

SECTION 00406 - TUNNELING, BORING, AND JACKING

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00406 of the Standard Specifications modified as follows:

00406.01 Descriptive Terms - Replace this subsection, except for the subsection number and title, with the following:

Tunneling - Tunneling includes all methods where an underground passageway is excavated and lining Materials are brought in and placed.

Boring - Boring includes all methods where a conduit, casing, pipe or sleeve is pushed or pulled into place and that the excavation method precludes the stationing of a worker within the conduit without stopping or removing the excavation Equipment.

Jacking - Jacking includes all methods where a conduit, casing, pipe or sleeve is pushed or pulled into place with one or more workers inside to excavate and assist in keeping the conduit on the required grade and alignment.

00406.12 Casing - Replace this subsection, except for the subsection number and title, with the following:

Furnish casing of the type, size and class as shown. The class of casing specified is based on the post construction loads and not on stresses resulting from jacking and boring operations. The casing may be constructed of other Materials, gauge and section modulus if approved, including increasing the casing strength to accommodate the Contractor's jacking or boring operations at no additional cost to the Agency.

When pressure grouting is specified, furnish jacked casings 36-inch diameter and larger with nipples installed at the springline and the crown, at 10-foot centers.

00406.41(b) Boring and Jacking - Replace the bullet that begins "Casing or Conduit" with the following bullet:

- Casing or conduit - verify that the casing is suitable for the installation method

00406.45 Smooth Steel Casing - Replace the paragraph that begins "Join sections of smooth steel ..." with the following paragraph:

Join sections of smooth steel casing to be jacked or bored by welding the joints with a continuous weld for the full circumference, or by other approved means. Furnish joints capable of resisting the jacking or boring forces.

00406.47 Cradles for Cased or Tunneled Pipe - Replace this subsection, except for the subsection number and title, with the following:

Where cradles are shown, provide a strapped cradle under the barrel of the carrier pipe. Ensure the barrel bears continuously on the cradles.

00406.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of casing will be measured on the length basis.

No measurement of quantities will be made for tunneling, boring, or jacking Work.

Where tunneling, boring, jacking, or open trench excavation is used at the Contractor's option in lieu of another specified method, measurement will be made as originally bid.

The quantities of pipe installed inside the casing will be measured according to the appropriate items under which this Work is required.

00406.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities of Work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

Pay Item	Unit of Measurement
(a) Tunneling, Boring, and Jacking.....	Lump Sum
(b) Casing, _____	Foot

Item (a) includes the additional effort required to install the casing by tunneling, boring, or jacking (other than under a Railroad). This includes Equipment, Sand, grout, jacking pits, and bracing.

In item (b) the type of casing, "steel" or "concrete" is inserted in the blank.

If tunneling, boring, jacking, or open trench excavation is used at the Contractor's option in lieu of another specified method, payment will be made as originally bid.

Payment will be payment in full for furnishing and placing all Materials, and for furnishing providing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Tunneling, boring, or jacking under a Railroad will be paid for according to 00445.91.

Pipe will be paid for according to the appropriate Section in which the Work is required.

