

**APPENDIX G
CHECKLISTS**

TABLE OF CONTENTS

Construction Drawings for Subdivisions Checklist

Construction Drawings for Final Development Plans Checklist

Rough Grading Plans Checklist

Division of Plan Review
 The Town of Leesburg in Virginia
 Construction Drawings for Subdivisions

Checklist

File Date: _____ Plan Control # _____

Project: _____

Owner: _____

Design Firm: _____ Contact Engineer: _____

Phone #: _____

	Deficiencies		
	O.K.	Sheet #	Notes
General Information (Section 10-110, 1) <ul style="list-style-type: none"> ● Name and proposed use of proposed subdivision ● Names and addresses of owners of record and subdivider ● Names, addresses, seal, and signature of the licensed professional preparing the drawings ● Deed reference, tax map, block, and parcel number ● Vicinity map provided at a scale not more than 1" = 1000' ● Existing zoning, proffers, and covenants listed ● All adjoining properties with owner name, addresses, zoning, and use listed ● Detailed signed cost estimate including items within easements 			
Project Tabulations (Section 10-110, 1A) <ul style="list-style-type: none"> ● Gross Acreage of subdivision to the nearest 1/10 acre ● Area and number of lots, and average lot size 			

	Deficiencies		
	O.K.	Sheet #	Notes
<ul style="list-style-type: none"> ● Minimum lot area and width ● Area in lots, area of open space and percentage of open space/gross area <p>Existing Subdivision Conditions (10-110, 1A)</p>			
<ul style="list-style-type: none"> ● Certified map of survey with all property lines, topography, maximum 5 ft. contour interval ● Location of rights-of-way, roadways, driveway access points, and explanation of any easements ● Location of overland water courses, drainage structures and FEMA Flood Plain Limits ● Location of tree cover and areas of steep slopes broken into two categories, those between 15 and 25% and those greater than 25% <p>Graphic Requirement (Section 10-110, 1B)</p>			
<ul style="list-style-type: none"> ● Sheets 24" x 36" numbered, drawn clearly and legible at a scale not less than 30 feet to the inch labeled "Construction Drawings" with match lines and corresponding sheet numbering system where required ● Blank space 2" x 3" on approved cover sheet for Town Approvals <p>Profile:</p>			
<ul style="list-style-type: none"> ● Profiles drawn to a scale of not more than 1" = 30' horizontally and 1" = 5' vertically. ● Water systems - existing and proposed grade, cover (4 ft. min. and 6 ft. max.) and clearance at all utility crossings, pipe material, joints, tees, valves, bend locations and size, thrust restraints and strapping, trench and bedding requirements. 			

O.K.	Deficiencies	
	Sheet #	Notes
<ul style="list-style-type: none"> ● Sanitary systems - existing and proposed grade, cover and clearance at all utility crossings, pipe length, pipe material, pipe slope, invert in/out at all manholes, top elevation, 100-year WSE, type of frame and cover. ● Storm drainage - existing & proposed grades, cover and clearance at all utility crossings, pipe material and class, pipe lengths, pipe slope, inverts in/out and top elevation at all structures, 10-year WSE at inlets, type and length of top or inlet. ● Transportation - existing and proposed grades, cover and clearance of all utility crossings, stations of vertical curves, elevations RT top, LT top, centerline, length of curves, sight distances, locations of PI, PC, PT, PVI, PVC, PVT, high/low point, begin and end of transitions for super-elevation, grades in and out of curves, entrances, stations, structure stations. 		
<p>Subdivision Conditions (Section 10-110, 2)</p> <p>Article 2; Water and Fire Regulations Systems</p> <ul style="list-style-type: none"> ● Town Council Approval of Extension (2-110) ● Virginia Department of Health Approval (15 or more equivalent residential connections 6000 gpd or private well) (2-110 & 2-370) ● Location of Proposed Water Mains Within Streets (10 feet north or east of centerline or outside edge of sanitary sewer) (2-121) ● Meter Located Within Utility Strip (2-121) ● Water Service Calculations (2-122) (average day demand, peak hour demands, maximum day demands, maximum day with fire flow and 20 psi minimum pressure in accordance with master plan) 		

- Cover Requirements (2-122)
(cover less than 4 feet or greater than 8 feet with strength calcs, request special approval on cover sheet)
- Valves (2-122)
(four valves at crosses, 3 at tees, except at fire hydrant leads and one every 500 feet on transmission mains)
- Air Releases and Blowoffs (2-122)
(automatic releases required on mains 10 inches and greater, all high points, all low points and terminal points)
- Thrust Blocks (2-122)
(required at all hydrants, valves, bends, tees, crosses and caps including details)
- Easements (2-123)
(on private property, 1:1 side slope from the outside edges of the pipe extending from the invert of the pipe to the proposed finished grade with a minimum easement width of 10 feet)
- Oversized Mains (2-123)
(submit unit prices for oversized mains and appurtenances)
- ISO Calculations (2-210)
- Minimum Fire Flow Requirements (2-220)
- Interim Fire Flow (2-230)
(request for interim fire flow on cover sheet)
- Fire Hydrant Coverage Plan (2-240)
(300 feet maximum "as hose lies")
- Fire Hydrant, Siamese, & Sprinkler Connection Locations (2-240)
(FH minimum 50 feet from building)
- Fire Marshall Approval (2-240)
(on cover sheet)
- Fire Lanes (2-250)
(18 feet in width with a maximum 5% slope. Buildings exceeding 50 feet require access front and rear)

O.K.	Deficiencies	
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- Pipe Fitting Deflection and Back Fill Requirements (2-310)
- Separation with Sanitary Sewer (2-350) (min. 10 feet horizontally, 1.5 feet vertically)
- Support Sewers Over Watermains (2-350) (structural support of sewer above water)
- Mains Installed with Casing Cathodic Protection (2-339)
- Fire Hydrant Valve (2-390) (multiple valve with hydrant length longer than 50 feet with one valve within 6 feet but no closer than one foot from hydrant)
- Notes and Details. Necessary for the construction, maintenance and inspection of the public water system

Article 4; Sewage and Solid Waste Disposal

- Virginia Department of Health Approval (4-110 & 4-130) (serving 400 persons and/or 40,000 GPD or more)
- Approval by Town Council (4-110) (application for sewerage service requiring extension of existing facilities)
- Compliance with Town's Subdivision and Land Development Ordinance (4-120)
- Calculations Providing for Peak Flow Discharges (available capacities) (4-130)
- Location and Separation of Sewers (4-130) (refer to Article 2; Section 2-350)
- Sewers Located Outside Stormwater Management Area (4-130) (impoundments, embankments, min. 15' downstream of outfall or spillway)
- Sewer Crossing Other Utilities (4-130) (crossings shall be made at approximately 90°)
- Clean Outs Properly Located (4-130) (five feet building, property line, easement line)

O.K.	Deficiencies	
	Sheet #	Notes

- Waiver for Cleanout Locations (4-130)
(noted on cover sheet)
- Velocity in sewer. Between 2.0 fps minimum and 15 fps max. (4-130)
- Depth of Cover Within Specifications (4-130)
(min. cover traffic 6', outside 3', max cover 18', depth greater than 12 require strength calcs, requests for waiver recorded on cover sheet)
- Sanitary Force Main Computations (4-130)
(minimum main velocity 2 fps, max. 8 fps, termination at manhole with gravity flow)
- Location and Width of Easements (4-130)
(1:1 side slope from outside edge of pipe extending from the invert of the pipe at its lowest point between grades and rounded up to the nearest foot)
- Class of Bedding Provided for Each Sewer Run (4-140)
- Approval for Private Systems (4-200)
- Description of Method of Storage, Collection, Disposal (4-300)
- Container Size Computations (4-300)
- Type of Storage Employed Listed (4-310)
(central refuse rooms, or individual containers)
- Statement Regarding Collection (4-320)
(Town, Private, Management)
- Statement of Disposal With Details of Storage Area (4-330, 4-340)
(provide proper screening)
- Notes and Details. Necessary for the construction, maintenance and inspection of the public sewerage system

Article 5; Storm Drainage

- Concentrated Flows For One 10-Year Storm in Excess of 4 CFS Contained Within Drainage System (5-100)

O.K.	Deficiencies	
	Sheet #	Notes

- Drainage System Capacity for 10-year event (5-210)
- Compliance with Storm Drainage Master Plan (5-210)
- Overland Relief Route and Limit for Infrequent Events Shown (5-210)
- Minimum Easement Requirements for Pipe System (5-220)
(1:1 side slope, 24" larger and multiples 1:1 from side wall, min. 15')
- Minimum Easement Requirements for Channel System (5-220)
(min. 15' TW less than 5', TW + 10 foot access strip for TW 5-10', TW + 10 foot access strip both sides for TW greater than 10')
- Drainage Divides Less Than 200 AC (Rational Method) (5-231)
- Drainage Divides Greater Than 200 AC (USDA-SCS Methodology) (5-232)
- Approved Pipe Materials (5-242)
(reinforced concrete only for public maintenance; vitrified clay, cast iron, corrugated metal, PVC)
- Minimum Cover 2' Required (5-242)
(requests for less cover on cover sheet)
- Velocity Requirements for Pipe System (5-242)
(min. 2.5 FPS full, max. 15 FPS full or Director approval)
- Trunk Line of System Matching Crowns (5-242)
- Spread Requirements (5-244)
(maximum 8' spread roadways, I=3.5 in/hr)
- By-Pass Flow (5-244)
(inlets must be clearly marked on plans)
- Protective Railing (5-247)
(for vertical drops of 18" or more)
- Hydraulic Grade Line Computations and Plotting on Profiles (5-249)
- Channel/Swale Capacity and Adequate Channel Lining (5-252)
(design 10-year event, max. side slope 3:1 grasslined)

O.K.	Deficiencies	
	Sheet #	Notes

- Swale Capacity With Easements (5-254)
(max. length 300', max. 4 CFS)
- Adequate Culvert Design (5-260)
(min. 30' from outside edge ultimate width at pavement, include inlet and outlet control computations)
- Outfall to Adequate Channel (5-311)
(min. 300' beyond site)
- Adequate Pond Routing (5-314)
- Adequate Spillway Design (5-322)
- Provide Dam Failure Analysis/Classification (5-324 & 5-520)
- Adequate Geologic Investigation (5-324)
- Adequate Embankment & Size/Slope/Protection (5-324)
- Adequate Seepage Control (5-324)
- Adequate Spillway Design Principal/Emergency (5-324)
- Adequate Min. Surface Area/Depth for Wet Ponds (5-326)
- Pond Design Elevations/Construction (5-328)
- Details Provided for Construction (5-328)
- Details and Computations for Design Criteria of Rooftop Facilities (5-332)
- Details and Computations Necessary for Design and Construction of Underground Detention Facilities (5-342)
(public maintenance must be reinforced concrete)
- Porous Pavement Designs Require Prior Approval of Director (5-351)
- Mix Design Approved/Storm Routing (5-352)
- Subsurface Investigation Perc Rates (5-352)
- Regional Facilities (5-360)
(min. 100 acres, two sites min.)
- Maintenance Provisions for Access to Detention Facilities (5-380)
- Prior Approval Required By Director for Work Inside Flood Plains (5-410)
- Pre-Development Limits/Post Development Limits (5-410)

O.K.	Deficiencies	
	Sheet #	Notes

- HEC-2 Pre/Post (5-410)
- Alternate Access Routes Provided (5-420)
- Flood Plain Study to Town, FEMA (5-422)
- Approval by FEMA (5-422)
- Flood Plain Study Required (5-431)
(development, subdivisions drainage area 50+ acres)
- Approval By Director of Mannings "N" Value (5-431)
- Cross Section Locations (5-431)
(300' up and downstream of point where pre/post WSE is the same)
- Approval of Director Required for Dam Design (5-511)
- Highway Embankments May Not Be Used As Dams (5-512)
- Provide Maintenance and Inspection Agreement (5-512)
- Separate Emergency Spillway (5-520)
(100-year undetained flow)
- Embankment Designed Proper Width/Height (5-520)
(max. 2' higher than 100-year elevation)
- Proper Flood Easements Provided (5-520)
- Provide BMP at Directors Request (5-610)
- Pond Volume Provided (5-620)
- Release Times (5-620)
(40 hours min., 48 hours max.)
- Notes and Details. Necessary for Construction, Maintenance, and Inspection of Public Sewer Systems

Article 6; Environmental Protection

- Erosion and Sediment Controls Required (6-110)
(areas over 500 sf or removal or addition of 12 in. of soil)
- Compliance with Virginia E & S Handbook (6-110)
- Inclusion of Detailed Narrative (6-220)
(calculation of approx. cut and fill volumes, erosion control measures, final stabilization, land disturbing schedule)

O.K	Deficiencies	
	Sheet #	Notes

- Note of "No Area Left Denuded for Longer Than Thirty Days" (6-220)
- Provision of Proper Surety for Erosion Control Measures (6-300)
- Conformance With This Section (6-400) (chemical and petroleum liquids)

Article 7; Transportation

- Compliance with VDOT Standards (7-110) (except as revised herein)
- Inclusion of Traffic Study (7-111) (required when adjacent to road carrying 500 VPD or more with current 20 year counts)
- Computations Detailed (7-111) (ADT, PHV, directional split, and LOS)
- Location of Traffic Control Devices (7-111)
- Conformance with Functional Classification (7-220)
- Conformance with Geometric Design Guides (7-300) (industrial zones 52' min width FC to FC)
- Conformance with Battlefield Pkwy Section (7-300)
- Inclusion of Roadway Elevations (7-310) (CL, Intx., curb returns, curb inlets, manholes, begin and end vert. curves, 50 ft. tan. 25 ft. in vertical curves)
- Cul-de-sac Criteria (max. Slope 3%, min. radius ROW 55 feet, pavement 45 feet) (7-310)
- Proper Street Signage Locations (7-310)
- Proper Location of Ramps for Handicapped Access and Movement (7-340)
- Guard Rail, Note Shown on Plans (7-350)
- Guard Rail, Type/Location/Height Shown (7-350)
- Proper Entrance Location/Number (7-360) (one entrance without approval of land development official)
- Proper Entrance Alignment (7-361) (CL to CL or 125 feet min. offset)

O.K	Deficiencies	
	Sheet #	Notes

- Adequate Design for Pipestem Drives (7-363)
(max. slope 12%, min. rad. 50', proper alignment)
- Proper Access Easements (7-364, 7-370)
- Adequate Design for Common Drives (7-364)
(max. slope 12%, max. length 600', SU vehicle)
- Parking Court Access Easements (7-370)
- Provide For "No Through Traffic" (7-370)
- Proper Landscaping Provided (7-370)
(refer to Zoning Ordinance)
- Design Noise Abatement Facilities per Town Council
(7-380)
- Adequate Pavement Designs (7-410)
(6" 21A, 3" BM3, 1½" SM5, local road 6" 21A,
6" BM3, 1½" SM5 through collector)
- CBR Tests at 500' Intervals (7-420)
(modification of design construction phase)
- Proper Parking Space Dimensions (7-520)
(8.5' X 18' standard, 7.5' X 15' compact,
12' X 18' handicap, "head in")
- Handicapped Parking Indicated by Sign
and Striping per ANSI (7-520)
- Proper Aisle Widths Provided (7-520)
- Maximum Contiguous Parking Spaces Does Not
Exceed 20 (7-520)
- Turn Around Provided for AASHTO SU Vehicle (7-520)
(parking bays w/20 or more spaces)
- Proper Slope provided within Parking Lot (7-520)
(maximum 7%)
- Bond Amount Shown For Street Lights (7-610)
- Provisions for Street Lighting (7-620, 7-640)
(public roads, commercial entrances)
- Proper Location and Size (7-710)
(min. width 4', max. cross slope 2.08%, max.
longitudinal slope 5%)
- Brick Faced Sidewalk in Historic Area (7-710)
- Adequate Trail Design (7-720)
(width 6' min., vertical clearance 10', min. 12'
easement, 20' min. turn radius, max. slope 10%)
- Highway Bridges Require VDOT Approval (7-800)

O.K.	Deficiencies	
	Sheet #	Notes

	Deficiencies		
	O.K.	Sheet #	Notes
<ul style="list-style-type: none"> ● Independent Review Required by Director for Special Structures (7-800) <p>Article 8; Vegetation Preservation and Planting</p>			
<ul style="list-style-type: none"> ● Location and Size 18" DBH or Larger Trees (8-310) ● Limits of Clearing and Grading (8-310) (min 5' from trees to be saved) ● Adequate Drainage for Trees (8-420) (no impounding of water for 48 hours within drip line of trees to be saved) <p>Article 9; Geotechnical Guidelines</p>			
<ul style="list-style-type: none"> ● Required In-Depth Soils and Geotechnical Review Provided (9-100) ● Compliance with Section Including Terrain, Surficial Description and Recommendations (9-230) ● Compliance with Section (Narrative, Geologic Cross Sections, Ground Water Locations, Recommendations (9-230) ● Blasting Information if Applicable (9-230) ● Written Statement of Review and Compliance with Geotechnical Review (9-510) ● Written Report and Inspection Provided and Required (9-611) ● Written Note on As-Built of Guarantee for 1 year against Settlement (9-713) ● Proper Materials for Use as Fill (9-720) ● Approval of Director Required for Location of Stockpiles (9-730) ● Provide Note Stating "Contractor to Provide Record of All Blasting to Director with Locations, Depths, # of Holes and Quantity of Explosives Each Day" (9-741) ● Test Pits Provided (9-750) ● Sheeting & Shoring Provided Per Directors Requirements (9-751) 			

- Dewatering Details and Calculations Provided (based on geotechnical investigations) (9-753)
- Directors Approval is Required for all Borrow Material (9-755)
- Backfill Meeting VDOT Requirements (9-760)
- Parking Lots, Courts, Driveways Meeting Minimum Pavement Requirements (9-763)
- Min. cover for Electric Utilities (min. 2' required) (9-770)
- Maintaining One Lane of Traffic During Utility Construction (9-770)
- Contractor/Soil Test Service Reports On Fill Material (9-784)
- Conformance with Specifications of Core Trench (min. width 4', min. depth 4', sides 1:1 or flatter extending to riser crest elevation) (9-788)
- Min. Riser Specifications (9-791) (watertight connection, prevent flotation, 1.25 factor safety)
- Min. Anti-Seep Collar Requirements (9-791)
- Min Bedding Requirements (9-791) (concrete cradle required)
- Proper Construction Techniques Employed To Reduce Erosion in Place (9-794)
- Rip-Rap Conformance with State Criteria (9-795)

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Division of Plan Review
The Town of Leesburg in Virginia
Construction Drawings for Final Development Plan
Checklist

File Date: _____ Plan Control # _____
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 Owner: _____
 Design Firm: _____ Contact Engineer: _____
 Phone #: _____

	Deficiencies		
	O.K.	Sheet #	Notes
General Information (Sections 10-120, 1 & 10-110, 1) <ul style="list-style-type: none"> ● Name and proposed use of proposed development ● Names and addresses of owners of record and subdivider ● Names, addresses, seal, and signature of the licensed professional preparing the drawings ● Deed reference, tax map, block, and parcel number ● Vicinity map provided at a scale not more than 1" = 1000' ● Existing zoning, proffers, and covenants listed ● All adjoining properties with owner name, addresses, zoning, and use listed ● Detailed signed cost estimate including items within easements 			
Project Tabulations (Sections 10-120, 1 & 10-110, 1A) <ul style="list-style-type: none"> ● Gross Acreage of development to the nearest 1/10 acre ● Number of parking spaces required and provided based on highest and lowest parking demand in zone, proposed demand based on use ● Interior and total lot landscaping tabulations ● Height of building 			

	Deficiencies		
	O.K.	Sheet #	Notes
<ul style="list-style-type: none"> ● Minimum and provided yard requirements on each boundary ● Minimum and provided buffers ● Percentage of lot covered by building, parking, drives, sidewalks, and landscaping ● Proposed floor area ratio (FAR) <p>Existing Development Conditions (Sections 10-120, 1 & 10-110, 1A)</p>			
<ul style="list-style-type: none"> ● Certified map of survey with all property lines, topography, maximum 5 ft. contour interval ● Location of rights-of-way, roadways, driveway access points, and explanation of any easements ● Location of overland water courses, drainage structures and FEMA Flood Plain Limits ● Location of tree cover and areas of steep slopes broken into two categories, those between 15 and 25% and those greater than 25% <p>Graphic Requirement (Sections 10-120, 1 & 10-110, 1B)</p>			
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Final Development Conditions (Section 10-120)		
<p>Article 2; Water and Fire Regulations Systems</p> <ul style="list-style-type: none"> ● Town Council Approval of Extension (2-110) ● Virginia Department of Health Approval (2-110 & 2-370) (15 or more equivalent residential connections 6000 gpd or private well) ● Location of Proposed Water Mains Within Streets (2-121) (10 feet north or east of centerline or outside edge of sanitary sewer) ● Meter Located Within Utility Strip (2-121) 		

- Water Service Calculations (2-122)
(average day demand, peak hour demands, maximum day demands, maximum day with fire flow and 20 psi minimum pressure in accordance with master plan)
- Cover Requirements (2-122)
(cover less than 3 feet or greater than 8 feet with strength calcs, request special approval on cover sheet)
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(four valves at crosses, 3 at tees except for fire hydrant leads, and one every 500 feet on transmission mains)
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(automatic releases required on mains 10 inches and greater, all high points, all low points and terminal points)
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(required at all hydrants, valves, bends, tees, crosses and caps including details)
- Easements (2-123)
(on private property, 1:1 side slope from the outside edge of the pipe extending from the invert of the pipe to the proposed finished grade with a minimum easement width of 10 feet)
- Oversized Mains (2-123)
(submit unit prices for oversized mains and appurtenances)
- ISO Calculations (2-210)
- Minimum Fire Flow Requirements (2-220)
- Interim Fire Flow (2-230)
(request for interim fire flow on cover sheet)
- Fire Hydrant Coverage Plan (2-240)
(300 feet maximum "as hose lies")
- Fire Hydrant, Siamese, & Sprinkler Connection Locations (2-240)
(FH minimum 50 feet from building)
- Fire Marshall Approval (2-240)
(on cover sheet)

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<ul style="list-style-type: none"> ● Fire Lanes (2-250) (18 feet in width with a maximum 5% slope. Buildings exceeding 50 feet require access front and rear) ● Pipe Fitting Deflection and Backfill Requirements. (2-310) ● Separation with Sanitary Sewer (2-350) (min 10 feet horizontally, 1.5 feet vertically) ● Support Sewers Over Water Mains (2-350) (structural support of sewer above water) ● Mains Installed with Casing Cathodic Protection (2-339) ● Fire Hydrant Valve (2-390) (multiple valve with hydrant length longer than 50 feet with one valve within 6 feet but no longer than one foot of hydrant) ● Notes and Details. Necessary for the construction, maintenance and inspection of the public water system 		
<p>Article 4; Sewage and Solid Waste Disposal</p> <ul style="list-style-type: none"> ● Virginia Department of Health Approval (4-110 & 4-130) (serving 400 persons and/or 40,000 GPD or more) ● Approval by Town Council (4-110) (application for sewerage service requiring extension of existing facilities) ● Compliance with Town's Development and Land Development Ordinance (4-120) ● Calculations Providing for Peak Flow Discharges (available capacities) (4-130) ● Location and Separation of Sewers (4-130) (refer to Article 2; Section 2-350) ● Sewers Located Outside Stormwater Management Area (4-130) (impoundments, embankments, min. 15' downstream of outfall or spillway) ● Sewer Crossing Other Utilities (4-130) (crossings shall be made at approximately 90°) 		

- Clean Outs Properly Located (4-130)
(five feet building, property line, easement line)
- Waiver for Cleanout Locations (4-130)
(noted on cover sheet)
- Velocity in sewer. Between 2.0 fps minimum
and 15 fps max. (4-130)
- Depth of Cover Within Specifications (4-130)
(min. cover traffic 6', outside 3', max. cover 18',
depth greater than 12' require strength calcs,
requests for waiver recorded on cover sheet)
- Sanitary Force Main Computations (4-130)
(minimum main velocity 2 fps, max. 8 fps,
termination at manhole with gravity flow)
- Location and Width of Easements (4-130)
(1:1 side slope from the outside edge of the
pipe extending from the invert of the pipe to
the proposed finished grade with a minimum
easement width of 10 feet)
- Class of Bedding Provided for Each Sewer
Run (4-140)
- Approval for Private Systems (4-200)
- Description of Method of Storage Collection
Disposal (4-300)
- Container Size Computations (4-300)
- Type of Storage Employed Listed (4-310)
(central refuge rooms, or individual
containers)
- Statement Regarding Collection (4-320)
(Town, Private, Management)
- Statement of Disposal With Details of
Storage Area (4-340, 4-340)
(provide proper screening)
- Notes and Details. Necessary for the
construction, maintenance and inspection
of the public sewerage system

O.K.	Deficiencies	
	Sheet #	Notes

O.K	Deficiencies	
	Sheet #	Notes

Article 5; Storm Drainage

- Concentrated Flows for the 10-Year Storm in Excess of 4 CFS Contained Within Drainage System (5-100)
- Drainage System Capacity for 10-year event (5-210)
- Compliance with Storm Drainage Master Plan (5-210)
- Overland Relief Route and Limits for Infrequent Events Shown (5-210)
- Minimum Easement Requirements for Pipe System (5-220)
(1:1 side slope, 24" larger and multiples 1:1 from side wall, min 15')
- Minimum Easement Requirements for Channel System (5-220)
(min. 15' TW less than 5', TW + 10 foot access strip for TW 5-10', TW + 10 foot access both sides for TW greater than 10')
- Drainage Divides Less Than 200 AC (5-231)
(Rational Method)
- Drainage Divides Greater Than 200 AC (5-232)
(USDA-SCS Methodology)
- Approved Pipe Materials (5-242)
(reinforced concrete only for public maintenance; vitrified clay, cast iron corrugated metal, PVC)
- Minimum Cover Required 2' (5-242)
(requests for less cover on cover sheet)
- Velocity Requirements for Pipe System (5-242)
(min. 2.5 FPS full, max. 15 FPS full or Director approval)
- Trunk Line of System Matching Crowns (5-242)
- Spread Requirements (5-244)
(maximum 8' spread roadways, I=3.5 in/hr)
- Bypass Flow (5-244)
(inlets must be clearly marked on plans)
- Protective Railing (5-247)
(for vertical drops of 18" or more)

- Hydraulic Grade Line Computations and Plotting on Profiles (5-249)
- Channel/Swale Capacity and Adequate Channel Lining (5-252)
(design 10-year event, max. side slope 3:1 grasslined)
- Swale Capacity With Easements (5-254)
(max. length 300', max. 4 CFS)
- Adequate Culvert Design (5-260)
(min. 30' from outside edge ultimate width of pavement, include inlet and outlet control computation)
- Outfall to Adequate Channel (5-311)
(min. 300' beyond site)
- Adequate Pond Routing (5-314)
- Adequate Spillway Design (5-322)
- Provide Dam Failure Analysis/Classification (5-324 & 5-520)
- Adequate Geologic Investigation (5-324)
- Adequate Embankment & Size/Slope/Protection (5-324)
- Adequate Seepage Protection (5-324)
- Adequate Spillway Design Principle/Emergency (5-324)
- Adequate Min. Surface Area/Depth for Wet Ponds (5-326)
- Pond Design Elevations/Construction (5-328)
- Details Provided for Construction (5-328)
- Details and Computations for Design Criteria of Rooftop Facilities (5-332)
- Details and Computations Necessary for Design and Construction of Underground Detention Facilities (5-342) (public maintenance must be reinforced concrete)
- Porous Pavement Designs Require Prior Approval of Director (5-351)
- Mix Design Approved/Storm Routing (5-352)
- Subsurface Investigation Perc Rates (5-352)
- Regional Facilities (5-360)
(100 acres, two sites min.)
- Maintenance Provisions for Access to Detention Facilities (5-380)

O.K.	Deficiencies	
	Sheet #	Notes

- Prior Approval Required By Director for Work Inside Flood Plains(5-410)
- Pre-Development Limits/Post Development Limits (5-410)
- HEC 2 Pre/Post (5-410)
- Alternate Access Routes Provided (5-420)
- Flood Plain Study to Town, FEMA (5-422)
- Approval by FEMA (5-422)
- Flood Plain Study Required (5-431)
(development, developments drainage area 50+ acres)
- Approval By Director of Manning's "n" Value (5-431)
- Cross Section Locations (5-431)
(300' up and downstream of point where pre/post WSE is the same)
- Approval of Director Required for Dam Design (5-511)
- Highway Embankments Not Used As Dams (5-512)
- Provide Maintenance and Inspection Agreement (5-512)
- Separate Emergency Spillway (5-520)
(100-year undetained flow)
- Embankment Designed Proper Width/Height (5-520)
(max. 2' higher than 100-year elevation)
- Proper Flood Easements Provided (5-520)
- Provide BMP at Directors Request (5-610)
- Pond Volume Provided (5-620)
- Release Times (5-620)
(40 hours min., 48 hours max.)
- Notes and Details. Necessary for Construction, Maintenance, and Inspection of Public Sewer Systems

Article 6; Environmental Protection

- Erosion and Sediment Controls Required (6-110)
(areas over 500 sf or removal or addition of 12 in. of soil)
- Compliance with Virginia E & S Handbook (6-110)

O.K.	Deficiencies	
	Sheet #	Notes

- Inclusion of Detailed Narrative (6-220)
(calculation of approx. cut and fill volumes, erosion control measures, final stabilization, land disturbing schedule)
- Note of "No Area Left Denuded for Longer Than Thirty Days" (6-220)
- Provision of Proper Surety for Erosion Control Measures (6-300)
- Conformance With This Section (6-400)
(chemical and petroleum liquids)
- Notes and Details Necessary for Construction, Maintenance

Article 7; Transportation

- Compliance with VDOT Standards (7-110)
(except as revised herein)
- Inclusion of Traffic Study (7-111)
(required when adjacent to road carrying 500 VPD or more with current 120 year counts)
- Computations Detailed (7-111)
(ADT, PHV, directional split, and LOS)
- Location of Traffic Control Devices (7-111)
- Conformance with Functional Classification (7-220)
- Conformance with Geometric Design Guides (7-300)
(industrial zones 52' min. width FC to FC)
- Conformance with Battlefield Pkwy Section (7-300)
- Inclusion of Roadway Elevations (7-310)
(CL, Intx, curb returns, curb inlets, manholes, begin and end vert. curves, 50 ft. tan., 25 vertical curves)
- Cul-de-sac Criteria (Max. Slope 3% ft. in
(min. radius ROW 55 feet, pavement 45 feet)
(7-310)
- Proper Street Signage Locations (7-310)
- Proper Location of Ramps for Handicapped Access and Movement (7-340)
- Guard Rail, Note Shown on Plans (7-350)
- Guard Rail, Type/Location/Height Shown (7-350)

O.K	Deficiencies	
	Sheet #	Notes

- Proper Entrance Location/Number (7-360)
(one entrance without approval of land development official)
- Proper Entrance Alignment (7-361)
(CL to CL or 125 feet min. offset)
- Parking Court Access Easements (7-363, 7-370)
- Provide For "No Through Traffic" (7-370)
- Proper Landscaping Provided (7-370)
(refer to Zoning Ordinance)
- Design Noise Abatement Facilities Requested per Town Council (7-380)
- Adequate Pavement Designs (7-410)
(6" 21A, 3" BM-3, 1½" SM-3, local road 6" 21A, 6" BM-3, 1½ SM-3 through collector)
- CBR Tests at 500' Intervals (7-420)
(modification of design construction phase)
- Proper Parking Space Dimensions (7-520)
(8.5' X 18' standard, 7.5' X 15' compact, 12' X 18' handicap, "head in")
- Handicapped Parking Indicated by Sign and Striping per ANSI (7-520)
- Proper Aisle Widths Provided (7-520)
- Maximum Contiguous Parking Spaces Does Not Exceed 20 (7-520)
- Turnaround Provided for AASHTO SU Vehicle (7-520)
(parking bays w/20 or more spaces)
- Proper Slope provided within Parking Lot (7-530)
(maximum 7%)
- Bond Amount Shown For Street Lights (7-610)
- Provisions for Street Lighting (7-620, 7-640)
(public roads, commercial entrances)
- Proper Location and Size for Sidewalks and Trails (7-710) (min. width 4', max. cross slope 2.08%, max. longitudinal slope 5%)
- Brick Faced Sidewalk in Historic Area (7-710)
- Adequate Trail Design (7-720)
(width 6' min., vertical clearance 10', min. 12' easement, 20' min. turn radius, max. slope 10%)

O.K.	Deficiencies	
	Sheet #	Notes

- Highway Bridges Require VDOT Approval (7-800)
- Independent Review Required by Director for Special Structures (7-800)

Article 8; Vegetation Preservation and Planting

- Location and Size 18" DBH or Larger Trees (8-310)
- Limits of Clearing and Grading Delineated (8-310)
(min 5' from trees to be saved)
- Adequate Drainage for Trees (8-420)
(no impounding of water for 48 hours within drip line of trees to be saved)

Article 9; Geotechnical Guidelines

- Required Indepth Soils and a Geotechnical Review Provided (9-100)
- Compliance with Section Including Terrain, Surficial Description and Recommendations (9-230)
- Compliance with Section Narrative, Geologic Cross Sections, Ground Water Locations, Recommendations (9-230)
- Blasting Information if Applicable (9-230)
- Written Statement of Review and Compliance with Geotechnical Review (9-510)
- Written Report and Inspection Provided and Required (9-611)
- Written Note on As-Builts of Guarantee for 1 year against Settlement (9-713)
- Proper Materials for Use as Fill (9-720)
- Approval of Director Required for Location of Stockpiles (9-730)
- Provide Note Stating "Contractor to Provide Record of All Blasting to Director with Locations Depths, # of Holes and Quantity of Explosives Each Day" (9-741)
- Test Pits Provided (9-750)
- Sheeting & Shoring Provided Meeting Directors Requirements (9-751)

O.K.	Deficiencies	
	Sheet #	Notes

- Dewatering Details and Calculations Provided (9-753)
(based on geotechnical investigations)
- Directors Approval is Required for all
Borrow Locations (9-755)
- Backfill Meeting VDOT Requirements (9-760)
- Parking Lots, Courts, Driveway Meeting
Minimum Pavement Requirements (9-763)
- Min. cover for Electric Utilities (9-770)
(min. 2' required)
- Maintaining One Lane of Traffic During Utility
Construction (9-770)
- Contractor/Soil Test Service Reports on Fill
Material (9-784)
- Conformance with Specifications of Core Trench (9-788)
(min. width 4', min. depth 4', sides 1:1 or flatter
extending to riser crest elevation)
- Min. Riser Specifications (9-791)
(watertight connection, prevent flotation, 1.25
factor safety)
- Min. Anti-Seep Collar Requirements (9-791)
- Min. Bedding Requirements (9-791)
(concrete cradle required)
- Proper Construction Techniques Employed To
Reduce Erosion in Place (9-794)
- Riprap Conformance with State Criteria for Soils
(9-795)

O.K.	Deficiencies	
	Sheet #	Notes

Division of Plan Review
 The Town of Leesburg in Virginia
 Rough Grading Plan
 Checklist

File Date: _____ Plan Control # _____
 Project: _____
 Owner: _____
 Design Firm: _____ Contact Engineer: _____
 Phone #: _____

General Requirements: _____

- Names, addresses, seal, and signature of the licensed professional preparing the drawings
- Vicinity map provided at a scale not more than 1" = 1000'
- Sheets 24" x 36" numbered, drawn clearly and at a scale not less than 30 feet to the inch with match lines and corresponding sheet numbering system where required
- North Arrow
- Limits of clearing and grading clearly delineated (match construction drawings)
- Letters of permission or easements provided for offsite work
- Existing contours extending 25 feet beyond limits of work
- Proposed grading delineated indicating the amount of grading to be done
- Existing tree line shown

O.K.	Deficiencies	
	Sheet #	Notes

O.K.	Deficiencies	
	Sheet #	Notes

Erosion Control Narrative

- Project Description - Nature of activity and amount of grading involved
- Existing Site Conditions - Description of existing topography, vegetation and drainage
- Adjacent Areas - Description of downstream properties or adjacent properties possibly affected by land disturbance
- Soils - Soil names, mapping units, erodibility, permeability, depth, texture and soil structure (Type I)
- Critical Areas - Onsite areas with potential serious erosion problems
- Erosion and Sediment Control Measures - Description of measures employed to control erosion
- Control Phasing - Description of how the control measures are to be phased with construction from initial clearing to final stabilization with specific attention to controls used
- Permanent Stabilization - Description including specifications of how the site will be stabilized after construction is complete.
- Stormwater Management - Peak runoff increase, Downstream channel degradation, Control structures
- Maintenance - Daily inspection, damaged controls repaired by the end of the work day

Construction Entrance (Entrance to R.O.W)

- Required Size: 30-foot width minimum
50-foot length minimum
- Wash Rack - required if earthwork imbalance
 - detail provided
 - water supply indicated
 - sediment trapping measures specified

Sediment Traps

- Location and ponded area indicated
- Calculations:
 1. Required Volume - based upon predeveloped divides:
 - < 5 Ac. disturbance
 2. Provided Volume
 3. Weir dimensions - weir detail provided
 4. Adequate outfall channel for 2 yr. storm event (sections, calculations demonstrating adequacy)
- Maintenance notes:
 1. Cleanout 1/2 design
 2. Methodology for determination of 1/2 full

Sediment Basin

- Location and proposed grading shown
drainage area > 5.0 ac. but < 150 ac.
- Calculations:
 1. Volume Design.
 - A. Required Volume - 67 yd.³ x Drainage Area
 - B. Provided Volume
 - C. Cleanout Volume
 2. Principal Spillway Design
 - A. Required Capacity Q₁₀ design
 - B. Riser Design
 - C. Barrel Design
 3. Anti-seep collar design - # required and size
 4. Design elevations
 - A. Crest of riser
 - B. Top of dam
 - C. Spillway elevation
- Details:
 1. Riser
 2. Anti-vortex device - trash rack
 3. Anti-seep collars

O.K.	Deficiencies	
	Sheet #	Notes

	Deficiencies		
	O.K.	Sheet #	Notes
Silt Fence			
<ul style="list-style-type: none"> ● Detail provided ● Not to be located within concentrated flow paths 			
Diversion Dikes			
<ul style="list-style-type: none"> ● Provide Detail ● Extend to weir location 			
Inlet Protection for Existing Structures			
<ul style="list-style-type: none"> ● Provided at all inlets downstream of denuded areas 			
Check Dams			
<ul style="list-style-type: none"> ● Provide Detail ● Spacing - According to 1.38 spec. VESCH 			
Temporary Seeding			
<ul style="list-style-type: none"> ● Specifications provided ● No area to remain denuded for more than 30 calendar days 			