



DelDOT - Subdivision Streets Checklist

Project Name: _____

Project Id.: _____

Tax Parcel No.: _____
(Lowest Numerical Tax Parcel I.D.)

Date: _____

Effective: 09/15/2020

Comment Ref No.	Checklist Topic/Content	Manual Ref.	Item addressed	Justifications are Required if: N or N/A
SECTION 1: GENERAL REQUIREMENTS				
1.1	All fees including Construction Stage Fee, Area Wide Study Fee, Transportation Improvement District or Sidewalk Fee In-Lieu of Construction calculations has been completed, are accurate and have been paid at time of submittal.	4.3, 2.2.2.2		
1.2	All supporting plans including Signal/Lighting/ITMS Plans are being coordinated through Traffic Design Submissions. All plans must be included in the Final Entrance Plan for Approval.	4.3.9, 4.5.1, 5.13, 5.14 & 5.15		
1.3	A completed Design Deviation form and supporting documentation for internal subdivision streets is ready for upload/submittal to DelDOT (if applicable).	4.2, 4.5, & 5.1		
SECTION 2: SUBDIVISION CONSTRUCTION PLAN				
2.1	<p>Title and Data Block</p> <p>Ensure the title & data blocks contain the following information.</p> <ol style="list-style-type: none"> 1. Name of proposed business/ subdivision. 2. Name of town/hundred and county. 3. Maintenance number of highway being accessed. 4. Graphic scale shown. 5. Date of current submission and all revised dates. 6. Name, address, of owner and engineer or surveyor preparing the plan 7. Signature and Seal of engineer or surveyor (Delaware licensed) 8. Owner's signature (Final Plan only) 9. Type of business 10. Tax parcel number(s). 11. Gross acreage of property. 12. Number of Subdivision Lots or Approximate gross leasable floor plan area. 13. Parking spaces required. 14. Parking spaces provided. 15. Local government responsible for land use approval. 	4.3.2		
2.2	Location map showing the relationship of the site to existing State-maintained roadways.	4.3.2.E		
2.3	<p>DelDOT Notes</p> <p>DelDOT General Notes are shown and dated on Title Sheet or Notes Sheet. Include any DelDOT related Additional Notes applicable to your project.</p>	4.3.2.I		
2.4	<p>Plan Sheet Index</p> <p>Plan Sheet Index (separate sheet) for plan sets containing 5 or more Construction Plan sheets are provided and includes:</p> <ol style="list-style-type: none"> 1. Sheet Numbers 2. Total Sheets 3. Number of Streets 4. Street Names 	4.3.4.C		
2.5	<p>Signature Block</p> <p>The following information has been added to the title block - Signature block (See Figure 4.3.2-a for a sample title sheet provided as general guidance):</p> <ol style="list-style-type: none"> 1. Seal of individual properly licensed in Delaware to perform the engineering and design for the preparation of construction plans for subdivision streets 2. Signature of engineer and date 	4.3.2.L		

2.6	Section of the subdivision or name of the streets to be considered by this plan.	4.3.2.C		
2.7	North arrow, with correct orientation labeled, in all plan views on all sheets in the plan set.	4.4.2.B.8		
2.8	Plan view of entire subdivision indicating streets to be constructed in accordance with this plan and their relation to all other streets within the subdivision.	4.3.2.H		
SECTION 3: DETAIL SHEET PRESENTATION REQUIREMENT				
3.1	Super-elevation diagrams (when required) shown on detail sheet.	4.3.4.A.2		
3.2	Bridge details provided on all structures with an opening greater than 20 square feet.	4.3.4.A.3		
3.3	Details of non-standard drainage structures shown as required.	4.3.4.A.4		
3.4	<p>Intersection Details</p> <p>Ensure Intersection Details contain the following : (Scale: 1"=10')</p> <ol style="list-style-type: none"> 1. Intersection radii with stations and offsets to curve points shown on intersection detail. 2. Location by station and offset to islands shown on intersection detail. 3. Grade elevations at edge of pavement at maximum interval of 25 feet on edge of pavement and 10 feet on intersection radii shown on intersection detail. 4. Curb ramps and drainage inlets shown on intersection detail. 	4.3.4.B		
SECTION 4: GENERAL SUBDIVISION CONSTRUCTION PLAN REQUIREMENTS				
4.1	Legend of all line-types and symbols used on plan views.	4.3.2.K		
4.2	<p>Existing / Proposed Features</p> <p>Ensure the following items are shown (based on actual field surveys), dimensioned and labeled and provide date of survey on the plans:</p> <ol style="list-style-type: none"> 1. Buildings 2. Structures 3. Curbs 4. Curb ramps 5. Trees 6. Designated wetlands 7. Water bodies 8. Transit facilities 9. Pedestrian and shared-use pathways 10. Pedestrian crossings 11. Bicycle facilities 12. Any items that can be seen on the ground or from an aerial perspective and represented on the plan 	4.4.2.B.11		
4.3	<p>General Plan Criteria</p> <p>General Plan Criteria included, such as:</p> <ol style="list-style-type: none"> 1. Limits of construction 2. Right-of-way line, existing and proposed (dimensioned in accordance with Fig. 3.2.5-a) 3. Right-of-way monuments 4. Street names 	4.3.5.A		
4.4	<p>Horizontal and Vertical Control Data</p> <p>Horizontal and Vertical Control Data contains the following information:</p> <ol style="list-style-type: none"> 1. Benchmarks: Maximum spacing is 1,000 feet; Show elevation and location (Use NAVD 88) 2. Centerline stationing and curve data (both horizontal and vertical) 3. Survey references to horizontal control points 4. Bearings of centerline tangents 5. Station equations of intersecting road baselines 	4.3.5.B, 4.3.5.B.1, 4.3.5.B.2, 4.3.5.B.3, 4.3.5.B.4 & 4.3.5.B.5		
4.5	Topography include the proposed positive drainage outfall, critical features of the existing highway for a minimum distance beyond the proposed entrance location.	4.3.5.C.1		
4.6	Contours showing the elevation of the existing ground shown and labeled within the limits of the topographic survey. The contour interval for various ground slopes shall be shown in accordance with Figure 4.3.5-a. Topography shall extend to the limits as defined in Section 4.3.5.C.	4.3.5.C.2 & 4.4.3.E		
4.7	Lot layout within the site showing relationship of lots to the proposed internal street system as well as the location of the proposed driveways.	4.3.5.D		
4.8	Utilities - Proposed and Existing location.	4.3.5.E		

4.9	Use legible scaling for all relevant line work/symbols used in each of the various plan views.	4.4.1.B		
4.10	All building set backs are displayed and dimensioned properly.	3.2.6		
4.11	Layout of required pedestrian facilities.	3.5.4.2, 5.2.5.5, 5.3 & 5.3.1.1		
SECTION 5: PROFILE SHEET PRESENTATION				
5.1	Profiles are on the same sheet as the corresponding plan view.	4.3.6		
5.2	Horizontal and Vertical Scale meets requirements. Vertical scale should be a ratio of 1:10 to the Horizontal Scale (i.e. hor. 1" = 50', vert. 1" = 5').	4.3.6.A & 4.3.6.B		
5.3	Vertical Curve Data is listed.	4.3.6.C		
5.4	Soil boring information.	4.3.6.D		
5.5	Drainage features are shown.	4.3.6.E		
5.6	Existing and proposed utilities are shown.	4.3.6.F		
5.7	Existing and proposed elevations every 50' at minimum.	4.3.6.G		
5.8	Longitudinal grades are shown.	4.3.6.H		
SECTION 6: SUBDIVISION STREETS DESIGN ELEMENTS				
6.1	Typical Sections have been provided for each major change of section.	4.4.3.Y		
6.2	<p>Typical Sections Ensure Typical Sections are labeled accordingly</p> <p>A. Typical street sections for internal streets and frontage roads:</p> <ol style="list-style-type: none"> Existing and proposed widths of streets, lanes, shoulders, right-of-way and easements Existing and proposed cross slopes of all lanes, shoulders and swales Slope of roadside embankment (front slope and back slope) Clear zone width and horizontal clearance Proposed limit of construction Point-of-Profile Grade Application and Point-of-Ditch Grade Application Type of curb Depth and type of pavement material Locations to place topsoil, seed and mulch Location of underdrains Subgrade to be prepared in accordance with DeIDOT Standard Specifications <p>B. Non-Roadside Ditches/Swales:</p> <ol style="list-style-type: none"> Width of ditch bottom Point-of-Profile Grade Application (Ditches longer than 100 feet require a profile) Side slopes Type and depth of ditch protection Locations to place topsoil, seed, and mulch Existing and proposed easements 	4.3.3		
6.3	Subdivision street pavement section layers meet minimum and maximum depth requirements based on the ADT of the site. Refer to Figure 5.1.2-A Pavement Design Chart for Internal Subdivision Streets. Be sure to include item numbers for each type of Bituminous Concrete, which can be found in the Standard Specifications Manual .	Fig 5.1.2-a & Fig 5.6.2-a		
6.4	Pavement Section Layers meet minimum and maximum depth requirements.	5.6		
6.5	Subdivision Streets meet the pavement width in accordance with the appropriate street classification.	5.5.1		
6.6	<p>Type I Street (< 500 ADT) Meets Design Requirements:</p> <ol style="list-style-type: none"> Horizontal Curvature \geq 150 feet Vertical Curvature meets minimum 'K' Value (Sag \geq 26, Crest \geq 12) Maximum Grades \leq 10%, Minimum Grades \geq 0.5% 	5.1.2		
6.7	<p>Type II Street (501 to 3000 ADT) Meets Design Requirements:</p> <ol style="list-style-type: none"> Horizontal Curvature \geq 300 feet Vertical Curvature meets minimum 'K' Value (Sag \geq 37, Crest \geq 19) Maximum Grades \leq 8%, Minimum Grades \geq 0.5% 	5.1.2		

6.8	Type III Street (>3000 ADT) Meets Design Requirements: 1. Horizontal Curvature \geq 500 feet 2. Vertical Curvature meets minimum 'K' Value (Sag \geq 49, Crest \geq 29) 3. Maximum Grades \leq 7%, Minimum Grades \geq 0.5%	5.1.2		
6.9	Curve Data and Line Charts Ensure the following are included and shown for each subdivision street: <u>Curve Data Chart</u> 1. Curve Number 2. Delta 3. Radius 4. Arc Length 5. Chord Bearing 6. Chord <u>Line Chart</u> 1. Line Number 2. Bearing 3. Distance	4.3.5.B		
6.10	Subdivision Curb meets DeIDOT requirements.	3.7.C		
6.11	ADA Compliant sidewalks shown on both side of subdivision street.	5.3		
6.12	Permanent and Temporary Dead End Streets.	5.5.1, 5.1.5.1 & 5.1.5.2		
6.13	Roundabout Guidance has been followed in accordance with the Design Guidance Memorandum (DGM 1-26), if applicable.	5.1.3.F		
SECTION 7: SIGNING AND STRIPING SHEET				
7.1	Signing and Striping plans submitted as a separate plan sheet.	4.4.3.V		
7.2	A legend must be included for all signing and striping plans.	4.4.3.V		
7.3	Signage Break-A-Way standard detail (T-15) has been called out in plan set.	5.11.1.2		
SECTION 8: DRAINAGE & STORMWATER MANAGEMENT				
8.1	Location and elevations of parallel ditches every 50 feet.	4.3.5.F.1		
8.2	Location and type of ditches protection other than seed and mulch.	4.3.5.F.2		
8.3	Drainage flow arrows on pipes, underdrains including location, and ditches.	4.3.5.F.3		
8.4	Identify and locate drainage structures, Storm sewers, and culverts with specific symbols.	4.3.5.F.4		
8.5	Location, flow line, elevation, typical section and ditch protection for culvert or storm sewer outfall.	4.3.5.F.5		
8.6	Pipe and drainage structures schedule shall be included on each plan sheet. These schedules shall list the structure ID, type, invert, and top elevation, pipe ID, size, length, invert elevations, slopes and type. See Figures 4.3.5-b and 4.3.5-c for storm drainage structure and pipe schedule.	4.3.5.F.6		
8.7	Pipe angles shall be listed in the schedule and shall not exceed the maximum values listed in the Pipe Cover/Angle Worksheet	4.3.5.F.7		
8.8	Drainage easements, shown in accordance with Section 5.7.2.6. Please note that all stormwater management facilities must be located a minimum of 20 feet outside of the right-of-way as measured from the top of slope of the facility.	4.3.5.F.5 & 5.7.2.6		
8.9	Pipe Cover for storm water constructability has been verified.	5.7.2.5		
8.10	Pipe Connection with catch basin meets depth requirements (Double catch basins require an 8" cover slab; this will in turn require the depth of pipe to be increased).	5.7.2.5		
8.11	Catch Basins can accommodate proposed pipe size.	5.7.2.5		
8.12	Correct Inlet Top has been specified by the Standard Construction Details .	5.7.2.4		
8.13	Flared End Section are used with Personnel Safety Grates where required.	5.7.2.8		
8.14	Hydrology and Hydraulic calculations for any culverts within DeIDOT R/W that are to be replaced and/or will be impacted by upstream improvements provided.	5.7.3 & 5.7.4		
8.15	Hydrologic & Hydraulic calculations for any new / modified ditches and/or those that will be impacted by upstream, improvements within DeIDOT R/W provided. Typical roadway sections, including proposed ditches, and all swales should have shear stress calculations computed to determine which soil retention blanket mulch (SRBM) should be used are all provided.	5.7.3 & 5.7.4		

DelDOT: Subdivision Streets Standard Comments to Engineer

SECTION 1: GENERAL REQUIREMENTS

1.1	The Construction Stage Fee, Area Wide Study Fee, Transportation Improvement District or Sidewalk Fee In-Lieu Of Construction is not correct, please update the calculation and provide payment on-line at time of submittal for review. DCM Ref: 4.3
1.1	The On-line Area Wide Study Fee calculation and payment are not correct or have not been submitted on-line. Please update the calculation and provide payment on-line at time of submittal for review. DCM Ref: 2.2.2.2
1.1	If project is to be phased, verify the correct fees have been paid based on the phased section.
1.2	All Traffic Design including Signal/Lighting/ITMS Plans shall be submitted separately through DelDOT's PDCA Traffic Design submission. All Approved plans must be included in the "Final" Entrance Plan for approval.
1.3	Submit a completed Design Deviation form, and supporting documentation. DCM Ref: 4.3.9, 4.5.1, 5.13, 5.14 & 5.15

SECTION 2: SUBDIVISION CONSTRUCTION PLAN

2.1	<p>Title and Data Block Update the title and data blocks on the plans to include the following information:</p> <ol style="list-style-type: none"> 1. Name of proposed business/ subdivision 2. Name of town/hundred and county 3. Maintenance number of highway being accessed 4. Graphic scale 5. Date of current submission and all revised dates 6. Name, address, and telephone number of owner and engineer or surveyor preparing the plan 7. Signature and Seal of engineer or surveyor (Delaware licensed) 8. Owner's signature (final Plan only) 9. Type of business 10. Tax parcel number(s) 11. Gross acreage of property 12. Number of Subdivision Lots 13. Approximate gross leasable floor plan area 14. Parking spaces required 15. Parking spaces provided 16. Local government responsible for land use approval <p>DCM Ref: 4.3.2</p>
2.2	Add a location map showing the relationship of the site to existing State-maintained roadways. DCM Ref: 4.3.2.E
2.3	Update the General Notes per the latest available on DelDOT's Development Coordination webpage. DCM Ref: 4.3.2.I
2.3	Include the date of the most current General Notes used (Last Revised XX/XX/XXXX) DCM Ref: 4.4.2.B.9
2.4	<p>Plan Sheet Index Provide a 'Plan Sheet Index' (separate sheet) for plan sets containing 5 or more Construction Plan Sheets The Plan Sheet Index should include:</p> <ol style="list-style-type: none"> 1. Sheet numbers 2. Total sheets 3. Streets 4. Street names <p>DCM Ref: 4.3.4.C</p>
2.5	<p>Signature Block Add the following information to the title block: - Signature block (See Figure 4.3.2-a for a sample title sheet provided as general guidance):</p> <ol style="list-style-type: none"> 1. Seal of individual properly licensed in Delaware to perform the engineering and design for the preparation of construction plans for subdivision streets 2. Signature of engineer and date <p>DCM Ref: 4.3.2.L</p>
2.6	Add the following information to the title block: Section of the subdivision or name of the streets to be considered by this plan. DCM Ref: 4.3.2.C
2.7	Add a north arrow, with correct orientation labeled, to the plan view on all plan sheets. DCM Ref: 4.4.2.B.8
2.8	Plan view of entire subdivision indicating streets to be constructed in accordance with this plan and their relation to all other streets within the subdivision. DCM Ref: 4.3.2.H

SECTION 3: DETAIL SHEET PRESENTATION REQUIREMENT

3.1	Special details sheet is missing "Super-elevation diagrams". DCM Ref: 4.3.4.A.2
3.2	Special details sheet is missing "Bridges". DCM Ref: 4.3.4.A.3

3.3	Special details sheet is missing "Details of non-standard drainage structures". DCM Ref: 4.3.4.A.4
3.4	Intersection Details Provide Intersection Details (at 1"=10') contains: 1. Intersection radii with stations and offsets to curve points 2. Location by station and offset to islands 3. Grade elevations at edge of pavement at maximum interval of 25 feet on edge of pavement and 10 feet on intersection radii 4. Curb ramps and drainage inlets DCM Ref: 4.3.4.B
3.4	Intersection details is missing "intersection radii with stations and offset to curve points". DCM Ref: 4.3.4.B.1
3.4	Intersection details is missing "Location by station and offset to islands". DCM Ref: 4.3.4.B.2
3.4	Intersection details is missing "Grade elevations at edge of pavement at maximum interval of 25 feet on edge of pavement and 10 feet on intersection radii". DCM Ref: 4.3.4.B.3
3.4	Intersection details is missing "Curb ramps and drainage inlets". DCM Ref: 4.3.4.B.4
SECTION 4: GENERAL SUBDIVISION CONSTRUCTION PLAN REQUIREMENTS	
4.1	Provide a legend of all line-types and symbols used on plan views. Including, but not limited to: <<<existing and proposed right-of-way, proposed property lines, proposed lot numbers, existing wood line, existing contours, wetlands line, 100-year floodplain line, easement line, drainage easement line, minimum building setback line, existing and proposed monuments and pins>>>. DCM Ref: 4.3.2.K
4.2	Existing / Proposed Features Show the <<<existing and proposed right-of-way, proposed property lines, proposed lot numbers, existing wood line, existing contours, wetlands line, 100-year floodplain line, easement line, drainage easement line, minimum building setback line, existing and proposed monuments and pins>>> on the plan. 1. Buildings 2. Structures 3. Curbs 4. Curb ramps 5. Trees 6. Designated wetlands 7. Water bodies 8. Transit facilities, 9. Pedestrian and shared-use pathways 10. Pedestrian crossings 11. Bicycle facilities 12. Any items that can be seen on the ground or from an aerial perspective and represented on the plan DCM Ref: 4.4.2.B.11
4.3	General Plan Criteria Provide General Plan Criteria such as: 1. Limits of construction 2. Right-of-way line, existing and proposed (dimensioned in accordance with Fig. 3.2.5-a) 3. Right-of-way monuments 4. Street names DCM Ref: 4.3.5.A
4.4	Horizontal and Vertical Control Data Provide Horizontal and Vertical Control Data that contains: 1. Benchmarks: Maximum spacing is 1,000 feet. Show elevation and location. Use NAVD 88 2. Centerline stationing and curve data (both horizontal and vertical) 3. Survey references to horizontal control points 4. Bearings of centerline tangents 5. Station equations of intersecting road baselines DCM Ref: 4.3.5.B
4.4	Please include "Benchmarks: Maximum spacing is 1000 feet, show elevation and location." in your "Horizontal and vertical control data." DCM Ref: 4.3.5.B.1
4.4	Please include "Centerline stationing and curve data" in your "Horizontal and vertical control data." DCM Ref: 4.3.5.B.2
4.4	Please include "Survey references to horizontal control points." in your "Horizontal and vertical control data." DCM Ref: 4.3.5.B.3
4.4	Please include "Bearings of centerline tangents." in your "Horizontal and vertical control data." DCM Ref: 4.3.5.B.4
4.4	Please include "Station equations of intersecting road baselines" in your "Horizontal and vertical control data." DCM Ref: 4.3.5.B.5
4.5	Topography shall include the proposed positive drainage outfall, critical features of the existing highway for a minimum distance beyond the proposed entrance location, please revise. DCM Ref: 4.3.5.C.1
4.6	Contours shall be showing the elevation of the existing ground within the limits of the topographic survey. DCM Ref: 4.3.5.C.2

4.6	Contour interval for various ground slopes shall be as follows: Less than 0.5% = 1.0 feet with spot grades 0.5% to 5.0% = 1.0 feet Over 5% = 2.0 feet DCM Ref: 4.3.5.C.2
4.6	<<<Show, and/or label>>> the elevation contours of the existing grade <<<within the limits of the topographic survey and/or near XXXXX location(s)>>>. DCM Ref: 4.4.3.E
4.6	<<<Revise and/or provide>>> the contour interval (in accordance with Figure 4.3.5-a) for ground slopes, <<<within the limits of the topographic survey and/or near XXXXX location(s)>>>. DCM Ref: 4.4.3.E
4.6	Extend topography to the limits as defined in Section 4.3.5-C: beyond the limits of the property to include <<<the proposed positive drainage outfall, critical features of the existing highway>>> for a minimum distance as specified in Figures 3.4.2-a, 3.4.2-b, and 3.4.2-c. DCM Ref: 4.4.3.E
4.7	Lot layout within the site shall be showing the relationship of lots to the proposed internal street system as well as the proposed driveways. DCM Ref: 4.3.5.D
4.8	Include utility plan sheets with the next plan submission to be used for informational purposes only. DCM Ref: 4.3.5.E
4.8	Add the following note to the plan: Should utility relocation be required; the developer must submit a utility relocation plan for DelDOT review and correspondence from utility company issuing no objection to the relocation and design prior to the pre-construction meeting and physical construction. DCM Ref: 4.3.5.E
4.9	Show the <<<existing and proposed right-of-way, proposed property lines, proposed lot numbers, existing wood line, existing contours, wetlands line, 100-year floodplain line, easement line, drainage easement line, minimum building setback line, existing and proposed monuments and pins>>> on the plan. DCM Ref: 4.4.1.B
4.10	All building set backs must be displayed and dimensioned properly from the right-of-way. DCM Ref: 3.2.6
4.11	Provide sidewalk / shared use path across the site frontage. DCM Ref: 3.5.4.2
4.11	Provide a minimum of a 5' buffer behind the back of curb to the sidewalk / shared use path. DCM Ref: 5.3.1.1
4.11	Provide a minimum of a 10' buffer beyond the edge of roadway to the sidewalk / shared use path for uncurbed roadways. DCM Ref: 5.3.1.1
4.11	The sidewalk / shared use path must meet the minimum separation requirements from the edge of road, pavement, driveways, parking lots, and site entrances. DCM Ref: 3.5.4.2.E
4.11	Sidewalk / shared use path shall tie in at the site entrance or other drives at a 90-degree angle. No skewed crosswalks will be allowed. DCM Ref: 5.3.1.3
4.11	Please revise sidewalk / shared use path so that they are ADA compliant. DCM Ref: 5.3
4.11	All channelizing Islands with pedestrian facilities must meet the minimum standard size of a minimum of 175 ft ² DCM Ref: 5.2.5.5
SECTION 5: PROFILE SHEET PRESENTATION	
5.1	Show the plan views and corresponding street profiles on the same plan sheets. DCM Ref: 4.3.6
5.2	The profile's horizontal scale should be equal to the scale of the plan view. The vertical scale should be a ratio of 1:10 to the horizontal scale (i.e. hor. 1" = 50', vert. 1" = 5'). DCM Ref: 4.3.6.A & 4.3.6.B
5.3	At a minimum, provide the following vertical curve data on the profile: PVC, PVI, PVT, length of curve, and PVI elevation. The 'k' value is desirable. DCM Ref: 4.3.6.C
5.4	Show soil boring information - Use exaggerated scale and indicate type and depth of material. DCM Ref: 4.3.6.D
5.5	Show and Label the proposed stormdrains and structures on the profile with pipe or structure symbols that matches schedule. DCM Ref: 4.3.6.E
5.6	Show and label the proposed and existing utilities on the profile sheet. DCM Ref: 4.3.6.F
5.7	Show and label elevations every 50' at minimum on the profile sheet. DCM Ref: 4.3.6.G
5.8	Show and label the longitudinal grades (%) on the profile sheet. DCM Ref: 4.3.6.H
SECTION 6: SUBDIVISION STREETS DESIGN ELEMENTS	
6.1	<<<Show and/or label>>> typical sections, (as defined in Section 4.3.3). DCM Ref: 4.4.3.Y

	<p>Typical Sections</p> <p>Typical Sections are required for each major change of section and shall include the following:</p> <p>A. Typical street sections for internal streets and frontage roads:</p> <ol style="list-style-type: none"> Existing and proposed widths of streets, lanes, shoulders, right-of-way and easements Existing and proposed cross slopes of all lanes, shoulders and swales Slope of roadside embankment (front slope and back slope) Clear zone width and horizontal clearance Proposed limit of construction Point-of-Profile Grade Application and Point-of-Ditch Grade Application Type of curb Depth and type of pavement material Locations to place topsoil, seed and mulch Location of underdrains Subgrade to be prepared in accordance with DeIDOT Standard Specifications <p>B. Non-Roadside Ditches/Swales:</p> <ol style="list-style-type: none"> Width of ditch bottom Point-of-Profile Grade Application (Ditches longer than 100 feet require a profile) Side slopes Type and depth of ditch protection Locations to place topsoil, seed, and mulch Existing and proposed easements <p>DCM Ref: 4.3.3</p>
6.2	
6.3	<p>Internal streets with an ADT between 1-500 pavement section layer needs to meet minimum depth requirements:</p> <p>1.25" Type C³ 1.25" Type C²</p> <p>2.25" Type B</p> <p>7" GABC</p> <p>DCM Fig. 5.6.2-a</p>
6.3	<p>Internal streets with an ADT between 501-1000 pavement section layer needs to meet minimum depth:</p> <p>1.25" Type C³ 1.5" Type C²</p> <p>2.25" Type B</p> <p>8" GABC</p> <p>DCM Fig. 5.6.2-a</p>
6.3	<p>Internal streets with an ADT between 1001-2000 pavement section layer needs to meet minimum depth:</p> <p>1.25" Type C³ 1.5" Type C²</p> <p>3" Type B</p> <p>8" GABC</p> <p>DCM Fig. 5.6.2-a</p>
6.3	<p>Internal streets with an ADT between 2001-3000 pavement section layer needs to meet minimum depth:</p> <p>1.25" Type C³ 1.5" Type C²</p> <p>4" Type B</p> <p>8" GABC</p> <p>DCM Fig. 5.6.2-a</p>
6.3	<p>Internal streets with an ADT between 3001-5000 pavement section layer needs to meet minimum depth:</p> <p>1.25" Type C³ 2" Type C²</p> <p>4" Type B</p> <p>8" GABC</p> <p>DCM Fig. 5.6.2-a</p>
6.3	<p>Internal streets with an ADT greater than 5000; pavement section layer needs to meet minimum depth. Traffic data should be submitted to DeIDOT for pavement design.</p> <p>DCM Fig. 5.6.2-a</p>
6.4	<p>Minimum and Maximum Lifts</p> <p>Bituminous Concrete (Asphalt) Pavement Type C 1 1/4" Min 2" Max</p> <p>Bituminous Concrete (Asphalt) Pavement Type B 2 1/4" Min 4" Max</p> <p>Bituminous Concrete Base Course (BCBC) 3" Min 6" Max</p> <p>GABC 4" Min 8" Max</p> <p>DCM Ref: 5.6</p>
6.5	<p>XXX Street does not meet the minimum/maximum width of XX per the street classification.</p> <p>DCM Ref: Figures 5.5.2-a & 5.5.2-d</p>
6.6	<p>The horizontal curve on __ Street at station __+__ does not meet the minimum radius of 150' for a Type I Street. Please increase the curve radius.</p> <p>DCM Ref: Fig 5.1.2-a</p>
6.6	<p>The sag vertical curve on __ Street at PVI station __+__ does not meet the minimum 'k' value of 26 for a Type I Street. Please increase the curve length.</p> <p>DCM Ref: Fig 5.1.2-a</p>
6.6	<p>The crest vertical curve on __ Street at PVI station __+__ does not meet the minimum 'k' value of 12 for a Type I Street. Please increase the curve length.</p> <p>DCM Ref: Fig 5.1.2-a</p>
6.6	<p>The grade proposed on ____ Street exceeds the maximum allowable grade for a Type I Street. Please revise the street's profile so that the grade is < 10%.</p> <p>DCM Ref: Fig 5.1.2-a</p>
6.7	<p>The horizontal curve on __ Street at station __+__ does not meet the minimum radius of 300' for a Type II Street. Please increase the curve radius.</p> <p>DCM Ref: Fig 5.1.2-a</p>
6.7	<p>The sag vertical curve on __ Street at PVI station __+__ does not meet the minimum 'k' value of 37 for a Type II Street. Please increase the curve length.</p> <p>DCM Ref: Fig 5.1.2-a</p>

6.7	The crest vertical curve on __ Street at PVI station __+__ does not meet the minimum 'k' value of 19 for a Type II Street. Please increase the curve length. DCM Ref: Fig 5.1.2-a														
6.7	The grade proposed on ____ Street exceeds the maximum allowable grade for a Type II Street. Please revise the street's profile so that the grade is < 8%. DCM Ref: Fig 5.1.2-a														
6.8	The horizontal curve on __ Street at station __+__ does not meet the minimum radius of 500' for a Type III Street. Please increase the curve radius. DCM Ref: Fig 5.1.2-a														
6.8	The sag vertical curve on __ Street at PVI station __+__ does not meet the minimum 'k' value of 26 for a Type III Street. Please increase the curve length. DCM Ref: Fig 5.1.2-a														
6.8	The crest vertical curve on __ Street at PVI station __+__ does not meet the minimum 'k' value of 12 for a Type III Street. Please increase the curve length. DCM Ref: Fig 5.1.2-a														
6.8	The grade proposed on ____ Street exceeds the maximum allowable grade for a Type III Street. Please revise the street's profile so that the grade is < 10%. DCM Ref: Fig 5.1.2-a														
6.9	<p>Curve Data and Line Charts</p> <p>Include and show the following for all subdivision streets:</p> <table border="0"> <tr> <td>Curve Data Chart</td> <td>Line Chart</td> </tr> <tr> <td>1. Curve Number</td> <td>1. Line Number</td> </tr> <tr> <td>2. Delta</td> <td>2. Bearing</td> </tr> <tr> <td>3. Radius</td> <td>3. Distance</td> </tr> <tr> <td>4. Arc Length</td> <td></td> </tr> <tr> <td>5. Chord Bearing</td> <td></td> </tr> <tr> <td>6. Chord</td> <td></td> </tr> </table> <p>DCM Ref: 4.3.5.B</p>	Curve Data Chart	Line Chart	1. Curve Number	1. Line Number	2. Delta	2. Bearing	3. Radius	3. Distance	4. Arc Length		5. Chord Bearing		6. Chord	
Curve Data Chart	Line Chart														
1. Curve Number	1. Line Number														
2. Delta	2. Bearing														
3. Radius	3. Distance														
4. Arc Length															
5. Chord Bearing															
6. Chord															
6.10	Provide a detail for a Modified I.P.C.C. curb and gutter, Type 3, 4" Reveal having a front wall thickness of 7 3/4" and a back wall thickness of 11". DCM Ref: 3.7.C														
6.10	Type I & II subdivision streets should use Int P.C.C Curb and Gutter Type 2. Use of I.P.C.C Curb and gutter Type 3 on Type II subdivision streets require prior approval from DelDOT.														
6.10	Type III subdivision streets should use Int P.C.C Curb and Gutter Type 3-8. Use of I.P.C.C Curb and gutter Type 2 is permitted.														
6.10	Industrial Streets should use I.P.C.C. curb and gutter Type 3-8.														
6.11	The cross slope of the sidewalk shown at specify location exceeds the maximum 2%. Please revise the grading to meet ADA requirements. DCM Ref: 5.3														
6.12	<p>All Cul-de-sacs must be incorporated in the design of all permanent dead end streets except those eligible to be constructed within a reduced right-of-way.</p> <p>A. Design radii shall be in accordance with Figure 5.1.5.1-a.</p> <p>B. Graded aggregate base course material for cul-de-sacs is to extend a minimum of two feet beyond the edge of paving when an open drainage design is utilized (no curbs).</p> <p>C. The maximum tangent length as measured from the corner radii of the intersecting street to the cul-de-sac radius for a permanent dead end street is 200 feet.</p> <p>DCM Ref: 5.5.1</p>														
6.12	Streets with reduced right-of-way should select one of the turn-around designs shown in Figure 5.1.5.2-a in lieu of the standard cul-de-sac. DCM Ref: 5.1.5.1														
6.12	Temporary dead end streets shall be constructed to the property line of the development in order to provide for future development of adjacent lands. A temporary turn around must be provided when the length of a temporary dead end street exceeds 200 feet. DCM Ref: 5.1.5.2														
6.13	Please follow the Roudabout Guidance in accordance with the Design Guidance Memorandum (DGM 1-26). DCM Ref: 5.1.3.F														
6.13	Internal streets with an ADT between 1001-2000 pavement section layer needs to meet minimum depth: 1.25" Type C ¹ 1.5" Type C ² 3" Type B 8" GABC DCM Fig. 5.6.2-a														
SECTION 7: SIGNING AND STRIPING SHEET															
7.1	Submit the Signing and Striping plan as a separate plan sheet. DCM Ref: 4.4.3.V														
7.2	Include a signing and striping plan(s) legend. DCM Ref: 4.4.3.V														
7.3	Call out signage break-a-way standard detail (T-15) on the signing and striping plan set. DCM Ref: 5.11.1.2														

SECTION 8: DRAINAGE & STORMWATER MANAGEMENT	
8.1	Show the location of any existing/ proposed ditches on the drainage plan. DCM Ref: 4.3.5.F.1
8.1	Show the elevations of parallel ditches every 50 feet. DCM Ref: 4.3.5.F.1
8.2	Show the location of proposed ditch protection on the drainage plan. DCM Ref: 4.3.5.F.2
8.2	Call out the type of protection used with a note if it is to be something other than seed or mulch. DCM Ref: 4.3.5.F.2
8.3	Show the drain flow arrows on all pipes, underdrains including location, and ditches on the drainage plan. DCM Ref: 4.3.5.F.3
8.4	Identify the location of <<<Drainage Structures, Storm Sewers, and Culverts>>> with a specific/ unique symbol(s). Be sure to add the symbol(s) used to the legend. DCM Ref: 4.3.5.F.4
8.5	Show the location of any existing/ proposed <<<Culvert(s), Storm sewer outfall(s)>>> on the drainage plan. DCM Ref: 4.3.5.F.5
8.5	For the culverts in <<<location XXXX>>>, show the <<<Flow Line(s), Elevation(s), Typical Section(s), Ditch Protection.>>> DCM Ref: 4.3.5.F.5
8.5	For the Storm Sewer Outfall in <<<location XXXX>>>, show the <<<Flow Line(s), Elevation(s), Typical Section(s), Ditch Protection.>>> DCM Ref: 4.3.5.F.5
8.6	Include a pipe and drainage structure schedule on the drainage plan sheet. DCM Ref: 4.3.5.F.6
8.6	Include <<< Structure ID, Type, Invert, Top Elevation, Pipe ID, Size, Length, Invert Elevations, Slopes>>> on the pipe and drainage structure schedule. DCM Ref: 4.3.5.F.6
8.7	List the pipe angles in the pipe and drainage structure schedule. DCM Ref: 4.3.5.F.7
8.7	Pipe angles shall not exceed the maximum values listed in the pipe cover/ angle spreadsheet. Please revise angles <<<XXXX>>>. DCM Ref: 4.3.5.F.6
8.8	A drainage easement(s) are required for all drainage facilities handling roadway runoff which are not located within a dedicated right-of-way. DCM Ref: 4.3.5.F.5 & 5.7.2.6
8.8	All underground drainage facilities require a 20-foot drainage easement. Please provide a 20 foot drainage easement for the facility <<<in XXXX locations>>>. DCM Ref: 5.7.2.6
8.8	The drainage pipe <<<in XXXX location>>> must be located in the center of the drainage easement. DCM Ref: 5.7.2.6
8.8	Open drainage facilities require a width equal to the width of the facility plus a 10-foot easement on one side and a minimum of a 5-foot easement on the other side of the open drainage facility as measured from the top of the slope. If the top of slope is undefined, measure from the 10-year water surface elevation. Refer to figure 5.7.2.6-a of the DCM for additional details. Revise the easement around <<<Facility XXXX>>> to meet this criteria. DCM Ref: 5.7.2.6
8.8	All stormwater management facilities must be located a minimum of 20 feet outside of the right-of-way as measured from the top of slope of the facility. DCM Ref: 3.8
8.9	Please verify the constructability of the pipe coverage needed as per the stormwater calculations. DCM Ref: 5.7.2.5
8.10	Pipe connection with catch basin does not meet the depth requirements. Please revise to <<<XXXX depth/ other suggestion>>>. DCM Ref: 5.7.2.5
8.11	Catch basin cannot accommodate pipe <<<XXXX>>> because it sized to <<<Big/ Small>>>. Please revise the catch basin to accommodate the proposed pipe size. DCM Ref: 5.7.2.5
8.12	Specify which Inlet Top is to be used at <<<Location XXXX>>>. DCM Ref: 5.7.2.4

8.12	An incorrect inlet top has been specified in <<<location XXXX>>>. Please revise to <<<Inlet Top as specified by Standard Construction Details>>>. DCM Ref: 5.7.2.4
8.13	Provide Personnel Safety Grates over the flared end sections at <<<location XXXX>>>. DCM Ref: 5.7.2.8 & DeIDOT Standard Detail D-3
8.14	Provide Hydrology and Hydraulic calculations for any culverts within DeIDOT R/W that are to be replaced and/or will be impacted by upstream improvements. DCM Ref: 5.7.3 & 5.7.4
8.15	Hydrologic & Hydraulic calculations for any new / modified ditches and/or those that will be impacted by upstream, improvements within DeIDOT R/W. Provide typical roadway sections, including proposed ditches. All swales should have shear stress calculations computed to determine which soil retention blanket mulch (SRBM) should be used. Please note that no V-ditches are permitted within DeIDOT R/W. All ditches shall have a minimum 2' bottom width to help reduce erosion. Where possible, swales within the roadway clear zone shall be designed by referring to section 4.2.5 of DeIDOT Road Design Manual, to provide a traversable cross section. Specify "6-inch topsoil, Permanent grass seeding - dry ground (PS-DG) & soil retention blanket mulch (SRBM) type "as appropriate in swales. In any areas that the existing ditch is to be filled, please show on the plans how the drainage is to be conveyed. Refer to DeIDOT ES2M Manual Section 11 for Seeding Guide and Specification for work within DeIDOT right-of-way. DCM Ref: 3.8, 4.3.1.D