



**US Army Corps
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Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: Souris River - Minot - Right Bank

Public Sponsor(s): City of Minot Public Works

Public Sponsor Representative: Dan Jonasson

Sponsor Phone: 701-857-4140

Sponsor Email: dan.jonasson@minotnd.org

Corps of Engineers Inspector: Joseph Hemmer Inspection Start Date: 10/30/2019

Inspection End Date: 10/30/2019

Inspection Report Prepared By: Luke Schmidt Date Report Prepared: 1/2/2020

Internal Technical Review (for Periodic Inspections) By: Eric Wittine Date of ITR: _____

Final Approved By: _____ Date Approved: _____

Type of Inspection:	<input type="checkbox"/> Initial Eligibility Inspection	Overall Segment / System Rating:	<input type="checkbox"/> Acceptable
	<input checked="" type="checkbox"/> Continuing Eligibility Inspection (Routine)		<input type="checkbox"/> Minimally Acceptable
	<input type="checkbox"/> Continuing Eligibility Inspection (Periodic)		<input type="checkbox"/> Unacceptable
Contents of Report:	<input checked="" type="checkbox"/> Instructions <input type="checkbox"/> Initial Eligibility Inspection <input checked="" type="checkbox"/> General Items for All Flood Control Works <input checked="" type="checkbox"/> Levee Embankment <input checked="" type="checkbox"/> Concrete Floodwalls <input type="checkbox"/> Sheet Pile and Concrete I-walls <input checked="" type="checkbox"/> Interior Drainage System <input checked="" type="checkbox"/> Pump Stations <input checked="" type="checkbox"/> FDR System Channels	<p>Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.</p> <p>Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.</p>	



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Flood Damage Reduction Segment / System Public Sponsor Pre-Inspection Form

The following information is to be provided by the levee district sponsor prior to an inspection. This information will be used to help evaluate the organizational capability of the levee district to manage the levee segment / system maintenance program.

1. Levee segment / system and district: (name of the segment / system and levee district) Souris River - Minot - Right Bank for CEMVP
2. Reporting period: (month/day/year to month/day/year) September 2018 - October 2019
3. Summary of maintenance required by last inspection report: Reference SWIF
4. Summary of maintenance performed this reporting period: Rip-Rap Spraying, Levee Mowing, Routine Maintenance on Storm Water Pump Stations and gatewells, and CIP Projects – SWIF D
5. Summary of maintenance planned next reporting period: MINR_2018_a_0129, MINR_2018_a_0134, MINR_2018_a_0126, MINR_2018_a_0128, MINR_2018_a_0130, MINR_2018_a_0132, MINR_2018_a_0135, MINR_2018_a_0136, MINR_2018_a_0080, MINR_2018_a_0127, MINR_2018_a_0131, MINR_2018_a_0133, will be incorporated as part of a CIP project - SWIF E which is in design right now. MINR_2018_a_0114, MINR_2018_a_0116 will be remediated next year as part of a Corps approved maintenance project.
6. Summary of changes to segment / system since last inspection: MINR_2018_a_0079, MINR_2018_a_0097, MINR_2018_a_0099, MINR_2018_a_0117, MINR_2018_a_0046, MINR_2018_a_0149, MINR_2018_a_0150, MINR_2018_a_0078, was included in SWIF D corrections. MINR_2018_a_0113 is City operated barricades to prevent unwanted traffic from using the levee crown. MINR_2018_a_0144 was included in the Corps Plans – Page 8 of 16 Drawing RI-P-60/34 Reach B-1.
7. Problems/ issues requiring the assistance of the US Army Corps of Engineers: Request funding to repair erosion East of Broadway Bridge on right bank – erosion is from 2011 flood.



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Public Sponsor Pre-Inspection Report

The following information is to be provided by the levee district sponsor prior to an inspection

8. Levee district organization: (elected or appointed levee district officials and key employees)

Name	Position	Mailing Address	Phone Number	Email Address
Dan Jonasson	Director of Public Works	PO Box 5006, Minot ND 58703-5006	701-857-4140	dan.jonasson@minotnd.org
Mike Love	Principal/Civil Engineer		701-237-5065	mlove@houstoneng.com

General Instructions for the Inspection of Flood Damage Reduction Segments / Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	Periodic Inspections
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate each Flood Damage Reduction "Segment" of the system. The overall system rating will be the lowest segment rating in the system.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.



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E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled "Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall Segment / System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the segment / system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the segment / system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

- a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
- b. Photos of the general system condition and noted deficiencies.
- c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
- d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
- e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Segments / Systems

For use during all inspections of all Flood Damage Reduction Segments / Systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Operations and Maintenance Manuals	A	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	A	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction



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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth ¹	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	MINR_2019_a_0066: Station_1 717+00: Station_2 740+00: Trees along the top of the channel bank within the easement area: Verify channel easement; Remove unwanted vegetation up to the channe easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal (U)
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	MINR_2019_a_0077: Station_1 693+89: Station_2 697+65: Overgrown vegetation growing at riverside toe of levee prevents inspection to water's edge: Mow grass on a routine basis and maintain in compliance with
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	operation and maintenance manual (A=0-6", M=6"-12", U=12+") (M) MINR_2019_a_0088: Station_1 647+00: Station_2 692+17: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within 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) MINR_2019_a_0101: Station_1 632+74: Station_2 644+54: Trees (> 2 inches in diameter) with long vegetation are located along the levee alignment: 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) MINR_2019_a_0124: Station_1 572+72: Station_2 588+37: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope: 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) MINR_2019_a_0132: Station_1 Unnamed Road: Station_2 565+84: Significant vegetation along levee slopes and crown, including trees with trunks greater than 2 inches in diameter, cut trees trunks with root balls intact. Overgrown vegetation and bush are located along the alignment: Remove unwanted vegetation from vegetation-free zone, up to levee easement. Remove root ball, backfill, compact in lifts, and reseed grass. Ensure environmental compliance

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				<p>with appropriate agencies prior to removal (U)</p> <p>MINR_2019_a_0144: Station_1 828+57: Station_2 847+38: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within 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)</p> <p>MINR_2019_a_0145: Station_1 803+00: Station_2 806+19: Trees (> 2 inches in diameter) within the levee and along the landside and riverside toe that appear to be within 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)</p> <p>MINR_2019_a_0146: Station_1 783+61: Station_2 790+48: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within 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)</p> <p>MINR_2019_a_0147: Station_1 763+35: Station_2 770+79: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within 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)</p> <p>MINR_2019_a_0150: Station_1 707+70: Station_2 713+62: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within 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)</p>
2. Sod Cover	U	A	There is good coverage of sod over the levee.	<p>MINR_2019_a_0127: Station_1 580+00: Sod appears to have been deliberately removed to place a garden at the landside levee toe: Reestablish sod cover (U)</p>
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
3. Encroachments	U	U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
		A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	<p>MINR_2019_a_0013: Station_1 848+00: Fire Hydrant within levee easement. 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 (U)</p> <p>MINR_2019_a_0014: Station_1 847+38: Sewer manhole located at levee crown. 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 (U)</p> <p>MINR_2019_a_0025: Station_1 847+38: Manhole passing through levee crown. Sponsor indicated this portion of levee will be abandoned with new design: Verify levee easement. Relocate encroachments outside of levee easement. Verify approval was received from Corps to perform excavations (U)</p> <p>MINR_2019_a_0040: Station_1 819+61: 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 (U)</p> <p>MINR_2019_a_0050: Station_1 798+15: Sewer manhole in levee crown: Verify levee easement. Relocate encroachments/debris outside of levee easement (U)</p> <p>MINR_2019_a_0051: Station_1 796+98: Sewer pipe in levee embankment: Verify levee easement. Relocate encroachments/debris outside of levee easement (U)</p> <p>MINR_2019_a_0055: Station_1 783+61: Power pole located in levee alignment: Verify levee easement. Relocate encroachments outside of levee easement (U)</p> <p>MINR_2019_a_0057: Station_1 770+55: Irrigation line on top of levee: Monitor irrigation line and prevent homeowner from trenching into the levee or eroding out the levee embankment (M)</p> <p>MINR_2019_a_0058: Station_1 761+00: Station_2 770+50: Fences, residential debris, power poles, flower beds, irrigation lines, and houses next to and/or on top of levee. Emergency operations will be impeded by these encroachments: Verify location levee easement. Remove or</p>
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	

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			<p>relocate encroachments outside of the levee easement (U)</p> <p>MINR_2019_a_0076: Station_1 696+64: New power pole located at levee toe: Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps (U)</p> <p>MINR_2019_a_0090: Station_1 676+91: PVC pipe through levee at toe. Flap gate placed on pipe in 2019: Verify levee easement; Relocate encroachments outside of levee easement unless approved by Corps (M)</p> <p>MINR_2019_a_0092: Station_1 670+00: PVC pipe through levee embankment. Flap gate placed on end of the pipe in 2019: Verify levee easement. Determine origin of the pipe and relocate encroachments outside of easement unless approved by Corps (M)</p> <p>MINR_2019_a_0102: Station_1 625+70: Station_2 643+37: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps (U)</p> <p>MINR_2019_a_0110: Station_1 624+00: Manhole has been placed in levee slope: Verify levee easement. Relocate encroachment outside of levee easement, unless approved by the Corps (U)</p> <p>MINR_2019_a_0123: Station_1 572+99: Station_2 589+25: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps (U)</p> <p>MINR_2019_a_0125: Station_1 587+80: Two pipes drilled through levee approximately 4 feet below crown are covered in grass and tree stump debris by landowner. The 2018 Culvert Inspection indicates that the pipes have minor sags and no closure structures: Verify levee easement. Determine origin of pipes and remove from levee easement, unless approved by Corps (U)</p> <p>MINR_2019_a_0131: Station_1 578+04: Burried gas line through levee crown; NOTE: Could not locate flags or gas line: Verify levee easement; Relocate encroachments/debris outside of levee easement (U)</p> <p>MINR_2019_a_0133: Station_1 565+43: White fence added in 2016 at levee toe and construction materials have not been</p>

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				removed.: Verify levee easement. Relocate encroachments/debris outside of levee easement (U) MINR_2019_a_0134: Station_1 545+00: Portion of levee removed for interior drainage. 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 (U) MINR_2019_a_0135: Station_1 563+00: Levee crown significantly reduced behind mobile home, potentially due to excavation: Verify levee easement. Relocate encroachments outside of levee easement. Reestablish levee section (U) MINR_2019_a_0140: Station_1 541+00: Materials and debris placed along the toe of the levee: Verify levee easement. Relocate encroachments/debris outside of levee easement (M) MINR_2019_a_0149: Station_1 714+07: Station_2 715+48: Fence and debris at landside levee toe: Verify levee easement; Relocate encroachments outside of levee easement (U) MINR_2019_a_0151: Station_1 646+00: Station_2 678+00: Multiple encroachments (railroad, fences, etc.) along the levee alignment (Zoo animal control fence approved by Corps): Relocate encroachments outside of easement, unless approved by the Corps (U)
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	U	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	MINR_2019_a_0054: Station_1 784+15: 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 (U)
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	A	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	

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6. Erosion/ Bank Caving	U	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	MINR_2019_a_0073: Station_1 703+70: 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 (U) MINR_2019_a_0084: Station_1 Little Roosevelt PS: Erosion and bank caving along the levee toe. Force main exposed due to erosion at pump station gate: Backfill erosion to the design grade, compact in lifts, and re-sod; Reevaluate drainage and erosion protection (U) MINR_2019_a_0126: Station_1 588+03: 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. NOTE: Tree fell over and slope continues to erode: Backfill erosion to the design grade, compact in lifts, and reseed with grass. Remove vegetation. Reevaluate erosion protection (U) MINR_2019_a_0137: Station_1 563+00: 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 (U) MINR_2019_a_0138: Station_1 545+00: Riverward slope eroded. Levee crown is less than 5 feet wide: Preform an engineering evaluation of the areas and perform remedial action (U) MINR_2019_a_0141: Station_1 541+00: Erosion of the levee riverside toe and slope; levee crest less than 3 foot wide: Preform an engineering evaluation of the areas and perform remedial action (U) MINR_2019_a_0152: Station_1 633+96: Station_2 643+69: Erosion and steep channel bank along the riverside levee slope: Evaluate steep bank and flatten slope. Backfill erosion to design grade, compact in lifts, and evaluate the need for erosion protection (U)
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement ²	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
8. Depressions/ Rutting	M	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	MINR_2019_a_0139: Station_1 560+00: Depression and 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 (M)
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	M	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	MINR_2019_a_0069: Station_1 714+07: Large animal burrow: Excavate, inspect, backfill, compact in lifts, and reseed with grass; Improve animal burrow control program (M)
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	
11. Culverts/ Discharge Pipes ³ (This item includes both concrete and corrugated metal pipes.)	U	A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	MINR_2019_a_0153: Station_1 500+00: Station_2 500+00: The 2018 Culvert Inspection Report indicates that there is a small hole in pipe upstream of line of protection: The culvert hole should be repaired (M) MINR_2019_a_0154: Station_1 571+00: Station_2 570+00: The 2018 Culvert Inspection Report indicates slight pipe deformations: Monitor the pipe for further deformations (M) MINR_2019_a_0155: Station_1 664+00: Station_2 664+00: The 2018 Culvert Inspection Report indicated that the pipe has a complete blockage in the line and the upstream structure was not found: Verify if the pipe is needed and either replace or remove pipe accordingly (U) MINR_2019_a_0156: Station_1 NA: Station_2 NA: The 2018 Houston Culvert Inspection Report indicates the pipe is blocked by sediment and the contractor was not able to preform a full inspection: Verify with property owner if the
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	pipe is needed. If the pipe is not needed, property owner to remove the pipe (U) MINR_2019_a_0157: Station_1 Moose Lodge PS: Station_2 Moose Lodge PS: The 2018 Houston Culvert Inspection Report indicates that there is excessive sedimentation in gravity outfall: Remove sediment from outfall. Sponsor indicates that this is to be removed as part of MREFPP MI-4 (U)
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments & Bank Protection	U	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	MINR_2019_a_0108: Station_1 624+00: The existing riprap is scoured out, deteriorated, missing, and covered by organics and soil.: 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)
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	NA	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	NA	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
15. Seepage	A	U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
		A	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

¹ If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

² Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

³ The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

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	<p>Inspect ID: MINR_2019_a_0066 Title: USACE_CEMVP_MINR_2019_a_0066_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees along the top of the channel bank within the easement area; Action: Verify channel easement; Remove unwanted vegetation up to the channe easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal; Station_1: 717+00; Station_2: 740+00</p>
	<p>Inspect ID: MINR_2019_a_0066 Title: USACE_CEMVP_MINR_2019_a_0066_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees along the top of the channel bank within the easement area; Action: Verify channel easement; Remove unwanted vegetation up to the channe easement. Remove root ball, backfill, compact in lifts, and reseed with grass. Ensure environmental compliance with all appropriate agencies prior to removal; Station_1: 717+00; Station_2: 740+00</p>





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 <p>A photograph showing a levee embankment with a grassy slope and a body of water. The vegetation is overgrown, and the water is calm. A timestamp in the bottom right corner reads "10 30 2019 11:51".</p>	<p>Inspect ID: MINR_2019_a_0077 Title: USACE_CEMVP_MINR_2019_a_0077_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Minimally Acceptable; Remarks: Overgrown vegetation growing at riverside toe of levee prevents inspection to water's edge; Action: Mow grass on a routine basis and maintain in compliance with operation and maintenance manual (A=0-6", M=6"-12", U=12+"); Station_1: 693+89; Station_2: 697+65</p>
 <p>A photograph showing a levee embankment with a grassy slope and a body of water. Several trees are visible in the background, and the water is calm. A timestamp in the bottom right corner reads "10 30 2019 11:36".</p>	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>



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	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>
	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_3.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>



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	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_4.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>
	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_5.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>





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	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_6.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>
	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_7.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>





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	<p>Inspect ID: MINR_2019_a_0088 Title: USACE_CEMVP_MINR_2019_a_0088_8.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Multiple trees with trunks greater than 2 inches in diameter appear to be within the levee alignment and within the vegetation free zone; Action: 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; Station_1: 647+00; Station_2: 692+17</p>
	<p>Inspect ID: MINR_2019_a_0101 Title: USACE_CEMVP_MINR_2019_a_0101_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) with long vegetation are located along the levee alignment; Action: 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; Station_1: 632+74; Station_2: 644+54</p>



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	<p>Inspect ID: MINR_2019_a_0101 Title: USACE_CEMVP_MINR_2019_a_0101_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) with long vegetation are located along the levee alignment; Action: 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; Station_1: 632+74; Station_2: 644+54</p>
	<p>Inspect ID: MINR_2019_a_0124 Title: USACE_CEMVP_MINR_2019_a_0124_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope; Action: 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; Station_1: 572+72; Station_2: 588+37</p>



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	<p>Inspect ID: MINR_2019_a_0124 Title: USACE_CEMVP_MINR_2019_a_0124_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope; Action: 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; Station_1: 572+72; Station_2: 588+37</p>
	<p>Inspect ID: MINR_2019_a_0124 Title: USACE_CEMVP_MINR_2019_a_0124_3.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope; Action: 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; Station_1: 572+72; Station_2: 588+37</p>





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 <p>A photograph showing a grassy levee embankment next to a body of water. A large tree trunk is visible in the foreground on the left. The water is calm and reflects the sky. The grass is green with some fallen leaves. A timestamp '39 30 2019 13:40' is visible in the bottom right corner of the photo.</p>	<p>Inspect ID: MINR_2019_a_0124 Title: USACE_CEMVP_MINR_2019_a_0124_4.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope; Action: 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; Station_1: 572+72; Station_2: 588+37</p>
 <p>A photograph showing a grassy levee embankment next to a body of water. A large tree trunk is visible in the foreground on the left. The water is calm and reflects the sky. The grass is green with some fallen leaves. A timestamp '39 30 2019 13:41' is visible in the bottom right corner of the photo.</p>	<p>Inspect ID: MINR_2019_a_0124 Title: USACE_CEMVP_MINR_2019_a_0124_5.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope; Action: 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; Station_1: 572+72; Station_2: 588+37</p>



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	<p>Inspect ID: MINR_2019_a_0124 Title: USACE_CEMVP_MINR_2019_a_0124_6.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 in diameter) and long vegetation located along the levee alignment and channel bank slope; Action: 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; Station_1: 572+72; Station_2: 588+37</p>
	<p>Inspect ID: MINR_2019_a_0132 Title: USACE_CEMVP_MINR_2019_a_0132_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Significant vegetation along levee slopes and crown, including trees with trunks greater than 2 inches in diameter, cut trees trunks with root balls intact. Overgrown vegetation and bush are located along the alignment; Action: 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; Station_1: Unnamed Road; Station_2: 565+84</p>



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	<p>Inspect ID: MINR_2019_a_0132 Title: USACE_CEMVP_MINR_2019_a_0132_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Significant vegetation along levee slopes and crown, including trees with trunks greater than 2 inches in diameter, cut trees trunks with root balls intact. Overgrown vegetation and bush are located along the alignment; Action: 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; Station_1: Unnamed Road; Station_2: 565+84</p>
	<p>Inspect ID: MINR_2019_a_0132 Title: USACE_CEMVP_MINR_2019_a_0132_3.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Significant vegetation along levee slopes and crown, including trees with trunks greater than 2 inches in diameter, cut trees trunks with root balls intact. Overgrown vegetation and bush are located along the alignment; Action: 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; Station_1: Unnamed Road; Station_2: 565+84</p>



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	<p>Inspect ID: MINR_2019_a_0132 Title: USACE_CEMVP_MINR_2019_a_0132_4.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Significant vegetation along levee slopes and crown, including trees with trunks greater than 2 inches in diameter, cut trees trunks with root balls intact. Overgrown vegetation and bush are located along the alignment; Action: 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; Station_1: Unnamed Road; Station_2: 565+84</p>
	<p>Inspect ID: MINR_2019_a_0144 Title: USACE_CEMVP_MINR_2019_a_0144_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 828+57; Station_2: 847+38</p>



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 A photograph showing a grassy area with several trees, some of which are bare. A sign is visible on the left side of the frame. The ground appears to be a mix of grass and dirt. A timestamp "10 30 2019 10 29" is visible in the bottom right corner of the image.	<p>Inspect ID: MINR_2019_a_0145 Title: USACE_CEMVP_MINR_2019_a_0145_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) within the levee and along the landside and riverside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 803+00; Station_2: 806+19</p>
 A photograph showing a grassy area with several trees, some of which are bare. A body of water is visible in the background. The ground appears to be a mix of grass and dirt. A timestamp "10 30 2019 10 30" is visible in the bottom right corner of the image.	<p>Inspect ID: MINR_2019_a_0145 Title: USACE_CEMVP_MINR_2019_a_0145_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) within the levee and along the landside and riverside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 803+00; Station_2: 806+19</p>



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	<p>Inspect ID: MINR_2019_a_0145 Title: USACE_CEMVP_MINR_2019_a_0145_3.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) within the levee and along the landside and riverside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 803+00; Station_2: 806+19</p>
	<p>Inspect ID: MINR_2019_a_0146 Title: USACE_CEMVP_MINR_2019_a_0146_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 783+61; Station_2: 790+48</p>



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	<p>Inspect ID: MINR_2019_a_0146 Title: USACE_CEMVP_MINR_2019_a_0146_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 783+61; Station_2: 790+48</p>
	<p>Inspect ID: MINR_2019_a_0147 Title: USACE_CEMVP_MINR_2019_a_0147_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 763+35; Station_2: 770+79</p>





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 <p>A wide-angle photograph of a levee embankment. In the foreground, there is a grassy area with scattered dry leaves. Two large, mature trees with bare branches stand prominently. In the background, a residential area with houses and utility poles is visible under an overcast sky. A timestamp in orange text at the bottom right reads '10 30 2019 11 37'.</p>	<p>Inspect ID: MINR_2019_a_0150 Title: USACE_CEMVP_MINR_2019_a_0150_1.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 707+70; Station_2: 713+62</p>
 <p>A close-up photograph of a tree trunk on a levee embankment. The ground is covered with grass and dry leaves. A blue surveying tape or string is visible, extending from the tree trunk towards the right. A timestamp in orange text at the bottom right reads '10 30 2019 11 37'.</p>	<p>Inspect ID: MINR_2019_a_0150 Title: USACE_CEMVP_MINR_2019_a_0150_2.jpg Rated Item: 1. Unwanted Vegetation Growth Caption: Rating: Unacceptable; Remarks: Trees (> 2 inches in diameter) along the levee landside toe that appear to be within the vegetation free zone; Action: 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; Station_1: 707+70; Station_2: 713+62</p>



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	<p>Inspect ID: MINR_2019_a_0127 Title: USACE_CEMVP_MINR_2019_a_0127_1.jpg Rated Item: 2. Sod Cover Caption: Rating: Unacceptable; Remarks: Sod appears to have been deliberately removed to place a garden at the landside levee toe; Action: Reestablish sod cover ; Station_1: 580+00</p>
	<p>Inspect ID: MINR_2019_a_0013 Title: USACE_CEMVP_MINR_2019_a_0013_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Fire Hydrant within levee easement. Sponsor indicated this portion of levee will be abandoned with new design; Action: Verify levee easement. Relocate encroachment outside of levee easement, unless approved by Corps; Station_1: 848+00</p>





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	<p>Inspect ID: MINR_2019_a_0014 Title: USACE_CEMVP_MINR_2019_a_0014_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Sewer manhole located at levee crown. Sponsor indicated this portion of levee will be abandoned with new design; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement. Verify approval was received from Corps to perform excavations; Station_1: 847+38</p>
	<p>Inspect ID: MINR_2019_a_0040 Title: USACE_CEMVP_MINR_2019_a_0040_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Boat dock driven into riverside levee slope. Steps and other residential debris on slope as well; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement; Station_1: 819+61</p>



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 <p>A photograph showing a close-up of a levee crown. The ground is sandy and covered with dry, brown leaves and some green grass. A circular manhole cover is visible in the center. A timestamp in the bottom right corner reads "10 30 2019 10 40".</p>	<p>Inspect ID: MINR_2019_a_0050 Title: USACE_CEMVP_MINR_2019_a_0050_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Sewer manhole in levee crown; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement; Station_1: 798+15</p>
 <p>A photograph showing a levee embankment. The ground is sandy and covered with dry, brown leaves and some green grass. A circular manhole cover is visible in the foreground. A timestamp in the bottom right corner reads "10 30 2019 10 43".</p>	<p>Inspect ID: MINR_2019_a_0051 Title: USACE_CEMVP_MINR_2019_a_0051_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Sewer pipe in levee embankment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement; Station_1: 796+98</p>



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 <p>10/30/2019 10:52</p>	<p>Inspect ID: MINR_2019_a_0055 Title: USACE_CEMVP_MINR_2019_a_0055_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Power pole located in levee alignment; Action: Verify levee easement. Relocate encroachments outside of levee easement; Station_1: 783+61</p>
 <p>10/30/2019 11:01</p>	<p>Inspect ID: MINR_2019_a_0057 Title: USACE_CEMVP_MINR_2019_a_0057_1.jpg Rated Item: 3. Encroachments Caption: Rating: Minimally Acceptable; Remarks: Irrigation line on top of levee; Action: Monitor irrigation line and prevent homeowner from trenching into the levee or eroding out the levee embankment ; Station_1: 770+55</p>



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	<p>Inspect ID: MINR_2019_a_0058 Title: USACE_CEMVP_MINR_2019_a_0058_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Fences, residential debris, power poles, flower beds, irrigation lines, and houses next to and/or on top of levee. Emergency operations will be impeded by these encroachments; Action: Verify location levee easement. Remove or relocate encroachments outside of the levee easement; Station_1: 761+00; Station_2: 770+50</p>
	<p>Inspect ID: MINR_2019_a_0058 Title: USACE_CEMVP_MINR_2019_a_0058_2.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Fences, residential debris, power poles, flower beds, irrigation lines, and houses next to and/or on top of levee. Emergency operations will be impeded by these encroachments; Action: Verify location levee easement. Remove or relocate encroachments outside of the levee easement; Station_1: 761+00; Station_2: 770+50</p>



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 A photograph showing a grassy levee embankment. On the left side, there are several houses and a fence line that encroach upon the levee. A white pipe or ditch runs along the edge of the embankment. The date and time stamp '10/30/2019 11:07' is visible in the bottom right corner of the photo.	<p>Inspect ID: MINR_2019_a_0058 Title: USACE_CEMVP_MINR_2019_a_0058_3.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Fences, residential debris, power poles, flower beds, irrigation lines, and houses next to and/or on top of levee. Emergency operations will be impeded by these encroachments; Action: Verify location levee easement. Remove or relocate encroachments outside of the levee easement; Station_1: 761+00; Station_2: 770+50</p>
 A photograph showing a levee embankment with a road and houses. A road curves along the levee, and there are houses and a utility pole nearby. The date and time stamp '10/30/2019 11:08' is visible in the bottom right corner of the photo.	<p>Inspect ID: MINR_2019_a_0058 Title: USACE_CEMVP_MINR_2019_a_0058_4.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Fences, residential debris, power poles, flower beds, irrigation lines, and houses next to and/or on top of levee. Emergency operations will be impeded by these encroachments; Action: Verify location levee easement. Remove or relocate encroachments outside of the levee easement; Station_1: 761+00; Station_2: 770+50</p>



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	<p>Inspect ID: MINR_2019_a_0076 Title: USACE_CEMVP_MINR_2019_a_0076_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: New power pole located at levee toe; Action: Verify levee easement; Relocate encroachments outside of levee easement, unless approved by Corps; Station_1: 696+64</p>
	<p>Inspect ID: MINR_2019_a_0090 Title: USACE_CEMVP_MINR_2019_a_0090_1.jpg Rated Item: 3. Encroachments Caption: Rating: Minimally Acceptable; Remarks: PVC pipe through levee at toe. Flap gate placed on pipe in 2019; Action: Verify levee easement; Relocate encroachments outside of levee easement unless approved by Corps; Station_1: 676+91</p>



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	<p>Inspect ID: MINR_2019_a_0092 Title: USACE_CEMVP_MINR_2019_a_0092_1.jpg Rated Item: 3. Encroachments Caption: Rating: Minimally Acceptable; Remarks: PVC pipe through levee embankment. Flap gate placed on end of the pipe in 2019; Action: Verify levee easement. Determine origin of the pipe and relocate encroachments outside of easement unless approved by Corps; Station_1: 670+00</p>
	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>





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	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_2.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>
	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_3.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>



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	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_4.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>
	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_5.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>



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	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_6.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>
	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_7.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>



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 <p>A photograph showing a grassy levee embankment. A red fire hydrant is visible in the foreground, and two yellow survey poles are planted in the ground. The background shows a rocky area and some vegetation. A timestamp '10/30/2019 13:01' is visible in the bottom right corner.</p>	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_8.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>
 <p>A photograph showing a grassy levee embankment. Two yellow survey poles are planted in the ground. In the background, there are residential buildings and trees. A timestamp '10/30/2019 13:01' is visible in the bottom right corner.</p>	<p>Inspect ID: MINR_2019_a_0102 Title: USACE_CEMVP_MINR_2019_a_0102_9.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachment (light and power poles, fire hydrant, residential, fence and debris) along the levee alignment; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement, unless approved by the Corps; Station_1: 625+70; Station_2: 643+37</p>



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 <p>10.30.2019 13:04</p>	<p>Inspect ID: MINR_2019_a_0110 Title: USACE_CEMVP_MINR_2019_a_0110_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Manhole has been placed in levee slope; Action: Verify levee easement. Relocate encroachment outside of levee easement, unless approved by the Corps; Station_1: 624+00</p>
 <p>10.30.2019 13:38</p>	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>



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	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_2.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>
	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_3.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>



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 <p>A photograph showing a steep, eroded levee embankment. Several concrete steps or slabs are visible, partially buried in soil and debris. A body of water is on the left, and bare trees are in the background. A timestamp '10 30 2019 13 29' is in the bottom right corner.</p>	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_4.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>
 <p>A photograph of a levee embankment with a white vinyl fence running along the top. A body of water is on the left, and trees are in the background. A timestamp '10 30 2019 13 40' is in the bottom right corner.</p>	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_5.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>



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	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_6.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>
	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_7.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>



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 <p>A photograph showing a grassy levee embankment next to a body of water. A wooden utility pole stands on the embankment, and several trees are visible in the background. The date and time '10.30.2019 13:45' are printed in orange at the bottom right of the image.</p>	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_8.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>
 <p>A photograph showing a grassy levee embankment next to a body of water. A wooden utility pole stands on the embankment, and several trees are visible in the background. The date and time '10.30.2019 13:46' are printed in orange at the bottom right of the image.</p>	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_9.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>





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	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_10.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>
	<p>Inspect ID: MINR_2019_a_0123 Title: USACE_CEMVP_MINR_2019_a_0123_11.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25</p>



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Inspect ID: MINR_2019_a_0123 **Title:** USACE_CEMVP_MINR_2019_a_0123_12.jpg **Rated Item:** 3. Encroachments
Caption: Rating: Unacceptable; Remarks: Multiple residential encroachments along levee slopes and crown. These include stairs, irrigation lines, pumps, power poles, children's playhouses, retaining walls, fences, and gardens; Action: Verify levee easement. Relocate encroachments outside of levee easement. Discourage home owners from modifying levee, unless approved by the Corps; Station_1: 572+99; Station_2: 589+25



Inspect ID: MINR_2019_a_0125 **Title:** USACE_CEMVP_MINR_2019_a_0125_1.jpg
Rated Item: 3. Encroachments **Caption:** Rating: Unacceptable; Remarks: Two pipes drilled through levee approximately 4 feet below crown are covered in grass and tree stump debris by landowner. The 2018 Culvert Inspection indicates that the pipes have minor sags and no closure structures; Action: Verify levee easement. Determine origin of pipes and remove from levee easement, unless approved by Corps; Station_1: 587+80



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 A black generator or pump unit is positioned on a grassy area with scattered leaves. In the background, there are trees and a white trailer. A timestamp "10-30-2019 11:34" is visible in the bottom right corner of the image.	<p>Inspect ID: MINR_2019_a_0133 Title: USACE_CEMVP_MINR_2019_a_0133_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: White fence added in 2016 at levee toe and construction materials have not been removed.; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement; Station_1: 565+43</p>
 A view of a levee embankment with trees and a drainage channel. The ground is covered with fallen leaves. A timestamp "10-30-2019 11:53" is visible in the bottom right corner of the image.	<p>Inspect ID: MINR_2019_a_0134 Title: USACE_CEMVP_MINR_2019_a_0134_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Portion of levee removed for interior drainage. NOTE: Construction activities and multiple lines of exposed pipe laid in dug drainage channel; Action: Verify levee easement. Replace portion of levee that has been removed; Station_1: 545+00</p>



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 <p>A photograph showing a steep, grassy embankment. Several white pipes are visible, some exposed and some partially buried in the soil. The area is overgrown with tall grass and bare trees. A timestamp in the bottom right corner reads "10/30/2019 11:58".</p>	<p>Inspect ID: MINR_2019_a_0134 Title: USACE_CEMVP_MINR_2019_a_0134_2.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Portion of levee removed for interior drainage. NOTE: Construction activities and multiple lines of exposed pipe laid in dug drainage channel; Action: Verify levee easement. Replace portion of levee that has been removed; Station_1: 545+00</p>
 <p>A photograph showing a dirt path or road next to a mobile home. The ground is covered with fallen leaves. Several trees are visible on the right side of the path. A timestamp in the bottom right corner reads "10/30/2019 12:30".</p>	<p>Inspect ID: MINR_2019_a_0135 Title: USACE_CEMVP_MINR_2019_a_0135_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Levee crown significantly reduced behind mobile home, potentially due to excavation; Action: Verify levee easement. Relocate encroachments outside of levee easement. Reestablish levee section; Station_1: 563+00</p>



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 <p>A photograph showing a levee toe with a wooden structure, possibly a shed or shed roof, partially collapsed and surrounded by tall grass and debris. The structure is made of weathered wood and is situated on a grassy area. The date and time stamp '10/30/2019 14:14' is visible in the bottom right corner of the image.</p>	<p>Inspect ID: MINR_2019_a_0140 Title: USACE_CEMVP_MINR_2019_a_0140_1.jpg Rated Item: 3. Encroachments Caption: Rating: Minimally Acceptable; Remarks: Materials and debris placed along the toe of the levee; Action: Verify levee easement. Relocate encroachments/debris outside of levee easement; Station_1: 541+00</p>
 <p>A photograph showing a levee toe with a green chain-link fence running along it. Behind the fence, there is a small white building and some debris. The area is grassy with some snow patches. The date and time stamp '10/30/2019 11:35' is visible in the bottom right corner of the image.</p>	<p>Inspect ID: MINR_2019_a_0149 Title: USACE_CEMVP_MINR_2019_a_0149_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Fence and debris at landside levee toe; Action: Verify levee easement; Relocate encroachments outside of levee easement; Station_1: 714+07; Station_2: 715+48</p>



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	<p>Inspect ID: MINR_2019_a_0151 Title: USACE_CEMVP_MINR_2019_a_0151_1.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachments (railroad, fences, etc.) along the levee alignment (Zoo animal control fence approved by Corps); Action: Relocate encroachments outside of easement, unless approved by the Corps; Station_1: 646+00; Station_2: 678+00</p>
	<p>Inspect ID: MINR_2019_a_0151 Title: USACE_CEMVP_MINR_2019_a_0151_2.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachments (railroad, fences, etc.) along the levee alignment (Zoo animal control fence approved by Corps); Action: Relocate encroachments outside of easement, unless approved by the Corps; Station_1: 646+00; Station_2: 678+00</p>



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	<p>Inspect ID: MINR_2019_a_0151 Title: USACE_CEMVP_MINR_2019_a_0151_3.jpg Rated Item: 3. Encroachments Caption: Rating: Unacceptable; Remarks: Multiple encroachments (railroad, fences, etc.) along the levee alignment (Zoo animal control fence approved by Corps); Action: Relocate encroachments outside of easement, unless approved by the Corps; Station_1: 646+00; Station_2: 678+00</p>
	<p>Inspect ID: MINR_2019_a_0054 Title: USACE_CEMVP_MINR_2019_a_0054_1.jpg Rated Item: 4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only) Caption: Rating: Unacceptable; Remarks: Discontinuous levee section. A closure would be required to utilize protection offered by the discontinuous levee section; Action: Evaluate the level of protection and determine when closures need to be installed; Station_1: 784+15</p>



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	<p>Inspect ID: MINR_2019_a_0073 Title: USACE_CEMVP_MINR_2019_a_0073_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Erosion along the levee crown and localized slope instability with steep sloughing riverside levee slope and channel bank; Action: Conduct an engineering evaluation of the erosion and slope stability. Complete remedial action to ensure a stable slope; Station_1: 703+70</p>
	<p>Inspect ID: MINR_2019_a_0084 Title: USACE_CEMVP_MINR_2019_a_0084_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Erosion and bank caving along the levee toe. Force main exposed due to erosion at pump station gate; Action: Backfill erosion to the design grade, compact in lifts, and re-sod; Reevaluate drainage and erosion protection; Station_1: Little Roosevelt PS</p>



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 <p>10/29/2019 12:40</p>	<p>Inspect ID: MINR_2019_a_0126 Title: USACE_CEMVP_MINR_2019_a_0126_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: 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. NOTE: Tree fell over and slope continues to erode; Action: Backfill erosion to the design grade, compact in lifts, and reseed with grass. Remove vegetation. Reevaluate erosion protection; Station_1: 588+03</p>
 <p>10/30/2019 13:40</p>	<p>Inspect ID: MINR_2019_a_0126 Title: USACE_CEMVP_MINR_2019_a_0126_2.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: 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. NOTE: Tree fell over and slope continues to erode; Action: Backfill erosion to the design grade, compact in lifts, and reseed with grass. Remove vegetation. Reevaluate erosion protection; Station_1: 588+03</p>



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	<p>Inspect ID: MINR_2019_a_0137 Title: USACE_CEMVP_MINR_2019_a_0137_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Significant erosion has occurred in levee slope around culvert; Action: Restore levee section. Install appropriate energy dissipation method with Corps approval if culvert is on plans; Station_1: 563+00</p>
	<p>Inspect ID: MINR_2019_a_0138 Title: USACE_CEMVP_MINR_2019_a_0138_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Riverward slope eroded. Levee crown is less than 5 feet wide; Action: Perform an engineering evaluation of the areas and perform remedial action; Station_1: 545+00</p>



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 <p>10/30/2019 14:15</p>	<p>Inspect ID: MINR_2019_a_0138 Title: USACE_CEMVP_MINR_2019_a_0138_2.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Riverward slope eroded. Levee crown is less than 5 feet wide; Action: Preform an engineering evaluation of the areas and perform remedial action; Station_1: 545+00</p>
 <p>10/30/2019 14:15</p>	<p>Inspect ID: MINR_2019_a_0141 Title: USACE_CEMVP_MINR_2019_a_0141_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Erosion of the levee riverside toe and slope; levee crest less than 3 foot wide; Action: Preform an engineering evaluation of the areas and perform remedial action; Station_1: 541+00</p>





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 <p>10 30 2019 12 50</p>	<p>Inspect ID: MINR_2019_a_0152 Title: USACE_CEMVP_MINR_2019_a_0152_1.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Erosion and steep channel bank along the riverside levee slope; Action: Evaluate steep bank and flatten slope. Backfill erosion to design grade, compact in lifts, and evaluate the need for erosion protection; Station_1: 633+96; Station_2: 643+69</p>
 <p>10 30 2019 12 54</p>	<p>Inspect ID: MINR_2019_a_0152 Title: USACE_CEMVP_MINR_2019_a_0152_2.jpg Rated Item: 6. Erosion/ Bank Caving Caption: Rating: Unacceptable; Remarks: Erosion and steep channel bank along the riverside levee slope; Action: Evaluate steep bank and flatten slope. Backfill erosion to design grade, compact in lifts, and evaluate the need for erosion protection; Station_1: 633+96; Station_2: 643+69</p>





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	<p>Inspect ID: MINR_2019_a_0139 Title: USACE_CEMVP_MINR_2019_a_0139_1.jpg Rated Item: 8. Depressions/ Rutting Caption: Rating: Minimally Acceptable; Remarks: Depression and rutting on levee crown, ; Action: 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; Station_1: 560+00</p>
	<p>Inspect ID: MINR_2019_a_0069 Title: USACE_CEMVP_MINR_2019_a_0069_1.jpg Rated Item: 10. Animal Control Caption: Rating: Minimally Acceptable; Remarks: Large animal burrow; Action: Excavate, inspect, backfill, compact in lifts, and reseed with grass; Improve animal burrow control program; Station_1: 714+07</p>




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	<p>Inspect ID: MINR_2019_a_0108 Title: USACE_CEMVP_MINR_2019_a_0108_1.jpg Rated Item: 12. Riprap Revetments & Bank Protection Caption: Rating: Unacceptable; Remarks: The existing riprap is scoured out, deteriorated, missing, and covered by organics and soil.; Action: 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; Station_1: 624+00</p>



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Floodwalls

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth ¹	A	A	A grass-only or paved zone is maintained on both sides of the floodwall, free of all trees, brush, and undesirable weeds. The vegetation-free zone extends 15 feet from both the land and riverside of the floodwall, at ground-level, to the centerline of the tree. Additionally, an 8-foot root-free zone is maintained around the entire structure, including the floodwall toe, heel, and any toe-drains. If the floodwall access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 and/or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the floodwall.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above. This vegetation threatens the operation or integrity of the floodwall and must be removed.	
2. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the floodwall.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the floodwall.	
3. Closure Structures (Stop Log Closures and Gates) (A or U only)	U	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	MINR_2019_a_0007: Station_1 855+00: As-built drawings have not been submitted to the Corps for the 408 Minot Water Treatment Plant Floodwall Project: Submit updated as-built drawings (U)
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
4. Concrete Surfaces	A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction



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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
5. Tilting, Sliding or Settlement of Concrete Structures ²	A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
6. Foundation of Concrete Structures ¹	A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stable until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
7. Monolith Joints	A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction



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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the floodwall.	
8. Underseepage Relief Wells/ Toe Drainage Systems	A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
9. Seepage	A	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

¹ Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

² The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction




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For use during Initial and Continuing Eligibility Inspections of all floodwalls

	<p>Inspect ID: MINR_2019_a_0007 Title: USACE_CEMVP_MINR_2019_a_0007_1.jpg Rated Item: 3. Closure Structures (Stop Log Closures and Gates) (A or U only) Caption: Rating: Unacceptable; Remarks: As-built drawings have not been submitted to the Corps for the 408 Minot Water Treatment Plant Floodwall Project; Action: Submit updated as-built drawings; Station_1: 855+00</p>



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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation noted within interior drainage channels or blocking the culverts, inlets, or discharge areas. Concrete joints and weep holes are free of grass and weeds.	
		M	Obstructions, vegetation, debris, or sediment are minor and have not impaired channel flow capacity or blocked more than 10% of any culvert openings, but should be removed. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions, vegetation, debris, or sediment have impaired the channel flow capacity or blocked more than 10% of a culvert opening. Sediment and debris removal required to re-establish flow capacity.	
2. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the interior drainage system.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of this component of the interior drainage system.	
3. Ponding Areas	A	A	No trash, debris, structures, or other obstructions present within the ponding areas. Sediment deposits do not exceed 10% of capacity.	
		M	Trash, debris, excavations, structures, or other obstructions present, or inappropriate activities that will not inhibit operations and maintenance. Sediment deposits do not exceed 30% of capacity.	
		U	Trash, debris, excavations, structures, or other obstructions, or other encroachments or activities noted that will inhibit operations, maintenance, or emergency work. Sediment deposits exceeds 30% of capacity.	
		N/A	There are no ponding areas associated with the interior drainage system.	
4. Fencing and Gates ¹	A	A	Fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.	
		M	Fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.	
		U	Fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous features are not secured.	
		N/A	There are no features noted that require safety fencing.	
5. Concrete Surfaces (Such as gate)	A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	

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Interior Drainage System

For use during Initial and Continuing Eligibility Inspections of interior drainage systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
wells, outfalls, intakes, or culverts)		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
6. Tilting, Sliding or Settlement of Concrete and Sheet Pile Structures ² (Such as gate wells, outfalls, intakes, or culverts)	A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the interior drainage system.	
7. Foundation of Concrete Structures ³ (Such as culverts, inlet and discharge structures, or gatewells.)	A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. The rate of erosion is such that the structure is expected to remain stable until the next inspection.	
		U	Erosion or bank caving observed that may lead to structural instabilities before the next inspection.	
		N/A	There are no concrete items in the interior drainage system.	
8. Monolith Joints	A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no monolith joints in the interior drainage system.	
9. Culverts/ Discharge Pipes ⁴	A	A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
10. Sluice / Slide Gates ⁵	A	A	Gates open and close freely to a tight seal or minor leakage. Gate operators are in good working condition and are properly maintained. Sill is free of sediment and other obstructions. Gates and lifters have been maintained and are free of corrosion. Documentation provided during the inspection.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
11. Flap Gates/ Flap Valves/ Pinch Valves ¹	M	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	MINR_2019_a_0010: Station_1 849+00: Gate stuck open, debris observed, and gate is corroded. 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 (M)
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
12. Trash Racks (non-mechanical)	A	A	Trash racks are fastened in place and properly maintained.	
		M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station, bars are corroded to the point that up to 10% of the sectional area may be lost. Repair or replacement is required.	
		U	Trash racks are missing or damaged to the extent that they are no longer functional and must be replaced. (For example, more than 10% of the sectional area may be lost.)	
		N/A	There are no trash racks, or they are covered in the pump stations section of the report.	
13. Other Metallic Items	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	MINR_2019_a_0023: Station_1 847+50: 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. 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) (M) MINR_2019_a_0074: Station_1 697+93: 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) (M)
		M	Corrosion seen on metallic parts appears to be maintainable.	
		U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
		N/A	There are no other significant metallic items.	
14. Riprap Revetments of Inlet/ Discharge Areas	A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
15. Revetments other than Riprap	A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

¹ Proper operation of this item must be demonstrated during the inspection.

² The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

³ Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

⁴ The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

⁵ Proper operation of the gates (full open and closed) must be demonstrated during the inspection if no documentation is available. Be aware of both manual and electrical operators.

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Inspect ID: MINR_2019_a_0023 **Title:** USACE_CEMVP_MINR_2019_a_0023_1.jpg
Rated Item: 13. Other Metallic Items **Caption:** Rating: Minimally Acceptable;
Remarks: 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. Sponsor indicated this portion of levee will be abandoned with new design; **Action:** Determine method of operation that does not require the gate operator to work over an open well (OSHA compliance); Station_1: 847+50



Inspect ID: MINR_2019_a_0074 **Title:** USACE_CEMVP_MINR_2019_a_0074_1.jpg
Rated Item: 13. Other Metallic Items **Caption:** Rating: Minimally Acceptable;
Remarks: 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; **Action:** Determine method of operation that does not require the operator to work over an open well (OSHA compliance); Station_1: 697+93



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Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Pump Stations Operating, Maintenance, Training, & Inspection Records	A	A	Operation, maintenance and inspection records are present at the pump station and are being used and updated, and personnel have been trained in pump station operations. Names and last training date shown in the record book.	
		M	Operation, maintenance and inspection records are present but not adequately used and updated.	
		U	No operation, maintenance and inspection records are present, or refresher training for personnel has not been conducted.	
2. Pump Station Operations and Maintenance Equipment Manuals	A	A	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and updated as required, and adequately cover all pertinent pump station features. O&M manuals include points of contact for manufacturers and suppliers of major equipment used in the facility.	
		M	Operation and Maintenance Equipment Manuals and/or posted operating instructions are present and adequately cover all pertinent pump station features. However, they are incomplete and the necessary updates have not been made.	
		U	Operation and Maintenance Equipment Manuals are not available.	
3. Safety Compliance	A	A	Safety compliance inspection reports by applicable local, state, or federal agencies available for review.	
		M	No safety compliance inspection reports are available for review.	
4. Communications (A or M only)	A	A	A telephone, cellular phone, two-way radio, or similar device is available to pump station operator and maintenance personnel.	
		M	A telephone, cellular phone, two-way radio, or similar device is not available to pump station operator and maintenance personnel.	
5. Plant Building	A	A	The building is in good structural condition with no major foundation settlement problems. The roof is not leaking, intake & exhaust louvers are clear of debris, fans are operational, etc.	
		M	There are minor structural defects, minimal foundation settlement, leaks, or other conditions noted that need repair. Defects do not threaten the structural integrity or stability of the building, and will not impact pumping operations.	
		U	The structural integrity or stability of the building is threatened, or there is damage to the building that threatens safety of the operator or impacts pumping operations.	
6. Fencing and Gates ¹	A	A	Fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.	
		M	Fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.	
		U	Fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous features are not secured.	

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Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		N/A	There are no features noted that require safety fencing.	
7. Pumps ¹	A	A	All pumps are properly maintained and lubricated. Systems are periodically tested and documented for review. No vibration, cavitation noises or unusual sounds are noted when the pump is operated. Bearing temperature sensor records don't indicate any problems.	
		M	Minor deficiencies noted that need to be closely monitored or repaired, such as the presence of slight vibrations, leakage of packing gland, bearing temperature sensors are inoperable or no record is present. However, the pumps are operational and are expected to perform through the next period of usage.	
		U	Major deficiencies identified that may significantly reduce pumping operations. For example, bearing sensor records indicate problems, excessive vibration noted, impellers are badly corroded, or there are eroded or missing blades.	
8. Motors, Engines, Fans, Gear Reducers, Back Stop Devices, etc.	A	A	All items are operational. Preventative maintenance and lubrication is being performed and the system is periodically subjected to performance testing. Instrumentation, alarms, bearing sensors and auto shutdowns are operational.	
		M	Systems have minor deficiencies, but are operational and will function adequately through the next flood. Bearing sensors are not operational.	
		U	One or more of the primary motors or systems is not operational, or noted deficiencies have not been corrected.	
9. Sumps / Wet well	A	A	Clear of debris, sediment, or other obstructions. Procedures are in place to remove debris accumulation during operation.	
		M	Debris, sediment, or other obstructions may be present and must be removed, but the sump/ wet well will function as intended during the next flood. Procedures are in place to remove debris accumulation during operation.	
		U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures established to remove debris accumulation during operation.	
10. Mechanical Operating Trash Rakes ¹	A	A	Drive chain, bearing, gear reducers, and other components are in good operating condition and are being properly maintained.	
		M	The trash rake is in need of maintenance, but is still operational.	
		U	Trash rake not operational or deficiencies will inhibit operations during the next flood event.	
		N/A	There are no mechanical trash rakes.	
11. Non-Mechanical Trash Racks	A	A	Trash racks are fastened in place and properly maintained.	
		M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station, bars are corroded to the point that up to 10% of the sectional area may be lost. Repair or replacement is required.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Trash racks are missing or damaged to the extent that they are no longer functional and must be replaced. (For example, more than 10% of the sectional area may be lost.)	
		N/A	There are no trash racks, or they are covered in the pump stations section of the report.	
12. Fuel System for Pump Engines	A	A	Fuel system is operational, day tank present and operational, fuel fresh and rotated regularly.	
		M	Fuel system is operational and of adequate capacity, but day tank is missing or fuel is not fresh and rotated regularly.	
		U	Fuel system not functional.	
		N/A	No fuel system.	
13. Power Source	A	A	The normal power source and backup generators, if installed, are operational, properly exercised and well maintained. Surge protection, grounding, lightning protection, transformers, and automatic/manual transfer of main power to backup system is working.	
		M	Normal power source and backup units, if applicable, are operational with minor discrepancies or maintenance, inspection and exercising record is present but not up to date. Preventative maintenance or repairs are required.	
		U	Normal power source or generators are not operational and must be repaired; or generator, if required, is not on site.	
14. Electrical Systems ²	A	A	Operational and maintained free of damage, corrosion, and debris. Preventative maintenance and system testing is being performed periodically.	
		M	Operational with minor discrepancies. Preventative maintenance or repairs are required, but the components are expected to function adequately during the next flood event.	
		U	Components of the electrical system will not function adequately during the next flood event and must be replaced.	
15. Megger Testing on Pump Motors and Critical Power Cables	A	A	Results of megger tests on pump motors or critical power cables show that the insulation meets manufacturer's or industry standards. Tested within the last year.	
		M	Megger testing not conducted within the past year. If megger tests on pump motors indicate that insulation resistance is below the manufacturer's or industry standard, but the resistance can be corrected with proper application of heat, this is minimally acceptable. (The application of heat does not relate to critical power cables.)	
		U	Megger tests not conducted within past two years, or tests indicate that insulation resistance is low enough that the equipment will not be able to meet design standards of operation; or evidence of arcing or shorting is detected visually.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
16. Enclosures, Panels, Conduit and Ducts	A	A	All enclosures, panels, conduits, and ducts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	
		M	Minor surface corrosion which appears to be maintainable. Cleaning and painting required.	
		U	Severely corroded and must be replaced to prevent failure, equipment damage, or safety issues.	
17. Intake and Discharge Pipelines	A	A	Intake and discharge pipelines have no corrosion and paint is intact, except for minor touch up required. Pipe couplings and anchors have no leakage or corrosion.	
		M	Intake and discharge pipelines have minor corrosion and repair and painting is required. Pipe coupling with anchors have minor leakage, corrosion and require bolts to be tightened.	
		U	Intake and discharge pipelines have major corrosion and replacement is required. Pipe coupling with anchors have major leakage and is heavily corroded and requires replacement.	
18. Sluice/ Slide Gates ³	A	A	Gates open and close freely to a tight seal or minor leakage. Gate operators are in good working condition and are properly maintained. Sill is free of sediment and other obstructions. Gates and lifters have been maintained and are free of corrosion. Documentation provided during the inspection.	
		M	Gates and/or operators have been damaged or have minor corrosion, and open and close with resistance or binding. Leakage quantity is controllable, but maintenance is required. Sill is free of sediment and other obstructions.	
		U	Gates do not open or close and/or operators do not function. Gate, stem, lifter and/or guides may be damaged or have major corrosion.	
		N/A	There are no sluice/ slide gates.	
19. Flap Gates/ Flap Valves/ Pinch Valves ¹	A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no gates on discharge lines from pump station.	
20. Cranes ¹	A	A	Cranes operational and have been inspected and load tested in accordance with applicable standards within the last year. Documentation is on hand.	

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Pump Stations

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)	M	M	Cranes have not been inspected or operationally tested within the past year, or there are visible signs of corrosion, oil leakage, etc, requiring maintenance.	
		U	Cranes are not operational, and this may prevent the pump station from functioning as required. No documentation available on cranes.	
		N/A	There are no cranes.	
	M	A	All metal parts are protected from corrosion damage and show no rust, damage, or deterioration that would cause a safety concern.	MINR_2019_a_0036: Station_1 Moose Lodge PS: Minor corrosion on gate well crank at Moose Lodge pump station: Remove corrosion and paint. Lubricate as necessary per O&M manual (M) MINR_2019_a_0083: Station_1 Little Rosevelt PS: Minor corrosion on gate well lifter crank: Clean corrosion and repaint. Continue to grease per O&M (M)
		M	Corrosion seen on metallic parts appears to be maintainable.	
		U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.	
		N/A	There are no other significant metallic items.	

¹ Proper operation of this item must be demonstrated during the inspection.

² Check motor control center, circuit breakers, pilot lights, volt meters, ammeters, sump level indicator, gate position indicators, remote operating systems, including SCADA and telemetry systems. Also, check interior and exterior lighting; especially lighting near trash rack screens, ladders, walkways, etc.

³ Proper operation of the gates (full open and closed) must be demonstrated during the inspection if no documentation is available. Be aware of both manual and electrical operators.

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Inspection Report
Souris River - Minot - Right Bank (MINR)

Pump Stations
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Pump Stations

For use during Initial and Continuing Eligibility Inspections of pump stations

	<p>Inspect ID: MINR_2019_a_0036 Title: USACE_CEMVP_MINR_2019_a_0036_1.jpg Rated Item: 21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc) Caption: Rating: Minimally Acceptable; Remarks: Minor corrosion on gate well crank at Moose Lodge pump station; Action: Remove corrosion and paint. Lubricate as necessary per O&M manual; Station_1: Moose Lodge PS</p>
	<p>Inspect ID: MINR_2019_a_0083 Title: USACE_CEMVP_MINR_2019_a_0083_1.jpg Rated Item: 21. Other Metallic Items (Equipment, Ladders, Platform Anchors, etc) Caption: Rating: Minimally Acceptable; Remarks: Minor corrosion on gate well lifter crank; Action: Clean corrosion and repaint. Continue to grease per O&M; Station_1: Little Roosevelt PS</p>



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Flood Damage Reduction Segment / System
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Pump Stations
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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling ¹ (sediment deposition)	U	A	No shoaling or minor, non-vegetated shoaling is present.	MINR_2019_a_0115: Station_1 601+35: Bank erosion is causing shoaling within the channel that is diverting flow towards the left bank, resulting in left bank erosion: Remove shoaling. Restore channel to the design grade and cross section. Ensure environmental compliance with all appropriate agencies prior to removal (U)
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	U	A	No head cutting or horizontal deviation observed.	MINR_2019_a_0117: Station_1 620+00: Significant erosion of channel bank. 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 (U) MINR_2019_a_0148: Station_1 742+50: Station_2 746+50: 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 (U)
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces	A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	

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Flood Damage Reduction Channels
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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures ²	A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures ³	A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stable until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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Inspection Report
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Flood Damage Reduction Channels
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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
8. Slab and Monolith Joints	A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves ⁴	A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	M	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	MINR_2019_a_0053: Station_1 787+34: 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 or riprap. Reevaluate drainage and erosion protection. Remedial action is required to correct undermining. Remedial actions must be approved by the Corps (M)
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
11. Revetments other than Riprap	A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	

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Flood Damage Reduction Channels
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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		N/A	There are no such revetments protecting this feature of the segment / system.	

¹ If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

² The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

³ Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

⁴ Proper operation of this item must be demonstrated during the inspection.

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

	<p>Inspect ID: MINR_2019_a_0115 Title: USACE_CEMVP_MINR_2019_a_0115_1.jpg Rated Item: 2. Shoaling (sediment deposition) Caption: Rating: Unacceptable; Remarks: Bank erosion is causing shoaling within the channel that is diverting flow towards the left bank, resulting in left bank erosion; Action: Remove shoaling. Restore channel to the design grade and cross section. Ensure environmental compliance with all appropriate agencies prior to removal; Station_1: 601+35</p>
	<p>Inspect ID: MINR_2019_a_0115 Title: USACE_CEMVP_MINR_2019_a_0115_2.jpg Rated Item: 2. Shoaling (sediment deposition) Caption: Rating: Unacceptable; Remarks: Bank erosion is causing shoaling within the channel that is diverting flow towards the left bank, resulting in left bank erosion; Action: Remove shoaling. Restore channel to the design grade and cross section. Ensure environmental compliance with all appropriate agencies prior to removal; Station_1: 601+35</p>





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	<p>Inspect ID: MINR_2019_a_0117 Title: USACE_CEMVP_MINR_2019_a_0117_1.jpg Rated Item: 4. Erosion Caption: Rating: Unacceptable; Remarks: Significant erosion of channel bank. NOTE: Vegetation makes erosion difficult to see in photographs; Action: Backfill erosion to the design grade, compact in lifts, and reseed with grass or provide rock bank protection. Reevaluate drainage and erosion protection; Station_1: 620+00</p>
	<p>Inspect ID: MINR_2019_a_0148 Title: USACE_CEMVP_MINR_2019_a_0148_1.jpg Rated Item: 4. Erosion Caption: Rating: Unacceptable; Remarks: 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; Action: Conduct engineering evaluation to determine best method of repair. Complete remedial action to ensure slope stability and protection; Station_1: 742+50; Station_2: 746+50</p>



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For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

 <p>10 30 2019 11:21</p>	<p>Inspect ID: MINR_2019_a_0148 Title: USACE_CEMVP_MINR_2019_a_0148_2.jpg Rated Item: 4. Erosion Caption: Rating: Unacceptable; Remarks: 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; Action: Conduct engineering evaluation to determine best method of repair. Complete remedial action to ensure slope stability and protection; Station_1: 742+50; Station_2: 746+50</p>
 <p>10 30 2019 10:49</p>	<p>Inspect ID: MINR_2019_a_0053 Title: USACE_CEMVP_MINR_2019_a_0053_1.jpg Rated Item: 10. Riprap Revetments & Banks Caption: Rating: Minimally Acceptable; Remarks: Concrete channel protection has begun eroding on southeastern tie-in with levee toe; Action: Backfill erosion to the design grade, compact in lifts, and reseed with grass or riprap. Reevaluate drainage and erosion protection. Remedial action is required to correct undermining. Remedial actions must be approved by the Corps; Station_1: 787+34</p>



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Flood Damage Reduction Channels
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Flood Damage Reduction Segment / System Supplemental Data Sheet

This form is intended for the Corps' internal use and may not need to be updated with every inspection.

Name of Segment / System: Souris River - Minot - Right Bank Sponsor: City of Minot Public Works Location: Souris River - Minot Right Bank and Channel River Basin: Souris River Project Description: Channel Improvement and Levee Embankments Authority that Project was Constructed Under: Date of Construction: 10/1/1971 Approximate Annual Maintenance Costs: Construction: <input checked="" type="checkbox"/> Federally Constructed <input type="checkbox"/> Non-Federally Constructed Maintenance: <input type="checkbox"/> Federally Maintained <input checked="" type="checkbox"/> Non-Federally Maintained	
National Flood Insurance Program: a. Is the project currently NFIP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No b. If in the NFIP, Date of Certification (per 44 CFR 65.10):	
Datum Information: a. Datum used for the design and construction of this project is: b. Current recommended datum for this project is: c. Has the Project been converted to the current recommended datum? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Levee Embankment Data: a. Levee Designed Gage Function Reading/Station: b. Level of Protection Provided: c. Average Height of Levee: d. Average Crown Width: e. Average Side Slope:	Protected Features (For use in preparing estimates and PIRs): a. Total acres protected: b. Total agriculture production acres protected: c. Towns: d. Businesses: e. Residences: f. Roads: g. Utilities: h. Barns: i. Machine Sheds: j. Outbuildings: k. Irrigation Systems: l. Grain Bins: m. Other Facilities:

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St. Paul District
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MAP LEGEND

Inspection Points

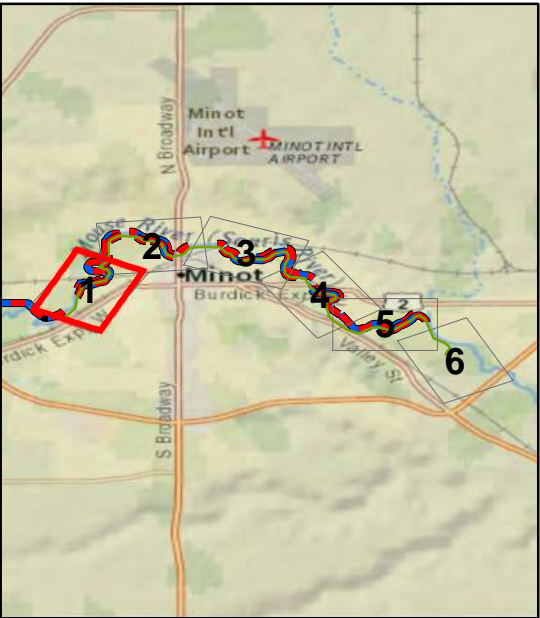
Rating

- (Green line) Acceptable
- (Yellow line) Minimally Acceptable
- (Red line) Unacceptable

Inspection Lines

Rating

- (Green line) Acceptable
- (Yellow line) Minimally Acceptable
- (Red line) Unacceptable
- (U symbol) Pump Station
- (Red dashed line) Levee Centerline



ROUTINE INSPECTION



0 175 350 700
Feet

USACE_CEMVP_MINR_2019_a_0014
USACE_CEMVP_MINR_2019_a_0013
USACE_CEMVP_MINR_2019_a_0023
USACE_CEMVP_MINR_2019_a_0025
USACE_CEMVP_MINR_2019_a_0040
USACE_CEMVP_MINR_2019_a_0144
USACE_CEMVP_MINR_2019_a_0010
USACE_CEMVP_MINR_2019_a_0007
USACE_CEMVP_MINR_2019_a_0036
USACE_CEMVP_MINR_2019_a_0157



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MAP LEGEND

Inspection Points

Rating

- (Green line) Acceptable
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- (Red line) Unacceptable

Inspection Lines

Rating

- (Green line) Acceptable
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ROUTINE INSPECTION



0 175 350 700
Feet



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Inspection Points

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- (Green line) Acceptable
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Inspection Lines

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ROUTINE INSPECTION



0 175 350 700
Feet





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Inspection Points

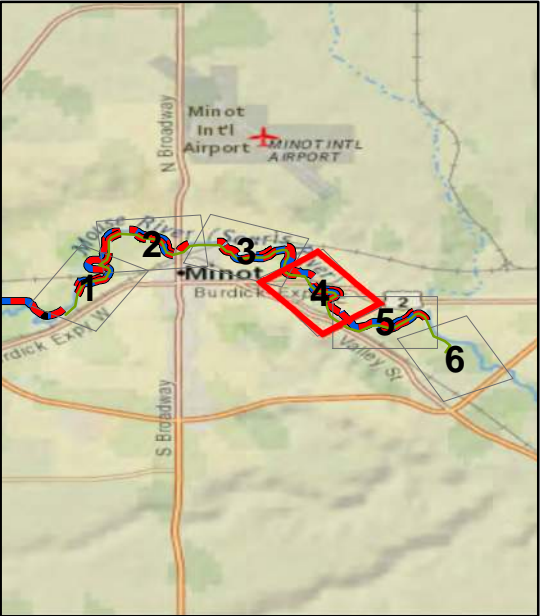
Rating

- (Green line) Acceptable
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- (Red line) Unacceptable

Inspection Lines

Rating

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ROUTINE INSPECTION



0 175 350 700
Feet





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Inspection Points

Rating

- Acceptable
- Minimally Acceptable
- Unacceptable

Inspection Lines

Rating

- Acceptable
- Minimally Acceptable
- Unacceptable
- Pump Station
- Levee Centerline



ROUTINE INSPECTION



0 175 350 700 Feet





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Inspection Points

Rating

-  Acceptable
-  Minimally Acceptable
-  Unacceptable

Inspection Lines

Rating

-  Acceptable
-  Minimally Acceptable
-  Unacceptable
-  Pump Station
-  Levee Centerline



ROUTINE INSPECTION

