

## ITEM SPECIAL - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT

**DESCRIPTION.** THIS WORK SHALL CONSIST OF PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION, RIGID PAVEMENT REPLACEMENT, AND SHOULDER RESTORATION IN ACCORDANCE WITH DETAILS SHOWN IN THE PLANS. UNLESS OTHERWISE PROVIDED HEREIN, THE MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF 202, 301, 305, 310, 402, 404, 448, 451, 452, 453, 499 AND 446 AS APPLICABLE. THE REQUIREMENTS OF ITEM 451.16 SHALL BE WAIVED FOR THIS WORK.

**MATERIALS.** PORTLAND CEMENT CONCRETE SHALL BE CLASS C, ITEM 499 UNLESS OTHERWISE SPECIFIED IN THE PLANS.

JOINT SEALER SHALL MEET THE REQUIREMENTS OF 705.04 AND SHALL BE PRETESTED BEFORE SHIPMENT TO THE PROJECT.

BOND-BREAKER MATERIAL SHALL BE ON THE APPROVED LIST ISSUED BY THE LABORATORY.

\* OR SS 952

NONSHRINK NONMETALLIC GROUT SHALL MEET THE REQUIREMENTS OF ASTM C-881, TYPE I, GRADE 3, CLASS A, B OR C EXCEPT GEL TIME\*. THE GROUT SHALL CONSIST OF A TWO COMPONENT EPOXY OR POLYESTER RESIN BONDING COMPOUND THAT WILL FIRMLY ANCHOR THE DOWEL/TIE BAR WITHIN 15 MINUTES. THE GROUT SHALL BE ACCEPTED BY CERTIFICATION IN ACCORDANCE WITH 101.061.

**FULL DEPTH PAVEMENT SAWING.** THE LIMITS OF ALL REPAIRS WILL BE LOCATED AND MARKED BY THE ENGINEER. AEROSOL SPRAY FOR MARKING THE LIMITS OF DETERIORATED PAVEMENT REMOVAL SHALL BE PROVIDED BY THE CONTRACTOR. RIGID PAVEMENT AREAS EXHIBITING DETERIORATION AT THE SURFACE SHALL BE MARKED ONE (1) FOOT MINIMUM BEYOND THE LIMITS OF DETERIORATION BUT IN NO CASE SHALL THE MINIMUM DIMENSION OF THE RIGID REPLACEMENT BE LESS THAN SHOWN IN THE PLANS. PAVEMENT DESIGNATED TO BE REMOVED SHALL BE SAWED FULL DEPTH TRANSVERSELY AND ALONG THE LONGITUDINAL JOINT WITH A DIAMOND SAW BLADE.

IN AREAS WITH AN EXISTING BITUMINOUS OVERLAY, AN OFF-SET CUT MAY BE MADE THROUGH THE OVERLAY AT THE OPTION OF THE CONTRACTOR, AND THE OVERLAY REMOVED TO PROVIDE CLEARANCE FOR THE FULL DEPTH SAW CUT THROUGH THE RIGID PAVEMENT. IF SUCH A SAW CUT IS MADE AT THE OPTION OF THE CONTRACTOR, IT SHALL BE AT NO ADDITIONAL COST TO THE STATE.

**RIGID PAVEMENT REMOVAL.** PAVEMENT SHALL BE REMOVED USING THE LIFT OUT METHOD AND SHALL NOT CAUSE SPALLING OR CRACKING OF THE ADJACENT PAVEMENT AND SHALL RESULT IN NO DISTURBANCE TO THE UNDERLYING SUBBASE/SUBGRADE OR SURFACED SHOULDER. THE CONTRACTOR MAY ELECT TO MAKE ADDITIONAL SAW CUTS TO FACILITATE THE REMOVAL OF THE PAVEMENT, HOWEVER, ONLY THE CUTS DESIGNATED BY THE ENGINEER WILL BE MEASURED FOR PAYMENT.

BREAKING THE PAVEMENT AND CLEANING THE MATERIAL OUT WITH A BACKHOE WILL NOT BE PERMITTED UNLESS THE ENGINEER DETERMINES THE LIFT OUT METHOD IS NOT FEASIBLE DUE TO PAVEMENT DETERIORATION.

IF THE ADJACENT PAVEMENT IS DAMAGED DURING THE PAVEMENT SAWING OR RIGID PAVEMENT REMOVAL, AN ADDITIONAL FULL DEPTH DIAMOND BLADE SAW CUT SHALL BE MADE THE FULL WIDTH OF THE LANE AT A LENGTH THAT WILL ENCOMPASS THE DAMAGED PAVEMENT. THIS ADDITIONAL WORK WILL BE PERFORMED AT NO ADDITIONAL COST TO THE STATE.

**SUBBASE/SUBGRADE CORRECTION.** PRIOR TO PLACING THE CONCRETE FOR THE RIGID REPLACEMENT, ANY SUBBASE/SUBGRADE MATERIAL THAT IS DISTURBED BELOW THE DESIRED LEVEL OF CLEANOUT SHALL BE REMOVED AND THE PATCH AREA COMPACTED TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL REPLACE THE SUBBASE/SUBGRADE MATERIAL REMOVED WITH CONCRETE AS PART OF THE RIGID REPLACEMENT AT NO ADDITIONAL COST TO THE STATE.

**FURNISHING AND PLACING NEW STEEL.** ALL REINFORCEMENT, DOWELS AND TIE BARS SHALL BE OF THE SIZE INDICATED IN THE PLAN. DOWEL BARS SHALL BE SMOOTH AND EPOXY COATED AS PER 709.13. THE TIE BARS SHALL BE ROUND, DEFORMED BARS AND EPOXY COATED AS PER 709.13. DOWEL/TIE BAR HOLES SHALL BE DRILLED WITH HYDRAULIC OR ELECTRIC DRILLS. ALL DRILL HOLES SHALL BE BLOWN CLEAN WITH COMPRESSED AIR PRIOR TO GROUTING. THE DOWEL/TIE BARS SHALL BE PERMANENTLY ANCHORED INTO THE EXISTING PAVEMENT WITH GROUT. THE GROUT SHALL BE MECHANICALLY INJECTED INTO THE REAR PORTION OF THE HOLE. ENOUGH MATERIAL SHALL BE INJECTED TO PROVIDE COMPLETE COVERAGE AROUND THE DOWEL/TIE BAR TO INSURE THEY ARE PERMANENTLY ANCHORED INTO THE EXISTING PAVEMENT. A SATISFACTORY METHOD SHALL BE USED TO HOLD THE DOWEL/TIE BAR IN THE PROPER ALIGNMENT UNTIL THE GROUT HAS HARDENED.

**RIGID REPLACEMENT.** THE RIGID REPLACEMENT SHALL NOT BE PLACED UNTIL THE GROUT AROUND THE DOWEL/TIE BAR HAS HARDENED. FORMS SHALL BE USED TO PROVIDE A STRAIGHT AND NEAT EDGE AT THE SHOULDER. EACH PATCH SHALL BE CAST IN ONE CONTINUOUS FULL-DEPTH OPERATION. THE CONCRETE SHALL BE CONSOLIDATED IN PLACE BY USE OF AN INTERNAL TYPE VIBRATOR. THE CONCRETE SHALL BE CONSOLIDATED AROUND THE EDGES OF THE PATCH AND INTERNALLY. INTERNAL VIBRATORS FOR CONSOLIDATING THE CONCRETE SHALL BE AN APPROVED MECHANICAL SPUD TYPE. THE VIBRATORS SHALL BE CAPABLE OF VISIBLY AFFECTING THE CONCRETE FOR A DISTANCE OF 12 INCHES FROM THE VIBRATOR HEAD.

**FINISHING AND TEXTURING.** PATCHES THAT ARE LESS THAN 12 FEET IN LENGTH SHALL BE SCREEDD EITHER TRANSVERSELY OR LONGITUDINALLY AS DIRECTED BY THE ENGINEER. FOR PATCHES OVER 12 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE.

WHILE THE CONCRETE IS STILL PLASTIC, THE CONTRACTOR SHALL TEST THE PATCH SURFACE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SLABS BY USE OF A STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH THE STRAIGHTEDGING SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE PAVEMENT CENTERLINE WITH THE ENDS RESTING ON THE EXISTING PAVEMENT AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. THE STRAIGHTEDGE SHOULD BE IN CONTACT WITH THE EXISTING PAVEMENT WHILE DRAWING IT ACROSS THE PATCH AND ANY HIGH OR LOW SPOTS EXCEEDING 1/8 INCH IN 10 FEET SHOULD BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED. THE SURFACE OF THE CONCRETE SHALL BE TEXTURED TO MATCH THE SURROUNDING PAVEMENT.

**CURING.** CONCRETE CURING COMPOUND SHALL BE APPLIED TO THE RIGID REPLACEMENT SURFACE IN ACCORDANCE WITH 451.10. IF THE RIGID REPLACEMENT IS TO BE OVERLAID WITH ASPHALT CONCRETE BEFORE OPENING TO TRAFFIC, THE CONTRACTOR MAY USE A 407 TACK COAT IN LIEU OF A CONCRETE CURING MEMBRANE AT A RATE OF 0.10 GALLONS PER SQUARE YARD.

**JOINTS.** TRANSVERSE JOINTS BETWEEN THE RIGID REPLACEMENT AND THE EXISTING RIGID PAVEMENT SHALL BE SAWED OR FORMED BEFORE THE REPAIR IS OPENED TO TRAFFIC. ANY CONCRETE OR LAITANCE ABOVE THE PREFORMED EXPANSION JOINT FILLER SHALL BE REMOVED. BOTH FACES OF THE JOINT SHALL BE THOROUGHLY CLEANED BY SANDBLASTING TO THE DEPTH OF THE BOTTOM OF THE PROPOSED SEALER. THE SANDBLAST CLEANING OPERATION SHALL BE SUCH THAT WHEN COMPLETED THE CONCRETE JOINT WHICH IS TO RECEIVE THE NEW JOINT SEALANT SHALL BE COMPLETELY FREE OF ALL DIRT, DUST, TAR AND ASPHALT, DISCOLORATION AND STAIN; CURING COMPOUND; AS WELL AS ANY AND ALL OTHER FORMS OF CONTAMINATION, LEAVING A CLEAN, NEWLY EXPOSED CONCRETE SURFACE. THE TOP OF THE FRESHLY PLACED SEALANT SHALL BE 1/4 INCH (+1/16 INCH) BELOW THE PAVEMENT SURFACE. THE SHAPE FACTOR (DEPTH TO WIDTH RATIO) OF THE SEALANT SHALL BE BETWEEN ONE (1) AND TWO (2).

**WEARING COURSE REPLACEMENT.** EXISTING BITUMINOUS OVERLAY REMOVED SHALL BE REPLACED IN ACCORDANCE WITH DETAILS SHOWN IN THE PLANS AND THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT.

**SHOULDER RESTORATION.** PRIOR TO OPENING THE RIGID REPLACEMENT TO TRAFFIC, THE SHOULDER SHALL BE RESTORED TO THE ORIGINAL LINE AND GRADE USING AN AGGREGATE OR BITUMINOUS CONCRETE IN ACCORDANCE WITH THE PLANS OR AS APPROVED BY THE ENGINEER. THE LOW AREAS SHALL BE FILLED AND COMPACTED FLUSH WITH THE SURROUNDING SHOULDER. MATERIALS REMOVED FROM THE SHOULDER SHALL BE DISPOSED OF BY THE CONTRACTOR.

**OPENING TO TRAFFIC.** THE RIGID REPLACEMENT MAY BE OPENED TO TRAFFIC WHEN NEW CONCRETE HAS ATTAINED A MODULUS OF RUPTURE OF 400 P.S.I. BEAMS SHALL BE CAST BY THE ENGINEER TO DETERMINE THE MODULUS OF RUPTURE.

**TRAFFIC SAFETY.** WHEN TRAFFIC IS MAINTAINED IN ADJACENT LANES, THE CONTRACTOR SHALL SCHEDULE HIS WORK SUCH THAT ALL REPAIRS 60 FEET OR LESS IN LENGTH ARE COMPLETED WITHIN 48 HOURS OF THE PAVEMENT REMOVAL. REPAIRS 10 FEET OR LESS IN LENGTH SHALL BE COVERED WITH A STEEL PLATE IF THEY ARE LEFT UNFILLED FROM 4:00 P.M. FRIDAY TO 8:00 A.M. MONDAY OR 8:00 A.M. TUESDAY IF MONDAY IS A HOLIDAY. WHEN THE PAVEMENT HAS BEEN REMOVED AND THE CONTRACTOR IS UNABLE TO COMPLETE THE REQUIRED RIGID REPLACEMENT IN THE TIME SPECIFIED ABOVE, THE EXCAVATION SHALL BE FILLED WITH A COMMERCIALY AVAILABLE BITUMINOUS MIXTURE OR OTHER SUITABLE TEMPORARY PATCH MATERIAL WITH A DURABLE SURFACE AS DIRECTED BY THE ENGINEER. OPENINGS 10 FEET OR LESS MAY BE COVERED WITH A STEEL PLATE. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THESE PATCHES WHILE THEY ARE IN SERVICE. THE COST OF PLACING, MAINTAINING, REMOVING AND DISPOSING OF THE TEMPORARY PATCHES WILL BE AT THE CONTRACTOR'S EXPENSE.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT.** THE QUANTITY OF FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT TO BE PAID FOR SHALL BE THE NUMBER OF SQUARE YARDS OF RIGID PAVEMENT REMOVED TO THE LIMITS ESTABLISHED BY THE ENGINEER. ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL PAVEMENT REMOVED, SUBBASE/SUBGRADE CORRECTION, RIGID REPLACEMENT, FURNISHING AND PLACING NEW STEEL, JOINTS, WEARING COURSE REPLACEMENT, SHOULDER RESTORATION AND ALL INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

THE QUANTITY OF FULL DEPTH PAVEMENT SAWING TO BE PAID FOR SHALL BE THE NUMBER OF LINEAR FEET OF TRANSVERSE AND LONGITUDINAL FULL DEPTH SAW CUTS COMPLETED AT THE DESIGNATED LIMITS OF THE REPAIR AREAS.

PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT
252	LIN. FT.	FULL DEPTH PAVEMENT SAWING

## SUBBASE/SUBGRADE FAILURES

IF, AFTER REMOVAL OF THE RIGID PAVEMENT, THE ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH COMPACTED 304 AGGREGATE AND PLACE AGGREGATE DRAINS AS NECESSARY. QUANTITIES OF ITEM 301 BITUMINOUS AGGREGATE BASE AND ITEM 304 AGGREGATE BASE HAVE BEEN PROVIDED TO RECONSTRUCT THE PORTION OF THE EXISTING PAVED BERM DISTURBED BY THE TRENCHING OPERATIONS FOR PLACING THE ITEM 605 AGGREGATE DRAINS.

PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNIT	DESCRIPTION
203	CU. YDS.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
301	CU. YDS.	BITUMINOUS AGGREGATE BASE, AC-20
304	CU. YDS.	AGGREGATE BASE
605	LIN. FT.	AGGREGATE DRAINS

FOR ESTIMATED QUANTITIES, SEE SHEET 37