



ENGINEERS AND SURVEYORS INSTITUTE
"A public/private partnership"
LOUDOUN COUNTY, VIRGINIA
MINIMUM SUBMISSION REQUIREMENTS



Revised 1/11/10
CONSTRUCTION PLANS AND PROFILES

PROJECT NAME & NUMBER: _____
SUBMITTING FIRM: _____ PHONE #: _____
PROJ. COORD: _____ E-MAIL ADDRESS: _____
DPE NAME: _____ DPE #: _____ E-MAIL ADDRESS: _____
REVIEW DATE: _____ ESI REVIEW TEAM: _____

Note: The following sheets and information are required for every submission. Additional sheets and information should be provided where necessary to demonstrate compliance with County requirements or conditions of approval. Peer Review dates are determined by Loudoun County Staff once the plan has been submitted following an acceptable MSR review. (Column abbreviations: AD = Addressed; REV = Revisions Required; NA = Not Applicable)

FSM CHAPTER 8.101 AND 8.106

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FSM 4.320.A	PUBLIC ROADWAY STANDARDS: All construction shall conform to VDOT standards. Provide note.					247
FSM 4.330.A.3	PRIVATE ROADWAY STANDARDS: Private roadways designed for SU-30 and emergency vehicles. (travelway inside radius $\geq 25'$, except for alleys)					248
FSM 4.330.A.6	Sidewalks placed within public access easements					249
FSM 4.330.A.6	HC ramps provided at C&G intersections					250
FSM 4.330.A.7	Non- standard details (e.g. CG-6R, YI-1) provided					251
Comments:						

Code Reference	Description	Sheet	AD	RR	N/A	Line
FSM 4.330.B	CATEGORY A ROADWAYS					
FSM 4.330.B.2	Width of access easement for private roads shall extend to property line along frontage of individual lots to which it provides access					252
FSM 4.330.B.3	Category A roads shall have a paved surface. See Table 1 for minimum pavement sections and design criteria					253
FSM 4.330.B.4	Utility easements shall be provided, as necessary					254
FSM 4.330.B.5	Category A roadway requires construction plans & profiles					255
FSM 4.330.B.5.1	Turn lanes req'd. at entrances with ADT > 5500 VPD					256
FSM 4.330.B.5.2	Roadways > 3000 VPD shall be superelevated					257
FSM 4.330.5.3	If ADT > 250 VPD, required pavement thickness shall be based on ADT volumes					258
FSM 4.330.5.4	If ADT ≤ 250 VPD, minimum pavement section: 2" bit. surface course and 6" aggregate base course					259
FSM 4.330.C	CATEGORY B ROADWAYS					
FSM 4.330.C	Category B roads: townhouse and multi-family uses					260
FSM 4.330.C	Design of category B roadways meets minimum standards shown in Table II. Category B: < 1000 VPD					261
FSM 4.330.C	Angle parking is not allowed on type B3 roadways. Parallel parking allowed on Cat. B with additional pavement					262
FSM 4.330.C.1	Roadways and parking areas have a curb section and are contained within an access easement					263
FSM 4.330.C.2	For Type B2 and B3 roads, intersections spaced ≥ 50 feet apart					264
FSM 4.330.C.4	Category B road intersections onto a public or Category A road not spaced < 100 feet at centerline					265
FSM 4.330.C.5	No parking for minimum distance of 30' from intersections measured from the flow line of the gutter pan.					266
FSM 4.330.C.6	Category B roads: Max posted speed = 15 mph					267
FSM 4.330.C.8	Minimum pavement section for Category B roads and parking areas based on projected ADT's > 250 VPD					268
FSM 4.330.C.9	Minimum pavement section for Category B roads and parking areas with projected ADT < 250 VPD: 2" bituminous surface and 6" aggregate base course					269
FSM 4.330.C.10	Permanent turn-a-round required when dead-end road > 500'					270

Comments:

Code Reference	Description	Sheet	AD	RR	N/A	Line
FSM 4.330.D	CATEGORY C ROADWAYS					271
FSM 4.330.D.1	Category C rds: priv. access rds., cl. III rds. serving ≤ 25 lots, pipestem drives & alleys					272
FSM 4.330.D.2	Category C roads designed to meet Table III min. standards					273
FSM 4.330.D.3.a	Permanent dead-end C3 and C4 roads which exceed 400 feet shall include vehicular turn-a-rounds					274
FSM 4.330.D.3.b	C3 and C4 roads located within class III and IV soils shall provide a field determination of CBR values					275
FSM 4.330.D.3.c	C3 roads constructed of gravel include a 50 foot paved apron when accessing an existing paved road					276
FSM 4.330.D.3.d	C3 and C4 roads include signage for road names, private road identification, and traffic control as appropriate					277
FSM 4.330.D.3.e	The following criteria applies to the design of C1 and C2 roads constructed as pipestem drives: <ul style="list-style-type: none"> i. Lots sharing a pipestem driveway provide ≥ 3 parking spaces per dwelling outside of the travelway. Driveways clearly labeled or noted "no parking along driveway." ii. The design of the pipestems serving more than one lot shown in typical section and on grading plan together with turn-a-round and required utilities iii. Each pipestem clearly identified as a private drive (sign at entry w/ words "Private Drive" & addresses) iv. No pipestem extends a distance of > 400 feet from public road to property which it serves or $> 800'$ total if a loop 					278
FSM 4.340	PAVEMENT THICKNESS DESIGN STANDARDS					
FSM 4.340.A	Methods and materials shall conform to VDOT standards. Provide note.					279
FSM 4.340.C	Preliminary subbase and pavement design shall be based on an assumed design CBR value of 6. Provide note.					280
FSM 4.340.F	The minimum pavement section for privately owned and maintained parking lots with a projected ADT of less than 400 VPD shall consist of 1.5" bituminous surface course, 3" bit. base course and 6" aggregate subbase course					281
FSM 4.340.G	Pavements in commercial areas shall be of a heavy-duty design in major cartways and loading areas and at dumpster pads. A minimum 6" depth 3000 psi concrete section with steel reinforcement over 4" of aggregate shall be used for loading areas and dumpster pad areas.					282
Comments:						

Code Reference	Description	Sheet	AD	RR	N/A	Line
FSM 4.400	PARKING GEOMETRIC STANDARDS					
FSM 4.400.A.2	Paved parking areas are required for four or more parking spaces and all parking spaces shall be delineated and striped					283
FSM 4.400.B.1	Minimum parking space sizes: Standard head-in 9' x 18' Parallel parking 8' x 22'					284
FSM 4.400.B.2	Aisle widths for standard car parking spaces: 90 - 22' 60 - 20' 45 - 18' A minimum aisle width of 25 feet shall be maintained adjacent to buildings. Min. travel aisle width = 18'					285
FSM 4.400.B.4	Where wheel stops or curbing are provided for parking spaces, a 1 foot reduction in the stall length will be allowed					286
FSM 4.400.B.5	Parking spaces for handicapped persons and related access aisles, accessibility routes and signage for physically handicapped persons shall be provided					287
FSM 4.400.B.6.a	Entrances to parking bays shall be located along the site access way to avoid blockage of the public right-of-way. No parking shall be allowed within 30 feet of the entrance					288
FSM 4.400.B.6.b	The major site access ways shall be clearly defined, with a minimum aisle width of 25 feet. No direct angle parking shall be allowed where ADT's exceed 1500 VFD					289
FSM 4.400.B.6.c	Retaining walls, screens, landscaping and building walls shall be protected from vehicle contact					290
FSM 4.400.B.6.d	Overhang areas which are a part of the required parking space graded $\leq 2''$ above top of curb not encroached by landscape plantings, signs, or obstructions.					291
FSM 4.400.B.6.e	Loading spaces and dumpster pads shall be accessible by the design vehicle with all parking spaces occupied					292
FSM 4.400.B.6.f	For drive-through facilities are proposed, the travelway width shall be a minimum of 10 feet and shall provide safe vehicle stacking					293
FSM 4.400.B.10	A Permanent turn-a-round shall be required when the dead-end aisle exceeds 500 feet					294
Comments:						

Code Reference	Description	Sheet	AD	RR	N/A	Line
FSM 4.400.C	LOADING SPACES					295
FSM 4.400.C	Commercial building sites shall provide for loading spaces in accordance w/ the Zoning Ordinance					296
FSM 4.400.C.1.a	Single unit loading space: 15' x 30'; 15' minimum horizon. clearance. When more than one space is provided adjacent to each other, additional spaces: 12 feet wide.					297
FSM 4.400.C.2.a	Semi-trailer loading sp: 15' x 55'; 15' min. horiz. clearance					298
FSM 4.400.C.4	No off-roadway loading area shall be located within any front yard. Loading areas shall be designed and located such that they do not interfere with the free circulation of vehicles within parking and stacking areas					299
FSM 4.500	DRIVEWAYS					
FSM 4.500.B.1	Driveway slopes shall be 12% or less					300
FSM 4.500.B.2	Driveways in Minside Dev. Overlay district or in steep slope areas – 16%max.					301
FSM 4.500.B.3	Driveways maintain full width of garage doors to property line or a distance of 18 feet outside of garage, whichever is less.					302
FSM 4.500.B.4	Skewed driveways cannot exceed a 10:1 angle with the driveway apron or garage					303
FSM 4.500.B.5	Curved driveways must be designed with a 10 foot minimum inside radius and a 24 foot outside radius					304
FSM 4.500.B.6	Tapered driveways cannot exceed a 10:1 taper					305
FSM 4.500.B.8	Roll top curbs not allowed as D/W entrances					306
FSM 4.600	PEDESTRIAN AND BICYCLE ACCOMMODATIONS					
FSM 4.600.A.3.a	NCUS provides access to destinations such as recreation, school, retail & commercial locations within subdivision					307
FSM 4.600.A.3.b	NUCS extends to property boundaries of project, ties into existing systems & previously approved planned systems and provides for future additions. When walkways are located outside of VDOT right-of-way, they shall be contained within a public access easement 1' beyond outside both sides of s/w or trail.					308
FSM 4.600.A.3.c	Sidewalks shall be provided on both sides of curb and gutter roadways for single family detached lots					309
FSM 4.600.A.3.d	Sidewalks shall be provided in front of all units and to the parking areas for townhouses and multi-family units					310
FSM 4.600.A.3.e	Sidewalks or trails shall be provided leading to activity centers and/or crosswalks such as play grounds, pools, tot lots and rec. centers					311
Comments:						

Code Reference	Description	Sheet	AD	RR	N/A	Line
FSM 4.600.A.3.f	Office and commercial areas: Sidewalks leading to facility and/or crosswalks					312
FSM 4.600.A.3.g	NUCS provided along road frontages to provide pedestrian interparcel access where such access is set forth in the Zoning Ordinance as a performance standard					313
FSM 4.600.A.3.h	Sidewalks provided on both sides of roadway where they conform to VDOT standards and allowances					314
FSM 4.600.A.3.i	Shared use trails provided w/ shoulder and ditch rds. in Suburban Policy Areas, transition Policy Areas, Joint Land Mgmt. Areas & Rural Villages. S/Ws may be provided in lieu of shared use trails in devs. of lots of 1acre or less.					315
FSM 4.600.B	SIDEWALKS					
FSM 4.600.B.1.a	Sidewalk and trails shall be constructed on a subgrade compacted to 95% density					316
FSM 4.600.B.1.b	Sidewalk and trails shall be constructed to one of the following cross-sections: <ul style="list-style-type: none"> i. VDOT Type A-3 concrete, 4" thick ii. Four inch thick crushed stone (21-A) topped with 1.5" asphalt iii. On well-drained soil, 4" of asphalt iv. Alternative sections may be approved By the Director and VDOT 					317
FSM 4.600.B.1.c	The maximum cross-slope allowed shall be 1/4" per foot					318
FSM 4.600.B.1.d	Sidewalks shall be constructed to VDOT standards-note					319
FSM 4.600.B.1.e	Sidewalk longitudinal slope shall be consistent with the adjacent roadway					320
FSM 4.600.B.1.f	VDOT standards for CG-12 shall be provided at pedestrian roadway crossings on curb and gutter roadway sections (includes trails)					321
FSM 4.600.B.1.g	Sidewalks shall have a minimum unobstructive width of 5 feet for residential developments where the average density exceeds 10 units per acre, for non-resid. dev. & for dev. Adj. to rds in Countywide Trans. Plan. For all other applications a minimum width of 4 feet shall be maintained <ul style="list-style-type: none"> i. Travelways up to 24' total width-F.L. signs both sides ii. Travelways >24' to 29'-F.L. signs both sides iii. Travelways > 29'-F.L. signs not req'd 					322
FSM 4.600.B.2	SHARED-USE TRAILS					
FSM 4.600.B.2.d	Shared-use trails outside of VDOT R.O.W.: Min. width 6'					323
Comments:						

Code Reference	Description	Sheet	AD	RR	N/A	Line
FSM 4.800	SIGNS					
FSM 4.810	FIRE LANE SIGNS					
FSM 4.810.A	Fire lane sign specifications provided					324
FSM 4.810.B & C	Fire lane sign placements shown correctly; curb painting noted w/in TH & MF devs.					325
FSM 4.810.C.5	Commercial buildings shall require fire lane signs along the frontage of the building and at other building access points as designated by Fire Marshal.					326
FSM 4.810.C.6	Public pools shall provide fire lane signs at the entrance to the secured entrance/access for emergency vehicles					327
Comments:						