CIDH Concrete Piling

Cast-In-Drilled-Hole (CIDH) concrete piling can be grouped in two categories: the first is CIDH piling without inspection pipes (dry method), and the second is CIDH piles with inspection pipes (wet method).

It is assumed that concrete placed in dry conditions is structurally sound. Piles less than 24 inches (600 mm) in diameter are designed assuming that the concrete will be placed in a dry or a dewatered hole. For these small diameter CIDH piles, if water is encountered and dewatering does not work, immediately contact the geotechnical engineer or CIDH Pile Mitigation Committee Chairperson. The pile type may be inappropriate for the site conditions.

Concrete that is placed under slurry or placed in a dewatered hole using temporary casing must be inspected for quality. If there is soil contamination, slurry mixed with concrete, or zones of low density concrete, repairs might be required to make the concrete structurally sound.

A chronological outline for contract administration of CIDH piling without inspection pipes is shown below:

1. CIDH Pile Preconstruction Meeting:
   a. Conduct meeting per the Special Provisions and BCM 130-20.0, Cast in Drilled Hole (CIDH) Pile Reconstruction Meeting.

2. Pile placement plan:
   a. Review the plan
   b. Respond to the contractor

3. Pile Construction

4. Payment

A chronological outline for contract administration of CIDH piling with inspection pipes is shown below:
1. CIDH Pile Preconstruction Meeting:
   a. Conduct meeting per the Special Provisions and BCM 130-20.0, Cast in Drilled
      Hole (CIDH) Pile Reconstruction Meeting.

2. Pile Placement Plan:
   a. Review the plan.
   b. Respond to the contractor.
   c. Send a copy of the authorized placement plan to the CIDH Pile Mitigation
      Committee Chair.

3. Test batch of concrete:
   a. Witness the test.
   b. Review the results.
   c. Respond to the contractor.
   d. For piles with inspection pipes, send a copy of the approved mix design and test
      results to the CIDH Pile Mitigation Committee Chair.

4. Pile Construction:
   a. Contractor logs concrete placement and submits copy within one working day.
   b. Contractor makes access for testing.
   c. Witness Contractor’s probe of inspection pipes.
   d. Reject a pile if an inspection pipe is blocked.
   e. Notify the Foundation Testing and Instrumentation Branch (FTI) of blocked
      inspection tubes and request guidance. (See BCM 130-10.0, Testing of CIDH
      Piling.)

5. Testing:
   a. Use the CIDH Pile Acceptance Test Request Form to schedule testing with FTI
      so that testing can be completed as soon as possible.
   b. FTI performs tests and sends report.

6. Pile Acceptance or Rejection:
   a. Send a letter to the contractor either accepting or rejecting a pile based on the
      FTI recommendations. For accepted piling, complete payment for that pile. Do
      not pay for rejected piling and continue with steps 7-13 below.

7. Suspend depositing of concrete (under slurry or with use of temporary casing to
   control groundwater):
   a. The contractor submits revised pile placement plan to correct methods that
      resulted in anomalies.
b. Review revised pile placement plan.
c. Notify the contractor when the plan is approved and slurry work can resume.

8. Pile Design Data Form:
   a. Immediately contact the structures project design engineer, the project geotechnical designer, and the corrosion specialist (Corrosion Technology Branch at Translab) to ensure that they complete the Pile Design Data Form (PDDF) included in the FTI report.
   b. Based on the completed PDDF, determine whether the rejected pile requires repair and if so, the feasibility of repairing the rejected pile. Consult with the CIDH Pile Mitigation Committee.
   c. Send a copy of the completed PDDF to the members in the CIDH Pile Mitigation Committee and allow 2 working days for a cursory check.
   d. Send appropriate letter and information to the contractor (See BCM 130-10.0, Testing of CIDH Piling.)

9. CIDH Pile Non-Standard Mitigation Meeting. (This meeting is necessary only when a non-standard mitigation method is required, see BCM 130-12.0, Mitigation of CIDH Piling, for different mitigation methods.)
   a. Conduct meeting per the Special Provisions and BCM 130-21.0, CIDH Pile Non-Standard Mitigation Meeting.

10. Pile Mitigation Plan:
    a. Contractor submits plan.
    b. Directly review if it is for simple repairs.
    c. Coordinate review with CIDH Pile Mitigation Committee for non-simple mitigation by sending a copy of the proposed Mitigation Plan to FTI and the CIDH Pile Mitigation Committee Chairperson.
    d. Get a consensus with CIDH Pile Mitigation Committee.
    e. Conduct a CIDH Pile Mitigation Review Meeting per BCM 130-12.0, Mitigation of CIDH Piling. This meeting is necessary only when a non-standard mitigation plan is rejected by the Designer.
    f. Review and respond to the contractor until the plan can be approved.

11. Pile Mitigation:
    a. The contractor submits the post mitigation report. Send a copy of this report to the members of the CIDH Pile Mitigation Committee.

12. CIDH Pile Information:
a. Verify that all final data has been submitted on the CIDH Pile Information form to the CIDH Pile Mitigation Committee Chairperson.

13. Complete Payment

Details for contract administration of CIDH piles are provided in BCMs 130-8.0 to 130-21.0.