

## APPENDIX G

### MSD CRITERIA FOR PRECAST STRUCTURES

Effective October 1, 1990

1. Any use of precast structures must be so noted on the plans, including a typical detail for each type of structure for the project.
2. Structures which require specially designed footings, cut-off walls, etc., will not be allowed as precast.
3. Openings in precast structures for pipes shall be the outside diameter of the pipe plus maximum of 6 inches. In order to use non-shrink grout, the opening shall be the outside diameter of pipe plus 3 inches. (Outside diameter of pipe plus 4 ½ inches is permissible when tapered hole forms are utilized.)
4. For precast structures (other than those with knockout panels), the opening around the pipe shall either be filled with non-shrink grout for the wall thickness of the structure or the pipe shall be encased with a minimum 6-inch collar of concrete from the inside face of the wall to 1'-0" outside the outer face of the wall. The pipe shall be adequately supported to prevent settling while the grout or the concrete encasement is setting up. The inside face of the structure walls shall be finished with a trowel and wet brush finish.
5. For circular structures, the following applies as to the maximum inside diameter (or horizontal dimension) of pipe to be used with a given size of manhole.

<u>Diameter of Structure</u>	<u>Maximum Size of Pipe*</u>
4'-0"	24 inches
5'-0"	36 inches
6'-0"	48 inches

\*Outside diameter may be considered on a case-by-case basis for flexible pipe.

6. For circular structures, the minimum distance allowed between precast holes for the pipes shall be 12 inches.
7. For circular structures and rectangular structures (other than those with knockout panels), the minimum vertical distance from the holes for the pipes to the top of the structure wall shall be 4 inches. If this vertical distance is less than 12 inches, then additional reinforcing steel shall be furnished for this section. The top slab must be designed for HS-20 loading.

8. For precast structures with knockout panels, holes for the pipe shall not be cut into the structural members (i.e., top beams and corner columns) and non-shrink grout shall not be allowed to be placed around the pipes. The pipes shall be encased with concrete a minimum 6-inch collar around the outside of pipe or a minimum of 3 inches beyond the hole knocked in the wall, whichever is greater. Also, the concrete encasement shall extend from the inside face of the wall to 1'-0" outside the outer face of the wall.
9. Precast structures with knockout panels shall not be used with more than 2 feet of earth cover unless load calculations are supplied.
10. For rectangular structures where pipe will be installed in adjacent walls (other than those with knockout panels), at least 6 inches of wall (measured from the interior corner) is required on each side of the pipe beyond the precast opening for the pipe. This rule is not applicable for structures which have pipe installed in opposite walls or where one outlet pipe is utilized.
11. A wash is required in the bottom of catch basins to provide positive drainage (sloped toward outlet).