

SECTION 31 62 19

TIMBER PILES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Demolition and removal of existing construction, treatment of existing timber piles, and installation of new round timber piles.
- B. Related Sections:
 - 1. Section 02 01 11 - Shoring
 - 2. Section 02 41 19 - Selective Demolition
 - 3. Section 03 30 00 - Cast-in-Place Concrete
 - 4. Section 05 12 00 - Structural Steel
 - 5. Section 06 10 63 - Exterior Rough Carpentry

1.2 REFERENCES

- A. Reference Standards: All standards listed below form a part of this specification to extent referenced.
 - 1. ASTM International
 - a. ASTM D25: Standard Specification for Round Timber Piles
 - 2. American Wood-Preservers Association (AWPA)
 - a. U1-17: User Specification for Treated Wood
 - b. M4-08: Standard for the Care of Preservative-Treated Wood Products

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details for piles.
- C. Certificates: Shall submit a signed certificate stating that preservative treatment of timber piles delivered to site complies with requirements. Certificate shall contain name and address of contractor, project locations, quantity of piles and date or dates of shipments, name of preservative used and retention in pounds per cubic foot of wood treated.

1.4 QUALITY ASSURANCE

- A. Contractor should install piling with a maximum variation of 3 inches of center of any pile from location shown. Piles should not be out of plumb more than 2 percent. Where piles are installed exceeding specified tolerances for plumb or location, notify Owner and Engineer immediately. The foundation design will be analyzed by Engineer and if necessary redesigned by Engineer. Costs for analysis and redesign shall be responsibility of Contractor.
- B. Comply with applicable provisions of the referenced specifications.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect members from erosion, cuts, breaks, abrasion, and deterioration.
 - 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.1 TIMBER PILES

- A. Round Timber Piles: ASTM D25, unused, clean peeled, one piece from butt to tip. Pressure treated according to AWWA U1.

2.2 FIELD APPLIED WOOD PRESERVATIVE

- A. Field-Applied Wood Preservative: Treat field cuts, holes, and other penetrations according to AWWA M4 and as specified in Section 06 10 63.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Survey existing conditions and correlate with requirements to determine extent replacement Work required.
- B. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of timber pile Work.
 - 1. Ensure that work done by other trades is complete and ready for timber pile Work.
 - 2. Verify that areas and conditions under which timber pile Work is to be performed permit proper and timely completion of Work.
 - 3. Notify Owner and Engineer in writing of conditions which may adversely affect installation or performance of timber pile Work and recommend corrections.
 - 4. Do not proceed with timber pile Work until adverse conditions have been corrected and reviewed by Engineer.
- C. It shall be Contractor's responsibility to furnish a specified type of pile necessary to install a satisfactory pile foundation. Conversion from one type of pile to another, or from lighter to heavier casing gauges shall be at no additional cost to the Owner.

3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

- C. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 PILE STRENGTHENING

- A. Field verify extent of decay following excavation of the pile. Notify Owner and Engineer if extent of decay exceeds anticipated extent of decay shown on Drawings.
- B. Remove deteriorated portion of timber through scraping and/or the use of a pressure washer. If pressure washing pile, avoid use of excessive pressures that may damage the sound portions of the pile.
- C. Wire brush or otherwise lightly abrade the surface of the pile to be in contact with the reinforced concrete jacket. Clean as necessary to achieve a dust free surface.
- D. Install reinforced concrete jacket as shown in Drawings and specified in Section 03 30 00.

3.4 PARTIAL PILE REPLACEMENT

- A. Excavation and partial replacement of existing pile shall not proceed until the overlying floor framing is shored as specified in Section 02 01 11.
- B. Field verify extent of decay and diameter of pile at splice location shown in Drawings. Notify Owner and Engineer if extent of decay exceeds anticipated extent of decay shown on Drawings.
- C. Diameter of new pile segment at location of splice shall match the diameter of the existing pile within a tolerance of $\pm 1/2$ inch.
- D. Do not use timber piles with defects that interfere with function. Timber piles shall be carefully handled to avoid bruising or injuring their surfaces. They shall not be handled by tongs, cant hooks, or pike poles.
- E. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit. Limit cuts to no more than 50 percent of pile cross-section.
- F. Notch and predrill new timber pile segment to fit existing connection at floor framing. Predrill holes in new and existing timber piles to allow installation of below-grade splice plates.
- G. Apply copper naphthenate field treatment to comply with AWWA M4, to cut and drilled surfaces of preservative-treated lumber as specified in Section 06 10 63.
- H. Wire brush or otherwise lightly abrade the surface of the pile to be in contact with the reinforced concrete jacket. Clean as necessary to achieve a dust free surface.

- I. Install galvanized steel splice plate and galvanized thru bolts at below-grade splice as specified in Section 05 12 00. Install thru bolts at beams as shown on Drawings and as specified in Section 06 10 63.
- J. Install reinforced concrete jacket as shown in Drawings and specified in Section 03 30 00. Allow concrete to reach specified strength prior to removal of shoring.

3.5 FULL PILE REPLACEMENT

- A. Removal and replacement of existing pile shall not proceed until the overlying floor framing is shored as specified in Section 02 01 11.
- B. Disconnect existing timber pile from adjoining structure. Fully remove above- and below-grade portions of deteriorated timber pile.
- C. Diameter of new pile shall match or exceed the diameter of the existing pile.
- D. Do not use timber piles with defects that interfere with function. Timber piles shall be carefully handled to avoid bruising or injuring their surfaces. They shall not be handled by tongs, cant hooks, or pike poles.
- E. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit. Limit cuts to no more than 50 percent of pile cross-section.
- F. Notch and predrill new timber pile to fit existing connections at floor and roof framing.
- G. Apply copper naphthenate field treatment to comply with AWPA M4, to cut and drilled surfaces of preservative-treated lumber as specified in Section 06 10 63.
- H. Install piles to the required depth through jetting. Piles shall be installed with such accuracy that they can be adjusted to fit the existing structure without damaging or overstressing the pile.
- I. Connect pile to existing floor framing as shown in Drawings and as specified in Section 06 10 63. Connection of pile to existing roof framing to match existing.
- J. Restore exterior finishes impacted by pile replacement.

3.6 REMOVAL AND DISPOSAL OF EXISTING TIMBER PILES

- A. Remove and dispose of existing timber piles as shown in the Drawings and specified in Section 02 41 19.

3.7 CLEANING

- A. Clean adjacent surfaces and structures of dust, dirt, and debris. Return to condition existing before Work began.

END OF SECTION