

SECTION 02317

STRUCTURAL EXCAVATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Excavate, backfill, and dispose of all material for constructing bridges, foundations, box culverts, pipe culverts, drains, and other structures.

1.2 RELATED SECTIONS

- A. Section 00120: Instructions to Bidders.
- B. Section 00820: Legal Relations and Responsibility to Public.
- C. Section 02056: Common Fill.
- D. Section 02324: Compaction.

1.3 PAYMENT PROCEDURES

- A. Department makes no separate payment for Structural Excavation. Include in associated bid items.

PART 2 PRODUCTS Not used.

PART 3 EXECUTION

3.1 PREPARATION

- A. The designated bottom elevation of the structure reflects information used for design and the Engineer may order changes in writing. Subsurface information shown in the plans reflects the information used for design.
- B. Verify conditions in the field according to Section 00120, article, "Examination of Plans, Specifications, Special Provisions, and Work Site."
- C. Provide a cofferdam for underwater work, so the excavation can be dewatered.

1. With inside dimensions sufficient to provide access to all parts of the foundation forms.
2. Remove all cofferdams, sheeting, and bracing when no longer needed.

3.2 EXCAVATION

- A. Comply with Utah Occupational Safety and Health regulations when excavating and trenching. Refer to Section 00820, articles, "General Legal Compliance," and "Sanitary, Health and Safety; and Explosives."
- B. Excavate to the established elevations and dimensions.
- C. Excavate and waste unsuitable material to the depth directed.
- D. Excavate rock, hardpan, or other material unsuitable for the structure foundation to at least 1 foot below the designated elevation.
- E. Rock and other hard strata for concrete and masonry foundations:
 1. Clean, and cut to a firm surface (level, stepped, or serrated as shown). Foundation cannot contain loose material.
 2. Clean out seams and fill with concrete, mortar, or grout.
- F. Dispose of all unused excavation material that impairs the appearance and use of the roadway or waterway.
 1. Clean the space under structures, in channels, and adjacent areas affected by operations to prevent drift and scour.

3.3 BACKFILL AND COMPACTION

- A. Compaction: Refer to Section 02324.
- B. Moisten all areas of backfill inaccessible to roller equipment. Compact in successive 6 inch (loose measurement) layers.
- C. Do not use excessive water in backfill material, and do not jet backfill.
- D. Use a hand-operated vibratory compactor or small vibratory roller in a transverse direction in areas directly adjacent to abutments, backwalls, approach slabs, wing walls, retaining walls, and other structures.
- E. Coordinate the rate of placing backfill materials with compaction operations.

- F. Unsuitable excavation areas:
1. Use granular backfill borrow or other suitable material.
 2. Compact to the density of surrounding ground.

END OF SECTION