

**PRECAST CONCRETE ELEMENT NOTES (CONT):**

- F. GENERAL PROCEDURES FOR INSTALLATION OF PRECAST AND PRECAST / PRESTRESSED BOX BEAM ELEMENTS (CONT):
- 7. ALL CLOSURE POUR SURFACES SHALL BE WETTED TO SATURATED SURFACE DRY (SSD) CONDITION PRIOR TO CASTING THE UHPC JOINT. JOINT SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE DESIGN PLANS.
- 8. DO NOT APPLY SUPERIMPOSED DEAD LOADS OR CONSTRUCTION LIVE LOADS TO, OR PERFORM GRINDING OPERATIONS ON THE ASSEMBLED SUPERSTRUCTURE UNTIL THE COMPRESSIVE STRENGTH TEST RESULTS FOR THE LONGITUDINAL UHPC CLOSURE POURS HAVE REACHED A MINIMUM COMPRESSIVE STRENGTH OF AT LEAST 10,000 PSI, OR AS OTHERWISE RECOMMENDED BY THE UHPC MANUFACTURER, WHICHEVER IS GREATER.
- 9. AFTER REMOVAL OF LIFTING LOOPS, CONCRETE SHALL BE PATCHED AS REQUIRED BY THE ENGINEER.

**METHOD OF MEASUREMENT:**

- A. BRIDGE ABUTMENT FOOTINGS:  
THE QUANTITY BY COUNT OF PRECAST CONCRETE BRIDGE ABUTMENT FOOTINGS WILL BE THE PLAN QUANTITY.
- B. BRIDGE ABUTMENT BACKWALL:  
THE QUANTITY BY COUNT OF PRECAST CONCRETE BRIDGE ABUTMENT BACKWALLS WILL BE THE PLAN QUANTITY.
- C. PRECAST BOX BEAMS:  
THE QUANTITY BY COUNT OF PRECAST CONCRETE BOX BEAMS WILL BE THE PLAN QUANTITY.
- D. PRECAST/PRESTRESSED BOX BEAMS:  
THE QUANTITY BY COUNT OF PRECAST/PRESTRESSED CONCRETE BOX BEAMS WILL BE THE PLAN QUANTITY.

**BASIS OF PAYMENT:**

- A. BRIDGE ABUTMENT FOOTINGS:  
PAYMENT WILL BE FULL COMPENSATION FOR THE MANUFACTURING, FURNISHING AND PLACEMENT OF EACH BRIDGE ABUTMENT FOOTING, INCLUDING STRUCTURAL CONCRETE, SELF-CONSOLIDATING (HIGH EARLY STRENGTH) CONCRETE, DRILLING FOR AND PLACING SMOOTH DOWELS, GROUT, NON-COATED REINFORCING STEEL, EPOXY COATED REINFORCING STEEL, EPOXY COATED MECHANICAL SPLICE ASSEMBLIES, GALVANIZED CORRUGATED METAL PIPE, LIFTING DEVICES, \*POROUS BACKFILL, #FLOODABLE BACKFILL (INCLUDES WATER FOR FLOODING), #GRANULAR BACKFILL, #GEOTEXTILE FABRIC FOR ABUTMENT BACKFILL, AND #SUBDRAINS.  
  
\*FOR ABUTMENTS USING SHEETPILE WINGS AND PRECAST ABUTMENT UNITS, THESE ITEMS ARE EXCLUDED OR INCLUDED IN A BID ITEM FOR GRANULAR BACKFILL. SEE NOTES ON SHEET B30-69-16.
- B. BRIDGE ABUTMENT BACKWALLS:  
PAYMENT WILL BE FULL COMPENSATION FOR THE MANUFACTURING, FURNISHING AND PLACEMENT OF EACH PRECAST CONCRETE BRIDGE ABUTMENT BACKWALL, INCLUDING STRUCTURAL CONCRETE, EPOXY COATED REINFORCING STEEL, CORRUGATED TUBES AND GROUT.
- C. PRECAST BOX BEAMS:  
PAYMENT WILL BE FULL COMPENSATION FOR THE MANUFACTURING, FURNISHING AND PLACEMENT OF EACH PRECAST CONCRETE BOX BEAM, NEOPRENE BEARING PADS, NEOPRENE SHIM PADS, EXPANSION JOINT MATERIAL, POLYSTYRENE PLUG FOR ANCHOR DOWELS, FOAM BACKER RODS, REINFORCING STEEL, EPOXY COATED REINFORCING STEEL, PRESTRESSING STEEL, EPOXY COATED MECHANICAL SPLICE ASSEMBLIES AND STRUCTURAL CONCRETE.
- D. PRECAST/PRESTRESSED BOX BEAMS:  
PAYMENT WILL BE FULL COMPENSATION FOR THE MANUFACTURING, FURNISHING AND PLACEMENT OF EACH PRECAST/PRESTRESSED CONCRETE BOX BEAM, NEOPRENE BEARING PADS, NEOPRENE SHIM PADS, EXPANSION JOINT MATERIAL, POLYSTYRENE PLUG FOR ANCHOR DOWELS, FOAM BACKER RODS, REINFORCING STEEL, EPOXY COATED REINFORCING STEEL, PRESTRESSING STEEL, EPOXY COATED MECHANICAL SPLICE ASSEMBLIES AND STRUCTURAL CONCRETE.

**ALTERNATE SITE CASTING NOTES:**

- THE CONTRACTOR MAY ELECT TO FABRICATE NON-PRESTRESSED PRECAST CONCRETE COMPONENTS AT AN ALTERNATE SITE DETERMINED BY THE CONTRACTOR, IN LIEU OF FABRICATING THESE COMPONENTS AT A PREQUALIFIED FABRICATION PLANT. ALTERNATE SITE CASTING SHALL COMPLY WITH THE FOLLOWING:
- A. ALTERNATE SITE CASTING:  
CONCRETE SHALL BE PROVIDED BY AN OFF-SITE READY MIX PRODUCER, SECTION 2403 AND APPLICABLE SECTIONS OF ARTICLE 2407.03.D (CURING) OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THE PRODUCTION, FABRICATION AND CONSTRUCTION OF PRECAST CONCRETE ELEMENTS. ARTICLE 2403.02.D.2 SHALL NOT APPLY.
    - 1. READY MIX CONCRETE SHALL BE SUPPLIED BY AN APPROVED READY MIX CONCRETE PLANT.
    - 2. CASTING BEDS SHALL BE RIGIDLY CONSTRUCTED AND SUPPORTED SO THAT UNDER THE WEIGHT (MASS) OF CONCRETE AND FORMS, THERE WILL BE NO VERTICAL DEFORMATION OF THE BED.
    - 3. THE PRODUCER OF THE PRECAST ELEMENTS SHALL PROVIDE TECHNICAL PERSONNEL, EXPERIENCED AND SKILLED IN THE APPLICATION OF PRECAST SYSTEMS, SUPPLEMENTED WITH A SUFFICIENT STAFF OF SKILLED LABOR TO CONSTRUCT FORMS, PLACE AND TIE REINFORCING STEEL AND PLACE, CONSOLIDATE AND FINISH WET CONCRETE. THE PRODUCER SHALL UTILIZE A TECHNICIAN WITH A VALID IOWA DOT LEVEL 1 PCC CERTIFICATION OR AN ACI LEVEL 1 CERTIFICATION WHEN CASTING OPERATIONS REQUIRE PHYSICAL TESTING SUCH AS AIR ENTRAINMENT, SLUMP TESTING, ETC.
    - 4. A MINIMUM OF 30 DAYS PRIOR TO BEGINNING PRECAST CONCRETE OPERATIONS, THE PRODUCER SHALL SUBMIT A PLAN TO THE ENGINEER INDICATING THE QUALITY CONTROL INSPECTION PROCEDURES TO BE USED IN THE MANUFACTURE OF THE PRECAST PRODUCTS, INCLUDING:
      - a. REINFORCING STEEL FABRICATION AND PLACEMENT
      - b. CONCRETE MIX DESIGN AND PROPORTIONING
      - c. CONCRETE PLACEMENT AND CONSOLIDATION
      - d. CONCRETE CURING
      - e. FREQUENCY AND PROCEDURES FOR PHYSICAL TESTING OF CONCRETE, INCLUDING AIR ENTRAINMENT TESTING, SLUMP TESTING, AND CONCRETE CYLINDER PRODUCTION / TESTING.
    - 5. APPLY ARTICLES 2407.03, D, 1; 2407.03, D, 2; 2407.03, D, 3, a-d; 2407.03, D, 3, f; AND 2407.03, D, 4 TO THE CURING OF PRECAST CONCRETE WHEN USING ACCELERATED HEAT CURING.
    - 6. FINISH ALL SURFACES WHICH WILL BE EXPOSED IN THE FINISHED STRUCTURE AS PROVIDED IN ARTICLE 2403.03, P, 2, b, AND AS NOTED IN THESE PLANS, AND ENSURE THEY ARE FREE OF HONEYCOMB OR SURFACE DEFECTS. SUBMIT STRUCTURAL REPAIR PROCEDURES TO THE ENGINEER FOR APPROVAL.

**PILE TOLERANCE NOTE:**

THE CONTRACTOR SHALL NOTE THAT TIGHTER PILE LOCATION TOLERANCE SHALL BE REQUIRED FOR USE WITH THE PRECAST ABUTMENT FOOTING OPTION. THE CMP PILE POCKET SIZE NOTED IN THE PLANS IS BASED ON MAXIMUM PILE DEVIATION OF 2" FROM PLAN VALUE, MEASURED AT THE LOCATION OF THE PILE POCKET. USE OF A PILE DRIVING TEMPLATE IS STRONGLY ENCOURAGED. THE CONTRACTOR SHALL BE PERMITTED TO MAKE MINOR ADJUSTMENTS TO POSITION THE TOP OF PILE BY JACKING OR OTHER APPROVED MEANS, TO FACILITATE PROPER FITUP OF THE PRECAST FOOTING. ADJUSTMENT METHODS THAT DAMAGE OR PERMANENTLY DEFORM THE PILE SHALL NOT BE PERMITTED.

LATEST REVISION DATE	 APPROVED BY BRIDGE ENGINEER	 STANDARD DESIGN - 30'-0 ROADWAY, SINGLE SPAN <b>CONCRETE BOX BEAM BRIDGES</b>	
		DECEMBER, 2016	
		GENERAL NOTES (SHEET 3 OF 3)	B30-04-16