

5.0 PREPARATION OF EXISTING DECK

THE ENTIRE TOP SURFACE OF THE REINFORCED CONCRETE DECK SHALL BE REMOVED TO A DEPTH OF 1-1/4" MINIMUM, MEASURED FROM ORIGINAL GRADE TO TOP OF EXPOSED AGGREGATE. AFTER THIS INITIAL REMOVAL, THE CONTRACTOR SHALL SOUND THE DECK AND OUTLINE THE AREAS OF LOOSE AND UNSOUND CONCRETE FOR REMOVAL SUBJECT TO THE APPROVAL OF THE ENGINEER. ADDITIONAL DETERIORATED CONCRETE DISCOVERED AFTER THIS FIRST PASS SHALL BE COMPLETELY REMOVED WITH THE USE OF HAND-HELD HYDRODEMOLITION WANDS. JACK HAMMERS OR OTHER MECHANICAL CONCRETE REMOVAL DEVICES WILL NOT BE ALLOWED ON THE BRIDGE DECK BUT MAY BE USED ON THE BACKWALLS. AEROSOL SPRAY PAINT FOR OUTLINING SHALL BE PROVIDED BY THE CONTRACTOR.

THE REQUIREMENT TO PROVIDE A MINIMUM 3/4" CLEARANCE AROUND ALL REINFORCING BARS THAT ARE MORE THAN 1/2" EXPOSED IS WAIVED, PROVIDING THAT THE CONCRETE IS SOUND AND NOT FRACTURED. WHEN THE BOND BETWEEN THE CONCRETE AND ANY REINFORCING STEEL HAS BEEN DESTROYED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE STEEL EXCEPT WHERE OTHER REINFORCING STEEL MAKES THIS IMPRACTICAL. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. REINFORCEMENT THAT IS DAMAGED BY ANY OF THE CONTRACTOR'S OPERATIONS SHALL BE REMOVED AND REPLACED AT NO COST TO THE DEPARTMENT. WHERE THE DECK IS SOUND FOR LESS THAN ONE HALF OF ITS ORIGINAL DEPTH, THE CONCRETE SHALL BE REMOVED FULL DEPTH EXCEPT FOR LIMITED AREAS AS MAY BE DESIGNATED BY THE ENGINEER. AFTER COMPLETION OF EACH REMOVAL OPERATION, THE CONTRACTOR WILL AGAIN SOUND AND RE-OUTLINE UNSOUND AREAS OF THE DECK SUBJECT TO APPROVAL OF THE ENGINEER TO ENSURE THAT ONLY SOUND CONCRETE REMAINS. FINAL SOUNDING OF THE DECK SHALL BE DONE BY THE ENGINEER AND SHALL NOT BE PERFORMED WITHIN 24 HOURS AFTER A RAIN. IN NO CASE SHALL THE FINAL SOUNDING BE MADE UNLESS THE DECK IS DRY. FINAL SOUNDING SHALL CONSIST OF AS MANY SUCCESSIVE RESOUNDINGS AS REQUIRED TO ENSURE THAT ALL DETERIORATED AND FRACTURED CONCRETE HAS BEEN REMOVED.

VEHICLES OTHER THAN APPROVED CONSTRUCTION EQUIPMENT WILL NOT BE PERMITTED ON THOSE SECTIONS OF THE DECK WHERE CONCRETE REMOVAL OPERATIONS HAVE BEGUN. CONTAMINATION OF THE DECK BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL.

FORMS SHALL BE PROVIDED TO SUPPORT CONCRETE PLACED IN FULL-DEPTH REPAIR AREAS. THE FORMS FOR AREAS OF UP TO 4 SQUARE FEET MAY BE SUSPENDED FROM WIRES FROM THE REINFORCING STEEL. FOR AREAS GREATER THAN 4 SQUARE FEET, THE FORMS SHALL BE SUPPORTED FROM THE PRIMARY MEMBERS OF THE SUPERSTRUCTURE OR BY SHORING FORM BELOW.

AREAS OF FULL-DEPTH REPAIR SHALL HAVE THE CONCRETE FACES AND REINFORCING STEEL CLEANED AS DESCRIBED BELOW.

SURFACES TO WHICH THE OVERLAY IS TO BOND SHALL INCLUDE EXPOSED REINFORCING AND STRUCTURAL STEEL, THE WORK FACE OF A PREVIOUSLY PLACED OVERLAY AND THE FACES OF CURBS, BARRIERS, ETC., UP TO A HEIGHT OF AT LEAST 1 INCH ABOVE THE PROPOSED OVERLAY SURFACE. NOT MORE THAN 24 HOURS PRIOR TO PLACEMENT OF THE MSC OVERLAY, SUCH SURFACES SHALL BE BLAST CLEANED BY AN ABRASIVE BLASTING OR AN APPROVED METHOD OF WATER BLASTING WITH 7000 PSI MINIMUM PRESSURE. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND ALL CONTAMINANTS DETRIMENTAL TO THE ACHIEVEMENT OF AN ADEQUATE BOND.

BRIDGE SCUPPERS SHALL BE CLEANED OF ALL FOREIGN MATTER AND PLUGGED PRIOR TO HYDRODEMOLITION OR PLACEMENT OF THE OVERLAY. SCUPPERS SHALL BE UNPLUGGED TO PERMIT FREE DRAINAGE OF WATER FROM THE DECK SURFACE FOLLOWING OVERLAY PLACEMENT.

5.1 HYDRODEMOLITION EQUIPMENT

THE EQUIPMENT SHALL BE A SELF-PROPELLED MACHINE THAT UTILIZES A HIGH PRESSURE WATER JET STREAM CAPABLE OF REMOVING CONCRETE TO THE DEPTH SPECIFIED HEREIN AND/OR AS SHOWN ON THE PLANS AND BE CAPABLE OF REMOVING RUST AND CONCRETE PARTICLES FROM REINFORCING STEEL. HAND HELD HIGH PRESSURE WANDS SHOULD BE USED IN AREAS THAT ARE INACCESSIBLE TO THE SELF-PROPELLED MACHINE IN PATCHING AREAS THAT REQUIRE MINOR "TRIM" WORK TO REMOVE THE REMAINING UNSOUND CONCRETE.

POSSIBLE SOURCES OF EQUIPMENT FOR THIS PURPOSE ARE:

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| FIP
INTERNATIONAL MARKETING CORPORATION
DRAWER 147
SOMERDALE, NJ 08083
(609) 784-8811
(609) 783-6384 | DYNAPAC
P.O. BOX 368
STANHOPE, NJ 07874
(201) 347-0700 |
| CONJET
JET AWAY CORPORATION
P.O. BOX 88074 -TUKWILA BRANCH
SEATTLE, WA 98188
(206) 242-6500 | ADMAC
ADVANCED MINING &
CONSTRUCTION SYSTEMS
21246 68TH AVENUE SOUTH
KENT, WA 98032
(206) 395-4040 |

THE CONTRACTOR MAY CHOOSE TO USE OTHER MAKES OF EQUIPMENT PROVIDING THEY ARE MANUFACTURED SPECIFICALLY FOR CONCRETE REMOVAL.

STREAM OR LAKE WATER WILL NOT BE PERMITTED FOR USE IN THE HYDRODEMOLITION MACHINE. ALL WATER USED MUST BE POTABLE.

THE CONTRACTOR IS RESPONSIBLE FOR SHIELDING THE HYDRODEMOLITION MACHINE AND HIGH PRESSURE WAND TO CONTROL FLYING DEBRIS FROM MAINTAINED TRAFFIC (BOTH ON THE BRIDGE AND BELOW)

CLEANING SHOULD BE PERFORMED WITH A VACUUM SYSTEM CAPABLE OF REMOVING WET DERRIS AND WATER ALL IN THE SAME PASS. THE DECK SHOULD THEN BE BLOWN DRY WITH AIR TO REMOVE EXCESS WATER.

6.0 FINISHING MACHINE DRY RUN

AFTER THE SCREED RAILS OR OTHER SUPPORTS HAVE BEEN SET TO PROPER PROFILE AND PRIOR TO PLACING THE OVERLAY, THE FINISHING MACHINE, WITH FILLER BLOCKS ATTACHED TO THE BOTTOM OF THE SCREED, SHALL BE PASSED OVER THE ENTIRE AREA OF THE DECK TO BE OVERLAID. THE THICKNESS OF THE FILLER BLOCKS SHALL BE THE PLAN SPECIFIED OVERLAY THICKNESS MINUS 1/8 INCH.

THE FILLER BLOCKS SHOULD CLEAR THE SCARIFIED DECK SURFACE BY NOT MORE THAN 1/8 INCH. CONCRETE WHICH DOES NOT CLEAR THE FILLER BLOCKS SHALL BE REMOVED.

7.0 PLACING, CONSOLIDATED AND FINISHING

IMMEDIATELY BEFORE THE MSC OVERLAY IS PLACED, THE NEWLY EXPOSED CONCRETE SURFACE SHALL BE CLEANED WITH AN AIR BLAST AND THEN COVERED WITH A COATING OF BONDING GROUT. THE MSC OVERLAY SHALL BE PLACED ONLY WHEN THE EXISTING DECK IS SURFACE DRY. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND, MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT-LIKE CONSISTENCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE APPLIED WITH A STIFF BRUSH OR BROOM TO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE SCRUBBED ONTO SURFACE DRY DECKS. (SURFACES WHICH ARE DRY ENOUGH TO ABSORB SOME OF THE MOISTURE FROM THE GROUT) WITH ENOUGH CARE TO ENSURE THAT ALL SURFACES ARE EVENLY COVERED AND THAT EXCESS GROUT WILL NOT COLLECT IN LOW AREAS. THE BONDING GROUT SHALL BE APPLIED FOR ONLY A SHORT DISTANCE, NOT TO EXTEND BEYOND THE REAR WHEELS OF THE MIXER OR MSC CARRIER, IN ADVANCE OF THE PLACEMENT OF THE MSC OVERLAY AND SHALL NOT BE ALLOWED TO DRY PRIOR TO OVERLAY PLACEMENT. THE GROUT SHALL BE MIXED AND PLACED WITHIN THE SAME TIME REQUIREMENTS AS FOR THE MSC OVERLAY. THE BONDING GROUT SHALL INCLUDE MICROSILICA IF RECOMMENDED BY THE MICROSILICA MANUFACTURER. IF USED THE GROUT PROPORTIONING SHALL BE AS DIRECTED BY THE MANUFACTURER.

THE NEWLY EXPOSED SURFACES IN FULL-DEPTH REPAIR AREAS SHALL BE SIMILARLY CLEANED AND COATED WITH BONDING GROUT IMMEDIATELY PRIOR TO PLACING 511 CONCRETE.

CONCRETE FOR FULL-DEPTH REPAIRS SHALL BE 511 CONCRETE OR, AT THE OPTION OF THE CONTRACTOR, MSC PLACED SIMULTANEOUSLY WITH THE OVERLAY. WHEN 511 CONCRETE IS USED, IT SHALL BE PLACED UP TO THE PLAN LOWER BOUNDARY OF THE 1 1/4 INCH THICK OVERLAY, GIVEN A BROOM FINISH, AND CURED AS SPECIFIED IN 8.0.

CONTAMINATION OF THE WETTED DECK BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4-MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE CONCRETE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE FINISHING MACHINE.

IMMEDIATELY FOLLOWING APPLICATION OF THE BONDING GROUT, THE MSC OVERLAY SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE PLAN SURFACE. HAND VIBRATORS SHALL BE USED FOR FULL DEPTH REPAIR, VARIABLE DEPTH AREAS, AT ALL EDGES AND ADJACENT TO JOINT BULKHEADS.

AN EVAPORATION RETARDANT AND FINISHING AID MAY BE USED AT THE CONTRACTORS OPTION PRIOR TO THE TINING OPERATION. ANY PRODUCT USED FOR SUCH PURPOSE SHALL BE SPECIFICALLY MARKETED FOR SAID USE. (PLAIN WATER IS NOT ACCEPTABLE) THE APPLICATION RATE SHALL NOT EXCEED THE HOURLY SURFACE EVAPORATION RATE AS DETERMINED BY FIGURE 1. (SEE PAGE 11 OF S.S. 845)

AFTER THE MSC HAS BEEN CONSOLIDATED AND FINISHED, IT SHALL BE TEXTURED TRANSVERSELY TO PROVIDE A RELATIVELY UNIFORM PATTERN OF GROOVES SPACED ON 5/8-INCH CENTERS WITH A TOLERANCE OF + 1/8 INCH. GROOVES SHALL BE APPROXIMATELY 0.15 INCHES DEEP AND 0.10 INCHES WIDE. A STRIP OF SURFACE 9 TO 12 INCHES WIDE ADJACENT TO CURBS AND BARRIERS SHALL NOT BE TEXTURED.

THE CONTRACTOR SHALL STENCIL THE DATE OF CONSTRUCTION (MONTH AND YEAR) AND THE LETTERS MS INTO THE OVERLAY BEFORE IT TAKES ITS FINAL SET. THE DATE SHALL BE LOCATED IN THE RIGHT-HAND CORNER OF THE DECK AT THE FORWARD ABUTMENT. IT SHALL BE PLACED PARALLEL TO THE EDGE OF THE OVERLAY AND CENTERED AT 12 INCHES IN FROM BOTH THE EDGE OF THE OVERLAY AND END FINISH. THE NUMERALS SHALL BE 3 TO 4 INCHES IN HEIGHT, 1/4 INCH IN DEPTH AND FACE THE CENTERLINE OF THE ROADWAY.

LONGITUDINAL JOINTS ARE PERMITTED, BUT ONLY TO THE EXTENT NECESSARY TO ACCOMMODATE THE WIDTH OF THE FINISHING MACHINE, TO FACILITATE CHANGES IN ROADWAY CROWN, AND TO PERMIT MAINTENANCE OF VEHICULAR TRAFFIC, EXCEPT AS APPROVED BY THE DIRECTOR. LONGITUDINAL JOINTS SHALL NOT BE USED IN CLOSE PROXIMITY TO FACES OF CURBS OR BARRIERS OR AT EDGES OF DECK. ALL JOINTS IN THE OVERLAY SHALL BE FORMED.

ANY PONDING PROBLEM WHICH IS NOTED PRIOR TO FINAL ACCEPTANCE OF THE OVERLAY SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE STATE.

A 10-FOOT STRAIGHTEDGE SHALL BE USED TO CHECK THE OVERLAY DIRECTLY BEHIND THE FINISHING MACHINE. IT SHALL ALSO BE USED TO CHECK TRANSVERSELY ALONG THE EDGES OF THE OVERLAY WHERE HAND FINISHING IS DONE. ANY IRREGULARITIES EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED IMMEDIATELY.