SP-150661
(New)

SPECIAL PROVISIONS
FOR
EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA

Pottawattamie County
IM-029-3(183)53--13-78
IM-029-3(184)53--13-78
IM-NHS-029-3(141)53--03-78

Effective Date
August 18, 2020

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150661.01 DESCRIPTION.

The work under this contract is located adjacent to a federally constructed levee along the Missouri River. As such, no improvement shall be passed over, under, or through the levees, improved channels or floodways, nor shall any excavation or construction be permitted within the limits of the levees other than the construction under this contract and these special provisions without prior approval of the U.S. Army Corps of Engineers (USACE). The limits of the levee critical area are 300 feet riverward and 500 feet landward of the levee. The following structures fall within these limits:

- Culverts
- Conduit
- Light Towers
- Removals

150661.02 WORK ZONE REQUIREMENTS.

Areas within these limits disturbed by excavation, shoring, other intrusions, or disturbances of the soil shall be restored as described in this special provision. Any construction within the levee critical area limits that is not directly related to the construction of the new bridge abutments and piers or removal of the existing bridge piers noted above shall not commence without prior approval of the Engineer and the USACE.

150661.03 CONSTRUCTION.

A. Culverts, Conduit, and Light Towers.

1. Structures shall be constructed within the levee critical area as per the contract documents. Excavations for construction of the structures shall be by open excavation to the limits as per the contract documents, unless site restraints preclude the use of open excavations. As such, no excavation or penetration of the existing ground beyond the limits as per the contract

documents will be permitted. Backfill shall be placed in the excavation as it was encountered in the initial excavation. Separate stockpiles shall be made for each soil type encountered in the excavation.

2. Open Excavation.

- **a.** Open excavation shall consist of 2 Horizontal:1 Vertical side slope.
- **b.** Excavated soils shall be sorted by soil type, classified and stockpiled, separately.
- **c.** The sand backfill shall be placed in the excavation as it was encountered in the initial excavation.
- **d.** The clay backfill shall be placed in the excavation as it was encountered in the initial excavation.

3. Shored Excavation.

- **a.** Shored excavation shall consist of sheet pile, soldier pile, or other excavation support systems approved by the Engineer.
- **b.** Soils shall be sorted, classified and stockpiled, separately.
- **c.** Excavation within the shoring limits shall extend to a minimum depth of the bottom of footing elevation.
- **d.** The backfill shall then be placed in the excavation as shown in Figure 1.
- **e.** Clay blanket soils disturbed by the removal of the shoring system shall be overexcavated.
- **f.** If site constraints will not allow for overexcavation of the clay blanket soils, the shoring system shall be abandoned-in-place to avoid leaving a disturbed zone within the clay blanket caused by removal of the shoring system and the backfill shall be placed in the excavation as shown in Figure 2.

B. Removals.

1. Within Levee Section.

During the excavation for removals within the levee section, excavation shall be by open excavation to the limits as per the contract documents.

- **a.** Open excavation shall consist of 3 Horizontal:1 Vertical side slope.
- **b.** Excavated soils shall be wasted.
- **c.** Backfill shall consist of lean clay borrow.

2. Not within Levee Section.

During the excavation for removals that are not located within the levee section, the various soil types shall be sorted. The clay blanket soils shall be placed in a separate stockpile from the fill soils and alluvial sands. Excavation shall be by open excavation to the limits as per the contract documents.

- **a.** Open excavation shall consist of 2 Horizontal:1 Vertical side slope.
- **b.** Excavated soils shall be sorted by soil type, classified and stockpiled, separately.
- **c.** The sand backfill shall be placed in the excavation as it was encountered in the initial excavation.
- **d.** The clay backfill shall be placed in the excavation as it was encountered in the initial excavation.

C. Materials.

1. If borrow is needed to complete the backfill, it shall be comprised of lean clay (CL). Lean clay shall consist of cohesive materials having at least 50% passing the U.S. Standard 200 mesh sieve size, a Liquid Limit less than 50, a Plasticity Index of 10 or greater, and falling between the “U” line and the “A” line on Figure 4 in ASTM D 2487 – Standard Tests for Classifications of Soils for Engineering Purposes.

2. Moisture and density control of the backfill shall be based on the standard Proctor compaction test (Materials I.M. 309). Cohesive materials shall be compacted to a density of at least 95% of the maximum dry density and be within -1% to +4% of the optimum moisture content at the time compactive effort is applied, which may require the addition of water or aeration of materials. Non-cohesive materials shall be placed in a moist condition and compacted with approved equipment to a density of at least 95% of the maximum dry density. Sampling and testing of backfill shall be in accordance with Materials I.M. 204 for roadway and borrow excavation and embankments and Materials I.M. 312.

D. Quality Control Program.

1. Provide and maintain a Quality Control Program for construction of backfill. This is defined as process control sampling, testing, and inspection as described in Materials I.M. 540 for construction of embankments with moisture and density control.

2. Provide a Quality Control Technician who is responsible for all process control sampling, testing, and inspection. The Quality Control Technician shall obtain Soils Technician certification through the Iowa DOT Technical Training and Certification Program (TTCP).

3. Provide a laboratory facility and necessary calibrated equipment to perform required tests.

4. Notify the Engineer when a moisture content falls outside specified control limits or density falls below required minimum. If a moisture content falls outside control limits, fill material in this area will be considered unacceptable for compaction. Perform corrective action(s) to bring uncompacted fill material within control limits. If material has been compacted, disk it, bring to within control limits, and re-compact. When project has a density requirement, if an in-place density does not meet the requirements, compacted fill material in this area will be considered unacceptable. Perform corrective action(s) to material to meet density requirements. Compensation will not be allowed for delays resulting from moistening, disking, or re-compacting.

150661.04 METHOD OF MEASUREMENT.

Compliance with this special provision will not be measured for payment but will be considered incidental to the bid item associated with the work.

150661.05 BASIS OF PAYMENT.

A. All costs associated with the excavation and backfilling with moisture and density control in levee critical area, will be considered incidental to the bid item associated with the work.

B. Payment is full compensation for furnishing a Quality Control Technician, sampling and testing, process control inspection, drying material, furnishing and applying water, controlling moisture content of the materials, and compacting the materials, as specified.

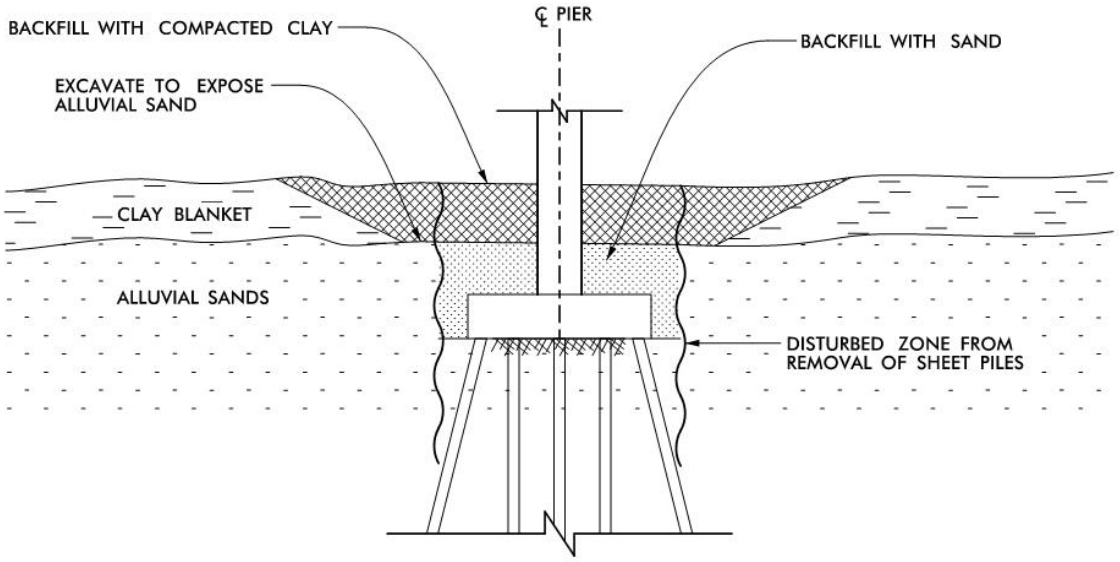

Figure 1: Shoring Removed Backfill Detail

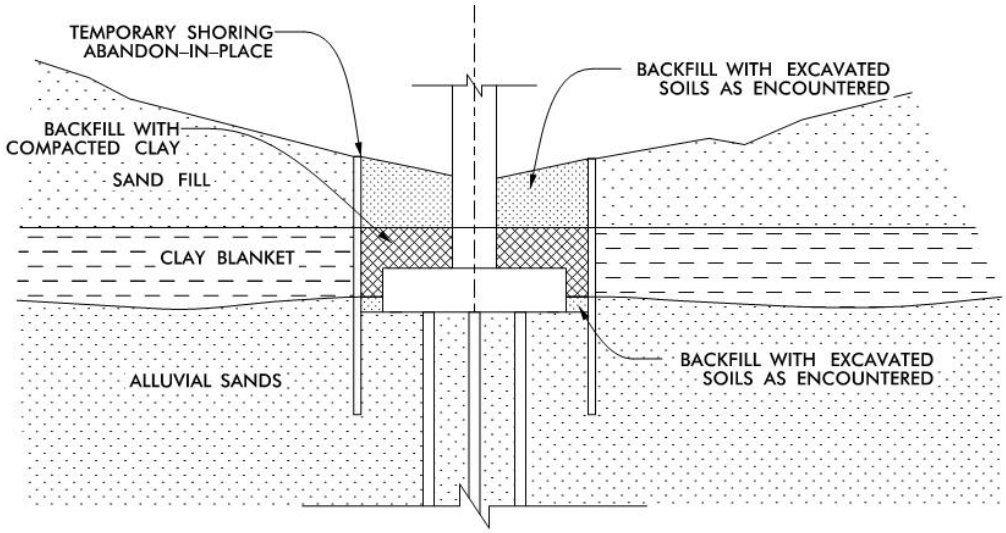

Figure 2: Shoring Abandoned-in-Place Backfill Detail