CEMVN-ED

19 Apr 2022

MEMORANDUM FOR RECORD

SUBJECT**:** Design Responsibility for Temporary Retaining Structures (TRS) per Engineering Regulation ER 1110-2-8152, Dated 31 August 1994.

1. **ISSUE:** Compliance of performance specifications utilizing Contractor-designed Temporary Retaining Structures (TRSs) with Engineering Regulation (ER) 1110-2-8152, “Planning and Design of Temporary Cofferdams and Braced Excavations”, Dated 31 August 1994.

2. **APPLICABILITY:** This Memorandum for Record is applicable to TRSs and Cofferdams required to construct New Orleans District (MVN) designed features of levee systems (sometimes referred to as local protection works), such as pumping stations, utility corridor floodwalls, fronting protection features at pumping stations, and standalone navigable closure structures. Major cofferdams for navigation locks are not covered by this Memorandum.

3. **OVERVIEW**: This Memorandum for Record documents that the New Orleans District use of performance specifications for Contractor-designed TRSs is compliant with ER 1110-2-8152 (hereafter referred to as “the ER”). Key passages of the ER are presented in the following paragraphs.

a. Paragraph 5 of the ER states: “Construction cofferdams on major civil works projects shall be planned, designed, reported, approved, specified, and inspected by the government in the same manner as for permanent project features. Construction cofferdams shall be designed or reviewed by engineers experienced in this area. Use of experienced consultants in this specialized field should be considered for important cofferdam structures. Performance specifications for contractor-furnished dewatering systems can be developed based on the government’s design and associated criteria. ***For uniformity in bidding, contract plans, and specifications will include the major features developed from the approved criteria and design. Alternate contractor-proposed designs will meet the approved government design criteria and will be reviewed and approved by the government.*** Deviation from this policy will be made only in consultation with and approval by CECW-E.”

b. Paragraph 8a of the ER states: “The project plans and specifications must include the results of the design ***in sufficient detail for the bidders*** to evaluate all construction techniques, scour protection provisions, deflector structures, cofferdam rewatering, and instrumentation and surveillance requirements.”

c. Paragraph 9 states “In general, deviation from the policy for planning, designing, constructing, and operating construction cofferdams will be approved only for ***local protection works, pumping plants, and relocation facilities***. ***Authority may be granted for the design of a construction cofferdam by the construction contractor where there is no potential for major damage or significant delays in project benefits resulting from cofferdam failure***. This authority may also be granted for a major project only upon assurances that the construction schedule will provide ample design and review time to ensure a competent, safe design. All requests for assigning cofferdam design responsibility to the construction contractor must be submitted in the feasibility report.”

4. **ATR POSITION**: ATR reviewers have indicated that MVN’s plans and specifications are in conflict with Paragraph 5 requiring the designs be prepared by USACE personnel or an A-E under the responsible charge of USACE, rather than the construction contractor. Furthermore, if not specifically approved for Contractor design of the TRS in the Feasibility Report, ATR reviewers contend that a waiver to the ER must be obtained from HQUSACE, per Paragraph 9.

5. **MVN POSITION**: MVN’s extensive experience with TRS designs and construction over the past 20 plus years have led to a methodology that results in low risk for life safety and minimal construction modifications for TRS systems. Engineering and Construction Divisions hold the life safety component of TRS designs paramount and have a mutual understanding of what is required of the construction contractor in respect to the TRS submittal and with the TRS installation. TRS considerations are part of the Engineering Considerations and Instructions to Field Personnel (ECIFP) prepared by Engineering Division, which is submitted to Construction Division during the 95% BCOES reviews. Additionally, MVN Construction Division staff obtain Engineering Division approval of TRS designs before allowing the Contractor to proceed with construction. Refer to Appendix A for typical ECIFP language.

a. In compliance with Paragraph 5 of the ER, MVN Engineering Division obtains soil properties and develops strength lines that are used to develop an initial, feasible design, and, in compliance with Paragraph 8a of the ER, provide essential TRS requirements, such as minimum sheet pile tip and size of major members (i.e. sheet piling, bracing, and waler designs). In addition to providing plans illustrating the Government conceptual design, and soil properties (test results and strength lines) are provided in the plans and specifications to ensure adherence to USACE design requirements. As allowed in Paragraph 5 of the ER, plans reflect minimal design that allows for uniformity of bids between the Government and contractors. Submittal

requirements are very clear and require a registered professional engineer experienced in cofferdam/TRS design to perform the design and stamp the calculations. The submittal undergoes a rigorous review and approval process by MVN Geotechnical and Structures Branches' staffs to ensure safe, efficient, and robust designs. Refer to Appendix B for typical MVN guide specification language for TRSs.

b. It is also MVN's experience that a USACE prepared design will be resubmitted for revision to suit the Contractor's means and methods.

c. As outlined above, the requirements of the ER requiring safe and competent design is met by MVN through its current submittal and review procedures for TRSs designed by qualified, licensed designers employed by construction contractors.

6. MVN, in consultation with MVD, contends that our position clearly allows for design of TRSs by any licensed engineer, USACE or Contractor, provided they have experience in TRS designs, provided that the performance specifications contain the requisite design criteria as specified in Paragraph 5 of the ER, and provided the Contract administered by Construction Division requires review and approval by the New Orleans District Engineering Division staff to ensure life safety is preserved.

7. Point of Contact for this MFR is Craig B. Waugaman, P.E.

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