

ITEM 509 - REINFORCING STEEL, AS PER PLAN

SHALL BE USED AS DIRECTED BY THE ENGINEER TO REPLACE REINFORCING STEEL WHICH IS BENT, ELONGATED, MISSING, OR EXTREMELY CORRODED. BARS SHALL BE THE SAME SIZE AS THE ORIGINAL BARS AND SHALL BE PLACED AS NEAR AS POSSIBLE TO THEIR ORIGINAL LOCATION. BARS SHALL BE LAPPED ACCORDING TO SEC. 509.08. PAYMENT FOR THIS ITEM SHALL INCLUDE THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE ABOVE WORK, INCLUDING REMOVAL OF THE EXISTING STEEL. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO PERFORM THIS WORK.

ITEM 509 - REINFORCING STEEL, AS PER PLAN 200 POUNDS

ITEM 510 - DOWEL HOLES, AS PER PLAN

THIS WORK SHALL CONFORM TO SS-853 AND SS-956.

ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING PORTLAND CEMENT CONCRETE IN ACCORDANCE WITH 511 WITH THE FOLLOWING ADDITIONS:

1. ALL CONCRETE SURFACES THAT WILL BE IN CONTACT WITH CLASS S CONCRETE SHALL BE THOROUGHLY SANDBLASTED AND AIR CLEANED.
2. BEFORE THE PLACEMENT OF CONCRETE, ALL OF THE EXISTING CONCRETE SURFACES MENTIONED ABOVE SHALL BE COATED WITH A TWO-COMPONENT EPOXY BONDING AGENT. THE BONDING AGENT SHALL CONFORM TO AASHTO M-235-73I, CLASS III. BONDING MATERIAL SHALL BE MIXED AND PLACED PER MANUFACTURER'S RECOMMENDATIONS.

ITEM SPECIAL - STEEL DRIP STRIP

AFTER THE CONCRETE SURFACES HAVE BEEN SEALED A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE DRIP STRIPS SHALL BE EMBEDDED IN A 1/8" x 5" LAYER OF HYPALON SEALANT. THE STRIPS SHALL BE FASTENED AT 0'-9" C/C MAXIMUM WITH NO. 10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WINGWALL. WHERE SPLICES ARE REQUIRED A 3-IN. (MIN) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" x 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167, TYPE 304, MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - SQ. FT. - STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE ITEM. SEALANT SHALL MEET GOVERNMENT SPECIFICATION TT-S-0023C, TYPE II.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)

AN EPOXY SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGE AS LISTED BELOW. SEE THE PROPOSAL FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, AND PROCEDURES.

1. BRIDGE CURBS AND DECK EDGES
2. ABUTMENTS INCLUDING ENCASEMENTS, BRIDGE SEATS AND WINGWALLS
3. DIAPHRAGMS (ALL FACES)
4. OUTSIDE AND BOTTOM FACES OF EXTERIOR T-BEAMS

ITEM SPECIAL - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (3 3/4 INCHES THICK)

THIS ITEM SHALL BE IDENTICAL TO ITEM SPECIAL - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (1 3/4 INCHES THICK) EXCEPT THAT ALL REFERENCE TO SDC OVERLAY (1 3/4 INCHES THICK) SHALL BE CONSIDERED TO READ SDC OVERLAY (3 3/4 INCHES THICK). SEE NOTE IN PROPOSAL.

ITEM SPECIAL - IMPREGNATED FOAM JOINT SEAL (IFJS)

I. DESCRIPTION: THIS WORK SHALL CONSIST OF SEALING OPEN JOINTS ON BRIDGES USING IMPREGNATED FOAM IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

II. MATERIAL: THE MATERIAL SHALL BE A PRECOMPRESSED SELF-ADHESIVE IMPREGNATED FOAM JOINT SEALANT SUCH AS EMSEAL PCSA, PERMABAND 8100 OR WILL-SEAL (TYPE 250). EMSEAL U.S.A., IS LOCATED AT 344 MILL RD. IN STAMFORD, CT. 06903 AND HAS A TELEPHONE NUMBER OF (203) 322-3828. PERMABAND IS AVAILABLE FROM PERMAQUIK (CANADA) LTD WHICH IS LOCATED AT 3043 UNIVERSAL DRIVE IN MISSISSAUGA, ONTARIO L4X2E2; TELEPHONE (416) 625-9444. WILL-SEAL (TYPE 250) IS AVAILABLE FROM ILLBRUCK/USA INC. WHICH IS LOCATED AT 3800 WASHINGTON AVE. NORTH IN MINNEAPOLIS, MINNESOTA 55412; TELEPHONE (612) 521-3555.

ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER ARE SURE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF JOINT SEALING.

III. SURFACE PREPARATION: THE FACES TO WHICH THE SEAL MUST ADHERE SHALL BE SANDBLASTED CLEAN AND BE FREE OF FOREIGN MATERIAL SUCH AS DIRT, DUST, GREASE, FORM OIL, RELEASE AGENTS AND ANY OTHER MATERIAL DETRIMENTAL TO ADHESION OF THE SEALANT.

IV. APPLICATION: JOINTS SEALS SHALL BE INSTALLED ONLY WHEN THE SURFACES ARE DRY AND THE SURFACE TEMPERATURE IS ABOVE 50°F. THE CONCRETE SURFACES SHALL BE PRIMED AS RECOMMENDED BY THE MANUFACTURER. THE FOAM SEAL SHALL BE REMOVED FROM THE PACKAGING AND ITS NARROW EDGE INSERTED INTO THE JOINT OPENING. THE DEPTH FACE WITH THE SELF-ADHESIVE BACKING SHALL BE PRESSED AGAINST ONE SIDE OF THE JOINT SO THAT FOAM IS HELD IN PLACE WHILE IT RECOVERS.

AT TEMPERATURES ABOVE 70°F, ALL MATERIALS WILL RECOVER IN A FEW HOURS. AT TEMPERATURES BELOW 70°F THE RECOVERY OF BITUMEN IMPREGNATED MATERIALS SHALL BE ACCELERATED BY HEATING THE MATERIAL WITH AN OPEN FLAME, GAS BURNER, INFRA-RED LAMP OR HOT-AIR BLOWER.

A CONTINUOUS LENGTH OF JOINT SEAL SHALL BE ACHIEVED BY JOINING INDIVIDUAL STRIPS ONLY BY MEANS OF SCARFED JOINTS CUT AT 45° OR LESS RELATIVE TO THE SIDES OF THE JOINT. THE SCARFED ENDS MUST BE PUSHED WELL PAST ONE ANOTHER. THE SEAL SHALL NOT BE PULLED OR STRETCHED SO THAT GAPS BETWEEN SUCCESSIVE LENGTHS ARE PREVENTED.

V. METHOD OF MEASUREMENT: FOOTAGE UNDER THIS ITEM SHALL BE THE LINEAR FEET OF IMPREGNATED FOAM SEAL INSTALLED IN THE OPEN JOINTS THAT ARE COMPLETE, IN PLACE AND ACCEPTED.

VI. BASIS OF PAYMENT: THE ACCEPTED QUANTITIES OF SEALED JOINTS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR PREPARING THE SURFACES, FURNISHING AND PLACING ALL MATERIALS AND ALL LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT SEAL ACCORDING TO SPECIFICATIONS. PAYMENT WILL BE MADE UNDER ONE OF THE FOLLOWING:

ITEM	UNIT	DESCRIPTION
SPECIAL	LINEAR FOOT	6" x 3" IMPREGNATED FOAM JOINT SEAL
SPECIAL	LINEAR FOOT	2" x 2" IMPREGNATED FOAM JOINT SEAL

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES WITH SUPERIOR BONDING MATERIALS

A. DESCRIPTION: THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND THE FORMING, MIXING, PLACING, FINISHING AND CURING OF THE PATCHES AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PERFORMED UPON THE FOLLOWING EXPOSED CONCRETE BRIDGE COMPONENTS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

1. DECK EDGES
2. ABUTMENTS AND WINGWALLS
3. T-BEAMS
4. FACES OF DIAPHRAGM

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B. MATERIALS: THE PATCHING MATERIAL SHALL BE HORN 240 CONCRETE, FAST CRETE, BOSTIK 276, SET 45, SIKATOP 122 AND 123, THERMAL-CHEM PRODUCT NO. 304 OR POLY CARB MARK 193.4 OR 194. THE MATERIAL SHALL BE TINTED TO CURE TO THE COLOR OF THE EXISTING CONCRETE. ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER ARE SURE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF PATCHING CONCRETE STRUCTURES WITH THE SELECTED MATERIAL.

C. REMOVAL OF CONCRETE: THE ENGINEER SHALL SOUND THE STRUCTURE AND OUTLINE THE AREAS TO BE REMOVED. ALL LOOSE, SOFT, HONEY-COMBED, AND DISINTEGRATED CONCRETE PLUS ONE-FOURTH INCH DEPTH OF SOUND CONCRETE SHALL BE REMOVED. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE-HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM THREE-FOURTH INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATION, THE ENGINEER WILL RESOUND THE AREAS TO INSURE THAT ONLY SOLID CONCRETE REMAINS. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN AND WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL IN ANY WAY. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35 POUND CLASS. WHERE EXISTING REINFORCING BARS WOULD BE LESS THAN ONE INCH FROM THE PROPOSED FINISHED SURFACE OF CONCRETE, THEY SHALL, IF PRACTICAL, BE DRIVEN BACK INTO RECESSES CUT IN THE MASONRY TO OBTAIN THAT COVERAGE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

D. SURFACE PREPARATION: CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. SURFACE SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO INSURE THE REMOVAL OF CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND. FOR PATCHES WHICH DO NOT USE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE DRY. FOR PATCHES WHICH REQUIRE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED. ALL UNCHIPPED SURFACES THAT WILL RECEIVE NEW MATERIAL SHALL BE MECHANICALLY ROUGHENED.

E. FORMS: IF REQUIRED TO RESTORE VERTICAL SURFACES IN AN ACCEPTABLE MANNER, FORMS SHALL BE ERECTED FLUSH WITH THE FACES OF REPAIR AREAS TO INSURE THAT THE MATERIAL DOES NOT ESCAPE FROM THE PATCH AREA.

STATE OF OHIO						3	10
DEPARTMENT OF TRANSPORTATION							
DISTRICT 12 BRIDGE DEPARTMENT							
STRUCTURE REPAIR NOTES							
BRIDGE LAK-20-2976 OVER ARCOLA CREEK							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
EJA	PJM	PJM	DWL	GWM	7-2-84		