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Standard Practice for Installation of Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers[1]

This standard is issued under the fixed designation C1675; 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 installation of precast reinforced concrete box sections cast monolithically and intended to be used for the conveyance of storm water, industrial wastes and sewage, and for passageways.

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 international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C822 Terminology Relating to Concrete Pipe and Related Products

C1433 Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers

C1433M Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers (Metric)

C1577 Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers Designed According to AASHTO LRFD

D698 Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))

D2487 Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

2.2 *ASCE Standard:*[3]

ASCE 26 Standard Practice for the Direct Design of Buried Precast Concrete Box Sections

2.3 *AASHTO Standards:*[4]

AASHTO Standard Specifications for Highway Bridges , Div. II, Section 27

AASHTO LRFD Bridge Construction Specifications , Section 27

AASHTO LRFD Bridge Design Specifications

AASHTO M145 Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes

3. Terminology

3.1 For definitions of terms relating to precast box sections, see Terminology C822.

3.2 For terminology related to soil classifications, see Practice D2487.

3.3 For terminology and definitions of terms relating to structural design, see ASCE 26.

3.4 Fig. 1 illustrates the installation terminology.

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[1] This practice is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.05 on Special Projects.

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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] Available from American Society of Civil Engineers (ASCE), 1801 Alexander Bell Dr., Reston, VA 20191, http://www.asce.org.

[4] Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, http://www.transportation.org.

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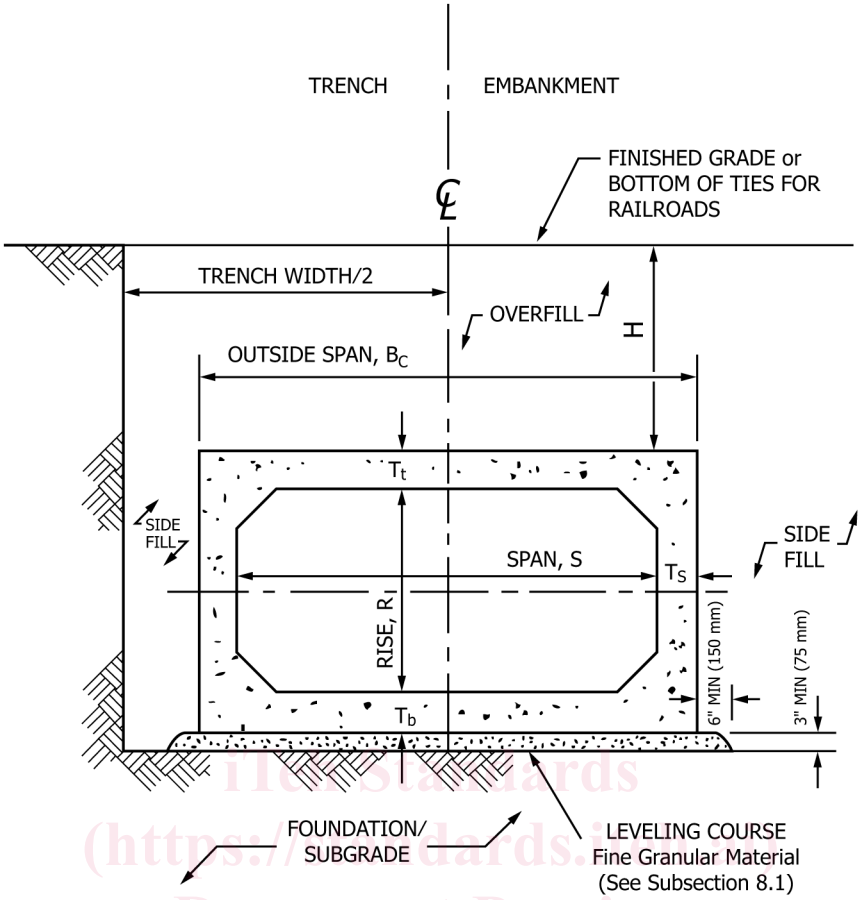

FIG. 1 Box Section/Installation Terminology

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4. Significance and Use

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4.1 This practice is useful as a reference by an owner and the owner's engineer in preparing project specifications.

5. General

5.1 The precast reinforced concrete box section/soil system shall be constructed to conform to the dimensions and requirements specified or shown on the plans and to this practice. Additionally, for highway projects, the precast reinforced concrete box section/soil system shall conform to requirements of Section 27 of AASHTO Standard Specifications for Highway Bridges or AASHTO LRFD Bridge Construction Specifications as appropriate. The owner is advised to provide or require adequate inspection of the box section installation at the construction site.

6. Excavation

6.1 Trenches shall be excavated to the dimensions and grade specified on the plans or as ordered by the owner. The width of trenches shall be kept to the minimum required for installation of the box sections and proper compaction of the sidefill.

6.2 When ledge rock, compacted rocky, or other unyielding foundation material is encountered, it shall be removed to the requirements shown on the plans. Over-excavated areas shall be backfilled with approved materials specified for the leveling course.

6.3 The contractor shall make such provisions as required to ensure adequate drainage of the trench to protect the leveling course during the construction operations. Where surface water or groundwater conditions exist, the site and trench shall be dewatered.

7. Foundation

7.1 The foundation shall be moderately firm to hard in situ material, stabilized soil, or compacted fill material.

7.2 When unsuitable or unstable material is encountered, the foundation shall be stabilized or removed and replaced with firm and stable foundation material.