Pre-Pour-Planning the Placement: It is required that a pre-pour meeting with the Contractor be scheduled to specifically discuss:

- Time of starting of pour -- Anticipated weather conditions?
- Anticipated rate of delivery of concrete?
- How much material will be needed? At what rate? Haul time from plant?
- Discuss pouring sequence concerns. Admixtures, dosage rates?
- Use of concrete retarders. Concrete must remain plastic ½ span back until ½ of the next span is placed.
- Deck placement sequence reviewed if so indicated in the plan and bulkhead placement if required.
- Pour to start on what side? Proceed to what side? Location of pumps (lights)? Pump break down? Back up procedure?
- Manpower – review the size of the crew and their specific duties assigned to them.
- How many assigned to consolidation, finishing, and curing? Application of surface texture?
- Curing requirements … there is a 30 minute time limit to get the concrete covered with pre-wetted burlap and plastic sheeting. Full depth deck slab-curing compound permissible with a wet cure.
- Curing and protection … windy, hot conditions create excessive evaporation? Are cold weather blankets and/or a heating system needed? See Bridge Construction Manual Figure A 5-393.360. and Specification 2401.3.G.
- Header available? Possible header locations? Emergency covering materials available just in case? (No rain to be forecasted during placement; if rain occurs, pour stops)
- Method of placement of the deck concrete? Pumping equipment with backup planned?
- Skew placement concerns.
- Type of finishing machine to be used? [if structural deck (7")-air screed is O.K. or the use of a Bidwell/Gomaco type finishing machine is also permissible. Full depth decks (9") require a Bidwell/Gomaco type finishing machine]
- Number of foot bridges needed (typically 2 minimum required)

Prior to Placement:

- Check that the falsework and forms are at the proper grade with no gaps (concrete leakage).
- Have the forms been oiled and hanger bolts greased?
- Rebars placed at correct location, height and the correct total quantity incorporated into deck.
- Rebar mat has been tied to beam stirrups, epoxy has been touched up?
Bridge Deck Concrete Placement Checklist – see Spec. 2401
Revised 6/2014

☐ Conduct a dry run using a filler strip attached to finishing machine to check proper rebar height. Adjust rebars as necessary. Also, make depth checks during this run for total slab thickness.

☐ Check deck drain clearances and rail deflection & stability.

☐ Assure that sufficient rebar supports have been used and tied as required (bottom mat every other intersection and top mat 100%). If air screed is O.K. to use (structural deck only), additional bolsters and high chair supports may be required under the skids.

☐ Are the overhang brackets properly seated against the beam? Struts need to be installed on steel beams between diaphragms if there is a wide overhang compared to the beam depth.

☐ Have expansion joints been set to correct grade and width for temperature? The finishing machine needs to be checked against the expansion joint for proper height.

☐ Adequate equipment at the site; size of crew with a review of each person's responsibility.

☐ Check frequency of pulses of vibrators, only use non-metallic head vibrators.

☐ Have the forms been cleaned out?

☐ Any joints need to be marked out – need to be tooled in during the pour and saw cut later.

☐ Proper curing materials at the site with enough people to install as soon as possible.

☐ Burlap must be pre-soaked.

Note: Excessive deck cracking is occurring. Proper placement & curing is of great importance.

• During the Placement:

☐ Within the Department's organization, discuss:
  ☐ Will concrete supplier test concrete?
  ☐ Will concrete supplier test re-mixed concrete?
  ☐ The concrete mix specified, quantity of tests needed and who is assigned the testing?
  ☐ What are the procedures to follow for any failures?
  ☐ Is retempering allowed?
  ☐ How many 10 foot straight edges?
  ☐ Who will be the inspector on the deck?
  ☐ Are control cylinders required?

☐ Air testers calibrated & correlated, spare testers available?

☐ Is the correct concrete mix being furnished?

☐ The deck forms need to be kept wet ahead of concrete placement.

☐ Review that the concrete is placed uniformly and uniform consolidation with vibrators (pattern).

☐ Place concrete on adjacent bay before the overhang to reduce deflection of reinforcement, reducing cover.
Where feasible and practical, concrete placement should proceed from lowest elevation to highest, to reduce finishing problems due to rainwater or moisture from fogging or cure blankets.

Insert vibrators vertical for 3 to 5 seconds. Do not drag vibrators. Don't use vibrators to move concrete. Avoid walking in mix after vibrating.

Screed operation-skewed to fit centerline of bearing? A small head of concrete in front of the roller.

Is hand floating sealing all voids?

Check for drainage at gutterline, especially on flat grades.

Periodically check crown and grade.

Is a 10 foot straight edge being used in the gutter lines and for checking the main deck.

Is there a form watcher looking at the performance of the falsework?

Check the concrete surface at the expansion joint with a 10 foot straight edge.

Concrete depth checks need to be made and documented by the Inspector. Very important!

Make reinforcing steel depth checks.

Carpet drag and tining operations for the texture need to be reviewed.

Leakage onto beams or girders must be removed when still plastic to avoid damage to primer/paint system (some contractors will use power washers during deck pour).

After the Placement:

Keep the slab moist; apply the curing per specifications.

Is there a continuous, dedicated water supply? How will it be kept wet overnight and weekend?

If there is cold weather predicted, is the Contractor prepared? Blankets or heating system?

Low temp. protection - means for checking concrete temperature during curing period.

Release the expansion joint; break lose any welded plates across the joint as soon as the joint is covered.

On prestressed beam bridges, tool in a contraction joint cut directly over the pier during deck placement operations and saw cut as soon as possible without raveling.

No heavy loads are allowed on the deck during the cure period or immediately after.

The cure requires 65% of strength gained; minimum curing time under ideal conditions according to Table 2401-2 is:

Day 1 15% strength gained for a total of 15%
Day 2 15% strength gained for a total of 30%
Day 3 13% strength gained for a total of 43%
Day 4 10% strength gained for a total of 53%
Day 5 8% strength gained for a total of 61%
Day 6  7% strength gained for a total of 68%
Note: A 7 day wet cure is required on decks!
This starts when the last curing protection is in place.
If control cylinders are used, there is a minimum of 96 hours.
Note: Must be surface moist through the 7 day curing period. Wet cure with
pre-wetted burlap and white poly inplace within 30 minutes or a $500.00 monetary
deduct for 5 minutes over the time limit. Full-depth deck curing compound use is
O.K. with pre-wetted burlap/poly ASAP.
☐ Complete the "Bridge Deck Placement Data Form" BR4789 and submit to the Bridge
Office.

- Before release of the Falsework:
  ☐ Must have the proper cure time plus one day dry out.
  ☐ Release of the falsework starts at the center of each span full width and proceeds
simultaneously to the ends of the span.

- Before Barrier Placement:
  ☐ The deck cure needs to be completed.
  ☐ The slab falsework needs to be released or removed.

- Before Heavy Loads are Applied:
  ☐ Not allowed until curing is completed.
  ☐ Ready mix trucks-agitating speed only -- not mixing speed.
  ☐ Slab spans and box girder decks, equipment 15 tons and over not permitted on the deck
until the cure is complete plus one week.
  ☐ See Spec. 1513 - Restriction on movement and storage of heavy loads and equipment.

- References - Need to review! Checklist doesn't override the specifications!
  ☐ MnDOT Bridge Construction Manual especially 5-393.358.
  ☐ MnDOT Concrete Manual.
  ☐ Special Provisions.