CONSTRUCTION SPECIFICATION

MI-161. MODULAR CONCRETE BLOCK

1. SCOPE

The work shall consist of the construction of modular concrete block structures and modular concrete block portions of composite structures.

2. MATERIALS

Concrete blocks shall be new or used units and full units shall weigh between 1200 pounds and 4000 pounds. They shall be dense and have a minimum concrete design compressive strength of 2000 psi. A modular concrete block shall be rejected when any face has 10% or more of its area "honeycombed". Modular concrete blocks shall have lifting inserts or equivalent for handling. Reinforcing steel used as lifting inserts shall be #4 (1/2 inch diameter) or larger. Modular concrete blocks shall have a tongue and groove system or other system to assist in alignment.

Gravel foundation material shall be a well graded material meeting Michigan Department of Transportation Michigan Series and Classes 22A or 23A, as shown in the drawings, or as approved by the NRCS inspector.

Concrete foundation shall meet the requirements of Specifications MI-158, Reinforced Concrete or MI-159, Plain Concrete, as appropriate.

3. FOUNDATION

Surface irregularities, loose material, vegetation, and all foreign matter shall be removed from below the foundation. The foundation for the modular concrete blocks may be concrete or gravel. Foundation materials shall extend a minimum of 3 inches outside each face of the block.

Where gravel is used, the thickness shall be a minimum of 12 inches and it shall be graded to the lines and grades shown on the drawings. The gravel shall be compacted in maximum 4 inch lifts by hand tamping or 12 inch lifts where rubber tired equipment or vibratory compactors are used.

Concrete shall be a minimum thickness of 5 inches.

When fill to subgrade lines is required, it shall meet the requirements of Specification MI-154, Earthfill.

4. MODULAR CONCRETE BLOCK PLACEMENT

The modular concrete blocks shall not be placed until the foundation preparation is completed and the subgrade surfaces have been inspected and approved by the NRCS inspector.

Where a concrete foundation is used, modular concrete blocks shall not be placed for 7 days or until the concrete foundation has attained a minimum compressive strength of 2500 pounds per square inch.

Gravel foundation on which the modular concrete block is to be placed shall be graded to the lines and grades shown on the drawings.

Modular concrete block shall be laid to the line and grade shown on the drawings. The modular concrete block shall be firmly and uniformly bedded throughout its entire length to the grade and in the manner shown on the drawings or as specified by the NRCS inspector.

Unless otherwise shown on the drawings, or approved by the NRCS inspector, modular concrete blocks shall be placed in a running bond pattern.

Unless otherwise shown on the drawings, or approved by the NRCS inspector, structure corners shall be constructed by one of the following methods:

a. Use of short modular concrete blocks at each corner in alternate layers.
b. Overlapping of modular concrete blocks at the corner.
c. Use of specially designed corner modular concrete blocks.

5. BACKFILLING MODULAR CONCRETE WALLS

Backfilling walls may be completed any time after placement of the modular concrete blocks. Compaction of backfill materials may be by manually directed vibratory compaction equipment or manually directed power or hand tampers. Each layer of backfill shall be compacted to the same density requirements specified for the adjacent fill or as shown on the drawings. Backfill shall be placed in layers not more than 4 inches thick before compaction.