

Turnpike Roadway Design Guidance

Design Submittals

Design Exception, Formal Design Variation, Project Design Variation Memo

Include the following (4) Four pdf's with every ERC submittal:

1. DE/DV/DVM Checklist
2. Stamped QC Docs with completed signoffs
3. Submittal/Approval Letter
4. S&S Justification Report

Common Deficiencies:

1. Missing criteria table that compares Exist, Proposed, Required by AASHTO vs FDM
2. Missing Plan, Profile, Typical Section, Cross Section markups as applicable
3. Missing site photos of existing condition
4. Missing a summary that clearly states exactly what is required vs what is provided, why the required criteria cannot be met, and what mitigation measures are in the plans.
5. Missing in write up whether the condition is existing to remain or something the project is creating or worsening.
6. Missing appropriately identifying crashes that are directly attributed to the design element that does not meet criteria.
7. Missing recommended solutions and safety improvements to mitigate for the design element not meeting criteria.
8. Refrain from using subjective terms (such as less safe, deficient, substandard...etc) and state facts (e.g. existing conditions does not meet FDM requirement).
9. Submittal/Approval Letter missing all required signature blocks
10. Justification Report is S&S by EOR only, no concurrence signatures required for the report

Timeline/Schedule of Events:

1. Within 60 days NTP a DE/DV/DVM Meeting is needed or it covered at the Project Kickoff Meeting. Agenda includes:
 - a. Present a Table of all DE/DV/DVM
 - b. Table needs Exist, FDM criteria, Proposed, B/C, Cost to upgrade, Attributable crashes
 - c. Deviations for ERCAR
2. Draft & Final ERC Submittals closed out prior to Ph II
3. Approved Prior to Ph III

Typical Section Package

Include the following (3) Three pdf's with every ERC submittal:

1. Typical Section package Checklist
2. Stamped QC Docs with completed signoffs
3. Typical Section Package

Common Deficiencies:

1. Typical Section Package was copied from the Roadway Plans Typical. There is too much detail in the construction plans. The Typical Section Package requires significantly less information. See Checklist.
2. FDOT District and Local Agency Signature Blocks are missing for facilities that are to be owned and maintained by other agencies. Include the Signature blocks for other agencies in the package cover sheet. Don't include signature blocks in the individual typical sections.
3. For peds clearly state "X ft Shared Use Path" or "X ft Sidewalk" since these two facilities are not interchangeable and fall into different sets of criteria FDM 222 vs FDM 224.
4. The 3 speeds are required for each typical: Design Speed, Posted Speed, Target Speed.
 - a. Target speed is NA for L/A facility in Typical Section Packages.
 - b. Target Speed is NA for Off System facilities (i.e. local and county roads)
 - c. EOR develops a target speed memo as required by some Districts
5. Shoulder width does not meet 12 foot requirement. Ensure the traffic volume is low enough to allow for a 10' shoulder.

Timeline/Schedule of Events:

1. Draft & Final Submittals closed in ERC Prior to Ph II
2. After 2 ERC reviews are complete, schedule a meeting with reviewers and signatories (DRDE, DSDE...etc) prior to obtaining DDE and local agency signatures.
3. Short presentation should include the following where applicable:
 - a. Roll Plots on Aerial
 - b. Context Classifications of all side streets impacted by project limits
 - c. Present Design Speed, Posted Speed, Target Speed for all facilities included with project
 - d. Modifications and/or improvements from existing condition
 - e. Street view pictures of existing conditions to be improved
 - f. Under bridge pinch points and pictures
 - g. Box culvert pinch points including existing pictures
 - h. Border Width deficiencies including existing pictures
 - i. Shoulder width deficiencies including existing pictures
 - j. Horizontal sight distance deficiencies requiring selective clearing including existing pictures
 - k. Guardrail Offset deficiencies including pictures

- I. Modifications to structural elements including pictures
4. Resubmit S&S Typical Section Package incorporating all comments from meeting
5. Approved Prior to Ph III

Pavement Design Package

Include the following (3) Three pdf's with every ERC submittal:

1. Pavement Design Package Checklist
2. Stamped QC Docs with completed signoffs
3. Pavement Design Package

Common deficiencies:

1. Cross Slope Analysis was provided but was submitted as separate pdf or completely missing. The Cross Slope Analysis must be included in the Appendix of Pavement Design Package.
2. Cross Slope analysis excel file not included with submittal. Ensure excel files used to develop the tables are submitted separately during ERC reviews.
3. Did not number pavement designs in sequence.
4. Pavement Design numbering does not match in all 3 locations: Index Sheet, Calcs, Layering Detail
5. Missing local agency signature blocks
6. Missing exhibits and coordination meeting minutes on FC-5 vs FC-12.5 limits\
7. Missing Deep Milling Plan View Exhibits

Timeline/Schedule of Events:

1. Within 60 Days NTP Pavement Kick Off Meeting. Identify any additional borings needed.
2. Draft ERC Submittal
3. Pavement Design Meeting during 2 week review.
4. Final ERC Submittal prior to Ph II
5. Approved prior to Ph III

Phase Submittal

Below applies to the Five (5) Official Plan Submittals: Ph I, 45%, Ph II, Ph III, Ph IV.
Not applicable to submittals prior to Ph I and after Ph IV such as 15%LG and PSE

Include the Best Practice Checklist along with all stamped QC Docs with completed signoffs in a QC folder separate from the regular submittal folder.

Common deficiencies:

1. Design Docs missing Design Decision Journal
2. Design Docs missing AutoTurn exhibits for all radial turns for both final condition and temporary MOT conditions.
3. Design Docs missing AutoTurn Exhibits for all curves that require wider shoulder due to HSO
4. Design Docs missing HSO calculations for setting shoulder width and barrier offsets.
5. Design Docs missing meeting minutes for all important decision made regarding local agency and stakeholder coordination.
6. Design Docs missing correspondence related to local agency comment and concurrence with impacts to side roads, intersections and other stakeholders (i.e. schools, churches, hospitals, businesses, residential developments...etc.)
7. Design Docs missing correspondence related to emergency management and access to crashes during construction phases the current access is impacted.
8. Lane Closure times concurrence on policy deviations from FTE Traffic Ops, Local Agency (as required), CO (as required)
9. Missing 3D deliverables QC checklist and Electronic QC docs

15% Line and Grade Submittal

Below applies to 15% Line and Grade Submittals only.

Include the following:

1. Use 100 scale Roll Plots 72x36 standard size unless scoped otherwise.
2. Show on Profiles:
 - a. All profiles mainline, ramps, and cross streets
 - b. Begin/End Bridge limits
 - c. Cross streets
 - d. Estimated bridge structure depths and MVC
 - e. If tying into an adjacent proposed profile at the Begin/End show adjacent profile in solid light gray as work by others
 - f. Seasonal High Groundwater Elevation
 - g. Flood Plain Elevations
3. Show in Plans:
 - a. All Chains for mainline, ramps, and cross streets
 - b. All curve data for all curves including design speed and superelevation
 - c. Label all street names
 - d. Label subdivision and pertinent business names as applicable to project
 - e. Label all existing utilities
 - f. Guardrail, shoulder gutter & barrier wall preliminary limits.
 - g. Preliminary pavement markings
 - h. Aerial Background
 - i. All Pond Sites in PSR
 - j. Critical Cross Sections including pattern line A-A, B-B...etc
 - k. Label existing and Proposed LA Lines & RW lines
 - l. Show all adjacent work by others regardless of timing and letting schedule as solid light gray marked work by others
 - m. Show FGT Specified Width
4. Include KMZ file
5. Include base DGN files: ALGNRD, DSGNRD, SURVRD

QC Guidance - Applicable to ALL Submittals

For each submittal ensure QC docs meet all requirements of FDM 124.
Send email to PM with project staffing list. See example in FDM Table 124.2.1.

Ensure all staff working on the project have been approved prior to submittals. Staff descriptions below:

- PM (Project Manager) – Must be knowledgeable of all facets of the project at all times
- Deputy PM – Assistant to the PM that can offer immediate assistance to the Department when PM is unavailable
- QAM (Quality Assurance Manager) or Project Principal – Must be of higher level than the PM that oversees multiple other PM’s within the firm and must not be intimately involved with the project. When a higher level position than the PM is not available other options may be discussed with Department PM.
- LTP (Lead Technical Professional aka EOR) – Must attend all project meetings to represent their respective discipline whenever an FDOT specific discipline attendance is requested.
- QC Reviewer – Must be of increasing level of experience from LTP and must not be intimately involved with the project. *Note: If QC reviewer attends progress meeting as a back up to the LTP that is considered intimately involved with the project and no longer allowed to do QC. The PM must immediately provide a replacement QC Reviewer in the staffing list.

All staff that is to be replaced must be approved prior to any submittal using new staff. Submit email with the entire staffing chart showing all staff with no changes in additional the ones with changes.

See Example Staffing Change Request Table:

Element/Task	Deliverable	Previous		Proposed Changes	
		LTP	QC Reviewer	LTP	QC Reviewer

Include the following in a separate QC folder for all submittals:

1. Applicable Checklists signed by PM & QAM
2. Certificate of Compliance signed by PM & QAM
3. Scanned QC files with hand written markups should be signed off with hand written initials on the stamp
4. Electronic QC files must not be flattened so as author of every markup can be easily identified
5. Cannot do partial “wet ink” and partial electronic QC. Must either be all electronic and not flattened or all “wet ink”