



Iowa Department of Transportation

SPECIAL PROVISION FOR EMERGENCY ACTION PLAN

Pottawattamie County
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Effective Date
January 21, 2015

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120214a.01 DESCRIPTION.

- A. Levee Unit Name:** Ag Levee L-624, Section 3 (Mosquito Creek Levee)
Missouri River - Council Bluffs Flood Protection
- Local Sponsor:** City of Council Bluffs, Iowa
- River Miles:** M0.00 to about M1.69
- Levee Stations:** 1010+00 to 1060+00
- Project Name:** Council Bluffs Interstate System – Segment 3
Reconstruction of I-29 / I-80 East System Interchange
and Railroad Consolidation
Pottawattamie County, Iowa
- B.** The Iowa DOT is proceeding with the reconstruction of the I-29 / I-80 East System Interchange (Segment 3) as a part of the Council Bluffs Interstate System (CBIS) improvement program. The work for Segment 3 involves the construction of new roadway embankments and bridge structures. The levee affected by this construction is the Agricultural Levee L-624, which ~~was~~ is a part of the Council Bluffs Flood Protection System that was originally designed and constructed by the Omaha District of the U.S. Army Corps of Engineers (USACE) in the early 1950s. A large portion of the interstate reconstruction will take place within the “critical area” of the levee, which is defined by the USACE as the area within 300 feet riverward and 500 feet landward of the levee.

The work covered by this Emergency Action Plan (EAP) addresses the removal of bridge foundations and embankments, storm sewer pipe, and sanitary sewer pipe and construction of roadway embankments including ground improvements, bridge structures, storm sewer, and sanitary sewer within the Mosquito Creek levee critical area. The ground improvements consist of below grade concrete columns that will be used to support the new embankments.

C. The purpose of this Special Provision is:

- to identify the submittals required by the Contractor for compliance with the Section 408 submittal to the United States Army Corps of Engineers (USACE),
- state the Section 408 submittal limitations on work in the levee critical area,
- establish the minimum monitoring requirements,
- establish the emergency response in case of a flood event, and
- establish the restoration requirements for damage to the levee critical area.

A copy of the Section 408 submittal is available from the Engineer.

120214a.02 CONSTRUCTION.

A. Preparation of Emergency Action Plan.

Prior to construction, prepare and follow an EAP, which will address the requirements presented in this document and the procedures for high water conditions on either the Missouri River or the Mosquito Creek during construction. The EAP shall include emergency contact information, including cell phone and pager numbers of the project manager, project superintendent and foreman. The numbers provided shall be monitored 24 hours a day, 7 days a week.

B. Submittals.

~~Any changes proposed by the contractor that might impact the levee or are located in the levee critical area, such as: changes to staging, excavation depths, shoring, haul routes, levee access roads, or working pads adjacent to the Mosquito Creek channel; addition of a temporary stream crossings; groundwater dewatering; or pumping water from the Mosquito Creek must be submitted for approval.~~

~~Submittals for contractor proposed changes, EAP, levee access roads and working pads adjacent to the Mosquito Creek, excavation shoring designs, or temporary stream crossing designs in the levee critical area will be reviewed by the Engineer, the City of Council Bluffs, and the USACE. Construction identified in the submittal shall not begin until the City of Council Bluffs and the USACE have accepted the submittal.~~

~~1. Levee access roads and working pads located on the levee shall be designed to meet the USACE stability guidelines in "Design and Construction of Levees" EM 1110-2-1913. Working pads located on the stream bank shall be designed to be stable and not further damage existing bank areas that are distressed. Analysis shall include weight of the levee access roads, working pads, and equipment (both static and operating). Additionally, any pre-existing slope failure surfaces shall be included in the analyses. The analyses shall be signed and sealed by a qualified professional engineer in the State of Iowa specializing in geotechnical engineering. The contractor is responsible for the stabilization of their working pad as it relates to their operations. The levee access roads and working pads shall be evaluated for both global stability and local stability.~~

~~2. Settlement of the levee due to the weight of the levee access roads, working pads, and equipment (both static and operating) shall be analyzed and a mitigation plan presented in the submittal, such that the level of protection provided by the levee is not reduced during or after construction. At a minimum, this shall include pre and post construction survey. See Article 120214a.02.E.~~

~~Any observed deformation that is greater than 6 inches, such as sliding, sloughing, or subsidence, of the levee access road, working pad, or immediately adjacent areas must be addressed immediately. Construction activities in the distressed area shall cease until a mitigation plan has been submitted and approved.~~

- ~~3. Changes to the levee access roads or working pads adjacent to the Mosquito Creek or the design of a temporary stream crossing will require a hydraulic analysis and preparation of a backwater profile. Levee access roads and working pads shown in the plans were designed for a maximum backwater of 0.5 feet, prior to overtopping of the levee. Backwater profiles for the 2, 5, and 10 year events and the bank full event shall be provided. The hydraulic analyses shall be signed and sealed by a qualified professional engineer in the State of Iowa.~~
- ~~4. Allow 9 weeks for review of these submittals.~~

The following submittals are required:

- Emergency Action Plan,
- Pre-Construction Survey,
- Post-Construction Survey,
- Distress Mitigation Plans, and
- Proposed modifications to the approved plans and specifications.

Submittals will be reviewed by the Engineer, the City of Council Bluffs, and the USACE. Allow 9 weeks for review of any submittal or resubmittal.

1. Survey the levee, landward toe area extending 50 feet landward, and riverward toe area extending to the Mosquito Creek waterline a minimum of 50 feet beyond the downstream and upstream limits of the levee access and levee restoration areas and any other area of the levee, landward toe area, or riverward toe area that will be accessed by the Contractor. The survey shall be completed prior to construction activities, after restoration of the disturbed areas, and as requested by the Engineer to document observed distress. The results of the post-construction survey shall be provided to the Engineer prior demobilization. Areas determined to be deficient by the Engineer shall be immediately repaired and confirmed by survey. Survey information shall be reported in a table format with levee stations and elevations presented along the levee centerline at 25-foot intervals and in graphical format in plan and profile view and cross-sections at 25-foot intervals. The plan view shall show the levee centerline, levee station, and 1-foot elevation contours. The profile view shall show the elevation at the levee centerline.

Piggy back levees have been included in this project as a mitigation measure for distress/deformation caused by construction activity on the levee or stream bank. Any observed deformation that is greater than 6 inches, such as sliding, sloughing, or subsidence, of the levee access road, working pad, or immediately adjacent areas shall be reported to the Engineer. If, in the opinion of the engineer, the deformations are determined to be significant, construction activities in the distressed area shall cease. The Contractor will work with the Engineer to develop and submit a mitigation plan and construction will only commence when the mitigation has been approved.

2. Changes to the levee access roads or working pads adjacent to the Mosquito Creek or the design of a temporary stream crossing will require a hydraulic analysis and preparation of a backwater profile. Levee access roads and working pads shown in the plans were designed for a maximum backwater of 0.5 feet, prior to overtopping of the levee. The acceptable amount of backwater will determined by the USACE based on a risk assessment of the magnitude of backwater, construction time frame, as well as other considerations. Backwater profiles for the 2, 5, and 10 year events and the bank full event shall be provided. The hydraulic analyses shall be signed and sealed by a qualified professional engineer in the State of Iowa.

3. Any modifications to the approved plans and specifications proposed by the Contractor for construction activities located in the levee critical area, such as: changes to staging, excavation depths, shoring, haul routes, levee access roads, or working pads adjacent to the Mosquito Creek channel; addition of a temporary stream crossings; groundwater dewatering; or pumping water from the Mosquito Creek must be submitted to the Engineer for approval.

C. Staging.

1. All construction related to the piggy-back levee or levee restoration must be substantially complete prior to the commencement of any excavations within the existing levee section at the location of the piggy-back levee or levee restoration. See staging plans for additional details and requirements.
2. The Iowa DOT, City of Council Bluffs representatives, and the Engineer shall be notified 1 week prior to construction of the piggy-back levee or levee restoration and at the completion of the piggy-back levee or levee restoration construction operations at least 1 week prior to beginning any excavations within the existing levee section.
3. Determination that the proposed piggy-back levee or levee restoration work is considered to be substantially complete will include review of: be made if the earthwork grading has been completed, compaction test results are satisfactory, and the as-built survey has been completed and shows conformance with planned grades.
 - a. The earthwork grading,
 - b. As built survey, and
 - c. Compaction test results for the embankments.

D. Limitations.

Ensure that the proposed construction will not involve any additional landward or riverward excavations in the critical area that may impact the levee at any time during construction except as shown in the approved plans and specifications.

Ensure that access to the levee crest and area within 15 feet of the riverward and landward levee toe is clear and available to the City of Council Bluffs and USACE for operations and maintenance at all times. If access to the levee crest or area within 15 feet of the levee toe will be restricted, coordinate restrictions with the Iowa DOT, Engineer and the City of Council Bluffs. Any required restrictions will require prior approval of the Engineer and the City of Council Bluffs.

E. Pre- and Post-Construction Survey.

Survey the levee, landward toe area extending 50 feet landward, and riverward toe area extending to the Mosquito Creek waterline a minimum of 50 feet beyond the downstream and upstream limits of the levee access and levee restoration areas and any other area of the levee, landward toe area, or riverward toe area that will be accessed by the contractor. The levee, landward toe area, and riverward toe area shall be surveyed prior to construction activities, and after restoration of the disturbed areas, or as requested by the engineer to document observed distress. The results of the post-construction survey should be provided to the Engineer prior demobilization. Areas determined to be deficient by the Engineer shall be immediately repaired and confirmed by survey. Survey information should be reported in a table format with levee stations and elevations presented along the levee centerline at 25-foot intervals and in graphical format in plan and profile view and cross-sections at 25-foot intervals. The plan view shall show the levee centerline, levee station, and 1-foot elevation contours. The profile view shall show the elevation at the levee centerline.

The Engineer will complete a pre-construction and post-construction inspection to identify any observable signs of distress including: rutting, cracks, lack of sod cover, settlement, erosion, or stability issues on the levee or riverside stream bank areas. If the post-construction inspection identifies any observable sign of distress that was the result of the Contractor, the area shall be

repaired to pre-construction conditions by the Contractor. The Contractor will prepare a submittal detailing the proposed repair method. The submittal will be reviewed by the Engineer, the City of Council Bluffs, and the USACE. Construction shall not begin until the City of Council Bluffs and the USACE have accepted the submittal. Allow 9 weeks for review of the submittal.

120214a.03 EMERGENCY ACTION PLAN.

A. Contents of Emergency Action Plan.

1. The contents of the EAP will shall present a detailed staging plan and all provisions in the contract documents so that the integrity of the levee system and its ability to provide flood protection will be maintained throughout the entire duration of construction. A site map will be provided in the EAP that identifies the location of:
 - Drainage District Right-of-Way (provided by the Engineer),
 - levee centerline with stationing (provided by the Engineer),
 - 500-foot landward critical area (provided by the Engineer),
 - proposed haul routes,
 - proposed construction within the levee critical area,
 - stockpiles that will be available for emergency backfill along with dates that stockpiles will be in-place and type of material,
 - levee access locations, and
 - temporary working pads or stream crossings along with dates that they will be in-place.

~~The design of the levee access roads and temporary working pads, as addressed in the plans, will be provided in the EAP including:~~

- ~~• plan view location,~~
- ~~• cross sections,~~
- ~~• material types,~~
- ~~• strength parameters~~
- ~~• stability analyses,~~
- ~~• settlement analyses, and,~~
- ~~• hydraulic analysis (if applicable).~~

The pre-construction survey will be provided in the EAP.

The schedule for activities within the levee critical area shall be specifically addressed in the EAP, such as planned excavations, working pad construction and removal, bridge demolition, and bridge construction.

The EAP shall be submitted at least ~~3~~ 9 weeks prior to construction within the critical area ~~and 9 weeks prior to construction on or riverward of the levee.~~

2. The proposed construction will be performed during flood and non-flood event periods, ~~including the work on the top, riverside and landside of the existing levee.~~ The potential does exist for the river or stream to rise to flood level during the proposed construction ~~and provisions will be in place to address this potential.~~ The Contractor shall have the provisions described in this Special Provision in place, to address this potential.

B. Procedures.

The following procedures shall be in place to address an emergency situation:

1. Daily Monitoring.

The water level in the Missouri River shall be monitored on a daily basis by the Contractor ~~and the Iowa DOT~~ and recorded in the daily construction log. The extended forecast of future river levels and precipitation in the Mosquito Creek drainage basin shall also be monitored

and recorded in the daily construction log. The Contractor shall be able to react quickly to implement the required actions described in this Special Provision if a heavy precipitation event occurs at any time of the day.

The Engineer and the City of Council Bluffs shall be notified if flood waters in the Mosquito Creek come into contact with the levee or are near the top of the levee within the construction limits.

2. Monitoring Agencies.

The river level shall be monitored through USGS and National Weather Service websites for River Gage - 06610000 Missouri River at Omaha, NE.

- http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06610000&
- <http://www.riverwatch.noaa.gov/forecasts/OAXRDOAX.php>

The Mosquito Creek basin precipitation forecast shall be monitored through the National Weather Service website.

- <http://www.hpc.ncep.noaa.gov/qpf/qpf2.shtml>

3. Ceasing Operation.

Construction operations will cease in the event the river levels are within 5 feet of the published flood stage of 29 feet (Elevation 974.4 feet). The 100-year flood elevation at this location is 981.0 feet. The 500-year flood elevation is 983.0 feet.

In the event greater than 1 inch of rainfall in a 24-hour period is forecasted for the Mosquito Creek drainage basin, coordinate the work planned on the levee or riverward of the levee with the Iowa DOT and City of Council Bluffs and take actions to ensure that no material or equipment is stored on the levee or riverward of the levee at the end of the shift.

Construction operations on the levee or riverward of the levee will cease if an unforeseen precipitation event occurs and the water level in the Mosquito Creek begins to approach bank full of the minor channel. Material and equipment shall be removed from the levee and riverward of the levee within 4 hours of the unforeseen precipitation event.

Coordinate with the Iowa DOT, Engineer, City of Council Bluffs, and USACE to determine timing and sequence of activities, as appropriate for returning to working following the receding of flood waters. When the flood waters recede and if repairs are needed, complete repairs, as directed by the Iowa DOT, Engineer, City of Council Bluffs, and USACE. Remove debris that has been deposited in the work areas.

4. Construction Equipment.

Provide a list of all construction equipment that will be present throughout the duration of construction within the critical area and will be available for emergency flood fighting activities.

5. Emergency Backfilling.

Emergency backfilling shall be commenced, if the river level reaches an elevation within 5 feet of the published flood stage of 29 feet (Elevation 974.4 feet), during excavation construction of the sanitary sewer, storm sewer, drilled shafts, confirmation borings, or rigid inclusions, . The rate of emergency backfilling shall exceed the rate of the rising river. Excavated soil shall be used as emergency backfill. Concrete or soil can also be used as emergency backfill for the ground improvements and drilled shafts.

Emergency backfilling shall commence, if the water level in the Mosquito Creek begins to approach bank full of the minor channel, during excavation construction of the drilled shafts or confirmation borings within the levee section or riverward of the levee. The rate of emergency backfilling shall exceed the rate of the rising water. Excavated soils shall be used

as emergency backfill. Concrete or cement-bentonite grout can also be used as emergency backfill.

120214a.04 EMERGENCY CONTACT INFORMATION.

A. City of Council Bluffs.

Jeff Krist, P.E.
City of Council Bluffs, Public Works Dept.
290 Pearl Street
Council Bluffs, Iowa 51503
Phone: 712-328-4635 (office)
Email: jkrist@councilbluffs-ia.gov

Pat Miller, Operations Manager
Phone: 402-510-2700 (cell)

Jeremy Noel, Levee Superintendent
Phone: 402-968-7301 (cell)

B. Iowa DOT Resident Construction Engineer.

David Dorsett, P.E.
3538 S. Expressway
Council Bluffs, Iowa 51501
Phone: 712-366-0568
Email: David.Dorsett@dot.iowa.gov

C. Iowa DOT District 4 Construction Engineer.

George Feazell, P.E.
2210 East 7th Street
Atlantic, Iowa 50022
Phone: 712-243-3355
Email: George.Feazell@dot.iowa.gov

D. Section 408 Engineer.

Patrick H. Poepfel, P.E.
HDR, Inc.
8404 Indian Hills Drive
Omaha, Nebraska 68114
Phone: 402-399-1368
Email: Patrick.Poepfel@hdrinc.com

E. USACE – Omaha District.

Ryan Buckley, P.E.
USACE – Readiness Branch
1616 Capitol Avenue, Suite 9000
Omaha, Nebraska 68102-4926
Phone: 402-995-2446
Email: Ryan.M.Buckley@usace.army.mil

F. Contractor.

Provide primary and secondary contact information for project manager, project superintendent, and foreman.

120214a.05 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

All costs for complying with this special provision including the preparation of the EAP, inclusion of submittals with the EAP, project coordination, pre- and post-construction surveys, monitoring, emergency

actions, and any other item associated with implementation of the EAP shall be considered incidental to the project. No separate payment will be made.