Common Deficiencies on Turnpike ERC Submittals

GENERAL	
	☐ Responses to the comments on the previous submittal must be resolved 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.
ROADWAY	
Roadway & MOT Plans	☐ Vertical clearance (VC) call outs are required under all bridges.
	☐ Barrier wall tapers and shoulder tapers require callouts.
	☐ Milling control point has to be shown on cross slope correction details.
	☐ Intermediate cross slope correction details require phasing shown to assure that water is not trapped between lanes.
	☐ 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.
	☐ 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.
	☐ MOT Plans must use FDM 211 & 210 criteria for horizontal curves, per FDM 240.2.1.4.
	☐ 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. 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, use AutoTurn to verify the width can accommodate design vehicles.
	☐ Roadway & MOT Plans must have an interdisciplinary review to confirm there are no drainage, lighting, signalization, or ITS conflicts present.
	☐ MOT Plans must be updated to reflect any changes to Drainage and Roadway Plans at all stages of plan development.
	☐ MOT Plans must provide a traffic operational pattern that is equal to or better than existing conditions. An example is at toll plazas where a merge from two lanes to one lane is shorter or worse than the existing condition.
	☐ MOT Plans phasing notes must clearly identify the objective of each phase and provide clear notes on each step.
	☐ Provide 12-foot shoulders for 3 lanes or more and >10% trucks (24-hr) per FDM. Consider AASHTO DDHV > 250 trucks.
	☐ For 12-foot shoulders the barrier lateral offset is 12 feet and guardrail lateral offset is 14 feet, not 12 feet.

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Exceptions & Variations	☐ A criteria summary table is required that compares applicable FDM/AASHTO criteria versus proposed or actual that is to remain.
	☐ Mitigation measures must be identified, including those proposed, those not proposed, and why.
	☐ 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.
	☐ 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.
	☐ 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 Sections	☐ Clear zone call outs must be shown.
	☐ Future anticipated typical sections must be shown, especially if it controls bridge spans, arrangement or some other permanent roadway feature.
	☐ Minimum vertical clearance (MVC) must be called out at the point of actual MVC.
	☐ Typical sections need to identify vertical clearances under bridges when there is work under a bridge.
	☐ Provide hydroplaning calculations if applicable.
Pavement Design & Cross Slope Analysis	☐ Draft & Pre-Final Pavement Designs (with Cross Slope Analysis Report) must be submitted prior to 45% traffic control plan workshop and plans submittal (per Project Scope). Every change in pavement design could have significant impacts to MOT.
	☐ Draft Pavement Design submittal must include 60% deep milling or base repair details.
	☐ Draft Pavement Design submittal must identify any pavement designs that require special Central Office approvals like high polymer or high friction surface.
	☐ Draft Pavement Design must clearly delineate the limits of FC-5 and FC-12.5 and any limits of deep mill and base repairs.
	☐ 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.
	☐ Draft Cross Slope Analysis Report must include a draft of the 45% level MOT phasing for paving operations.
	☐ Final Pavement Design (with Cross Slope Analysis Report) must be submitted prior to submitting Phase II Plans and approved prior to submitting Phase III Plans.
	☐ Provide base clearance calculations if applicable.
Design Docs	☐ AutoTurn analysis is required for the final proposed condition and all phases of MOT.
	☐ Sight distance triangles are required for: all horizontal & vertical conditions as appropriate; to signal heads at the ramp intersections; bridge columns and other obstructions.
	☐ Vertical clearance calculations must be shown at all bridges.
	☐ For dual or triple left turn lanes, use upstream destinations to determine if WB-62 must be used as a design vehicle for inside, outside, or both lanes. Coordinate with local agency.
	☐ Provide guardrail length of advancement calcs.

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DRAINAGE	
☐	Drainage calculations and reports must be submitted to support any phase or subphase of work, whether temporary calculations for a MOT plan set, hydroplaning calculations from early submittals (such as typical sections, DV/DE packages, etc.), or calculations to accompany plan revisions/RFIs/CSIs. Phase submittals require appropriate documentation submittals and could cause rejection of the submittal if not included.
☐	Any deviations from the Drainage Manual must have been properly approved by the DDrE. This documentation must be included in the Final Drainage Calculations.
☐	Any relevant supporting documentation for modeling input (tailwater data, TCs, existing flows, offsite flows, as built plans, etc.) must be included in the Drainage Calculations to support the modeling assumptions and assist in the review.
☐	Drainage Report appendices must be included as appropriate.
STRUCTURES	
☐	Documentation (calcs, etc.) from sub-consultants must be provided.
☐	Miscellaneous Structure Plans/Details (signs, signals, ITS, etc.) must be provided at the first required submittal.
☐	Miscellaneous Structure calculations (signs, signals, ITS, etc.) must be provided at the first required submittal.
☐	Geotech Reports must be submitted as appropriate.
☐	Boring Sheets must be inserted in plans as appropriate.
☐	Sheet numbers and initials must be shown on calculations.
☐	Required information must accompany BDRs, such as: Typical Section Package, BHR info, and Roadway Plans in the vicinity.
☐	Documentation (i.e., backup sketches, etc.) is required to determine the need for temporary critical walls.
☐	Documentation (i.e., backup sketches, etc.) is required to determine wall zone pipes.
☐	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.
☐	Existing plans must be inserted into the plans as appropriate.
ITS	
☐	Ensure the design plans and design documents (such as Power Analysis Report) are consistent with each other.
☐	Begin ITS design early, including identifying power sources so that adequate time is available to address and incorporate comments.
☐	Provide Maintenance of Communications and existing ITS showing relocations and corresponding notes for all phases of construction.
☐	Coordinate with Specs/ITS early for the development of MSPs/TSPs.
☐	Coordinate with ITS to complete Sole Source documentation immediatelty after Phase II submittal.

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SIGNING AND PAVEMENT MARKINGS
☐ Review Enterprise Signing and Pavement Markings Guidance Document for applicable General Notes to include in the Plans.
☐ Follow the Freeway Classification in MUTCD Tables 2B-1, 2C-1, 2E-1, 2E-4, and 2E-5 for size of signs, lettering, and plaques.
☐ Follow the Typical Off-Ramp Signing Diagrams located on the Turnpike Design website for signing and pavement markings at all Turnpike exit ramps.
☐ Per MUTCD Section 2E.47, post-interchange sign sequence should begin 500-ft downstream of the acceleration lane with a route sign, followed by a speed limit sign and a distance sign each at a spacing of 1000-ft.
☐ Per FDOT Standard Plans Index 546-010, use ground-in rumble strips continuous array on both inside and outside shoulders 1,000 feet in advance of bridge end or back to the gore recovery area for mainline interchange bridges. Use the skip array for all other locations. Show limits of continuous and skip array.
☐ Where applicable, replace post mounted delineators along exit and entrance ramps per FDOT Standard Plans Index 711-003, sheets 5 and 6 of 8.
☐ Per FDM Section 212.12.5, lane lines for dual and triple left turns should be determined by plotting the swept paths of the selected design vehicles. Design of dual turns should accommodate an SU-40 vehicle and a P vehicle turning simultaneously and triple left turns should accommodate a WB-62FL, an SU-40, and a P vehicle turning simultaneously.
☐ Ensure Guide Sign Worksheets show sign stations and quantity.
☐ Do not show cutouts or logos in the guide sign worksheet for logo panels as their dimensions may not match and leave a white empty space.
☐ Per TEM Section 2.43.3, use 'RAMP ONLY' sign panel when the through lane is dropped at the interchange entrance ramp.
LIGHTING
☐ 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.
☐ Power System Analysis, including utility service provider correspondence, must be included with Phase III LDAR submittal. Show Arc Flash labels in plans for equipment including service disconnect, load center panel, etc.
☐ In accordance with department specifications, make all selections for proposed equipment on cut sheets provided in the LDAR .
☐ Underdeck mounting details, including conductor/conduit sizes, must be included in Phase III Plans.
☐ 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.
☐ 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 .

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UTILITIES
☐ 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.
☐ All existing utilities including department facilities need to be completely and accurately depicted.
TOLLS
☐ Ensure the TSTM Table IV notes column includes project specific values for the 100-year flood plain, TEB finished floor elevation, cable distances, etc. as required in the tolling scope and TSTM template.
☐ Coordinate the Preliminary TSTM with PD&E roadway concepts to accommodate sketch level toll sites in each concept alternative.
☐ Verify that contours are shown on grading plans per GTR 302.3.1.
☐ Ensure grading plan provides positive drainage per GTR 231.6(1).
☐ Coordinate with other disciplines to maintain required separation distances from toll site envelope per GTR 230.
☐ Coordinate with MOT development to ensure that the existing toll site maintains operation until the new toll site is built, operational, and actively collecting tolls per GTR 223.
☐ Verify the roadway typical sections show the correct type of concrete barrier, toll header curb, shoulder pavement at full depth and full width, and adequate toll site width per GTR 231.
☐ Ensure the appropriate electrical equipment layouts inside the TEB are coordinated with the number of tolling movements per GTR Exhibit 242.1-2.
☐ Verify that the site grading values along the centerline of the gantry match the grading values shown on the gantry elevation sheets.
☐ Ensure the site electrical conduit layouts provide the adequate quantity of conduits and intermediate pull boxes to support the interim and ultimate conditions.
☐ Provide a toll equipment layout that doesn't conflict with gantry structural elements including chord splices, w-section members, etc. For accessible gantries, ensure the gear box orientations and swing gate posts are also considered.
☐ Provide shoulder transitions into and out of the toll loop pavement area to prevent ponding.
ENVIRONMENTAL PERMITTING
☐ Wetland or surface water lines must be indicated on plans.
☐ Species occurrences (such as tortoise burrows, eagle's nests, etc.) must be marked with a buffer on plans.
☐ Draft ERP package should be included with Phase I Plans and Final ERP or Environmental Permit Exemption Memo must be included with the Phase II Plans to ensure a timely submittal of any permits needed.