

# Driven Bearing Piles Preconstruction Meeting

Based on 2014 Specifications

State Construction Bureau  
State Materials Bureau  
Geotechnical Section

## Documents to accompany this packet include:

- Approved Material Certifications (Bridge Bureau Review)**
- Approved Welder Certifications (Bridge Bureau Review)**
- Approved Pile Driving Equipment Submittals (Geotechnical Section Review)**
- Approved Class G Concrete Mix Design (Materials Testing Section Review)**
- Approved Class A Concrete Mix Design (Materials Testing Section Review)**
- Boring Log Summaries**



*New Mexico* DEPARTMENT OF  
**TRANSPORTATION**  
MOBILITY FOR EVERYONE



<b>Date:</b>		<b>Control Number:</b>	
<b>Project Name:</b>		<b>Bridge Number(s):</b>	
<b>Project Location:</b>			
<b>I. Introduction of Participants and Contact Information</b>			
<b>NMDOT Project Manager:</b>	<b>Name:</b>		
	<b>Email:</b>		
	<b>Phone:</b>		
<b>Pile Driving Superintendent:</b>	<b>Name:</b>		
	<b>Email:</b>		
	<b>Phone:</b>		
<b>NMDOT's Pile Driving Inspector:</b>	<b>Name:</b>		
	<b>Email:</b>		
	<b>Phone:</b>		
<b>Foundation Engineer of Record (NMDOT or Consultant):</b>	<b>Name:</b>		
	<b>Email:</b>		
	<b>Phone:</b>		
<b>NMDOT Geotechnical Section Representatives</b>	<b>Name:</b>		
	<b>Email:</b>		
	<b>Phone:</b>		
<b>NMDOT Inspector:</b>	<b>Email:</b>		
	<b>Phone:</b>		
	<b>Phone:</b>		



<b>NMDOT Inspectors:</b>	Name:
	Email:
	Phone:
	Name:
	Email:
	Phone:
	Name:
	Email:
	Phone:
<b>Integrity Testing (PDA) Personnel:</b>	Name:
	Email:
	Phone:
<b>Integrity Testing (CAPWAP) Personnel:</b>	Name:
	Email:
	Phone:
<b>Prime Contractor and Representatives:</b>	Name:
	Email:
	Phone:
	Name:
	Email:
	Phone:
	Name:
	Email:
	Phone:



<b>Pile Driving Contractor and Representatives:</b>	<b>Name:</b>
	<b>Email:</b>
	<b>Phone:</b>
	<b>Name:</b>
	<b>Email:</b>
	<b>Phone:</b>
	<b>Name:</b>
	<b>Email:</b>
	<b>Phone:</b>
<b>FHWA Representatives:</b>	<b>Name:</b>
	<b>Email:</b>
	<b>Phone:</b>
	<b>Name:</b>
	<b>Email:</b>
	<b>Phone:</b>
<b>Other Attendees:</b>	
<b>Name:</b>	
<b>Email:</b>	
<b>Phone:</b>	
<b>Company/Title:</b>	
<b>Name:</b>	
<b>Email:</b>	
<b>Phone:</b>	
<b>Company/Title:</b>	



## II. Meeting Objectives

- Review specifications and project specific plan requirements.
  - Review Boring Log Summaries and geologic conditions.
  - Review contractor's construction sequence, work schedule and equipment for driven pile construction.
  - Discuss pile driving construction procedures as outlined in the NMDOT Specifications.
  - Discuss inspection procedure and acceptance criteria.
  - Review *Pile Driving Equipment Data Request Form*.
  - Discuss Pile Driving Analyzer (PDA) and CAsE Pile Wave Analysis Program (CAPWAP) Testing requirements.
  - Other items:
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**NOTE: NONE OF THE FOLLOWING DISCUSSIONS SHALL BE CONSTRUED AS ADDITIONAL REQUIREMENTS OR CHANGES IN THE PLANS OR SPECIFICATIONS.**

## III. Roles and Responsibilities

- ❖ Pile Driving Superintendent is responsible for providing oversight of all aspects of pile driving construction covered in Section 501 and 504, including testing and inspecting all aspects of the driven pile construction.
- ❖ NMDOT Inspector is responsible for monitoring the contractor's driven pile operations to ensure construction, testing, and inspection procedures are performed in accordance with the NMDOT specifications.
- ❖ Engineer of Record (EOR) will provide final acceptance of the driven piles based on a review of the *NMDOT Driven Pile Inspection Reports* and results of the integrity tests. The EOR may either be the NMDOT Foundation Engineer or a consultant hired through Phase III services.
- ❖ Geotechnical Section Personnel will represent the NMDOT Foundation Engineer of Record and is responsible for ensuring that inspection is being performed in accordance with the specifications and support the NMDOT Pile Driving Inspector.



**IV. Startup and General Plan Review**

- Driven pile material submittal has been reviewed by the Bridge Bureau and approved by the Project Manager. \_\_\_\_\_  
(Date Approved)
- Pile driving equipment submittal has been reviewed by the Foundation Engineer of Record and approved by the Project Manager. \_\_\_\_\_  
(Date Approved)
- Class G Concrete Mix Design has been approved by the State Concrete Engineer (including slump loss test results). \_\_\_\_\_  
(Date Approved)
- Class A Concrete Mix Design has been approved by the State Concrete Engineer (including slump loss test results). \_\_\_\_\_  
(Date Approved)
- Welder Certifications have been reviewed by the Bridge Bureau and approved by the Project Manager.  
\_\_\_\_\_  
(Date Approved)
- Hammer systems meeting the requirements of 501.3.1.4 shall be approved by the Project Manager. However, final approval will be contingent upon dynamic test results (PDA and CAPWAP analysis).  
\_\_\_\_\_  
(Date Approved)

<b>Anticipated Work Schedule (Days, Hours):</b>		<b>Mobilization Date:</b>	
<b>Driven Pile Construction Start date and duration:</b>			



<p><b>Site Conditions:</b> <i>Discuss conditions that could affect pile driving operations. Equipment access, earthwork, soil, groundwater.</i></p>	
<b>V. Proposed Construction Sequence</b>	
<p><b>Discussion of driven pile construction sequence:</b></p>	
<b>VI. Construction of Driven Piles:</b>	
<p><input type="checkbox"/> Review <i>Pile Driving Field Inspection Form</i> and required signatures.</p>	
<ul style="list-style-type: none"> <li>➤ <b>Minimum Manufacturer’s-Rated Hammer Energy (Section 501.3.1.3)</b> Does Contract specify minimum hammer energy? Yes____ No____ Amount? _____</li> <li>➤ <b>Pre-Boring (Section 501.3.3.2)</b> Do plans call for pre-boring? Yes____ No____</li> <li>➤ <b>Rock Sockets (Section 501.3.3.2.4)</b> Does contract require the Contractor to drive piles in rock sockets? Yes____ No____</li> <li>➤ <b>Do Plans call for Minimum (501.3.5.2) or Estimated (501.3.5.3) Penetration Elevations?</b> _____</li> <li>➤ Pile cut-offs shall be approved by the Engineer of Record.</li> <li>➤ Driven piles that are installed above the minimum penetration elevation shown on the contact documents shall be approved by the Engineer of Record prior to acceptance.</li> </ul>	



## VII. Acceptance

- PDA Department Testing
- CAPWAP Department Analysis
- PDA Consultant Testing
- CAPWAP Consultant Analysis

### Pile Acceptance (501.3.6)

- Drive piles to the required nominal capacity in accordance **Section 501.3.2**, “Driven Pile Capacity.”
- If specified, install piles to the penetration elevation in accordance with **Section 501.3.5.2**, “Minimum Penetration Elevation.”

### Location and Alignment Tolerances

- Department will accept driven piles if the construction tolerances are satisfied in accordance with **Section 501.3.6.2**.

## VIII. Damaged Pile Limitation (Section 501.3.6.3)

### The Department will reject damaged piles based on the following criteria:

- Piles that are broken, cracked, or split;
- Pre-cast concrete piles that show signs of crushing and spalling of the concrete, splitting, or visible cracks that affect the strength or service life of the pile;
- Steel piles bent or deformed during installation and exceed mill tolerances for sweep and camber; or
- Closed-end pipe piles that show evidence of groundwater infiltration, or breaks or deformation that would impair the strength of the completed piles.
- **This is performed at no additional cost to the Department.**





## IX. Correcting Rejected Piles (501.3.6.4)

**Correct piles damaged during driving because of internal defects or improper driving with methods approved by the Project Manager, at no additional cost to the Department.**

- If the Contractor exceeds the location or alignment tolerances, and the Foundation Engineer determines that corrective measures are necessary, the Contractor shall design and construct corrective measures at no additional cost to the Department. The State Geotechnical Engineer will approve the design.
  
- Corrective methods may include the following:
  - Removing and replacing the pile with a new, and when necessary, longer pile;
  - Driving additional piles next to the defective piles; or
  - Extending the footing to properly embed the pile.



## X. Index of Applicable Specifications

### Section 501 Driven Bearing Piles

- **Materials (501.2)**
  - Standards
  - Steel Piles (Pipe and HP Piles)
  - Spiral Weld Pipe Piles
  - Pre-cast Pre-stressed Concrete Piles
  - Pile Splices
  - Cut-Off Lengths
- **Submittals (501.2.3)**
  - Materials
  - Pile Driving Equipment
  - Class G Concrete Mix
  - Pile Driving Equipment Request Form
  - Welder Certification
- **Equipment (501.3.1)**
  - Pile Hammers
  - Driving Apparatus
  - Required Hammer Energy
  - Approval of Driving System
  - Driven Pile Capacity
  - Determine Pile Capacity with Impact Hammer
  - Preparing for Driving
  - Pile and Hammer Cushion Preparation
  - Conditions to Proceed
  - Pile Driving Operations
  - Minimum Penetration Elevation
  - Estimated Penetration Elevation
  - Pile Acceptance
- **Preparations for Driving (501.3.3)**
  - Abutment Piles
  - Pre-Boring
  - Application of Pre-Bored Holes
  - Diameter of Pre-Bored Holes
  - Obstructions
  - Rock Sockets
  - Temporary Casing
- **Pile Acceptance (501.3.6)**
  - Location and Alignment Tolerances
  - Damaged Pile Limitations
  - Correcting Rejected Piles
  -

### Section 504 Load Testing of Bearing Piles

- **Description (504.1.1)**
- **Testing Requirements (504.3.4)**
  - PDA
  - CAPWAP
- **Dynamic Pile Testing (504.3.4.1)**
  - Pile Driving Analyzer
  - Pile Dynamic Test
  - Consultant Testing
  - Department Testing
- **CAPWAP (504.3.4.1.5)**
  - Case Pile Wave Analysis Test
  - Consultant Analysis
  - Department Analysis
- **Acceptance (504.3.4.3)**
  - Field acceptance criteria are by dynamic testing.

### Section 509 Portland Cement Concrete Mix Designs

### Section 541 Welding Certifications



### XI. Pile Driving Field Inspection Form (Section 501.3.3.4)

Contractor shall not drive piles until it meets the following conditions.

Pre-Construction Checklist:

- Driven Pile Preconstruction Meeting has been held.
- NMDOT inspector has copy of Pile Driving Equipment Data Request Form.
- NMDOT inspector has copy of Pile Driving Acceptance Chart.
- NMDOT inspector has copy of approved Material certifications.
- NMDOT inspector has copy of approved Equipment submittal.
- NMDOT inspector has copy of approved Class G Concrete Mix Design submittal.
- NMDOT inspector has copy of Welder Certifications submittal.
- Inspect hammer Serial Number and compare with Pile Driving Equipment Data Request Form.

Onsite Construction Checklist:

- Inspect drive head for plumb (plane and perpendicular) with the piles.
- Inspect hammer cushion condition.
- Load testing is ready by Department or Consultant.
- Hammer and leads are aligned with pile plan in vertical or battered position.
- NMDOT Inspector completes the Pile Driving Field Inspection Form.
- Project Manager approves the Pile Driving Field Inspection Form.

NMDOT Construction Inspector Comments/Signature:

Project Manager Comments/Signature:

