SECTION 408 PERMISSION TECHNICAL SUBMITTAL CHECKLIST

United States Army Corps of Engineers, Los Angeles District (USACE-SPL)

The purpose of this checklist is to provide the Los Angeles District of the U.S. Army Corps of Engineers (USACE-SPL) technical review team sufficient information to analyze the proposed alteration/modification. This checklist will provide The list below is not all inclusive and may not apply to every situation; our technical reviewers may request additional documentation. Please refer to Engineering Circular 1165-2-220 for a complete guide to USACE Section 408 policy. For more information, please refer to www.spl.usace.army.mil/Missions/Section-408-Permits/.

USACE Design Standards will be applied. No other agencies design Standard plans or calculation will be approve or acceptable for proposed alteration.

TECHNICAL REVIEW AND DESIGN DOCUMENTATION

1. Are you proposing new construction?

   ☐ Yes ☐ No

2. What type of features will you impact with the new construction?

GEOTECHNICAL REVIEW (APPLICABLE FOR HORIZONTAL AND VERICAL DRILLING ACTIVITY ONLY)

3. Will your work require horizontal or vertical drilling/boring? ☐ Yes ☐ No
4. Will your work require a subsurface geotechnical investigation? ☐ Yes ☐ No

If **Yes** to Question 3 or 4, please provide the following:

☐ Provide a Drilling/Work Plan which includes at minimum:

- As-built plan sheets with boring location, station/offset, and northing/easting coordinates
- Boring dimensions (hole-size and depth)
- A typical cross-section showing relevant USACE features in relation to the proposed explorations
- Drilling Equipment and Methods (e.g. Hollow Stem Auger, Rotary Wash, or HDD)

- If drilling will be performed through the concrete lined invert of the channel, the requester shall provide a method of nondestructive testing to ensure channel lining reinforcement will not be affected by drilling and provide a contingency plan for repair if reinforcement is compromised. Concrete repair methods should also be included.
- Proposed method of boring abandonment/backfilling
- Description of any in-situ testing
- Description of any instrumentation installation
- Staging Plan
- Access to the Drilling Location
- Emergency contact information of the Drilling Team

Refer to ER 1110-2-1807 (Drilling in Earth Embankments, Dams and Levees). A Template of Drilling/ Work plan can be found at:

Https://www.spl.usace.army.mil/Missions/Section-408-Permits/

GEOTECHNICAL REVIEWS (NOT REQUIRE FOR HORIZANTAL AND VERTICAL DRILLING ACTIVITY)

A **Geotechnical Report/Memo** should be included addressing design considerations and recommendations pertinent to the proposed alteration. The report /memo should be applicable to the work being performed and specifically reference the proposed Section 408 Activity. The following is a list of analyses or information that may be necessary to consider for geotechnical design and assessing their impacts if proposed alterations alter the levee, floodwall or channel bank cross-section or penetrate the natural blanket or foundation. Please cite applicable USACE references as necessary.

- ☐ Structural Design Parameter and Requirements
- ☐ Method of Excavation and Installation/Backfill
- ☐ Compaction Reports and any other Pertinent Geotechnical Testing Reports performed during construction
- ☐ Results of Geotechnical Investigation (Boring Logs, Test Pit Logs, Laboratory Test Results when complete)
- ☐ Material Usage/Borrow/Waste/Transport/Hauling
- ☐ Type of Bedding/Filter Material Backfill
- ☐ Placement of Stockpiles, Heavy Equipment, or Other Surcharges
- ☐ Seepage Analysis
- ☐ Settlement Analysis
- ☐ Stability Analysis
- ☐ Erosion Control
- ☐ Vegetation

If a Section 408 Activity may not require a Geotech Report/ Memo. Then provide an **Executive Summary** with explanation addressing each of the item listed above is not applicable to your Section 408 Activity.

See ER 1165-02-220, Appendix E- 5 (Civil Section) for Additional Information.

STRUCTURAL REVIEW

If applicable, the following is a list of analyses or information will be require to evaluate the impacts of proposed alterations to concrete flood Wall, channel, Grouted Trapezoidal Channel, Concrete Joint structure, sheet piling, or drainage structures.

Please provide an **Executive Summary** for the Structural Analysis detailing how each of the below items is addressed or not addressed and how your project impacts the Federally-constructed project. Please cite applicable USACE references as necessary. The structural design of all structural connections to the foundation, structural system and elements must comply with UFC and IBC's vertical and lateral wind/earthquake load requirements.

- ☐ Design analysis and calculations for retaining walls and excavation support system
- ☐ Design of shallow or deep foundations, including bearing capacity and settlement analysis if the construction is located within the line of protection or right-of-way and creates potential seepage problems
- ☐ Stability analysis including sliding, overturning, bearing, flotation, uplift and any seismic load effects for any alteration to the channel walls and/or flood walls
- ☐ Structural drainage control methods
- ☐ Water stops and contraction/expansion joints

HYDROLOGIC AND HYDRAULICS ANALYSIS

If applicable, the purpose of a hydrologic and hydraulics system performance analysis is to determine the potential hydrologic and hydraulics impact of proposed alterations.

See EC 1165-2-220, Appendix H for additional information.

Please provide an **Executive Summary** for the Hydrologic and Hydraulics Analysis detailing how each of the below items is addressed or not addressed and how your project impacts the Federally-constructed project. Please cite applicable USACE references as necessary.

- ☐ Summary of existing conditions and future conditions with proposed alterations

- ☐ Changes in velocity
- ☐ Changes in water surface profiles and flow distribution
- ☐ Scour Analysis
- ☐ Sediment Transport Analysis
- ☐ Upstream and Downstream impacts of proposed alterations
- ☐ Sources of pertinent data
- ☐ Watershed Hydrology
- ☐ HEC-RAS Model or Similar (include electronic files)

Submit above applicable require documents in the “B-Technical” Folder

REFERENCES

Please consider the following references in the design, construction, and/or work to be performed for the proposed alteration. These references are not inclusive but needs to be considered prior to submitting the Complete Permit Package. USACE publications are available from the Internet at: http://www.usace.army.mil/library.

The following table categorizes some of the relevant engineering guidance. Please reference EC 1165-2-220 for additional engineering guidance.

Access Roads	• EM 1110-2-1913, Design and Construction of Levees
Embankment Seepage	• EM 1110-2-1901, Seepage Analysis and Control for Dams • EM 1110-2-1913, Design and Construction of Levees
Erosion Protection	• EM 1110-2-1601, Hydraulic Design of Flood Control Channels • ETL 1110-2-120, Riprap Revetment Design • ETL 1110-2-334, Design and Construction of Grouted Riprap
Geotechnical Investigations	• ER 1110-1-1807, Drilling in Earth Embankments, Dams and Levees • EM 1110-2-1906, Laboratory Soil Testing • EM 1110-1-1804, Geotechnical Investigations • EM 1110-1-1906, Soil Sampling
Hydraulics	• EM 1110-2-1408, Routing of Floods through River Channels • EM 1110-2-1409, Backwater Curves in River Channels • EM 1110-2-1416, River Hydraulics • EM 1110-2-1601, Hydraulic Design of Flood Control Channels • EM 1110-2-1619, Risk-Based Analysis for Flood Damage Reduction Studies • FHWA-IP-90-014 Stream Stability at Highway Structures, Hydraulic Engineering Circular No. 20
Hydrology, Interior Drainage	• EM 1110-2-1405, Flood Hydrograph Analyses and Computations • EM 1110-2-1411, Standard Project Flood Determinations • EM 1110-2-1413, Hydrologic Analysis of Interior Areas • EM 1110-2-1417, Flood-Runoff Analysis

Levee Height and Geometry	• EM 1110-2-1913, Design and Construction of Levees • EM 1110-2-1619, Risk-Based Analysis for Flood Damage Reduction Studies • ER 1105-2-101, Risk Analysis for Flood Damage Reduction Studies
Operations and Maintenance	• ER 1110-2-401, Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual for Projects and Separable Elements Managed by Project Sponsors
Sedimentation and Scour Analyses	• FHWA-IP-90-017 Evaluating Scour at Bridges, Hydraulic Engineering Circular No. 18 • EM 1110-2-4000, Sedimentation Investigations of Rivers and Reservoirs
Seismic	• ER 1110-2-1806, Earthquake Design & Evaluation of Civil Works Projects • EM 1110-2-1913, Design and Construction of Levees • ITL-92-11 The Seismic Design of Waterfront Retaining Structures
Settlement	• EM 1110-1-1904, Settlement Analysis • EM 1110-2-1913, Design and Construction of Levees
Slope and Channel Stability	• EM 1110-2-1902, Slope Stability • EM 1110-2-1418, Channel Stability Assessment for Flood Control Projects
Structural (Side-Drain Structures; Clear Cover Requirements, etc.)	• EM 1110-2-2000, Standard Practice for Concrete for Civil Works Structures • EM 1110-2-2007, Structural Design of Concrete Lined Flood Control Channels • EM 1110-2-2104, Strength Design for Reinforced Concrete Hydraulic Structures • EM 1110-2-2502, Retaining and Flood Walls • EM 1110-2-2504: Design of Sheet Pile Walls • EM 1110-2-2902, Conduits, Culverts and Pipes • ECB 2017-5 Revisions and Clarifications of EM 1110-2-2502 • ETL 1110-2-584 Design of Hydraulic Steel Structures
Vegetation	• EP-1110-2-18, Engineering and Design: Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures
Miscellaneous	• EC 1165-2-217, Water Resources Policies and Authorities, REVIEW POLICY FOR CIVIL WORKS • EM 1110-2-1914, Design, Construction, and Maintenance of Relief Wells • EM 1110-2-3102, General Principles of Pumping Station Design and Layout

	• ER 1105-2-101, Risk Analysis for Flood Damage Reduction Studies • ER 1110-2-1150, Engineering and Design for Civil Works Projects • ASTM D5299-92, Standard Guide for Decommissioning Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities • 33 CFR 208.10, Local flood protection works; maintenance and operation of structures and facilities