



Final Design Checklist Roadway Design Plans

Project Name: _____
 Designer: _____
 Project Manager: _____
 Reviewer: _____

Project No.: _____
 Submittal Date: _____
 Review Date: _____

	Designer						Comments
	Quality Control						
DESIGN EVALUATION:	N/A	60%	95%	100%	Sealed		
Checked horizontal geometry meets design criteria.							
Checked vertical geometry meets design criteria.							
Checked cross slopes and superelevation rates and transitions meet design criteria.							
Checked clear zone is unobstructed.							
Checked intersection sight triangles are unobstructed.							
Checked driveway sight triangles are unobstructed.							
Checked taper rates meet design speed requirements.							
Checked guardrail length of need meets design requirements.							
Checked earthwork end area volumes have been calculated and shrink/swell factors provided in geotechnical report have been applied.							
DRAFTING GENERAL INFORMATION:	N/A	60%	95%	100%	Sealed		
Followed MCDOT's latest Roadway Design Manual (RDM).							
Followed latest MCDOT CADD and Drafting Guidelines.							
Used latest MCDOT sheet border and title blocks.							
Aligned plan sheet(s) such that the North arrow faces upward or to the right.							
Included North arrow and scale on all applicable sheets.							
Setup CADD to print local file path, and print date on the left sheet border.							
Updated lower title block to show project title and limits.							
Filled in sheet numbers in all upper and lower title blocks.							
CADD AND ASSOCIATED FILES	N/A	60%	95%	100%	Sealed		
Include all current CAD and associated files in deliverable (.dgns, .alg(s), .dtm(s)).							
Remove outdated files and contents within files, specifically alignments in the .alg file.							
FACE SHEET:	N/A	60%	95%	100%	Sealed		
Key Map shown and labeled with street names, centerline stationing, and north arrow pointed upward or to the right.							
Vicinity map shown with Section, Township and Range, and street names labeled and north arrow pointing upward.							
Location map - County map shown with circled project area and project number callout.							
Project Name and Termini in title.							
Project Number in subtitle.							
Included the table titled "Locations for As-Built Indexing."							
Filled in pertinent information in the bottom right block including MCDOT PM, Director, and County Supervisor Chairman.							



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GENERAL NOTES:	N/A	60%	95%	100%	Sealed		
Symbols Legend shown.							
Abbreviations listed.							
List of Standards (M.A.G., A.D.O.T., etc.) provided.							
General Notes shown.							
Length of Project (feet and miles) provided.							
Project Disturbed Area (square feet and acres) provided.							
Index of sheets shown with numbers and sheet names specific to project.							
Design Data (Classification, Terrain, Design Speed, Current Daily Traffic and Year, and Future Daily Traffic and Year) shown for all roadways.							
QUANTITY SUMMARY SHEET:	N/A	60%	95%	100%	Sealed		
All calculated material quantities are listed sequentially in a table with item numbers and units, following MCDOT Bid Item Master List (BIML).							
Items that are paid by lump sum, or cannot be quantified on plan sheets (with the exception of Roadway Excavation), are NOT listed.							
Zeros are NOT used and spaces are left empty when an item is absent from a plan sheet.							
Provided quantities per plan sheet.							
Pavement quantities backchecked.							
If a pay item is quantified on a summary sheet other than paving sheets (e.g. traffic sheets or earthwork report), quantities reference the summary sheet, not the plan sheet.							
TYPICAL SECTION SHEET:	N/A	60%	95%	100%	Sealed		
Typical section drawn based on roadway classification.							
Appropriate design cross-slope used and drawn at Scale 1:1 (vertical can be exaggerated if needed).							
New sections developed for significant changes in roadway geometric features and elements - cross-slope, roadway width, guardrail, barrier, curb, gutter, sidewalk, R/W, etc. Used dropdown partial section for minor changes.							
Special sections shown individually (e.g. approach slab, elevated roads, etc.).							
Pavement structural section layers shown. Layers grouped together and total thickness provided. Structural sections numbered. Show on each individual typical section.							
Verify pavement addressed to confirm if appropriate removal and use of existing surface material has been identified.							
Dimensioned only in horizontal or vertical directions; not sloping.							
Dimensioned all section elements and features - travel lanes, shoulders, existing and new R/W, ditches and slopes individually, and then total width shown.							
Used tenth of a foot (e.g. 12.8') for existing features and hundredths (e.g. 12.84') for new ones. Decimals and zeros NOT used with whole numbers.							
Control lines (e.g., construction centerline, PGL, section line, crown line, etc.) shown and labeled.							
Roadway cross-slope shown in percent format (5%) and roadside slopes in ratio format (20:1).							
Typical sections titled, showing roadway name, stationing, and NTS under the name.							
Limit the use of dimensions of "Varies".							
Make a note of transition length (by distance or stationing) per each typical.							
GEOMETRIC CONTROL:	N/A	60%	95%	100%	Sealed		
All secondary control shown							
Stations and Offset to all monuments and alignments.							



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Clear designation between construction centerline and monument line when different.						
If the construction centerline and monument centerline differ at the beginning or end of the project, dimension bearing and distance tie to each other.						
Provide coordinates of the beginning and ending of the project on construction centerline if not on a physical monument.						
Annotate all monuments with point numbers.						
(GC11) The coordinate table should include and Point Name/Number, Northing, Easting, Elevation and Station and Offset						
Include the PLSS corner diagram at point appropriate point.						
Annotate the geometry (bearing, distances and curve information) of pavement edge and curb within plan view or in a detail with a reference to the detail by sheet number.						
Label all PC's, PT's, PRC's, PCC's, etc. with Station, Offset and Grade. This includes but is not limited to Medians, Edge of Roads and Sidewalks.						
Station, Offset and Grade provided where the beginning and ending of a straight line taper is at the edge of roadway . Geometry (i.e. bearing, distance, and curve data) is not needed.						
Station, Offset and Grade provided when lines and curves maintain a constant offset from the construction centerline. Geometry (i.e. bearing, distance, and curve data) is not needed.						
The Right of Way shall be on the same station and offset as the construction centerline.						
Proposed section and centerlines are shown with proposed stationing.						
Included station callouts for Beginning and Ending of Project.						
Existing and proposed right-of-way shown with callouts. Dimensions are not necessary.						
Intersection station equations (mainline and crossroads) are shown.						
Important points such as POB, PC, PI, PT and POE are shown.						
Tangent lengths and bearings shown between curves.						
Provided coordinate table showing Northing, Easting and Elevation for key alignment points and benchmarks.						
Included Section, Township and Range information.						
Provided benchmark information in table format.						
Benchmarks shown and labeled in plan view.						
Provided metadata including horizontal and vertical coordinate system datum note with appropriate information like ground scale factor.						



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ROADWAY PLAN AND PROFILE SHEET:	N/A	60%	95%	100%	Scaled	
Compiled plan and profile on the same sheet. At large intersections or when steep elevation prohibits, plan and profile may be separated in successive sheets.						
Existing and proposed mainline and crossroads alignments shown.						
Existing and proposed roadway design features and elements (pavement, driveways, guardrail, signs, signals, cut/fill limits, curb, gutter, sidewalk, etc.) are shown and annotated as required by MCDOT drafting standards.						
Existing and proposed drainage features shown and annotated. Drainage sheets referenced (if applicable).						
Existing houses and appurtenances (mailboxes, decks, patios, fences, walls, etc.) are shown.						
Existing and proposed structures (retaining walls, bridges, misc.) are shown.						
Existing utilities features (poles, lines, boxes and structures) are shown.						
Construction centerline alignments stationed and annotated (tangents and important points such as POB, PC, PI, PT, POE, and station equations).						
Curve data (PI Sta, Δ, D, T, L and R) shown.						
Dimensioned proposed pavement widths and curb returns.						
Backcheck standard curb details to match subgrade elevations.						
Driveway design accomedates field conditions						
Dimensioned and annotated existing and proposed right-of-way and easements. Property lines and information shown for each parcel. Jurisdictional boundary lines are shown and labeled.						
Benchmarks are shown and station, offsets, and elevations are provided.						
Drainage flow direction identified with arrows.						
Existing ground and design centerline vertical alignment shown in profile.						
Profiles shown for proposed top of curb and gutter and existing grade along proposed curb alignments.						
Important points, such as PVC, PVI, PVT, HP and LP, shown with station and elevation.						
Vertical curve data (length, correction, grades, K & SD for crest curves and headlight SD for sag curves) shown.						
Items for (Construction) listed in sequential order and corresponding quantities are shown.						
Items for (Removal/Relocate) listed in sequential order and corresponding quantities are shown.						
Annotated all angle points along the proposed and existing right-of-way with station and offset.						
Annotate any curves in proposed or existing right-of-way.						
Scale added for 11 x 17 plan set.						
Annotate tappers on match lines with station and offset.						
Make sure to note if annotation is to F/C or B/C.						
Annotate all corners TCE, Drainage Easement, Utility easements with Station and Offset.						
Annotate Cut / Fill transitions with Station.						
Annotation all curve returns, whether pavement or curb and gutter with Station, Offset and Grade.						
If ADA ramp(s) are offset provide Station and Offset.						
Profile vertical curves make sure the correction variable has correct sign (+ or -)						
Elevation of vertical profile to fit existing conditions.						
Verify if rock excavation is needed. Determine if specification is needed to address blasting or other special conditions.						



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INTERSECTION STAKING SHEETS:	N/A	60%	95%	100%	Sealed		
Provided intersection staking plan for intersecting roads.							
Provided staking data in tables for all curves including middle islands, curb returns and roundabout circles.							
Provided sidewalk ramp staking table with stations, offsets and elevations of key points.							
Provided curve data along the face of curb (R, T, Δ and L).							
CROSS SECTION SHEETS:	N/A	60%	95%	100%	Sealed		
Provided final cross sections that accurately represent the project earthwork.							
Existing grade, new grade, grade break elevations and offsets, and slope rates labeled.							
Calculated areas of cut and fill are shown.							
Locations of construction centerline, existing and new right-of-way, and easements are labeled.							
Cross sections do not exceed 50-foot spacing and are provided from beginning of project to the end of project.							
Scale is 1" = 10' horizontally and 1" = 5' vertically, or as approved by MCDOT.							
Cross-sections accompany but are not incorporated into project construction plans.							
DRIVEWAY PROFILE SHEET:	N/A	60%	95%	100%	Sealed		
Define skew on all driveways even if perpendicular to construction centerline.							
Annotate Station and Offset to edge of wings (45 degree tappers)							
Ensure that the cover over the Bell housing of pipe in considered in driveways.							
MISCELLANEOUS DOCUMENTS TO PROVIDE:	N/A	60%	95%	100%	Sealed		
Mass Diagram of earthwork and earthwork report provided.							
Special Provisions provided and align with engineers estimate and plans.							
Engineer's Cost Estimate and Quantity Calculations provided.							
Structure design calculations provided.							
Specifications include construction restrictions.							
Specifications address pavement millings and if millings are to be stockpiled at maintenance yard.							
Specifications address environmental needs (SWPPP, NOI) required at milling stockpile locations.							
Verify if specifications address option to over excavate or use cement treatment at soft spot locations.							
REFERENCE DRAWINGS:	N/A	60%	95%	100%	Sealed		
Reference drawings from utility companies, irrigation districts, and others are placed at the back of the plan set.							
OTHERS:	N/A	60%	95%	100%	Sealed		



Final Design Checklist Drainage Design Plans

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	N/A	60%	95%	100%	Sealed	
DRAINAGE PLAN AND PROFILE SHEET:						
Verify gaurdail requirements						
Developed separate plan and profile sheets for major drainage elements such as channels, stormdrains, bridges, culverts, etc.						
Information from roadway base plans shown, including existing and proposed roadway design features and appurtenances, utilities, irrigation, ditches, washes, vegetation, etc.						
Existing contours shown at 1' intervals.						
Existing and proposed right-of-way, parcels, drainage easements and TCEs shown and annotated.						
Existing drainage elements shown on plan and annotated (station and offset, type, size and dimensions).						
Proposed drainage elements shown on plan and in profile with annotations to include type, size and dimensions.						
Annotated existing ground and proposed finished grade for channels, ditches and retention basins.						
Cross-culverts shown with invert and skew information.						
Proposed stormdrain network shown and catch basins, manholes, and pipe runs annotated with unique IDs or numbering in sequential order.						
Stormdrain profile shown with hydraulic gradeline from outlet to inlet of each pipe segment.						
Annotated culverts and stormdrain pipe runs with stations along the length. Annotated the invert, length and slope information.						
Items for (Construction) listed in sequential order and corresponding quantities are shown.						
Items for (Removal/Relocate) listed in sequential order and corresponding quantities are shown.						
Annotate all pipes at both ends with Station, Offset and grade or make a note to see detail and a specific page.						
Always provide skew or note it is perpendicular.						
DRAINAGE CULVERT SHEET:						
Annotate headwall at both ends and angle points with Station and Offset and note which face the Station and Offset is to (up or down flow) or make a note to see detail and a specific page.						
Annotate skew						
If riprap is not defined by the typical section (i.e. an irregular shaped area), annotate Station, Offset and Grade of all angle points of irregular shaped area and slope of sides.						
DRAINAGE GRADING PLAN:						
In catch basin details annotate Station, Offset and Invert of the end of all pipes coming in or out.						
SPECIAL DETAILS SHEETS:						
Provided as many detail drawings as necessary to clarify design.						
Identified details with sequential numbering or lettering.						
Provided drawings for non-standard design and modified standard details.						
Provided details for roadway and drainage design elements (driveway profiles, pipe profiles, etc.).						
Standard details other than MCDOT, ADOT, or MAG must be reproduced in the construction documents, when referenced in the plans, or appended to the special provisions as appendix.						
OTHERS:						