U.S. Army Garrison
Fort Leavenworth Military Installation

DRAFT Environmental Assessment (EA)

Fort Leavenworth Levee Repairs

Prepared by
USACE Kansas City District

Prepared for
Directorate of Public Works,
U.S. Army Garrison Fort Leavenworth

July 2021

DRAFT Finding of No Significant Impact (FNSI)

Fort Leavenworth Levee Repairs

July 2021

Proposed Action.

The proposed action is the repair of the levee and stormwater systems to address the issues outlined in the Purpose and Need. The primary function of these systems is to protect the Sherman Airfield from flooding due to the Missouri River.

Purpose and Need.

During 2019, the Sherman Army Airfield was subject to flooding, which overtopped the local levee system and damaged numerous parts of the Airfield Infrastructure. The stormwater pump stations were inundated and are no longer functioning. The levee system was overtopped and experienced significant erosion during the storm event. The box culvert under the entrance road to the Airfield was overtopped which resulted in damage to the culvert and loss of pavement.

Alternatives Considered.

Two alternatives were evaluated for their effects to the human environment.

Alternative 1: No-Action. Continue with no repair to the levee or stormwater systems. The No Action Alternative is not considered a viable solution, but it is required to be analyzed in this environmental assessment (EA) per National Environmental Policy Act (NEPA) regulations. The No Action Alternative provides a baseline for comparison against the proposed action so that a determination of potential effects to the human and natural environment can be made.

Alternative 2: Proposed Action (Repair the Levee and Stormwater Systems). This alternative will repair levee damage and restore elevations. Most of the levee system has received significant erosion damage and would be restored to their respective elevations. This alternative will install a diversion culvert from Quarry Creek onto the protected side of levee, connecting it to pump station 1 as well as replacing the box culvert flood control structure. The levee would be setback 100 feet from station 149+00 to station 151+00. A three-foot overflow weir would be installed from station 121+00 to station 148+50 to control the location of overflow from the Missouri River. This

alternative will also construct a one-mile long levee on the west side, north of the airfield hangers, tying the local levee system to the high ground by raising the existing road to levee height. Three failed pump stations would be replaced with gravity outlets and improved drainage with culverts and ditches to move water to the three new pump stations. Borrow for repairs would be taken from stockpiles around the Installation to reduce risk of disturbing possible cultural sites and from an identified area Northeast of the airfield with 155 acres approved, that was cleared prior to nesting season.

Public Review and Comment Period.

A 30-day public and agency comment period commenced on July 30th, 2021 and concluded on August 29th, 2021. Comments were solicited from government agencies during the public review process. Copies of this EA and the Draft FNSI were provided to federally recognized tribes and the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- Kansas Department of Wildlife, Parks, and Tourism (KDWPT)
- Kansas Department of Health and Environment (KDHE)
- Kansas State Historic Preservation Office/Officer (SHPO)
- U.S. Environmental Protection Agency, Region 7

Anticipated Environmental Effects

Based on the analyses performed in the EA, implementation of Alternative 2 would not result in significant impacts to land use, transportation, airspace, hazardous wastes, human health and safety, water quality, biological resources, cultural resources, socioeconomics, recreation, infrastructure, air quality, noise, floodplain, or geological resources.

Decision

After evaluating the anticipated environmental, economic, and social effects of the Fort Leavenworth Levee Repairs, it is my determination that this project does not constitute a major Federal action that would significantly affect the quality of the human environment; therefore, preparation of an EIS is not required.

Date: _____ _____

John G. Misenheimer Jr.
Colonel, Corps of Engineers
Garrison Commander

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The U.S. Army Garrison Fort Leavenworth (FLVN, Installation) has prepared this environmental assessment (EA) to examine the potential environmental effects of repairing flood damage to the levees and stormwater pump stations at FLVN Sherman Army Airfield. FLVN operation and maintenance (O&M) is the responsibility of the Directorate of Public Works (DPW). This EA was developed in accordance with the National Environmental Policy Act (NEPA) of 1969 as amended.

NEPA compliance for this project was completed using emergency provisions. The emergency provisions allow NEPA documentation to be accomplished after the completion of emergency work. This EA fulfills the NEPA compliance for this project.

The information contained in this EA, including any comments by the public, will be reviewed and considered by the U.S. Army prior to any final decision to implement the Proposed Action, which is the repair of flood damage to levees and the stormwater pump stations, as further described in Chapter 2. The results of the EA will be used to determine whether a Finding of No Significant Impact (FNSI) is appropriate or whether an Environmental Impact Statement (EIS) should be prepared.

1.2 PURPOSE AND NEED

During 2019, the Sherman Army Airfield was subject to Missouri River flooding, which overtopped the local levee system and damaged numerous parts of the Airfield Infrastructure. The stormwater pump stations were inundated and are no longer functioning. The levee system was overtopped and experienced significant erosion during the flood. The box culvert under the entrance road to the Airfield was overtopped which resulted in damage to the culvert and loss of pavement.

1.3 PROJECT LOCATION

FLVN is located in East Central Kansas about 25 miles northwest of Kansas City, MO and 15 miles southeast of Atchison, KS. FLVN is in Leavenworth County on the right descending bank of the Missouri River. The proposed project area is on the Missouri River floodplain east of historic Fort Leavenworth encompassed by Chief Joseph Loop (Figure 1).

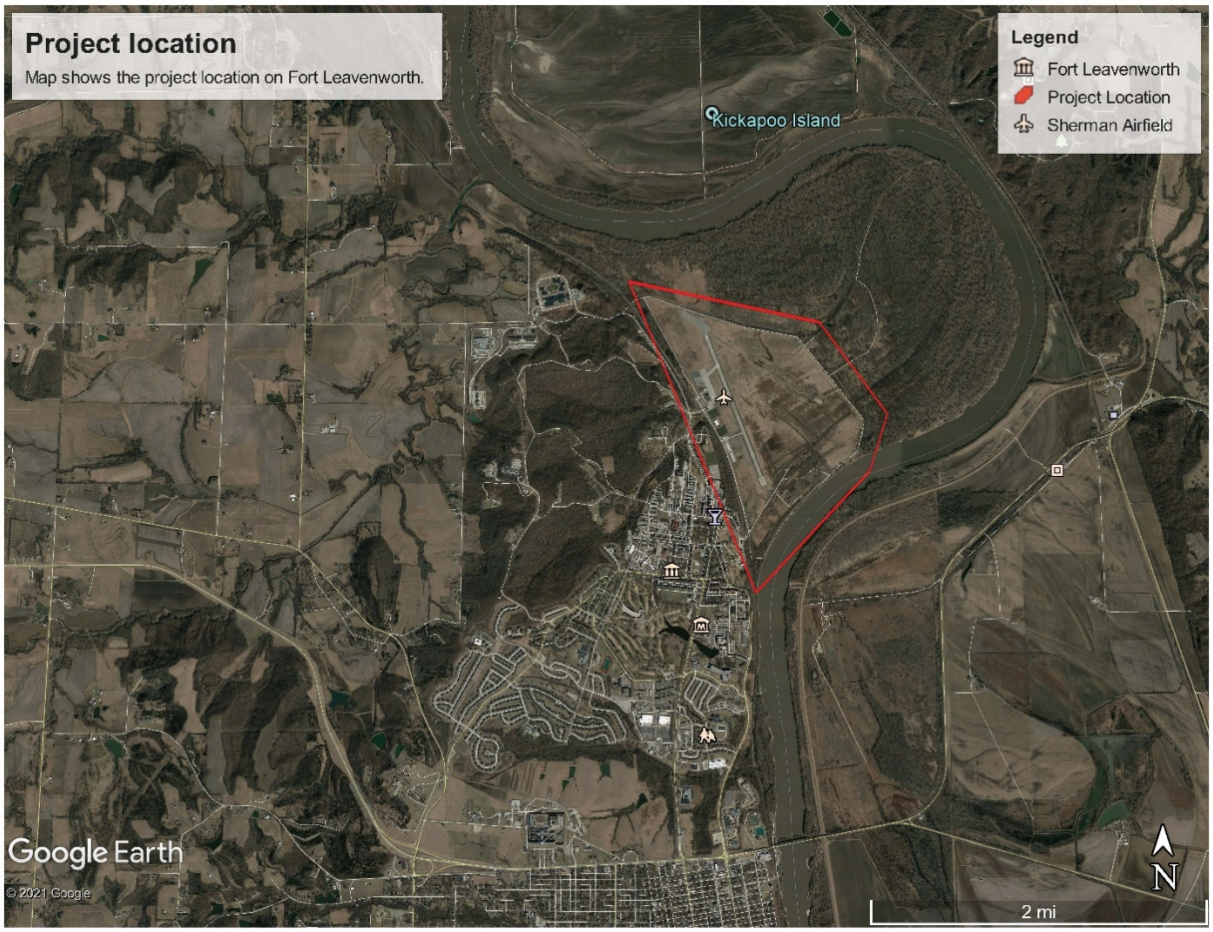

Figure 1. Map showing the project location (red polygon) within Fort Leavenworth.

1.4 AGENCY, PUBLIC, AND TRIBAL COORDINATION

1.4.1 Public Review

An electronic copy of this EA and draft FNSI are available for download from the USACE Kansas City District website at http://www.nwk.usace.army.mil/Media/PublicNotices/PlanningPublicNotices.aspx. The public, agencies, and Tribes were invited to submit comments by August 29th 2021 to Brian Bueker via email at: Brian.J.Bueker@USACE.army.mil. Inquiries were also invited via phone by calling Brian Bueker at (816) 278-2834. Comments submitted within the 30-day public review and comment period were made part of the Administrative Record and will be considered before signing a FNSI or, if warranted, publishing a notice of intent to prepare an EIS.

1.4.2 Agency Coordination

A 30-day agency coordination process commenced on the same day as the public review and comment period. Comments were solicited from government agencies during the public review process. Copies of this EA and the Draft FNSI were provided to the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (USEPA)
- Kansas Department of Wildlife, Parks, and Tourism (KDWPT)
- Kansas Department of Health and Environment (KDHE)

1.4.3 National Historic Preservation Act Section 106 Coordination

In addition to the preparation of this EA, FLVN also prepared a determination of effect in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. This review is a process that starts by inviting the participation of consulting parties including the Kansas State Historic Preservation Officer (SHPO) and federally recognized Native American Tribes.

FLVN used information from its own records, any new research necessary, and comments received from the consulting parties to assess what effect the proposed action may have on historic properties in accordance with 36 CFR § 800.5. The results of this consultation were used to inform the discussion of impacts to cultural resources as discussed in Section 3.7 of this EA. Copies of cultural resource correspondence are included in Appendix C. Additionally, as part of the 30-day public review period, and in accordance with Army Regulation (AR) 200-1, the SHPO and federally recognized Native American Tribes were provided copies of this EA and the draft FNSI for review and comment.

2.0 ALTERNATIVES EVALUATION

2.1 INTRODUCTION

This Chapter describes the Proposed Action and the alternatives carried forward for detailed evaluation in this EA.

2.2 PROPOSED ACTION

The proposed action is the repair of the levee and stormwater systems to address the issues outlined in section 1.2, Purpose and Need. The primary function of these systems is to protect the Sherman Airfield from flooding due to the Missouri River. Due

to the emergency nature of the proposed action, alternatives are limited. Therefore, only the No Action and an action alternative were evaluated.

2.3 ALTERNATIVES CARRIED FORWARD

Alternative 1: No-Action. Continue with no repair to the levee or stormwater systems. The No Action Alternative is not considered as a viable solution to the problem, but it is required to be analyzed in this EA per NEPA regulations. The No Action Alternative provides a baseline for comparison against the proposed action so that a determination of potential effects to the human and natural environment can be made.

Alternative 2: Proposed Action (Repair the Levee and Stormwater Systems). This alternative would repair levee damage and restore elevations. Most of the levee system has received significant erosion damage and will be restored to their respective elevations (Appendix D, Sheets C-101 to C-112). This alternative will install a diversion culvert from Quarry Creek onto the protected side of levee, connecting it to pump station 1 as well as replacing the box culvert flood control structure. The levee would be setback 100 feet from station 149+00 to station 151+00. A three-foot overflow weir would be installed from station 121+00 to station 148+50 to control the location of overflow from the Missouri River (Appendix D, Sheet C-109). This alternative would also construct a one-mile long levee on the west side, north of the airfield hangers, tying the local levee system to the high ground by raising the existing road to levee height (Appendix D, Sheets C-120 to C-123). Three failed pump stations would be replaced with gravity outlets and improve drainage with culverts and ditches to move water to the three new pump stations (Appendix D, Sheets CD102 to CD 104). Borrow for repairs would be taken from stockpiles around the Installation to reduce risk of disturbing possible cultural sites and from an identified area Northeast of the airfield with 155 acres approved, that was cleared prior to nesting season.

3.0 AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter discusses aspects of the environment that may potentially be impacted by the No Action alternative and Proposed Action. It presents both the affected environment and environmental consequences, as required by NEPA. This chapter is organized by resource topic with the status of the affected environment and the impacts of each alternative described within each resource section. The affected environment sections provide a description of different aspects of the human environment that may be affected by the Proposed Action. The environmental consequences sections provide a description of the anticipated impacts. Consistent with CEQ Regulation 1502.2 and CEQ 40 Questions 36A, this chapter focuses on the resource topics most relevant to the Proposed Action under evaluation. Resources that were considered but for which

effects are either entirely beneficial or the adverse impacts are not as relevant to decision-making are in Section 3.2.

3.2 RESOURCE AREAS CARRIED FORWARD FOR ANALYSIS

A NEPA analysis should reduce or eliminate discussion of minor issues to help focus the analyses. This approach minimizes unnecessary analysis in the document and discussion during the NEPA process. Resource topics for which the Proposed Action and Alternatives have little or no measurable environmental effect will not be analyzed in this EA, and include:

- Land Use
- Transportation and Traffic
- Airspace
- Electromagnetic Spectrum
- Hazardous and Toxic Materials and Waste
- Socioeconomics
- Human Health and Safety
- Recreation
- Utilities
- Air Quality
- Noise
- Geology

After consideration of the anticipated impacts associated with the proposed alternatives, the following resource topics were selected for detailed analysis in this EA:

- Water Quality
- Wetlands and Waters of the U.S.
- Biological Resources (including wildlife, vegetation, and sensitive species)
- Floodplain
- Cultural Resources

3.3 WATER QUALITY

3.3.1 Affected Environment

Individual states have jurisdiction for managing water quality within their states. Section 303(d) of the Clean Water Act requires each state to identify waters for which existing required pollution controls are not stringent enough to meet state water quality standards. States are required to establish total maximum daily loads (TMDLs) for these waters (40 CFR 130.7). The State of Missouri has placed the Missouri River on the 303(d) List of Impaired Water Bodies for bacteria from Atchison, KS through Jackson county, MO. Also, the Missouri River along its entire length in Missouri has a TMDL

approved by the U.S. Environmental Protection Agency (EPA) for aquatic life impairments due to chlordane and polychlorinated biphenyls. Historically, the water quality of the Missouri River was much different than it is today. Prior to the 1930's when major river modifications began, the Missouri River contained 70 – 80 times as much suspended sediment as it does currently (Blevins, 2006). Consequently, the Missouri River is no longer as turbid as it was previously (Blevins, 2006).

3.3.2 Environmental Consequences

Alternative 1 - No-Action

No change to existing water quality would be expected under Alternative 1 because no actions would be taken.

Alternative 2 - Repair the Levee and Stormwater Systems

Alternative 2 would have the potential for short-term, minor adverse impacts to water quality during project construction due to stormwater runoff. The most likely impact to water quality would be increased turbidity during levee repair activities. Any construction related increases in turbidity would be unlikely to negatively impact water quality. As shown by Blevins (2006), the turbidity levels in the Missouri River are far below what they were historically.

Any changes to the existing water quality would be avoided and/or minimized to the greatest extent possible by the implementation of Best Management Practices and measures required under the National Pollutant Discharge Elimination System (NPDES) permit. Best Management Practices would minimize potential adverse sedimentation into aquatic resources during construction and would minimize the introduction of fuel, petroleum products, or other deleterious material from entering the waterway. Such measures may consist of erosion control fences; storing equipment, solid waste, and petroleum products above the ordinary high-water mark and away from areas prone to runoff; and requiring that all equipment be clean and free of leaks. To prevent fill from reaching water sources by wind or runoff, fill would be covered, stabilized or mulched, and silt fences would be used as required. Nationwide Permit 3, Maintenance and Nationwide Permit 13, Bank Stabilization would be applicable to comply with Clean Water Act Section 404 authorization. State Water Quality Certifications, to comply with Clean Water Act Section 401, have been issued for Nationwide Permit 3 and Nationwide Permit 13 (Appendix E).

3.4 WETLANDS AND WATERS OF THE U.S.

3.4.1 Affected Environment

Wetlands are lands that are transitional between terrestrial and aquatic systems (Cowardin et al., 1979). Wetlands are characterized by three attributes: hydric soils,

vegetation adapted to such soils, and soils that are saturated with water or covered by shallow water at some point during the growing season (Cowardin et al., 1979). Wetlands serve a variety of important functions, including wildlife habitat, fish breeding and foraging habitat, nutrient/sediment trapping, flood control, and recreation. Beginning in 1912, the Missouri River has been channelized through the construction of the Bank Stabilization and Navigation Project (BSNP) which was completed in the early 1980s. The BSNP stabilized the river and allowed accreted land to form in the old active channel and created a narrow channel with few islands, backwaters, or side channels. As a result, the number of wetlands has been significantly reduced along the Missouri River. A 2015 study by USACE cataloged wetland locations on FLVN (Figure 2).

3.4.2 Environmental Consequences

Alternative 1 - No-Action

No change to existing wetlands would be expected under Alternative 1 because no actions would be taken.

Alternative 2 - Repair the Levee and Stormwater Systems

Alternative 2 would have minor to moderate impacts on wetlands and waters of the U.S. The project would impact 75 linear feet (lf) of stream for the placement of an outlet pipe and headwall for the replacement of pump station 1. There would also be 770 square feet (sq ft) of wetland impacts with the placement of 92 cu/yds of rip rap near the intake of the new pump station. The levee setback near the Quarry Creek crossing would impact 1.2 acres of wetland with 9,658 cubic yards (cu/yds) of earthen fill but it would also provide connectivity to about 1 acre that was previously the levee which would now be riverward of the new setback levee and more prone to flooding. In addition, 130 feet of stream would be reverted back to native substrate by the removal of the Quarry Creek box culvert. The culvert and its replacement cannot be removed and replaced without some incidental fall back of fill, which would impact the 100 lf where the culvert is being removed and the 100 lf downstream where the new culvert is being installed. The replacement of pump station 2 would impact 1,440 sq ft of wetlands with the installation of rip rap. The Southeast portion of the levee rehab would be flooded more frequently with the completion of the project, which would result in the addition of wetlands in the area bringing the size to approximately 5 acres.

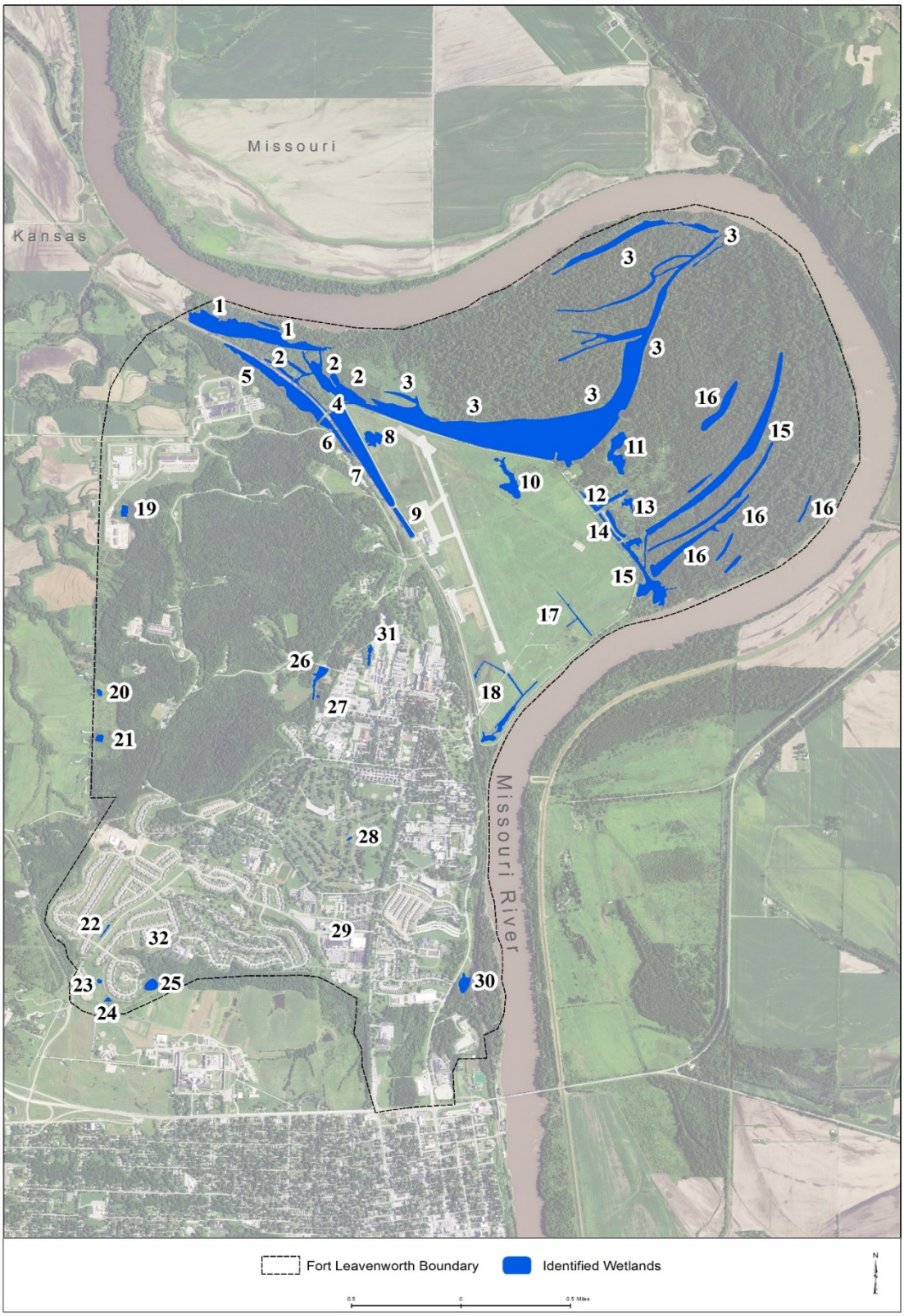

Figure 2. Wetland location map.

3.5 BIOLOGICAL RESOURCES

3.5.1 Affected Environment

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are generally referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the resources and conditions present in an area that produces occupancy of a plant or animal (Hall et al., 1997). Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide aesthetic, recreational, and socioeconomic values to society. For purposes of this analysis, these resources are divided into three major categories: terrestrial habitat; wildlife, excluding special-status wildlife species; and threatened or endangered species.

Terrestrial Habitat

The terrestrial habitats along the Missouri River have changed drastically during the last century. The historic terrestrial habitat consisted of grasslands and bottomland forest ecosystems. In many instances, native floodplain habitats have been converted to crop land or developed for other uses. Much of the conversion of riparian habitat to agriculture occurred prior to construction of levees with nearly 50% of the Missouri River floodplain being in agricultural production by 1937 (Bragg and Tatschl, 1977). On the lower 100 miles of the Missouri River, nearly 70% of the existing floodplain was in agricultural production by 1826 (Bragg and Tatschl, 1977). Hesse et al. (1988) estimated that along the Missouri River between 1892 and 1982 deciduous vegetation declined by 41%, grasslands by 12%, wetlands by 39%, and sandbars by 97%. During the same time, agriculture increased by 4,278%. Within the project area, the natural habitat has been transitioned from a bottomland forest to a grassland surrounding the airfield.

Wildlife

The project area provides habitat for mammals such as gray squirrel, fox squirrel, cottontail rabbit, red fox, gray fox, and coyote. Common furbearers along river banks include mink, muskrat, beaver, otter, and raccoon. White-tailed deer is a common species found in the floodplain.

Many reptile and amphibian species have also been negatively impacted because of the reduction of wetland habitat within the floodplain. Amphibian species such as eastern tiger salamander, smallmouth salamander, great plains toad, Woodhouse's toad, and plains spadefoot toad require ephemeral wetland habitats to successfully reproduce. Wetlands within the floodplain also support numerous reptilian species such as diamondback water snake, northern water snake, and the western hog-nosed snake and eastern hog-nosed snake in certain geographic reaches. The floodplain also

provides important habitat for turtles, such as false map turtles, smooth softshell turtles, and spiny softshell turtles.

The Lower Missouri River is located within the Central and Mississippi North American migratory waterfowl flyway (USACE, 2001). Waterfowl use the Missouri River and its floodplain for resting, feeding, and nesting. Numbers of waterfowl are greatest during the spring and fall migration seasons. Common dabbling duck species include mallard, wood duck, northern shoveler, northern pintail, gadwall, blue-winged teal, green-winged teal, and American widgeon. Wood ducks are probably the most common nesting species in the study area (USFWS, 1999). Common species of diving ducks are ring-necked, lesser scaup, ruddy, redhead, common golden-eye, and bufflehead (USFWS, 1999). Other waterfowl in the study area include hooded merganser, common merganser, red-breasted mergansers, Canada geese, snow geese, and white-fronted geese. During migration stops, dabbling ducks and geese rest on islands and sandbars and forage in grain fields, whereas diving ducks use large open water areas for loafing and foraging. Other migratory birds that can be found in the study area include wading birds, shorebirds, passerines, and raptors. Wading birds such as the great blue heron, black-crowned and yellow-crowned night heron, and green heron use the river corridor to forage for fish, amphibians, and invertebrates (USFWS, 1999). Shorebirds that are regular breeders in the area include killdeer and American woodcock. Passerines are the largest group of migratory bird species within the study area and include thrushes, warblers, flycatchers, vireos, hummingbirds, swallows, wrens, tanagers, orioles, sparrows, as well as others (USFWS, 1999). Floodplain forests and wetlands are important breeding and migratory habitats for passerines. Hawks, falcons, eagles, vultures, and owls are also found in floodplain habitats. On FLVN, most migratory bird nesting activities occur during the period of April 1 to July 15. Bald eagles have become increasingly common within the area. They use riparian woodlands along rivers, lakes, and streams for nesting, perching, and roosting sites. Bald eagles are no longer listed as a federally-threatened species. However, bald eagles are still protected by the Bald and Golden Eagle Protection Act.

Threatened or Endangered Species

According to the USFWS Information for Planning and Consultation (IPaC) system federally-listed threatened or endangered species which could occur in the project area are the northern long-eared bat (*Myotis septentrionalis)*, pallid sturgeon (*Scaphirhynchus albus*), Mead's milkweed (*Asclepisa meadii*), and western prairie fringed orchid (*Platantherea praeclara*). No suitable habitats for listed species have been observed within the project area boundaries.

Invasive Species

Invasive species have the potential to displace native plants and animals. According to Executive Order 13122, Federal agencies may not authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species.

Invasive aquatic species that are a concern that have the potential to be introduced into new water bodies by contaminated construction equipment include zebra mussels, quagga mussels, New Zealand mudsnails, purple loosestrife, and Eurasian watermilfoil, among others. Invasive terrestrial species often flourish on land that has recently been disturbed. They may also be transported to new locations on construction equipment. Examples of invasive terrestrial species of concern include Johnson grass, reed canary grass, musk thistle, and bromegrass.

3.5.2 Environmental Consequences

Alternative 1 - No-Action

Alternative 1 would result in a transition from a grassland area to a wetland area because the area would be more prone to flooding.

No change to existing wildlife would be expected under Alternative 1 because no actions would be taken.

Alternative 2 - Repair the Levee and Stormwater Systems

Alternative 2 would have minor short-term impacts to terrestrial habitat resulting from land disturbance during construction activities. Construction typically involves the use of heavy equipment to obtain, move, and compact earthen materials**.**

This alternative would result in minor short-term construction related impacts to fish and wildlife resources. The potential impacts to fishery and other aquatic resources would primarily be related to changes in water quality that could occur during project construction. Specifically, an increase in the turbidity of the water could be negatively impact aquatic species that are not tolerant of these conditions. However, most of the native fish and wildlife would be tolerant of any short-term increases in turbidity.

As described in Section 3.3.2, Best Management Practices would minimize impacts to water quality, therefore minimizing any impacts to aquatic life. Impacts to wildlife resources would be related to noise, visual, and land disturbance from construction activities. This would result from the use of heavy construction equipment to obtain, move, and compact earthen materials.

USACE has determined that the proposed action would have no affect on pallid sturgeon, Mead’s milkweed, and western prairie fringed orchid.

USACE has determined that the proposed action may affect but would not likely adversely affect northern long-eared bat. Construction activities that require tree clearing would have potential to affect bat habitat. USACE would comply with established seasonal tree clearing restrictions for federally listed bats. Any tree clearing

would occur between November 1 and March 31 to avoid impacts to spring/summer roosting and maternity colonies of federally listed bats.

This alternative is not expected to introduce any new invasive species to levee repair sites. All previously used construction equipment is required to be cleaned prior to being brought onto construction sites. As part of their contract, construction companies are also required to ensure that all equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, plant seeds, and aquatic nuisance species prior to its use on the project. Levees would be seeded with a fescue, brome, and ryegrass mixture and mulched to minimize the likelihood that invasive plants would become established on soils that have been disturbed.

3.6 FLOODPLAIN

3.6.1 Affected Environment

Floodplains along the Missouri River have been significantly altered over the past century. In many areas, flood control, bank stabilization, and channelization of rivers have either completely or partially removed the connectivity of rivers with the floodplain. Most of the floodplains are now used for either agriculture or urban development. It is expected that over time, more agricultural areas will be converted to urban/suburban uses, as urban populations continue to grow.

3.6.2 Environmental Consequences

Alternative 1 - No-Action

Alternative 1 would result in moderate negative impacts to the floodplain, without the repairs the area would be more prone to flooding. This would increase safety risks for flight operations at Sherman Army Airfield.

Alternative 2 - Repair the Levee and Stormwater Systems

Alternative 2 would maintain the same level of flood risk management which existed prior to any flood damage. USACE has determined that structural repairs to levees damaged during flood events comply with the intent of Executive Order 11988. In compliance with EO 11988, an evaluation is included in Appendix F.

3.7 CULTURAL RESOURCES

3.7.1 Affected Environment

The Sherman Airfield area has been the location of several historic events. Most notably was the encampment of the 10th US Cavalry (1867) somewhere below the fort's bluff. Also, of note was a racetrack (1875) where a group of 430 or 431 Nez Perce Tribal

members with Chief Joseph were confined from 1877 to 1878. An airfield was built in the alluvial fan area (where Quarry Creek exits the uplands) prior to World War I. Some of the first aircraft were dirigibles. The levee road surrounding the floodplain adjacent to Chief Joseph Loop was built in the 1940s causing unknown levels of disturbance.

3.7.2 Environmental Consequences

Alternative 1 - No-Action

No change to cultural resources would be expected under Alternative 1 because no actions would be taken.

Alternative 2 - Repair the Levee and Stormwater Systems

There are two cultural sites designated in the Integrated Cultural Resources Management Plan (ICRMP 2018) within the project area. The work to repair the levees would have minimal impact to the cultural sites. To identify and protect the two sites, the sites would be marked in the field including a 50 foot buffer zone. Most of the work performed is concentrated along the south and west levees, away from the cultural sites.

4.0 AGENCIES and PERSONS CONSULTED

CEQ Regulations §1501.5 states that an EA should include a listing of agencies and persons consulted. In preparation of this EA and through the NEPA process, USACE consulted with the following agencies and persons:

- Cheyenne-Arapaho Tribe
- Colville Confederated Tribes
- Delaware Nation
- Delaware Tribe
- Iowa Tribe of Kansas And Nebraska
- Iowa Tribe of Oklahoma
- Kansas Department of Health and Environment
- Kansas Department of Wildlife, Parks, and Tourism
- Kansas State Historic Preservation Office
- Kaw Nation
- Kickapoo Tribe in Kansas

- Nez Perce Tribe
- Omaha Tribe
- Osage Nation
- Otoe-Missouria Tribe
- Prairie Band Potawatomi Nation
- Sac and Fox Nation of Missouri in Kansas and Nebraska
- Sac and Fox Nation of Oklahoma
- Sac and Fox Tribe of the Mississippi in Iowa
- Stockbridge-Munsee Community Band of Mohican Indians
- U.S. Environmental Protection Agency, Region 7
- U.S. Fish and Wildlife Service, Kansas Ecological Services Field Office

USACE has prepared this draft EA in accordance with NEPA. A notice of availability will be issued by USACE announcing the availability of this draft EA for a 30-day public comment period and public interest review. The public notice will be distributed as appropriate to notify the affected public of the availability of the draft EA. During the public comment period, the Public Notice and draft documents are available on the NWK Public Notice website at: http://www.nwk.usace.army.mil/Media/PublicNotices/PlanningPublicNotices.aspx. All public and agency comments received during the public comment period and USACE responses will be included in the final EA. The NEPA process will conclude with either signing of a FONSI, the draft of which is found at the beginning of this document, or with a determination that an environmental impact statement is required.

5.0 References

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Missouri River ecosystem and a rationale for recovery. Pages 13-29 *in* N. G.Benson, editor. The Missouri River: the resources their uses and values. North Central Division of the American Fisheries Society Special Publication 8.

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APPENDIX A
U.S. Fish and Wildlife Service Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
Phone: (785) 539-3474 Fax: (785) 539-8567

In Reply Refer To:
Consultation Code: 06E21000-2020-SLI-0878
Event Code: 06E21000-2021-E-02129
Project Name: Leavenworth Levee Repairs

May 20, 2021

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*)(https://www.fws.gov/birds/management/managed-species/eagle-management.php), and wind projects affecting these species may require development of an eagle conservation plan (https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/ecological-services/energy-development/wind.html) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
(785) 539-3474

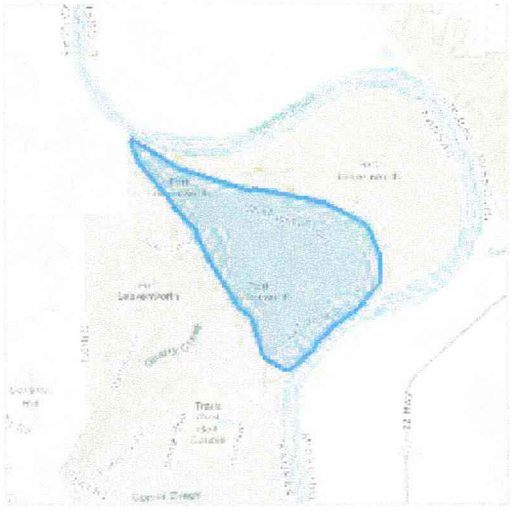
Project Summary

Consultation Code: 06E21000-2020-SLI-0878
Event Code: 06E21000-2021-E-02129
Project Name: Leavenworth Levee Repairs
Project Type: ** OTHER **
Project Description: Fort Leavenworth is in Leavenworth County on the right descending bank of the Missouri River.
Within the Fort Leavenworth boundary is Sherman Army Airfield (Airfield) adjacent to the
Missouri River which is the project site location.

The project involves the repairs and improvement of the damaged stormwater systems associated
with the Airfield. These improvements include:
• Repair the levee damage and restore the top of levee elevations.
• Construct an overflow weir in the southern boundary of the levee system to help control
the location of overflow from the Missouri River into the protected side of the airfield.
• Construct a levee along the west side and north of the airfield hangers to tie the local levee
system to high ground.
• Replace pump stations and gravity outlets.
• Improve the airfield drainage with culverts and ditches to convey the runoff to the pump
stations.
• Improve the unlined section of Quarry Creek with a concrete lined channel.
• Replace the Quarry Creek bridge flood control structure.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.3702680852688,-94.91031864879852,14z



Counties: Leavenworth County, Kansas

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

Flowering Plants

NAME	STATUS
Mead's Milkweed *Asclepias meadii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8204	Threatened
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 21 to Jul 20
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

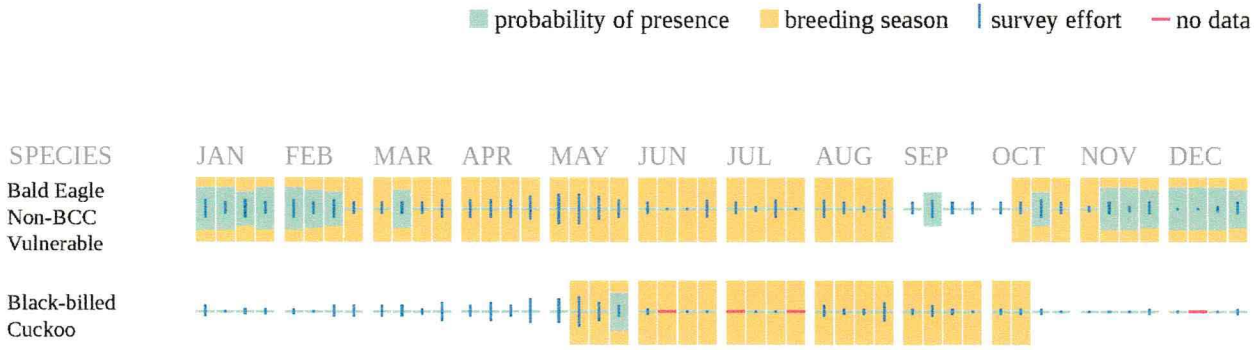
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

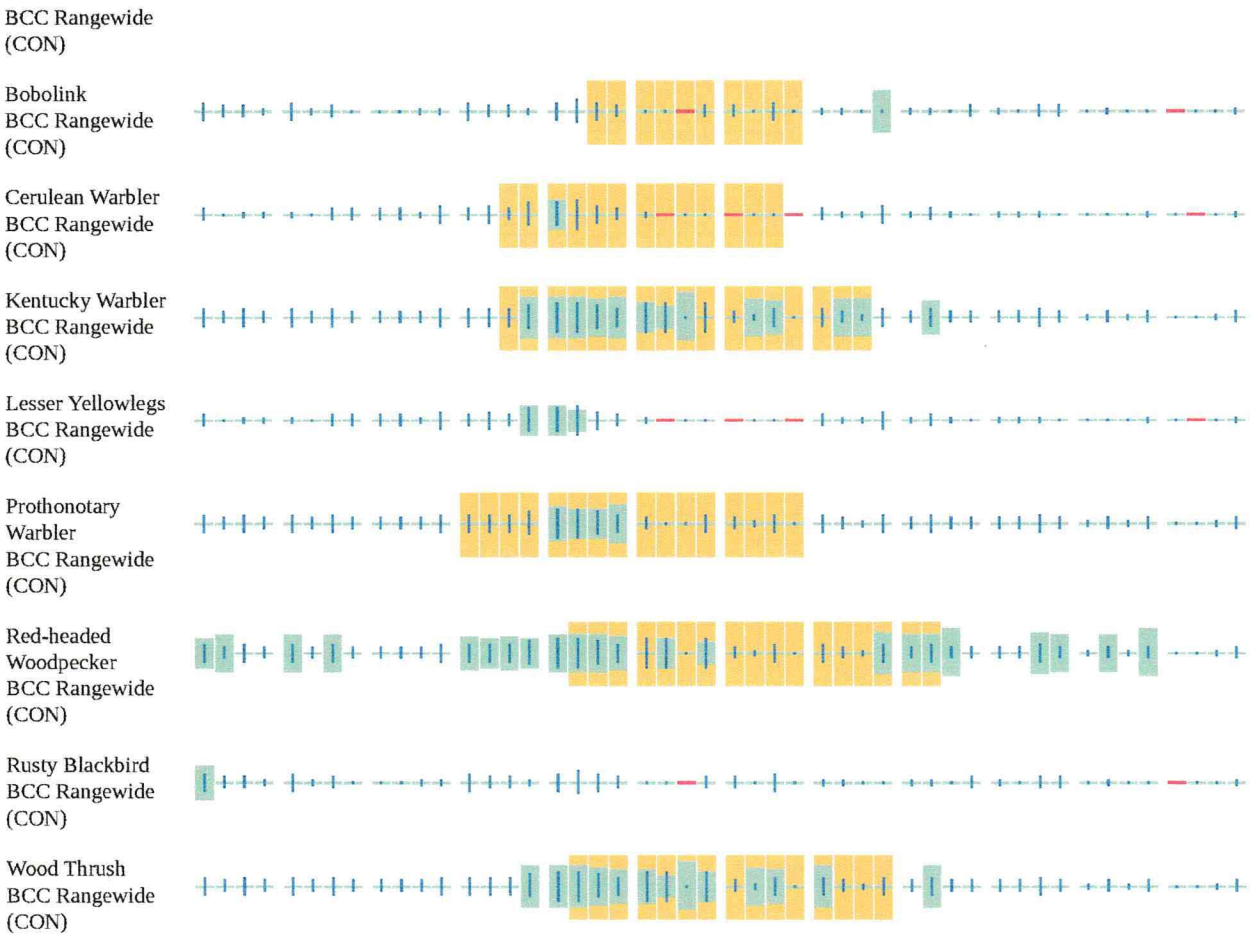
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding

in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PABF
- PABFh
- PUBFx
- PUSCx

FRESHWATER EMERGENT WETLAND

- PEM1A
- PEM1C
- PEM1Cx
- PEM1F

FRESHWATER FORESTED/SHRUB WETLAND

- PFOA
- PFOC
- PSSA
- PSSAx
- PSSC

RIVERINE

- R4SBC
- R2UBH

APPENDIX B
Agency and Public Comments
(Placeholder)

APPENDIX C
Cultural Resources Coordination

Cultural Resources Division
State Historic Preservation Office
6425 SW 6th Avenue
Topeka KS 66615-1099

Kansas Historical Society

785-272-8681, ext. 240
kshs.shpo@ks.gov
kshs.org

Jennie Chinn, Executive Director

Laura Kelly, Governor

KSR&C No. 20-07-134
August 14, 2020

Elisabeth Jackson
Fort Leavenworth
Via E-Mail

RE: Sherman Airfield Levee Repair Project
Fort Leavenworth
Leavenworth County

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed your request (in a letter dated August 6, 2020) regarding proposed repairs to the Sherman Airfield flood control levees at Fort Leavenworth. Potential impacts to standing structures resulting from this project were reviewed earlier (KSR&C No. 19-12-079).

As we understand it, the project is designed to repair damage to the levees and drainage systems incurred during major Missouri River flood events in 2019. As you noted, there are two recorded archeological sites (14LV133 and 14LV134) located within the project's APE. According to the construction plans, both sites (along with associated buffer areas) will be avoided by all construction activities. Numerous archeological and geomorphological surveys have been conducted in the airfield area in the hopes of locating historic properties believed to be present. Those properties include the racetrack, the 1877 – 1878 camp of the Nez Perce, and the Nez Perce cemetery. Neither of the two recorded sites (based on current evidence) are related to any of those resources. Locating the cemetery has been an emphasis over the years, with surface survey, remote sensing, and cadaver dog investigations all being employed. Those results were generally inconclusive and it's safe to say that the cemetery's location remains unknown. We therefore agree that earthmoving activities away from the levees themselves (including excavation/removal of sediment from the central drainage ditch) should be monitored. With that stipulation, our office concurs that the proposed flood control levee repair project will have no adverse effect on historic resources as defined in 36 CFR 800. This office has no objection to implementation of the project.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston 785-272-8681 (ext. 214) or Lauren Jones 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
State Historic Preservation Officer

Patrick Zollner

Patrick Zollner
Director, Cultural Resources Division
Deputy State Historic Preservation Officer

APPENDIX D
Design Drawings

GENERAL NOTES

1. REMOVE AGGREGATE BASE WITH PAVEMENT REMOVALS.
2. THE CONTRACTOR SHALL FLAG OR MARK TREES DESIGNATED FOR REMOVAL. OBTAIN CONTRACTING OFFICER'S APPROVAL PRIOR TO CLEARING AND GRUBBING OPERATIONS.

LEGEND

- REMOVE PAVEMENT
- CLEARING AND GRUBBING
- REMOVE CONCRETE STRUCTURE
- — x — x — REMOVE FENCE

A1 DEMOLITION PLAN - PUMP STATION #1
SCALE: 1"=20'-0"

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: M. HOLMAN
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
GSO - Stanley Joint Venture X

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

DEMOLITION PLAN
PUMP STATION #1

SHEET ID
CD102

Aug 04, 2020 - 4:28pm LEAVENWORTH_CD102.dwg

FINAL SUBMITTAL

GENERAL NOTES

1. REMOVE AGGREGATE BASE WITH PAVEMENT REMOVALS.
2. THE CONTRACTOR SHALL FLAG OR MARK TREES DESIGNATED FOR REMOVAL. OBTAIN CONTRACTING OFFICER'S APPROVAL PRIOR TO CLEARING AND GRUBBING OPERATIONS.

LEGEND

CLEARING AND GRUBBING

REMOVE CONCRETE STRUCTURE

PUMP STATION #2
(TO BE REMOVED BY OTHERS)

CHIEF JOSEPH LOOP

PUMP #2 ACCESS ROAD

REMOVE 116 LF - 24" CMP GRAVITY PIPE

REMOVE DISCHARGE CHAMBER AND SLUICE GATE

REMOVE 64' - 24" CMP GRAVITY PIPE

REMOVE 165 LF - 21" STEEL DISCHARGE PIPE

REMOVE FLAPGATE AND CONCRETE OUTFALL STRUCTURE

REMOVE OUTFALL STRUCTURE

N

0 16' 32' 64' 96'

SCALE: 1/32" = 1'-0"

A1 DEMOLITION PLAN - PUMP STATION #2
SCALE: 1"=20'-0"

Aug 04, 2020 - 4:31pm LEAVENWORTH_CD103.dwg

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: W. HOLMAN
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants Inc.
GEO - Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

DEMOLITION PLAN
PUMP STATION #2

SHEET ID
CD103

FINAL SUBMITTAL

GENERAL NOTES

1. REMOVE AGGREGATE BASE WITH PAVEMENT REMOVAL.
2. THE CONTRACTOR SHALL FLAG OR MARK TREES DESIGNATED FOR REMOVAL. OBTAIN CONTRACTING OFFICER'S APPROVAL PRIOR TO CLEARING AND GRUBBING OPERATIONS.

LEGEND

REMOVE CONCRETE STRUCTURE

CLEARING AND GRUBBING

REMOVE OUTFALL STRUCTURE

REMOVE 26 LF - 21" CMP GRAVITY PIPE

REMOVE DISCHARGE CHAMBER

CHIEF JOSEPH LOOP

REMOVE 34 LF - 6" STEEL PUMP DISCHARGE PIPE

REMOVE 34 LF - 21" CMP GRAVITY PIPE

BH22

REMOVE PUMP STATION #4 (TO BE REMOVED BY OTHERS)

N

0 10' 20'

SCALE:1"=10'

A1 DEMOLITION PLAN - PUMP STATION #4

SCALE: AS SHOWN

Jul 29, 2020 - 1:16pm LEAVENWORTH_CD104.dwg

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: W. COLEMAN
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
CEIO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

DEMOLITION PLAN
PUMP STATION #4

SHEET ID

CD104

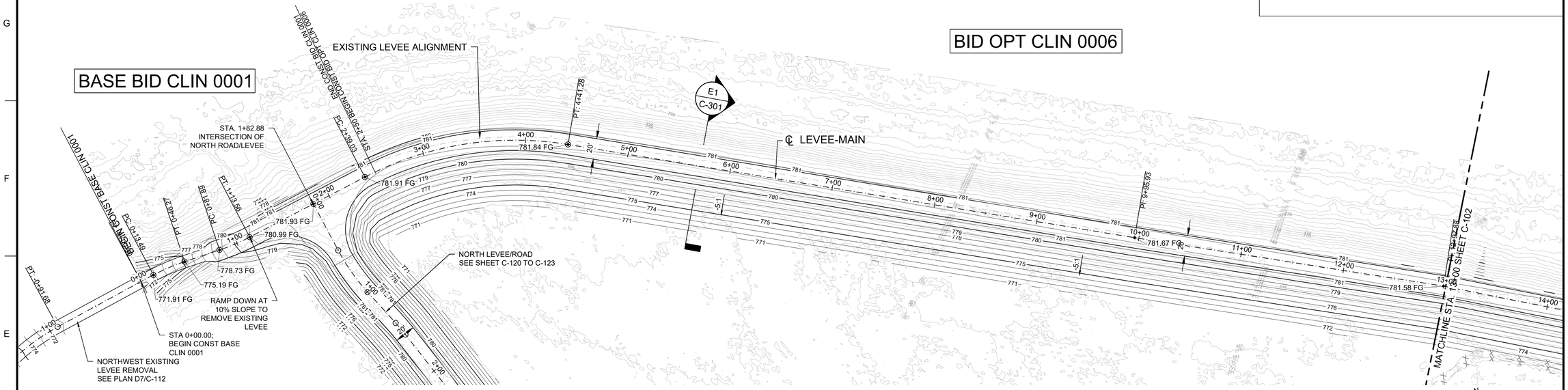
FINAL SUBMITTAL

GENERAL NOTES:

1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.

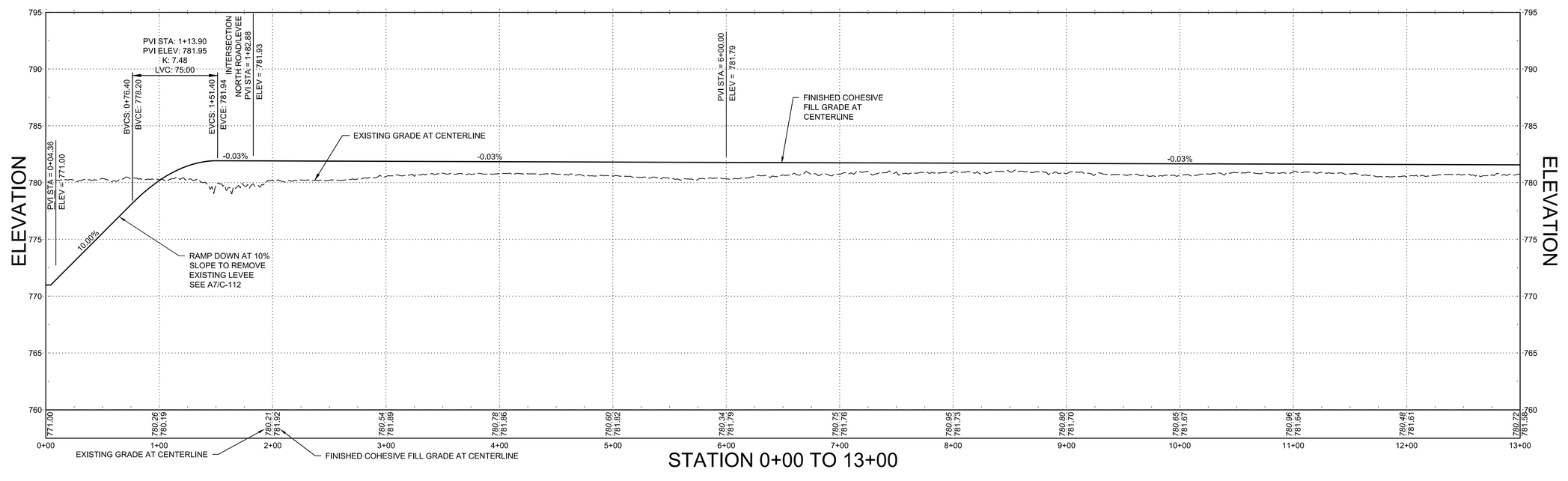
BASE BID CLIN 0001

BID OPT CLIN 0006



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M.DUBBIN	ISSUE DATE: 07/24/20
DRAWN BY: K. HOONE	SOLICITATION NO.: W912DQ20R4021
CHECKED BY: E. DALY	CONTRACT NO.: TBD
SUBMITTED BY: M.FLANN	
SIZE: ANSI D	

U.S.ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO64106

Stanley Consultants INC.
ESO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 0+00 TO 13+00

SHEET ID
C-101

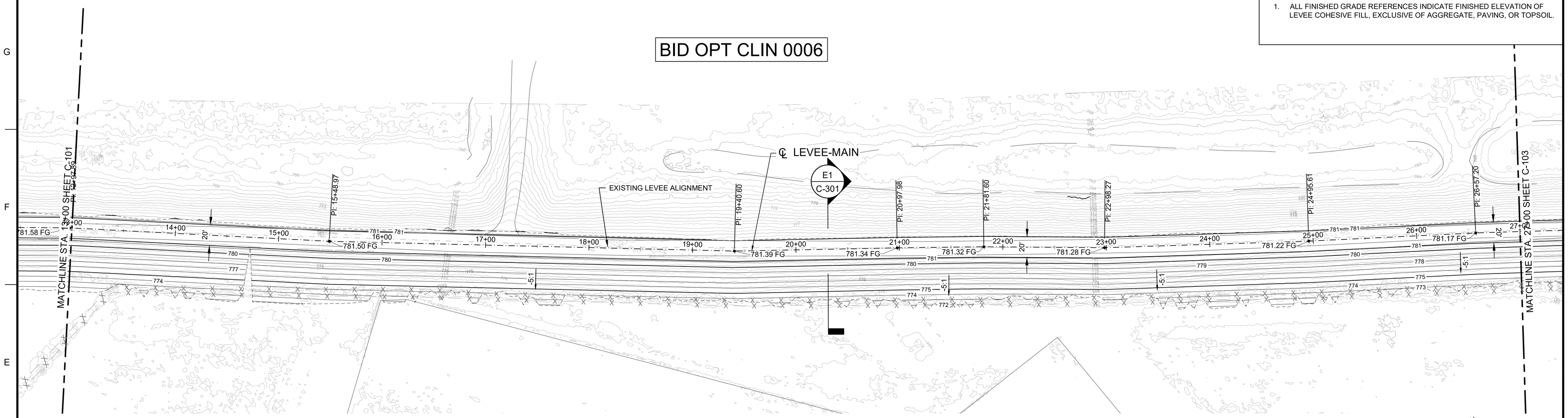
Aug 04, 2020 - 12:15pm LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

GENERAL NOTES:

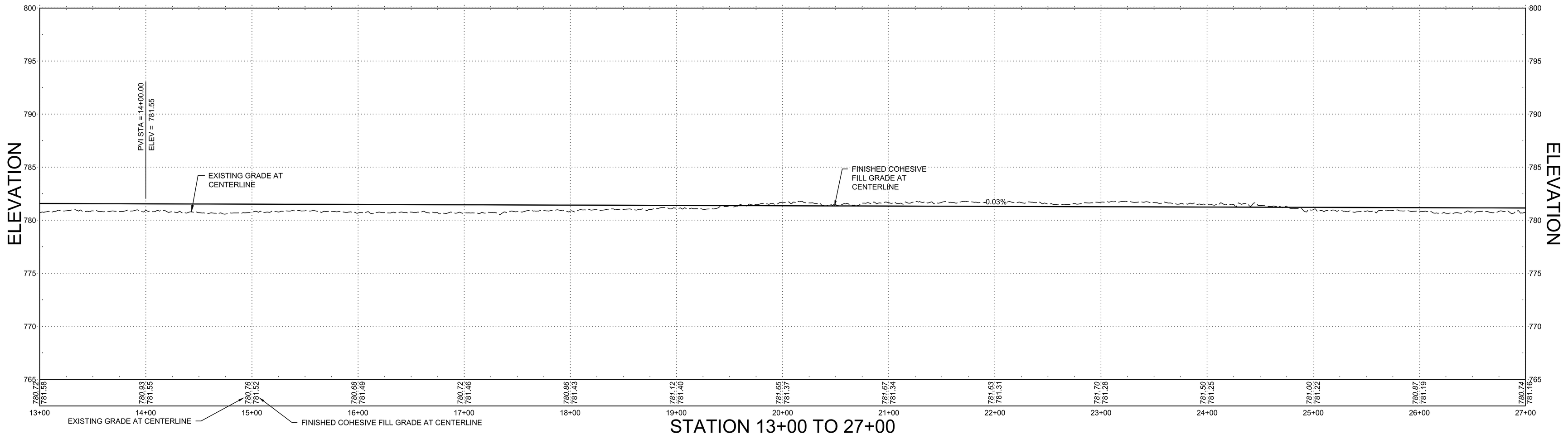
1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.

BID OPT CLIN 0006



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

Jul 29, 2020 - 12:10pm LEAVENWORTH_C-101.dwg

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. DUBBIN	ISSUE DATE: 07/24/20
DRAWN BY: K. HODNE	SOLICITATION NO.: W912DQ20R4021
CHECKED BY: E. DALY	CONTRACT NO.: TBD
SUBMITTED BY: M. HOLMAN	
SIZE: ANSI D	

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 13+00 TO STA. 27+00

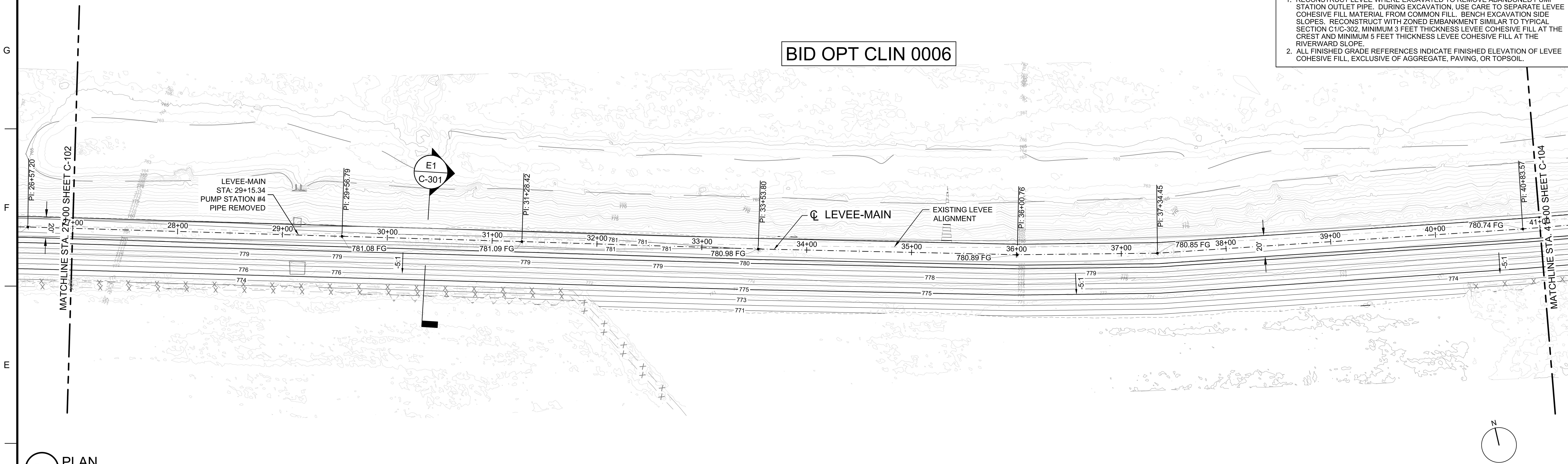
SHEET ID
C-102

FINAL SUBMITTAL

BID OPT CLIN 0006

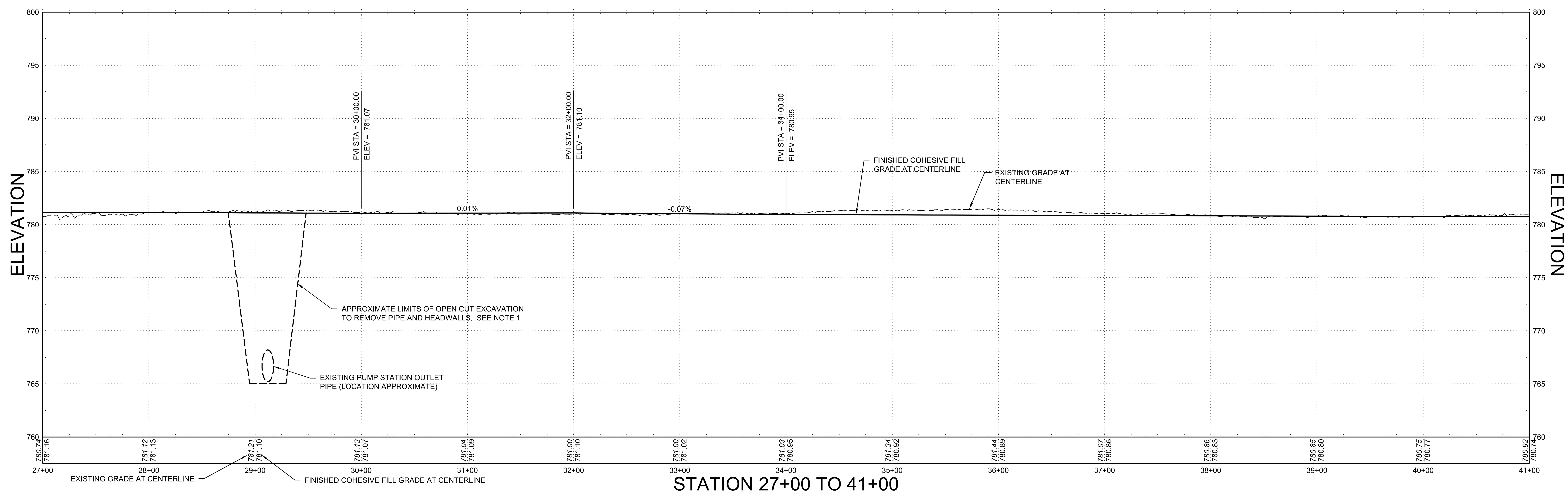
GENERAL NOTES:

1. RECONSTRUCT LEVEE WHERE EXCAVATED TO REMOVE ABANDONED PUMP STATION OUTLET PIPE. DURING EXCAVATION, USE CARE TO SEPARATE LEVEE COHESIVE FILL MATERIAL FROM COMMON FILL. BENCH EXCAVATION SIDE SLOPES. RECONSTRUCT WITH ZONED EMBANKMENT SIMILAR TO TYPICAL SECTION C1/C-302, MINIMUM 3 FEET THICKNESS LEVEE COHESIVE FILL AT THE CREST AND MINIMUM 5 FEET THICKNESS LEVEE COHESIVE FILL AT THE RIVERWARD SLOPE.
2. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.



D1 PLAN
SCALE: 1"=50'

SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

DESIGNED BY: M. DUBBIN
DRAWN BY: K.HODNE
CHECKED BY: E.DALY
SUBMITTED BY: M. HOLMAN
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO,64106

Stanley Consultants INC.
GEO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 27+00 TO 41+00

SHEET ID
C-103

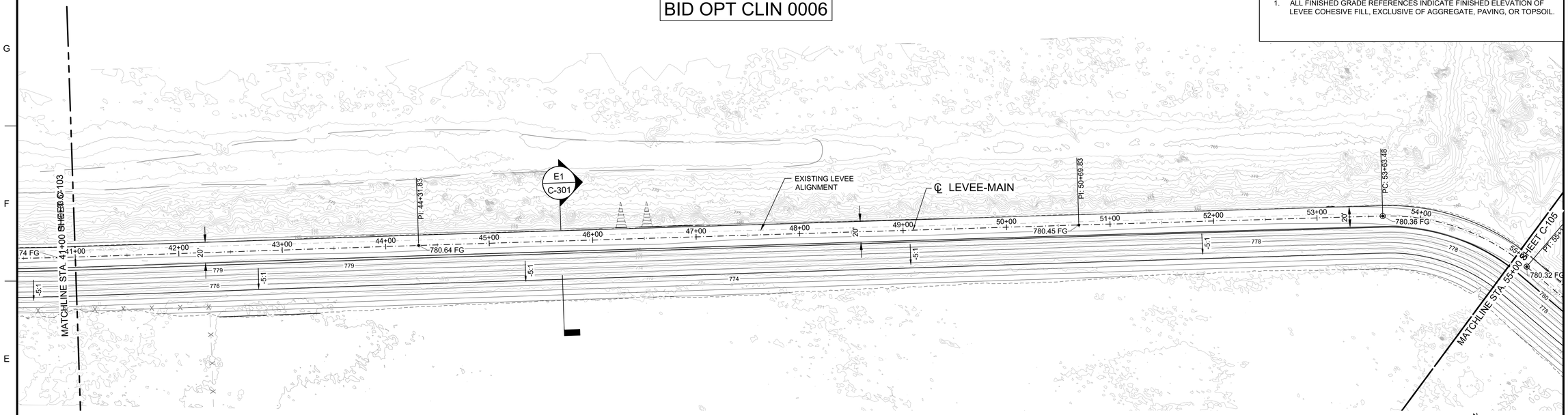
Jul 29, 2020 - 12:11pm LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

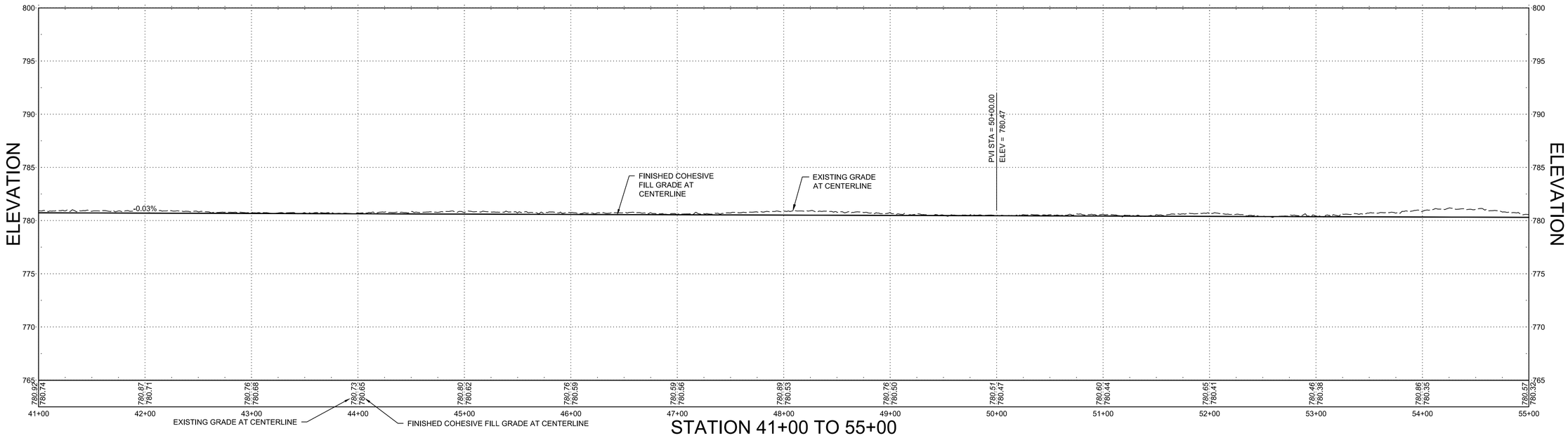
BID OPT CLIN 0006

GENERAL NOTES:

1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.



D1 PLAN
SCALE: 1"=50'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. DUBBIN	07/24/20
DRAWN BY:	SOLICITATION NO.:
K. HODNE	W912DQ20R4021
CHECKED BY:	CONTRACT NO.:
E. DALY	TBD
SUBMITTED BY:	
M. HOLMAN	
SIZE:	
ANSI D	

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
GSO - Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 41+00 TO 55+00

SHEET ID
C-104

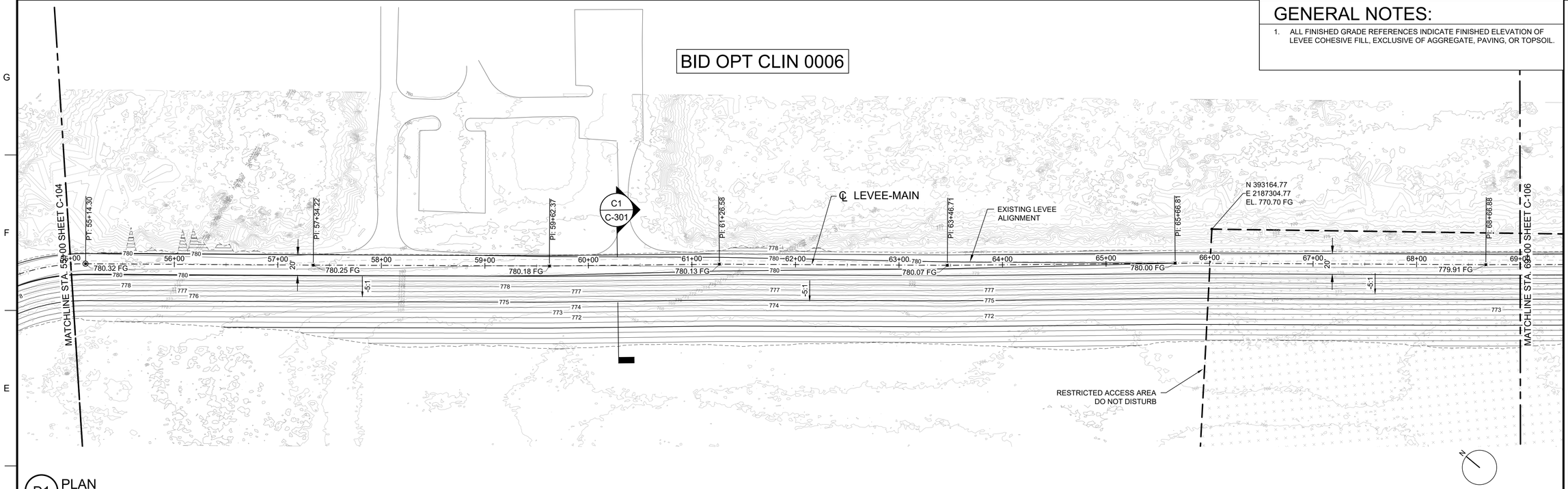
Jul 29, 2020 - 12:11pm LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

GENERAL NOTES:

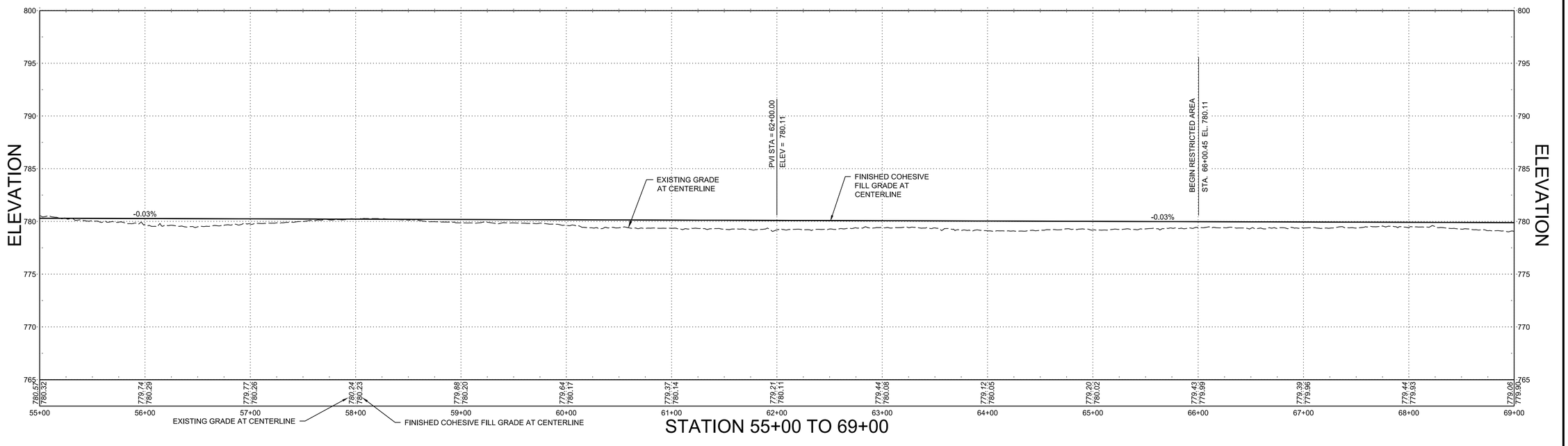
1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.

BID OPT CLIN 0006



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. DUBBIN	ISSUE DATE: 07/24/20
DRAWN BY: K. HODNE	SOLICITATION NO.: W912DQ20R4021
CHECKED BY: E. DALY	CONTRACT NO.: TBD
SUBMITTED BY: M. HOLMAN	
SIZE: ANSI D	

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 55+00 TO 69+00

SHEET ID
C-105

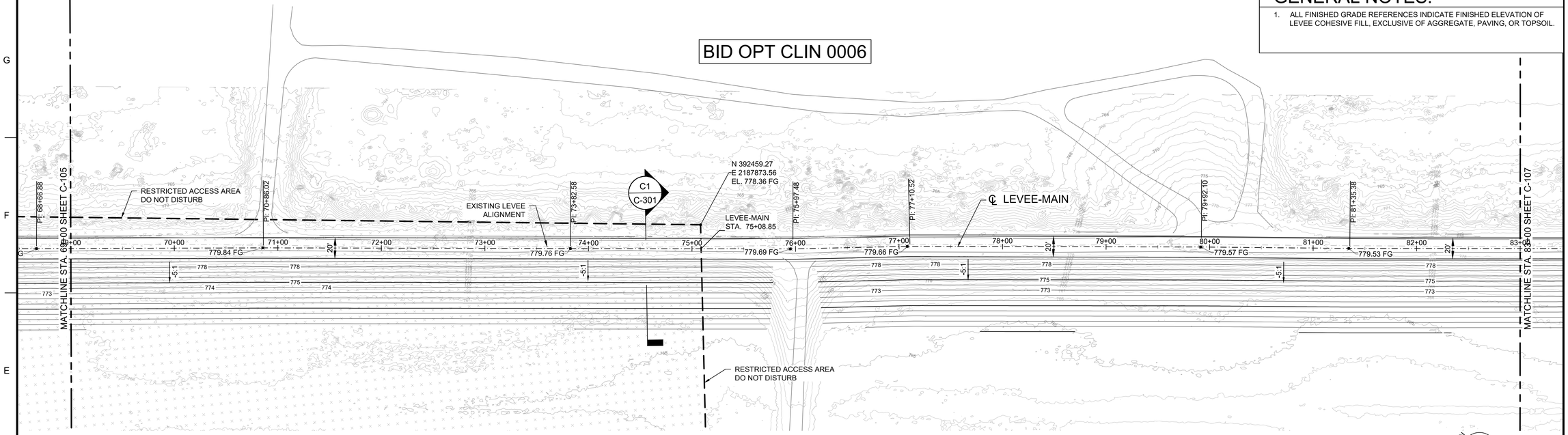
Jul 29, 2020 - 12:11pm LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

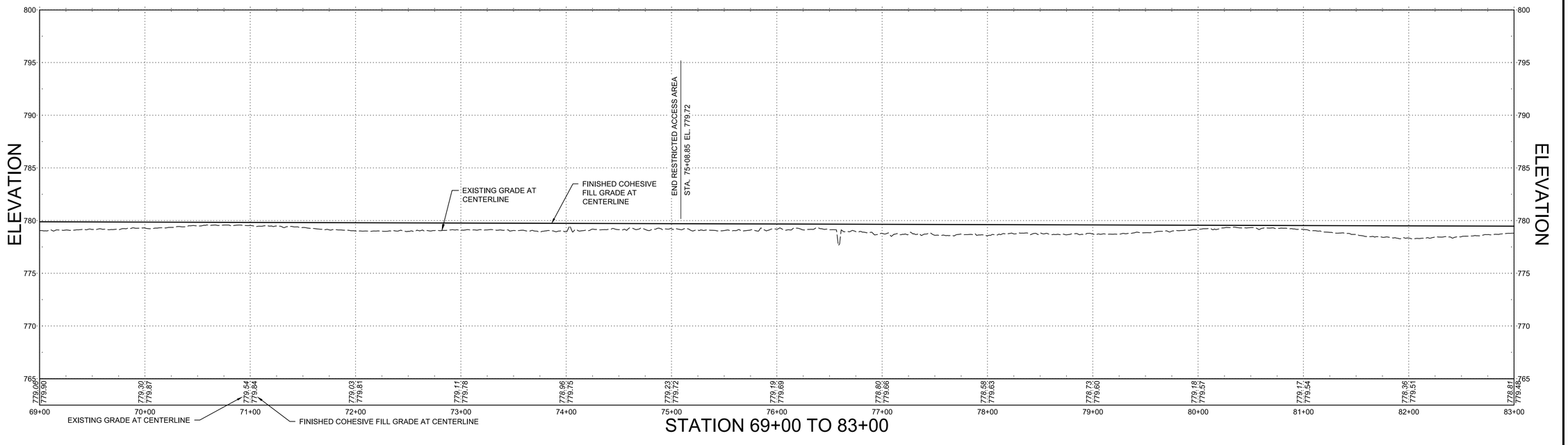
GENERAL NOTES:

1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.

BID OPT CLIN 0006



D1 PLAN
SCALE: 1"=50'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	07/24/20
SOLICITATION NO.:	W912DQ20R4021
CONTRACT NO.:	TBD
DESIGNED BY:	M.DUBBIN
DRAWN BY:	K. HOONE
CHECKED BY:	E. DALY
SUBMITTED BY:	M.FLANN
SIZE:	ANSI D

U.S.ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO64106

Stanley Consultants INC.
GSO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 69+00 TO 83+00

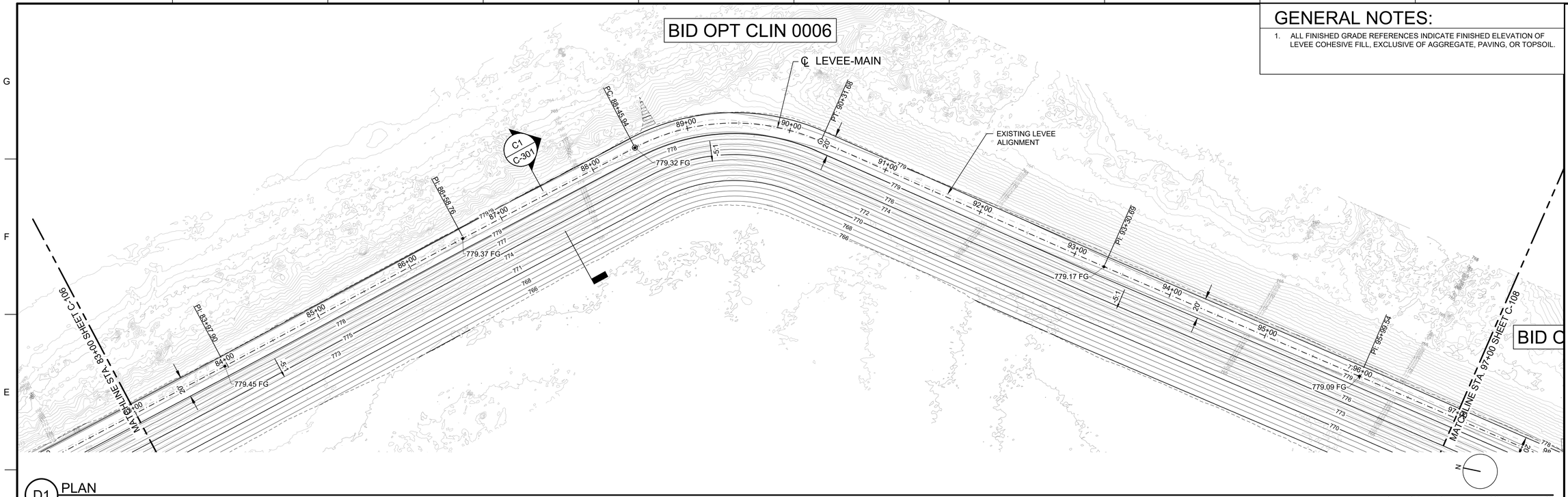
SHEET ID
C-106

FINAL SUBMITTAL

GENERAL NOTES:

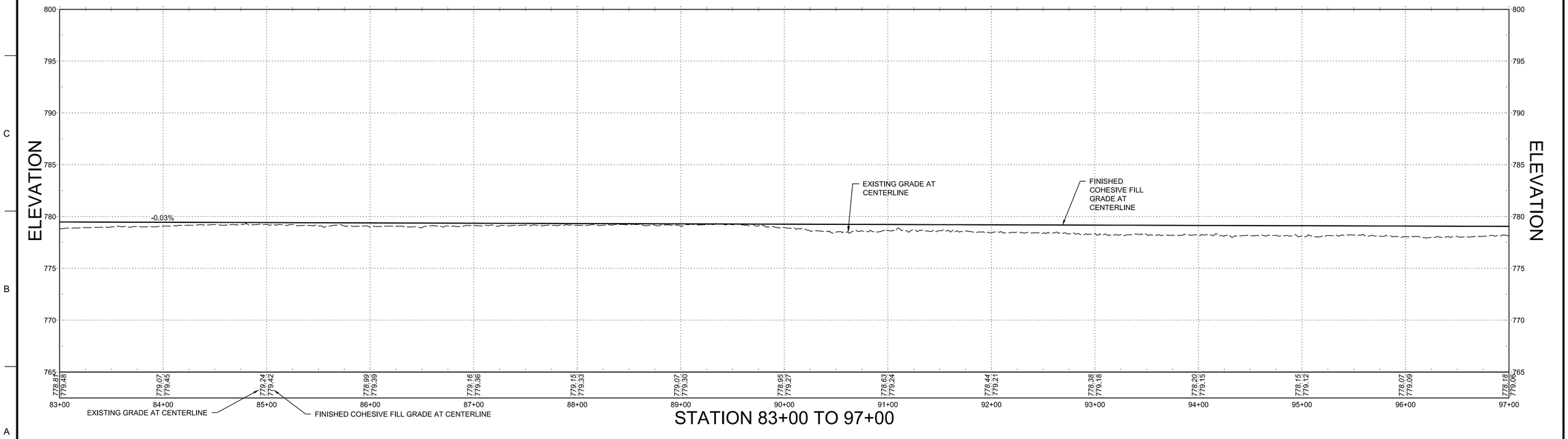
1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.

BID OPT CLIN 0006



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

DESIGNED BY: M. DUBBIN
DRAWN BY: K.HODNE
CHECKED BY: E.DALY
SUBMITTED BY: M. HOLMAN
SIZE: ANSI D

U.S.ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO64106

Stanley Consultants INC.
ESO - Stanley Joint Venture 1

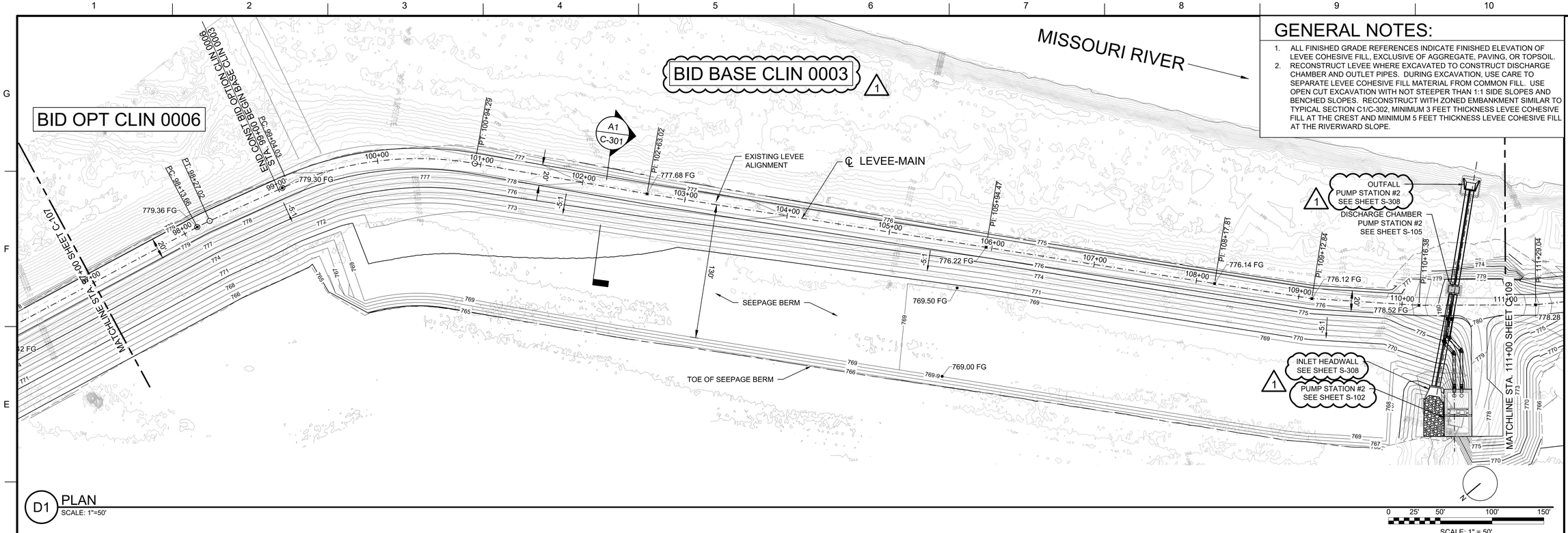
FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 83+00 TO 97+00

SHEET ID
C-107

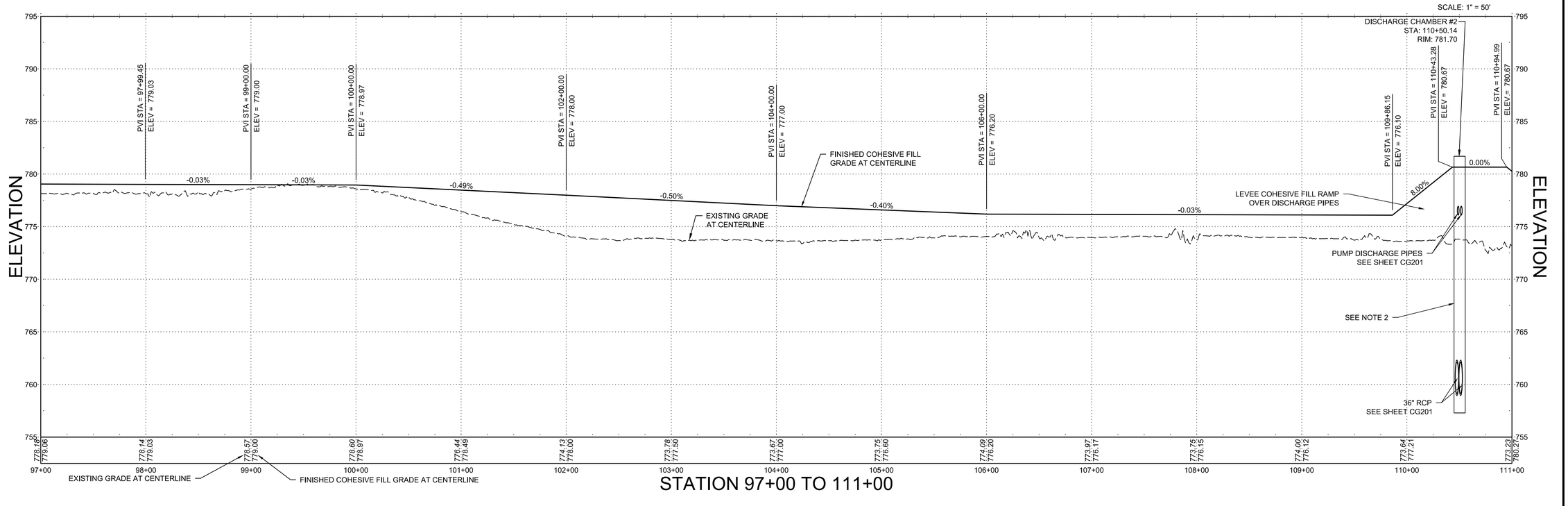
Jul 29, 2020 - 12:12pm LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL



D1 PLAN
SCALE: 1"=50'

SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

Aug 21, 2020 - 3:03:..m LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

GENERAL NOTES:

1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.
2. RECONSTRUCT LEVEE WHERE EXCAVATED TO CONSTRUCT DISCHARGE CHAMBER AND OUTLET PIPES. DURING EXCAVATION, USE CARE TO SEPARATE LEVEE COHESIVE FILL MATERIAL FROM COMMON FILL. USE OPEN CUT EXCAVATION WITH NOT STEEPER THAN 1:1 SIDE SLOPES AND BENCHED SLOPES. RECONSTRUCT WITH ZONED EMBANKMENT SIMILAR TO TYPICAL SECTION C1/C-302, MINIMUM 3 FEET THICKNESS LEVEE COHESIVE FILL AT THE CREST AND MINIMUM 5 FEET THICKNESS LEVEE COHESIVE FILL AT THE RIVERWARD SLOPE.

US Army Corps of Engineers®

MARK	AMENDMENT #1 DESCRIPTION	DATE
1		08/20/2020

DESIGNED BY: M.DUBIN
DRAWN BY: K. HOONE
CHECKED BY: E. DALY
SUBMITTED BY: M. SULLIVAN
SIZE: ANSI D

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

U.S.ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
EGCI – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

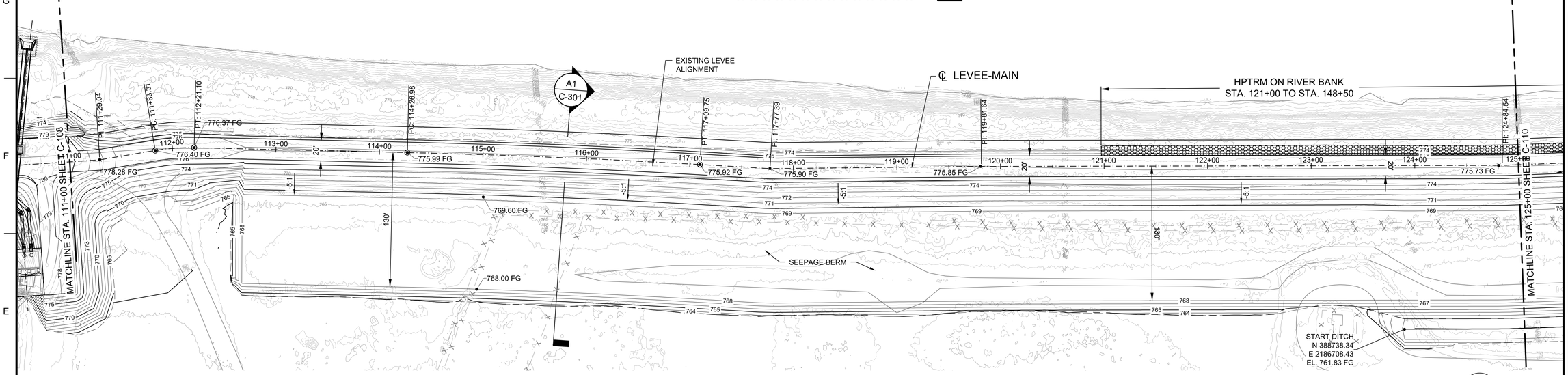
LEVEE PLAN AND PROFILE
STA. 97+00 TO 111+00

SHEET ID
C-103

GENERAL SHEET NOTES:

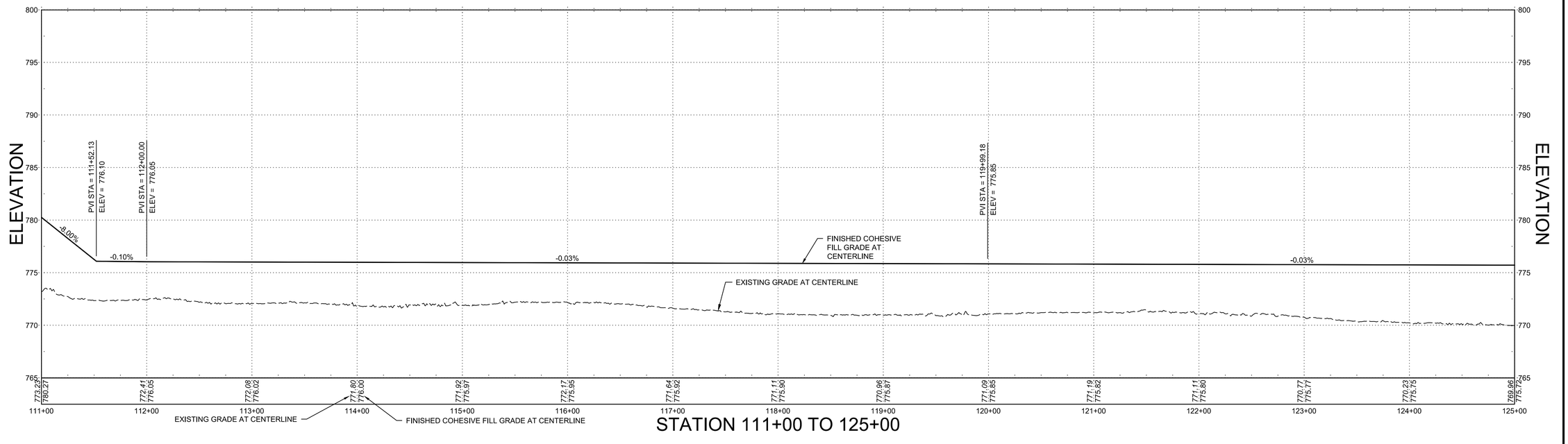
1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.
2. HPTRM SHALL CONFORM TO SPECIFICATION SECTION 31 05 19.

BID BASE CLIN 0003 (1)



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

MARK	DESCRIPTION	DATE
1	AMENDMENT #1	08/20/2020

ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

DESIGNED BY: M.DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: M.DUBBIN
SIZE: ANSI D

U.S.ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

GKD – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 111+00 TO 125+00

SHEET ID
C-109

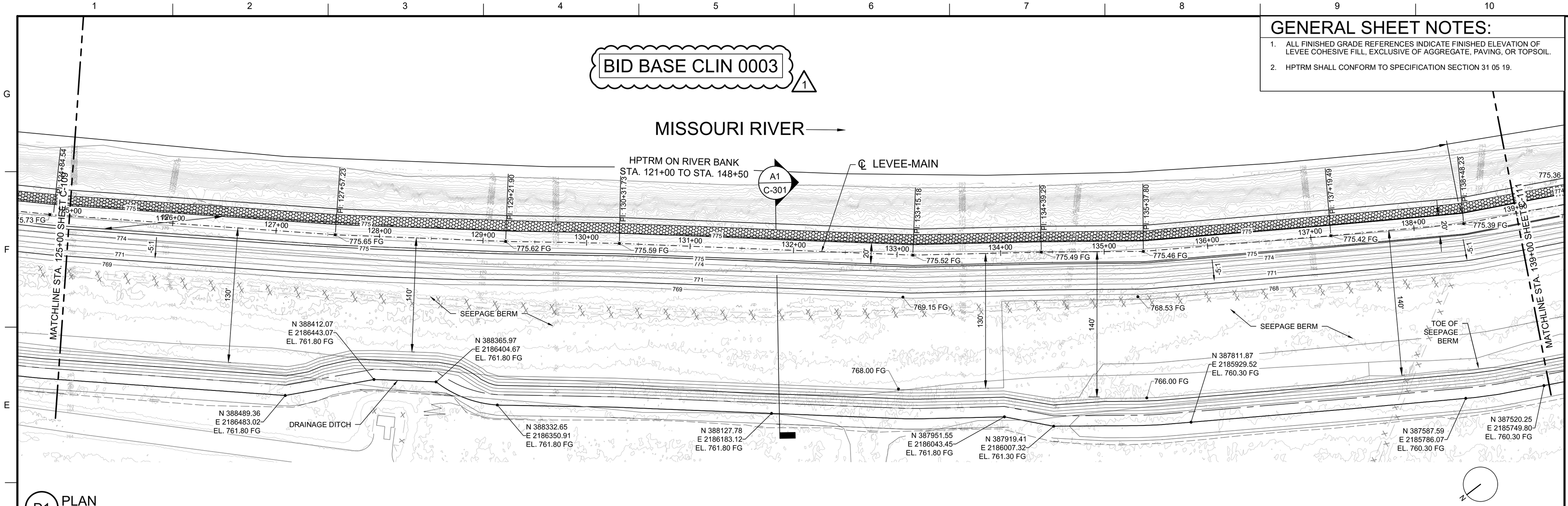
Aug 21, 2020 - 3:04:...m LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

GENERAL SHEET NOTES:

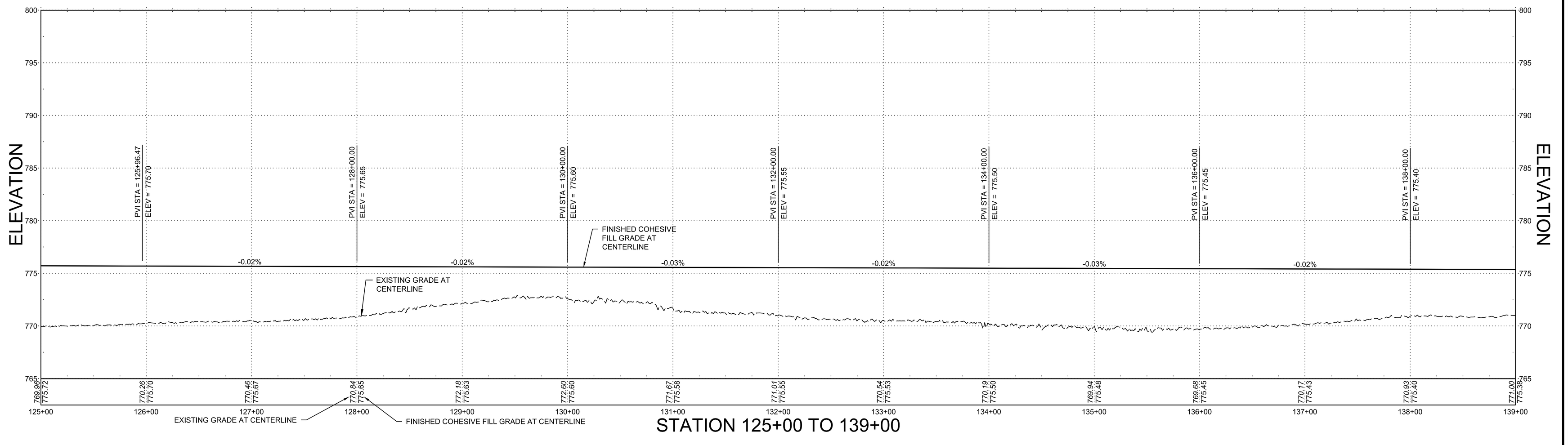
1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.
2. HPTRM SHALL CONFORM TO SPECIFICATION SECTION 31 05 19.

BID BASE CLIN 0003 (1)



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

Aug 21, 2020 - 3:04□m LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

US Army Corps of Engineers®

MARK	AMENDMENT #1	DATE
1	DESCRIPTION	08/20/2020

ISSUE DATE:	07/24/20
SOLICITATION NO.:	W912DQ20R4021
CONTRACT NO.:	TBD
DESIGNED BY:	M. DUBBN
DRAWN BY:	K. HOONE
CHECKED BY:	E. DALY
SUBMITTED BY:	M. HOLMAN
SIZE:	ANSI D

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESCI – Stanley Joint Venture 1

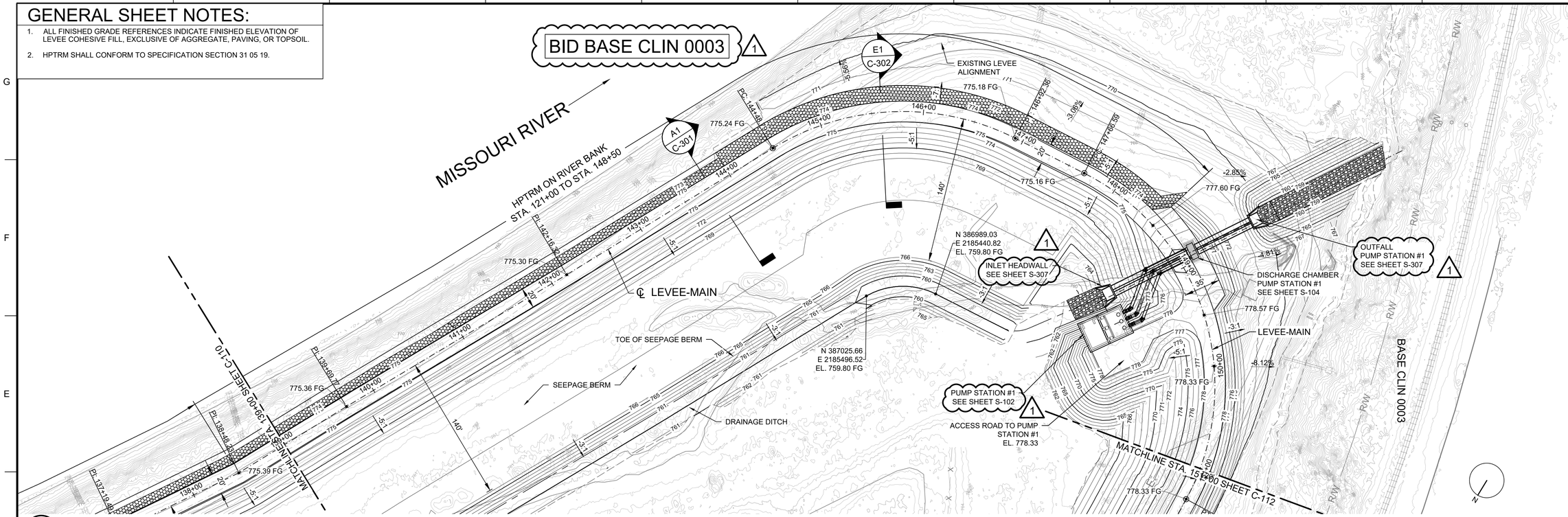
FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 125+00 TO 139+00

SHEET ID
C-100

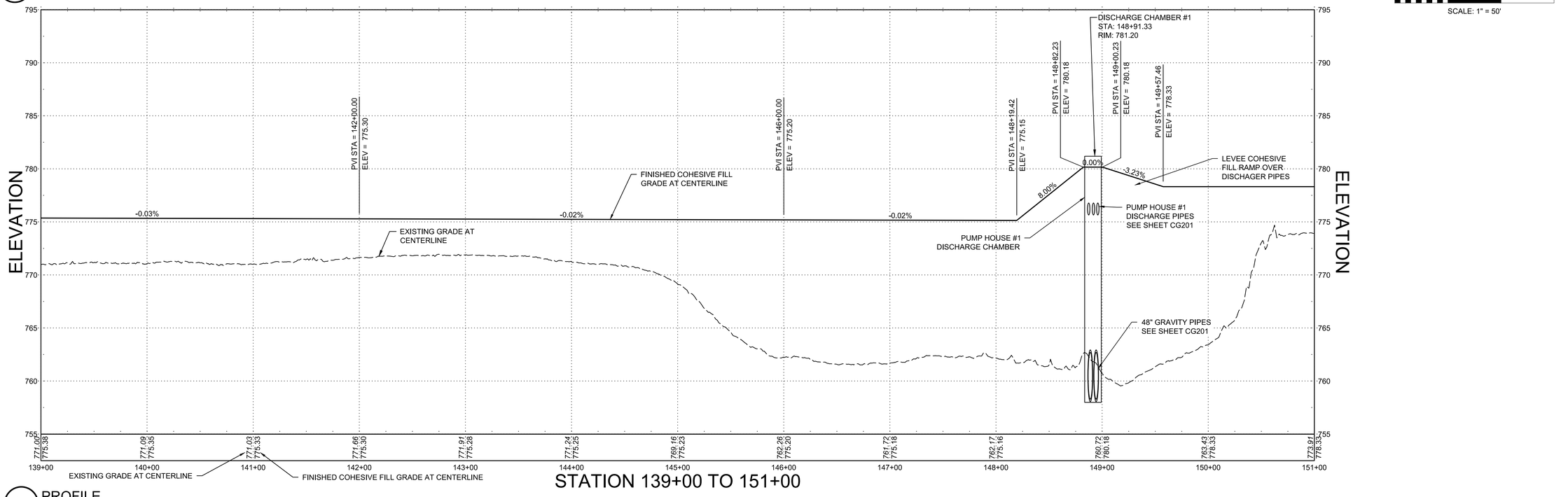
GENERAL SHEET NOTES:

1. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.
2. HPTRM SHALL CONFORM TO SPECIFICATION SECTION 31 05 19.



D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

NO.	MARK	AMENDMENT #1 DESCRIPTION	08/20/2020 DATE

DESIGNED BY: M.DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: M. DUBBIN
SIZE: ANSI D
ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

US Army Corps of Engineers®

U.S.ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO.64106

Stanley Consultants INC.
GKD – Stanley Joint Venture 1

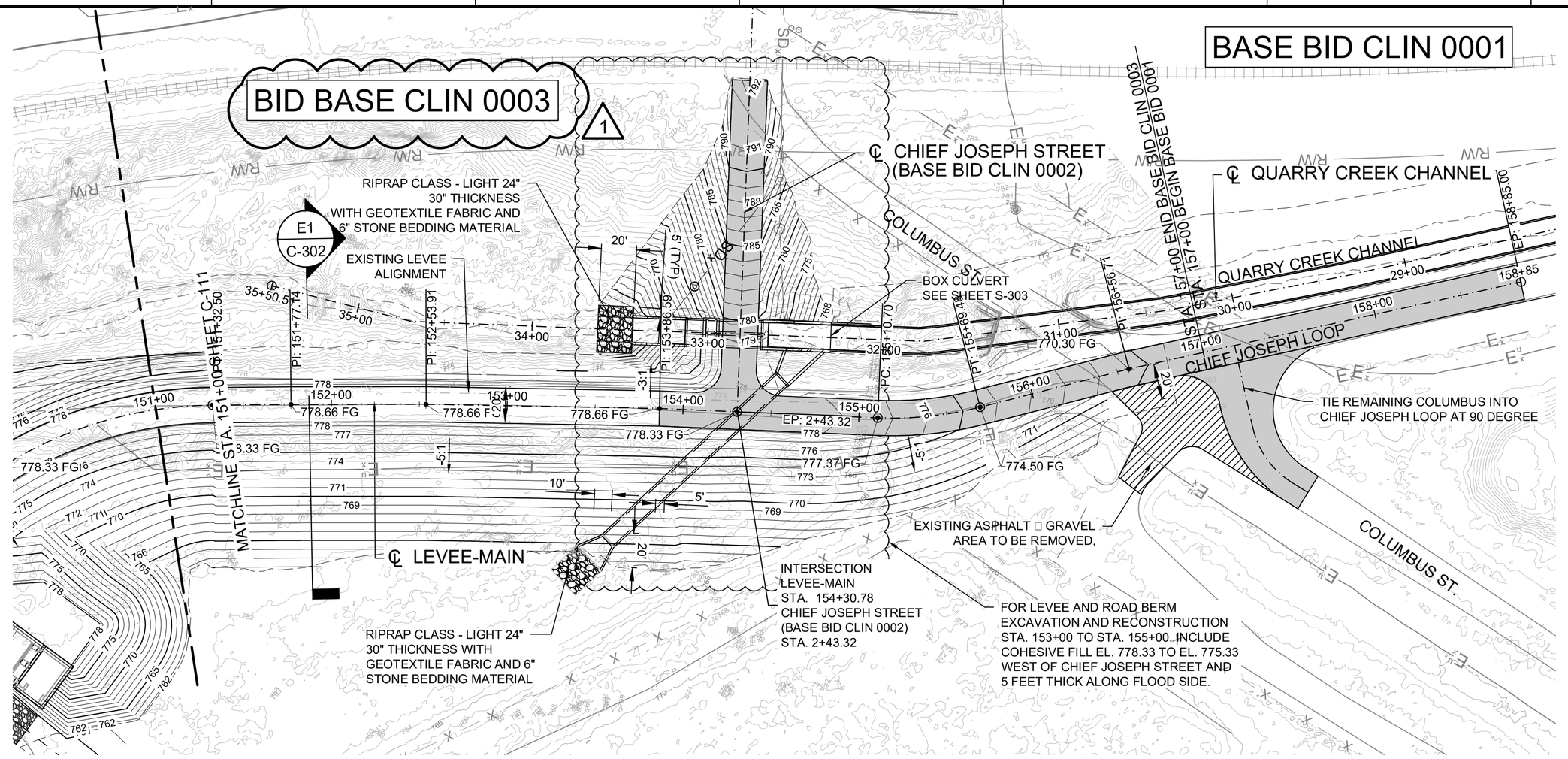
FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

LEVEE PLAN AND PROFILE
STA. 139+00 TO 151+00

SHEET ID
C-101

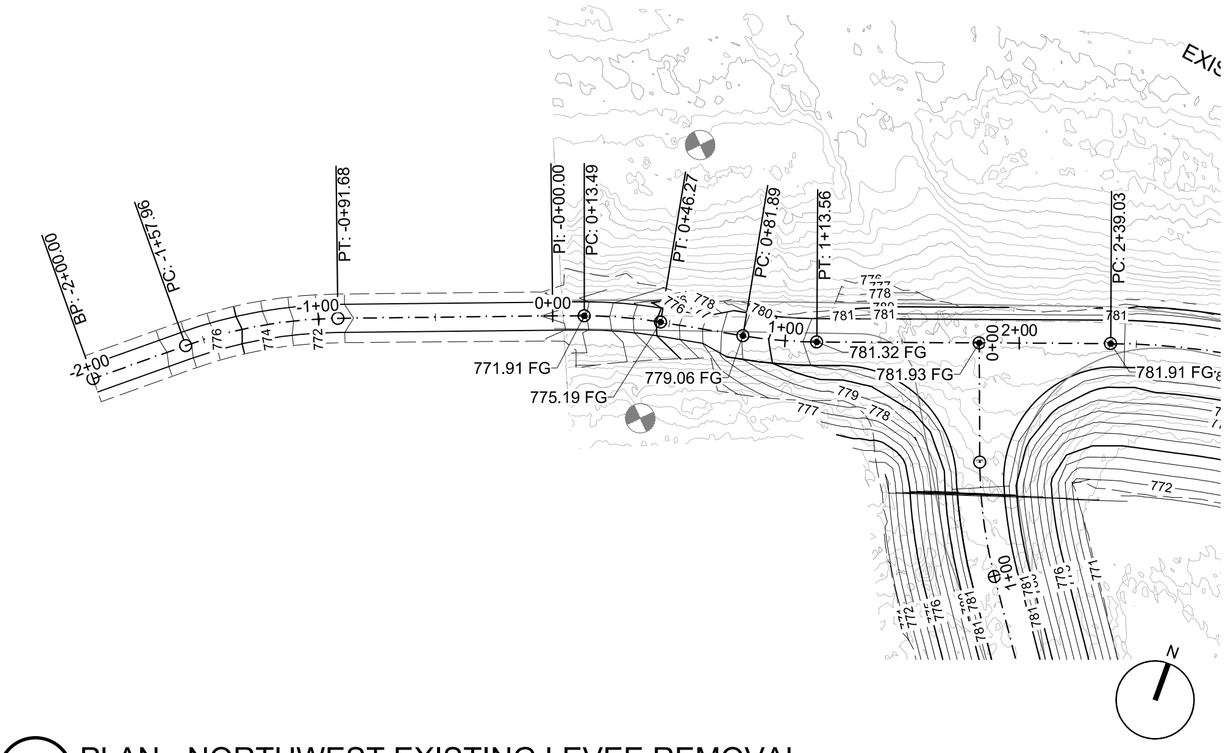
Aug 21, 2020 - 3:06:..m LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL



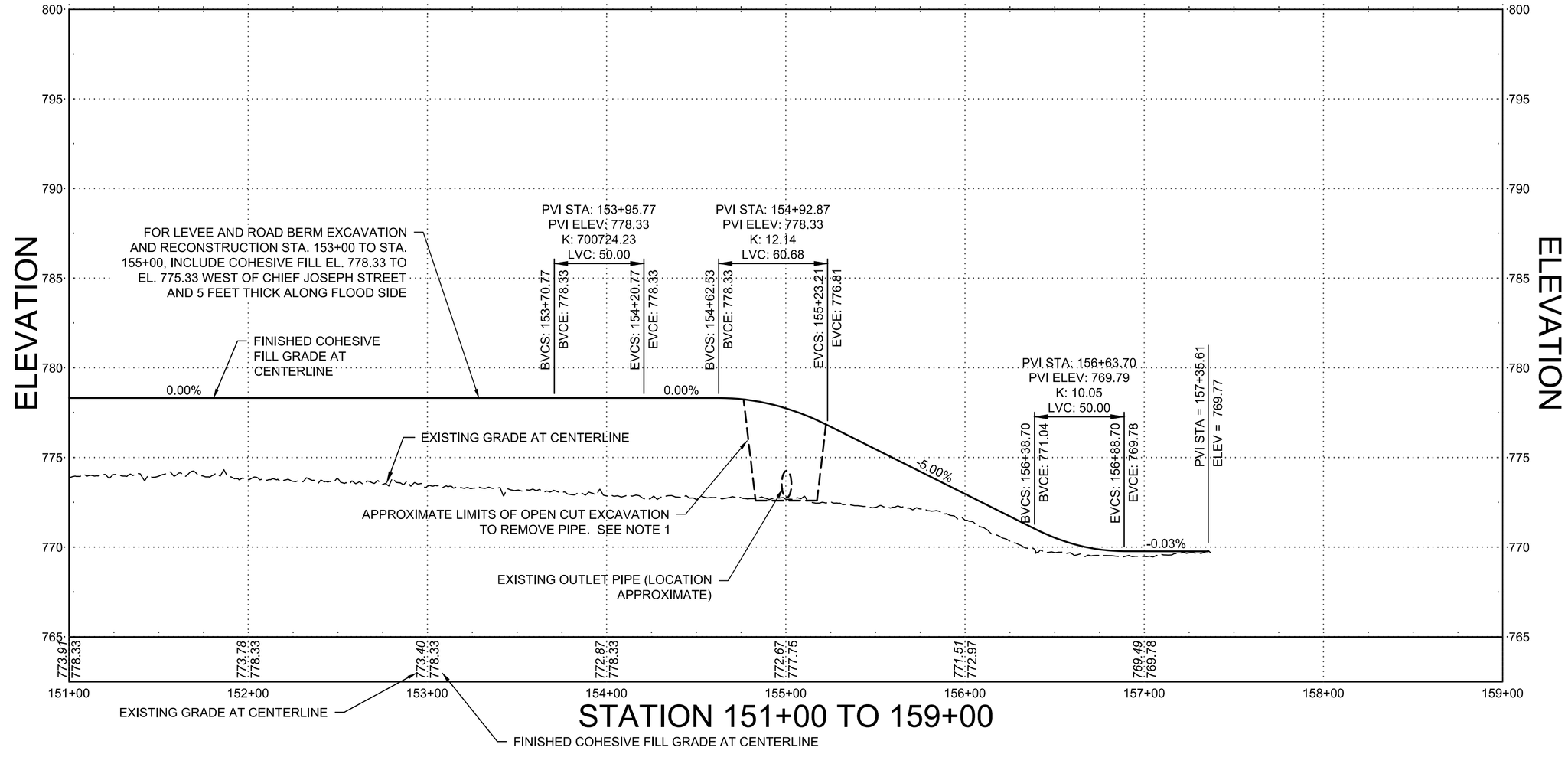
D1 PLAN
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



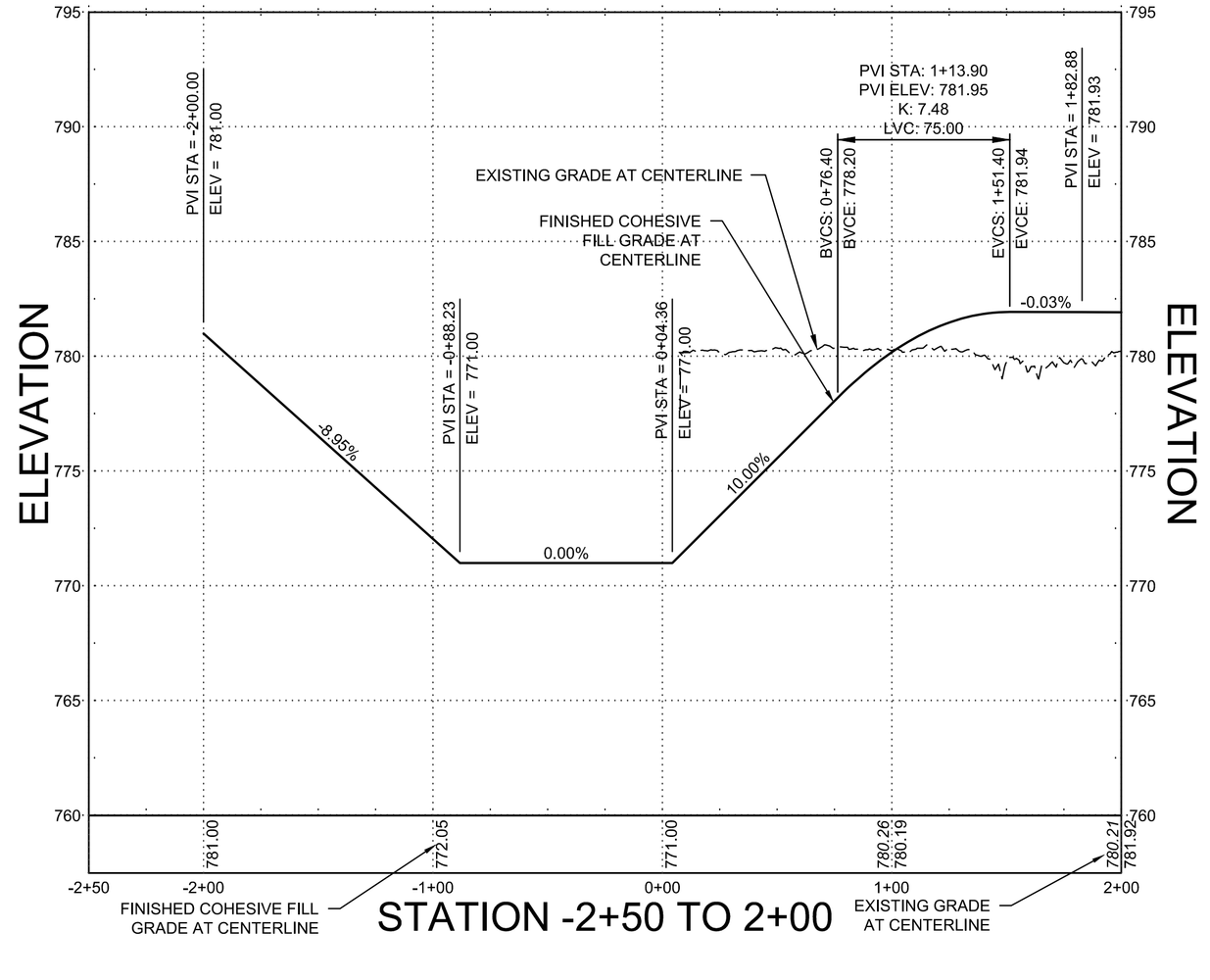
D7 PLAN - NORTHWEST EXISTING LEVEE REMOVAL
SCALE: 1"=50'

0 25' 50' 100' 150'
SCALE: 1" = 50'



A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150' HORIZONTAL SCALE: 1" = 50'
0 2.5' 5' 10' 15' VERTICAL SCALE: 1" = 5'



A7 PROFILE - NORTHWEST EXISTING LEVEE REMOVAL
SCALE: AS SHOWN

0 25' 50' 100' 150' HORIZONTAL SCALE: 1" = 50'
0 2.5' 5' 10' 15' VERTICAL SCALE: 1" = 5'

GENERAL NOTES:

1. RECONSTRUCT LEVEE WHERE EXCAVATED TO REMOVE ABANDONED PIPE. DURING EXCAVATION, USE CARE TO SEPARATE LEVEE COHESIVE FILL MATERIAL FROM COMMON FILL. BENCH EXCAVATION SIDE SLOPES. RECONSTRUCT WITH ZONED EMBANKMENT SIMILAR TO TYPICAL SECTION C1/C-302, MINIMUM 3 FEET THICKNESS LEVEE COHESIVE FILL AT THE CREST AND MINIMUM 5 FEET THICKNESS LEVEE COHESIVE FILL AT THE RIVERWARD SLOPE.
2. ALL FINISHED GRADE REFERENCES INDICATE FINISHED ELEVATION OF LEVEE COHESIVE FILL, EXCLUSIVE OF AGGREGATE, PAVING, OR TOPSOIL.
3. RIPRAP, GEOTEXTILE FABRIC, AND BEDDING STONE SHALL CONFORM TO SPECIFICATION SECTION 31 00 00.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
1	AMENDMENT #1	08/20/2020

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HOONE
CHECKED BY: E. DALY
SUBMITTED BY: M. HOLMAN
SIZE: ANSI D
ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESCO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

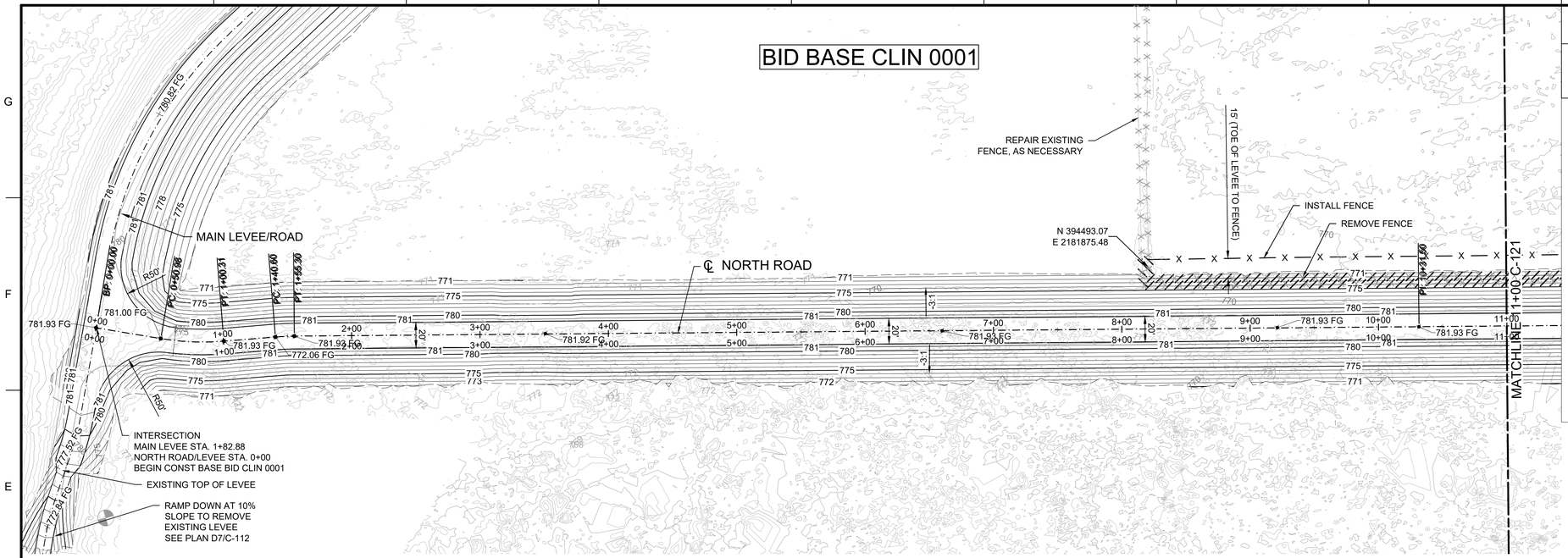
LEVEE PLAN AND PROFILE
STA. 151+00 TO 155+00

SHEET ID
C-102

Aug 21, 2020 - 3:07pm LEAVENWORTH_C-101.dwg

FINAL SUBMITTAL

BID BASE CLIN 0001

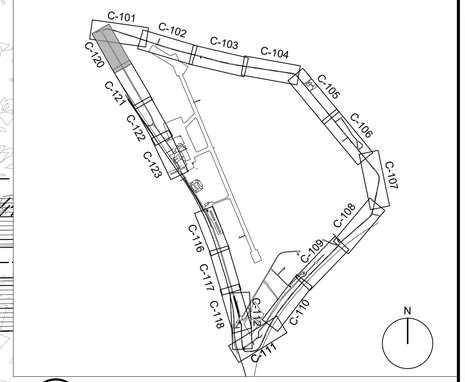


D1 PLAN
SCALE: AS SHOWN

0 50' 100'
SCALE:1"=50'

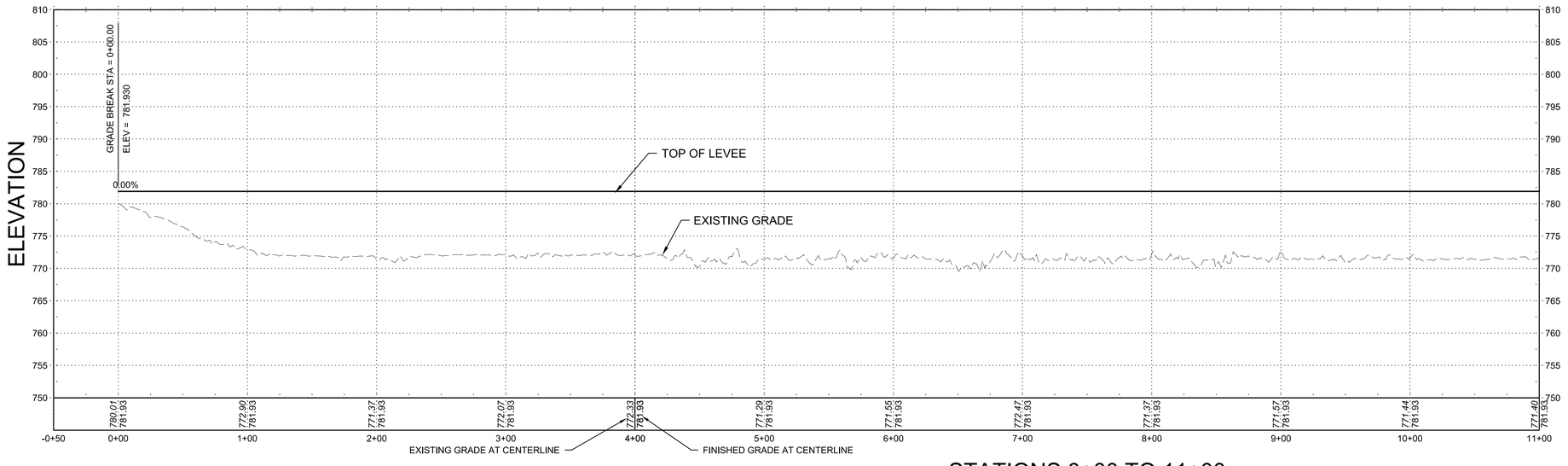
GENERAL SHEET NOTES:

1. FG IS CENTERLINE TOP OF COHESIVE FILL.



E9 KEY PLAN
SCALE: AS SHOWN

0 2000' 4000'
SCALE:1"=2000'



STATIONS 0+00 TO 11+00

A1 PROFILE
SCALE: AS SHOWN

0 25' 50' 100' 150'
HORIZONTAL SCALE: 1" = 50'

0 2.5' 5' 10' 15'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. PAHRIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: W. HOLLMAN
SIZE: ANSI D
ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESO – Stanley Joint Venture 1

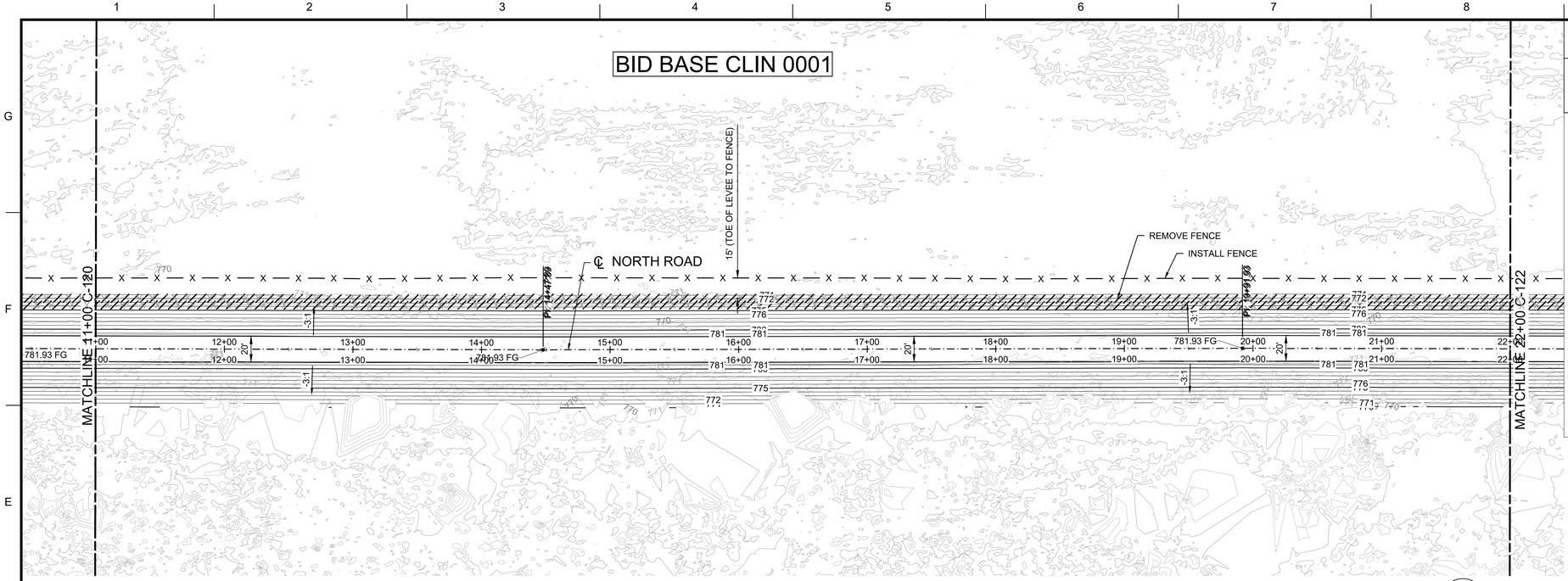
FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

PLAN AND PROFILE
NORTH ROAD/LEVEE
STA. 0+00 TO 11+00

SHEET ID
C-120

Aug 04, 2020 - 11:20pm LEAVENWORTH_C-120.dwg

FINAL SUBMITTAL

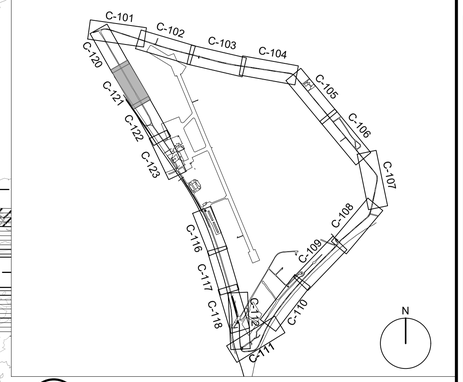


D1 PLAN
SCALE: AS SHOWN

0 50' 100'
SCALE:1"=50'

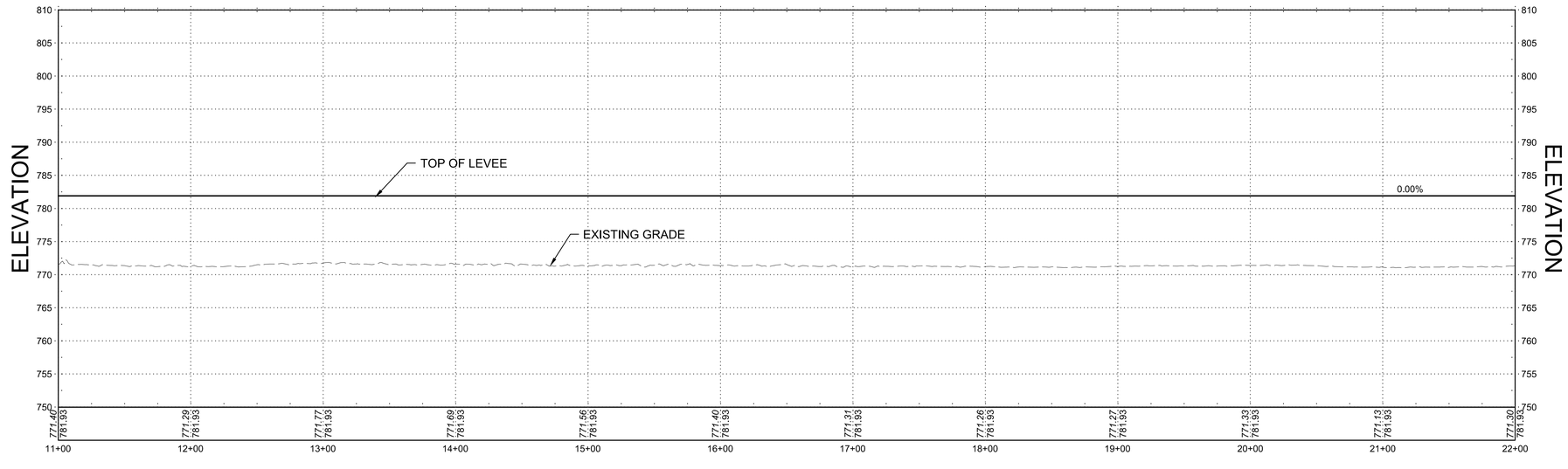
GENERAL SHEET NOTES:

1. FG IS CENTERLINE TOP OF COHESIVE FILL.



E9 KEY PLAN
SCALE: AS SHOWN

0 2000' 4000'
SCALE:1"=2000'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50' (0 25' 50' 100' 150')
VERTICAL SCALE: 1" = 5' (0 2.5' 5' 10' 15')

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: W. LAMAN
SIZE: ANSI D
ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

ESO – Stanley Joint Venture 1

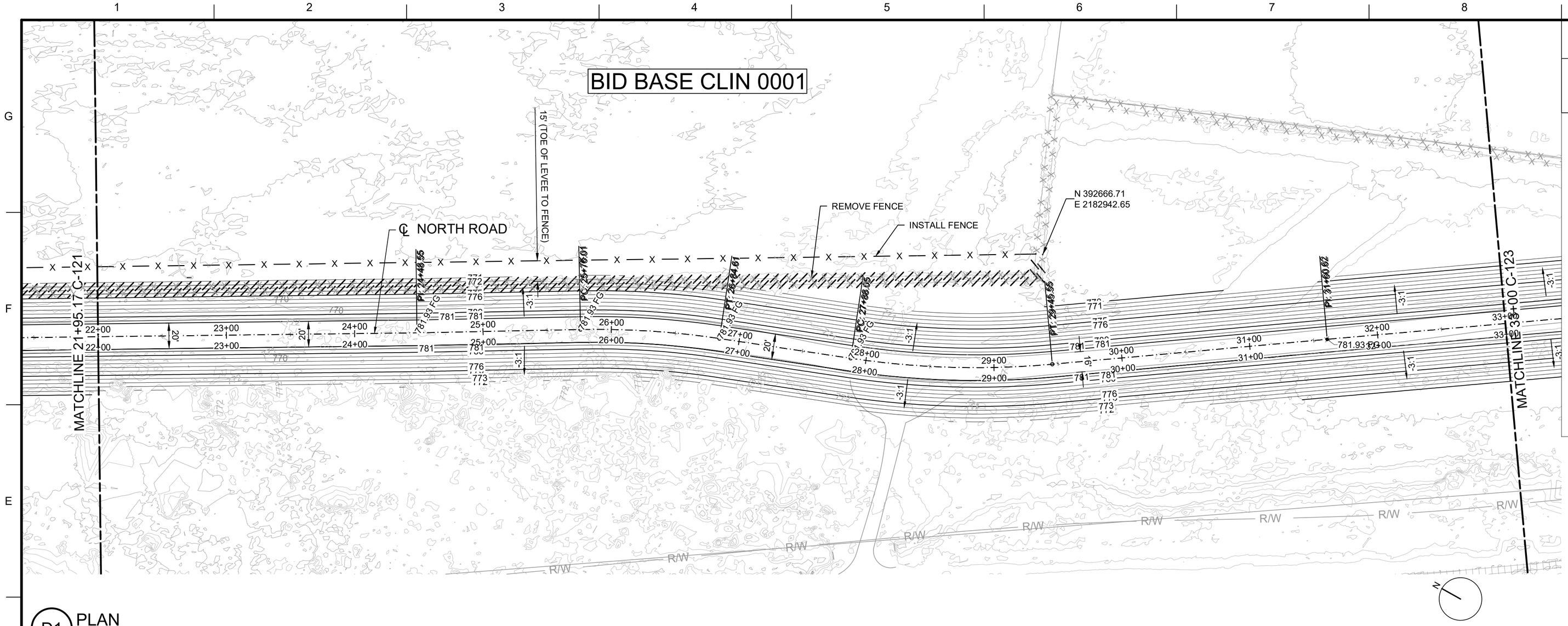
FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

PLAN AND PROFILE
NORTH ROAD LEVEE
STA. 11+00 TO 22+00

SHEET ID
C-120

Jul 29, 2020 - 12:16pm LEAVENWORTH_C-120.dwg

FINAL SUBMITTAL

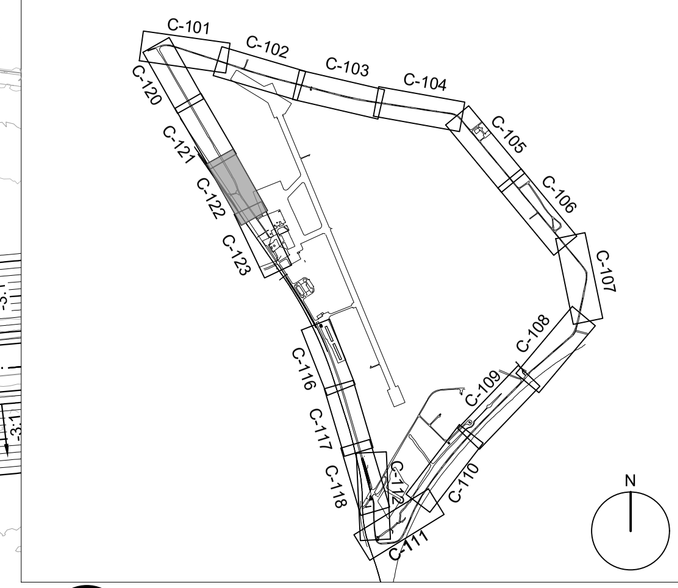


D1 PLAN
SCALE: AS SHOWN

0 50' 100'
SCALE:1"=50'

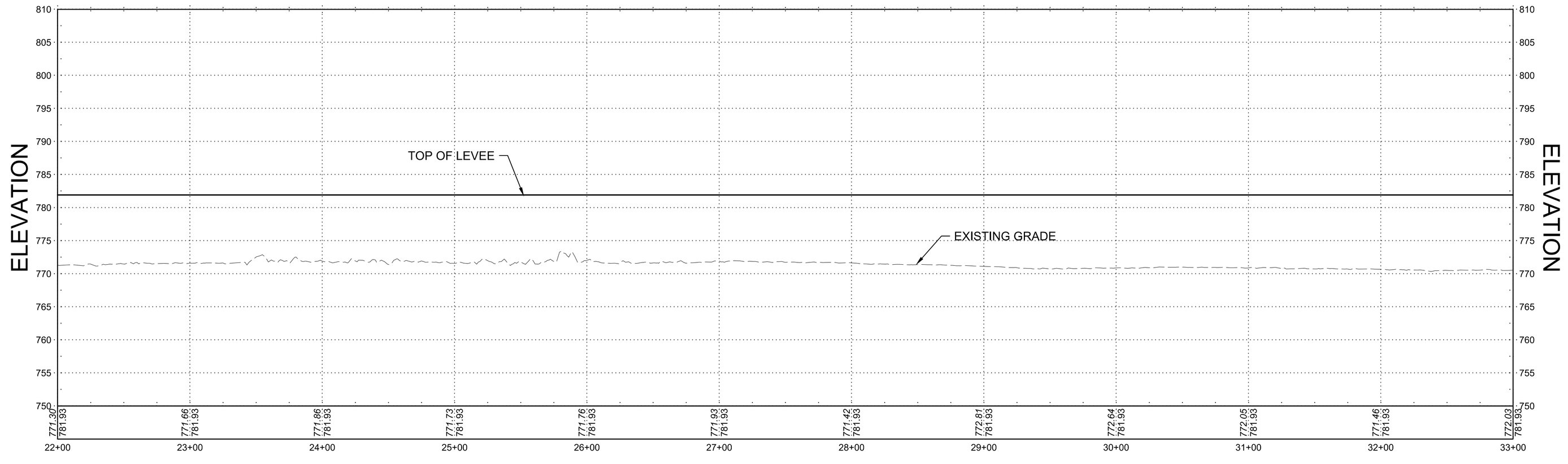
GENERAL SHEET NOTES:

1. FG IS CENTERLINE TOP OF COHESIVE FILL.



e9 KEY PLAN
SCALE: AS SHOWN

0 2000' 4000'
SCALE:1"=2000'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: W. HOLMAN
SIZE: ANSI D
ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESO – Stanley Joint Venture 1

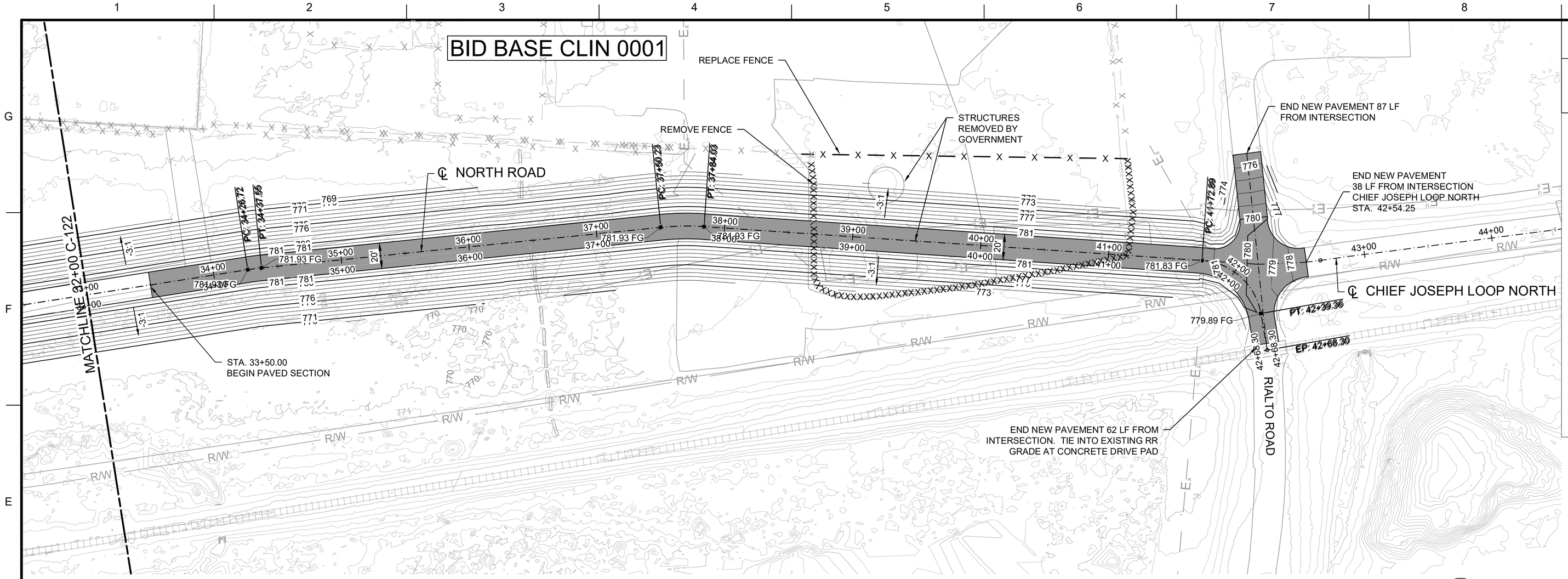
FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

PLAN AND PROFILE
NORTH ROAD LEVEE
STA. 22+00 TO 33+00

SHEET ID
C-120

Jul 29, 2020 - 12:16pm LEAVENWORTH_C-120.dwg

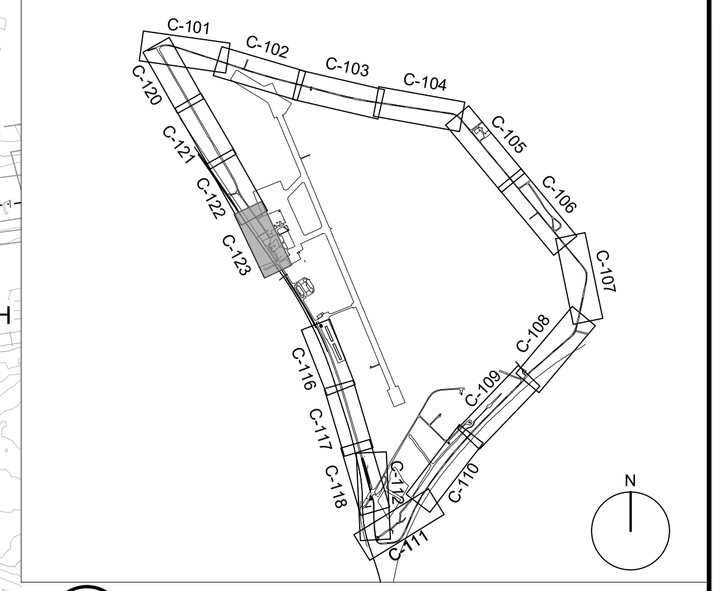
FINAL SUBMITTAL



D1 PLAN
SCALE: AS SHOWN

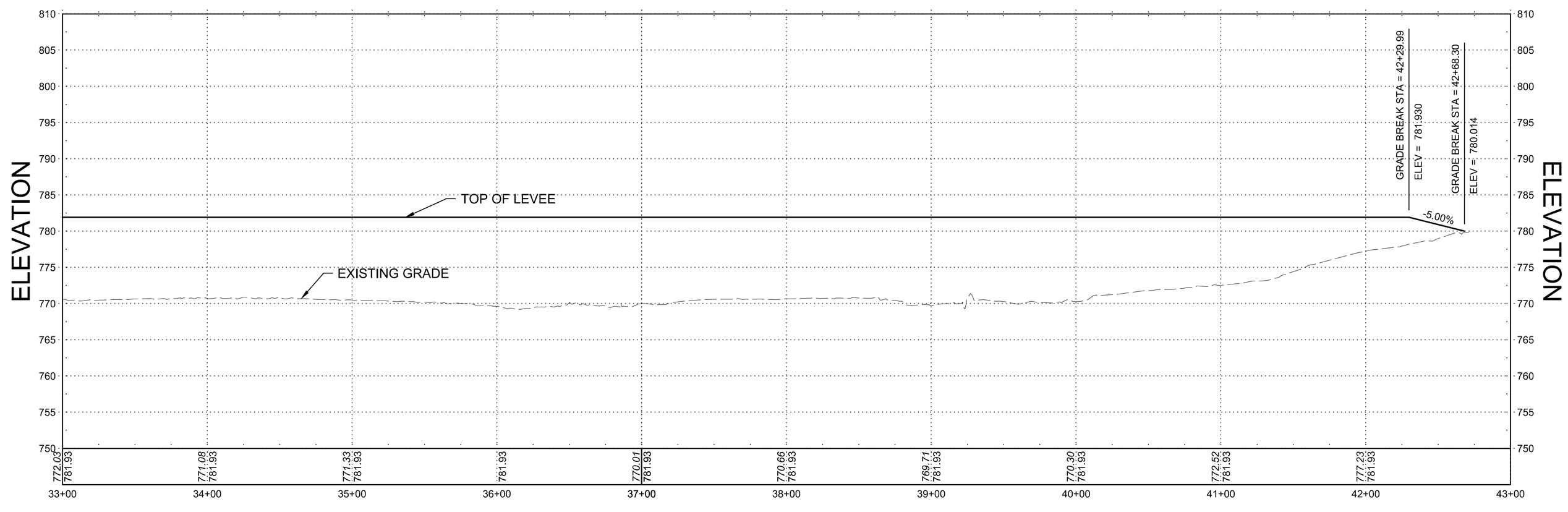
GENERAL SHEET NOTES:

1. FG IS CENTERLINE TOP OF COHESIVE FILL.



E9 KEY PLAN
SCALE: AS SHOWN

0 2000' 4000'
SCALE:1"=2000'



A1 PROFILE
SCALE: AS SHOWN

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. DUBBIN
DRAWN BY: K. HODNE
CHECKED BY: E. DALY
SUBMITTED BY: W. HOLMAN
SIZE: ANSI D
ISSUE DATE: 07/24/20
SOLICITATION NO.: W912DQ20R4021
CONTRACT NO.: TBD

U.S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 E. 12TH STREET
KANSAS CITY, MO 64106

Stanley Consultants INC.
ESO – Stanley Joint Venture 1

FORT LEAVENWORTH FLOOD REPAIRS
FORT LEAVENWORTH
FORT LEAVENWORTH, KS

PLAN AND PROFILE
~~NORTH ROAD/LEVEE~~
STA. 33+00 TO 43+00

SHEET ID
C-120

Jul 29, 2020 - 12:17pm LEAVENWORTH_C-120.dwg

FINAL SUBMITTAL

APPENDIX E
Clean Water Act Nationwide Permit and Section 401 Water Quality Certification Conditions

Print Form | Save As

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 02-28-2022

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Neil Middle - Last - Bass	First - Middle - Last -
Company - US Army Fort Leavenworth	Company -
E-mail Address - michael.n.bass.civ@mail.mil	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 810 McClellan Ave	Address-
City - Ft Leavenworth State - KS Zip - 66027 Country -	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 913 684-8979 c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ SIGNATURE OF APPLICANT _____ DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Fort Leavenworth Flood Repair

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Quarry Creek and Missouri River Floodplain	Address
15. LOCATION OF PROJECT	City - Fort Leavenworth State- KS Zip- 66027
Latitude: ◦N 39.364431 Longitude: ◦W -94.905166	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality

Print Form | Save As

17. DIRECTIONS TO THE SITE

From Metropolitan Ave turn North on Grant Ave. Follow Grant across Riverside and then bend left, West, on McPherson. Stay on McPherson to the stop sign, then turn right and bend left to stay on McPherson. Turn right, North, on Sylvan Trail to the stop sign. Then turn left, North, and drive to the intesection of Bluntville and Rialto. Turn right, East, on Rialto across railroad tracks. Then turn right, South, on Cheif Joseph Loop and follow it till it turns hard left. Much of the work is located along the downstream side of the levee.

18. Nature of Activity (Description of project, include all features)

The project involves the repairs and improvement of the damaged stormwater systems associated with the Airfield. These improvements include:

- Repair the levee damage and restore the top of levee elevations.
- Construct an overflow weir in the southern boundary of the levee system to help control the location of overflow from the Missouri River and a box culvert diversion structure from Quarry Creek into the protected side of the airfield.
- Construct a levee along the west side and north of the airfield hangers to tie the local levee system to high ground.
- Replace pump stations and gravity outlets.
- Improve the airfield drainage with culverts and ditches to convey the runoff to the pump stations.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Repairing flood damage to the levee and airfield drainage. This will keep the airfield protected from future flooding. The drainage repairs will allow water, either from levee over topping or from internal drainage, to flow to new pumps that will pump the water out of the airfield. This will decrease BASH safety risks for flight operations at Sherman Army Airfield. The overflow weir will help minimize flooding damage from water over topping and running into the river and from high flows on Quarry Creek from localized rain events.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

This action will impact 75 lf of stream for the placement of and outlet pipe and headwall. There will also be 770 sq ft of wetland impacts with the placement of 92 cu/yds of rip rap near the intake of the new pump station. The levee set back will impact 1.2 acres of wetland with 9,685 cu/yds of earthen fill but it will also provide connectivity to about 1 acre that was previously the levee and remove the box culvert and levee from 130 lf of stream. These impacts can all be seen on pages 1, 4, and 5. The impacts on Pg 2 are 1,440 sq ft of rip rap or 133 cu yds of wetland impacts. Flood damage to the box culvert on Quarry Creek requires it be removed and relocated. The culvert and its replacement can not be removed and replaced without some incidental fall back from the removal and the placement of the new culvert into the stream. This will impact the 100 lf where the culvert is being removed and the 100 lf just donwstream where the new culvert is being installed. This can be found on pages 3 and 6.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
225 cy of rip rap	9,685 cy of earthen fill	

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 1.25 acres of wetlands

or

Linear Feet 275 linear feet of stream

23. Description of Avoidance, Minimization, and Compensation (see instructions)

130 feet of stream will be reverted back to native substrate by the removal of the Quarry Creek box culvert. The removal of the old levee will reconnect about 1 acre with the floodplain. The SE portion of the levee rehab, mostly on Page 1, will be flooded more frequently with the completion of the rehab project. This will result in the addition of wetlands in this area bringing the size to approximately 5 acres.

Print Form | Save As

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

BASS.MICHAEL.NEIL.JR.1241420830 Digitally signed by BASS.MICHAEL.NEIL.JR.1241420830 Date: 2020.07.10 15:09:22 -05'00' — 2020-07-10

SIGNATURE OF APPLICANT | DATE | SIGNATURE OF AGENT | DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT
635 FEDERAL BUILDING
601 E. 12TH STREET
KANSAS CITY, MISSOURI 64106-2824

July 28, 2020

Regulatory Branch
NWK-2020-00551
Leavenworth, KS, NWP 3 & 13

Mr. Neil Bass
US Army Fort Leavenworth
810 McClellan Avenue
Fort Leavenworth, Kansas 66027

Dear Mr. Bass:

This letter pertains to an application received on July 10, 2020 for a Department of the Army permit. The proposed work concerns the maintenance and repair of flood control structures at Sherman Army Airfield which will involve the placement of fill material within the Missouri River, Quarry Creek and adjacent wetlands. The project is located in Section 12, Township 8 south, Range 22 east, Leavenworth County, Kansas.

The Corps of Engineers has jurisdiction over all waters of the United States. Discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (33 USC 1344) and Section 10 of the Rivers and Harbors Act of 1899(33 USC 403). The implementing regulations for these Acts are found at 33 CFR 320-332.

The following general condition applies to your project regarding Section 10 of the Rivers and Harbors Act. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

We have reviewed the information furnished and have determined that your project is authorized by nationwide permit (**NWP**) **#3, Maintenance** and **NWP #13, Bank Stabilization,** provided you ensure that the conditions listed in the enclosed copy of excerpts from the January 6, 2017 Federal Register, Issuance of Nationwide Permits, are met. You must also comply with the Kansas City District Regional NWP Conditions posted at:
http://www.nwk.usace.army.mil/Missions/RegulatoryBranch/NationWidePermits.aspx

The Kansas Department of Health and Environment (KDHE) has certified that this NWP will not violate existing state water quality standards provided you comply with the conditions included in their attached letter. All conditions included in the water quality certification become conditions of the NWP authorization, please carefully review all conditions associated with this NWP. If you have any questions concerning state water quality standards or compliance issues with the associated certification conditions, please contact KDHE at 785-296-5573, Bureau of Environmental Field Services, Watershed Management Section, 1000 SW Jackson Street, Suite 430, Topeka, Kansas 66612-1367.

General condition 30 requires you to sign and submit the enclosed "Compliance Certification" within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

This NWP verification is valid until March 18, 2022. Should your project plans change or if your activity is not complete within the specified verification term, you must contact this office for another permit determination. Although the Corps has verified your project would meet the terms and conditions of a nationwide permit, other Federal, state and/or local permits may be required. You should verify this yourself.

We are interested in your thoughts and opinions concerning your experience with the Kansas City District, Corps of Engineers Regulatory Program. Please feel free to complete our Customer Service Survey form on our website at: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. You may also call and request a paper copy of the survey which you may complete and return to us by mail.

Mr. Connor Bickford, Regulatory Specialist, reviewed the information furnished and made this determination. If you have any questions concerning this matter, please feel free to contact him at 816-389-3115 or by email at connor.n.bickford@usace.army.mil. Please reference Permit No. NWK-2020-00551 in all comments and/or inquiries relating to this project. This letter is only being provided to you electronically at michael.n.bass.civ@mail.mil.

Enclosures

cc (electronically w/o enclosures):

Environmental Protection Agency,
Watershed Planning and Implementation Branch
U.S. Fish and Wildlife Service, Manhattan, Kansas
Kansas Department of Wildlife, Parks and Tourism
Kansas Department of Health and Environment
Kansas Department of Agriculture

COMPLIANCE CERTIFICATION

General condition 30 of this Nationwide Permit requires that you submit a signed certification regarding the completed work and any required mitigation. This certification page satisfies this condition if it is provided to the Kansas City District at the address shown at the bottom of this page within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

APPLICATION NUMBER: NWK-2020-00551

APPLICANT: US Army Fort Leavenworth
810 McClellan Ave.
Fort Leavenworth, Kansas 66027

PROJECT LOCATION: In the stream channel of Quarry Creek, the Missouri River, and adjacent wetlands, in the U.S. Army Garrison, Fort Leavenworth, Section 12, Township 8 south, Range 22 east, Leavenworth County, Kansas.

a. I certify that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions.

b. I certify that any required mitigation was completed in accordance with the permit conditions.

c. Your signature below, as permittee, indicates that you have completed the authorized project as certified in paragraphs a and b above.

_____ _____

(PERMITTEE) (DATE)

Return this certification to:

U.S. Army Corps of Engineers
Kansas City District, ODR
601 East 12th Street, Suite 402
Kansas City, MO 64106-2824

Bureau of Water
Watershed Management Section
1000 SW Jackson, Suite 420
Topeka, KS 66612-1367

Phone: 785-296-4195
Fax: 785-296-5509
nps@kdheks.gov
www.kdheks.gov/water

Susan Mosier, MD, Secretary | Department of Health & Environment | Sam Brownback, Governor

Kansas Section 401 Water Quality Certification for Clean Water Act Section 404 Nationwide Permits (Dredge and Fill) Kansas Department of Health and Environment, Bureau of Water. March 6, 2017 http://www.kdheks.gov/nps/section401.html

I. Authority

This certification is prepared pursuant to Clean Water Act (CWA) Section 401 and Kansas Administrative Regulation (K.A.R.) 28-16-28f(b)(1) by the Kansas Department of Health and Environment (KDHE).

II. Certification

All activities authorized by the U.S .Department of Army Corps of Engineers (USACE) proposed Nationwide Permits (NWP) published, in the Federal Register, and will go into effect on March 19, 2017, are not expected to result in violations of Kansas Water Quality Standards found at Kansas Administrative Regulations 28-16-28b through 28g, provided the person conducting the Corps of Engineers authorized activity adheres to the conditions set out by this certification. The public notice documenting the final issuance of the NWPs can be found at: http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/publicnotices/2017-01-13%20NWP%202017%20Reissuance%20PN.pdf?ver=2017-01-13-160903-293

Additionally, Kansas Regional Conditions for NWPs have been drafted by the Kansas City District USACE in coordination with state and federal agencies. Once issued, these conditions provide a general statewide framework for requirements for permitted activities considered by the Kansas City District USACE to have minimal impacts on the aquatic ecosystem. This water quality certification provides conditions and guidance to address local water quality needs of the permitted activities.

III. Limitations of this Certification: All Section 404 activities within the borders of Indian owned and operated lands are not covered by this certification. Individuals proposing projects which impact those waters are responsible for contacting the appropriate individual at the following numbers:

a. Prairie Band Pottawatomie Indians, Planning Department, 785/966-2946

b. Kickapoo Tribe in Kansas, Environmental Office, 785/486-2601

c. Iowa of Tribe of Kansas and Nebraska, 785/595-3258

d. Sac and Fox Tribe of Missouri, 785/742-4705

IV. General Conditions

1. **Certification Retention:** Nationwide permit recipients shall retain this water quality certification on the project site through the duration of the project to accommodate inspection.

2. **KDHE Notification:** Nationwide permit recipients shall email KDHE at NPS@kdheks.gov when construction starts.

3. **Kansas Water Pollution Control General Permit for Stormwater Runoff from Construction Activities**: This certification does not relieve the applicant of the responsibility to determine if the project is subject to the requirements of a **General NPDES Permit** and to secure such permit as necessary. Questions and inquiries may be directed to:

   Kansas Department of Health and Environment
   Bureau of Water – Industrial Program Section
   1000 SW Jackson Street, Suite 420
   Topeka, Kansas 66612-1367
   Phone 785/296-5549 or FAX: 785/296-0086
   www.kdheks.gov/stormwater

4. **Project Water Quality Protection Plan:** Any person wishing to use a Section 404 Nationwide Permit shall prepare and follow a written project water quality protection plan (PWQPP.) The PWQPP shall identify components of the permitted activity (i.e. solid waste handling, fuel storage and leaks, sediment from construction etc.) which may or will result in the discharge of pollutants to waters of the state. For each component which may discharge pollutants to waters of the state, the plan shall set out the physical, structural and management measures to be implemented to prevent or minimize the discharge of pollutants to waters of the state. The PWQPP shall be posted or retained on site through the duration of the project (see Section VIII for additional information on preparing a PWPP). Activities requiring a construction stormwater permit, as described above, also require a stormwater pollution prevention plan which will serve as the PWQPP.

   The permittee is required to submit the PWQPP to KDHE only if the project impacts Outstanding National Resource, Exceptional State or Special Aquatic Life Use Waters per condition No. 5 below.

5. **Outstanding National Resource Waters, Exceptional State and Special Aquatic Life Support Use Waters:** In the event the permitted activity occurs within one half (1/2) mile of an Outstanding National Resource Water as defined pursuant to **K.A.R. 28-16-28b (yy)** and **K.A.R. 28-16-28c(a)B(3)**, an Exceptional State Water pursuant to **K.A.R.**

28-16-28b(yy) and **K.A.R. 28-16-28c(a)B(2)**, or a Special Aquatic Life Support Use Water designated pursuant to **K.A.R. 28-16-28d(b)(2)(A) and K.A.R. 28-16-28d (c),** the person responsible for initiating the activity shall submit a copy of the PWQPP to**:**

Kansas Department of Health and Environment
Bureau of Water - Watershed Management Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367 or email: nps@kdhe.state.ks.us

Locations of **Outstanding National Resource Waters, Exceptional State and Special Aquatic Life Support Use Waters** can be found in the tables attached. The permittee should also be aware of the following Kansas water quality protection regulations associated with high value/ critical resource waters:

K.A.R. 28-16-28c(a)B(2) "Wherever state surface waters constitute exceptional state waters, discharges shall be allowed only if existing uses and existing water quality are maintained and protected."

K.A.R. 28-16-28c(a)B(3) "Wherever state surface waters constitute an outstanding national resource water existing uses and existing water quality shall be maintained and protected. New or expanded discharges shall not be allowed into outstanding national resource waters."

K.A.R. 28-16-28c(a)B(4) "No degradation of surface water quality by artificial sources of pollution shall be allowed if the degradation will result in harmful effects on populations of any threatened or endangered species of aquatic or semiaquatic life or terrestrial wildlife or its critical habitat as determined by the secretary of wildlife and parks pursuant to K.S.A. 32-960, and amendments thereto, and K.A.R. 115-15-3 or in the federal endangered species act, 16 U.S.C. 1532 , as amended on October 7, 1988."

6. **Solid Waste Disposal:** All solid waste materials produced during the execution of the project shall be disposed in accordance with the provisions of Kansas Solid Waste Management Statutes and regulations and applicable local regulations. Direct inquiries to:

KDHE, Bureau of Waste Management
1000 SW Jackson Street, Suite 320
Topeka, Kansas 66612-1366
Phone: 785/296-1600; FAX: 785/296-1592 www.kdheks.gov/waste/index.html

7. **Equipment Staging Areas and Project Closure:** Upon completion of the project, disturbed areas shall be expeditiously stabilized with temporary and permanent vegetation, bio-artificial ground cover or other appropriate non-polluting material. Fertilizer application to establish and maintain vegetation shall be done in a manner that will not contribute to the current nutrient load to any of the surface waters impacted by the project. The person responsible for the permitted activity shall monitor and maintain cover materials until such time as the site is stabilized. Project closure procedures shall be included in the PWQPP per condition No. IV. 4.

8. **Riparian Areas:** Minimize removal or disturbance of riparian areas (areas adjacent to water bodies). KDHE encourages the use of vegetation consistent with adjoining vegetation materials to minimize impacts from improper handling of fertilizers and pesticides.

9. **Discharge of Floatable Materials:** Pursuant to K.A.R. 28-16-28e(b)(1,3) the person responsible for executing the permitted activity shall assure good house-keeping is practiced at the site to minimize the discharge of floatable materials such as personal refuse including food containers, packing, and other materials. Appropriate measures shall be taken to capture and/or recover any floatable materials discharged to waters of the state originating with the permitted project.

10. **Fuel, Chemical and Materials Storage:** Fuel, chemical and other materials stored at the project site shall be stored in a manner that minimizes the discharge of product to waters of the state. Spill minimization and prevention measures and procedures shall be documented in the PWQPP.

11. **Spill Response, Cleanup and Reporting:** In the event a spill of fuel, chemical or other water quality degrading materials stored or transported on the site occurs, the permittee shall or with the assistance of professional response personnel, expeditiously control or contain the spill and initiate clean up procedures. The applicant shall immediately contact 911. The Kansas Department of Health and Environment shall then be notified immediately: (785) 291-3333 (24 hours a day.) These incidences should also be reported to the National Spill Response Center (1-800-424-8802. Spill response and cleanup actions shall be documented on the applicable Project Water Quality Protection Plan (WQPP). KDHE strongly encourages the permittee to establish and post a sign that includes phone contact numbers for the appropriate local emergency response unit, KDHE district office, and the project manager/owner

12. **Drinking Water Intakes:** The person responsible for the permitted activity shall avoid adverse impacts on public water supplies. Whenever permitted activities occur within one mile upstream of a public drinking water supply - surface water intake, the applicant shall contact the official in charge of the public drinking water supply to apprize the drinking water supply official of the permitted activity. The person responsible for the permitted activity shall consider the suggestions and recommendations of the public water supply official when preparing the PWQPP.

13. **Treated Wastewater Effluent Mixing Zones:** As a general guideline any Section 404 activity within one-half (1/2) mile upstream or one-half (1/2) mile downstream of a permitted wastewater effluent discharge may impact the effluent mixing zone. The person responsible for the permitted activity shall determine if the project will adversely impact the wastewater effluent mixing zones and take appropriate measures to avoid altering or changing the mixing zone. The permitted activities may include but are not limited to:

    a. The construction or placement of a recreation oriented facility or structure (i.e. boat ramp, walkway) which may require modification of the beneficial use designation to accommodate contact or non-contact recreation, thereby increasing the effluent limitations for the permit.

    b. Any activity which may alter or remove the stream channel geometry or natural oxygenation abilities of the stream such as bridge construction, channelization, stream channel substrate modification etc.

    The person responsible for the permitted Section 404 activity shall advise and describe to the waste water discharge permittee and KDHE any potential mixing zone impacts and the measures the person responsible for the Section 404 activity will take to minimize adverse impacts on the mixing zone. Inquiries should be directed to:

    Kansas Department of Health and Environment
    Bureau of Water - Municipal Programs Section
    1000 SW Jackson Street, Suite 420
    Topeka, Kansas 66612-1367
    Phone: 785/296-5527 or FAX: 785/296-0086

14. **Total Maximum Daily Load:** The permittee should be aware of their activity occurring in a watershed with a Total Maximum Daily Load (TMDL) in implementing appropriate water quality practices. Visit http://www.kdheks.gov/tmdl/planning_mgmt.htm for TMDL watershed locations, maps and other information.

V. Special Conditions for Specific Nationwide Permits

1. **Nationwide Permit #7. Outfall Structures and Maintenance (construction):** Controls shall be in place to stabilize all areas of the bed and bank around the pipe or adjacent to the outfall structure and associated intake structures that may be affected by outfall or stream flows, respectively.

2. **Nationwide Permits #3-Maintenance; #12-Utility Line Activities; and #18-Minor Discharges (pipelines included):** Hydrostatic tests for pipeline activities shall be approved prior to discharge of water used for the test. Please contact the following for new and used pipeline:

   a. New Pipe- Kansas Department of Health and Environment
   Bureau of Water Technical Services Section
   1000 SW Jackson Street, Suite 420
   Topeka, Kansas 66612-1367
   Phone 785/296-2856 785-2962856 or FAX: 785/296-0086

   b. Reused Pipe- Kansas Department of Health and Environment, Bureau of Water, Industrial Program Section Phone: 785-296-5547 or FAX: 785/296-0086

3. **Nationwide Permit #16:** The permittee shall contact Kansas Department of Health and Environment, Bureau of Water, Industrial Program Section Phone: 785-296-5547 or FAX: 785-296-0086 to inquire as to a need for a permit to discharge.

4. **Nationwide Permit #20:** The permittee should coordinate with EPA Region VII SPCC Coordinator. Phone: 913-551-7003

5. **Nationwide Permits #27 (Aquatic Habitat, Restoration, Establishment and Enhancement Activities) #29 (Residential Developments), #30 (Moist Soil Management for Wildlife), #39 (Commercial and Institutional Developments), #42 (Recreational Facilities), #43 Stormwater Management Facilities). A (Wind Energy Generative Facilities, B Water Based Renewable Energy):** Measures shall be

implemented to assure impounded waters, created by activities within the framework of these permits, avoid becoming public health threats, nuisances, generate complaints, and potentially discharge degraded water. The applicant shall prepare and implement an Operations and Maintenance Plan for facilities and landscapes (O&M), which at the minimum incorporate the following:

a. Identify individual and public property owners and their potential for being the source of nonpoint source pollution. This could include but is not limited to: commercial grounds, streets, right-of-ways, parking areas, conservation easement and **proposed** mitigation areas etc.

b. For each property as described in item A. above, indicate the applicable water quality protection measures for each category of artificial sources of pollution. The identified water quality protection measure for each category of artificial source of pollution shall be designed to ***reduce to the maximum extent practicable, the level of pollution resulting from identified pollutant sources***. Identified water quality protection quality protection measures shall be at least as effective as those set out by the Kansas Nonpoint Source Pollution Management Plan, 2010 Update, available at: http://www.kdheks.gov/nps/.

c. Strategies to assure implementation of the water quality protection measures identified under item IV. 3-10 which may include but are not limited to prohibition or restriction of activities, utilization of alternative technologies or products, information and education, financial assistance, technical assistance, enforcement and penalties. Additionally, an in-house reporting form used by staff to document degraded property conditions potentially impacting the property and needs to address them should be developed, if applicable.

d. Organizations and individuals responsible for assuring implementation of identified water quality protection measures.

6 **Nationwide Permit #s 29, 39, and 42**: The increase in impervious surface through construction of parking lots, roof tops etc., can increase velocity destabilizing the receiving unnamed tributary thus increasing sedimentation downstream. Projects should be designed to replicate pre-construction conditions so as to minimize or abate destabilization of the banks of receiving streams. In addition to stormwater detention basins, pervious pavement, pervious pavers, underground rain water catchments are strongly recommended. For more information said practices go to this

link:
http://kcmetro.apwa.net/content/chapters/kcmetro.apwa.net/file/Specifications/BMPManual_Oct2012.pdf

7. **Nationwide Permit #33**: Kansas Water Pollution Control General Permit for Stormwater Runoff from Construction Activities: This certification does not relieve the applicant of the responsibility to determine if the project is subject to the requirements of a **General NPDES Permit** and to secure such permit as necessary. Questions and inquiries may be directed to:

    Kansas Department of Health and Environment
    Bureau of Water – Industrial Program Section
    1000 SW Jackson Street, Suite 420
    Topeka, Kansas 66612-1367
    Phone 785/296-5549 or
    FAX:785/296-0086
    www.kdheks.gov/stormwater

8. Nationwide Permit #38: The permittee shall coordinate with the Kansas Department of Health and Environment – Bureau of Environmental Remediation by Phone: 785-296-1662 or Fax: 785-559-4259 or click on this link for staff emails. http://www.kdheks.gov/ber/admin.html.

    Additionally, activities authorized by NWP #38 may also require land disturbance authorization from KDHE, Industrial Program Section: Contact by Phone: 785-296-5549 or FAX: 785-296-0086.

VI. Enforcement and Penalties

This certification does not relieve the applicant of the responsibility for any discharge to waters of the state or allow for any inappropriate discharge to occur. As provided for by K.S.A. 65-171(f), failure to comply with the conditions of this certification may subject the responsible party to fines of $10,000 per violation with each day the violation occurs constituting a separate violation.

VII. Variance

If the applicant believes the conditions of this certification will result in impairment of important widespread social and economic development, the applicant is advised of the variance provisions of KAR 28-16-28b(sss) and KAR 28-16-28f(d).

VIII. Additional Information

The KDHE website contains the following information to assist the applicant in preparing a Project Water Quality Protection Plan (PWQPP) for projects not requiring a construction stormwater permit and stormwater pollution prevention plan:

1. Construction practices: http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm (a cooperative work product between Missouri and Kansas)

2. PWQPP Form and Instructions: http://www.kdheks.gov/nps/resources/nwpwqppfrm.doc or http://www.kdheks.gov/nps/resources/nwpwqppfrm.pdf

3. Kansas Surface Water Register: http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf

4. Kansas Surface Water Maps: http://www.kdheks.gov/befs/download/Current_Surface_Water_Register_Maps.pdf

5. Surface Water Quality Standards- K.A.R. 28-16-28b through g: http://www.kdheks.gov/tmdl/download/KDHE_SWQS_Reg_Unofficial_032315.pdf http://www.kdheks.gov/tmdl/download/SWQS_Tables_2015.pdf

6. KDHE District Offices- http://www.kdheks.gov/befs/dist_office.html This information can also be obtained by written communication directed to:

Kansas Department of Health and Environment
Bureau of Water - Watershed Management Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367 or email: **nps@kdheks.gov**
FAX 785/296-5509

ATTACHMENT 1. TABLE OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) and OUTSTANDING NATIONAL RESOURCE WATERS (ONRW), provided by Kansas Department of Health and Environment. (5/2000)
(Revised: 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6th 3/14/2012, 7th 3/3/2017, 8th 4/5/17, 9th 4/10/17))
(The Kansas Surface Water Register supersedes this list if discrepancies occur- http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf)

COUNTY	*EXCEPTIONAL STATE WATERS	* SPECIAL AQUATIC LIFE USE WATERS
Allen		Onion Cr. Neosho R., Marmaton R. **WETLANDS(7):** within boundaries of a point from NE corner of S34 T24 R18E, West to NW corner S35 T24 R17E, South to SW corner of S35 T24 R17E, East to SE corner of S34 T25 R18E, back north to origin ; Other: **(6)** all oxbow lakes and **WETLANDS** within NE 1/4 of S32 T26S R18E, N 1/2 and SE 1/4 of S33 T26 R18E
Anderson		Pottawatomie Cr., South Fk., Pottawatomie Cr., Little Indian Cr., , WETLANDS**(8)**: within boundaries of a point from the NE corner of S24 T21 R19E, West to the NW corner S22 T21 R18E, South to SW corner of S22 T25 R18E, back north to origin.
Atchison		Missouri R.; **WETLANDS(9):** All WETLANDS within S15 T6 R7E and S16 T6 R7E
Barber		Arkansas River, Salt Fork , Amber Cr., Bear Cr., Cottonwood Cr , Elm Cr., Inman Cr; Little Sandy Cr, South East Branch Elm Cr., North Branch Elm Cr., Medicine Lodge River, Mulberry Cr., Mule Cr., Sand Cr., Turkey Cr., Two unnamed tributaries to Medicine Lodge River, Unnamed tributary to Turkey Cr
Barton	Blood Cr., Little Cheyenne Cr.	Arkansas River, Blood Cr.; **WETLANDS(5):** Cheyenne Bottoms Preserve; Designation applies to all surface waters within the Nature Conservancy wildlife preserve in Sections 2, 11, 12, 16, 13, 22, 24, 25, 36 and parts of Sections 3, 10, 15, 14, 23,26, 34, and 35 in T18S R13W and from the NE corner of S07, west to NW 1/4 of S02 south to W 1/2 of S35 East to S31 of T18S R12W
Bourbon		Marmaton River, Mill Cr., Pawnee Cr.
Butler	Walnut River, Grouse Cr., Cottonwood River South Fork	Walnut River., Cottonwood River South Fork
Chase	Cottonwood River South Fork, Cedar Cr.	Bloody Cr., Cedar Cr., Collett Cr., Cottonwood River, Cottonwood River South Fork, Jacob Cr., Middle Cr., Shaw Cr.
Chautauqua	Caney River, Otter Cr.	Caney River
Cherokee	Neosho River, Shoal Cr., Spring R.., Unnamed tributary to Shoal Cr.	Brush Cr., Cow Cr., Labette Cr., Neosho River, Shoal Cr. Spring R., Taylor Branch, Turkey Cr., Un. Trib. to Shoal Cr. **WETLANDS(10a): 10a All cave waters** & associated springs within that portion of Cherokee County encompassed by a line that extends from NE corner of Sec. 24, T34S, R25E, due W. to NW corner of Sec. 24, T34S, R24E, then due S. to KS/OK(Sec.13 T35S, R.24E), then due E. to KS/MO border (Sec.13, T35S, 25E), then N. to point of origin. **And 10b**:All **wetlands** within those portions of Cherokee & Labette counties encompassed by a line that extends from KS/MO border at NE corner of Sec. 24, T31S, R25E due W. to NW corner of Sec.20, T31S, R25E, then due S. to NW corner of Sec.17, T33S, R25E, then due W. to NW corner of Sec.14, T33S, R21E, then due S to KS/OK border(Sec.14,T35S, R21E), then due E. to KS/MO border(Sec.13, T35S, R25E), then due S. to point of origin.
Cheyenne		Republican River South Fork

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Clark	Cimarron River: **(23)** St. Jacob's Well: NW1/4 of SW1/4 of S19 T32S R24W	Big Sandy Cr., Bluff Cr., Cimarron River, Gyp Cr., Indian Cr., Kiowa Cr. West, Rattlesnake Cr.: **(23)** Clark County State Fishing Lake
Cloud	**(25)** All surface waters within Jamestown Waterfowl Management Area	
Coffey		Frog Cr., Little Indian Cr., Neosho River, Wolf Cr.
Comanche	Cimarron River	Bluff Cr., Calvary Cr., Cimarron Cr., Kiowa Cr., Kiowa Cr. Middle, Kiowa Cr. West, Mule Cr., Nescatunga Cr., Wiggins Cr.
Cowley	Beaver Cr., Grouse Cr., Otter Cr., Walnut River	Arkansas River, Spring Cr., Walnut River
Crawford		Brush Cr., Cow Cr., Cow Cr East, First Cow Cr., Taylor Branch.
Dickinson	Lyon Cr.	Carry Cr., Lime Cr., Lyon Cr., Lyon Cr West Branch, Unnamed tributary to Lyon Cr., unnamed tributary to West Branch Lyon Cr.; **(**19) Herington Reservoir
Doniphan		Missouri R., Rock Creek, Wolf River
Douglas		Appanoose Cr., Buck Cr., Kansas River, West Fork Tauy Cr.; **(16)** Clinton Reservoir,
Edwards		Rattlesnake Cr.
Elk	Caney River, Fall River, Grouse Cr.	Caney River, Fall River
Ellis	Saline River	
Ellsworth	Smoky Hill River	Smoky Hill River
Finney		Arkansas River
Ford		Bluff Cr., Kiowa Cr West, Rattlesnake Cr.
Franklin		Appanoose Cr., Hickory Cr., Marais Des Cygnes River, Ottawa Cr., Pottawatomie Cr., West Fork Tauy Cr; Wilson Cr.
Geary	Lyon Cr.	Carry Cr., Davis Cr., Dry Cr., Kansas River, Lyon Cr., Thomas Cr.; **(14)** Konza Prairie Natural Area: designation applies to all surface waters within natural area
Grant	Cimarron River	Cimarron River
Greeley		Ladder Cr.
Greenwood	Fall River, Fall River East Branch, Fall River West Branch	Fall R., Fall R. East Branch, Fall R. West Br, Otter Cr, Otter Cr. South Br, Verdigris River: **(2)** Flint Hills Tallgrass Prairie Preserve, all surface waters within the Nature Conservancy Reserve: Section 22 & 23 T23S R8E
Hamilton		Arkansas River
Harper	Chikaskia River	Bluff Cr., Chikaskia River, Little Sandy Cr., Sandy Cr.
Jefferson		Buck Cr., Kansas River: **(18)** Perry Reservoir

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Johnson		Kansas River,
Kearny		Arkansas River
Kingman	Chikaskia River	Allen Cr., Chikaskia River, Chikaskia River North Fork, Duck Cr., Nester Cr., Ninnescah River South Fork, Painter Cr., Pat Cr., Sand Cr., Silver Cr., Smoots Cr., Unnamed tributary to Smoots Cr., nine separate tributaries to South Ninnescah River
Kiowa	Thompson	Calvary Cr., Kiowa Cr., Kiowa Cr Middle, Kiowa Cr West, Medicine Lodge River, Mule Cr., Rattlesnake Cr., Soldier Cr., Thompson Cr., Wiggins Cr., Unnamed tributary to Thompson Cr.
Labette		Labette Cr., Neosho River
Leavenworth		Kansas River, Missouri River
Linn	Big Sugar Cr., Marais Des Cygnes River, Middle Cr., Muddy Cr., Sugar Cr North **(12)** all surface waters within Marais des Cygnes Waterfowl Area, all WETLANDS, oxbow lakes and classified streams within Linn County extending from the Kansas/Missouri border at NE corner of S26 T19S R25E west to NW corner of S26 T19S R23E, south to SW corner of S12 T22S R23E, east to Kansas/Missouri border at SE corner of S12 T22S R25E	Big Sugar Cr., Marais Des Cygnes River, Middle Cr., Muddy Cr., Sugar Cr. North **(12)** all surface waters within Marais des Cygnes Waterfowl Area, all WETLANDS, oxbow lakes and classified streams within Linn County extending from the Kansas/Missouri border at NE corner of S26 T19S R25E west to NW corner of S26 T19S R23E, south to SW corner of S12 T22S R23E, east to Kansas/Missouri border at SE corner of S12 T22S R25E
Logan		Ladder Cr., Smoky Hill River, Twin Butte Cr.
Lyon		Cottonwood River, Elm Cr., Jacob Cr., Neosho River
Marion	Lyon Cr.	Catlin Cr., Lyon Cr., Middle Cr., Mud Cr., Spring Cr.
Marshall		Black Vermillion R, Clear Fork
Mc Pherson		**(15)** McPherson Valley Wetlands: Classification applies to all surface waters **within state owned** portions of wetlands
Meade		Big Sandy Cr., Cimarron River, Crooked Cr., Gyp Cr **(22)** Lake Meade State Park
Miami	Marais Des Cygnes River, Middle Cr.	Hickory Cr., Marais Des Cygnes River, Middle Cr., Pottawatomie Cr., Unnamed tributary to North Wea Cr. **(17)** Hillsdale Reservoir
Montgomery		Onion Cr., Verdigris River
Morris	Mill Creek, West Br.	Davis Cr., Lime Cr., Middle Cr., Mill Cr. West Br. Neosho R., Six Mile Cr., Thomas Cr.
Morton	Cimarron River, **(1 & 20)** Mallard Lake, Lake Cimarron, Point of Rocks	Cimarron River, All surface waters within the Cimarron National Grasslands

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Nemaha		Big Nemaha River South Fork
Neosho		Flat Rock Cr., Neosho River; Neosho Wildlife Area Wetlands
Osage		Appanoose Cr., Frog Cr., Long Cr. Marais Des Cygnes R,
Phillips		**(4)** Kirwin Lake; Kirwin National Wildlife Refuge; designation applies to all surface waters within wildlife refuge.
Pottawatomie		Black Vermillion River Clear Fork, Kansas River,
Pratt	**(26)** All surface waters within Texas Lake Wildlife Area	Amber Cr., Chikaskia River and North Fork, Elm Cr North, Elm Cr South East Branch, Mulberry Cr., Natrona Cr., Ninnescah River South Fork, Ninnescah River West Branch of South Fork, Painter Cr., Rattlesnake Cr., Sand Cr., Silver Cr., Turkey Cr.
Reno		Arkansas River, Goose Cr. Ninnescah River North Fork, Peace Cr., Red Rock Cr., Silver Cr., Smoots Cr., Spring Cr.,Unnamed Tributary to North Fork Ninnescah River, Unnamed Tributary to Silver Cr, Wolf Cr.; **(3)** Quivera Little Salt Marsh; All surface waters within Quivera National Wildlife Refuge
Republic	**(25)** All surface waters within Jamestown Waterfowl Management Area	
Rice		Arkansas River, Peace Cr., Rattlesnake Cr. **(3)** Quivera Big Salt Marsh and Quivera Little Salt Marsh
Riley		Deep., Honey., Little Ark, Moose, Seven mile, Spring, Swede Wildcat, and Wind Crks.. Kansas River; Konza Prairie (14)
Rush	Blood Cr.	Blood Cr.
Russell	Saline River, Smoky Hill River	Smoky Hill River
Scott		Ladder Cr.; **(24)** Lake Scott State Park, Scott Wildlife Area and feeder Springs
Sedgwick		Arkansas River, Sand Cr., Ninnescah River, Ninnescah River South Fork; Nester and Sand Cr. Unnamed Tribto North Fork Ninnescah River; Wichita Valley Center Flood Control (from confluence with Cowskin Creek to Arkansas River)
Seward		Cimarron River
Shawnee		Kansas River, Mission Cr.
Stafford		Ninnescah River NF, Peace Cr., Rattlesnake Cr.; **(3)** Quivera Big and Little Salt Marshes, All surface waters within Quivera National Wildlife Refuge
Stevens	Cimarron River	Cimarron River; All surface waters within the Cimarron National Grasslands
Sumner	Chikaskia River	Arkansas River, Bluff Cr., Chikaskia River, Ninnescah River, Spring Cr.
Wabaunsee	Deep Cr., Illinois Cr., Mill Cr., Mill Cr E and W Branches , Unnamed Tributary of Mill Cr. E Br	Deep., Dry, Elm, Hendricks, Illinois, Kuenzli, Locust, Loire, Mill, Mission, Mulberry, Nehring, Paw Paw, Pretty, Ross, Snokomo,& Spring Crks.; Mill Cr. E. and W. Branches, Mill Cr. South Branch, Unnamed Tributary of Mill Cr. East Branch; Kansas R.

ATTACHMENT 1. TABLE OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) and OUTSTANDING NATIONAL RESOURCE WATERS (ONRW), provided by Kansas Department of Health and Environment. (5/2000) (Revised: 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6th 3/14/2012, 7th 3/3/2017, 8th 4/5/17, 9th 4/10/17))

(The Kansas Surface Water Register supersedes this list if discrepancies occur- http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf)

Wallace		Eagletail Cr., Rose Cr., Coon Cr., Pond Cr., Capper Draw, Smoky Hill R., Willow Cr., Twin Butte Cr.
Wichita		Ladder Cr.
Wilson	Fall River	Fall River, Verdigris River
Woodson		Neosho River, Owl Cr. South, Verdigris River: **(21)**Leonards Lake & Circle Lake **(13)** WETLANDS in Woodson County Sections 3 and 11, Township 26S, Range 14E
Wyandotte		Kansas River, Missouri River

Note: All surface waters within the Cimarron National Grasslands are Outstanding National Resource Waters. The Following counties currently do not contain waters recognized as ESW, SALU or ONRW: Brown, Clay, Decatur, Gove, Graham, Gray, Harvey, Haskell, Hodgeman, Jackson, Jewell, Lane, Lincoln, Mitchell, Ness, Norton, Osborne, Ottawa, Pawnee, Rawlins, Rooks, Saline, Sheridan, Sherman, Smith, Stanton, Thomas, Trego, Washington

Kansas Regulations for "high value- waters":

Exceptional state waters, K.A.R. 28-16-28b(cc), "means any of the surface waters or surface water segments that are of remarkable quality or of significant recreational or ecological value, are listed in the surface water register and afforded the highest level of water quality protection under the anti-degradation provisions of K.A.R. 28-16-28cand the mixing zone provisions of K.A.R. 28-16-28c."

Outstanding national resource water, **K.A.R. 28-16-28b (vv)** means any of the surface waters or surface water segments of extraordinary recreational or ecological significance identified in the surface water register, as defined this regulation, and afforded the highest level of water quality protection under the anti-degradation provisions and the mixing zone provisions of K.A.R. 28-16-28c.

Special Aquatic Life Use, K.A.R. 28-16-28d(b)(2)(A) and K.A.R. 28-16-28d(c), "means either classified surface waters other than classified stream segments that contain combinations of habitat types and indigenous biota not found commonly in the state or classified surface waters other than classified stream segments that contain representative populations of threatened or endangered species

K.A.R. 28-16-28c(a)B(2)- "Wherever state surface waters constitute exceptional state waters, discharges shall be allowed only if existing uses and existing water quality are maintained and protected."

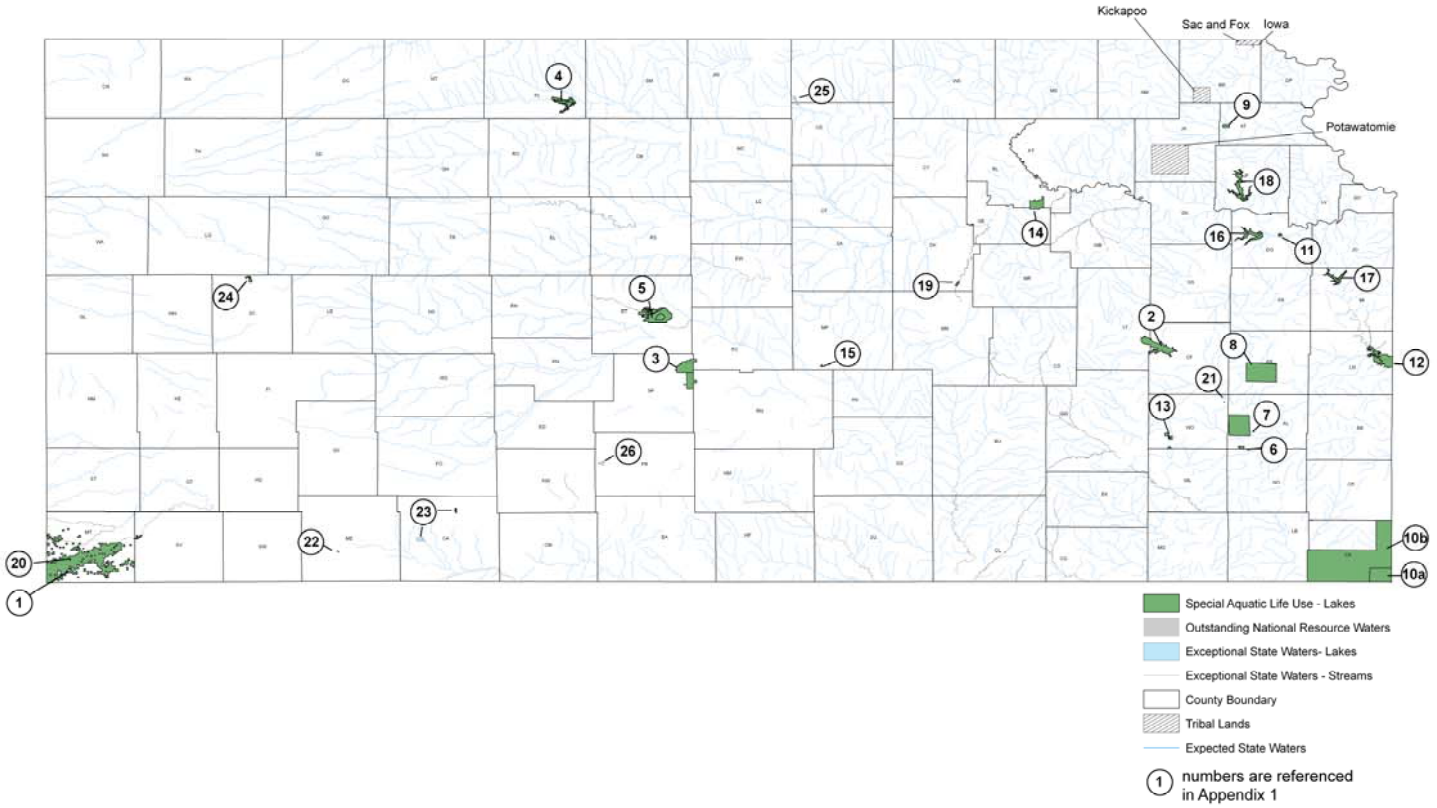
K.A.R. 28-16-28c(a)B(3) "Wherever state surface waters constitute an outstanding national resource water existing uses and existing water quality shall be maintained and protected. New or expanded discharges shall not be allowed into outstanding national resource waters."

K.A.R. 28-16-28c(a)B(4) "No degradation of surface water quality by artificial sources of pollution shall be allowed if the degradation will result in harmful effects on populations of any threatened or endangered species of aquatic or semiaquatic life or terrestrial wildlife or its critical habitat as determined by the secretary of wildlife and parks pursuant to K.S.A. 32-960, and amendments thereto, and K.A.R. 115-15-3 or in the federal endangered species act, 16 U.S.C. 1532 , as amended on October 7, 1988."

Finally, the Kansas Surface Water Standards K.A.R. 28-16-28 can be found at: http://www.kdheks.gov/tmdl/download/KDHE_SWQS_Reg_Unofficial_032315.pdf

ATTACHMENT 2. MAP OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) AND OUTSTANDING NATIONAL RESOURCE WATERS (ONRW) provided by Kansas Department of Health and Environment. (5/2000) (revised 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6 th 2/2017) .

OUTSTANDING NATIONAL RESOURCE WATERS,
EXCEPTIONAL STATE WATERS,
AND SPECIAL AQUATIC LIFE USE WATERS



APPENDIX F
EO 11988 Evaluation

EO 11988 Evaluation

Fort Leavenworth Levee Repairs

Ft. Leavenworth, Kansas

July 2021

Below is the eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts to or within the floodplain. The eight steps reflect the decision-making process required in Section 2(a) of the Order.

1. Determine if a proposed action is in the base floodplain (that area which has a one percent or greater chance of flooding in any given year).

The preferred alternative is within a floodplain. Due to the emergency situation no other alternatives were considered.

2. Conduct early public review, including public notice.

The public will be notified of the upcoming availability of the draft EA.

3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.

The action alternative consists of measures to address instability of existing structures located in the floodplain, no non-floodplain alternatives exist. Due to the emergency situation no other alternatives were considered.

4. Identify impacts of the proposed action.

The proposed action will ensure that the infrastructure associated with Fort Leavenworth will appropriately minimize the potential for flooding and stormwater impacts to structures existing in the floodplain.

5. If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate.

Construction activities within the floodplain will be minimized to only that which is necessary to construct the permanent project and the staging area will be located outside the floodplain. Additionally, construction will follow Best Practices and the requirements of the Stormwater Pollution Prevention Plan. The proposed action would generally use the existing infrastructure configuration and footprint to improve the Fort Leavenworth levee system. Downstream water levels will not be impacted by the project.

6. Reevaluate alternatives.

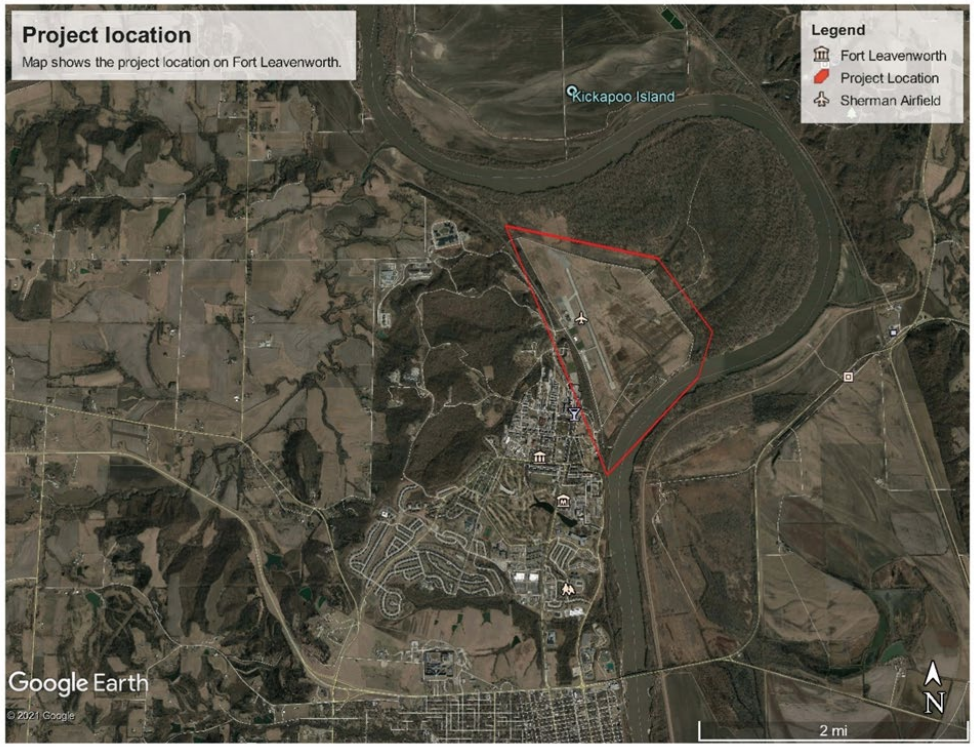
No non-floodplain alternative exists.

7. Present the findings and a public explanation.

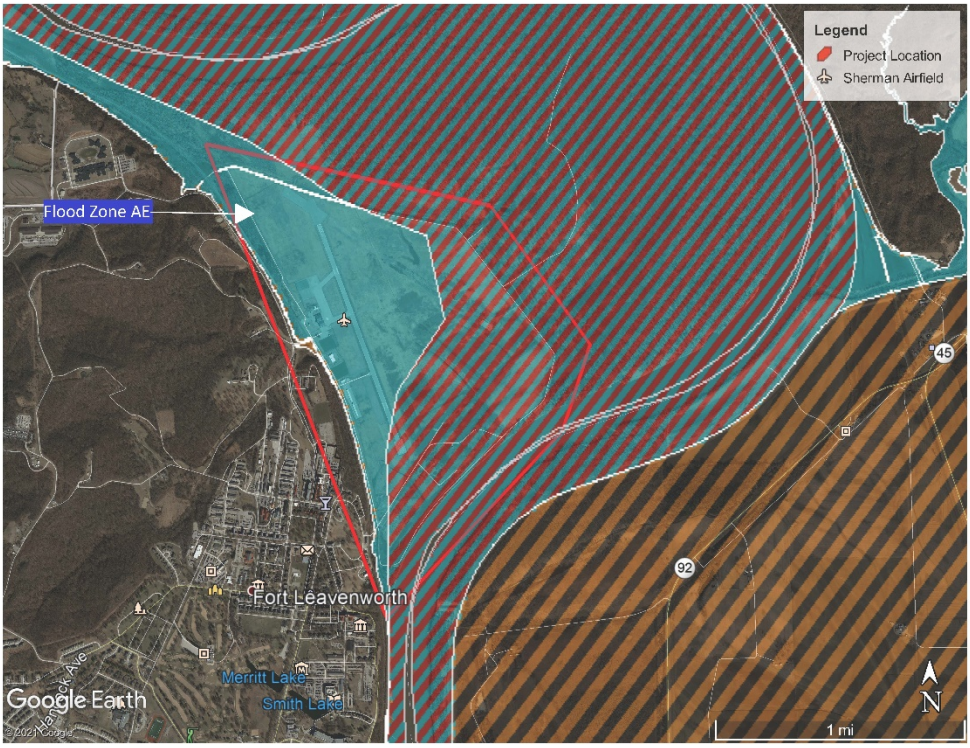
Ft. Leavenworth has determined that there is no practicable alternative for locating the project out of the flood zone. This is due to the location of the levee system within the floodplain. Details of the proposed action are available to the public in the draft EA.

8. Implement the action

Once an action is initiated Ft. Leavenworth will also take an active role in monitoring the construction process to ensure no unnecessary impacts occur nor unnecessary risks are taken.



PROJECT LOCATION MAP FORT LEAVENWORTH



FEMA FLOOD MAP PROJECT LOCATION