MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
STRUCTURE SURVEY DURING CONSTRUCTION

STR:KCK 1 of 5 APPR:BDF:JAB:03-17-25
FHWA:APPR:03-18-25

a. Description. This work consists of obtaining elevation observations along existing and proposed beams or girders at the stages of construction set forth in this special provision. Complete all work in accordance with section 824 of the Standard Specifications for Construction, except as modified herein.

Submit the qualifications of the survey crew chief used to complete this work for review and approval by the Engineer in accordance with subsection 824.01 of the Standard Specifications for Construction.

b. Materials. None specified.

c. Construction. Witness horizontal control points in accordance with subsection 824.03.A of the Standard Specifications for Construction and verify plan benchmarks and establish new benchmarks in accordance with subsection 824.03.B of the Standard Specifications for Construction prior to starting work.

Furnish the Engineer and the Notice to Bidders Contract Person with elevation observations at the same points along the existing and proposed beams or girders as the bottom of slab and screed point locations included on the plans and at the stages of construction listed below. Measure the elevations requested to an accuracy of 0.01 feet. Furnish the information using the Bridge Elevation Table spreadsheet included in the Reference Information Documents (RID).

1. Partial or Complete Deck Replacement Projects.

A. Elevations Prior To Deck Removal. For complete deck replacement projects, elevation observations along the underside of the bottom flange of the existing beams or girders. As an alternative to bottom flange elevations, the Contractor may elect to remove portions of the deck to permit access to obtain the required elevations on the top flange. Deck concrete removal is limited to an area with length and width not exceeding the smaller of the flange width or 18 inches, at each survey location. Ensure access is sufficient to positively identify the top of the beam flange and to mark the beam at each survey location to ensure repeatability during successive stages. Core drilling is prohibited.

For partial deck replacement projects, elevation observations:

(1) Along the underside of the bottom flange of the existing beams or girders that will be exposed by the removal of the portion of the existing bridge deck. As an alternative to bottom flange elevations, the Contractor may elect to remove portions of the deck to permit access to obtain the required elevations on the top flange. Deck

concrete removal is limited to an area with length and width not exceeding the smaller of the flange width or 18 inches, at each survey location. Ensure access is sufficient to positively identify the top of the beam flange and to mark the beam at each survey location to ensure repeatability during successive stages. Core drilling is prohibited.

(2) Along the underside of the bottom flange of the existing beam or girder under the existing bridge deck that is to remain in place and closest to the proposed saw cut line. As an alternative to the bottom flange elevations, the Contractor may elect to obtain elevations along the top of the existing deck over the centerline of the beam closest to the proposed saw cut line.

Make observations prior to the removal of any of the existing superstructure, except as noted above, and without any live load or materials or equipment stored on top of the existing superstructure.

B. Elevations After Deck Removal. After the existing bridge deck has been removed and prior to installing forms and reinforcement, elevation observations along the top of the top flange or the underside of the bottom flange of the existing beams or girders.

For partial deck replacement projects, elevation observations along the top of the existing deck or the underside of the bottom flange of the existing beam or girder closest to the proposed saw cut line.

Include information regarding any false decking and/or fascia walkways in place. Submit to the Engineer and the Notice to Bidders Contact Person and obtain approval prior to beginning installation of deck formwork.

C. Elevations Prior To Concrete Placement. Elevation observations along the top of the top flange or the underside of the bottom flange of the existing beams or girders after installing the forms and reinforcement and prior to placing the superstructure concrete. Include formwork information.

D. Elevations After Form Removal. Elevation observations along the underside of the bottom flange of the existing beams or girders after the proposed superstructure is complete and without any live load or materials or equipment stored on top of the proposed superstructure. Furnish these elevations no more than 7 calendar days after completing placement of all superstructure concrete, including deck slab, sidewalks, and concrete barriers.

2. Projects with a New Prestressed Concrete Superstructure.

A. Notify the fabricator, the Engineer, and Notice to Bidders Contact Person 14 calendar days prior to setting the beam seat elevations at the abutments and piers. Once notified the fabricator will measure the camber of the prestressed concrete beams and report them to the Engineer and Notice to Bidders Contact Person for review within 7 calendar days in accordance with the Special Provision for Measuring Camber of Prestressed Concrete Beams. The Engineer will have up to 7 calendar days to review and may elect to adjust the proposed beam seat elevations following a review of the documentation. Do not cast the beam seats at the abutments and piers prior to Engineer review of the camber measurements. If, for reasons not attributed to the Contractor, additional time is required beyond 14 calendar days of Department review time to obtain

approval for the beam seat elevations, this additional time will be considered for an extension of time in accordance with subsections 108.07 or 108.08 of the Standard Specifications for Construction.

In cases where the prestressed concrete beams have not been fabricated prior to the Contractor providing notice of their intent to set the beam seat elevations at the abutments and pier, the Contractor may proceed with work after receiving notice from the fabricator that the prestressed concrete beams have not been fabricated.

B. Elevations After Girder Erection. Elevation observations along the top of the proposed prestressed concrete beams after they have been erected on the abutments and piers and prior to installing forms or reinforcement. Include information regarding any false decking and/or fascia walkways in place.

Submit elevations from subsection c.2.B of this special provision to the Engineer and Notice to Bidders Contact Person and obtain approval prior to beginning installation of deck formwork.

C. Elevations Prior To Concrete Placement. Elevation observations along the top of the top flange or the underside of the bottom flange of the proposed prestressed concrete beams after installing forms and reinforcement and prior to placing the superstructure concrete. Include formwork information.

D. Elevations After Form Removal. Elevation observations along the underside of the bottom flange of the proposed prestressed concrete beams after the proposed superstructure is complete and without any live load or materials or equipment stored on top of the proposed superstructure. Furnish these elevations no more than 7 calendar days after completing placement of the superstructure concrete, including deck slab, sidewalks, and concrete barriers.

3. Projects with a New Steel Superstructure.

A. Elevations After Girder Erection. Elevation observations along the top and bottom of the proposed steel beams or girders after they have been erected on the abutments and piers and prior to installing forms or reinforcement. Height measurements may be utilized to calculate bottom elevations. Compare heights to plan dimensions and report any discrepancies. Include information regarding any false decking and/or fascia walkways in place. Submit to the Engineer and Notice to Bidders Contact Person and obtain approval prior to beginning installation of deck formwork.

B. Elevations Prior To Concrete Placement. Elevation observations along the top of the top flange or the underside of the bottom flange of the proposed beams or girders after installing the forms and reinforcement and prior to placing the superstructure concrete. Include formwork information.

C. Elevations After Form Removal. Elevation observations along the underside of the bottom flange of the proposed beams or girders after the proposed superstructure is complete and without any live load or materials or equipment stored on top of the proposed superstructure. Furnish these elevations no more than 7 calendar days after completing placement of the superstructure concrete, including deck slab, sidewalks, and concrete barriers.

4. Superstructure Widening Projects. Furnish the information specified above for deck replacement projects for the existing beams or girders that will remain in place. Furnish the information specified above for projects with a new prestressed concrete superstructure or for projects with a new steel superstructure for the proposed beams or girders.

5. Submit the following information with the elevation observations for all projects:

A. False Decking.

(1) Material type(s).

(2) Material dimension(s).

(3) False decking layout.

B. Formwork.

(1) Material type(s).

(2) Material dimension(s).

(3) Formwork layout.

For elevation observations required prior to placement of forms or reinforcement, submit a complete set of elevations and other required information to the Engineer and Notice to Bidders Contact Person for review and approval. The Engineer will have up to 7 calendar days to review for approval and may elect to adjust the proposed bottom of slab and screed elevations following a review of the documentation. Do not place any deck formwork prior to Engineer review and approval of the required elevation observations. If, for reasons not attributed to the Contractor, additional time is required beyond 7 calendar days of Department review time to obtain approval for the bottom of slab and screed elevations, this additional time will be considered for an extension of time in accordance with subsections 108.07 or 108.08 of the Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will be measured as a lump sum and paid for at the contract price using the following pay item:

Pay Item	**Pay Unit**
Structure Survey During Construction (Structure Identification)	Lump Sum

Structure Survey During Construction (Structure Identification) includes all costs associated with access, coordination, traffic control, collection, and distribution of the surveyed measurements required by this special provision.

Any additional work associated with deck concrete removal to access the top flange for elevations prior to deck removal will not be paid separately but is included in payment for the deck removal pay item.

The pay item will include partial payments using the following milestone schedule.

1. Submittal of all items required prior to placement of forms and reinforcement: 50 percent.

2. Submittal of final grades after completion of superstructure concrete placement: 50 percent.