

SAMPLE SPECIFICATIONS

Sample government specifications covering the work illustrated in this pamphlet are provided below to assist in preparing contract plans and specifications should a contractor's services be required.

SITE WORK

This work consists of performing all excavation and backfilling. All work shall be conducted in a manner to prevent damage to the structures which are to remain and to maintain or improve the aesthetics and ecology of the site.

STONE PROTECTION

The work required consists of furnishing and placing stone as indicated on the drawings and herein. Surplus material other than stone shall be placed against the toe stone, as directed. All stone required shall be produced from quarries approved by the owner.

FOUNDATION PREPARATION

Areas on which cover stones and toe stones are to be placed shall be trimmed and dressed as needed to provide stable bedding and so that the stones may be placed within the allowable tolerances from the neat lines. Where cover stone areas are below the required depth, they shall be brought to grade by filling with core stone. To the extent practicable, the larger sizes of core stone shall be placed in the upper surface of the core stone.

LIMITING DIMENSIONS

Cover stone and toe stone shall be in pieces generally compact in shape and as nearly cubical as possible with the least dimension of any stone being not less than one-third its greatest dimension.

Stone shall consist of a well-graded mixture of sizes that will form a compact mass in place. The mixture shall be well-graded within the limits of maximum and minimum as specified on the drawings. Where space does not permit the inclusion of the larger sizes of stone, these sizes shall be omitted from the mixture.

PLACEMENT

Stones shall be placed by equipment suitable for handling material of the sizes required. The cover stone shall be placed a minimum of two layers thick. Stones shall be placed by means of a bracket or strip. End dumping will not be permitted. Stone shall not be dropped from a height greater than three feet.

GRADES

Cover stone and toe stone shall be placed to the grades (neat lines) shown on the drawings, within a tolerance of 0.5 foot above grade and 0.5 foot below grade, measured perpendicular to the neat lines. The intention is that the stone protection shall be built to at least the neat lines, the outer surfaces shall be reasonably even and present a uniform appearance and that extreme ranges in tolerance will not be allowed in surfaces of adjacent stones.

PILING: SHEET STEEL

Shop drawings shall be submitted to the owner for his approval. The Contractor shall furnish two certified copies of all mill reports covering the chemical and physical properties of the steel used in the work.

Steel for sheet piling shall conform to the requirements of ASTM Standard A 328.

Piles, including special fabricated sections, shall be of the types indicated on the drawings and shall be of a design such that when in place they will be continuously interlocked throughout their entire length. All piles shall be provided with standard handling holes located approximately four inches below the top of the pile. Each steel pile shall be free from any kinks and shall not possess camber, twist, or warp of a degree which will, in any manner, prevent easy and ready driving of a pile. The interlock of each pile shall be straight throughout its entire length and shall be of such shape and dimensions as will permit free and easy threading.

PILING TIMBER

Wood piles shall conform to Federal Specification MM-P-371, Type I, Class B, rough-peeled subject to further limitation in this Section of the specifications. The piles shall be treated in accordance with Federal Specification TT-W-571 with creosote by the pressure process. The wood piles shall be treated to refusal with a minimum creosote content of ten pounds per cubic foot. The Contractor shall make provisions for treating in the field, all cuts, holes and abrasions in the creosoted piles. Abrasions and cuts in the piles shall be given two brush coats of the creosote followed by a heavy coat of tar paint. The lengths of piles shall be as called for on the drawings. To provide for "heading" and cutting off square after driving, piles shall be driven within one foot of the depths specified.

PLACING AND DRIVING PILING

Driving equipment shall be a size and type required to drive piling to the required penetration without serious damage to the pile. Piledriving leads shall be marked so as to facilitate counting of the blows. A protective pile cap of approved design shall be employed in driving, when required, to prevent damage to the tops of the piles. Spliced piles shall not be used. All piles shall be driven to the penetration called for where practicable to do so without damage to the piles.

QUALITY CONTROL

The contractor shall establish and maintain a quality control system for all operations performed under this contract to assure compliance with contract requirements and maintain records of his quality control for all operations performed.

The Coastal Zone Management Act passed by the U.S. Congress in 1972 with its 1976 amendments establishes a national interest in the effective management, beneficial use, protection, and development of the coastal zone by providing assistance and encouragement to coastal states to develop and implement management programs. The addresses for the Great Lakes States coastal zone management offices are listed below. Questions concerning individual state programs should be addressed to the property owner's respective state office.

Illinois

Division of Water Resources
Illinois Department of Transportation
10th Floor
300 North State Street
Chicago, Illinois 60610

Michigan

Coastal Management Program
Department of Natural Resources
Division of Land Resource Program
P.O. Box 30028
Lansing, Michigan 48909

New York

Division of State Planning
Department of State
162 Washington Avenue
Albany, New York 12231

Pennsylvania

Division of Outdoor Recreation
3rd and Reilly Street
Harrisburg, Pennsylvania 17120

Indiana

State Planning Services Agency
143 West Market Street
Indianapolis, Indiana 46204

Minnesota

State Planning Agency
801 Capitol Square Building
St. Paul, Minnesota 55155

Ohio

Department of Natural Resources
1930 Belcher Drive
Columbus, Ohio 43224

Wisconsin

State Planning Office
B-130 One West Wilson Street
Madison, Wisconsin 53702

Successful management of the coastal zone's resources also depends upon local participation through development of a management plan or strategy by individual property owners when they consider shore protection. An individual's management strategy would consist of evaluating the need for shore protection, selecting suitable techniques to provide structural or non-structural erosion control considering other uses of the shore area, and formulating and then implementing a plan. This pamphlet has presented information on techniques that may be used to provide shore erosion control. It must be understood; however, that some of these techniques alter littoral processes and may have either adverse or beneficial effects on other shore uses.

For example, revetments and bulkheads protect only the land area behind them and afford no protection for adjacent beach areas. Erosion in front of these structures may be increased, and if a recreational beach is to be maintained in front of them, additional beach erosion control devices may be necessary.

Although groins or an offshore breakwater may provide additional beach area at the structures, it is often at the expense of the downdrift shoreline. Groins and offshore breakwaters may cause recession of the shoreline downdrift, because the supply of sand to the downdrift shoreline is reduced by the accumulation at the structures. In contrast, beach nourishment provides effective protection without altering the recreational values of the shoreline.