

Common Deficiencies on Turnpike ERC Submittals

ROADWAY	
Roadway & MOT Plans	<input type="checkbox"/> Vertical clearance (VC) call outs are required over and under all bridges, especially for multi-level ramps. Often VCs are only called out for first level bridges under, but missing at all the higher levels over.
	<input type="checkbox"/> Barrier wall tapers and shoulder tapers require callouts.
	<input type="checkbox"/> Milling control point has to be shown on cross slope correction details.
	<input type="checkbox"/> Intermediate cross slope correction details require phasing shown to assure that water is not trapped between lanes.
	<input type="checkbox"/> Cross slope correction MOT requires intermediate wedge and buffer striping (solid stripe on each side of wedge treatment) as depicted on revised 2020 Standard Index 102-000.
	<input type="checkbox"/> MOT Plans must provide 10 foot shoulder on NB TPK Mainline for emergency shoulder use (ESU) on all areas listed on the Emergency Management website (https://www.fdot.gov/emergencymanagement/esu/default.shtm), and all other areas with only two travel lanes NB. This includes the section of Turnpike from Lantana Toll Plaza (MP 89) to Beachline (MP 256). Also, both NB & SB must provide 10 foot shoulders for disabled vehicles when barrier wall is present on both sides.
	<input type="checkbox"/> MOT Plans must use FDM 211 & 210 criteria for horizontal curves, not FDM 240.2.1.1 (per TDH 240.2.1.4).
	<input type="checkbox"/> For single lane ramps, MOT Plans must provide 12 feet minimum lane width and a minimum 2 feet clear paved shoulder and 4 feet minimum lateral offset to milling operations when using channelizing devices (per TDH 240.2.1.5). Often, only 2 feet to work zone is provided (not 4 feet), and drums are shown on the stripe that do not provide the 2 feet clear. Construction has expressed concerns that drums are constantly being knocked over when the drum is placed directly on the stripe. When there is physically not enough space to accommodate, EORs must document the deficiency with a Design Variation Memorandum.
	<input type="checkbox"/> Roadway & MOT Plans must have an interdisciplinary review to confirm there are no drainage, lighting, signalization, or ITS conflicts present.
	<input type="checkbox"/> MOT Plans must be updated to reflect any changes to Drainage and Roadway Plans at all stages of plan development.
Exceptions & Variations	<input type="checkbox"/> A criteria summary table is required that compares applicable FDM/AASHTO/TDH criteria versus proposed or actual that is to remain.
	<input type="checkbox"/> Mitigation measures must be identified, including those proposed, those not proposed, and why.
	<input type="checkbox"/> Provide three alternatives: 1) completely fixes the deficiency (if applicable); 2) a partial fix that is more cost effective than the complete fix; and 3) no build including associated cost comparison. The cost analysis must compare the different alternatives to show that a complete fix, or even partial fix, is not feasible to strengthen the argument for leaving the existing condition.
	<input type="checkbox"/> The benefit cost analysis must be completed utilizing benefit/Cost Analysis Spreadsheet Tool provided by FDOT Central Office. The spreadsheet can be downloaded from https://www.fdot.gov/roadway/QA/Tools.shtm .
	<input type="checkbox"/> Recommendation Section must state deficiency and restate why it is not feasible to fix and why it is requested to remain. This should not say that the deficiency is to remain because it was directed by FTE.
Typical Section Package	<input type="checkbox"/> Clear zone call outs must be shown.
	<input type="checkbox"/> Future anticipated typical sections must be shown, especially if it controls bridge spans, arrangement or some other permanent roadway feature.
	<input type="checkbox"/> Minimum vertical clearance (MVC) must be called out at the point of actual MVC.
	<input type="checkbox"/> Typical sections need to identify vertical clearances, both over and under, when there is bridge work.
	<input type="checkbox"/> On RRR projects where no bridge work is anticipated, if shoulder pinch points exist that warrant a Design Variation or Exception, a typical section is required for the Variation/Exception. If no bridge work is anticipated and there is no anticipated Variation/Exception then a separate typical section is not needed.

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Pavement Design & Cross Slope Analysis	<input type="checkbox"/> Draft & Pre-Final Pavement Designs (with Cross Slope Analysis Report) must be submitted prior to 45% traffic control plan workshop and plans submittal (per TDH 120.2.7.1). Every change in pavement design could have significant impacts to MOT.
	<input type="checkbox"/> Draft Pavement Design submittal must include 60% deep milling or base repair details.
	<input type="checkbox"/> Draft Pavement Design submittal must identify any pavement designs that require special Central Office approvals like high polymer or high friction surface.
	<input type="checkbox"/> Draft Pavement Design must clearly delineate the limits of FC-5 and FC-12.5 and any limits of deep mill and base repairs.
	<input type="checkbox"/> Draft Cross Slope Analysis Report must include 60% cross slope correction details and shoulder rocking details. Additionally, the calculation spreadsheet must be submitted with every pavement design submittal.
	<input type="checkbox"/> Draft Cross Slope Analysis Report must include a draft of the 45% level MOT phasing for paving operations.
	<input type="checkbox"/> Final Pavement Design (with Cross Slope Analysis Report) must be submitted and reviewed prior to submitting Phase II Plans (per TDH 120.2.7.1). Proceeding with Phase II Plans without Final Pavement Design & Cross Slope Analysis, including all the associated details, presents the risk of missing a lot of items needed for Phase II Plans. This requires additional work at Phase III and Phase IV that ripple back through the plans.
	Design Docs
<input type="checkbox"/> Sight distance triangles are required for: all horizontal & vertical conditions as appropriate; to signal heads at the ramp intersections; bridge columns and other obstructions.	
<input type="checkbox"/> Vertical clearance calculations must be shown at all bridges.	
DRAINAGE	
<input type="checkbox"/> Drainage calculations and reports must be submitted to support any phase or subphase of work, whether temporary calculations for a MOT plan set or hydroplaning calculations from early submittals (such as typical sections, DV/DE packages, etc.). Phase submittals require appropriate documentation submittals and could cause rejection of the submittal if not included.	
<input type="checkbox"/> Drainage Report appendices must be included as appropriate.	
STRUCTURES	
<input type="checkbox"/> Documentation (calcs, etc.) from sub-consultants must be provided.	
<input type="checkbox"/> Miscellaneous Structure Plans/Details (signs, signals, ITS, etc.) must be provided at the first required submittal.	
<input type="checkbox"/> Miscellaneous Structure calculations (signs, signals, ITS, etc.) must be provided at the first required submittal.	
<input type="checkbox"/> Geotech Reports must be submitted as appropriate.	
<input type="checkbox"/> Boring Sheets must be inserted in plans as appropriate.	
<input type="checkbox"/> Sheet numbers and initials must be shown on calculations.	
<input type="checkbox"/> Required information must accompany BDRs, such as: Typical Section Package, BHR info, and Roadway Plans in the vicinity.	
<input type="checkbox"/> Documentation (i.e., backup sketches, etc.) is required to determine the need for temporary critical walls.	
<input type="checkbox"/> Documentation (i.e., backup sketches, etc.) is required to determine wall zone pipes.	
<input type="checkbox"/> Coordination among design disciplines associated with structures must be accomplished. Deficiency example include light pole locations on a bridge do not match the lighting plans.	
<input type="checkbox"/> Existing plans must be inserted into the plans as appropriate.	
ITS	
<input type="checkbox"/> Ensure the design plans and design documents (such as the Power Analysis Report) are consistent with each other.	
<input type="checkbox"/> Begin ITS design early, suggested at Phase II, including identifying power sources so that adequate time is available to address and incorporate comments.	

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SIGNING AND PAVEMENT MARKINGS
<input type="checkbox"/> Applicable Typical General Notes shown in the Traffic Guide Drawings Sheet 101-1 must be included in the plans (per TDH 325.5).
<input type="checkbox"/> The width of the attached cardinal direction sign, directional arrow auxiliary sign, or other auxiliary sign must match the width of the parent route marker sign (per TDH 230.2.12).
<input type="checkbox"/> Follow the Typical Off-Ramp Signing Diagrams located on the Turnpike Design website for Advisory Speed Warning Signing at all Turnpike exit ramps (per TDH 230.2.1)
<input type="checkbox"/> Follow the Freeway Classification in MUTCD Tables 2B-1, 2C-2, 2E-4, and 2E-5 for size of signs, lettering, and plaques.
<input type="checkbox"/> Ensure Guide Sign Worksheets show sign stations and quantity.
<input type="checkbox"/> Place overhead advance guide signs over the shoulder with the edge of the sign aligned with the edge of the traveled way unless otherwise shown in the MUTCD (per FDM 230.2.2).
<input type="checkbox"/> Cross sections for overhead signs must include the grade elevation at the top of the foundation and the elevation at the high point of the roadway directly beneath the structure. The vertical clearance from the high point of the roadway beneath the structure to the bottom of the sign must be clearly labeled (per TDH 325.9).
<input type="checkbox"/> Verify Post-Interchange Sign sequencing. If the space between interchanges permit beginning 500 feet beyond the downstream end of the acceleration lane, a Route sign assembly should be installed followed by a Speed Limit sign and Distance sign (per MUTCD 2E-38).
<input type="checkbox"/> Do not place wrong way arrows between consecutive directional arrows at exit ramps (per Index 711-003).
LIGHTING
<input type="checkbox"/> Updated photometrics/LDAR are required for design modifications (i.e. new pole locations, heights, or luminaires). Provide FAA results for updated locations, heights, etc. in the updated LDAR report.
<input type="checkbox"/> Power System Analysis, including utility service provider correspondence, must be included with the Phase III LDAR submittal. Show Arc Flash labels in the plans for equipment including service disconnect, load center panel,
<input type="checkbox"/> In accordance with department specifications, make all selections for proposed equipment on cut sheets provided in the LDAR .
<input type="checkbox"/> Underdeck mounting details, including conductor/conduit sizes, must be included in Phase III Plans.
<input type="checkbox"/> Load center details including riser diagram are required in Phase III Plans. Include project specific load center/service point information. Include grounding details in accordance with electrical codes.
<input type="checkbox"/> Provide new power service CIAC costs/pay items with the Phase III submittal. Coordinate with the utility power service provider early on in the project to prevent schedule impacts or delays .
UTILITIES
<input type="checkbox"/> Utility information needs to be shown on the plans at the appropriate phase of plan development in accordance with criteria. All utilities need to be properly labeled.
<input type="checkbox"/> All existing utilities including department facilities need to be completely and accurately depicted.
ENVIRONMENTAL PERMITTING
<input type="checkbox"/> Wetland or surface water lines must be indicated on plans.
<input type="checkbox"/> Species occurrences (such as tortoise burrows, eagle's nests, etc.) must be marked with a buffer on plans.
<input type="checkbox"/> Draft ERP package should be included with Phase I Plans and Final Draft ERP or Environmental Permit Exemption Memo must be included with the Phase II Plans to ensure a timely submittal of any permits needed.

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GENERAL

- Prior to starting design, read the TDH sections pertaining to respective disciplines, including the latest updates. FTE disciplines invest significant time to include FTE-specific requirements and update them on a regular basis based on lessons learned and specification updates in general.
- Responses to the comments on the previous submittal must be completed prior to the next submittal.
- All agreed upon comments must be implemented on any subsequent submittal.
- Plan notes should be project-specific and should not be redundant to or conflict with the specifications or special provisions. Notes should not be copied and pasted from a previous project.
- Provide applicable Notes to Reviewers when required information cannot be provided in earlier phases of plan submittals. An example is project specific pay items which are requested by the consultant from FDOT Central Office in earlier phases and assigned in later phases of the project.
- QC documents must be submitted as required by the FDM.