From: Andrew Porter
Sent: Thursday, September 6, 2018 4:39 PM
To:
Subject: design
Attachments: Scanned from Bestway.pdf

Rob,

I forgot I have your email address, I just left you a voicemail.

I've attached a set of plans for a sound wall that we recently worked on in New Hampshire. Just to be clear, this was not designed for or related to our project, it is simply an example of what works for these purposes. As mentioned in our letter, we suggested that a sound wall like those along highways be installed. These are the plans for just such a wall.

Additionally, Ali and I discussed the berm. As noted, we support that idea and would be interested in seeing what you might have in mind for design.

From our perspective, the higher, sturdier, more sound deadening, and obscuring this wall/berm project is, the better.

Look forward to speaking with you.

Best,

Andrew Porter
Special Projects Manager

2.2.3 All lumber shall be CCA treated to 0.25 lbs/cubic foot in accordance with AWPA. In addition, all lumber shall be kiln dried to 15% moisture content after treatment. The wood caps may be treated with ACQ with an application rate exceeding 0.25 lbs/cubic foot. If this treatment is used, all fasteners in the wood cap shall be stainless steel. The second drying process for the wood caps may be air dried in place of kiln dried.

2.2.4 All lumber shall be cut to dimension and pressure treated prior to shipping to the field. No field cutting shall be allowed unless approved by the Engineer. If field cutting is allowed, the cut ends shall be brush coated in accordance with AWPA.

2.2.5 All lumber shall be graded and stamped at the wood mill before it is shipped off to be pressure treated.

2.2.6 All lumber shall be graded for a second time after pressure treatment and after the wood is kiln dried to 15%.

2.2.7 Wood panels shall be constructed of smooth finish 2" x 8" x 12' stock with tongue and groove, as shown on the plans.

2.2.7.1 The top panel shall have no tongue. The bottom panel shall have no groove.

2.2.8 Lumber shall be wrapped for shipment and shall not be exposed to the weather until used in the wall.

2.3 Hardware.

2.3.1 Nails. Nails shall be stainless steel common nails and shall conform to ASTM F 1667.

2.3.2 Carriage Bolts. Carriage bolts shall conform to ASTM A307 and be galvanized in accordance with Section 2.6 of this document.

2.3.3 Nuts. Nuts shall conform to AASHTO M 291 (ASTM A563). Nuts shall be grade DH and shall be galvanized in accordance with Section 550. Nuts shall be tapped oversize the minimum amount required for proper assembly. The amount of overtap in the nut shall conform to the specifications and be such that the nut will assemble freely on the bolt in the coated condition.

2.3.4 Washers. Washers shall be hardened steel and conform to AASHTO M 293 (ASTM F436), Type 1 and shall be galvanized in accordance with Section 2.6 of this document.

2.4 Structural Steel.

2.4.1 Steel Posts and Base Plates. Steel posts and base plates shall conform to specification AASHTO M223/M 223M (ASTM A572/A572M), Grade 50 and shall be galvanized in accordance with Section 2.6 of this document.

2.4.2 Anchor Plates. Anchor plates used for holding the anchor rods in concrete may be ASTM A36 and galvanized in accordance with Section 2.6 of this document.

2.5 Anchor Rods and Vertical Post Reinforcement.

3.2 Qualification of Precast Concrete Fabricator.

3.2.1 Proof shall be given by the Contractor that the Fabricator is capable of and has the organization and plant for performing the work involved in manufacturing the precast concrete posts and leveling panels herein referred to as "units".

3.2.1.1 Engineering/Drafting. The Fabricator shall have trained, knowledgeable, and experienced drafting personnel available who can produce and check legible, complete, and accurate shop detail drawings.

3.2.1.2 Specifications. The Fabricator shall have available in the shop all pertinent specifications governing the work.

3.2.2 Quality Control. The Fabricator shall perform quality control functions to insure that the product is fabricated in accordance with contract documents and specifications.

3.3 Blank.

3.4 Shop Drawings.

3.4.1 The Contractor shall prepare and submit shop details, and all other necessary working drawings for approval in accordance with the requirements of 105.02. The Shop drawings shall show reinforcement, and all information required for proper fabrication and handling of the units.

3.4.2 Fabrication shall not begin until written approval of the submitted shop drawings has been received from the Engineer.

3.4.3 Deviation from the approved shop drawings will not be permitted without written approval of the Engineer.

3.5 Shop Inspection.

3.5.1 Inspection. A Department Representative will inspect the fabrication of the units for quality assurance. This inspection will include the examination of materials, work procedures, and the final fabricated product.

3.5.1.1 Fabrication shall only be done in the presence of an authorized inspector representing the Department. The Department's authorized quality assurance inspector is herein referred to as the "Inspector".

3.5.2 Notice. At least fourteen (14) days prior to the scheduled start of casting on any member or test section, the Fabricator shall contact the Department's Bureau of Materials and Research to provide notice of the scheduled start date. The Bureau of Materials and Research will assign an Inspector to the scheduled work to provide quality assurance testing. The Inspector will coordinate directly with the fabricator to determine the casting schedule.

3.5.2.1 In addition to the requirements of 3.5.2, the Fabricator shall contact the Bureau of Materials and Research at least two (2) days before the actual work begins to allow scheduling of independent assurance testing by the Department.

3.5.3 Authority. The Inspector shall have the authority to reject any material or workmanship that does not meet the requirements of the contract documents.

3.11.3 All items encased in the concrete shall be accurately placed in the position shown on the plans and firmly held during the placing and setting of the concrete. Clearance from the forms shall be maintained by supports, spacers, or hangers in accordance with 544 and shall be of approved shape and dimension.

3.11.4 The details of all inserts, anchors, and any other items required to be cast into the units (whether detailed on the contract drawings or provided for the Contractor's convenience) shall be shown on the shop drawings. Units shall not be fired or drilled into for attachment purposes. All hardware shall be galvanized except as otherwise noted.

3.11.5 The temperature of the concrete shall not exceed 90 deg F when placed in the forms.

3.12 Consolidation of Concrete.

3.12.1 Consolidation of concrete shall conform to 520 or as ordered.

3.12.2 The vibrating shall be done with care and in such manner as to avoid displacement of reinforcing or other inserts.

3.12.3 The size of the vibrator spud shall be proper for the size of the openings available.

3.12.4 External vibration will be permitted.

3.13 Blank.

3.14 Curing. The Contractor shall include on the shop drawings the method of initial and final curing and outline the proposed curing procedure. Units shall not be allowed to freeze until the full design strength is achieved.

3.15 Blank.

3.16 Stripping Forms and Finish of Units

3.16.1 No forms shall be removed without approval and until eighty (80) percent of the design strength is achieved. Proper care and precautions shall be exercised in removing forms so that no damage results to finished surfaces.

3.16.2 The units shall receive a Class 1, Ordinary Finish in accordance with 520 except patching shall be in accordance with 3.18.

3.16.3 All surfaces of the units shall be coated with water repellent (silane/siloxane) in accordance with 534.

3.17 Blank.

3.18 Patching.

3.18.1 Patching of any surface irregularities, especially those resulting from honey-combing, shall be done only after inspection for determination as to whether or not the work is acceptable.

3.18.2 When patching is allowed, it shall be done within 24 hours after stripping, and the patching shall be damp-cured for not less than a 3-day period and kept from freezing for the following 3 days.

3.18.3 Patching of damaged units in lieu of required replacement will not be permitted.

3.22.6 All lifting device recesses in precast concrete posts and leveling panels shall be filled with non-shrink grout after installation.

Method of Measurement

4.1 Wood Panel Sound Abatement Wall will be measured by the square foot to the nearest 0.1 of a square foot. The area will be computed by multiplying the length of each panel (from center to center of the posts) by minimum wall height as given in the Soundwall Post Locations and Elevations table in the Plans.

4.1.1 The wall consists of wood wall panels (including strong-backs and caps), precast concrete posts or steel post precast concrete leveling panels, steel base plates and anchor plates, anchor rods,, closed cell expansion material, elastomeric bearing pad, and silicone sealant for sealing gaps, and all hardware necessary for construction of the soundwall as detailed on the plans.

Basis of Payment

5.1 The accepted quantity of wood panel sound abatement wall will be paid for at the unit price per square foot complete in place.

5.2 Water repellent (silane/siloxane) treatment to precast concrete surfaces will be subsidiary.

5.3 Excavation for precast concrete leveling panels shall be subsidiary.

5.4 Concrete and reinforcing steel for drilled shafts will be paid for under item 509.2.

5.5 Installation of the drilled shafts is paid for under the corresponding items required to do the work.

Pay item and unit:

594.2	Wood Panel Sound Abatement Wall	Square Foot
594.21	Wood Panel Sound Abatement Wall (Bridge Mounted)	Square Foot