

## **ITEM 04502.8020 M - EVALUATION AND MARK OUT FOR PCC PAVEMENT REPAIRS**

### **DESCRIPTION**

This work will consist of the Contractor initiating a pavement numbering system, evaluating the extent of pavement deterioration, and the marking out the repair boundary line based on the pavement evaluation. This work shall be witnessed and accepted by the Engineer or his designee.

### **MATERIALS**

Not Specified

### **CONSTRUCTION DETAILS**

#### **Locating Slabs.**

A system for locating concrete pavement repairs is provided in the contract plans. The Contractor shall install this numbering system within the project limits as specified in the contract plans. The Contractor shall maintain the locating system until all pavement repairs have been completed as specified in the plans and/or as ordered by the Engineer. The Contractor shall ensure the locating system is readable and visible from within the work zone and not obstructed at any time.

In addition, The Contractor shall place and maintain any stationing required by the Engineer to tie repairs to record plans. The Engineer will inform the Contractor where stationing is needed. The record plan stationing will be provided in the contract plans or as directed by the Engineer.

#### **Pavement Evaluation and Mark out.**

The Contractor shall be responsible for evaluating and marking out all concrete pavement slabs within the project limits. Using current industry practices for ascertaining deteriorated concrete, the Contractor shall evaluate the concrete pavement and clearly mark out the boundary of deteriorated and/or defective concrete requiring repairs. The Contractor shall, if ordered by the Engineer, remove from the repair area any asphalt or debris that inhibits evaluation of the area. The contract plans provide recognized areas of deterioration requiring repair.

The Contractor may group or modify repairs with the approval of the Engineer to make pavement repairs more cost effective. Any additional areas added to the mark out to facilitate group or modified repairs shall be done at the Contractors expense.

Each evaluation and mark out will be witnessed by the Engineer or his designee. The Engineer will make any adjustments to the repair that he may deem necessary. Field conditions may require the Engineer to change the repair type and size. The Contractor shall then mark or remark the repair type and removal boundary before preceding to the next repair location. The Contractor shall accommodate the Engineer to ensure each location is witnessed. Any evaluation and mark out not witnessed shall be redone.

After all pavement evaluation and repair mark out locations have been completed in the field for a section of roadway, the Contractor shall provide to the Engineer an updated listing of all needed repairs. The updated listing of repairs shall be in the same format as shown on the contract plans and shall include any deleted, additions and/or changes in type or size of marked out repairs. The Engineer will review the updated listing of marked out repairs and inform the contractor within (5) five working days of receiving the updated repair listing of his approval or any, changes that must be included.

No pavement repairs for a section of roadway shall begin until the pavement has been evaluated, the removal boundary marked out, and the work witnessed and the updated listing approved by the Engineer. If the mark out is lost, removed or becomes unclear for any reason the Contractor shall notify the Engineer. The location(s) shall be reevaluated and marked at no addition cost to the State. Once a boundary line for a repair location has been approved by the Engineer the Contractor shall not make further alterations.

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### **Partial Depth Repairs.**

To insure that all defective concrete is removed, the Contractor shall add 25 mm to 50 mm to the boundary line of the defective concrete. Note that this will remove a minimum of 25 mm of good concrete.

#### Coring Method

Note that the drill bit size includes an additional 20mm for the removal of good concrete. All defective concrete shall lie within the template. When laying out coring near joints the Contractor shall confer with the Engineer to attain a satisfactory repair. When placing the template the Contractor shall attempt to keep the removal boundary as far away as possible from any joints to prevent coring into the adjacent lane or the leaving of thin portions of concrete. Over coring can produce small wedges of concrete that may de-bond and pop out. When coring very close to a joint, thin portions of concrete between the joint and the core hole may remain. These thin portions of concrete shall be removed as directed by the Engineer and the joint shall be reformed as needed.

#### Sawing Method

When determining the size of a repair area, the Contractor shall attempt to maintain a length to width shape factor ratio of 1½ to 1. For an area where it is not reasonable to maintain a shape factor of 1½ to 1 or less, and the Contractor marks out an area with a shape factor of 2 to 1 or greater, the Contractor shall pay special attention to designing or selecting a repair material that meets all specification, including cracking for the item where it will be used. The Contractor may with the approval of the Engineer alter repair areas with a ratio of 2 to 1 or greater to a 1½ to 1 ratio, with the additional area added being repaired at the Contractors expense. No repair may be altered so that the final area is greater than twice the initial area.

Any partial depth repair that does not conform to the type and size of repair specified in the approved pavement repair plan, may be, at the sole discretion of the Engineer, rejected and ordered redone at no additional cost to the State. In this situation the Engineer will determine the type and size of the redone repair, which could include a complete full depth repair of the pavement with the initial partial depth repair being paid to the Contractor.

### **Full Depth Repairs.**

The Contractor shall mark out the removal boundary lines following the details provided for in the contract plans, however some multiple slab repairs are more complex than others and will need clarification. Under this specification, the Engineer will clarify all aspects of the repair evaluation and mark out, including all details (such as slab lengths, transverse joint locations, and longitudinal ties, etc.), and give the Contractor approval to progress these repairs. The Contractor shall not make any repairs without approval of the repair plan by the Engineer. Any full depth repair that does not conform to the type and size of the repair specified in the approved pavement repair plan may at the sole discretion of the Engineer, be rejected and ordered redone at no additional cost to the State.

All saw cuts mark outs shall be a minimum of 150 mm from any area of deteriorated concrete. If the repair encroaches on the minimum distance from the transverse joint to the repair boundary then the repair boundary shall be moved beyond the transverse joint as shown in the contract plans.

### **METHOD OF MEASUREMENT**

This work shall be the calculated length between the project work limits in kilometers.

### **BASIS OF PAYMENT**

The unit price bid for this item shall include the cost of all labor, materials, and equipment necessary to evaluate and mark out the concrete pavement repairs. In addition, the cost for any reevaluating and remarking of boundaries for any pavement repairs rejected shall be included in the unit price bid of this item.