

Exhibit B2.5:
DOT&PF Roadway Design QC Checklist
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Program Number SFHWY00307



Introduction

The attached Roadway Design QC Checklist is to be used in conjunction with the DOT&PF Highway Preconstruction Manual (HPCM) as a tool to assist the project team in verifying that all work is produced with due diligence, using the acceptable industry standard techniques, available resources and data, and reasonable decisions by competent professionals. The checklist is a tool and cannot replace the sound judgment and experience of competent professionals. It is the Design Team's responsibility to verify the quality of project documents **before** distribution.

QC Documentation

Consistently documenting the QC process is an essential step to the QC procedures. The Documentation provides the following benefits:

1. It confirms for project teams that each step in the QC process was completed correctly.
2. It confirms for DOT&PF that the QC procedures are followed consistently by all project teams.
3. It provides the opportunity for all to find ways of improving QC/QA procedures.

Documentation has always been used by the project team to perform required quality assurance verification and has been maintained by the design team for reference during construction. It has also served as the way for DOT&PF to perform project audits to verify that the design team followed required QC/QA procedures.

The selected design firm is to provide QC documentation for each deliverable and distribute it as directed by the DOT&PF Project Manager. Every deliverable and applicable checklist item must have some form of documentation demonstrating the QC was completed. The QC documentation must be submitted at or before each milestone review package distribution. The QC process is incomplete until all QC documentation is delivered and attributed correctly.

The following recommendations are provided for creating QC documentation files:

- Provide all QC documentation required to review the QC process.
- Separate or combine QC documentation into files that are logical for the size and complexity of the project. For example, smaller projects can combine multiple disciplines' plan sheets into one QC file while larger projects should maintain separate files.
- Insert the deliverable milestone name into the file before the QC submittal.
Example: Pre-Environmental Check Prints, PIH Check Prints, etc.

- Collate the plan sheets, specifications, and any project specific special provisions so that each sheet and specification has the deliverable and check print redlines together.

DOT&PF QC Documentation Recommendations and Instructions

A balance between consistency and flexibility is required to meet the demands of quality control and the variation in project scopes, teams, budgets, and methods. DOT&PF is providing a list of minimum requirements for QC documentation to help meet this balance. DOT&PF is requiring that the project team provide all QC documentation to the DOT&PF Project Manager.

Recommended QC Documentation and ***DOT&PF QC Instructions*** are provided within the checklist to assist project teams, Checkers, and QA reviewers. These recommendations and instructions are given as guidance and are not meant to change the way a project team performs their QC process if the process verifies that it meets all the appropriate DOT&PF design criteria. Project teams may adapt the recommendations and instructions as needed or use them to verify their process meets DOT&PF requirements. The recommendations and instructions are not and cannot be completely comprehensive so it is necessary for project teams to make some alterations to the recommendations as needed to meet specific project challenges.

The ***DOT&PF QC Instructions*** for each checklist item or group of checklist items can be found italicized under the corresponding items followed by the right justified ***Recommended QC Documentation***.

Not all checklist items have a recommended QC documentation. The completed checklist serves as the QC documentation for these items. Provide additional documentation when available.

Some checklist items require coordination, acceptance, or approval to be completed. A space has been provided for these items to identify the documentation being provided as evidence of completion.

The **Originator** is responsible to have all their worked checked and to provide and upload all documentation. The **Checker** is responsible to complete a thorough check and provide all documentation to the **Originator**. Complete QC reviews **before** each deliverable distribution.

QC Checklist Instructions

It is **required** to complete and submit all QC checklists unless otherwise noted by the DOT&PF Project Manager on the Project QC/QA Plan. The Checker must verify that all items in the checklist are complete and correct for each deliverable listed along with any additional items the Checker deems necessary.

- The checklist items are not to be interpreted as the only items that need to be checked.
- The Checker places his or her name in the space provided at the beginning of the checklist. Fill out one checklist and include all names if multiple Checkers are used for the same deliverable. If multiple checkers are used in a checklist, place the Checker's initials next to each item they checked. Use the space to the left of the item number provided in the form for the Checker's initials unless the item is not applicable.
- Check the checkbox next to each item that has been checked. Replace the checkbox with NA if the item is not applicable to the project. **ALL** items must have a check mark or NA.
- Provide documentation demonstrating the action occurred for checklist items that recommend **Approval Documentation, Coordination Documentation, or Acceptance Documentation**. Documentation may be formal communication, emails, meeting notes, phone conversation logs, or other forms that document the communication process. Place the file name in the space provided.
- Provided at the end of each checklist is an Estimate Review Checklist. Complete and submit this checklist when checking the estimate as well as completing any checkboxes found on the activity checklist.
- Complete and submit the Design Criteria Checklist with each submittal. This is in addition to completing any checkboxes on the corresponding design checklist.
- A comments sheet is provided at the end of each discipline's checklist for the Originator and Checker to make comments, notes, and clarifications. Only one comment sheet is provided to minimize space and printing when printing the entire checklist. Use this sheet to document and consolidate the QC check comments.
- Each discipline checklist is separated into activity checklists. Complete the activity checklists necessary for the design phase of the project. It is recommended to upload each activity checklist as a separate file.
- Every checklist item in each section of all required Design QC Checklists must be completed. ***It is unacceptable to address an entire section with a blanket statement or a continuous line through all boxes.*** Each item must have an "NA" next to it even if an entire activity or section is not applicable.
- Previously completed checklist items that were completed for previous project deliverables may need to be completed again if, after a milestone, changes were made to elements checked on a previous checklist. Complete the necessary checklist items associated with the changed element and mark "NA" on all other items. Combine these checklists with the existing phase or deliverable checklist into one file.
- Do not recheck items that have been QC checked previously and have not changed or are not affected by a change.

Introduction

The Originator is required to submit the completed checklist to the DOT&PF Project Manager once all items have been checked and verified.

The following explanations are to aid in completing the QC checklist items:

- A checklist item that is deemed “complete,” “correct,” or “accurate” does not denote that the item is perfect, but rather that the item satisfies the project design criteria based on known information, acceptable techniques, and sound judgment.
- A checklist item deemed “addressed” denotes the item as “reviewed all known concerns and verified the concerns are appropriately mitigated and satisfy design criteria.” Addressed concerns are not necessarily incorporated into the design, but they are satisfactorily mitigated.
- A checklist item deemed “identified” denotes the item as “an acceptable and economical approach to satisfy design criteria based on known information.”
- A checklist item deemed “verified” denotes the item as “verified the approach/conclusion as acceptable based on known information.”

Develop Preliminary Initial Alternatives Graphic Plan View Drawings

Determine the preliminary project footprints/impacts.

References

1. AASHTO, A Policy on Geometric Design of Highways and Streets
2. DOT&PF Highway Preconstruction Manual (HPCM)
3. FHWA 13 Controlling Criteria
4. Design Criteria Checklist
5. QC Color Code Instructions
6. Estimate Review Checklist

Preliminary Initial Alternatives Graphic Plan View Drawings

Checker: _____

Date Completed: _____

1. ☐ A field visit was conducted.
2. ☐ The designer coordinated with DOT&PF maintenance and their comments are documented and addressed.

Verify all discipline related comments are documented, addressed, and all required and recommended actions are implemented.

Recommended QC Documentation: DOT&PF Maintenance Comment.

3. ☐ Roadway Related deficiencies were developed and/or documented.
 - a. ☐ Obtained capacity and safety deficiencies from project traffic engineer
 - b. ☐ Reviewed multi-modal needs
 - c. ☐ Roadway related deficiencies were considered and addressed.
 - i. ☐ Capacity deficiencies
 - ii. ☐ Safety needs
 - iii. ☐ Multi-modal needs
 - iv. ☐ For deficiencies not addressed, adequate justification is provided

Review the list and coordinate any comments and errors with the designer. Use this checklist as the documentation and note on the checklist all review comments and revisions.

Recommended QC Documentation: Roadway Deficiencies Evaluation List.

- 4. ☐ Preliminary typical sections developed to determine roadway footprint.
 - a. ☐ Each typical section conforms to the Project Type and Design Criteria.
 - b. ☐ Each typical section correctly shows the existing and proposed roadway width.

Recommended QC Documentation: Traffic Task Design Calculations Redlines.

- 5. ☐ The Preliminary Footprint Review Drawings are ready for distribution and review.
 - a. ☐ Known existing topography is shown in the correct grayscale.
 - b. ☐ Known ROW is shown (existing and proposed).
 - c. ☐ If developed, preliminary horizontal and vertical alignments are included.
 - i. ☐ Each alignment named correctly.
 - ii. ☐ Coordinates for BOP, EOP, and crossings with other alignments labeled correctly.
 - iii. ☐ Bearings of tangents labeled correctly.
 - iv. ☐ Curve information is labeled correctly.
 - d. ☐ All information appropriate for review of the proposed footprint is included and correct.
 - e. ☐ Drawings are prepared in the format(s) approved by the Project Manager and reviewers.

Recommended QC Documentation: Preliminary Footprint Review Drawing Redlines.

Preliminary Roadway Cost Estimates

Checker: _____

Date Completed: _____

- 1. The preliminary roadway cost estimates were reviewed using the Estimate Review Checklist (found at the end of this document).

See the Estimate Review Checklist for recommended QC documentation and instructions.

Recommended QC Documentation: Scoping Engineer's Estimate Redlines.

Final 2D Roadway Design

Determine the recommended horizontal alignments by developing the final 2D dimensional roadway model. Horizontal plans for this submittal should be 95% of final form and should be legible and consistent with the quality for public viewing at a public-information meeting, if required.

References

1. AASHTO, A Policy on Geometric Design of Highways and Streets (Green Book)
2. DOT&PF Highway Preconstruction Manual (HPCM)
3. AASHTO Roadside Design Guide
4. FHWA 13 Controlling Criteria
5. Design Criteria Checklist
6. DOT&PF CADD Standards
7. DOT&PF Standard Drawings
8. Design Exception and Design Waivers
9. QC Color Code Instructions
10. Estimate Review Checklist

Recommended Alignment Final 2D Roadway Design

Checker: _____

Date Completed: _____

1. ☐ All review comments are addressed and the comment resolutions sent to the design leader.
2. ☐ All comment resolution form revisions are complete.

Verify all discipline related comments are addressed and all actions are implemented. Verify all comments not retired in previous stages are transferred to the current comment resolution form.

Recommended QC Documentation: Pre-Environmental Comments and Responses.

3. ☐ Horizontal alignments meet design standards.
 - a. ☐ Design Criteria Checklist
 - b. ☐ AASHTO Green Book
 - c. ☐ DOT&PF HPCM

- d. ☐ Stationing goes from south to north or west to east and reads left to right.
 - e. ☐ For an alignment that follows an existing alignment, the new alignment is based off ROW markers or common tie points between the existing alignment and the proposed alignment.
- 4. ☐ The initial roadway 2D configuration contains all necessary information to analyze the proposed design.
- 5. ☐ The 2D configuration templates represent all aspects of the proposed roadway.
 - a. ☐ Number of lanes and width
 - b. ☐ Superelevations (recommended)
 - c. ☐ Turn bays (based on assumed lengths)
 - d. ☐ Shoulders and bike lanes
 - e. ☐ Curb and gutter
 - f. ☐ Sidewalks and park strips
 - g. ☐ Sideslope treatments
 - i. ☐ Clear zones
 - ii. ☐ Retaining walls
 - iii. ☐ Guardrail
 - iv. ☐ Drainage
- 6. ☐ The 2D configuration design represents the final design.
- 7. ☐
- 8. ☐ Correct clear zone used for the design speed and ADT.
- 9. ☐
- 10. ☐ The roadway design complies with the project type and design criteria
- 11. ☐ Potential utility conflicts with the 2D layout have been identified and coordinated with the DOT.
- 12. ☐ ☐ All or potential areas of drainage concerns based on the 2D orientation are communicated to DOT.
- 13. ☐ The 2D drawings are ready for distribution and review.
 - a. ☐ Existing topography is in proper grayscale.
 - b. ☐ Existing features are labeled as needed.
 - c. ☐ All street names are included and correct.
 - d. ☐ North arrow and scale is included and correct.
 - e. ☐ Existing and proposed ROW is shown.
 - f. ☐ Proposed horizontal are included and annotated correctly.
 - i. ☐ Each alignment named correctly
 - ii. ☐ Coordinates for BOP, EOP, and crossings with other alignments labeled correctly
 - iii. ☐ Bearings of tangents labeled correctly
 - iv. ☐ Curve radius information is labeled correctly

- g. ☐
 - h. ☐ Labels are included and correct for all design features needing identification.
 - i. ☐ Striping was considered if needed to show lane widths.
 - j. ☐ All necessary information for a proper review of the final 2D roadway design is included.
- 14. All driveway connections meet DOT&PF requirements.
 - 15. ☐ Adequate sight distance and intersection sight distance is provided.
 - 16. ☐ Adequate sight distance is provided at all critical locations.
 - 17. ☐ Adequate protection is provided for all clear zone hazards.
 - 18. ☐ Correct median barrier.
 - 19. ☐ All pedestrian facilities meet DOT&PF and ADA 2D requirements.
 - 20. ☐ Adequate pavement width is provided based on the turning radius of the design vehicle.
 - 21. ☐ Curb and gutter, sidewalk, park strip, and median locations, types, and widths meet the requirements of the project and conform to DOT&PF standards.
 - 22. ☐ All curb return radii conform to DOT&PF standards.
 - 23. ☐ All side treatments meet DOT&PF standards.
 - 24. ☐ All cross street tie-ins conform to DOT&PF standards.
 - 25. ☐ All roadway environmental commitments are addressed.
 - 26. ☐ The design fulfills the goals of the project scope.
 - 27. All preliminary plan sheets conform to DOT&PF CADD Standards.
 - a. ☐ All 2D design sheets are cut appropriately.
 - b. ☐ All reference files are properly attached.
 - c. ☐ Plan sheet CADD standards are followed and maintained on each sheet and in AutoCAD model space.

Recommended QC Documentation: Recommended Final 2D Roadway Design Review Drawing Redlines.

- 28. ☐ All computer input is entered correctly.

Recommended QC Documentation: Recommended Final 2D Roadway Design Input Printout Redlines.

- 29. ☐ All design calculations including AutoTurn outputs have been reviewed for accuracy and compliance with the design criteria checklist found at the end of this document.

Recommended QC Documentation: Recommended Final 2D Roadway Design Calculations Redlines.

Recommended Final 2D Roadway Design

Checker: _____

Date Completed: _____

1. ☐ Design exception and design waivers are documented for any design element that does not meet the FHWA 13 Controlling Criteria or additional design criteria.
2. ☐ Cost estimates justifying exception(s) or waiver(s) are appropriate.

Attach the Design Criteria Checklist and include all calculations.

**Recommended QC Documentation: Design Exceptions & Design Waiver
Redlines**

Recommended QC Documentation: Deviation from Standard Redlines

Recommended Final 2D Roadway Design Drawing

Checker: _____

Date Completed: _____

1. ☐ The roadway cost estimate was verified using the Estimate Review Checklist (found at the end of this document).

See the Estimate Review Checklist for recommended QC documentation and instructions.

**Recommended QC Documentation: Geometry Review Engineer's Estimate
Redlines.**

Preliminary Signing and Striping Plan Sheets

Checker: _____

Date Completed: _____

1. ☐ All review comments are addressed and the comment resolutions sent to the design leader.
2. ☐ All revisions based on review comments are complete.

Verify all discipline related comments are addressed and all actions are implemented. Verify all comments not retired in previous stages are transferred to the current Comment Resolution Form.

Recommended QC Documentation: Geometry Review Comment Resolution Form

- 3. ☐ All signing and striping conforms to the latest Alaska Traffic Manual.
- 4. ☐ The signing design is complete.
 - a. ☐ All guide signs have been designed using approved computer software.
 - b. ☐ Sign installation is appropriate for each sign.
 - c. ☐ All signs to be replaced, modified, or upgraded are in accordance with the project scope.
 - d. ☐ Signs required for the project, but located outside the project limits, were considered.
- 5. ☐ The Striping design is complete.
 - a. ☐ Lane widths, tapers, and transitions meet DOT&PF standards and approved design criteria
 - b. ☐ The signing and striping addresses findings in the capacity analysis
 - c. ☐ All striping types and sizes are correct
 - d. ☐ Crosswalks are located where warranted
- 6. ☐ All additional ROW needs for signs are included in the ROW design.
- 7. ☐ Signing and Striping Plan Sheets and designs conform to DOT&PF CADD Standards.
 - a. ☐ All sheets are cut appropriately.
 - b. ☐ All reference files are properly attached.
 - c. ☐ Plan sheet CADD standards are followed and maintained on each sheet.
 - d. ☐ CADD standards are maintained on each sheet (i.e. lines styles shown correctly, cell scaling, etc.).
 - e. ☐ Label pavement marking type.
 - f. ☐ Call out proposed sign locations.
 - g. ☐ Additional callouts, notes, identifiers, symbols, and information required for the plans-in-hand review are provided and correct.

Recommended QC Documentation: Preliminary Signing and Striping Sheets Redlines

Preliminary Signal Plan Sheets

Checker: _____

Date Completed: _____

1. ☐ Signal poles are located as close to the center back of the corner or pedestrian ramp as possible.
2. ☐ Push button locations comply with DOT&PF requirements.
3. ☐ All overhead clearances comply with DOT&PF requirements.
4. ☐ Signal head types and placement comply with DOT&PF requirements.
5. ☐ Vehicle detection was coordinated with the Region Traffic Section.
6. ☐ Circuit design is in compliance with DOT&PF requirements.
 - a. ☐ The power source location is identified and coordinated with the power company.
 - b. ☐ All signal heads are identified and located appropriately.
 - c. ☐ The required lighting is identified and coordinated with the lighting design.
 - d. ☐ Detection types and locations are identified.
 - e. ☐ Interconnect is identified and located appropriately.
 - f. ☐ All conduits are identified and located appropriately.
 - g. ☐ All junction boxes are identified and located appropriately.
 - h. ☐ Ground rods and wires are identified and located appropriately.
 - i. ☐ Controller cabinets are identified and located appropriately.
7. ☐ The design fulfills the needs and requirements of the project.
8. ☐ Signal Plan Sheets and designs conform to DOT&PF CADD Standards.
 - a. ☐ All sheets were cut appropriately.
 - b. ☐ All reference files are properly attached.
 - c. ☐ Plan Sheet CADD standards are followed and maintained on each sheet.
 - d. ☐ All callouts, notes, identifiers, symbols, and information required for the Plans-in-Hand Review is provided and correct.

Recommended QC Documentation: Preliminary Signal Sheets Redlines

Signing and Striping Plan Sheets

Checker: _____

Date Completed: _____

1. ☐ All review comments are addressed and the comment resolutions sent to the Design Leader.

Verify all discipline related comments are addressed and all actions are implemented. Verify all comments not retired in previous stages are transferred to the current Comment Resolution Form.

Recommended QC Documentation: Plans-in-Hand Comment Resolution Form

2. ☐ All revisions based on comments are complete.
3. ☐ All signing and striping design revisions conform to design standards (verify using appropriate checklist items from the Plans-in-Hand Review).
4. ☐ Signing and striping design comply with the Alaska Traffic Manual.
5. ☐ All details needed to construct the project are developed.
6. ☐ Signing and Striping Plan Sheets are complete.
 - a. ☐ Call-out rules are followed.
 - b. ☐ All title blocks are filled out correctly.
 - c. ☐ CADD standards are followed and maintained on each sheet.
 - d. ☐ All necessary labels, callouts, identifiers, symbols, and notes are provided and correct.
 - e. ☐ All items are called out correctly.
 - i. ☐ Lane widths
 - ii. ☐ Taper lengths and widths
 - iii. ☐ Striping types and sizes
 - iv. ☐ Beginning and end of all striping
7. ☐ The Detail Sheets are complete.
 - a. ☐ All details are labeled and dimensioned completely and correctly.
 - b. ☐ All title blocks are filled out correctly.
 - c. ☐ CADD standards are followed and maintained on each sheet.

Check the signing and striping design revisions and plan sheets and use the Plans-in-Hand checklist if revisions are made.

Recommended QC Documentation: Signing & Striping Sheets Redlines

8. ☐ The Summary Sheets are complete.
 - a. ☐ DOT&PF standard summary sheets are used.
 - b. ☐ All pay items are included in the summary.
 - c. ☐ All calculations have been reviewed for accuracy and compliance with the design criteria checklist found at the end of this document.
 - d. ☐ All pay item names, alignment designations, stations, offsets, units, and quantities are correct.
 - e. ☐ Summaries exported from Excel to AutoCAD are updated with the current Excel version.
 - f. ☐ All title blocks are filled out correctly.

Check the summary sheets. Verify the quantities and provide all documentation, including spreadsheet printouts, hand calculations, etc. Provide notes on the QC documentation where necessary to explain the methods and programs used to check quantities and prices.

Recommended QC Documentation: Signing & Striping Summary Sheets Redlines

Signal Plan Sheets

Checker: _____

Date Completed: _____

1. ☐ All review comments are addressed and the comment resolutions sent to the Design Leader.
2. ☐ All revisions based on comments are complete.

Verify all discipline related comments are addressed and all actions are implemented. Verify all comments not retired in previous stages are transferred to the current Comment Resolution Form.

Recommended QC Documentation: Plans-in-Hand Comment Resolution Form

3. ☐ All signal design revisions conform to design standards (verify using appropriate checklist items from Plans-in-Hand Review).
4. ☐ Signal plans conform to the most recent DOT&PF Alaska Traffic Manual.
5. ☐ All circuit and detection design and details needed to construct the project are developed.
6. ☐ Signal Plan Sheets are complete and conform to DOT&PF CADD standards.
 - a. ☐ All pole schedules, signal signs, phasing, and signal heads are included.
 - b. ☐ All title blocks are filled out correctly.
 - c. ☐ CADD standards are followed and maintained on each sheet.
 - d. ☐ All necessary labels, callouts, identifiers, symbols, and notes are provided and correct.
7. ☐ The Signal Circuit and Detection Detail Sheets are complete.
 - a. ☐ All details are labeled and dimensioned completely and correctly.
 - b. ☐ All title blocks are filled out correctly.
 - c. ☐ CADD standards are followed and maintained on each sheet.

Check the signal design revisions and plan sheets following DOT&PF Standard Procedures. Use the Plans-in-Hand checklist if design revisions were made.

Recommended QC Documentation: Signal Sheets Redlines

Signal Cost Estimate

Checker: _____

Date Completed: _____

1. ☐ The cost estimate was updated and verified using the Estimate Review Checklist (end of this document).

See the Estimate Review Checklist for recommended QC documentation and instructions.

Recommended QC Documentation: PS&E Engineer's Estimate Redlines

Signal Project Documents

Checker: _____

Date Completed: _____

1. ☐ The **Special Provisions** are complete.
 - a. ☐ A special provision has been created for each non-standard item.
 - b. ☐ All general and project specific special provision content is accurate, complete, and does not contain anything unnecessary.

Recommended QC Documentation: Special Provisions Redlines

2. ☐ The **Measurement & Payment** is complete.
 - a. ☐ All M&P items match pay items exactly.
 - b. ☐ For all non-standard pay items, a complete and correct M&P description of all effort and materials is included.
 - c. All units are correct.

Check the signal M&P descriptions. The project team decides the best process to check the M&P (separate redlines for each discipline, one circulated printout, etc.).

Recommended QC Documentation: M&P Redlines

Estimate Review Checklist

Provide review checklist of all design cost estimates.

Estimate (applies to every stage for updating the estimate)

Checker: _____

Date Completed: _____

1. ☐ All required bid items are included.
2. ☐ All quantities and units are correct.
3. ☐ All standard bid items match DOT&PF standard bid items exactly.
4. ☐ All unit price estimates are documented.
5. ☐ Unit prices reflect the following:
 - a. ☐ Location
 - b. ☐ Inflation
 - c. ☐ Quantity of item
 - d. ☐ Construction Complexity
 - e. ☐ Limitations of operation
 - f. ☐ Current bidding environment
 - g. ☐ Familiarity of a process
 - h. ☐ Time of year for advertising
 - i. ☐ Specialty equipment
 - j. ☐ Risk to contractor
 - k. ☐ Availability of materials
 - l. ☐ Construction schedule
6. ☐ Lump sum bid prices are used only when appropriate (i.e. unit pricing is too difficult).
7. ☐ All lump sum bid prices considered the following:
 - a. ☐ Contractor risk due to unknown quantity
 - b. ☐ Difficulty in making it a unit price pay item

Additional PS&E Estimate

8. ☐ All bid items, quantities, and units match the plan sheet callouts, summary sheets, and M&P exactly.

Recommended QC Documentation: Engineer's Estimate Redlines

The way the engineer's estimate is QC checked may vary depending upon the project scope and project team. Provide documentation demonstrating that every item and all quantities in the engineer's estimate were QC checked. Provide spreadsheets, hand calculations, notes, etc. as necessary to explain methods, assumptions, etc. The Design Leader gathers all estimate QC documentation and uploads one file.

DESIGN CRITERIA CHECKLIST

Project Name _____ Page _____ of _____
 State Project No. _____ Fed. Project No. _____
 Functional Classification: _____ Terrain: _____
 Present Year (&ADT): _____ Design Year (&ADT): _____
 DHV (%): _____ Directional Split (%): _____ Percent Trucks: _____
 Pavement Design Year: _____ Pavement Design ESAL: _____
 Design Turning Vehicle: _____ Design Accommodated Vehicle: _____
 Project Type: _____

13 CONTROLLING DESIGN CRITERIA	STANDARD	AS DESIGNED	EXCEPTION
1. Design Speed	ft	ft	
2a. Travel Lane Width	ft	ft	
2b. Auxiliary Lane Width	ft	ft	
3a. Outside Shoulder Width	ft	ft	
3b. Inside Shoulder Width	ft	ft	
3c. Auxiliary Lane Shoulder Width	ft	ft	
4. Bridge Clear-Roadway Width	ft	ft	
5. Horizontal Curvature, Minimum Radius	ft	ft	
6. Superelevation*	e(max) = %	e(max) = %	
7. Vertical Curvature, Minimum	K(crest) = K(sag) =	K(crest) = K(sag) =	
8. Grade	Min. = % Max. = %	Min. = % Max. = %	
9. Stopping Sight Distance*	ft	ft	
10. Cross Slope	%	%	
11. Vertical Clearance*	ft	ft	
12. Lateral Offset to Obstruction	ft	ft	
13. Structural Capacity			

* Attach calculations.

OTHER DESIGN CRITERIA	STANDARD	AS DESIGNED	WAIVER
Superelevation Transition*	$\Delta =$ %	$\Delta =$ %	
Surfacing Material			
Clear Zone Slope			
Clear Zone Width	ft	ft	
Bicycle Lane Width	ft	ft	
Sidewalk Width	ft	ft	
Intersection Sight Distance, Left Turn*	ft	ft	
Right Turn*	ft	ft	
Crossing*	ft	ft	
Passing Sight Distance	ft	ft	
Degree of Access Control			
Median Treatment			
Median Width	ft	ft	
Illumination			
Curb Type			

* Attach calculations.

Notes:

Proposed by: _____ Date: _____
 Designer Signature (Consultant or Staff)

Checked by: _____ Date: _____
 Engineering Manager Signature

QC Check Comments

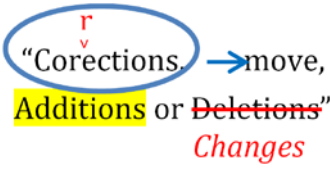
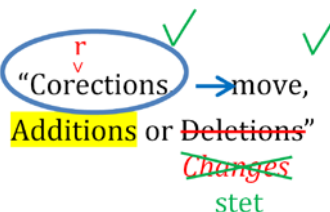
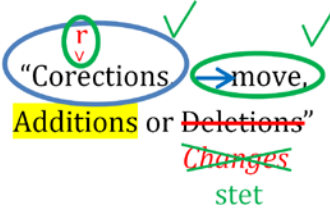
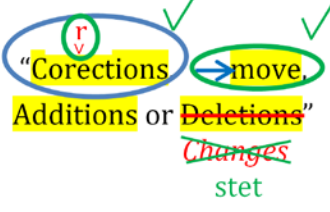
Provided comments, methods, assumptions, explanations, file locations, and any other information needed to facilitate the QC check. Print and attach this sheet to the checklist. Upload this sheet with the associated checklist.

Activity: _____ **Deliverable(s):** _____
Originator: _____

Checker: _____

Additional Commenter(s): _____

QC Color Code Instructions

Originate Check Print (Originator/Designer)	Create Check Print. Do not use Red/Yellow, or Blue.	"Corection, Additions or Deletions"
Check: (Checker)	Yellow highlight is used for correct items. Red for corrections, additions, or deletions. Blue for notes and comments for clarification or direction but not to be drafted.	
Back Check: (Back Checker/Originator)	Green check mark indicates agreement with change. STET and cross out is used when agreed that no change should be made.	
Correct: (Corrector/Originator)	Green circle when update complete. Print final document when all updates are complete.	
Verify: (Verifier/Checker)	Check against updated print and yellow highlight all items correctly updated.	
Updated Print		"Corrections, Additions, or Deletions"