

Revision of Section 202 Removal of Portions of Present Structure

Revise Section 202 of the Standard Specifications for this project to include the following:

Description

This work consists of removing existing bridge approach slabs and sleeper slabs as shown in the plans. ●

This work consists of saw cutting, removing, and disposing of existing deteriorated, spalled, and unsound concrete as shown in the plans. ◆

It also consists of removing corroded steel, sandblasting reinforcing steel or welded wire fabric that remains, and sandblasting the newly exposed concrete surfaces at the removal locations.

Construction Requirements

At least 10 working days before beginning removal, the Contractor shall submit a method statement to the Engineer with details of the removal operations, including the means, methods, sequence of removal, tools, and equipment to be used. The Engineer must approve all removal operations, methods, and equipment the work begins.

The Contractor's method statement shall include proposed methods used to:

- (1) Determine the locations and limits of deteriorating concrete,
- (2) Prevent debris from falling to the ground below the structure,
- (3) Protect the traveling public using and adjacent to the structure from airborne debris generated by the removal operations.

Conduct removal operations to protect the traveling public and to minimally interfere with [the railroad or] ♣ the traveling public on or below the structure. [Also, coordinate removal operations with the Railroad to not interfere with daily train operations.] ♣

The work shall be done per these Special Provisions, subsection 202, in conformity with the plans or as directed by the Engineer.

Prepare the existing [bridge rail and guardrail] ♣ to remain to fit the new construction and protect it from damage. Any damage caused by the Contractor to any portion of the structure not intended for repair shall be repaired in kind by the Contractor at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

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Remove the existing concrete as shown on the plans or as directed by the Engineer, but to a minimum depth to provide 1-inch clear around all existing reinforcing steel in the removal area or to sound concrete, whichever is deeper. Removal operations shall not occur before the Engineer's acceptance. The Contractor shall saw cut along the removal limits before removal. Saw the concrete to a true line, with a vertical face, unless otherwise specified. Feathered edges will not be acceptable. The depth of the saw cut shall be approximately 3/4-inch.

The Contractor shall minimize spalling on the face of the existing concrete adjacent to the removal boundaries. Do not use pneumatic hammers heavier than the nominal 15-pound class for removals adjacent to the removal boundaries. Use hand tools such as hammers and chisels to remove particles of loose, unbonded concrete. Sandblast exposed concrete surfaces within the removal limits to remove all final fractured or loose particles. Any damage caused by the Contractor to any portion of the structure not intended for repair shall be repaired in kind by the Contractor at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

The Contractor shall prevent cutting or otherwise damaging reinforcing steel or welded wire fabric intended to remain in place. Any reinforcing damaged by the Contractor's operation shall be repaired or replaced at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

After removing the concrete, straighten all exposed non-epoxy reinforcing steel to remain in place as required and thoroughly clean to sound metal by sandblasting per subsection 202. Do not sandblast epoxy-coated reinforcing steel, if present, but clean with hand tools. Repaint epoxy coating on reinforcing steel, if damaged, with epoxy paint, before placing the concrete.

Following sandblasting, the Engineer will inspect the condition of all exposed reinforcing. If, in the Engineer's opinion, the loss of the original cross-sectional area of the bar due to deterioration is 25 percent or more, the Contractor shall add additional bars as approved by the Engineer. Lap splice newly added bars as shown in the plans. Use a mechanical splice if the required lap splice length cannot be used. The mechanical splice shall develop at least 125 percent of the specified yield strength of the bar. Maintain all minimum clearances as defined in the plans. Payment for the mechanical splice will be as the weight of reinforcing steel for the designated lap splice for that bar size. As an alternative, the Contractor may remove additional sound concrete to achieve the required lap length. Payment for additional removals and repairs will be based on the unit price for the appropriate removal and repair method class.

Secure all reinforcing steel to adjacent bars as provided in subsection 602.

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Thoroughly clean all areas of the prepared surface contaminated by oil or other materials detrimental to bonding, using a method approved by the Engineer.

The Contractor is responsible for disposing of all removed material and debris.

All materials removed from the existing structure shall become the Contractor's property; dispose of it per regulations off-site at the Contractor's expense.

Method of Measurement

Removal of Portions of Present Structure will be measured by the area completed and accepted.

Removal and repairs beyond the minimum required lap length of reinforcing steel will not be measured or paid for separately but will be at the Contractor's expense.

Cleaning of prepared surfaces contaminated by oil or other materials detrimental to bonding will not be measured and paid for separately but shall be included in the work.

Basis of Payment

Planned rehabilitation quantities are approximate. The accepted quantities will be paid for at the contract unit price.

Payment will be made under:

Pay Item	Pay Unit
Removal of Portions of Present Structure	Square Foot ■
Removal of Portions of Present Structure	Square Yard ■

Payment for Removal of Portions of Present Structure will be total compensation for:

- All labor, materials, tools, equipment, and incidentals required to perform the neat line removals to the required depth.
- Methods to prevent debris from falling from the structure; and
- Methods to protect the traveling public using or adjacent to the structure from airborne debris.

Payment for the new reinforcement steel will be made per Section 602. Payment for the Mechanical splice will be the weight of reinforcing steel for the designated lap splice for that bar size.

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Cleaning, straightening, and repairing epoxy coating of existing reinforcing steel will not be paid for separately but shall be included in the work.

Saw cutting will not be paid for separately but shall be included in the work.

Sounding and marking repair areas will not be paid for separately but shall be included in the work.

Sandblasting will not be paid for separately but shall be included in the work.

Disposal of removed materials and debris will not be paid for separately but shall be included in the work.

Instructions to Designers (delete instructions and symbols from final draft):

Use this project special provision for concrete repairs on structures (except for deck rehabilitation). Designer to consider safety critical structural implications and possible falsework requirements. Do not use for Class 1, 2, or 3 deck repairs or Hydrodemolition, which have separate specifications.

Use Concrete (Patching) for the corresponding repair/replacement portion of concrete repairs. Pair the Pay units (Square Foot to Cubic Foot and Square Yard to Cubic Yard).

- Use if approach or sleeper slabs are being removed. Revise to include all components to be replaced with Concrete Class G or D (Bridge), or Concrete Class (Patching).

- ◆ Use for abutment, pier cap, edge of deck, girder bearing pedestal, slope paving, or other similar repairs.

- ♣ Use if railroads are below this structure.

- ♣ Replace/substitute, as appropriate, the existing components to remain.

- Match the removal pay unit area to the pay unit volume of the corresponding repair material (Square Foot to Cubic Foot and Square Yard to Cubic Yard).

Designer to provide estimated quantity of removal area in the Summary of Quantities. The estimated depth of removal is to be provided in the Summary of Quantities Worksheet note and is to be used to calculate the patching quantity.

Include Revision of Section 202 Sandblasting Reinforcing Steel in specification package.

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Permanent Changes to Project Dated Special Provisions

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<u>Date</u>	<u>Author</u>	<u>Description of Change</u>
12/12/91	M. Dodson	Minor Format Changes
9/17/1999	M.Nord	Converted to Microsoft Word 97 SR-2 Revised the specification references to conform with the 1999 Colorado DOT Standard Specifications for Road and Bridge Construction as follows: On page two, changed the subsection reference from 202.07 to 202.12. The changes referenced are related to Basis of Payment.
1/14/19	BPM Cons.	Revised to match current usage and formatting.
11.1.21	M. Kayen	Revisions to grammar, format as per CDOT Style Guide (4.22.21)
04.06.2023	M. Kayen	Revisions to make spec online accessibility-compliant. 5.22.23 Additional accessibility work.