

9. Design Quality Control (QC) Procedures

9.1 General

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This section describes the requirements for the designer, checker, and engineer of record (EOR) in reviewing and finalizing the PS&E package.

The bridge portion of the PS&E is ready for review and approval once the Plans reach 95 percent completion. The following defines the process for completing and signing the Final Bridge Plans:

1. **Estimate.** The bridge designer is responsible for estimating the quantities and cost of the bridge bid items.
2. **Plan Review.** The bridge checker will:
 - prepare independent calculations to verify the bridge plan details are structurally adequate and meet the standards of this *Manual*.
 - verify plan sheets are correct and complete ("biddable & buildable"). The checker will mark every item on every plan sheet as either "OK" or "No Good." Highlighting or color coding is an acceptable means of marking the plans.
 - verify the Engineer's Estimate is correct and complete by calculating quantities and reviewing item prices for reasonableness
 - verify that all bid items are covered by the *Standard Specifications for Highway Construction* or a Special Provision
3. **Revisions/Corrections.** The marked up plans will be returned to the bridge designer for consideration, correction, or clarification. The designer and checker will meet to resolve all discrepancies, and the designer will revise the plans as needed. Upon completing the revisions, the designer will submit the bridge plans to the Bridge Squad Leader for quality control review.
4. **Quality Review.** The Squad Leader or Chief Bridge Engineer will conduct a quality review of the bridge plans. The plans are reviewed to determine if they meet the following requirements:
 - the approved project scope of work and Design Study Report
 - the design criteria presented in the *Alaska Bridges and Structures Manual*, except where revised by a design variance
 - the criteria presented in Bridge Design Memorandums
 - any reports or studies for the project
 - the plan preparation information presented in this *Manual*
 - good bridge engineering and detailing practice
5. **Plans Submittal Process for Bid Package.** After the plans are reviewed, the EOR (who is either the designer or checker) will sign and submit the plans, quantity and cost estimates, and special provisions to the Chief Bridge Engineer. Once the Chief Bridge Engineer is satisfied with the final plans, the bridge plans are submitted to the Project Manager for incorporation into the overall contract documents. The Project Manager submits the final plans, special provisions, and quantity and cost estimates to the Regional Contracts Section.

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