Areas	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2014_a_0004	USACE_CEMVP_BMKC_2016_a_0021	USACE_CEMVP_BMKC_2017_a_0007	USACE_CEMVP_BMKC_2018_a_0042	Unauthorized raise of an unknown amount	Survey levee crest and submit information to Corps. If already surveyed, please submit data.	M	Slope Stability	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2014_a_0015	USACE_CEMVP_BMKC_2016_a_0012	USACE_CEMVP_BMKC_2017_a_0028	USACE_CEMVP_BMKC_2018_a_0020	Sprinkler and irrigation pipe	Verify levee easement. Relocate irrigation piping outside of levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2014_a_0020	USACE_CEMVP_BMKC_2016_a_0005	USACE_CEMVP_BMKC_2017_a_0041	USACE_CEMVP_BMKC_2018_a_0008	Irrigation pipe through levee	Verify levee easement. Relocate irrigation piping outside of levee easement, unless approved by Corps	M	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2015_a_0009	USACE_CEMVP_BMKC_2016_a_0009	USACE_CEMVP_BMKC_2017_a_0032	USACE_CEMVP_BMKC_2018_a_0017	Newly identified residential encroachment (landscaped retaining wall and shed) on landside slope of levee	Verify levee easement; Relocate encroachments outside of levee easement unless approved by Corps.	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2015_a_0011	USACE_CEMVP_BMKC_2016_a_0011	USACE_CEMVP_BMKC_2017_a_0029	USACE_CEMVP_BMKC_2018_a_0019	Steep land side levee slope	Remedial actions required to restore levee slope per plan. Further evaluation is required. Solutions must be approved by Corps. Verify fill placement approved by the Corps.	M	Slope Stability	Unresolved	No	2032-2034

USACE_CEMVP_BMKC_2016_a_0008	USACE_CEMVP_BMKC_2016_a_0008	USACE_CEMVP_BMKC_2017_a_0035	USACE_CEMVP_BMKC_2018_a_0015	Residential encroachments including new deck and irrigation line	Verify levee easement; Relocate encroachments outside of levee easement	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2016_a_0024	USACE_CEMVP_BMKC_2016_a_0024	USACE_CEMVP_BMKC_2017_a_0054	USACE_CEMVP_BMKC_2018_a_0056	Vegetation and sediment blocking culvert	Remove unwanted Vegetation and debris	U	Vegetation and Obstructions	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2016_a_0025	USACE_CEMVP_BMKC_2016_a_0025	USACE_CEMVP_BMKC_2017_a_0053	USACE_CEMVP_BMKC_2018_a_0057	Trees > 2 inch diameter are growing out of 18 inch CMP entering drainage area	Remove all unwanted vegetation; verify trash rack is not damaged. If damaged, repair trash rack.	U	Vegetation and Obstructions	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0003	#N/A	USACE_CEMVP_BMKC_2017_a_0003	USACE_CEMVP_BMKC_2018_a_0048	Metal tube driven into levee slope at unknown depth contains a wood post	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Excavate, inspect, backfill, compact in lifts, and reseed with grass	M	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0004	#N/A	USACE_CEMVP_BMKC_2017_a_0004	USACE_CEMVP_BMKC_2018_a_0043	Shed built into landside toe, surrounding by garden and concrete pad	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0005	#N/A	USACE_CEMVP_BMKC_2017_a_0005	USACE_CEMVP_BMKC_2018_a_0044	Tree with trunk >2 inches in diameter	Remove unwanted vegetation from vegetation-free zone, up to levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0006	#N/A	USACE_CEMVP_BMKC_2017_a_0006	USACE_CEMVP_BMKC_2018_a_0041	Multiple trees with trunks >2 inches in diameter on riverside slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0008	#N/A	USACE_CEMVP_BMKC_2017_a_0008	USACE_CEMVP_BMKC_2018_a_0039	Pump line placed through levee crown and across riverside slope	Relocate encroachments/debris outside of levee easement, unless approved by Corps. Verify approval was received from Corps to perform excavations. Remove pump line, backfill, compact in lifts, and reseed with grass	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0011	#N/A	USACE_CEMVP_BMKC_2017_a_0011	USACE_CEMVP_BMKC_2018_a_0038	Trees with trunks >2 inches in diameter at landside toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0021	#N/A	USACE_CEMVP_BMKC_2017_a_0021	USACE_CEMVP_BMKC_2018_a_0037	Edge of storage building placed at the landside levee toe	Storage building previously reviewed by the Corps. No action required. Point placed for future inspections.	A	Encroachments	Monitor	No	2032-2034

USACE_CEMVP_BMKC_2017_a_0023	#N/A	USACE_CEMVP_BMKC_2017_a_0023	USACE_CEMVP_BMKC_2018_a_0023	Unwanted vegetation on near RS slope and trees on far LS slope.	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0024	#N/A	USACE_CEMVP_BMKC_2017_a_0024	USACE_CEMVP_BMKC_2018_a_0024	Multiple irrigation lines pass through levee crown and both slopes.	Relocate encroachments/debris outside of levee easement, unless approved by Corps. Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0025	#N/A	USACE_CEMVP_BMKC_2017_a_0025	USACE_CEMVP_BMKC_2018_a_0026	Fence at landside toe	Verify levee easement. Relocate encroachments outside of levee easement unless approved by Corps.	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0026	#N/A	USACE_CEMVP_BMKC_2017_a_0026	USACE_CEMVP_BMKC_2018_a_0021	Irrigation line passes through levee crown and slope. Paddle boat tethered to stake located at riverside toe	Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by Corps. Verify approval was received from Corps to perform excavations	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0027	#N/A	USACE_CEMVP_BMKC_2017_a_0027	USACE_CEMVP_BMKC_2018_a_0022	Retaining wall appears to be collapsing into garage. Per O&M cross section 6, appears levee crown has been overbuilt at retaining wall	Remedial actions required to restore levee slope per plan. Further evaluation is required. Solutions must be approved by Corps. Verify fill placement approved by the Corps. Restore levee cross-section per plan	M	Slope Stability	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0030	#N/A	USACE_CEMVP_BMKC_2017_a_0030	USACE_CEMVP_BMKC_2018_a_0016	Weather equipment attached to pole driven into levee crown. Unclear if equipment is privately owned or public weather service	Verify levee easement. Relocate encroachments outside of levee easement unless approved by Corps.	M	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0038	#N/A	USACE_CEMVP_BMKC_2017_a_0038	USACE_CEMVP_BMKC_2018_a_0012	Significant construction activities at levee landside slope and crown	Verify levee easement. Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform construction	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0040	#N/A	USACE_CEMVP_BMKC_2017_a_0040	USACE_CEMVP_BMKC_2018_a_0010	Sod cover on crown and slopes missing	Reestablish sod cover	U	Sod Cover	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0042	#N/A	USACE_CEMVP_BMKC_2017_a_0042	USACE_CEMVP_BMKC_2018_a_0009	Minor longitudinal cracks along levee crown	Monitor cracking depth. When depth exceeds 12 inches, consider remedial actions. Remedial actions must be approved by the Corps	A	Cracking	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0044	#N/A	USACE_CEMVP_BMKC_2017_a_0044	USACE_CEMVP_BMKC_2018_a_0007	Tree with trunk diameter greater than 2 inches at landside levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0045	#N/A	USACE_CEMVP_BMKC_2017_a_0045	USACE_CEMVP_BMKC_2018_a_0005	Power pole, shed, and other residential encroachments present at landside toe	Verify levee easement. Relocate encroachments/debris outside of levee easement unless approved by Corps	M	Encroachments	Unresolved	No	2032-2034

USACE_CEMVP_BMKC_2017_a_0046	#N/A	USACE_CEMVP_BMKC_2017_a_0046	USACE_CEMVP_BMKC_2018_a_0004	Metal pole present at levee crown	Verify levee easement. Relocate encroachments/debris outside of levee easement unless approved by Corps	M	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0058	#N/A	USACE_CEMVP_BMKC_2017_a_0058	USACE_CEMVP_BMKC_2018_a_0049	Wood and soil debris dumped at riverside toe	Remove debris from levee easement. Verify dumping in this area is not a wetland violation	M	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0059	#N/A	USACE_CEMVP_BMKC_2017_a_0059	USACE_CEMVP_BMKC_2018_a_0045	Overgrown vegetation prevents close inspection of riverside levee slope	Mow grass on a routine basis and maintain in compliance with operation and maintenance manual (no longer than 12 inches at any given time)	M	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0060	#N/A	USACE_CEMVP_BMKC_2017_a_0060	USACE_CEMVP_BMKC_2018_a_0040	Trees with trunks >2 inches in diameter at landside toe need to be removed	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0061	#N/A	USACE_CEMVP_BMKC_2017_a_0061	USACE_CEMVP_BMKC_2018_a_0025	Soil appears to have been placed over rip rap with ineffective erosion barriers. Sod has mostly died. This configuration does not match O&M as built.	Replace riprap with hard, durable rock of suitable size. Replace filter-blanket layer. Replace/Repair geotextile fabric under the stone riprap. Contact Corps for technical assistance when installing geotextile fabric. Remove all vegetation from riprap.	U	Sod Cover	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0062	#N/A	USACE_CEMVP_BMKC_2017_a_0062	USACE_CEMVP_BMKC_2018_a_0035	Locks and bolting mechanisms are missing on crane base and pump station access panels	Repair	U	Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0063	#N/A	USACE_CEMVP_BMKC_2017_a_0063	USACE_CEMVP_BMKC_2018_a_0028	Locks on fence around gatewell cut. Lock on gatewell latch missing.	Replace locks on fence and gatewell latch	U	Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	Unresolved	2019 Improvement Item	2032-2034
USACE_CEMVP_BMKC_2017_a_0064	#N/A	USACE_CEMVP_BMKC_2017_a_0064	USACE_CEMVP_BMKC_2018_a_0014	Numerous irrigation and pump electrical lines passing through levee crown and slope. Numerous pumps at riverside toe. Evidence of excavations and trenching to place lines	Relocate encroachments outside of levee easement, unless approved by Corps. Verify approval was received from Corps to perform excavations. Remove pump line, backfill, compact in lifts, and reseed with grass	U	Encroachments	Unresolved	No	2032-2034
USACE_CEMVP_BMKC_2017_a_0065	#N/A	USACE_CEMVP_BMKC_2017_a_0065	USACE_CEMVP_BMKC_2018_a_0030	The discharge pipe from pump to gatewell has been fully videotaped and visually inspected within the past 5 years. Sponsor provided 2017 Houston Engineering inspection report indicating this pipe has been fully inspected	Continue to perform video or visual inspections of all project culverts	A	Intake and Discharge Pipelines	Resolved - Monitor	Yes/2017	2032-2034

USACE_CEMVP_BMKC_2018_a_0046	#N/A	#N/A	USACE_CEMVP_BMKC_2018_a_0046	Rutting on levee crown.	Backfill ruts/depression to the design grade, compact in lifts, and re-sod; Reevaluate levee crown surface; A resilient surface treatment is recommended for levee activities	U	Depressions/Rutting	Unresolved	No	2032-2034
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Resolved

Monitor/Typical Conditions


Unresolved

Planned 2019 Improvement Item

\*-Typical Conditions or Monitor excluded

Resolved Deficiencies	Total Deficiencies*	2018 Deficiencies	Resolution Rate
4	58	1	7%
Resolved Deficiencies	Total Deficiencies*	2017 Deficiencies	Resolution Rate
4	58	11	9%



## USACE INSPECTION YEAR

## TIERRRECITA VALLEJO DEFICIENCY TRACKER

Original ID	2016	2017	2018	Remarks	Action	Rating	Rated Item	April 2019 Status	Resolved	MREFPP Scheduled Replacement
USACE_CEMVP_BMTV_2010_a_0001	USACE_CEMVP_BMTV_2016_a_0016	USACE_CEMVP_BMTV_2017_a_0002	USACE_CEMVP_BMTV_2018_a_0019	Culvert opening is being obstructed by more than 10 percent from sedimentation and vegetation	Remove sediment and vegetation from the drainage feature	U	Vegetation and Obstructions	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0003	USACE_CEMVP_BMTV_2016_a_0017	USACE_CEMVP_BMTV_2017_a_0018	USACE_CEMVP_BMTV_2018_a_0017	Overgrown grass, large dense tree cover, and brush cover the levee crown, slopes, toes, and vegetation-free zone	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0007	USACE_CEMVP_BMTV_2016_a_0013	USACE_CEMVP_BMTV_2017_a_0004	USACE_CEMVP_BMTV_2018_a_0015	Miscellaneous residential encroachments including fencing, playground, on the landside slope and toe. A light pole is no longer present	Verify levee easement. Relocate encroachments outside of the levee easement, unless approved by Corps	U	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0009	USACE_CEMVP_BMTV_2016_a_0012	USACE_CEMVP_BMTV_2017_a_0003	USACE_CEMVP_BMTV_2018_a_0014	Riverside riprap not visible, may have been displaced or covered with silt. Grassy vegetation covers area	Verify if riprap is present and perform remedial actions as needed	U	Riprap Revetments & Bank Protection	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0020	USACE_CEMVP_BMTV_2016_a_0008	USACE_CEMVP_BMTV_2017_a_0015	USACE_CEMVP_BMTV_2018_a_0011	The flood damage reduction channel control structure is bowing downstream	Review control structure design, evaluate current conditions (Scour and rock displacement), and repair. If repair is a change from the original design, a Corps review is required	U	Tilting, Sliding or Settlement of Concrete Structures	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0021	USACE_CEMVP_BMTV_2016_a_0009	USACE_CEMVP_BMTV_2017_a_0016	USACE_CEMVP_BMTV_2018_a_0012	Riprap on riverward slope is overgrown with brush and saplings	Remove all woody vegetation and spray or burn grasses.	U	Riprap Revetments & Bank Protection	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0022	USACE_CEMVP_BMTV_2016_a_0005	USACE_CEMVP_BMTV_2017_a_0012	#N/A	Metal fence posts on the landside levee slope remain; wiring from the fence was removed	Relocate fence posts outside of levee easement	M	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0033	USACE_CEMVP_BMTV_2016_a_0015	USACE_CEMVP_BMTV_2017_a_0001	USACE_CEMVP_BMTV_2018_a_0018	The project interior drainage system culverts has been videotaped or visually inspected within the past 5 years. Sediment build up 2" from top of pipe at Segment ID TV0120C.	Monitor for pipe corrosion and take appropriate actions to inhibit corrosion or repair/replace culvert;	M	Culverts/ Discharge Pipes	Monitor	No	2020/2021
USACE_CEMVP_BMTV_2010_a_0034	USACE_CEMVP_BMTV_2016_a_0007	USACE_CEMVP_BMTV_2017_a_0014	USACE_CEMVP_BMTV_2018_a_0010	The project levee embankment culverts has been videotaped or visually inspected and has sedimentation within 2" from top of pipe at culvert TV0120ES-TV0119.	Monitor for pipe corrosion and take appropriate actions to inhibit corrosion or repair/replace culvert;	M	Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.)	Monitor	No	2020/2021
USACE_CEMVP_BMTV_2010_a_3005	USACE_CEMVP_BMTV_2016_a_0002	USACE_CEMVP_BMTV_2017_a_0010	USACE_CEMVP_BMTV_2018_a_0005	The position indicator cover for Gatewell No. 1 (Oxbow inlet) is weathered and prevents viewing the indicator	Replace indicator cover	M	Sluice/ Slide Gates	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_3006	USACE_CEMVP_BMTV_2016_a_0003	USACE_CEMVP_BMTV_2017_a_0011	USACE_CEMVP_BMTV_2018_a_0006	The plexiglass cover on the stem cover viewing window for Gatewell No. 1 (Oxbow inlet) is broken	Replace viewing stem plexiglass or use PVC pipe to cover the stem preventing water from entering the gate lifter mechanism	M	Sluice/ Slide Gates	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_3007	USACE_CEMVP_BMTV_2016_a_0006	USACE_CEMVP_BMTV_2017_a_0013	USACE_CEMVP_BMTV_2018_a_0009	Local sponsor is not maintaining bypass gatewell	Bypass is to allow water downstream during low flow conditions. Maintain the gatewell in accordance with O&M Manual	U	Sluice/ Slide Gates	Unresolved	No	2020/2021
USACE_CEMVP_BMTV_2010_a_3008	USACE_CEMVP_BMTV_2016_a_0004	USACE_CEMVP_BMTV_2017_a_0009	USACE_CEMVP_BMTV_2018_a_0004	The BMTV system does not have a pump station but utilizes portable pumps stored at the North County garage	No action necessary	A	Pumps	Typical Conditions	N/A	2020/2021

USACE_CEMVP_ BMTV_2012_p_ 0002	USACE_CEMVP_ BMTV_2016_a_0 011	#N/A	#N/A	Culvert opening is being obstructed more than 10 percent by sedimentation	Remove sediment from the drainage feature	A	Vegetation and Obstructions	Resolved/ Unobserved 2017/2018	Yes	2020/2021
USACE_CEMVP_ BMTV_2012_p_ 0038	USACE_CEMVP_ BMTV_2016_a_0 014	USACE_CEMVP_ BMTV_2017_a_ 0005	USACE_CEMVP_ BMTV_2018_a_0 016	The federal project ties into a discontinuous emergency embankment at the upstream extent of the project	An evaluation of the profile is necessary to define the line of protection and required closure heights and extents for varied flow events	U	Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	Unresolved	No	2020/2021
USACE_CEMVP_ BMTV_2015_a_ 0006	USACE_CEMVP_ BMTV_2016_a_0 001	USACE_CEMVP_ BMTV_2017_a_ 0007	USACE_CEMVP_ BMTV_2018_a_0 002	Trees (> 2 inches in diameter) and long vegetation located on landside levee slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_ BMTV_2015_a_ 0016	USACE_CEMVP_ BMTV_2016_a_0 010	USACE_CEMVP_ BMTV_2017_a_ 0017	#N/A	Trees (> 2 inches in diameter) and long vegetation located on landside levee slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021
USACE_CEMVP_ BMTV_2015_a_ 0018	USACE_CEMVP_ BMTV_2016_a_0 018	USACE_CEMVP_ BMTV_2017_a_ 0019	USACE_CEMVP_ BMTV_2018_a_0 021	Large trees and long vegetation growth surrounding the gatewell	Remove unwanted vegetation; Backfill and compact in lifts	U	Vegetation and Obstructions	Unresolved	No	2020/2021
USACE_CEMVP_ BMTV_2015_a_ 0019	USACE_CEMVP_ BMTV_2016_a_0 019	USACE_CEMVP_ BMTV_2017_a_ 0020	USACE_CEMVP_ BMTV_2018_a_0 020	Large debris blocking inlet	Remove debris from the drainage feature; Sponsor should discourage the public from placing debris within the drainage feature	U	Vegetation and Obstructions	Monitor	No	2020/2021
USACE_CEMVP_ BMTV_2017_a_ 0006	#N/A	USACE_CEMVP_ BMTV_2017_a_ 0006	#N/A	NA	NA	A	Public Sponsor (A or U only)	Monitor	N/A	2020/2021
USACE_CEMVP_ BMTV_2017_a_ 0008	#N/A	USACE_CEMVP_ BMTV_2017_a_ 0008	#N/A	NA	NA	A	Public Sponsor (A or U only)	Monitor	N/A	2020/2021
USACE_CEMVP_ BMTV_2018_a_ 0007	#N/A	#N/A	USACE_CEMVP_ BMTV_2018_a_0 007	Corrosion, rusting on stem.	Remove corrosion and repaint; Replace metallic item	M	Other Metallic Items	Monitor	No	2020/2021
USACE_CEMVP_ BMTV_2018_a_ 0022	#N/A	#N/A	USACE_CEMVP_ BMTV_2018_a_0 022	Corrosion and cap for gatwell missing.	Remove corrosion and repaint; Replace metallic item	M	Other Metallic Items	Unresolved	No	2020/2021
USACE_CEMVP_ BMTV_2018_a_ 0023	#N/A	#N/A	USACE_CEMVP_ BMTV_2018_a_0 023	Metal fence posts on the landside levee slope remain; wiring from the fence was removed	Relocate fence posts outside of levee easement.	M	Encroachments	Unresolved	No	2020/2021
USACE_CEMVP_ BMTV_2018_a_ 0024	#N/A	#N/A	USACE_CEMVP_ BMTV_2018_a_0 024	Unwanted Vegetation Growth. Trees (>2 inches in diameter) and long vegetation located on landside levee slope.	"Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and re-sod; Ensure environmental compliance with all appropriate agencies prior to removal; Monitor vegetation on future inspe	U	Unwanted Vegetation Growth	Unresolved	No	2020/2021

	Resolved		Unresolved
	Monitor/ Typical Conditions		Planned 2019 Improvement Item

\*-Typical Conditions or Monitor excluded

<b>Resolved Deficiencies</b>	<b>Total Deficiencies*</b>	<b>2018 Deficiencies</b>	<b>Resolution Rate</b>
1	20	4	6%
<b>Resolved Deficiencies</b>	<b>Total Deficiencies*</b>	<b>2017 Deficiencies</b>	<b>Resolution Rate</b>
1	20	3	6%

## Appendix B-1

Figure B.8.10 – Minot Left Bank System Deficiency  
Table (Updated April 2019)

Figure B.8.11 – Minot Right Bank System Deficiency  
Table (Updated April 2019)

## Appendix B-2

2017 Annual SWIF Progress Report

2018 Annual SWIF Progress Report

## Appendix B-3

Left Bank Deficiency Tracking Table

Right Bank Deficiency Tracking Table

**April 2019 Interim SWIF Continuation Report  
Left Bank Deficiency Tracking Table**

USACE 2017 Routine Inspection ID	Bank	2017 Rating	April 2019 Rating	USACE Remarks	USACE Action	2017 Status	April 2019 Status	Sponsor Remarks
MINL_2017_a_0001	LB	U	A	Large trees on the landside and riverside levee slopes and toes	Remove large trees and unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0002	LB	U	A	Large trees along the landside and riverside levee slopes and toes	Remove large trees and unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0003	LB	M	A	An unapproved clay ramp has been installed that is blocking the interior drainage along the toe of the levee.	Verify levee easement. Remove ramp, unless approved by Corps.	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0004	LB	U	A	Large trees along the riverside levee slope	Remove large trees and unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0005	LB	M	A	PVC pipe at top of levee slope that appears to be a piezometer pipe that has been knocked over	Verify that this is a functioning piezometer and return the pipe to the vertical position	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0006	LB	M	A	Lack of sod cover along newly installed paved walkway	Reestablish sod cover	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0007	LB	U	A	Fence on top of levee	Verify levee easement; Relocate encroachments/debris outside of levee easement	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0008	LB	M	A	PVC pipe for piezometer on levee slope	No action required	Monitor	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0009	LB	M	A	Sediment has accumulated in the drainage ditch that runs along the levee landside toe. The ditch appears to slope the wrong direction as a result of the accumulation. The minor high point does not appear to be ponding water. Vegetation has been mowed	Remove sedimentation from the drainage ditch. Restore ditch to the design grade and cross section	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0010	LB	U	A	Significant erosion has occurred on riverside slope of the levee embankment	Backfill erosion to the design grade, compact in lifts, and reseed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0011	LB	U	A	Trees ( > 2 inches in diameter) located within 15 feet of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0012	LB	U	A	Large trees and dense brush on the riverside levee slope along the entire length of the levee embankment. Landside has had some trees and brush removed, but some still remains	Remove large trees and unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0013	LB	U	A	Utility pole in levee prism	Verify levee easement. Relocate power pole outside of levee easement	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0014	LB	U	A	Ponding water at toe of levee due to an unauthorized excavation	Backfill excavation to the design grade, compact in lifts, and reseed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0015	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0016	LB	U	A	The gate well discharge pipe is separating from pipe section and trash rack is broken	Realign the discharge pipe to eliminate the separation and install tie-rods to hold the pipe in place. Replace the trash rake	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0017	LB	M	A	Erosion at base of gateway structure, 4 feet in depth	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Reevaluate drainage and erosion protection. Remedial action is required to correct structure undermining. Remedial actions must be approved by the Corps	Unresolved	Resolved	Deficiency resolved by MREFPP MI-2 Project
MINL_2017_a_0018	LB	U	A	Large trees and vegetation along the embankment	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project

MINL_2017_a_0019	LB	U	A	Steep landside levee slope with concrete footing at toe. 2017 NOTE: Point not located.	Remedial actions required to restore levee slope per plan; Further evaluation is required; Solutions must be approved by Corps; Verify fill placement approved by the Corps; Restore levee cross-section per plan	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0020	LB	U	A	Low spot in levee crown 10 ft long	Backfill ruts/depression to the design grade, compact in lifts, and reseed with grass; Reevaluate levee crown surface; A resilient surface treatment is recommended for levee activities	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0021	LB	U	A	Erosion has occurred that threatens the stability and integrity of the levee embankment and is progressing into the levee section; Large trees on levee	Backfill erosion to the design grade, Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill compact in lifts, and reseed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0022	LB	U	A	Power pole and large trees remain	Remedial actions required to restore levee slope per plan; Further evaluation is required; Solutions must be approved by Corps	Monitor	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0023	LB	U	A	Slope is greater than 2:1. Steep slope creates slope stability problems and collapse into channel	Remedial actions required to restore levee slope per plan. Further evaluation is required. Solutions must be approved by Corps. Verify fill placement approved by Corps. Restore levee cross-section per plan	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0024	LB	U	A	Area of settlement at gateway	Raise levee to design grade, compact in lifts, and reseed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0025	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0026	LB	U	A	Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section	Evaluate the level of protection and determine when closures need to be installed	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0027	LB	U	A	Large trees and brush on levee embankment	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0028	LB	U	A	Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section	Evaluate the level of protection and determine when closures need to be installed	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0029	LB	M	A	Piezometer near levee crown	No action necessary	Typical Conditions	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0030	LB	U	A	Fence in levee crown	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Resolved	Deficiency resolved by MREFPP MI-3 Project
MINL_2017_a_0031	LB	U	U	A drainage ditch was cut through the levee prism	Fill and compact the cut area with appropriate material to design elevation, and reseed with grass	Unresolved	Unresolved	
MINL_2017_a_0032	LB	U	U	In 2015 a resident planted trees and a garden on a section of discontinuous levee	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0033	LB	U	U	Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section	Evaluate the level of protection and determine when closures need to be installed	Unresolved	Unresolved	
MINL_2017_a_0034	LB	U	U	Low spot in levee crown and new garage next to levee	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps; Raise levee to design grade, compact in lifts, and reseed with grass	Unresolved	Unresolved	
MINL_2017_a_0035	LB	U	U	Residential encroachments, utility poles, and fences	Verify levee easement. Relocate encroachments outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0036	LB	U	U	Beehive inlet appears to be full of sediment	Remove debris from the drainage feature	Unresolved	Unresolved	
MINL_2017_a_0037	LB	M	U	Sediment and vegetation growth in discharge basin	Remove vegetation and sedimentation from the drainage feature	Unresolved	Unresolved	
MINL_2017_a_0038	LB	U	U	Sump pump hose through levee	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	Unresolved	Unresolved	
MINL_2017_a_0039	LB	U	U	Fence passing over levee, Power pole on levee	Verify levee easement, Relocate encroachments outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0040	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0041	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0042	LB	U	U	Private property sign on levee crown and riverside slope. 2017 NOTE: Inspectors saw person removing temporary fencing with construction equipment before inspectors could reach this site to photograph activity	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps	Unresolved	Unresolved	

MINL_2017_a_0043	LB	U	U	Irrigation line through levee	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	Unresolved	Unresolved	
MINL_2017_a_0044	LB	U	U	Crack extending parallel to the levee along the crown. 2017 NOTE: Did not observe in 2015 or 2016 but clearly observed in 2017	Continue to monitor area for cracking, When depth exceeds 12 inches, or vertical movement is seen, consider remedial actions	Unresolved	Unresolved	
MINL_2017_a_0045	LB	U	U	Residential encroachments, structures, decks, irrigation line, and landscaping. Private property signs are posted on the levee	Verify levee easement. Relocate encroachments outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0046	LB	U	U	Irrigation pumps and lines through levee	Verify levee easement; Relocate encroachments outside of levee easement,	Unresolved	Unresolved	
MINL_2017_a_0047	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0049	LB	M	U	Gate height indicator is opaque metal, requiring gate operator to open well cover and crank while standing next to an open well	Replace gate height indicator with material or method that would not require operator to work next to open well (OSHA)	Unresolved	Unresolved	
MINL_2017_a_0050	LB	U	U	Significant vegetation and rip rap displacement below gate well	Remove unwanted vegetation from vegetation-free zone, up to levee easement. Replace rip rap with hard, durable rock of appropriate size (see plans). Restore section layer thickness.	Unresolved	Unresolved	
MINL_2017_a_0053	LB	U	U	Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section	Evaluate the level of protection and determine when closures need to be installed	Unresolved	Unresolved	Deficiency is being managed by IRRM
MINL_2017_a_0054	LB	U	U	Power poles in levee crown	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	Unresolved	Unresolved	
MINL_2017_a_0056	LB	U	U	Break in the levee where road ends; a closure is needed	Remedial actions are required to provide the designed level of flood protection; Solutions must be approved by Corps; Analyses may be required; Equipment, materials, and procedures should be made readily available;	Unresolved	In Progress	Deficiency will be resolved by Minot SWIF D CIP
MINL_2017_a_0057	LB	U	U	Newly installed fence at toe of levee	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0058	LB	U	U	Large tree on the levee landside slope	Remove large tree from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0059	LB	U	U	Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section	Evaluate the level of protection and determine when closures need to be installed	Unresolved	Unresolved	Deficiency is being managed by IRRM, a levee will no longer be needed once Maple Diversion Phase of MREFPP is complete
MINL_2017_a_0060	LB	M	A	Piezometer in levee and box	No action necessary	Typical Conditions	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0061	LB	U	A	Encroachments include utility poles, guard-rails, and bridge piers	Verify levee easement. Relocate encroachments outside of levee easement, unless approved by Corps. Verify approval was received from Corps to perform excavations	Unresolved	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0063	LB	U	A	A PVC pipe is located within the levee embankment, Large trees and dense vegetation. 2017 NOTE: Inspector could not observe due to on-going construction activities on new bridge.	Verify what pipe is being used for. Verify levee easement. Relocate encroachment outside of levee easement, unless approved by Corps, Remove unwanted vegetation from vegetation-free zone, Remove root ball, backfill, compact in lifts, reseed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0064	LB	U	A	A drainage ditch was cut through levee embankment	Backfill cut ditch to the design grade, compact in lifts, and reseed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0065	LB	M	A	Large rocks in discharge outlet	Remove rocks from the drainage feature	Unresolved	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0066	LB	U	A	Erosion along the left channel bank upstream and downstream of the steel-span pedestrian bridge. Eroded area is also covered with abundant vegetation	Backfill erosion to the design grade, compact in lifts, and re-seed with grass	Unresolved	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0068	LB	U	A	Manhole installed in 2015 on levee crown	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps;	Unresolved	Resolved	Deficiency resolved by MREFPP MI-1 Project
MINL_2017_a_0069	LB	U	U	Power pole on levee, Vegetation in riprap	Verify levee easement, relocate encroachments outside of levee easement, unless approved by Corps, Remove unwanted vegetation from vegetation-free zone, Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	City has sprayed vegetation in riprap
MINL_2017_a_0070	LB	U	U	A drainage ditch has been cut through levee prism. Levee appeared to be constructed out of pervious fill material	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Verify the type of material used to construct the levee. Impervious material should be used	Unresolved	In Progress	Deficiency is being resolved by Minot SWIF D CIP



MINL_2017_a_0071	LB	U	U	Vegetation on landside levee slope and toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0072	LB	U	A	Encroachments include buildings, tires, material storage, and fences	Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by Corps. Verify approval was received from Corps to perform excavations	Unresolved	Resolved	City has acquired property and is removing encroachments
MINL_2017_a_0073	LB	U	U	PVC pipe through levee. 2017 NOTE: Vegetation obstructs view of pipe	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	Unresolved	In Progress	Deficiency is being resolved by Minot SWIF D CIP
MINL_2017_a_0074	LB	U	U	Large tree within the vegetation-free zone	Remove large tree from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0075	LB	U	U	Guard rail and power pole on levee	Verify levee easement; Relocate encroachments outside of levee easement	Unresolved	Unresolved	
MINL_2017_a_0076	LB	U	A	Large holes dug into level crown and landside slope, likely for use as fire pits	Backfill and compact holes. Discourage these activities	Unresolved	Resolved	Holes were not present during 2018 Inspection
MINL_2017_a_0077	LB	M	A	Debris has been caught on the low flow control structure	Remove debris from low flow control structure	Unresolved	Resolved	Debris has been removed
MINL_2017_a_0078	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0079	LB	U	U	Trees and brush on channel bank and levee riverside slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0080	LB	U	U	A utility pole is located in the levee prism	Verify levee easement. Relocate utility pole outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0081	LB	U	A	Hole in emergency levee to expose fire hydrant. 2017 NOTE: Could not locate	Relocate fire hydrant. Backfill erosion to the design grade, compact in lifts, and reseed with grass	Unresolved	Resolved	Hydrant has been removed and levee reconstructed
MINL_2017_a_0082	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0084	LB	U	U	A fence is located at the landside toe of the levee embankment	Verify levee easement. Relocate fence encroachment outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0085	LB	U	U	Trees ( > 2 inches in diameter) and long vegetation located on both levee slopes	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0086	LB	U	U	Sewer manhole on riverside levee slope	Verify levee easement; Relocate encroachments outside of levee easement	Unresolved	Unresolved	
MINL_2017_a_0087	LB	U	A	Trees and brush growing on the landside and riverside levee slopes	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Landside stability berm constructed as part of Minot SWIF C CIP
MINL_2017_a_0088	LB	U	A	New trees planted on both levee slopes. 2017 NOTE: Some trees have been cut down, but debris has not been removed	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0089	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0090	LB	U	U	Zoo fence and long vegetation on levee riverside slope	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Ensure environmental compliance with all appropriate agencies prior to removal; Relocate encroachments/debris outside of levee easement, unless approved by Corps;	Unresolved	Unresolved	
MINL_2017_a_0091	LB	M	U	Gate well for Big Roosevelt Loop (upper) has opaque gate height indicator, requiring operator to open gate well and look at gate to check height	Replace or modify gate well indicator to allow operator to not have to work next to an open well (OSHA)	Unresolved	Unresolved	
MINL_2017_a_0092	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP

MINL_2017_a_0093	LB	M	U	Sediment is partially blocking a discharge pipe in the ponding area. Could not observe in 2016 or 2017	Remove obstructions and sediment from ponding area	Unresolved	Unresolved	
MINL_2017_a_0094	LB	M	U	Big Roosevelt Loop (Lower) has opaque gate well indicator which requires operator to work over an open well in order to check gate height	Modify gate well indicator so that operator does not have to stand over an open gate well (OSHA)	Unresolved	Unresolved	
MINL_2017_a_0095	LB	U	U	Residential encroachments include structures and material storage. A few items have been removed as a result of buyouts	Verify levee easement. Relocate encroachment structures outside of levee easement, unless approved by Corps	Unresolved	Unresolved	Levee easements are being verified
MINL_2017_a_0096	LB	U	U	Culvert through levee leaked during the 2011 flood event. 2017 NOTE: Did not observe culvert, photograph is of nearby area	Determine cause of leaking; Repair culvert as necessary to prevent future leakage	Unresolved	Unresolved	
MINL_2017_a_0097	LB	U	A	Large tree on levee crown	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	
MINL_2017_a_0098	LB	U	U	Power poles and guard rail on levee crown	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps;	Unresolved	Unresolved	
MINL_2017_a_0099	LB	U	A	PVC pipe and debris on levee crown	Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations	Unresolved	Resolved	Debris has been removed
MINL_2017_a_0100	LB	U	A	The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspection of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINL_2017_a_0102	LB	U	A	The sheet pile grade control structure in the vicinity of Souris Court area has moved and riprap downstream of the structure has been displaced	Replace riprap with hard, durable rock of suitable size	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0103	LB	U	U	Fence across levee crown	Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINL_2017_a_0104	LB	M	U	Gate height indicator is opaque, requiring operator to open well in order to check gate height while operating gate. Gate over well was propped open with broken chunks of styrofoam	Modify gate height indicator to allow for safe operation (OSHA). Repair grate and affix safely	Unresolved	Unresolved	
MINL_2017_a_0105	LB	M	U	Culvert trash rack is too small for opening and does not appear to be affix appropriately	Obtain appropriately sized trash rack and affix in place	Unresolved	Unresolved	
MINL_2017_a_0106	LB	U	A	Irrigation line through levee	Verify levee easement; Relocate encroachments outside of levee easement	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0107	LB	U	A	Large trees and brush cover the levee embankment and channel bank	Remove unwanted vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0109	LB	U	A	Utility boxes located on landside slope of levee	Verify levee easement; Relocate encroachments outside of levee easement	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0110	LB	U	A	A portion of the riverside levee section has slid into the river due to channelization created by right bank erosion	Remedial actions required to restore levee slope per plan. Solutions must be approved by Corps	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0111	LB	U	A	Buried communications cable within levee prism.	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps; Verify approval was received from Corps to perform excavations	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINL_2017_a_0112	LB	U	U	Fence and retaining wall in landside slope of levee	Verify levee easement; Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINL_2017_a_0113	LB	M	U	Erosion and bank caving along the left channel bank and levee riverside slope and toe	Backfill erosion to the design grade, compact in lifts, and reseed with grass	Unresolved	Unresolved	
MINL_2017_a_0114	LB	U	U	Irrigation line trenched into levee	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINL_2017_a_0116	LB	U	U	Trees (> 2 inches in diameter) located on levee	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINL_2017_a_0117	LB	U	U	Multiple irrigation systems, including pipe and under ground electric, have been installed through the levee embankment.	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINL_2017_a_0122	LB	U	A	Megger testing has not been conducted in previous 2 years	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations. Check with Corps for additional requirements	Unresolved	Resolved	Megger testing completed by City

MINL_2017_a_0124	LB	U	A	Megger testing has not been performed in the last 2 years	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations. Contact Corps for additional requirements	Unresolved	Resolved	Megger testing completed by City
MINL_2017_a_0125	LB	U	U	Fabric connection for confined space air circulation duct has stitching that has come loose	Replace duct connection to prevent safety hazard	Unresolved	Unresolved	
MINL_2017_a_0131	LB	U	U	Gate height indicator is broken, requiring operator to open gate well to check gate height	Fix gate height indicator to prevent safety concern (OSHA)	Unresolved	Unresolved	
MINL_2017_a_0132	LB	U	A	Megger testing has not been performed on Roosevelt Park pump station pumps in the last two years	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations. Contact Corps for testing requirements	Unresolved	Resolved	Megger testing completed by City
MINL_2017_a_0138	LB	U	A	Megger testing has not been conducted in the last 2 years	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations. Contact Corps for guidance	Unresolved	Resolved	Megger testing completed by City

**April 2019 Interim SWIF Continuation Report  
Right Bank Deficiency Tracking Table**

USACE 2017 Routine Inspection ID	Bank	2017 Rating	April 2019 Rating	USACE Remarks	USACE Action	2017 Status	April 2019 Status	Sponsor Remarks
MINR_2017_a_0002	RB	M	M	Gate stuck open, no debris observed, gate is corroded. 2017 NOTE: Sponsor indicated this portion of levee will be abandoned with new design	Ensure proper gate alignment; Remove debris and obstructions if present; Ensure gate is operational, lubricate, paint	Unresolved	Unresolved	
MINR_2017_a_0005	RB	U	U	Power pole and construction material located on levee prism. 2017 NOTE: Sponsor indicated this portion of levee will be abandoned with new design.	Verify levee easement. Relocate encroachment outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINR_2017_a_0007	RB	U	U	Trees (> 2 inches in diameter) and power poles along levee toe for the entire reach. 2017 NOTE: Sponsor indicated this portion of levee will be abandoned with new design.	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps;	Unresolved	Unresolved	
MINR_2017_a_0008	RB	M	A	Portion of landside levee embankment has been excavated and then re-filled. Sponsor indicated workers had dug into embankment to perform a television inspection of a culvert.	Verify approval was received from Corps to perform excavations.	Unresolved	Resolved	Excavation was conducted as part of Minot SWIF B CIP that was reviewed and permitted by USACE
MINR_2017_a_0009	RB	M	M	Roadway and dumpsters potentially within levee easement	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0010	RB	U		Vegetation on and along the landside levee slope	Verify location of levee easement; Remove unwanted vegetation from vegetation-free zone, up to levee easement; Remove root ball, backfill, compact in lifts and reseed with grass. Ensure environmental compliance with appropriate agencies prior to removal	Unresolved	Unresolved	
MINR_2017_a_0018	RB	U		Sponsor indicated storm drain pipe (PVC) exits levee embankment. Pipe is partially exposed; however, no supporting structure or energy dissipator is visible.	Ensure pipe has been approved by Corps. If not approved, pipe is an encroachment, and the storm drain system will need to be redesigned with Corps approval.	Unresolved	In Progress	Deficiency will be resolved by Minot SWIF D CIP
MINR_2017_a_0019	RB	U		Boat dock driven into riverside levee slope. Steps and other residential debris on slope as well	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0020	RB	U		Trees (> 2 inches in diameter) and long vegetation on both slopes of levee	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal;	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINR_2017_a_0022	RB	M		Strange mound in levee; approximately 5 x 8 feet	Investigate; Restore levee cross-section per plan	Unresolved	Unresolved	
MINR_2017_a_0025	RB	U		Trees (> 2 inches in diameter) located within 15 feet of levee toe	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass; Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	Deficiency is being managed by IRRM, a levee will no longer be needed once Maple Diversion Phase of MREFPP is complete
MINR_2017_a_0026	RB	U		Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section	Evaluate the level of protection and determine when closures need to be installed	Unresolved	Unresolved	Deficiency is being managed by IRRM, a levee will no longer be needed once Maple Diversion Phase of MREFPP is complete
MINR_2017_a_0027	RB	U		Rutting greater than 6 inches due to vehicle traffic	Backfill ruts to the design grade, compact in lifts, and reseed with grass; Discourage vehicle traffic	Unresolved	Unresolved	
MINR_2017_a_0028	RB	U		Irrigation line through levee	Verify levee easement; Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0031	RB	U		Irrigation line through lower third of levee	Relocate encroachments/debris outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINR_2017_a_0032	RB	U		Raised flower beds on the levee crown and landside slope	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0033	RB	U		Large tree (> 2 inches in diameter) in the levee crown. 2017 NOTE: Tree has been cut down, but root ball has not been removed.	Remove vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINR_2017_a_0035	RB	U		The channel has erosion greater than a 1 foot horizontal deviation from design grade or cross section. Exposed pipe and the walking path is breaking off into the river	Conduct engineering evaluation to determine best method of repair. Complete remedial action to ensure slope stability and protection.	Unresolved	Unresolved	

MINR_2017_a_0036	RB	U		Fence and debris at landside levee toe	Verify levee easement; Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0037	RB	M		Large animal burrow	Excavate, inspect, backfill, compact in lifts, and reseed with grass; Improve animal burrow control program	Unresolved	Unresolved	
MINR_2017_a_0038	RB	U		Pipe through 1st Street bridge abutment missing a flap gate	Install flap gate on drainage pipe	Unresolved	In Progress	Deficiency will be resolved by Minot SWIF D CIP
MINR_2017_a_0039	RB	U		Trees ( > 2 inches in diameter) located within 15 feet of levee toes	Verify location of levee easement; Remove vegetation from vegetation-free zone, up to levee levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with appropriate agencies prior to removal	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINR_2017_a_0041	RB	U		Erosion along the levee crown and localized slope instability with steep sloughing riverside levee slope and channel bank	Conduct an engineering evaluation of the erosion and slope stability. Complete remedial action to ensure a stable slope	Unresolved	Unresolved	
MINR_2017_a_0042	RB	U		Power pole located at levee toe; 2017 NOTE: No point for sod cover due to area being under construction	Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps	Unresolved	Unresolved	
MINR_2017_a_0043	RB	U		Irrigation pipe through levee	Verify levee easement; Relocate encroachments/debris outside of levee easement, unless approved by Corps	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINR_2017_a_0045	RB	U		PVC pipe through levee at toe	Verify levee easement; Relocate encroachments outside of levee easement	Unresolved	In Progress	Pipe is needed for trapped drainage due to levee. Flaggate is being installed as part of Minot SWIF D CIP
MINR_2017_a_0046	RB	U		Railroad tracks on top of levee	Verify levee easement. Relocate railroad tracks outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0047	RB	U		PVC pipe extending from riverward slope of levee without gate	Verify levee easement. Determine origin of the pipe and remove	Unresolved	In Progress	Pipe is needed for trapped drainage due to levee. Flaggate is being installed as part of Minot SWIF D CIP
MINR_2017_a_0048	RB	U		Large trees on the levee embankment and right channel bank	Verify location of levee easement. Remove vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with appropriate agencies prior to removal	Unresolved	Unresolved	
MINR_2017_a_0049	RB	M		Thick vegetation; Fence on top of levee embankment part of zoo animal containment that was previously approved by Corps.	Recommend relocating fence outside of levee easement; Remove unwanted vegetation within levee easement	Unresolved	Unresolved	
MINR_2017_a_0050	RB	U		Thick vegetation and trees	Remove unwanted vegetation from vegetation-free zone, up to the levee easement; Remove root ball, backfill, compact in lifts, and reseed with grass	Unresolved	Unresolved	
MINR_2017_a_0051	RB	U		Construction debris and vehicles within levee easement	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Resolved	Items have been removed and a setback levee has been constructed as part of Minot SWIF C CIP
MINR_2017_a_0052	RB	M		Longitudinal cracking along the levee crown extends approximately 20-25 feet and appears to indicate local slope instability; 2017 NOTE: Cracks appear to have filled with soil	Conduct an engineering evaluation of the cracking and slope stability. Complete remedial action to ensure a stable slope	Monitor	Resolved	Setback levee has been constructed as part of Minot SWIF C CIP
MINR_2017_a_0053	RB	M		Erosion beginning along riverside levee	Backfill erosion to the design grade, compact in lifts, and reseed with grass; Reevaluate erosion protection	Unresolved	Unresolved	
MINR_2017_a_0055	RB	U		Erosion on riverside levee; Steep slope; Plastic and sand bags showing for approximately 200 yds. from emergency raise. 2017 NOTE: Could not locate plastic and sand bags due to significant vegetation	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Reevaluate erosion protection	Unresolved	Unresolved	
MINR_2017_a_0057	RB	U		Trees on the levee embankment	Verify location of levee easement; Remove vegetation from vegetation-free zone, up to the levee easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINR_2017_a_0059	RB	U		Fire hydrant and power lines on riverside toe	Verify levee easement; Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0062	RB	U		Multiple storm drains without flap covers penetrate levee slope and empty into a poorly designed, deteriorating concrete and riprap energy dissipator. Significant erosion has occurred behind dissipator.	Verify levee easement. Relocate encroachments/debris outside of levee easement. Backfill levee in lifts as necessary to return section to original design	Unresolved	In Progress	Deficiency will be resolved by Minot SWIF D CIP

MINR_2017_a_0063	RB	U		Erosion of channel slope from run off; 2017 NOTE: Hard to see in picture; Approximately 4 feet deep x 20 feet wide	Backfill erosion to the design grade, compact in lifts, and reseed with grass; Reevaluate drainage and erosion protection	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINR_2017_a_0064	RB	U		Significant erosion into channel bank that has increased in size from the previous routine inspection 2017 NOTE: Sponsor is preparing contract and bids to repair this erosion.	Backfill erosion to the design grade, compact in lifts, and reseed with grass or provide rock bank protection. Reevaluate interior drainage and erosion protection	Unresolved	Resolved	Deficiency resolved by Minot SWIF C CIP
MINR_2017_a_0065	RB	U		Bank erosion is causing shoaling within the channel that is diverting flow towards the left bank, resulting in left bank erosion. 2017 Note: Sponsor is setting up contract for bids to repair this erosion	Remove shoaling. Restore channel to the design grade and cross section. Ensure environmental compliance with all appropriate agencies prior to removal	Unresolved	Unresolved	
MINR_2017_a_0067	RB	U		Significant erosion of channel bank. 2017 NOTE: Vegetation makes erosion difficult to see in photographs	Backfill erosion to the design grade, compact in lifts, and reseed with grass or provide rock bank protection. Reevaluate drainage and erosion protection	Unresolved	Unresolved	
MINR_2017_a_0069	RB	U		Raspberry bushes planted on riverside levee toe, with fence. 2017 NOTE: Bushes have been removed, but fence, debris, and irrigation lines remain	Remove unwanted vegetation from vegetation-free zone, up to the levee easement, Relocate encroachments outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0070	RB	U		Erosion on riverside levee	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Reevaluate erosion protection	Unresolved	Unresolved	
MINR_2017_a_0071	RB	U		Two pipes drilled through levee approximately 4 feet below crown are covered in grass and tree stump debris by landowner. Erosion has gotten worse since the prior inspection	Verify levee easement. Determine origin of pipes and remove from levee easement	Unresolved	Unresolved	
MINR_2017_a_0073	RB	U		Levee is caving on riverside crown, there is significant erosion along this reach, the slope is very steep, if not corrected more caving will likely occur. 2017 NOTE: Trees are beginning to fall out of slope	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Remove vegetation. Reevaluate erosion protection	Unresolved	Unresolved	
MINR_2017_a_0075	RB	U		Sod appears to have been deliberately removed	Reestablish sod cover	Unresolved	Unresolved	
MINR_2017_a_0077	RB	U		Power pole placed in 2016 in center of levee remains	Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0079	RB	U		Buried gas line through levee crown; 2017 NOTE: Could not locate due to flag missing and significant vegetation	Verify levee easement; Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0081	RB	U	A	Fence added in 2016 at levee toe has not been removed	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Resolved	Fence has been removed
MINR_2017_a_0082	RB	U		Portion of levee removed for interior drainage. 2017 NOTE: Construction activities and multiple lines of exposed pipe laid in dug drainage channel	Verify levee easement. Replace portion of levee that has been removed. Seek approval by Corps prior to installation	Unresolved	Unresolved	
MINR_2017_a_0083	RB	U		Levee crown significantly reduced behind mobile home, potentially due to excavation	Verify levee easement. Relocate encroachments/debris outside of levee easement. Reestablish levee section to plans	Unresolved	Unresolved	
MINR_2017_a_0084	RB	U		Culvert with flap gate does not fully close due to debris. 2017 NOTE: Sponsor indicated that dead animals had been found inside culvert last year.	Verify culvert is within plan. If not, remove it due to being an encroachment. If it is within plan, clean and maintain as necessary.	Unresolved	Unresolved	
MINR_2017_a_0085	RB	U		Riverward slope eroded. Levee crown is less than 5 feet wide	Perform an engineering evaluation of the areas and perform remedial action	Unresolved	Unresolved	
MINR_2017_a_0087	RB	M		Trailer steps placed against landside levee slope	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0088	RB	U		Erosion of the levee riverside toe and slope; levee crest less than 3 foot wide	Perform an engineering evaluation of the areas and perform remedial action	Unresolved	Unresolved	
MINR_2017_a_0089	RB	U		Flow from culvert is eroding channel bank and levee. Erosion has continued to grow in size unabated since 2014 inspection	Excavate and replace the pipe, restore pipe foundation and channel bank, backfill, and compact in lifts	Unresolved	In Progress	Deficiency will be resolved by Minot SWIF D CIP
MINR_2017_a_0090	RB	U		The project levee embankment culverts have not been videotaped or visually inspected within the past 5 years	Perform video or visual inspections of the project culverts	Unresolved	Resolved	Pipe inspected as part of Minot SWIF B CIP
MINR_2017_a_0107	RB	U		Sewer manhole located at levee crown. 2017 NOTE: Sponsor indicated this portion of levee will be abandoned with new design.	Verify levee easement. Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations	Unresolved	Unresolved	
MINR_2017_a_0108	RB	M		Gate well lifter and indicator appear to be in good condition; however, gate lifting is performed by visually monitoring gate through the open well during lift. 2017 NOTE: Sponsor indicated this portion of levee will be abandoned with new design.	Determine method of operation that does not require the gate operator to work over an open well (OSHA compliance)	Unresolved	Unresolved	
MINR_2017_a_0109	RB	U		Manhole passing through levee crown. 2017 NOTE: Sponsor indicated this portion of levee will be abandoned with new design.	Verify levee easement. Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations	Unresolved	Unresolved	

MINR_2017_a_0116	RB	U		Sewer pipe in levee embankment	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0117	RB	U		Sewer manhole in levee crown	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0120	RB	M		Concrete channel protection has begun eroding on southeastern tie-in with levee toe.	Backfill erosion to the design grade, compact in lifts, and reseed with grass. Reevaluate drainage and erosion protection. Remedial action is required to correct undermining. Remedial actions must be approved by the Corps	Unresolved	Unresolved	
MINR_2017_a_0121	RB	U		Power pole and fence in levee crown.	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0122	RB	U		Power pole and stabilizing cables as well as fence within levee easement	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0123	RB	M		Animal burrows present	Excavate, inspect, backfill, compact in lifts, and reseed with grass animal burrow locations. Improve animal burrow control program.	Unresolved	Unresolved	
MINR_2017_a_0126	RB	M		Gate well crank appears to be in good condition; however, gate well height indicator has been replaced by opaque metal pole, requiring operator to look into well.	Determine method of operation that does not require the operator to work over an open well (OSHA compliance)	Unresolved	Unresolved	
MINR_2017_a_0136	RB	U		Manhole has been placed in levee slope	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0138	RB	U		Irrigation line on levee slope	Verify levee easement. Relocate encroachments/debris outside of levee easement	Unresolved	Unresolved	
MINR_2017_a_0142	RB	U		Significant erosion has occurred in levee slope around culvert	Restore levee section. Install appropriate energy dissipation method with Corps approval if culvert is on plans	Unresolved	Unresolved	
MINR_2017_a_0150	RB	M		Minor corrosion on gate well crank at Moose Lodge pump station.	Remove corrosion and paint. Lubricate as necessary per O&M	Unresolved	Unresolved	
MINR_2017_a_0151	RB	M		Confined space exhaust fan has holes along fabric duct connection	Replace duct connection	Unresolved	Unresolved	
MINR_2017_a_0152	RB	U		Megger tests have not been conducted within the past two years	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations	Unresolved	Resolved	Megger testing completed by City
MINR_2017_a_0154	RB	U		Trash rack is bent and damaged. Nut from rack to culvert outlet is missing	Refasten trash rack	Unresolved	Unresolved	
MINR_2017_a_0156	RB	M		Minor corrosion on gate well lifter crank	Clean corrosion and repaint. Continue to grease per O&M	Unresolved	Unresolved	
MINR_2017_a_0157	RB	U		Megger tests not conducted within past two years	Recommend Megger testing and documentation thereof for the motor cables, windings, and power cables serving pump motors to ensure their reliability in future operations	Unresolved	Resolved	Megger testing completed by City