

Appendix I

Table 1 Local Road Design Criteria

Table 2 Submittal Checklist

Table 1

Road Type	ADT	R/W Width	Min. Pavement Width (feet)	Design Speed (MPH)	Min Radius (Feet)	Min. Stopping Sight Distance (ft)	Min. Stopping Sight Distance (ft) Intersections
(a) Local Road Type I for Rural Areas	Less than 400	50	20' travel way with 4' shoulders on each side	25	180	150	250
(b) Local Road Type II for Rural Areas	401-2000	50	22' travelway with 6' shoulders on each side	30	300	200	300
(c) Local Road Type III for Rural Areas in Critical and Sensitive Areas	Less than 500	50	20' travelway	25	180	150	250
(d) Private Road for Rural Areas	Less than 250	40	16' travelway with 2' shoulders on each side	20	120	125	200
(e) Local Road Type IV for Growth Areas	1001-2000	40	23' travelway with mountable curb and gutter on both sides	30	300	200	300
(f) Local Road Type V for Growth Areas	2001-4000	50	33' travelway with mountable curb and gutter on both sides	40	535	275	400
(g) Boulevard for Growth Areas	Over 4000	75	2-22' travelways separated by a 15' median	45	850	400	500
(h) Commercial Road - Light Duty	should be per pavement section	50	33' travelway with curb and gutter on both sides	40	535	275	400
(i) Commercial Road - Heavy Duty	should be per pavement section	60	43' travelway with curb and gutter on both sides	40	535	275	400

TABLE 2

**DEPARTMENT OF PUBLIC WORKS
DEVELOPMENT SERVICES DIVISION
SUBMITTAL CHECKLIST**

Final Submittal Major Subdivision

Project Name _____

Subdivision Number _____

Location (Street Address) _____

Name and Address of Engineering Firm:

Tax Map _____

Parcel _____

200 Scale Topo Map _____

Road Index Map _____

Page No. _____ Coordinates _____

Contact Person _____

Telephone Number _____

Name and Address of Developer:

Contact Person _____

Telephone Number _____

I hereby certify that I have personally reviewed the materials submitted with this checklist and to the best of my ability have insured that the submittal is complete and accurate.

Signature
(Design Professional Responsible for the work)

Date

SEAL

Legend

COLUMN # 1

Design Engineer Comments

Enclosed _____

Not Applicable _____

Not Enclosed _____

COLUMN # 2

Department of Public Works
Review Engineer Comments

Acceptable _____

Not Acceptable _____ (M) See Memo

Incomplete _____ (M) See Memo

		Provided	Not Provided	Not Applicable	For County Use Only
I.	Roadways				
	A. General				
	1 The engineer is to review the Design Manual for applicable drafting standards for acceptable materials and plan presentation				
	2 Normally the roadway and storm drainage can be presented in single contract set. For large projects (more than 4 plan sheets) it is recommended that separate roadway and storm drainage contract sets be presented				
	3 Only for small projects (less than two plan sheets) will the stormwater management (public systems) be included in the contract set. Separate stormwater management sets are recommended for record keeping needs of the County				
	4 Each contract set is to have a title sheet that has the subdivision layout shown, general notes, vicinity map, etc.				
	B. Cover Sheet				
	1 1" = 200' layout of the subdivision				
	a. Lot numbers (sections shown)				
	b. Street names				
	c. Boundary bearings and distances				
	d. Existing County and State roadways				
	2 Typical sections (on second sheet if additional room is needed)				
	3 Vicinity map (1" = 2,000')				
	a. Major County and State roadways				
	b. Site located				
	c. (3) Section hatched (if applicable)				
	4 General Notes for Roadway Projects				
	a. Standard notes				
	b. Benchmark and coordinate data				
	c. Existing utility contacts and phone numbers				
	d. County contacts and phone numbers				
	e. Specifications and Details Reference				
	5 Owner/Developer				
	a. Name of contact person				
	b. Phone number (area code)				
	c. Address				
	6 Engineer/Design Professional				
	a. Signature and seal of design professional				
	b. Name and number of design professional				
	c. Name, address (including zip code), and telephone number of professional organization making the submittal				

		Provided	Not Provided	Not Applicable	For County Use Only
C. Plan Sheets (1" = 40')					
1	Supplementary Information				
	a. Property - all lines abutting trafficway right-of-way shown in proper symbols				
	b. Property - existing right-of-way shown and dimensioned				
	c. Property - subdivision plat book and folio numbers when available				
	d. Property - subdivision layout checked with final subdivision plat				
	e. Property - subdivision name, section, block letter when available				
	f. Topography - field run checked for poles, fences, buildings, driveways, hydrants, shrubs, trees, pavement walks, symbols, etc.				
	g. Topography - carried 100' beyond right-of-way lines and 200' beyond ends of trafficways or beyond approval limits				
	h. Topography - shown existing pavement and label type of surface.				
	i. Utilities - show storm drain facilities being prepared; with proper symbol				
	j. Utilities - existing utilities shown and labeled				
	k. Scales - shown in proper location				
2	Proposed Road and Streets (Trafficways)				
	a. Trafficways - names of all trafficways in proper positions				
	b. Trafficways - limits of contract clearly defined				
	c. Trafficways - limits of new right-of-way shown and dimensioned #1 and #2				
	d. Trafficways - limits of necessary easement shown and dimensioned				
	e. Trafficways - widths of proposed pavement properly shown and dimensioned				
	f. Trafficways - centerlines correctly shown and stationed				
	g. Trafficways - complete bearing information				
	h. Trafficways - curve data in proper order; check computations.				
	i. Trafficways - proper radii returns to face of curb or edge of pavement				
	(1) See design standards for radii				
	(2) Label P.C., P.T.'s in clockwise manner				
	(3) Label P.I.'s (N.E., N.W., S.E., S.W.) as applicable				
	(4) Note handicapped ramps and details				
	(5) Show sidewalk treatment for termination				
	(6) Refer to Development Services Division fillet information guidelines				

		Provided	Not Provided	Not Applicable	For County Use Only
	j. Trafficways - P.I.'s of curb lines located and labeled				
	k. Trafficways - direction of flow arrows at curb returns and critical drainage points				
	l. Trafficways - slopes of non-standard gutters noted on plan				
	m. Trafficways - locations of curb, gutter, inlets, side ditches, outlet ditches, swales or mountable curb and gutter shown and labeled where necessary				
	n. Trafficways - typical sections properly drawn and labeled				
	o. Trafficways - guard fence or barricade post locations noted				
	p. Trafficways - cul-de-sacs or tee streets correctly drawn; dimensioned				
	(1) Note enter point elevation				
	(2) Cross slope of cul-de-sac				
	(3) Radial location at 45 degree points and points of curvature and reverse curvature				
	q. Trafficways - horizontal and vertical curves meet requirements for design speed				
	r. Coordinates for all control points				
D. Profiles (1" = 4' Vertical and 1" = 40' Horizontal)					
1	Supplementary Information				
	a. Property - existing ground along property lines shown with proper symbol and labeled with survey date				
	b. Topography - existing ground along proposed center line shown with proper symbol and labeled with survey date				
	c. Topography - previously established grades labeled with date of establishment and original drawing number when available # 1 #2				
	d. Trafficways - existing trafficways shown and labeled				
	e. Topography - existing ground lines or top curb lines extended 200' at tie-ins or breaks. Height of existing curb faces noted				
	(1) Top of curb line is to be shown for closed section profiles				
	(2) Centerline profile for open sections				
	(3) Existing ground line projections (right and left) at approximately the building restriction line				
	(4) For boulevards, raised medians, points of rotation, etc., the point of application for PGL shall be shown on the typical section				
	f. Show profile in accordance with Maryland State Highway Administration convention				
2	Proposed Road and Streets (Trafficways)				

		Provided	Not Provided	Not Applicable	For County Use Only
	a. Trafficways - names of all trafficways in proper positions				
	b. Trafficways - centerlines of intersecting trafficways shown and labeled				
	c. Trafficways - top curb grade or centerline grade properly shown and labeled #1 and #2				
	d. Trafficways - profiles of warped curbs shown with proper symbol (one solid line; the other a dashed line)				
	e. Trafficways - P.V.C.'s, P.V.T.'s indicated, and P.I.'s of intersecting curb lines indicated and labeled				
	f. Trafficways - grades meet minimum and maximum gradient requirements				
	g. Trafficways - tangent percents of grade shown to two decimal places				
	h. Trafficways - vertical curves meet sight distance and minimum length requirements				
	i. Trafficways - complete stationing at 50' minimum intervals and wherever else required (25' for horizontal and vertical curves)				
	j. Trafficways - elevations shown at 50' minimum intervals and wherever else required				
	k. Trafficways - linear profile around cul-de-sacs				
	l. Trafficways - profiles carried 200' beyond profile limits				
	m. Trafficways - 200' minimum of profile repeated at breaks				
	n. Trafficways - finished centerline grade profiles shown for alleys and entrances to parking areas as required				
	o. Trafficways - check all computations				
E. Miscellaneous Information (Scale as is appropriate)					
1	Plan Sheets				
	a. Check recommendations of sketch subdivision submission				
	b. Title block - tracer's initials, designer's initials, checker's initials				
	c. General notes				
	d. Title of drawing - subdivision name and section, election district, trafficway name				
	e. Design professional's seal and signature				
	f. North arrow properly oriented				
	g. Three coordinate "tics" labeled at multiples of 250'				
	h. Additional revisions as noted on check print				
	i. All non-standard details shown on plans at a suitable scale				
2	Design Booklet (when required)				

		Provided	Not Provided	Not Applicable	For County Use Only
	a. All necessary design computation in a bound booklet				
	(1) Subdivision name and number				
	(2) Design professional signature, seal and number				
	(3) Computations labeled and referenced to standard tests				
	(4) Nomographs marked for data used and referenced to source				
	(5) Sheets numbered				
	b. Booklet shall be on 8-1/2" x 11" paper with clear copies and color coded as required				
II. Storm Drainage					
A. General					
1	The Engineer is to review the General Requirements for Roadway Drawings for applicable presentation comments				
2	Plan profile sheets shall be presented unless the storm drainage follows the roadway plan and profile. Engineering judgment shall be used in determining when a plan presentation is to be combined. For projects requiring four or more plan sheets, separate sets of drawings are normally required				
3	Public systems shall be solid shaded and private systems when shown on public drawings shall be dash shaded. A legend shall be added to the plan and systems shall be labeled				
B. Cover Sheet					
1	1" = 200' layout of the subdivision				
	a. Existing contours				
	b. Lot lines and numbers				
	c. Street names				
	d. Boundary with bearings and distances				
	e. Existing County and State roadways				
	f. Proposed drainage areas and systems (with structures numbered)				
	(1) Areas shaded				
	(2) Large off-site areas may be shown at 1" = 2,000' scale without contours (prints of 1" = 2,000' topo sheets shall be presented as back-up)				
2	Subdivision name (section if applicable)				
3	Flow tabulation data				
4	Vicinity Map (1" = 2,000')				
	(a) Major County and State roadways				
	(b) Site located				
	(c) Section hatched (if applicable)				
5	General notes for drainage projects				

		Provided	Not Provided	Not Applicable	For County Use Only
	(a) Standard notes				
	(b) Benchmark and coordinate data				
	(c) Existing utility company phone numbers				
	(d) County contacts and phone numbers				
	(e) Specifications and details referenced				
6	Owner/Developer				
	(a) Name of contact person				
	(b) Phone number (area code)				
	(c) Address (zip code)				
7	Engineer/Design Professional				
	a. Signature and seal of design professional				
	b. Name and telephone number of design professional				
	c. Name, address (including zip code), and telephone number (including area code) of professional organization making the submittal				
C. Plans (1" = 40')					
1	Supplementary Information				
	a. Property - all lines shown in proper symbols				
	b. Property - lot numbers and front dimensions (front only)				
	c. Property - new and existing R/W's shown and dimensioned				
	d. Roads and streets - all shown in proper symbol				
	e. Roads and streets - name and alignment with R/W and pavement widths shown				
	f. Roads and streets - existing and/or proposed pavement labeled				
	g. Roads and streets - existing and/or proposed curb line - labeled if existing or proposed				
	h. Roads and streets - curb radii indicated				
	i. Roads and streets - State Highway Administration stamp, applied where required				
	j. Topography - check with Record Drawings for poles, fences, building, driveways, hydrants, shrubs, trees, pavement, walks, etc.				
	k. Utilities, existing - all shown (size and type noted)				
	l. Utilities, existing - checked water, sewer and drains against Record Drawings				
	m. Utilities, existing - checked with telephone company				
	n. Utilities, existing gas - check with gas & electric company				
	o. Utilities, existing - drawing and file numbers shown for sewer, water and drain record drawings				
	p. Utilities, existing - storm drain manholes and structures shown in accordance with record drawings				
	q. Utilities, proposed - all shown in proper symbols (size and type noted)				

		Provided	Not Provided	Not Applicable	For County Use Only
	r. Utilities, proposed - checked against construction plan for each proposed utility (sewer, water, gas, etc.)				
	s. North arrow and three coordinate ticks shown and labeled at multiples of 250'				
	t. Scales - notes at proper locations				
2	Proposed Storm Drain				
	a. Drains - all shown in proper symbol				
	b. Drains - shown in proper location				
	c. Drains - dimensioned for location (dimensioned from property lines or traverse lines)				
	d. Drains - curve data shown for pipes laid on curves (minimum length of pipe = 4')				
	e. Drains - size between manholes, labeled				
	f. Drains - in State roads, method of crossing labeled				
	g. Drains - proper clearance from other utilities shown				
	h. Drains structures - dimensioned for location (dimensioned from property lines or traverse lines)				
	i. Drain structures - adequate access to structures provided				
	j. Drain structures - numbered S-1, S-2, M-1, M-2, etc., starting from downstream end of system				
	k. Drain structures - curve data for junction chambers checked				
	l. Inlet connections - size indicated				
	m. Inlets - numbered I-1, I-2, etc. starting from downstream end				
	n. Inlets - shown in proper location				
	o. Inlets - dimensioned for location (dimensioned from P.C. or P.T. of curb, property lines or traverse lines)				
	p. Structure schedules				
	q. Structure locations				
	r. Inlet and manhole schedules				
D. Profiles (1" = 4' Vertical and 1" = 40' Horizontal)					
1	Supplementary Information				
	a. Roads and streets - existing ground and/or pavement-labeled and date noted				
	b. Roads and streets - established grade - labeled and checked against approved established grade profile				
	c. Roads and streets - name of road or street and intersecting streets - labeled				
	d. Utilities, existing - crossing and parallel lines shown and labeled (inv. shown and size)				
	e. Utilities, existing - drainage structures and manholes shown, invert elevations shown and checked against Record Drawing				

		Provided	Not Provided	Not Applicable	For County Use Only
	f. Utilities, proposed - crossing and parallel lines shown and labeled (show diameter)				
	g. Scales - shown in proper location				
2	Proposed Storm Drain				
	a. Drains - size, type, kind and grade shown				
	b. Drains - quantity of flow, design storm, and velocity of flow shown (actual velocity at outfall and steep pipes 8% and over)				
	c. Drains - manholes numbered and stationed				
	d. Drains - manhole inverts labeled (upstream and downstream)				
	e. Drains - arithmetic of invert elevations and grades checked				
	f. Drains - profile labeled (street name) or R/W				
	g. Drains - hydraulic gradients shown				
	h. Drains - pipe checked for allowable maximum and minimum cover				
	i. Drains - the use of concrete cradle, or encasement, where necessary, checked				
	j. Drain structures - stations of manhole centerline, P.C. and P.T. of bend structures, cut-ins and inlets indicated (check stationing with Plan)				
E. Miscellaneous Information (Scale as is appropriate)					
1	Plans				
	a. Title Block - date of approval of road grade, plans and file number, designer and tracer's initials, topographical base map number shown				
	b. General Notes - stamps (excavation) (subgrade) applied				
	c. Title of Drawing - size and location of sewer, local subdivision name and section, and district shown				
	d. Engineer's seal and engineer's signature and license number shown				
	e. Design Data - area letters, total tributary area, time of concentration to points under consideration, rainfall intensity and flow listed				
	f. Design Data - pipe diameter, grade, velocity and storm frequency curve listed				
	g. Structure Schedule - type, size, top elevation, invert elevation (downstream end) indicated opposite numbers S-1, S-2, etc. If special structure, sheet number indicated where detail appears (under type)				
	h. Manhole Schedule - type, size and top elevation and invert elevation indicated for all manholes in contract				

		Provided	Not Provided	Not Applicable	For County Use Only
	i. Inlet Schedule - number, type, tributary area, rainfall, intensity, runoff, coefficient, flow, top elevation and invert elevation indicated for all inlets in contract				
	j. Inlets - inlet flow checked against inlet capacity curves				
	k. Special Details - shown in accordance with Standard Details as much as is feasible				
	l. Special Details - check use of proper scales				
	m. Special Details - reinforcing clearly detailed				
	n. Centerline stationing shown for all utilities in streets				
	o. Full trench compaction shown for all utilities in streets, and for all utilities within road right-of-way limits on all existing streets				
	2 Design Booklet				
	a. Design booklet shall be a bound booklet (8 1/2" x 11" paper)				
	b. Signature, seal and number of design professional				
	c. Name of subdivision				
	d. Sheets numbered				
	e. Nomographs marked for data used and source noted				
	f. Drainage area map color coded (if required)				
	g. Outfall study to show non-erosive discharge of storm water				