

PRINCE GEORGE'S COUNTY DEPARTMENT OF PUBLIC WORKS &
TRANSPORTATION
STREET GRADE ESTABLISHMENT PLAN CHECKLIST

Items Required COMPLETE INCOMPLETE N/A NOT APPLICABLE

I. SUBMITTAL CONTENT REQUIREMENTS

- 1) Preliminary Plan
- 2) Record Plat
- 3) Street Grade Establishment plan

I. PLAN VIEW

- 1) Title Block
 - a) Subdivision name (from Record Plat)
 - b) Street name (large and bold)
 - c) Stationing
 - d) Election district
 - e) Date
- 2) Provide DPW&T approval stamp on each sheet
- 3) Engineer's Certificate (signed, sealed and dated) shall contain a note stating that "I hereby certify that":
 - a) The information shown hereon has been compiled from field surveys conducted by (name source of survey and date).
 - b) There is no existing paving, water or sewer in this right-of-way, unless as shown hereon.
 - c) No portion of this R/W lies within, connects or crosses an existing state road.
- 4) Add the following note to each sheet: "SUBJECT TO SUBDIVISION PLAT BEING RECORDED AS SHOWN AND ACQUISITION OF ANY NECESSARY SLOPE EASEMENTS AND RIGHT-OF-WAY"
- 5) Show North arrow and horizontal and vertical datum. Use NAD (North American Datum) 83/91 for horizontal datum and NGVD (National Geodetic Vertical Datum) 1929 for vertical datum.
- 6) 3 grid tics with coordinates with horizontal and vertical set in an "L" pattern
- 7) R/W centerline
- 8) R/W lines
- 9) R/W widths
- 10) Ditch lines (when applicable)
- 11) Centerline stationing

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- 12) Intersection stationing and R/W width of intersecting street and DPW&T File number as approved by M-NCPPC.
- 13) Street names
- 14) Lot lines
- 15) Lot and Block number
- 16) Existing R/W, easements, paving, utilities
- 17) Adjacent property names or subdivision references, plat book and page, liber and folio.
- 18) Show matchline with stationing (as necessary).
- 19) Label horizontal curves and fillets.
- 20) Label PC, PT For cul-de-sac in plan view with appropriate stationing to relate to cul-de-sac profile.
- 21) Provide curve table with the following information:
 - a) Start and end stationing of curve
 - b) Change in direction of two tangents, or I or Delta
 - c) Tangent value (T)
 - d) Radius value (R)
 - e) Length of Arc (L)
 - f) Chord Length (LC)
- 22) Street name in lower right corner of sheet
- 23) Transition from 60-foot Right-of-Way (R/W) to 50-foot R/W should occur through an intersection where possible.
- 24) Label high and low points (with flow arrows)
- 25) Label street slope % on street with flow arrows so that every percent grade is represented in plan view.
- 26) While the review of the street grade primarily focuses on the centerline grade, since it so critical that intersections, cul-de-sac bulbs and other potentially flat areas drain, please ensure that you are using the correct Minimum Turning Radius (50' for urban arterial, 45' for urban collectors of all types, 50' for urban commercial and industrial, 37' for urban primary and urban secondary, 50' for rural arterial, rural and/or scenic and historic collectors of all types, 43' for rural primaries, and 44' for rural secondary).
- 27) Provide cul-de-sac profiles which shows the following minimum information:
 - a) Approach grades and TC's match street grade at PC and PT;
 - b) Cul-de-sac profile number matches plan view;
 - c) Highpoint or low point TC's provided;
 - d) Smooth curve throughout;
 - e) Datum elevation provided;
 - f) Street name provided;

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- g) Property line intersection stationing with related TC or flowline elevation;
 - h) PC, PT and PRC stationing with related TC or flowline elevation;
 - i) High-point, Low-point or Mid-point station with related TC or flowline elevation;
 - j) Percentage slope specified on profile line.
- 28) An alternate to cul-de-sac profiles is the following method:
- a) In plan view, provide elevation at fillet point, along with station and offset;
 - b) In plan view, provide high or low point, along with the station and offset;
 - c) In plan view, provide a minimum of 4 elevation points along cul-de-sac bulb (in addition to the fillet points) with station and offset information;
 - d) In plan view, provide flow arrows WITH PERCENTAGES SPECIFIED along flow line.
- 29) Provide fillet profiles which show the following minimum information:
- a) Approach grades and TC's match street grade at PC and PT;
 - b) Fillet profile number matches plan view;
 - c) Datum elevation provided;
 - d) Start and end stationing with related TC or flowline elevation;
 - e) High point, Low point or Midpoint station with related TC or flowline elevation;
 - f) Percentage slope specified on profile line;
 - g) Smooth curve throughout;
 - h) Street name provided at PC and PT.
- 30) An alternate to fillet profiles is the following method:
- a) In plan view, provide elevation at fillet point, along with station and offset;
 - b) In plan view, provide elevation of mid point along fillet or high or low point, along with station and offset;
 - c) In plan view, provide spot elevation at centerline intersection;
 - d) In plan view, provide flow arrows WITH PERCENTAGES SPECIFIED along flowline.
- 31) Label flow arrows with Percentage Slope. MOST IMPORTANTLY, label the percentage slope at the intersections in the direction the water will actually flow around the warped

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fillets. The idea is to calculate the flattest slope at each quadrant of the intersection and reflect that on the plan.

- 32) The grade of the street parallel to the flow shall not be less than 2% at intersections in order to allow for pavement irregularities and to have the actual flowline grade not less than 1% when allowance has been made for the lowering of the gutter lip at the spill-out area of the return.
- 33) Show limits of 100-year flood plain.
- 34) For significant impacts to existing water and sewer facilities (ie, street grade over any existing public water and/or sewer), provide WSSC approval (for ex. Utilities within R/W).
- 35) SHA approval necessary when connecting to a State road. Coordinate with Mike Bailey at 301-513-7499.
- 36) Where applicable, approval by City of Bowie, PEPCO, BGE, SMECO, and/or M-NCPPC provided.

II. PROFILE

- 1) Existing topography (centerline, left & right property line, extended left & right spots to 25' outside of the R/W) extend topography 300' past end of approval limit, 200' for cul-de sacs (from center)
- 2) Legend
- 3) Scale (horizontal & vertical)
- 4) Elevations labeled on vertical axis and stationing on horizontal axis.
- 5) Proposed centerline grades (bold line) or top of curb where applicable
- 6) 100' stationing and 25' tics
- 7) Elevations every 25' for vertical curves
- 8) Elevations every 50' for tangent sections
- 9) PVC stations labeled with elevations
- 10) PVT stations labeled with elevations
- 11) PVI stations labeled with elevations and POC elevations
- 12) PVRC stations and elevations
- 13) When possible, PVC and PVT stations should fall on 25' tics and vertical curve lengths should be multiple of 50'
- 14) Gradebreak stations labeled with elevation. NOTE: the maximum algebraic difference allowed is 6%.
- 15) Flowline stations labeled with elevations
- 16) High point and low point elevations and stations
- 17) Intersecting elevations and stations
- 18) Boundary line elevations and stations
- 19) Tangent grade lines with slope percentage specified
- 20) All streets maximum of 10% slope and no less than 1% anywhere and 2% minimum for rural-section roadways.
- 21) Maximum 4% slope out of intersection (i.e. landing grade). Note, when intersection flowlines are less than 1.5%, then a 2% slope out of the intersection is required.
- 22) Crowning the cul-de-sac in the bulbous area is not required if it can be shown that positive drainage will occur across this area. This is usually appropriate on severe slopes into a cul-de-sac and is applicable on downgrade scenarios only.
- 23) It is recommended that Cul-de-sacs not have a vertical curve beyond the fillet point at the entrance to the cul-de-sac's bulbous end.

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- 24) Cul-de-sacs shall not have a vertical grade in excess of 6% beyond the fillet point at the entrance to the cul-de-sac's bulbous end.
- 25) Vertical curve lengths and "e" value
- 26) Any existing utilities shown in plan and profile.
- 27) No tangents less than 50 feet allowed between vertical curves for industrial classification and higher classification roadways; recommended for primary roadways.
- 28) For landing pad, provide 100' tangent to gutter line of intersecting street if on downhill slope to the intersection (note: there is some flexibility in this rule if it can be shown that no portion of vertical curve exceeds the landing grade maximum within this 100 feet).
- 29) For landing pad, provide 50' of tangent length to gutter line of intersecting street if on uphill slope to the intersection (note: there is some flexibility in this rule if it can be shown that no portion of vertical curve exceeds the landing grade maximum within this 50 feet).
- 30) CLEARLY LABEL REQUESTED LIMITS OF APPROVAL. Provide station limits and refer to revision number and date.
- 31) Clearly label previously approved limits. Show the date.
- 32) Label design speed limit.
- 33) Show K-factor. Note: Do not exceed minimum K-value for sight distance.
- 34) For drainage purposes, at the high and low points it is recommended that the K-value not exceed 50% of the minimum required K-value for flat (i.e. less than 2%) roadways. It is recommended that the K-value not exceed twice the minimum K-value for all other roadways for high or low points.