

matches. The minor adjustment can always be done by inserting some packing while placing stopper of vertical fin. The length of U coming out from wing as well as spine should be as decided in meeting with the Consultants. If by chance, due to any practical difficulty or mistake, any U is lesser in length then it should be rectified by cutting and welding longer U. All these activities should be completed in casting yard before transportation at site.

(3) Before transportation of segments from casting yard to site for erection, the various sides/surfaces of the spine and wing segment should be thoroughly checked in advance and findings may be kept on record to ensure that all desired hacking/cleaning/any minor repair etc. has been carried out so that these activities need not taken up after erection of the segment. This will save a lot of time.

(4) After erection and pre-stressing of spine segments and installation of bearing in any span, its level at the end segments and four corners of every segment should be recorded. As per the discussion with the consultants on 15.10.2014, it emerged that due to pre-stressing, central spines segments may have same hogging which may not match with the FRL. Thereafter, once the cantilever frame for wing erections and wings are erected, these spines will sag a little bit. Therefore, the consultants suggested that while aligning the wing segments, these should be aligned with respect to the present levels of various spine segments, keeping the required transverse slope so that once the dead load and live load are applied on the segments, spines along with wings segments sag equally. Therefore, the consultant advised that while aligning the wing segments, it should not be aligned w.r.t. the FRL but should be aligned with respect to the levels of spine segment at the time of wing erection.

(5) The consultants also desired that utmost care should be taken at the time of casting of spine/wing segments so as to avoid any gap.

(6) Before stitching of concrete, concrete surfaces should be properly cleaned, loose concrete removed, nitobond applied before doing stitch concrete. In the vertical portion, stitch concrete is to be done with non-shrink grout of combestra or FOSROC or equivalent as shown in the drawing. Lateral/longitudinal stitch is with concrete of M-60 grade after applying the nitobond. After stitch concrete is complete, the gap between pre-cast element of wings and spines i.e. around horizontal, vertical fins should be filled up, after removing backing rod, with GP-2 material of equivalent strength i.e. M-60 and above.

(7) Various minor modifications in the length of U reinforcement bars coming from spine and wings in the longitudinal/vertical stitch and in lateral stitch have already been decided earlier which were agreed upon by consultant and he will issue the modified drawings. In the vertical stitch portion where required space for placing vertical bars in the common area of overlapping U is not available, alternative solutions have been proposed by the consultant.

EEs may also suggest any modification/betterment in above suggested methodology.

It was also directed that utmost care should be taken to check the various line and levels of various components of structure i.e. spine segments, wings, bearings etc.

  
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**Project Manager**

  
**Flyover Project Circle F-13, PWD**

**Copy to:-**

- (1) Chief Engineer, Flyover Project Zone F-1, PWD, 12<sup>th</sup> Floor, MSO Building, I.P. Estate, New Delhi for kind information please.
- (2) The Executive Engineer, FPD, F-131 for information & necessary action please.
- (3-4) The Executive Engineer, FPD, F-132 and F-134 for necessary action as mentioned above.

  
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**Project Manager**