



**ENGINEERS AND SURVEYORS INSTITUTE**  
 "A public/private partnership"  
**TOWN OF LEESBURG, VIRGINIA**  
**MINIMUM SUBMISSION REQUIREMENTS**



**CONSTRUCTION DRAWINGS**

PROJECT NAME & #: \_\_\_\_\_  
 SUBMITTING FIRM: \_\_\_\_\_ PHONE #: \_\_\_\_\_  
 SUBMITTING ENGINEER: \_\_\_\_\_ E-MAIL ADDRESS: \_\_\_\_\_  
 REVIEW DATE: \_\_\_\_\_ ESI REVIEW TEAM: \_\_\_\_\_

All references are to Section 10-110 of the Town of Leesburg Design and Construction Standards Manual, unless otherwise noted.

(Column abbreviations: OK = Addressed; REV = Revisions required; N/A = Not Applicable)

Code Reference	Description	Sheet	OK	REV	N/A	Line
<b>1.</b>	<b>General</b>					
B.	Clearly legible at a scale no more than one inch equals 30 feet and 24 x 36 inches in size, with an approved cover sheet					1
C.	All construction drawings shall bear the professional seal with date and signature of a design professional licensed to practice in the Commonwealth of Virginia					2
D.	A detailed cost estimate of all public improvements and a separate detailed cost estimate of all erosion control measures provided separately					3
<b>(1)</b>	<b>Public Improvements</b>					
(c)	All cost estimates shall be certified by the design professional of record					4
<b>(2)</b>	<b>Erosion and Sediment Control</b>					
	Cost estimate in accordance with Loudoun County requirements					5
<b>2. A.</b>	<b>Water System</b>					
(1)	Water system calculations					6
(2)	State Health Department approval for all water system extensions serving 15 or more equivalent residential connections					7
(3)	Location and sizes of existing and proposed water mains, lines, meters, valves, connections and easements					8
(4)	Profile of existing and proposed waterlines within the limits of work showing existing and proposed grades					9
(5)	Profiles drawn to a scale of no greater than one inch equals 30 feet horizontal, and one inch equals five feet vertical of water lines, indicating amount of cover and clearance at other utility crossings, length of pipe, pipe material, joints, thrust restraints, pipe fittings and deflections, trenching and bedding requirements					10
(6)	Location of existing and proposed fire hydrants, siamese and sprinkler connections, post indicator valves and other fittings, blow-offs and air release valves					11
(7)	Coverage plan for fire hydrants, indicating coverage of all areas with					12

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Code Reference	Description	Sheet	OK	REV	N/A	Line
	300-foot hose reach to the most remote edge of any proposed structure or parking facility, whichever is farthest from the hydrant					
(8)	Pipe strength calculations for all water lines with depth of cover less than 3 feet (if subject to vehicle live load) or exceeding 20 feet					13
(9)	Notes, references to construction standard details of this Manual, and construction details for non-standard structures and installation, necessary for the construction, maintenance and inspection of the public water system					14
<b>2. B.</b>	<b>Sanitary Sewer System</b>					
(1)	Calculations. Terminal lines 8 inches in diameter serving less than 8,000 gpd and having the required 1 percent slope or greater do not require calculations but sewer design flow shall be shown in the design table					15
(2)	State Health Department approval for all systems which will serve more than 400 persons					16
(3)	Plans drawn to a scale no greater than one inch equals 30 feet indicating the location and sizes of existing and proposed sanitary sewer lines, manholes, cleanouts, laterals and easements. Profile of existing sewer lines within the limits of work, showing existing and proposed grades					17
(4)	Profiles drawn to a scale no greater than one inch equals 30 feet horizontal and one inch equals five feet vertical of public sanitary sewer lines, indicating amount of cover, clearance from other utilities, invert elevations, elevation of any 100-year flood plain within 100 feet of the project, length of pipe, pipe material, joints, pipe fittings and deflections, trenching and bedding requirements					18
(5)	Capacity, complete engineering calculations, and full specifications for any proposed lift stations					19
(6)	Pipe strength calculations for all sanitary sewer lines with depth of cover less than 3 feet (if subject to vehicle live load) or exceeding 20 feet					20
(7)	Notes, references to construction standard details of this manual, and construction details for non-standard structures and installation necessary for the construction, maintenance and inspection of the sanitary sewer system					21
<b>2. C.</b>	<b>Road System</b>					
(1)	Typical section of improvements to public roads and approved private road systems including common driveways and parking courts, and pavement design calculations if other than a local road. The typical road section shall specify the typical pavement section (referencing Virginia Department of Transportation materials), standard cross-slope point of finish grade for profile, design CBR requirements, width of pavement, and width of right-of-way or easement. This cross section shall also indicate proposed sidewalks, utility strips and tree planting areas within the right-of-way					22
(2)	Road cross section at 50-foot intervals in all areas of transition, super-elevation, addition of lanes, and crossovers. Cross sections shall extend to existing grade on each side of road, shall be dimensioned from the road centerline to indicate width of lanes, pavement, slope,					23

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Code Reference	Description	Sheet	OK	REV	N/A	Line
	and right-of-way. Cross sections shall include elevations at centerline, top of curb, top of bank, toe of bank, and point of grade line; this requirement may be met by reference to profile sheets if cross sections are cut at stations with computed elevations shown on the profile sheets					
(3)	Plans and profiles of roads, drawn to a scale no greater than one inch equals 30 feet horizontally and one inch to five feet vertically, showing stations, percent of grades, elevations at 50-foot stations on vertical tangent sections and on 25-foot stations in vertical curves, spot elevations for all non-typical sections, locations of entrances, taper design and any necessary structures and roadway appurtenances					24
(4)	Sight distance shall be shown in plan and profile at all street intersections and road entrances, other than single-family driveways, unless warranted by unique topographical conditions. Distances shall be specifically delineated by dimensions or station					25
(5)	All public streets shall be classified by function and indicate the projected average daily traffic					26
(6)	Location of existing and proposed traffic signals, stop and yield signs, and posted speed limits					27
(7)	Existing and proposed streets, names, and widths of pavement, rights-of-way and entrances					28
(8)	Existing and projected traffic information					29
(9)	Horizontal and vertical curve data, definition of curve control points (PI, PC, PT, PVI, PVR, etc.)					30
(10)	Information regarding the maintenance of any private streets, parking courts, or common driveways					31
(11)	Notes, references to construction standard details of this manual, and construction details for non-standard structures and installation necessary for the construction, maintenance and inspection of the public and private road system					32
<b>2. D.</b>	<b>Parking Areas</b>					
(1)	Tabulations indicating the number of required and provided off-street parking spaces					33
(2)	Indication of the size and dimensions of off-street parking spaces, including the specific delineation of any parking spaces utilizing an overhang to reduce the length of parking spaces					34
<b>2. E.</b>	<b>Sidewalks and Trails</b>					
(1)	The location and dimension of all proposed public and private sidewalks and trails					35
(2)	A cross section of all public sidewalks or trails					36
<b>2. F.</b>	<b>Plantings and Landscaping</b>					
	Landscaping plan drawn to a scale no greater than one inch equals 50 feet, indicating the size, type and location of all proposed street trees, landscape materials, and buffer yards. The location of existing and proposed easements shall also be shown on the plan to avoid conflicts between proposed landscape areas and utility improvements					37
<b>2. G.</b>	<b>Storm Drainage System</b>					
(1)	Existing major sub-basin drainage divides and all proposed drainage divides for proposed drainage facilities, shown at a scale no greater					38

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Code Reference	Description	Sheet	OK	REV	N/A	Line
	than one inch equals 50 feet for on-site areas and no greater than one inch equals 200 feet for off-site areas not exceeding 100 acres, and no greater than one inch equals 500 feet for offsite areas exceeding 100 acres. Drainage divide maps for <u>floodplain studies only</u> may be at a scale no greater than one inch equals 2,000 feet. Drainage divide maps shall clearly delineate the boundaries for the existing major drainage areas and all proposed drainage areas, and indicating the amount of land within individual drainage areas and runoff coefficients. The plan sheet for proposed drainage divides must show the final grading of the site and all physical improvements and drainage elements thereon. Drainage areas must "close" and account for all on-site areas					
(2)	Storm drainage calculations to include runoff and pipe sizing, hydraulic grade line for pipes surcharged above the pipe crown for any portion of that pipe run, inlet sizing and channel and swale capacity, and system demonstrating adequacy of design for each element of the required public drainage system. Calculations for the drainage system shall be in the format of the Virginia Department of Transportation Drainage Manual. Open channels shall be designed in compliance with the Virginia Erosion and Sedimentation Control Handbook, Chapter 5					39
(3)	Plan and profile of the designed drainage system drawn to a scale no greater than one inch equals thirty 30 feet horizontal and one inch equals five feet vertical. Plan and profile are required for underground conduits, at-grade conduits and open channel reaches in the system. Data required includes: location, type, top elevation, inverts of structures, material, class, slope, length of pipe, cover over the top of the pipe and clearance at all utility crossings					40
(4)	Location of 100-year flood plain for any water course (constant or intermittent, natural or manmade) within 25 feet of the subject property					41
(5)	Location, description, and certification that an "adequate" downstream channel exists or will be provided with the project. Description shall include channel cross section at control points and profile to the point of adequacy. Plan and profile for the off-site channel shall be at a scale not greater than one inch equals 200 feet					42
(6)	Overland relief for 100-year storm, showing that residential buildings or other structures will not be flooded or damaged. Overland relief shall be provided for all natural or manmade sumps where water may pond if the underground drainage system becomes inoperative. Overland relief easement must be provided to maintain the overland relief path and prevent flooding; the easement need not encompass the upstream ponded area					43
(7)	Location and size of existing and proposed public drainage systems, connections, inlets and gutters, and natural and man-made channels					44
(8)	A stormwater management plan sheet and narrative with supporting calculations detailing the techniques proposed					45
(9)	Details and narrative defining special maintenance provisions (if any), which are over and above the requirements listed in the standard "stormwater detention facility" easement, for any proposed					46

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Code Reference	Description	Sheet	OK	REV	N/A	Line
	stormwater detention ponds					
(10)	Notes, references to construction standard details of this manual, and construction details for non-standard structures and installation necessary for the construction, maintenance, and inspection of the storm drainage system					47
<b>2. H.</b>	<b>Lot Grading and Soils</b>					
(1)	Existing and proposed topography, vegetation and drainage areas to include specific location and disposition of specimen trees, and limits of clearing dimensioned from the perimeter boundary					48
(2)	Topography shall extend a minimum of 25 feet beyond the site boundary and/or limits of work					49
(3)	Contour interval shall be two feet and, in areas of less than four percent slope, spot elevations 50 feet on center shall be provided					50
(4)	Grading plans shall be at a scale no less than one inch equals 30 feet and shall indicate physical improvements, drainage systems, finish floor and basement elevations, spot elevations at lot corners and all breaks in grade. Survey control point locations for grading operations shall be indicated					51
(5)	The applicant shall submit a complete detailed geotechnical investigation. The detailed geotechnical investigation is to be prepared under the direction of, and sealed by, a registered professional engineer licensed in the Commonwealth of Virginia with experience in geotechnical engineering. The detailed investigation shall contain specific recommendations for problems anticipated during the proposed construction of required public improvements, overlot cuts or fills in excess of 6 feet, and slopes exceeding 1 vertical foot in 3 horizontal feet					52
(5)	The design professional shall provide the Director with a written statement from the geotechnical engineer stating that he has reviewed the plans, as submitted, and that the plans were prepared in accordance with the recommendations of the geotechnical investigation					53
<b>2. I.</b>	<b>Erosion and Sediment Control</b>					
(1)	General description of project, type and nature of land disturbing activity, and amount of grading involved					54
(2)	Description of existing topography, vegetation and drainage					55
(3)	Description of neighboring and downstream properties which may be affected by the land disturbance					56
(4)	Specific erosion and sediment control plan sheet and narrative providing the details and calculations required to select and size the measures to be used					57
(5)	Existing and proposed topography, vegetation and drainage area to erosion and sediment control devices, as required for design in accordance with the VESCH, and limits of clearing dimensioned from the perimeter boundary					58
(6)	Topography shall extend a minimum of 25 feet beyond the site boundary or limits of work					59
(7)	Contour intervals shall be two feet, except in areas of less than four percent slope, where spot elevations 50 feet on center shall be					60

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	provided					
(8)	Location, description, and certification that an "adequate" downstream channel exists or will be provided with the project. Description shall include channel cross section at control points and profile to the point of adequacy. Plan and profile for the off-site channel shall be at a scale not greater than one inch equals 200 feet					61
(9)	Information and specifications on how the site will be stabilized after construction is completed					62
<b>2. J.</b>	<b>Other Information</b>					
(1)	Public street security lighting plan					63
(2)	A lighting plan indicating that all outdoor lighting fixtures (if any) proposed with the subdivision construction drawings, exclusive of public street lights and walkway, accent lights or yard lighting located on individual residential lots, will not have a source of illumination that is visible beyond the site or cause illumination of adjacent properties in excess of 0.5 foot-candles as measured at the site boundary					64
(3)	Location of proposed electrical, telephone, cable television, and gas lines and associated easements					65
(4)	Boundary survey of the property with bearings and distances					66
(5)	Off-site right-of-way dedications and temporary construction easements					67
(7)	All survey monuments, lot corners, block markers and construction benchmarks, together with their description shall be provided					68

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