

**Delaware County Engineer's Office (DCEO)
Road Widening Review
Checklist**

Project Name: _____

Submittal Items included with Plans

- Yes No N/A Proper number of plan sets provided (Typically part of the subdivision plans – if a separate plan, submit 4 sets of the full size plans and 1 set of half size plans)
- Yes No N/A A CD or DVD containing PDFs of the plans, storm reports, etc shall also be provided with the plans for all submittals
- Yes No N/A Plan review fees and fee submission checklist (if applicable)
- Yes No N/A Completed final plan review checklist provided
- Yes No N/A Traffic Impact Study prepared and approved
- Yes No N/A Drainage and/or Right-of-Way (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 Construction Work Agreements for all properties affected by the construction (outside existing R/W)
- Yes No N/A Stormwater calculations and delineated tributary areas including offsite areas?
Water Quality calculations provided (if applicable)?
- Yes No N/A Engineer's estimate based on Delaware County Engineer's Unit Bid Prices (Section 403 A).
- Yes No N/A All required environmental documents, Army Corps permits and ODNR permits submitted before final plan approval (Section 401 A).
- Yes No N/A If final plan resubmittal, written response and marked prints included that addresses previous comments and identifies additions/deletions made to plans since previous submittal (Section 401 A)

Note: DCEO 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. For all subdivisions, the road widening plans shall be included as part of the final engineering and construction plans for the first phase/section of the proposed development. A separate road widening plan is only permitted with prior approval of DCEO.

General

- Yes No N/A Has Section 403G of the Standards Manual (current edition) been reviewed to insure all items have been incorporated into these plans?
- Yes No N/A Intersection Sight Distance (ISD) Diagram showing adequate intersection sight distance for the proposed entrance drives(s) per the current ODOT Location and Design (L&D) Manual - Do not use stopping sight distance tables.
- Yes No N/A Also, has Decision Sight Distance (DSD) been provided for vehicles turning left using Table 201-6E of the ODOT L & D Manual, using a 40 mph design speed

- for a vehicle positioned in the left turn lane 200' from the intersection of the centerline of the intersecting roads?
- 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 Show the Clear Zone Setback line for projects located on County and Township Roads according to the ODOT L&D Manual, current editions. Provide additional utility easements if needed.
- Yes No N/A Did Zoning require the development provide a leisure path or show future leisure path along the existing public road? If so, please show a 15' wide leisure path easement adjacent to the proposed R/W. Please also show the path in the typical section and cross sections.
- Yes No N/A Have drainage easements for the road widening, shoulder and ditch improvements been addressed (in addition to the required R/W per these Standards)?
- Yes No N/A Are existing utilities shown in area of the road widening, shoulder and ditch improvements? Have the utilities been called out to be relocated? Have easements been provided for utility relocation or future needs?
- Yes No N/A All required easements for R/W, drainage and/or sight distance shall be recorded prior to final engineering plan approval (if offsite or not included on a final plat submittal). Copies of the required easements shall be submitted to the County Engineer for approval.
- Yes No N/A For open ditch roads, has the driveway pipe sizes, including calculations been submitted for approval? Minimum drive pipe size is 12". (Section 802 H)
- Yes No N/A Any adjacent properties affected by the project?
- Yes No N/A Work Agreement(s) and/or Temporary Easement(s) been provided if work is proposed on other property? Typically work agreements or temporary easements are for work beyond the ditch back slope or in other areas affected by the road widening.
- Yes No N/A Has plans and plat for any adjoining subdivisions or other adjoining properties been reviewed to insure the proposed project is compatible?
- Yes No N/A Have the proposed storm sewer inverts, project pavements, project grading, etc. align (horizontally & vertically) with adjacent existing storm sewers, pavements, and grading? Have differences between 1929 Datum and 1988 Datum been addressed if adjacent projects or sewers were based on a different Datum?
- Yes No N/A General DESC permit must be approved before final plans can be approved.
- Yes No N/A General Summary/Table of Estimated Quantities provided (if separate plan from subdivision)
- Yes No N/A If the road widening is part of a publicly bid project and the County Engineer's Office will be involved in administering the contract, please contact the DCEO for other plan requirements.
- Yes No N/A Reference to the current ODOT CMS provided?
- Yes No N/A On all road widening plans, ODOT Standard Drawings MT-97.10 (one lane closure for two lane roads) and MT-101.90 (drop-offs in work zones) shall be included in the widening plans.
- Yes No N/A General Notes included (refer to Supplemental Specifications and General Notes section of this checklist)
- Yes No N/A Utilities relocated in compliance with County Engineer's Utilities Policy. (See Supplemental Specifications for copy of current policy)
- Yes No N/A Are the plan and profile sheets to the proper scale (1" = 20 feet - plan; 1" = 5 feet - profile)?

- Yes No N/A Do the turn lane lengths match those provided in the approved Traffic Impact Study and with the current requirements of ODOT L&D Manual, Vol. 1?
- Yes No N/A Do the taper rates from the proposed to existing pavements widths match the required ratio of Design Speed:1?
- Yes No N/A Are the cross sections are the proper scale (Vertical – 1” = 5 feet; Horizontal – 1” = 10 feet)
- Yes No N/A No more than four cross sections per plan sheet is permitted
- Yes No N/A Do the roadway widths, shoulder and ditch section match DCEO Standard Drawing DCED R-2130?
- Yes No N/A Has Del-Co Water been provided a set of plans (if existing waterline along roadway)
- Yes No N/A Video tape shall be provided (prior to the PreCon Meeting) of existing conditions (Section 403 G and Supplemental Specifications) along the existing roads adjacent to the development on Township Roads. The Standard Videotaping note needs added to the plans.
- Yes No N/A Township roads shall not be used for detours in nearly all cases. If there is a case where the township road must be used, please provide a letter from the township stating that they will allow the use of the Township road for the detour.

Title Sheet - Only used if the road widening plan is a separate plan (must be approved by DCEO). Please contact our office to determine if a title sheet is required.

- Yes No N/A Road Name and Number
- Yes No N/A Subdivision Name (if applicable)
- Yes No N/A Township Name
- Yes No N/A General Description (Range, Township, Quarter Township, and Lot Number or Survey Number)
- Yes No N/A Developer’s Name, Address and Telephone Number
- Yes No N/A Utility Company Name, Address, Contact Person and Telephone provided for all utilities
- Yes No N/A Location Map and Index Map with Scale
- Yes No N/A Road Classification (Arterial, Collector, etc.), Design Speed, and Speed Limit
- Yes No N/A North Arrow
- Yes No N/A Written and graphical (bar) scale
- Yes No N/A Consultant’s Name, Address, and Telephone Number
- Yes No N/A Date, PE Seal and Signature of Design Engineer
- Yes No N/A Date and Signature Blank for County Engineer
- Yes No N/A Date and Signature Blank for General Manager of Del-Co Water
- Yes No N/A Design Engineer’s Certification paragraph: “This is to certify that good engineering practices have been utilized in this project and that all of the minimum standards as delineated in the Delaware County Engineer’s 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 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. All technical details remain the

responsibility of the Professional Engineer who prepared and certified these plans.”

- Yes No N/A List of referenced Standard Drawings (Delaware County & ODOT) – Must be included for all applicable standard drawings required for the road widening.
- Yes No N/A Supplemental Specifications referenced (Delaware County and ODOT)
- Yes No N/A Reference provided to Standard Drawing DCED-R2130
- Yes No N/A Proper Specification Statement provided (See Section 402 H)
- Yes No N/A List of Bench Marks referencing USGS Datum
- Yes No N/A Index of Sheets
- Yes No N/A Change Order (revisions) table provided. Numbered Triangles are used to reference changes. Revised Sheets are noted as such and dated. Deleted Sheets and Supplemental Sheets are listed in Revision Box.
- Yes No N/A Variance Table with Approval Dates Shown

Typical Section(s)

- Yes No N/A Widening Section match Standard Drawing DCED-R2130 (must match exactly)
- Yes No N/A Pavement buildup must be approved by DCEO. Calculations supporting the proposed typical section must be provided for review. Contact DCEO for guidance regarding the pavement calculations.
- Yes No N/A Pavement width must be approved by DCEO
- Yes No N/A Legend identifying all items provided
- Yes No N/A Sawcut of existing pavement shown and located a minimum of 1’-0” from the existing edge of pavement?
- Yes No N/A Leveling course provided to insure constant cross slope per the approved typical section? Quantities for leveling course based on field verified data at 50’ intervals, or other approved method, for the entire project length?
- Yes No N/A Subgrade compaction, tack coat and prime coat provided?
- Yes No N/A Pavement joint reinforcement between existing and proposed pavement shown (callout for reinforcing material shown and DCEO Standard Drawing referenced)
- Yes No N/A Reconditioning of the opposite shoulder shown (Only applicable when roads are widened to one side only).

For curb and gutter typical section (must be approved by DCEO)

- Yes No N/A Curb, Berm, and Pavement Planning Details
- Yes No N/A ODOT Type 2 Curb (required) - reference to ODOT Standard Drawing shown?
- Yes No N/A All Type 2 curbs shall have a minimum gutter pan thickness of 9”
- Yes No N/A ODOT No. 3 Catch Basins need to be called out on all streets that utilize a 2’ wide gutter pan.
- Yes No N/A On all arterial roads, 6” underdrain provided

General Summary/Estimate of Quantities Sheet

- Yes No N/A Table includes Item Number, Quantity Total, Unit, and Description
- Yes No N/A Accounts for all Sub-summary Table Quantities (Compare with plan sheets)
- Yes No N/A A quantity must be provided for Item 448, Intermediate Leveling Course. For estimating purposes, the intermediate leveling course shall include depth of 2.5-inches over 25% of the surface with 1.5 inches used over the remainder of the surface.
- Yes No N/A The asphalt shall be called out in the quantities and estimate as: Item 441 - 1 ½” Asphalt Surface Course (448, Surface Course, PG 64-22), and Item 441 - 1 ½” Asphalt Intermediate Course (448, Intermediate Course, PG 64-22).

- Yes No N/A Striping items provided and correct
- Yes No N/A Accounts for all items shown on the typical section (pavement, berm, guardrail, leveling course, tack coat for intermediate course, subgrade compaction, proof rolling, mailboxes removed/restored, tree removal, etc.)
- Yes No N/A Item for pavement joint reinforcing between existing and proposed pavement provided
- Yes No N/A Item for subgrade stabilization or full depth pavement repair provided (Per General Notes)
- Yes No N/A Milling Quantities (if applicable)
- Yes No N/A Proper quantity callouts (CY, SF, etc.) used for the items shown?
- Yes No N/A Fabric Item included for undercut areas
- Yes No N/A SWPPP/Erosion Control items are provided

General Notes

*Refer to the Supplemental Specifications for Road Widening General Notes. These notes must be included without any modifications. The notes can also be downloaded from the website at:

<http://www.co.delaware.oh.us/engineer/review/Standards.htm>

- Yes No N/A Additional notes necessary for project specific issues?

Cost Estimate - Refer to Final Engineering and Construction Plan Review Checklist for Cost Estimate requirements (See Section 403 and example in the Supplemental Specifications)

Plan View

- Yes No N/A Does plan follow requirements set forth in the ODOT L&D Manual, current edition – Horizontal Scale – 1” = 20’, etc.?
- Yes No N/A Station and offset of all structure or GPS coordinates provided
- Yes No N/A Existing Pavement (dashed lines) and Proposed Pavement (solid lines).
- Yes No N/A Pavement Width and Shoulder Widths match Standard Drawing DCED R-2130/Approved Typical Section
- Yes No N/A Existing and Proposed R/W (See Supplemental Specifications for Proposed R/W width)
- Yes No N/A Existing and Proposed Utilities (Surface and Sub-Surface)
- Yes No N/A Existing and Proposed Surface and Subsurface Drainage Features (Ditches, Tiles, Culverts, etc.)
- Yes No N/A Work and/or clearing limits shown
- Yes No N/A Clearing/grubbing notes provided. Clearing within the R/W and if necessary clearing within the construction limits.
- Yes No N/A Benchmark Location, Elevation, and Description (for all benchmarks)
- Yes No N/A Existing and/or Proposed Driveway locations
- Yes No N/A Proposed Subdivision and Lot Boundaries
- Yes No N/A Other Physical Objects shown (Trees, Fences, Signs, Guardrail, Mailbox Posts, Existing Property Corner Monuments, etc.)
- Yes No N/A Any Physical Objects to be removed or relocated are noted (outside clear zone or R/W)
- Yes No N/A Trees to be removed during the project shown crossed out on the plans
- Yes No N/A Show the Clear Zone Setback line for projects located on County and Township Roads according to the ODOT Location and Design Manual, current edition.
- Yes No N/A Legend for Abbreviations
- Yes No N/A Adjacent Property Owners and Lot numbers

- Yes No N/A Intersection Detail shown (Proposed and Existing)
 - Yes No N/A Sight distance exhibits provided for all proposed intersections.
 - Yes No N/A Horizontal Curve Data including Delta, Radius, Chord Bearing, and Chord Distance
 - Yes No N/A All Catch Basins, Ditch Inlets, Manholes, Headwalls, etc. Shown and Labeled with Stations and Referenced Standard Drawing
 - Yes No N/A Entrance Street must be designed as a Collector with respect to pavement width only to the first intersection or specified length as determined with Tapers based on the ratio of Design Speed:1 (Section 601 B.3).
 - Yes No N/A Appropriate taper rate (Design Speed:1) used
 - Yes No N/A Location of beginning and end of roadway tapered sections
 - Yes No N/A Driveway Pavements – Descriptions of existing types of driveways matches field conditions - asphalt, concrete, gravel.
 - Yes No N/A Existing drives shall be paved to the proposed R/W line (applies only to drives on the same side of the street as the proposed subdivision)
 - Yes No N/A Existing Drives shall be paved an additional 5' from the edge of pavement as part as the overlay (applies only to existing drives opposite the side of the street of the proposed subdivision)
 - Yes No N/A Underdrains outlet at ditch low point (with proper ODOT end treatment referenced) or at a structure
 - Yes No N/A Butt Joint shown (per ODOT Standard Drawing BP 3.1) at Begin/End of Project
 - Yes No N/A Any Mailboxes needing removed and/or relocated noted? Mailbox support height needs to be per local USPS standards in General Notes.
 - Yes No N/A All guardrails have been scrutinized for line of sight obstruction at intersections
 - Yes No N/A Existing Culvert Condition – DCEO to determine if culvert is to be replaced
 - Yes No N/A Culverts must extend beyond the required clear zone
 - Yes No N/A Precast wingwalls, headwalls, footings, etc. per Supplemental Specifications
 - Yes No N/A Handicap ramps details addressed
- For curb and gutter typical section (must be approved by DCEO)
- Yes No N/A Has the transition from curb and gutter to the existing open ditch section been addressed (e.g., grading, underdrain outlet, erosion protection at the gutter pan, etc.)?
 - Yes No N/A Has the callout for the curb height transition from 6" to 0" in 10-feet been provided?

Profile

- Yes No N/A Elevation at Centerline (Profile Grade) and Edge of Pavement– every 25' for existing and proposed grades
- Yes No N/A Existing and Proposed Ditch Flowline elevations (to a point of adequate outlet)
- Yes No N/A Existing Ground Elevation at Proposed Ditch Flowline
- Yes No N/A Any Existing and/or Proposed Surface and Sub-Surface Drainage Structures (proposed Tile must be shown to a point of adequate outlet)
- Yes No N/A Driveway profiles provided (may be shown on cross sections if appropriate)
- Yes No N/A Plan elevations match As-Built elevations for adjoining properties (e.g. roadways, back yards, etc.)?

Cross-Sections

- Yes No N/A Centerline shown and proper scale used (vertically – 1' = 5');

- horizontally – 1' = 10')
- Yes No N/A Cross sections provided at 50-foot intervals with Station Numbers
 - Yes No N/A Cross sections also provided at all driveways, culverts and road entrances
 - Yes No N/A Edge of Pavement, ditch flowline, foreslope and backslope rates, etc. shown and match the approved typical section?
 - Yes No N/A R/W (Existing and Proposed)
 - Yes No N/A Existing and Proposed Profile Grade Elevations
 - Yes No N/A Existing and Proposed Utilities (Surface and Sub-Surface)
 - Yes No N/A Existing and/or Proposed Surface and Sub-Surface Drainage Structures
 - Yes No N/A Maximum of 4 cross sections per plan sheet
 - Yes No N/A Precast wingwalls, headwalls, footings, etc. per Supplemental Specifications
 - Yes No N/A Proper slope used beyond back of curb (6:1 or flatter - sloping up) when curb and gutter is provided?
 - Yes No N/A Check cross sections to see if all utilities are drawn accurately (horizontal and vertical). Are there conflicts between the utilities and the proposed work?
 - Yes No N/A Check Sections against Grading Plan and Driveway Replacement Limits on plan views to verify that the cross sections extend to the proposed work limits.
 - Yes No N/A Beginning and Ending Stations match beginning and ending Stations on Plan and Profile Sheets
 - Yes No N/A Cross Section Elevations match Profile Elevations for Objects (storm sewers, culverts, drive pipes, utilities, etc. shown)
 - Yes No N/A 4:1 Maximum backslope in Lawn Areas
 - Yes No N/A Grading and proposed elevations on road widening match those shown on the subdivision grading plan (Are they consistent?)
 - Yes No N/A Sub-summary of Fill and Cut Quantities with totals for the sheet
 - Yes No N/A Transition of Existing Ditch to Proposed Ditch is shown (typically within last 20' of project limits)
 - Yes No N/A Storm and sanitary sewers structures, waterlines, culverts, and bridges. Clearly label all pipe material specification and classification. (Section 403 A)
 - Yes No N/A Ditch enclosure necessary due to steep ditch slopes? See Article 403 G.

Storm Sewer and/or Culvert Profile – Refer to Final Engineering and Construction Plan Review Checklist for Roadway Culvert and Storm Sewer Requirements. The items listed below are in addition to the checklist items provided in the Final Engineering and Construction Plan Review Checklist.

- Yes No N/A Culvert profiles (including extension of existing culverts) are required. For pipe diameters larger than 36" and for all three and four-sided structures a separate plan and profile sheet is required (Section 403 B. 5).
- Yes No N/A If a proposed pipe connects to an existing pipe a concrete collar is required
- Yes No N/A Items to be removed identified

Curb Inlets (Section 904 E) - Refer to Final Engineering and Construction Plan Review Checklist for Curb Inlet Requirements (Must be approved by DCEO).

Erosion and Sediment Control Plan - Refer to Final Engineering and Construction Plan Review Checklist for Erosion and Sediment Control Plan Checklist Items. The item listed below is in addition to the checklist items provided in the Final Engineering and Construction Plan Review Checklist.

- Yes No N/A OEPA Storm Water NOI submitted before final plans approval.

Storm Water Management

- Yes No N/A Calculations included for all storm sewers with correct design storm and correct storm hydraulic grade check
- Yes No N/A Calculations included for all culverts with correct design storm and correct storm hydraulic grade check
- Yes No N/A Calculations for all drive pipes provided (based on 10-year storm)
- Yes No N/A 100-year flood routing path shown

Maintenance of Traffic (MOT) Plan

- Yes No N/A Existing and Proposed Roadway shown?
- Yes No N/A Existing and Proposed Construction Road Work Signs, Drums, Temporary Pavement Markings, etc. shown?
- Yes No N/A Minimum lane widths of 10-feet shown along with typical sections for each phase of construction?
- Yes No N/A Proper notes and details shown for two-way, one-lane traffic with flaggers (9am – 3pm limit)?
- Yes No N/A Temporary Pavement Marking provided (tape is acceptable as a temporary pavement marking)?
- Yes No N/A ODOT Work Zone plan insert sheet (current edition) included with final plans?
- Yes No N/A Maintenance of Traffic Sub-summary
- Yes No N/A Temporary Pavement a pay item when shown (typically required for MOT)
- Yes No N/A Has access been provided if existing adjacent properties are affected? Has a note been provided on the MOT Plan (or in the general notes)?
- Yes No N/A Copies of the Traffic Maintenance Plan been submitted to the Township (For emergency response purposes)?

Traffic Control Plan

- Yes No N/A Tapered areas meet current ODOT L&D Manual?
- Yes No N/A Adequate storage length (including taper) for turn lane provided per approved TIS and the current ODOT L&D Manual
- Yes No N/A Island Detail with proper diagonal striping provided (Check width and spacing of diagonal striping)
- Yes No N/A Existing Signs with disposition (to be removed or to remain) shown
- Yes No N/A Proposed Signs with Stations (including street name signs with Township/County Road Number, etc.) shown
- Yes No N/A Line Specifications provided – 4” wide line for edge of pavement and centerline striping; 6” wide line for island and diagonal striping.
- Yes No N/A Specify Item 644 for long pavement marking and Item 647 for short markings (arrows, stop bars, etc.)
- Yes No N/A Striping Plan includes arrows for turn lane and through lane. Do NOT include the word “ONLY”.
- Yes No N/A Does proposed pavement striping match the existing pavement striping at the begin and end project stations?

Traffic Control Quantities

- Yes No N/A Table for signing and includes station, side, type, size, and quantity
- Yes No N/A Table for Pavement Marking that includes station (from & to) and quantity. Quantities carried to General Summary? Item callout correct (thermoplastic striping – not paint - is required)?

Lighting and Power (if Traffic Signal is required per approved TIS)

- Yes No N/A Proper traffic control general notes provided (see Supplemental Specifications)
- Yes No N/A The numbers of luminaries match the number of poles.
- Yes No N/A Provided Loop Locations and Quantities. Installation is before or after overlay?
- Yes No N/A Pull Boxes adjusted to Grade and are on the Quantity Sheet.
- Yes No N/A Provisions were made to relocate Existing Lighting Controllers to County Owned Poles. Verify locations.
- Yes No N/A Highway Lighting-need for lighting to be determined by DCEO. Lighting shall be in conformance with ODOT L& D Manual current edition (Section 403 G).

Miscellaneous

- Yes No N/A Milling Depth vs. Overlay Thickness checked
- Yes No N/A Slopes at Project Limits – Verify that Plans account for Existing Slopes where the proposed pavement begins and the existing pavement ends
- Yes No N/A Field visit completed to insure all items are accounted for in the plans? (e.g., new developments adjacent to site, etc. along with cross sections, if needed)

FOR INTERNAL USE ONLY

- Yes No N/A Check with Design Group to determine if this section of road is to be paved as part of their road paving contract.
- Yes No N/A Coordinate with Permit Department, Design Group and Storm Water Department for any comments
- Yes No N/A Permit Department has been contacted regarding the required permits
- Yes No N/A County Operations Manager has been informed of any pipe replacements on Township Roads

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: _____