

SECTION 203 REMOVING OLD CULVERTS AND BRIDGES

203.1 Description

- (1) This section describes wholly or partially removing or closing existing culverts and bridges, disposing of the resulting materials, or if required, salvaging and storing designated materials.

203.2 (Vacant)

203.3 Construction

203.3.1 General

- (1) Remove or close all or parts of existing culverts and bridges within the roadway and that are replaced by or interfere with new construction. The contractor who constructs the new structure that replaces the existing facility, unless the contract specifies otherwise, shall perform this removal or closing.
- (2) If specified in the contract, remove or close existing culverts, bridges, or parts of them, beyond the roadway limits, but within the highway limits.
- (3) Leave existing culverts and bridges beyond the limits of the highway in place and in service unless the contract specifies otherwise.
- (4) Upon removal, culverts, bridges, or parts of them, become the property of the contractor, unless designated in the contract as salvageable. If the contractor removes, but does not replace entrance pipes from private property, the contractor must offer these pipes to the property owners before claiming them.

203.3.2 Breaking Down and Removing

203.3.2.1 General

- (1) Remove those parts of an existing structure that interfere with new construction. Do not use equipment, facilities, or methods that might damage members, portions of the structure to be preserved, or adjacent construction. Before starting new work, complete all blasting or other operations that might endanger new work. If incorporating portions of existing culverts or bridges in the new work, remove the portions not being saved in a way that leaves the remainder of the structure undamaged.
- (2) Notify the engineer if the portion of a structure remaining in place is damaged. Do not conduct construction operations that would obscure that damage or cause additional damage until the department has had an opportunity to assess the structural significance of the damage. Provide the engineer with means to access the site to make this determination.
- (3) Repair damage done during breaking down and removal as the engineer directs.

203.3.2.2 Removal Operations

- (1) Except as specified below for closing culverts, remove the entire top slab of box culverts and the entire superstructure of all other culverts and bridges designated for removal. Completely remove existing piles, cribs, or other timber construction within the limits of new embankments, or remove these structures to an elevation at least 2 feet below finished ground line. Remove sidewalls or substructure units in water to an elevation no higher than the elevation of the natural stream or lake bed, or, if grading the channel is required under the contract or the plans, to the proposed finished grade of the stream or lake bed. Remove sidewalls or substructure units not in water down to at least 2 feet below natural or finished ground line.
- (2) If removing a bridge deck to construct a new deck, protect the work as specified in [107.14](#). Remove decks on prestressed concrete girders using a hydraulic shear or other engineer-approved equipment. Coordinate with the engineer to provide at least one business day for the department to conduct an inspection to determine if prestressed concrete or steel girders were structurally damaged. Remove and replace or otherwise repair damage as required to structurally restore the girders. Bear all restoration expenses, including engineering costs. Have a registered professional engineer analyze the effect of damage to the bridge, make recommendations, and prepare signed, sealed, and dated structural details for the proposed restoration. Submit the structural details to the department and the design engineer of record. The department and design engineer of record will jointly accept or reject the proposed restoration within 3 business days. Do not begin restoration work without the department's acceptance. The engineer will not extend contract time to complete this work.
- (3) During deck removal operations, do not damage the existing bar steel reinforcement to be incorporated in the new work, and thoroughly clean, realign, and retie reinforcement if necessary. Minimize debris falling onto water surfaces and wetlands as the contract specifies in [107.18](#) or in the special provisions. Also, minimize debris falling on the ground and roadway.

- (4) If extending or incorporating existing culverts and bridges in the new work, remove only those parts of the existing structure as necessary to provide a proper connection to the new work. Saw, chip, or trim the connecting edges to the required lines and grades without weakening or damaging the remaining part of the structure. During concrete removal, do not damage reinforcing bars left in place as dowels or ties incorporated into the new work.
- (5) Remove pipe culverts designated for salvage in a way that prevents damage to the culverts.
- (6) Dismantle steel structures or parts of steel structures designated for salvage in a way that avoids damage to the members. If the contract specifies removing the structure in a way that leaves it in a condition suitable for re-erection, matchmark all members with durable white paint before dismantling. Mark all pins, bolts, nuts, loose plates, etc., similarly to indicate their proper location. Paint all pins, bolts, pinholes, and machined surfaces with a department-approved rust preventative. Securely wire all loose parts to adjacent members, or label and pack them in boxes.
- (7) Remove timber structures or parts of timber structures designated for salvage in a way that prevents damage to the members.
- (8) If the engineer approves, and if the contract specifically authorizes using matchmarked material, the contractor may temporarily use materials designated for salvage to construct new work. Do not damage or reduce the value of those materials through temporary use.

203.3.3 Closing Culverts

- (1) The contractor may close culverts instead of removing them if the following conditions exist:
 1. The diameter or span of a culvert is less than 4 feet.
 2. The top of the culvert does not come within 5 feet of the elevation of the finished roadway.
 3. The engineer deems the structure to be in suitable condition.
- (2) Remove the headwalls and those parts of the structure that would be within 2 feet of the finished ground line. Completely fill each end of the culvert with satisfactory soil for a distance from each end of at least 2 feet plus the height of the opening of the structure.

203.3.4 Incorporating or Disposing of Materials

- (1) Remove materials resulting from culvert or bridge removals not designated for salvage or incorporation in the work, from the right of way. Ensure that disposal sites are neatly constructed.
- (2) Place materials designated for salvage in neat piles outside the roadway but within the right of way at locations the engineer designates. Clean salvaged pipe culverts. Locate the piles far enough from the traveled way so they do not create a hazard to traffic.
- (3) Incorporate broken steel-free concrete, stone, brick, and like granular material in the contract work to the extent that it is practical. The contractor may use these materials, if suitable, to construct riprap, tree wells, and similar structures. Unless the contract or the engineer specifies otherwise, incorporate the balance of these materials, if they have suitable engineering properties, in embankments as specified for placing rocks under [207.3.4](#). Do not place these materials within 8 inches of the surface of the earth grade.
- (4) Incorporate excavated material in the work to the extent that it is practical. Use materials with suitable engineering properties to backfill areas resulting from removals and to construct embankments. Dispose of surplus or unsuitable material as specified under [205.3.12](#).
- (5) If placing broken concrete, stone, brick, or any other waste material outside the right of way, conform to all regulations governing solid waste disposal. Obtain written permits for this disposal from the owner of the property where placing the material, unless disposing of the material at a licensed waste disposal operation. Furnish permits, or copies of permits, to the engineer before disposal begins. Do not deposit waste in wetlands.
- (6) Arrange with the owners for the disposal of private entrance pipes removed but not replaced.
- (7) Unless the contract or the engineer gives more specific instructions, neatly store structural steel designated for salvage on blocking in a location suitable for loading. Store structures or portions of structures, specified in the proposal for re-erection, in separate piles.
- (8) Remove all nails and bolts from timber or piling from old structures, designated for salvage. Store this timber or piling in neat piles in locations suitable for loading. Dispose of waste timber and lumber by open burning, if allowed; by burning in an air curtain destructor, if allowed; by chipping, or dispose of as

specified for surplus material in [205.3.12](#). Dispose of chipped material as specified for machine cutting or chipping in [201.3\(13\)](#). Dispose of creosote treated piling as required by the WDNR.

203.3.5 Backfilling

- (1) Backfill all trenches resulting from removing or breaking down old culverts and bridges, and not occupied by new structures or required for waterways. Use either satisfactory soil or broken masonry and satisfactory soil. If the contract specifies granular backfill, use backfill material conforming to [section 209](#). Place backfill material in layers no thicker than 8 inches. If using granular backfill, the contractor may place granular backfill in layers up to 12 inches thick. Thoroughly compact each layer using engineer-approved tampers, rollers, or vibrators. If encountering water in an excavation, place backfill in a way that displaces the water and does not trap it.
- (2) Do not use water to expedite settlement of backfill except with the engineer's approval. However, this provision does not require the contractor to de-water the excavation before placing backfill.

203.4 Measurement

- (1) The department will measure Removing Small Pipe Culverts as each individual small culvert removal acceptably completed.
- (2) The department will measure the Removing Old Structure bid items as a single lump sum unit for each culvert or bridge removal designated in the proposal and acceptably completed.
- (3) The department will not deduct the volume of these removals from the volume of the associated roadway, drainage, or structure excavation item.

203.5 Payment

203.5.1 General

- (1) The department will pay for the measured quantity at the contract unit price under the following bid items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
203.0100	Removing Small Pipe Culverts	EACH
203.0200	Removing Old Structure (station)	LS

- (2) Payment is full compensation for breaking down and removing; repairing all damage including any associated engineering costs; required salvaging, storing, and disposing of all materials; and, unless the contract specifies granular backfill, for backfilling.
- (3) Removing all non-rectangular culverts with a cross sectional area smaller than the area of a 12-inch diameter round pipe is incidental to associated items of work.
- (4) The department will pay for backfilling separately under [209.5](#) if the contract specifies granular backfill.

203.5.2 Removing Small Pipe Culverts

- (1) Under the Removing Small Pipe Culverts bid item, remove non-rectangular culverts with a cross sectional area equivalent to or larger than the area of a 12-inch diameter round pipe but smaller than a 60-inch diameter round pipe.
- (2) The department will pay for each individual pipe in a multi-pipe cluster at the contract price each. All associated precast components are incidental to this bid item. The department will pay for all associated cast-in-place components separately under the appropriate removal item in [section 204](#).
- (3) If a culvert removal the engineer directs, or [104.7](#) requires, conforms to the classification criteria for the Removing Small Pipe Culverts bid item, but the contract does not show that removal, the department will pay for that removal at the contract price each or, absent the bid item, as extra work. If a removal that the plans show as a small pipe culvert conforms to the classification criteria for the Removing Old Structure bid items, the department will pay for that removal as extra work.

203.5.3 Removing Old Structure

- (1) Under the Removing Old Structure bid items, remove bridge-like structures. The department classifies a removal as a bridge-like structure if the structure is one or more of the following:
 1. A bridge with a span of 20 feet or greater.
 2. Bridge-like with a span less than 20 feet.
 3. A rectangular culvert of any size.

4. A non-rectangular culvert with a cross sectional area equivalent to or larger than the area of a 60-inch diameter round pipe.
- (2) Payment includes removing all associated incidental structures, hybrid concrete box culverts with associated pipe culvert extensions, and multi-cell and multi-pipe systems. If required in [104.7](#) or if the engineer directs removing a structure, conforming to the classification criteria for this bid item but not included in the contract, the department will pay for that removal as extra work.
- (3) The contractor will bear all expenses, including engineering costs, for restoring structurally damaged girders as specified in [203.3.2.2\(2\)](#).