

## STATEWIDE CRITICAL REQUIREMENT LIST – FISCAL YEAR 2013/2014

### Quality Assessment Category Number 9 Structure Foundations

#### **PILES**

1. Does the CEI staff ensure that pile driving requirements as outlined in Spec 455 and as established by the Geotechnical Engineer in reference to bearing penetration, pile and hammer cushion, blow count criteria, practical refusal, maximum strokes and equipment for driving has been complied with? Do the project records, the pile driving log and a field visit verify this? [Spec.455-5]
2. Does the CEI staff inspect prestressed piles for defects as soon as possible upon delivery to the project site? Are defects reported to the Project Administrator as soon as possible but, in any case, prior to use? Have the width, length, termination points, and precise location for any cracks or other defects been properly documented? Have the cause and need for correction of defects been addressed appropriately? Do project documentation and a field visit verify the aforementioned? [Good Practice]
3. When proprietary pile splices are used - is the CEI staff aware of and ensuring that threaded rebars penetrate into the splice plate at least the distance specified in the shop drawings as verified by measuring the distance from plate top to bar end. Is the splice listed on the QPL? Does project documentation and a field visit verify this [Good Practice] Verify Buy America provisions are met, if applicable. [Spec.6]
4. When driving with Open Diesel Hammers, does the CEI enforce that the contractor shall provide and maintain in working order an approved device (such as a saximeter) to automatically determine strokes?

#### **ALL DRILLED SHAFTS INCLUDING SHAFTS UNDER MISCELLANEOUS STRUCTURES**

5. Does the CEI staff ensure the methods and equipment for drilled shaft construction are consistent with the contract plans and the approved drilled shaft installation plan and ensure proper alignment, cleanliness of shaft, over reaming, and slurry mixtures have been maintained and documented as required by contract documents? Do project records including the drilled shaft logs and a field visit verify this? Try to visit during drilled shaft installation if possible. [Spec. 455-15]
6. Does the CEI staff ensure that Drilled shaft concrete operations are consistent with slump loss test results, limits, pump requirements, curing requirements and duration of placement limits as outlined in Specs 346, 400 and 455? Does the CEI ensure that the concrete is over-poured until good concrete is evident. Do project records including the drilled shaft logs and a field visit verify this? [Spec. 455-17]
7. Does the CEI staff verify that the temporary casing in drilled shafts supporting miscellaneous structures provided at least one foot above the ground surface to at least five feet below the ground surface (455-15)
8. Does the CEI verify that the proper reinforcement cage is assembled according to the plans,

indexes or specifications with the proper number and dimension of bars, with the proper number, type and size of spacers, and that the number, length, top and bottom of the CSL tubes are according to the specifications? [Spec. 455-16]

9. Does the CEI enforce that the shafts are over-reamed when the excavation time exceeds the limits indicated in the specifications? [Section 455-15.11.5]

10. Does the CEI verify that the Contractor insert simulated or mock probes in each cross-hole-sonic access tube prior to concreting to ensure the serviceability of the tube? Does the CEI verify that the Contractor fills access tubes with clean potable water and recap prior to concreting? The Contractor must repair or replace any leaking, misaligned or unserviceable tube prior to concreting [Section 455-16.4].

### ***AUGER CAST PILES***

11. Auger Cast Pile Installation Plan (ACPIP): Have an approved copy of the ACPIP on site. [Spec. 455-47]. Verify the auger flights are of the proper diameter and length, continuous and without breaks and gaps.

12. Ensure the demonstration Pile is performed successfully prior to the start of production piles [Spec. 455-39]. Document demonstration pile and production pile activities in the Auger Cast-in-Place Pile Installation Record (Form 700-011-03) and note problems in the Daily Report of Construction.

13. Ensure the pump is properly calibrated [455-42] and an accurate calibration factor in units of volume/stroke is obtained. Pump calibration must be performed prior to the installation of the demonstration pile, immediately after any significant pump maintenance or repair is performed or at any time the inspector suspects the pump is operating differently from the last calibration.

14. Ensure that at least 5 ft of head is established before withdrawing the auger [455-44, item 10].