SP- 231047
(New)

SPECIAL PROVISIONS
FOR
FLOOD CONTINGENCY PLAN

Polk County
HDP-1945(411)--71-77

Effective Date
January 22, 2025

THE STANDARD SPECIFICATIONS, SERIES 2023, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

PART 1 - GENERAL

1.01 Preparation and Submittal of the Flood Contingency Plan.

A. Prior to equipment mobilization, materials delivery, and construction, the Contractor shall prepare, submit for approval, and construct temporary risk reduction measures for a Flood Contingency Plan (FCP) to address the requirements presented in this document and the procedures for high water conditions during construction. The Contractor shall not mobilize equipment or materials to the site without written approval of the FCP from the Engineer.

B. The Contractor's FCP shall be submitted to the Engineer for approval. Submittals will be reviewed by the Engineer, City, and USACE. The Contractor shall allow at least 8 weeks for the review and processing of any submittal or resubmittal.

1.02 Levee Construction Staging and Stoplog Closure Construction Staging.

A. The Contractor shall ensure that the proposed construction staging will not impact the performance of the levee system or accessibility to the levee system during flood stages.

B. Any proposed modifications of the contract documents by the Contractor for construction activities located within the levee system footprint, such as: changes to staging, excavation depths, shoring, hauling routes, levee access locations, addition of temporary steam crossings, groundwater dewatering, must be submitted to the Engineer for approval before changes are implemented.

1.03 Contents and Limitations of the FCP.

A. The prepared FCP shall demonstrate the compliance with all provisions in the contract documents so that the integrity of the levee system and its ability to provide flood risk reduction will be maintained throughout the entire duration of the construction.

B. The proposed construction will be performed during flood and non-flood event periods. The potential does exist for the river or creek to rise to flood level during the proposed construction. The FCP shall demonstrate that the Contractor will have adequate provisions in place to address this potential.

C. The Contractor's FCP shall clearly state the proposed methods for temporarily providing flood protection while the existing levee system is being degraded. Leaving the existing levee system in place during construction and completion of the realigned levee shall be a part of the FCP. The FCP shall include each of the following at a minimum:

1. Planned construction schedule.
2. Site Map, Including:
    a. City's right-of-way (provided by Engineer).
    b. Levee centerline with stationing (provided by Engineer).
    c. Landward criteria area, 500 feet off levee centerline (provided by Engineer).
    d. Proposed hauling routes with site access plans with profile of access routes.
    e. Proposed construction within the levee footprint.
        1) Detailed materials and equipment staging plan.
        2) List of all construction equipment that will be present.
        3) Temporary soils stockpile area(s).
        4) Sheeting and shoring plans.
        5) Flood barrier integrity monitoring program.
        6) Equipment staging and storage plans for emergency actions.
        7) Dewatering plans.
        8) Site restoration plan.
        9) The FCP shall also include emergency contact information, including cell phone of the project manager, project superintendent and foreman. The Contractor's contact phone numbers shall be monitored 24 hours a day, 7 days a week.

1.04 Emergency Procedures.

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

1. Daily Monitoring: The water level on Fourmile Creek and the Des Moines River shall be monitored daily by the Contractor. The extended forecast of future river levels shall also be monitored by the Contractor.
2. Monitoring Agencies: Monitoring shall be done by visual inspection of the Fourmile Creek and Des Moines River water surface elevations, weather forecasts, and through the National Weather Service Hydrologic Prediction Services (NWS River Forecast) website for:
    a. NWS Gage DESI4 – Des Moines River (Central IA) at SE 6th Street: https://water.weather.gov/ahps2/hydrograph.php?wfo=dmx&gage=desi4
    b. NWS Gage DFMI4 Fourmile Creek (Central IA) at Des Moines Easton Boulevard: https://water.weather.gov/ahps2/hydrograph.php?wfo=dmx&gage=dfmi4

B. Ceasing Construction - Base Flood Stage: If the Des Moines River water level reaches the published flood stage of 24.0 feet, or the Fourmile Creek water level reaches the

published flood stage of 12.5 feet, the Contractor shall cease construction and coordinate with the Engineer to evaluate the feasibility for continuing construction.

1. Project areas shall be continuously monitored for seepage, sloughing, and other distress to the levee. The Contractor may continue construction if there are no indications of distress as determined by the Engineer.
2. If distress to the levee is observed at an excavation, the excavation shall be emergency backfilled, as directed by the Engineer.
3. The Engineer, City, and USACE representatives will be notified when the decision has been made to cease construction.
4. The Engineer will issue approval prior to resumption of construction.

C. Ceasing Construction – Moderate Flood Stage: If the Des Moines River water level reaches the published moderate flood stage of 26.0 or the Fourmile Creek reached the moderate flood stage of 14.0, the Contractor shall cease all construction.

1. Open excavations shall be emergency backfilled.
2. All equipment, construction materials, and stockpiled materials shall be removed and relocated to the landside of the levee system.
3. The Engineer, City and USACE representatives will be notified when the decision is made to cease construction operations. Construction may resume when the water levels fall below the published flood stages under the Base Flood Stage and determined feasible by the Engineer.
4. The Engineer will issue approval prior to resumption of construction.

D. Emergency Backfilling.

1. The Contractor shall backfill any open excavations within 7 hours of notice by the Engineer.
2. All equipment used for emergency backfilling shall be stored with a reasonable distance from the excavation throughout construction so that emergency backfilling can be completed within an expedited manner.
3. Required equipment for emergency backfilling includes loaders, excavators, backhoes, dozer, etc. capable of completed backfill procedures in an expedited manner.
4. A moderate compacting effort with a dozer or compactor shall be applied during the emergency backfilling of excavations. The proposed method of backfilling shall be submitted as part of the FCP.

E. Emergency Backfilling During Levee Construction.

1. The Contractor shall actively monitor Fourmile Creek conditions when major precipitation events (3 inch rainfall) are forecasted or have been observed over the basin. Typically, it takes approximately 5 to 6 hours for the rainfall over the basin to accumulate and flow to the BNSF railroad bridge.
2. When monitoring conditions there are several key indicators which should always be considered. These indicators include the antecedent conditions (soil moisture), intensity and duration of rainfall observed, real time stream stages at all gages, and the rates of rise observed at these gages.
3. Since there is no river gage at the railroad bridge, the conditions recorded by the USGS gage at Easton Blvd. are vital when monitoring conditions on Fourmile Creek.
4. Alternative Available Meteorological Data may be used to monitor the Fourmile Creek conditions these include:
    a. City of Des Moines river gages website https://contrail.dmgov.org this website service provides near real-time (every 15 minutes) data and 15-minute, 1-hr, 3-hr, 6-hr, 12-hr, 24-hr, 2-day, 7-day, & 30-day accumulated rainfall data (Figure 2). This network also provides data from the USGS gauges in our area (2nd Ave., SE 6th, Fleur, Walnut Creek and Fourmile Creek etc.). The website https://rivergages.dmgov.org/ pulls the latest

graphs from the NWS and the Corps every 15 minutes to give a quick snapshot of the latest conditions/predictions for the locations that are most used during flood operations. The Red Rock Project Manager may set up a service to receive cell phone flood stage alerts text messages for the NWS/USGS Gages at Easton Boulevard stages of 10 feet, 12.5 feet, 14 feet, and 16 feet (Figure 3). Appendix A shows additional screen shots of the Des Moines ALERT Flood Monitoring System.

b. USGS 05485605 Fourmile Creek near Ankeny, IA DS1: http://nwis.waterdata.usgs.gov/ia/nwis/peak/?site_no=05485605&agency_cd=USGS&amp

c. USGS 05485640 Fourmile Creek at Des Moines, IA: http://nwis.waterdata.usgs.gov/ia/nwis/peak/?site_no=05485640&agency_cd=USGS&amp

d. NWS Fourmile Creek at Des Moines Easton Blvd. [NWS will issue forecast once action stage is reached]: http://water.weather.gov//ahps2/hydrograph.php?wfo=dmx&gage=dfmi4&view=1,1,1,1,1,1,1,1

e. The Iowa Flood Center's Iowa Flood Information System**:** http://ifis.iowafloodcenter.org/ifis/main/ is a user-friendly statewide resource for real-time flood information. The IFIS radar product is real-time, updating every 5 minutes and includes information on rainfall accumulation up to 14 days. The radar data are viewable as a 6-hour loop animation with full control of individual 5-minute frames. Stream gauge data, including USGS and IFC sensors are available to view through the IFIS interface.

5. The Contractor shall backfill any open excavations within 7 hours of notice by the Engineer.

6. The Contractor shall provide a list of all construction equipment and material stockpiles that will be stored on the riverward and landward side of the levee during each stage of construction. All equipment, construction materials and stockpiled soils on the riverward side of the levee will be removed in the event of flooding.

7. The rate of emergency backfilling shall exceed the rate of the rising water. Excavated or imported soil shall be used as emergency backfill. The Contractor shall maintain construction equipment on-site that will be available for emergency backfilling of excavations.

8. The emergency placement of fill shall be completed within 7 hours of notice from the Engineer. The cohesive fill from the emergency stockpile shall be used as emergency fill. The Contractor shall maintain construction equipment on-site that will be available for emergency backfilling of excavations.

   a. Emergency Stockpile Material shall consist of cohesive materials having at least 50% passing the U.S. Standard 200 mesh sieve size. Cohesive materials consist of materials classifying as lean (CL), having a Plasticity Index of 10 or greater, and falling between the "U" line and the "A" line on Figure 3 in ASTM D 2487 – Standard Tests for Classifications of Soils for Engineering Purposes and a Liquid Limit less than 50.

   b. Stockpiled materials shall be appropriately protected from the elements such that it maintains a workable moisture content for placement and compaction at all times.

   c. Submit to the Engineer for approval the results of grain size testing (ASTM D 6913 and D 7928) and plasticity testing (ASTM D 4318) on all Cohesive Fill Materials proposed for use in the Emergency Stockpile.

   d. The source of materials proposed for use in emergency stockpile shall also be submitted. These submittals must be approved by the Engineer prior to the placement of materials within the emergency stockpile.

1.05 Emergency Contact Information.

A. City Primary Contact: City of Des Moines, Iowa
Name: Steve Naber
Address: City Hall, 900 Robert D Ray Drive, Des Moines, IA 50317
Phone: 515-283-4920
Email: SLNaber@dmgov.org

B. Engineer: Kirkham, Michael & Associates, Inc.
Name: Scott Almeida, PE
Address: 4390 114th Street, Urbandale, IA 50322
Phone: 515-953-9012
Email: SAlmeida@Kirkham.com

C. USACE – Rock Island District
Jason Smith
Address: 1500 Rock Island Drive, Rock Island, IL 61201
Phone: 309-794-5690
Email: Jason.T.Smith2@usace.army.mil

1.06 Measurement And Payment.

A. Measurement: Flood Contingency Plan shall be measured as a lump sum item.
1. Partial payments for work under this specification shall be as follows:
2. When a draft written plan, including all items outlined in Paragraph 1.03 has been submitted to the Engineer, 10% of the contract lump sum unit price for Flood Contingency Plan will be paid, subject to any limitations outlined previously.
   a. When a completed written plan is submitted and approved by the Engineer, the next 15% of the contract lump sum unit price for Flood Contingency Plan will be paid, subject to any limitations outlined previously.
   b. When 50% of the original contract sum for the project, excluding the Flood Contingency Plan item and stored materials, has been earned, the next 25% of the contract lump sum unit price for Flood Contingency Plan will be paid, subject to any limitations outlined previously.
   c. When 75% of the original contract sum for the project, excluding the Flood Contingency Plan item and stored materials, has been earned, the next 25% of the contract lump sum unit price for Flood Contingency Plan will be paid, subject to any limitations outlined previously.
   d. Upon City acceptance of Substantial Completion of the project, full payment will be made for contract lump sum unit price for Flood Contingency Plan, including any amount not made as a progress payment.
   e. No payment shall be made to the Contractor for this work until a completed plan is submitted and approved by the Engineer.

B. The Contractor shall submit a schedule of values to the Engineer to explain the breakdown of the lump sum price. This schedule of values will only be used to determine the appropriate proportion of the lump sum to be attributed to each progress payment. The following list contains items that should be used, at a minimum for the schedule of values:
1. Preparation of the plan
2. Construction of the plan.
3. Maintenance of the plan
4. Removal of temporary risk reduction measures.