Memorandum

To: Bridge Design

From: NJA/dac

Date: 7/15/2013

Re: High Early Strength Concrete

As per NJA and JMW, the following description shall be inserted into the plans for projects requiring high early strength concrete:

The concrete mixture design shall be furnished by the Contractor for approval by the Materials Division. Mixture design parameters are as follows:

Required Strength:	4000 psi in 24 hours
Total Air Content:	3-6 %
Maximum Slump:	6 inches

Non-chloride based accelerator may be used if the ambient temperature is 50°F or less, but shall not be used if the ambient temperature is greater than 50°F.

Synthetic structural fibers shall be used. The Contractor shall select a manufacturer from MDOT's Approved Products List, and the manufacturer's recommendations shall be followed for the dosage rate.

Curing is to be continuous until 4000 psi is attained. Traffic is to be diverted from the repair area until this value is reached. The Contractor may use the Maturity Method per Section 907-804 to estimate the concrete compressive strength for the purposes of releasing the repair area to traffic. However, final acceptance of the in-place concrete shall be determined using eight concrete test cylinders, which shall be cured in a container next to the concrete placement. Two cylinders are to be tested at 8, 16, and 24 hour intervals. The two remaining cylinders shall be used to determine the 28-day compressive strength of the concrete.