

**Delaware County Engineer's Office (DCEO)
Common Access Drive (CAD)
Review Checklist**

Project Name: _____

Submittal Items included with Plans– All references included in this checklist (such as Art. IV, Section 401, etc.) refer to the Delaware County Engineer's Design, Construction and Surveying Standards Manual, current edition, including the Supplemental Specifications to the Standards.

- Yes No N/A Proper number of plan sets (4 sets of full size and 1 set of half-size plans)
- Yes No N/A Completed CAD plan review checklist provided
- Yes No N/A Proper fees, including fee submission checklist been submitted? See http://www.co.delaware.oh.us/engineer/Review/Plan_Review_fee_schedule_cover_page.pdf for copy of fee submission checklist.
- Yes No N/A Existing Topographic Survey – Incorporated into the Plan Sheet(s)
- Yes No N/A Drainage and/or R/W Conveyance Instruments, Metes and Bounds Descriptions, and associated Exhibits provided (If applicable – typically for any off-site easements – easements must state their purpose, such as “for highway purposes” or “for drainage purposes”).
- Yes No N/A Stormwater Management Report with all the various calculations, predevelopment and post-development tributary maps (See Article IV, Section 403 E, Art. IX and the Supplemental Specifications)
- Yes No N/A For proposed improvements to existing County/Township Road including roadway, shoulder and ditch improvements, additional plan sheets and a cost estimate are required (see separate Road Widening Checklist in the Supplemental Specifications). These improvements are required unless a variance is granted by DCEO.
- Yes No N/A Evidence of review and approval from the local fire department provided with the plans (Approval letter, comments, etc.)
- Yes No N/A Copies of approved environmental documents, Army Corps of Engineers permits, ODNR permits, and other permits submitted before final plan approval. (Article 401 A)
- Yes No N/A OEPA Stormwater NOI submitted before final plans approval
- Yes No N/A Final Engineer's Estimate (For publicly inspected/maintained items only – See Art. IX and the Supplemental Specifications for guidance regarding how to format the estimate.)
- Yes No N/A If final plan resubmittal, written response included that addresses previous comments and identifies additions/deletions made to plans since previous submittal (Article IV, Section 401 A)

Yes No N/A Construction surety addressed for publicly inspected items (See Article IV, Section 404)

Note: The County shall contact the plans submitter if the above items have not been submitted with the plans. Failure to submit the items may result in delay or halting of the review process.

Title Sheet – A sample Title Sheet is available from DCEO. Please contact this office for a copy.

- Yes No N/A Name of Subdivision
- Yes No N/A Location by Range, Township, Quarter-Township, Farm Lot (U.S.M. Lands), and/or Virginia Military Survey Name and Number
- Yes No N/A North Arrow
- Yes No N/A A clearly legible location map showing the location of the project with respect to the nearest road intersection
- Yes No N/A Written and graphical (bar) scale
- Yes No N/A Name, address, and telephone number of the Design Engineer preparing the plan
- Yes No N/A Signature Line for the County Engineer
- Yes No N/A Signature Line for the County Sanitary Engineer (if applicable)
- Yes No N/A Signature Line for Del-Co Water (if applicable)
- Note: DO NOT PROVIDE SIGNATURE LINES FOR THE COUNTY COMMISSIONERS ON THE TITLE SHEET
- Yes No N/A Applicable Delaware County Standard Drawings referenced by Drawing Number. City of Columbus and/or ODOT standard drawings may be referenced on a project-by-project basis.
- Yes No N/A Applicable Delaware County Supplemental Specifications referenced by number. City of Columbus and/or ODOT supplemental specifications may be referenced on a project-by-project basis.
- Yes No N/A Applicable specifications statement per Article IV, Section 402 H provided. (Typically the City of Columbus CMS would be used. Check with DCEO for further guidance.)
- Yes No N/A Index of Sheets
- Yes No N/A Index Map (Showing lot layout)
- Yes No N/A Benchmark list (referenced to USGS datum), Elevations, Designations and Locations
- Yes No N/A Owner/Developer's Name, Address, Telephone and Fax Numbers
- Yes No N/A Utility Owner(s) Name, Address, and Telephone and Fax Numbers
- Yes No N/A County Engineer Disclaimer Paragraph: "The Delaware County Engineer's signature on this plan signifies only concurrence with the general purpose and location of the proposed improvements with respect to improvements within the right-of-way, storm water management, erosion and sediment control. All technical details remain the responsibility of the Professional Engineer who prepared and certified these plans."
- Yes No N/A Consultant's Certification Paragraph: "This is to certify that good engineering practices have been utilized in the design of this project and that all of the minimum standards as delineated in the Delaware County

Design, Construction and Surveying Standards Manual have been met, including those standards greater than minimum where, in my opinion, they are needed to protect the safety of the public. Any variances to the above standards are consistent with sound engineering practices and are not detrimental to the public safety and convenience. These variances have been listed herein and have been approved by the Delaware County Engineer.”

- Yes No N/A Stamp and Signature of the Design Engineer licensed in the State of Ohio
- Yes No N/A Site Data including Total Area and Total Impervious Area
- Yes No N/A Change Order (revisions) table
- Yes No N/A Variance Table with Approval Dates Shown

General/Site Improvement Plan

- Yes No N/A Intersection Sight Distance (ISD) Diagram showing adequate intersection sight distance for the proposed entrance per the current ODOT Location and Design (L&D) Manual. (Do not use stopping sight distance tables).
- Yes No N/A Have all trees and obstructions within the R/W and sight distance triangle been shown (and designated to be removed) on the ISD diagram?
- Yes No N/A Maximum of 3 lots accessed by the CAD drive with a maximum of 2 more contiguous lots at the public road
- Yes No N/A Have plans and plat for all adjoining subdivisions been reviewed to insure the proposed project is compatible?
- Yes No N/A Has road widening and/or a ditch setback been addressed at an existing County/Township road? (Please refer to Article IV, Section 403E and the Road Widening checklist)
- Yes No N/A Reference provided to DCEO Standard Drawing DCED-R2130 for all road widening, shoulder and ditch improvements. Provide reference on Title Sheet for this standard drawing.
- Yes No N/A Have drainage easements for road widening and/or a ditch setback been addressed?
- Yes No N/A Are existing utilities shown in area of road widening and/or a ditch setback? Have the utilities been called out to be relocated? Have easements been provided for utility relocation or future needs?
- Yes No N/A Show the Clear Zone Setback line for projects located on County and Township Roads according to the ODOT L&D Manual, Volume 1, current edition. Provide additional utility easements if needed.
- Yes No N/A Is the CAD easement 60 feet (minimum) to permit driveway construction, roadside drainage and utility service infrastructure?
- Yes No N/A Does the minimum cross-section of the CAD include compacted subsoil and a minimum of 10 inches compacted aggregate base?
- Yes No N/A Are nearby existing adjacent and opposing driveways shown?
- Yes No N/A Typical Pavement Section (within R/W) provided? See Table 801 for required pavement buildup.
- Yes No N/A Show and Label all Existing and Proposed R/W, Easements (including type), and No-Build Zones
- Yes No N/A Show and Label Centerline, Edge of Pavement (or Back of Curb) and R/W of all adjacent streets.

- Yes No N/A Show and Label all Proposed and/or Existing Ingress/Egress, or Cross Access Easements
- Yes No N/A Have provisions for the drainage of the subgrade along the length of the CAD been provided?
- Yes No N/A Is adequate drainage provided along the sides of the CAD driveway by either enclosed storm sewers or by ditches with a maximum side slope of 3:1?
- Yes No N/A Is the minimum ditch gradient 0.5%?
- Yes No N/A Ditch flowline elevations provided? (Art. IV, Section 403 B)
- Yes No N/A Are any above ground utility structures placed within the drainage areas or installed in a manner that interferes with surface or subsurface drainage (Not permitted)?
- Yes No N/A Is CAD drive at least 12 feet wide? Are passing lanes of 6 feet wide and 35 feet in length provided every 350 feet or less? Distance from public road to first passing area must be less than 350 feet.
- Yes No N/A "T", "hammerhead" or cul-de-sac turnaround shall be provided at CAD Driveway terminus or other approved location as required.
- Yes No N/A Maximum gradient along CAD Driveway of 10%? (Required)
- Yes No N/A Driveway width (within R/W) compliant with Table 802?
- Yes No N/A Drive profile (within R/W) per Art. VIII, Section 802 A?
- Yes No N/A All trees shown within 16 feet horizontally and 20 feet vertically from the centerline of CAD Drive? Have they been labeled on the plans to be removed?
- Yes No N/A Does CAD have safe and adequate access, maneuvering and use by fire and safety vehicles?
- Yes No N/A Township Fire Department contacted regarding site access/approval letter. Did they request fire hydrants, dry hydrants for wet ponds, etc.?
- Yes No N/A General Summary/Table of Estimated Quantities provided?
- Yes No N/A Lot address with an approved reflective sign at each driveway needs to be shown on the final CAD plans. Plan note is acceptable.
- Yes No N/A Is a pole sign called out to be located at the CAD intersection with the public or private road (can be integrated into a common mailbox structure), located outside the public R/W and say "Private Drive". Sign to meet the size requirements of Regional Planning.
- Yes No N/A Health Department approval provided (If any onsite treatment regardless of lot acreage)? A copy of their approval letter is required before the plans can be approved by DCEO.
- Yes No N/A General Notes (See Supplemental Specifications for notes – A copy of these notes can be obtained from our office)
- Yes No N/A General DESC permit must be approved before final plans can be approved.
- Yes No N/A If high voltage power lines on site, has the power company had the chance to review the site plans?
- Yes No N/A As-built plans are required for all CAD's per Article IV, Section 404 and Article X.

Master Grading Plan

- Yes No N/A Has a Master Grading Plan been provided that complies with Article IV, Section 403 C?

- Yes No N/A Proper scale used for Master Grading Plan? Check the remaining items in Article IV, Section 403 C for complete compliance.
- Yes No N/A One-foot contour lines of the development area. Use of County Auditor's website (DALIS) is acceptable for existing topography.
- Yes No N/A North Arrow and Scale
- Yes No N/A Proposed contours (or proposed spot elevations) shown?
- Yes No N/A Existing Contours (dashed) shown?
- Yes No N/A Storm Sewer Top of Casting & Invert Elevations
- Yes No N/A Major Flood Routing (Designated with Unique Arrows defined on legend). Arrows used must be a different symbol than flow routing arrows.
- Yes No N/A Does the major flood routing for the proposed site affect any property downstream (e.g., existing subdivision, commercial sites, homes, etc.)? If so, the final engineering plans shall meet the requirements of Art. IV, IX, and the Supplemental Specifications.
- Yes No N/A Is the 100-year flood routing (including water surface elevations) shown and is it adequate?
- Yes No N/A Proposed Pad and Finished Floor Elevations provided?
- Yes No N/A Elevation of finished floors above 100-year flood elevation (minimum of 1 foot above 100-yr Flood).
- Yes No N/A Proposed Pad and Finished Floor Elevations provided?
- Yes No N/A Utility pedestals shall be located outside the 100-year flood elevation along major flood routes.
- Yes No N/A Proposed grading or spot elevations called out by each house location?
- Yes No N/A Drains away from house?
- Yes No N/A Show and Label any FEMA designated Floodway and 100-year Flood Plain.
- Yes No N/A Floodway Note provided?
- Yes No N/A Are leach fields, mound systems, or other approved on-site system shown on the plans for the lots and existing adjacent lots? Is storm water routed anywhere near existing or proposed leach fields or mound systems, potentially creating problems for owners or adjacent owners?
- Yes No N/A Proposed Landscape Mounding Contours
- Yes No N/A Spot elevations (minimum of 2, 3 preferred) for area of the proposed driveway radius.
- Yes No N/A Label Adjacent Property Names, Lot Numbers and Road Names
- Yes No N/A Existing and proposed utilities shown? (Surface and subsurface)
- Yes No N/A Size, Slope, Length, and Type of Proposed and Existing Culverts [may be done with profiles]
- Yes No N/A Size, Type, Length, and Slope of Existing and Proposed Storm Sewers [may be done with profiles]
- Yes No N/A Storm Sewer and/or Culvert Profiles shown (must meet County Standards if publicly maintained – provide on separate plan sheet than the Master Grading Plan)
- Yes No N/A Station and offset or GPS coordinates of all publicly maintained structures (Article IV, Section 403 B)

- Yes No N/A Proper design year storm used for Drive Pipes (10-year)? Have drive pipes been sized for all drives and shown on the plans? County standards used to compute design year flow (See Art. IX)?
- Yes No N/A Proper drive pipe length provided per Article VIII, Section 802H?
- Yes No N/A Ditch Direction of Flow and Slope shown?
- Yes No N/A Trees or Landscape Features in R/W? (Not acceptable)

Erosion & Sediment Control Plan

- Yes No N/A Inlet Protection Locations
- Yes No N/A Silt Fence Locations
- Yes No N/A Check Dam Locations
- Yes No N/A Erosion Control Standard Details
- Yes No N/A General Notes (See Supplemental Specifications for Notes)
- Yes No N/A Sequence of Construction (See Supplemental Specifications for Notes)
- Yes No N/A Construction Entrance Location
- Yes No N/A Construction Entrance Detail
- Yes No N/A Major Flood Routing (Designated with Arrows defined on legend)
- Yes No N/A Ditch depth calculations provided in storm report?
- Yes No N/A Has ditch protection been called out on the plans based on shear stress calculated per ODOT L & D Manual, current edition (Sections 1102.3 and 1102.4 - 670, 660, 659 protection, RCP)?

Existing Topographic Survey – To be included on applicable Plan Sheet(s)

- Yes No N/A Show all Existing Features including Structures, Trees, Metes & Bounds, Topography and Utilities
- Yes No N/A Note which existing structures are to be removed
- Yes No N/A Benchmark used, referenced to NAV Datum 1929 or 1988
- Yes No N/A Legend/Abbreviations
- Yes No N/A Additional Surveying Notes

Stormwater Management Report Requirements and Calculations

- Yes No N/A Bound (3-ring) report and CD (PDF Format) of Stormwater Management Report submitted?
- Yes No N/A Signature and Stamp of Ohio Registered Professional Engineer
- Yes No N/A Plan with tributary areas defined and tributary acreages labeled including offsite tributaries (Art. IV, Section 401 A).
- Yes No N/A Pre-Development and Post-Development Maps provided (Art. IV, Section 403 E)
- Yes No N/A Calculations agree with Plan?
- Yes No N/A Written Explanation/Summary/Narrative provided?
- Yes No N/A Water quantity addressed and complies with Art. IX and Supplemental Specifications?
- Yes No N/A Water quality addressed and complies with Art. XII and Supplemental Specifications?
- Yes No N/A Calculations and frequencies provided according to Art. IV, Section 403, Art IX, Section 903 and Table 901?

- Yes No N/A Calculations of the predevelopment peak flows from the delineated drainage areas for the 1, 2, 5, 10, 25, 50, and 100-year frequency, 24 hour storms. List the peak flows on the map.
- Yes No N/A Calculations of the post-development peak flows from the delineated drainage areas for the 1, 2, 5, 10, 25, 50, and 100-year frequency, 24 hour storms. List the peak flows on the map.
- Yes No N/A Summary Table
- Yes No N/A Drainage maintenance requirements shall be addressed for any storm water running through the site. Contact the Delaware Soil and Water Conservation District (SWCD). (See Art. IV, Section 401 A)
- Yes No N/A Exhibit C showing all stormwater management items that will be publicly maintained must be included as part of the final engineering plans. The plans cannot be approved without Exhibit C.
- Yes No N/A If Drainage Maintenance is required, then a cost estimate and a signed Drainage Maintenance Petition is required (See Art. IV, Section 404 and the Supplemental Specifications)
- Yes No N/A Is the overall stormwater management for the CAD acceptable? Does it adversely impact property owners upstream and downstream?
- Yes No N/A Is an adequate outlet(s) provided?
- Yes No N/A Identification of the existing drainage outlet(s) for the site including size, material type, and condition of any storm sewer, culverts, etc. shall be shown. This information shall be based on an onsite investigation and observations of the outlet(s), (e.g., videotape, photographs, etc.).
- Yes No N/A An analysis of the capacity of the drainage outlet(s) for the site and a determination of the adequacy of the outlet(s) under the predevelopment conditions provided with the narrative?

Permits

- Yes No N/A Permit Fees paid? Plans must be forwarded to DCEO Permit Department for required permits (i.e. Driveway, etc.). See Art. IV, Section 404.
- Yes No N/A Has a DESC permit been obtained? (Required)
- Yes No N/A SWCD must initial Title Sheet Mylar before signing.

Plat (Refer to Checklist for Plats in Supplemental Specifications)

See the Subdivision Regulations of Delaware County located on Delaware County Regional Planning Commission’s Website for final plat requirements for CADs:

http://www.dcrpc.org/online_forms/FinalChecklist07.pdf

For final plat checklist items for CAD’s please refer to the Final Plat Checklist in the Supplemental Specifications.

For County Engineer Use only

- Yes No N/A Schedule meeting with design engineer, SWCD and Storm Water Department to review comments prior to sending formal review letter.
- Yes No N/A Notify Permit Department for Fees and Initial Title Sheet Mylar before signing
- Yes No N/A Have Storm Water Department DESC permit approval and initial Title Sheet Mylar before signing
- Yes No N/A Have SWCD approval and initial Title Sheet Mylar before signing.
- Yes No N/A Notify SWCD to coordinate with Permit Department regarding construction inspection
- Yes No N/A Provide a set of plans to Liberty Township Fire Department (LTFD) for their review. Do not approve plan until LTFD has provided an approval letter.

Comments:

Comment Disclaimer:

The County Engineer Reserves The Right To Make Any Additional Comments At Any Time Up To The Actual Approval Of This Project. See the Delaware County Standards for other items not addressed on this list.

Approved Disapproved

Reviewed by: _____

Date: _____

Write letter to: _____