



South Carolina
Department of Transportation

PRECONSTRUCTION DESIGN MEMORANDUM

MEMO: PCDM-23

SUBJECT: Design Quality Assurance Review for the Project Development Process

DATE: September 2, 2021

SUPERCEDES: Preconstruction Advisory Memorandum Number 4 and the Preconstruction Quality Assurance Review Process (Dated August 9, 2009)

The Office of Engineering Support has updated the design quality assurance review process contained within the attached document. A two week buffer has been established with the effective date to ensure adequate time for supporting resources to adapt. A summary of the significant changes are:

- Revised title and content to focus on design plans/reports/RFPs associated with the project development process;
- Simplified submittal process to specify one (1) email address for each discipline;
- Clarified that “response only” reviews should not be utilized due to the Department’s inability to verify implementation without plans;
- Encouraged increased communication to discuss comments and resolution;
- Established QA programs for Hydraulic Engineering and Geotechnical Engineering;
- Created a chart to easily understand the submittals for each discipline; and
- Created comment categories for “compliance” and “recommendations” to expedite the resolution of comments.

September 16, 2021

George R. Bedenbaugh, Jr.
Director - Office of Engineering Support

Effective Date

GRB
Attachment
ec:

Randy Young, Chief Engineer for Project Delivery
John Boylston, Director of Preconstruction
Chris Gaskins, Director of Alternative Delivery
Andy Leaphart, Chief Engineer for Operations
Rob Perry, Director of Traffic Engineering

Jen Necker, RP Engineer - Lowcountry
Michael Hood, RP Design Manager - Midlands
Leah Quattlebaum, RP Engineer - Pee Dee
Julie Barker, RP Engineer - Upstate
Tad Kitowicz, FHWA



SCDOT DESIGN QUALITY ASSURANCE REVIEW FOR THE PROJECT DEVELOPMENT PROCESS

09-02-2021

The Office of Engineering Support provides Quality Assurance (QA) reviews of designs, reports and specifications. The intent of these reviews is to manage risk for the Department by ensuring consistent and on-going Quality Control (QC) has occurred and that statewide consistency with existing policies is applied to designs and specifications during the development of the project. The Department's Design Quality webpage contains documents to enhance the quality of design deliverables and can be found by searching "Design Quality" on www.scdot.org. QA reviews do not take the place of the QC practices being performed by the Engineers of Record.

This process specifies the procedures for submittal of QA reviews, types of comments, resolution of comments, and the milestone reviews that will be provided to each Engineering Support Discipline Lead (ESDL).

SUBMITTAL PROCEDURE

A programmatic level review should be completed by the Program Manager (PM) prior to submittal for QA review to ensure the plans are in agreement with the scope, NEPA obligations, and the Purpose and Need of the project.

QA reviews will be submitted by the requestor to each relevant Engineering Support design discipline. Each Engineering Support design discipline has been assigned a Department email address that will ensure the requests are routed for assignment. The recipient(s) of the email address are determined by each ESDL to ensure proper routing of the submittal. Review requests should no longer be sent to individual employees within Engineering Support. **Requests for reviews from outside of the Department must be routed through a Department employee with responsibility over the project to ensure a consistent flow of communication.** Email addresses for each design discipline are:

- Geotechnical Design Support: D8QAGDS@scdot.org
- Hydraulic Design Support: D8QAHDS@scdot.org
- Roadway Design Support: D8QARDS@scdot.org
- Structural Design Support: D8QASDS@scdot.org

To request a review, send an email to the aforementioned email addresses with the following information:

- Project ID, County, Route (must be contained in the subject line of the email);
- Review description (i.e. Right of Way Roadway Plans, 95% Bridge Plans, etc.);
- Requested due dates;
- Link(s) to the project documents; and
- A Bluebeam session (if utilized).

The requestor will receive an email response from each design discipline acknowledging receipt of the submittal. On-going and open communication between the requestor and the ESDL is encouraged to ensure an understanding of the scope and project expectations are clear during the QA review process.

Submittals that include only responses to comments, but not updated plans or reports, should not be submitted for QA due to the inability to verify implementation. The requestor should coordinate directly with the ESDL if clarification is needed regarding a specific comment(s).

It may also be beneficial for the requestor and the ESDL to have a meeting at the time of the submittal to discuss known variances or nonstandard design decisions. This will allow for a more efficient review schedule and eliminate the need for unnecessary comments.

REQUIRED QA REVIEWS

Submittal Type	Geotechnical Support	Hydraulic Support	Roadway Support	Structural Support
Right of Way Roadway Plans	X	X	X	
Construction Roadway Plans	X	X	X	
Roadway Structures contained within Roadway Construction Plans ¹	X			X
RFP Prior to Industry Review	X	X	X	X
Conceptual Plans for Bridges and/or Structures ²	X	X		X
Preliminary Bridge Plans	X	X		X
95% Bridge Plans	X	X		X
Preliminary Seismic Summary Report	X			X
Final Seismic Summary Report	X			X
Hydraulic Design Report at Construction Plans		X		
Stormwater Pollution Prevention Plan (SWPPP)		X		
Preliminary Geotechnical Report	X			X
Final Geotechnical Report	X			X
Preliminary Boring Layout Plan	X			
Final Boring Layout Plan	X			
Subsurface Data Report	X			
Site-specific Seismic Response Analysis Report	X			X

¹ See Roadway Design Manual Section 22.2.16

² Only if required by SCDOT Bridge Design Manual

COMMENTS AND COMMENT RESOLUTION

Upon completion of the QA review, comments will be emailed to the requestor and others that were copied with the QA review request submittal. QA comments will be submitted via email or Bluebeam session (as applicable) upon completion of the QA review. The QA review will generate two types of comments:

Compliance – Comments related to design criteria, standards, and specifications that are supported by policy and procedure. Compliance comments must include references to supporting policies and procedures and must be resolved by the requestor prior to further development of the project.

Recommendations – Comments provided by a QA reviewer that denote enhancements to the project or improvements to plan clarity/intent. Recommendations do not require resolution for the project to continue development; however, responses should be issued for record keeping purposes.

If all compliance comments have not been resolved after a second submittal, the requestor will initiate additional coordination with the QA lead within the Engineering Support design discipline to determine resolution. The Engineer of Record will be responsible for and involved in all design decisions within the comment resolution process. If a mutual resolution cannot be achieved between the QA lead and the PM, the issue will then be elevated for discussion by the Regional Production Engineer or Alternative Delivery Engineer and the ESDL. If these parties cannot resolve the issue, the PM will initiate Director level coordination to determine final resolution.