



Designation: C891 – 09

Standard Practice for Installation of Underground Precast Concrete Utility Structures¹

This standard is issued under the fixed designation C891; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the procedures to be followed in the planning, site preparation, and installation of underground precast concrete utility structures. Concrete pipe and box culverts are not covered under this practice. Also, precast concrete manholes covered in Specification C478 are excluded from this practice.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C478 Specification for Precast Reinforced Concrete Manhole Sections

3. Survey

3.1 The installation area shall be surveyed using the workprint and a checklist to identify the work to be done and to determine that the plans are correct.

3.1.1 The location of the utility structure should be where it will cause minimum interference with traffic and shall be clearly defined on work prints.

3.1.2 All underground facilities and structures such as gas, water, sewer, power, telephone cable, and so forth shall be located and identified. Location markings shall be placed by the affected utilities before the construction.

¹ This practice is under the jurisdiction of ASTM Committee C27 on Precast Concrete Products and is the direct responsibility of Subcommittee C27.10 on Utility Structures.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.2 The survey shall identify any obstacles such as overhead wires, building structures, and so forth that will interfere with crane operations, work progress, or create a safety hazard. Precautionary arrangements shall be made before excavation begins.

3.3 The survey shall give consideration to the soil structure so that proper shoring, sloping, or both, may be planned in advance of the excavation work.

4. Planning

4.1 Permits required to do work in accordance with the detail plans shall be secured before starting the job. All permits or a record of the permits shall be retained on the job for immediate reference.

4.2 All utilities and owners of surface and subsurface facilities and structures in the area shall be given advance notification of proposed excavation. Every effort shall be made to avoid damage to the facilities of others. If any damage occurs, the owner of the damaged facility shall be notified immediately.

4.3 Planning shall include the coordination of all responsible parties to ensure that arrangements for removal of broken pavement, rocks, excess spoil, and so forth have been made. Responsible parties shall arrange for the delivery, distribution, and storage of required material. If such material cannot be stored on the site, other storage areas must be provided.

4.4 Should it appear that a structure location will interfere with traffic, review the situation with the engineer and notify appropriate authorities.

4.5 Provide for access to call boxes, fire hydrants, etc.

5. Safety Requirements

5.1 Safety requirements for construction shall be in accordance with all federal, state, and local regulations.

5.2 The utility structure or any sections that comprise the structure assembly shall only be lifted at the lifting points so designated by the manufacturer.

6. Excavating

6.1 Coordinate the various excavation operations from the point of opening the pavement to completion of backfill so that the work area thus occupied is kept to a minimum consistent