

LAND DEVELOPMENT SERVICES
March 6, 2018 – Amended April 5, 2018

STAFF REPORT

PREPARED BY CODE DEVELOPMENT AND COMPLIANCE

- PROPOSED COUNTY CODE AMENDMENT
- PROPOSED PFM AMENDMENT
- PROPOSED ZONING AMENDMENT
- APPEAL OF DECISION
- WAIVER REQUEST

Proposed Amendments to *The Code of the County of Fairfax, Virginia* (Code) and to the Public Facilities Manual (PFM) related to Interpretation of the PFM, Hydraulic Grade Lines, Debris Control Devices, New Fees for Modifications and Appeals, and Other Edits

PUBLIC HEARING DATES

Authorization to Advertise:	March 6, 2018
Planning Commission Hearing:	March 22, 2018 at 7:30 p.m., decision deferred to April 5, 2018
Board of Supervisors Hearing:	May 1, 2018 at 4:00 p.m.
Prepared By:	Thakur Dhakal, P.E. (703) 324-2992 Site Code Research & Development Branch, LDS

STAFF REPORT

STAFF RECOMMENDATION

Staff recommends that the Board of Supervisors adopt the proposed amendments. Edits to the amendment text to address the Planning Commission's feedback are shown by double underlines and double strikeouts in the attachments.

DISCUSSION

1. Clarification of Introductory Language and Director Authority (PFM as Guidelines)

The Introduction to the PFM states that it "sets forth the guidelines for the design of all public facilities" and provides that the Director of Land Development Services (LDS) can waive these guidelines subject to specific conditions. However, PFM Section 13 states that provisions with the terms "shall" or "must" are mandatory. Also, PFM Section 1-0100.6 states that variations from mandatory policies and requirements cannot be waived. In the Development Process Committee meeting on January 30, 2018, the Board of Supervisors directed staff to clarify the PFM language to make clear that the PFM serves as a guideline. The Board of Supervisors directed staff to clarify that the LDS Director administers the PFM and has authority to waive all provisions subject to certain conditions.

The proposed amendment clarifies the conditions for waiver and removes conflicting language regarding the LDS Director's authority. The amendment clarifies that the LDS Director can waive provisions so long as the following conditions are met:

- A strict application of the PFM standard cannot be met for a particular site; or new or creative designs are proposed; and
- Variations meet the intent of the provisions, and the submitting engineer provides an adequate justification and supporting data.

In addition, any waivers or alternative designs must comply with specific requirements of the Virginia Code, County Code, and other applicable regulations, such as specific standards of the Virginia Department of Transportation (VDOT) and other reviewing agencies, from which variances may not be granted at the local level. LDS will continue to apply current waiver criteria and to use the current waiver application form. The proposed amendments setting forth these clarifications are included in Attachment A.

2. Proposed Hydraulic Grade Line (HGL) Amendment

Storm sewer systems consist of a network of pipes connected by inlets and manholes.

The HGL is an engineering analysis used to determine the flow energy of water. However, the County has inconsistently required HGL analysis. In cases where HGL analysis has not been required, the designer has used Manning's Equation alone, which measures the initial capacity of a storm sewer pipe. Manning's Equation determines the capacity for individual pipes but does not collectively analyze the entire pipe network.

Staff has determined that the Manning's Equation determination alone is inadequate because it omits calculations to analyze the effects of tailwater, which is the depth of water immediately downstream from a dam, bridge, culvert, or other hydraulic structure in the flow path. Including the HGL in the storm sewer design helps mitigate potential flooding, and reduces the likelihood that storm water will improperly exit the storm sewer system during a storm surge.

The proposed amendment to Chapter 6 (Storm Drainage) of the PFM adopts the Virginia Department of Transportation's computational methodology for calculating HGL, providing designers a single method of calculating HGL that is consistent and predictable. The amendment also allows flexibility for limiting or not providing the HGL in certain instances. The proposed amendment is included in Attachment A.

3. Proposed Debris Control Devices (Trash Racks) Amendment

Since low-level and low-flow intake devices in dry ponds or extended detention ponds are situated at the pond bottom, they are most affected by debris, and generally require a debris control device to keep them functioning properly. Based on their years of experience with pond inspection and maintenance, staff members believe the current design guidance for debris control devices on these low-level and low-flow intake devices can be improved. For example, the current debris control device sizing and shape has led to clogging and standing water in some stormwater facilities. Additionally, the current recommended material for these devices has failed, which has led to water ponding in some cases over time. These recurring issues required staff to replace these devices at the County's expense.

The proposed amendment updates design guidance for debris control devices to help improve functionality, facilitate easy cleanout, and increase longevity. The proposed PFM amendment is included in Attachment A.

4. Proposed Land Development Service (LDS) Fee Schedule Amendment

The proposed amendment to County Code Appendix Q (LDS Fee Schedule) would clarify some inspection and study fees while also aligning current inspection fees with the Bonds and Agreements Center's annual Comprehensive Unit Price Schedule. The amendment proposes new fees for modifications and appeals. The proposed amendment is included as Attachment B.

5. Proposed Updates to the Subdivision Provisions

The proposed amendment to Fairfax Code Chapter 101 (Subdivision Provisions) mirrors the 2014 amendment to Virginia Code § 15.2-2260, which made it optional for owners creating 50 or fewer lots to submit preliminary subdivision plats to localities. The proposed amendment is included as Attachment C.

6. Proposed Updates to the PFM

The proposed update to the PFM requires designers to provide a copy of the standard maintenance specifications for stormwater management facilities on the construction plans. The proposed PFM amendment is included in Attachment A.

LDS has collaborated with the County Attorney, and the Department of Public Works and Environmental Services, Maintenance and Stormwater Management Division on the proposed amendments. The Engineering Standards Review Committee recommended the approval of PFM amendments.

ATTACHED DOCUMENTS

Attachment A –Amendments to the PFM

Attachment B - Amendments to Appendix Q (LDS Fee Schedule)

Attachment C- Amendments to the Subdivision Provisions (Chapter 101)

**Proposed Amendments
to
the Fairfax County Public Facilities Manual**

Interpretation of the PFM

Amendment the Public Facilities Manual, §1-0100 (Introduction), the lead in paragraph and §1-0100.6 and §1-0100.7, to read as follows:

1-0100 INTRODUCTION

The Public Facilities Manual (PFM) sets forth the guidelines which govern the design of all public facilities which must be constructed to serve new development. In adopting its Subdivision Ordinance in 1975, the Board incorporated specific reference to the requirements described in the PFM. Similarly, in 1978, the Board adopted a Zoning Ordinance which made specific reference to the requirements in this PFM.

1-0100.76 The Director is the designated official to administer the standards and requirements contained in the PFM. ~~He shall~~ The Director will make the final decision on questions regarding the PFM after having reviewed recommendations from designated departments, authorities, boards, and committees. Wherever the term “Director” is used in this PFM without further organizational reference, the reference ~~shall~~ must be interpreted as meaning the Director, Land Development Services, Department of Public Works and Environmental Services. (See Definitions §13-0300.)

1-0100.67 The Director, in administering these standards, ~~shall~~ will treat them as guidelines rather than mandates ~~unless the language clearly specifies otherwise.~~ Except as expressly provided otherwise in this document, the Director can approve a waiver where strict application of the standard cannot be met for a particular site or where new or creative designs are proposed, provided variations that meet the intent of the provisions, and, provided a statement of justification for deviating from the PFM, including supporting data and information, accompanies any submission seeking waiver. The Director may allow for a variation of a given standard where the effect of such variation is in keeping with established engineering practice and procedure. ~~Variations from mandatory policies or requirements will not be permitted.~~

Amendment the Public Facilities Manual, §13-0200 (Interpretations), §13-0200.2, to read as follows:

13-0200.2 The words “shall” and “must” are mandatory minimum requirements; however, “shall” and “must” may be the Director may waive these mandatory minimum requirements (See Introduction § 1-0100.7).

Hydraulic Grade Line

38 Amend §6-0904, Energy and Hydraulic Grade Line, to read as follows:

39

40 **6-0904 Energy and Hydraulic Gradients Grade Line**

41

42 The hydraulic gradient for a storm sewer system is a line connecting points to which water will
43 rise in manholes and inlets throughout the system during the design flow. The energy gradient is
44 a line drawn a distance $V^2/2g$ above the hydraulic gradient of the pipes.

45

46 The hydraulic grade line (HGL) is a measure of flow energy. In open channel flow the HGL
47 coincides with the water surface elevation, and in pressure flow it is a line that connects the
48 elevation to which the water would rise in piezometer tubes along the pipe. The HGL aids the
49 designer in determining the acceptability of the proposed storm sewer system by establishing the
50 elevations to which water will rise in the structures (inlets, manholes, etc.) along the system for
51 the recommended design frequency storm flow. Inlet surcharging and possible access hole lid
52 displacement can occur if the HGL rises above the ground surface. In addition, even though each
53 pipe is designed as non-pressure flow, cumulated energy losses and tailwater conditions at the
54 outlet may cause the system to flow under pressure, especially in low lying areas. Improper and
55 proper pipe design for pressure flow situations is provided in Plate 94-6.

56

57 6-0904.1 Unless waived by the Director, the HGL shall must be calculated for all proposed storm
58 sewer systems using the method set forth in the latest edition of the VDOT ~~e~~Drainage ~~m~~Manual.
59 The HGL hydraulic grade line computations begin at the system outfall with a known
60 water surface elevation. However, the Director may also require analysis further downstream
61 of the outfall pipe to demonstrate whether conditions exist there, including, but not limited to,
62 channel obstructions, or changes in channel roughness, width and slope, that should be included
63 in the HGL computations. ~~provided a statement of justification for deviating from the PFM is on~~
64 the plan.

65

66 6-0904.42 Where a proposed drainage system is ~~connected~~ connects to an existing drainage
67 system the HGL hydraulic gradient at the point of junction shall must be determined from the
68 HGL hydraulic gradient computation of the existing system on file with DPWES. LDS or the
69 Director may approve an alternative location to begin the HGL computations given adequate
70 justification on the plan.

71

72 6-0904.44.3 Pressure Flow. Storm sewer systems may be designed for pressure flow; however,
73 all proposed pressure flow systems should be coordinated with DPWES in the preliminary
74 design stage. The HGL hydraulic gradient for the design flows shall should be generally at least
75 1 foot ~~ft~~ below the established ground elevation and no more than 5 feet ~~ft~~ above the crown of
76 the pipe. For curb opening inlets the gutter flow line is considered the established ground
77 elevation.

78

79 6-0904.1 At storm sewer junctions the total energy loss at the junction, H_L , is the difference in
80 elevation between the energy grade lines of the upstream and downstream pipes. To establish

81 ~~these gradients for a system, it is necessary to start at a point where the hydraulic and energy~~
 82 ~~gradients are known or can readily be determined.~~

83

84 ~~6-0904.2 Generally, when the energy and hydraulic gradients must be determined, the pipes are~~
 85 ~~assumed to have uniform flow. For uniform gravity flow and for pressure flow, the friction loss~~
 86 ~~in storm sewer pipes may be determined by the Manning Formula as follows:~~

87

$$88 \ h_f = SL = \left[\frac{(nV)^2}{2.208r^{1.33}} \right] L$$

89

90 Where:

91 h_f = Friction loss in pipe (ft.)

92 S = Slope of the energy grade line

93 n = Roughness coefficient

94 V = Discharge velocity (fps)

95 r = Hydraulic radius (ft.)

96 L = Length of line (ft)

97

98 ~~6-0904.3 Few design situations will ever require determination of energy and hydraulic gradients~~
 99 ~~for non-uniform flow conditions. Should non-uniform flow analysis be necessary, designers are~~
 100 ~~referred to standard hydraulic texts for determining gradients for non-uniform flow.~~

101

102 ~~6-0904.4 Where a proposed drainage system is connected to an existing drainage system the~~
 103 ~~hydraulic gradient at the point of junction shall be determined from the hydraulic gradient~~
 104 ~~computation of the existing system on file with DPWES.~~

105

106 ~~6-0904.5 The total energy losses at a junction, H_L , is assumed to be made up of one or more of~~
 107 ~~the following losses:~~

108

109 ~~6-0904.5A Expansion loss, h_i , when stormwater enters the junction.~~

110

111 ~~6-0904.5B Contraction loss, h_o , when stormwater leaves the junction.~~

112

113 ~~6-0904.5C Bend loss, h_A , due to the change in horizontal direction of stormwater velocity.~~

114

115 These losses may be estimated as follows:

116

$$117 \ H_L = h_i + h_o + h_A = 0.1 \frac{V_i^2}{2g} + 0.5 \frac{V_o^2}{2g} + K_A \frac{V_i^2}{2g}$$

118

119 Where:

120 H_L = Total Energy Loss

121 h_i = Expansion Loss (flow in to junction)

122 h_o = Contraction Loss (flow out of junction)

123 h_A = Bend Loss

124 V_i = Velocity in fps, Q/A, of upstream pipe

125 V_o = Velocity in fps, Q/A, of downstream pipe

127 Δ = Horizontal angle in degrees between the direction of flow of incoming and outgoing pipes
128 K_{Δ} = Bend loss coefficient (see Plates 13-6 and 14-6)

129

130 ~~6-0904.6 Considerable judgement must be used when applying the above energy loss equations.~~
131 ~~Some general rules to be used when applying these equations are as follows:~~

132

133 ~~6-0904.6A When two or more pipes discharge into a manhole or inlet type structure, the~~
134 ~~expansion loss for the junction shall be calculated for the pipe discharge that produces the~~
135 ~~maximum momentum.~~

136

137 ~~6-0904.6B When two or more pipes discharge into a manhole or inlet type structure at different~~
138 ~~angles of flow with the outgoing pipe, the junction bend loss shall be calculated for the pipe~~
139 ~~discharge that produces the maximum momentum.~~

140

141 ~~6-0904.6C Prefabricated "T", "Y", and bend sections are assumed to have bend losses only.~~

142

143 ~~Momentum may be determined as follows: $M = Q(w/g)V$~~

144

145 ~~Where:~~

146 ~~M = Momentum~~

147 ~~Q = Pipe discharge (cfs)~~

148 ~~w/g = Density of water 62.4 lbs/ft³~~

149 ~~V = Discharge velocity in fps~~

150

151 ~~6-0904.7 Since the density of water can be considered constant, the pipe discharge with the~~
152 ~~largest product, QV, will have the maximum momentum.~~

153

154 ~~6-0904.8 The energy loss for the initial inlet(s) of a storm sewer system may be assumed to be~~
155 ~~0.3 times the velocity head in the outlet pipe.~~

156

157 ~~6-0904.9 The above energy loss formulas can be readily solved with the use of Plate 14-6 and a~~
158 ~~transparency made to conform to Plate 13-6.~~

159

160 ~~6-0904.10 Non-pressure Flow. Storm sewer systems generally shall be designed as non-pressure~~
161 ~~systems. In general, if a drop in the structure between the inverts of the incoming and outgoing~~
162 ~~pipes is approximated by a value equal to or greater than the junction energy loss, the system can~~
163 ~~be assumed to be non-pressure flow.~~

164

165 ~~6-0904.11 Pressure Flow. Storm sewer systems may be designed for pressure flow; however, all~~
166 ~~proposed pressure flow systems should be coordinated with DPWES in the preliminary design~~
167 ~~stage. The hydraulic gradient for the design flows shall be at least 1 foot below the established~~
168 ~~ground elevation and no more than 5 feet above the crown of the pipe. For curb opening inlets~~
169 ~~the gutter flow line is considered the established ground elevation.~~

170

171 ~~6-0904.12 Drop. If possible the energy losses through a junction should be accounted for by a~~
172 ~~drop across the junction. The equations on Plate 15-6 show the method for computing the drop~~

173 **Amend §6-0905.3A and §6-0905.4, and delete §6-0905.3B, to read as follows:**

174

175 6-0905.3A For storm sewer systems, ~~or portions of systems designed for pressure flow,~~ submit
176 a storm sewer profile with ~~energy and hydraulic gradients~~ grade lines drawn on it, ~~shall be~~
177 ~~submitted for the portion of the system that experiences pressure flow.~~

178

179 ~~6-0905.3B—Energy and hydraulic gradients do not need to be submitted for non-pressure~~
180 ~~systems.~~

181

182 6-0905.4 Energy loss calculations at storm sewer junctions shown on VDOT's form, Hydraulic
183 Grade Line Computations.

184

185

186 **Amend §6-1007, Energy and Hydraulic Gradients, and §6-1007.1 and §6-1007.2, to read as**
187 **follows:**

188

189 **6-1007 Energy and Hydraulic Gradients Grade Lines in Open Channel Systems** (Reference
190 Plates 24-6 through 26-6)

191

192 6-1007.1 The hydraulic ~~gradient~~ grade line for an open channel system is the water surface. The
193 energy ~~gradient~~ grade line is a line drawn a distance $V^2/2g$ above the hydraulic grade line ~~gradient~~.
194 At channel junctions, the total energy loss at the junction, HL, is the difference in elevation between
195 the energy grade lines of the upstream and downstream channels. To establish these gradients for a
196 system, it is necessary to start at a point where the energy and hydraulic gradients are known or can
197 readily be determined.

198

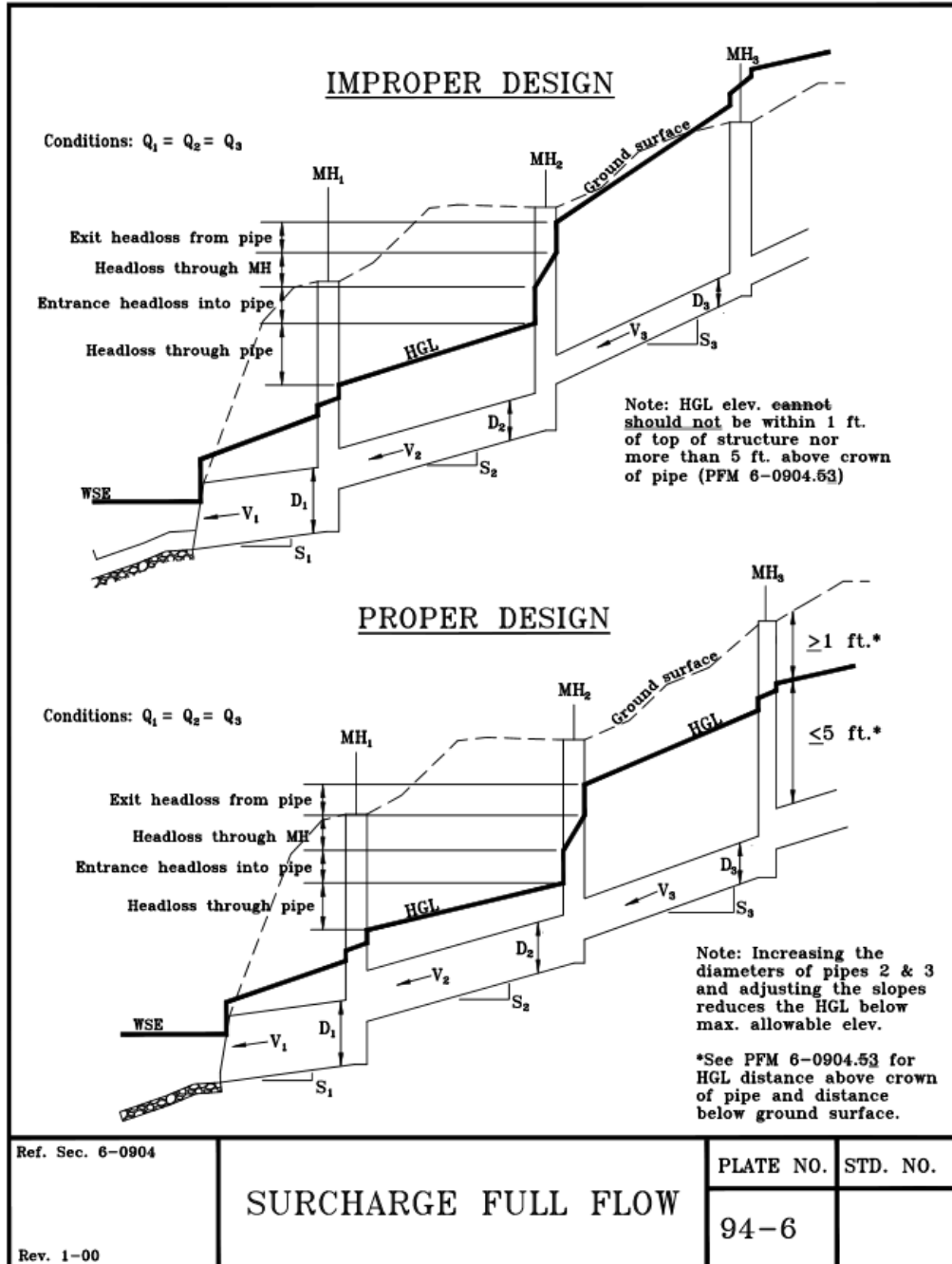
199 6-1007.2 Generally, when the energy and hydraulic ~~gradients~~ grade lines must be determined, the
200 channels are assumed to have uniform flow. For uniform flow the friction loss along the channel
201 may be determined by the Manning Equation Formula as discussed ~~above and in § 6-0902~~ in the
202 latest edition of the VDOT Drainage Manual.

203

204 **Amend Chapter 6, Table of Contents and List of Plates in accordance with the amendment.**
205 **Amend Chapter 6, to add Plate 94-6 (Surcharge Full Flow – Improper and Proper Design),**
206 **and delete Plates 12-6, 13-6, 14-6 and 15-6, to read as follows:**

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Ref. Sec. 6-0904

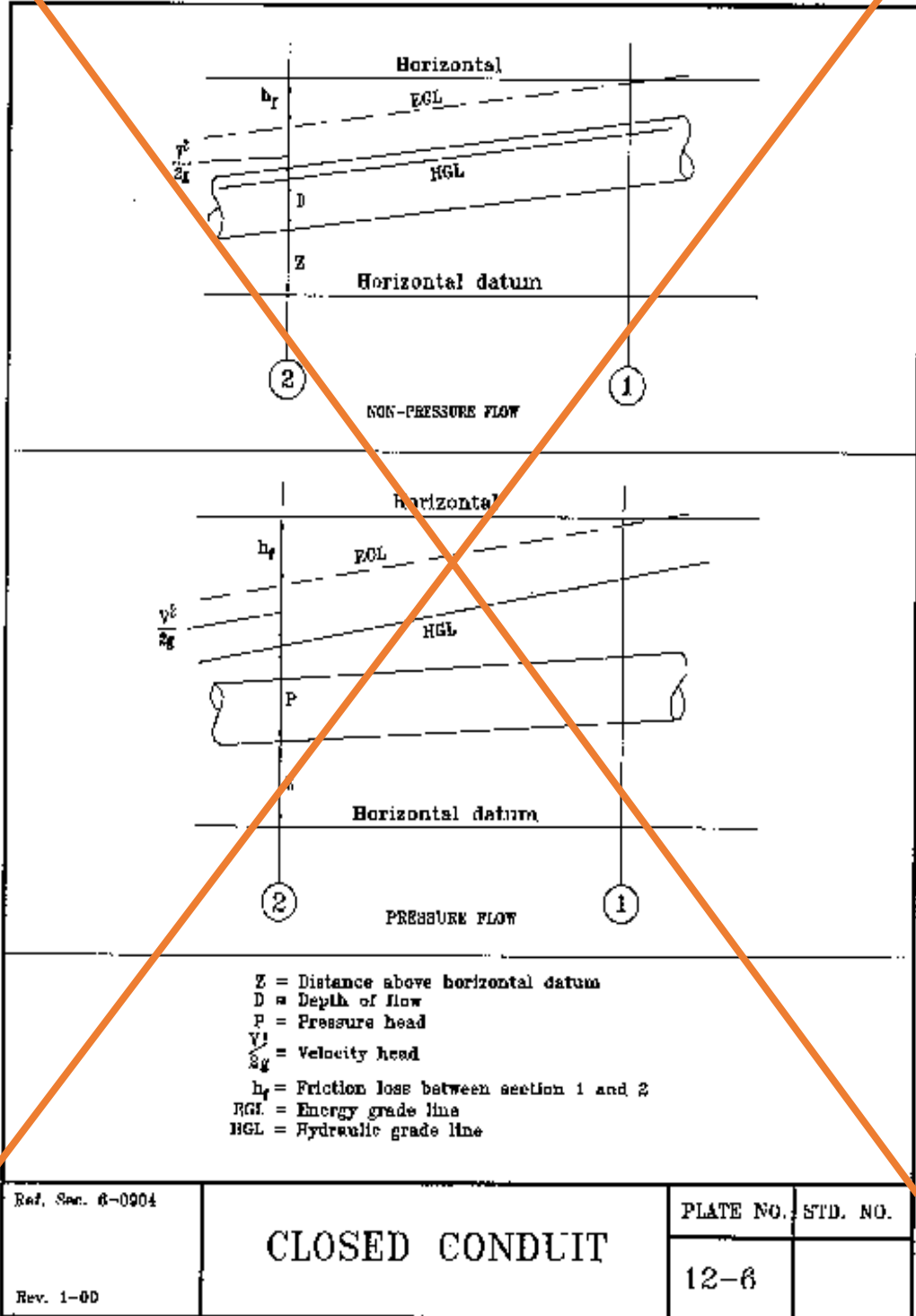
Rev. 1-00

SURCHARGE FULL FLOW

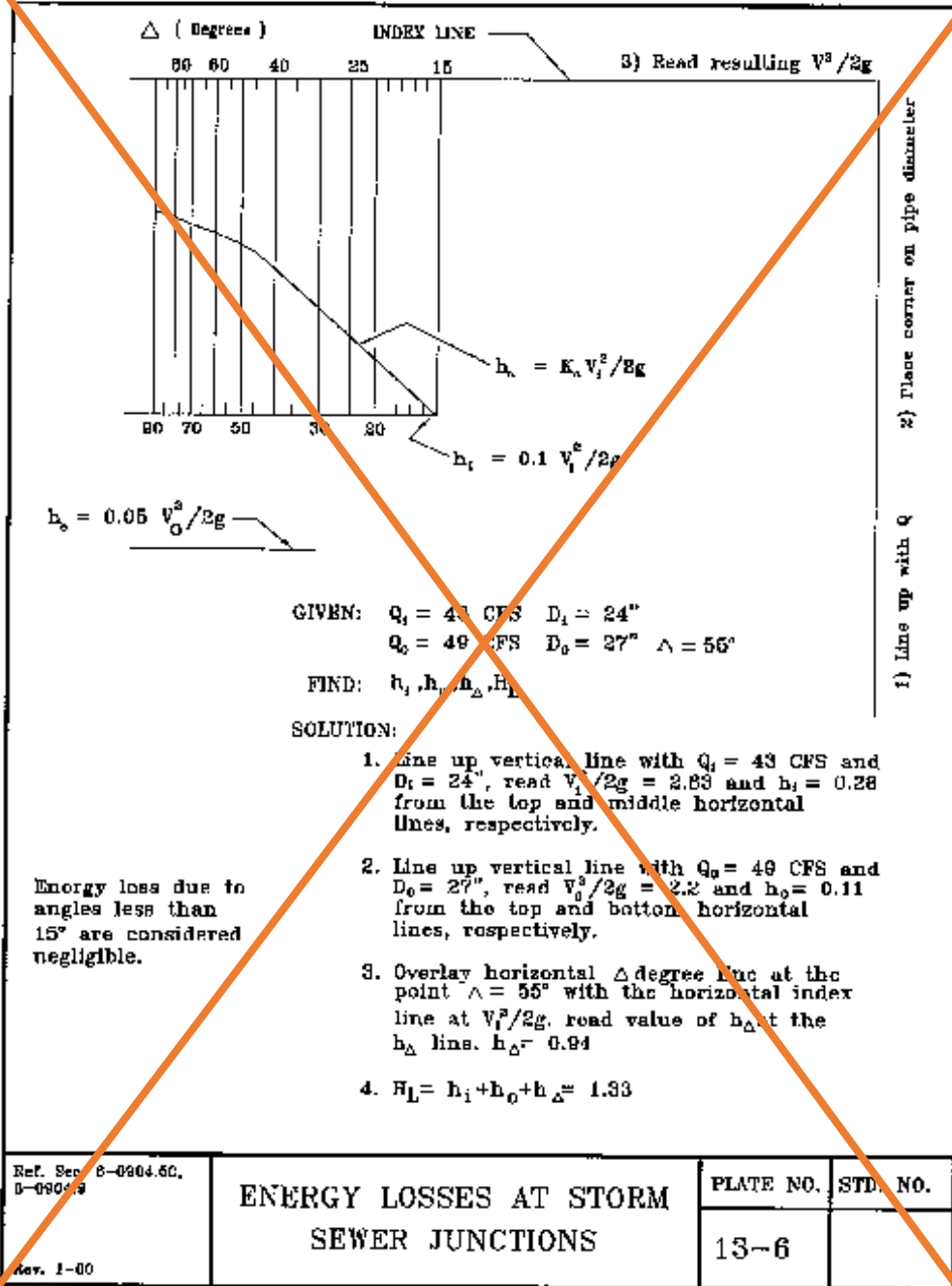
PLATE NO. STD. NO.

94-6

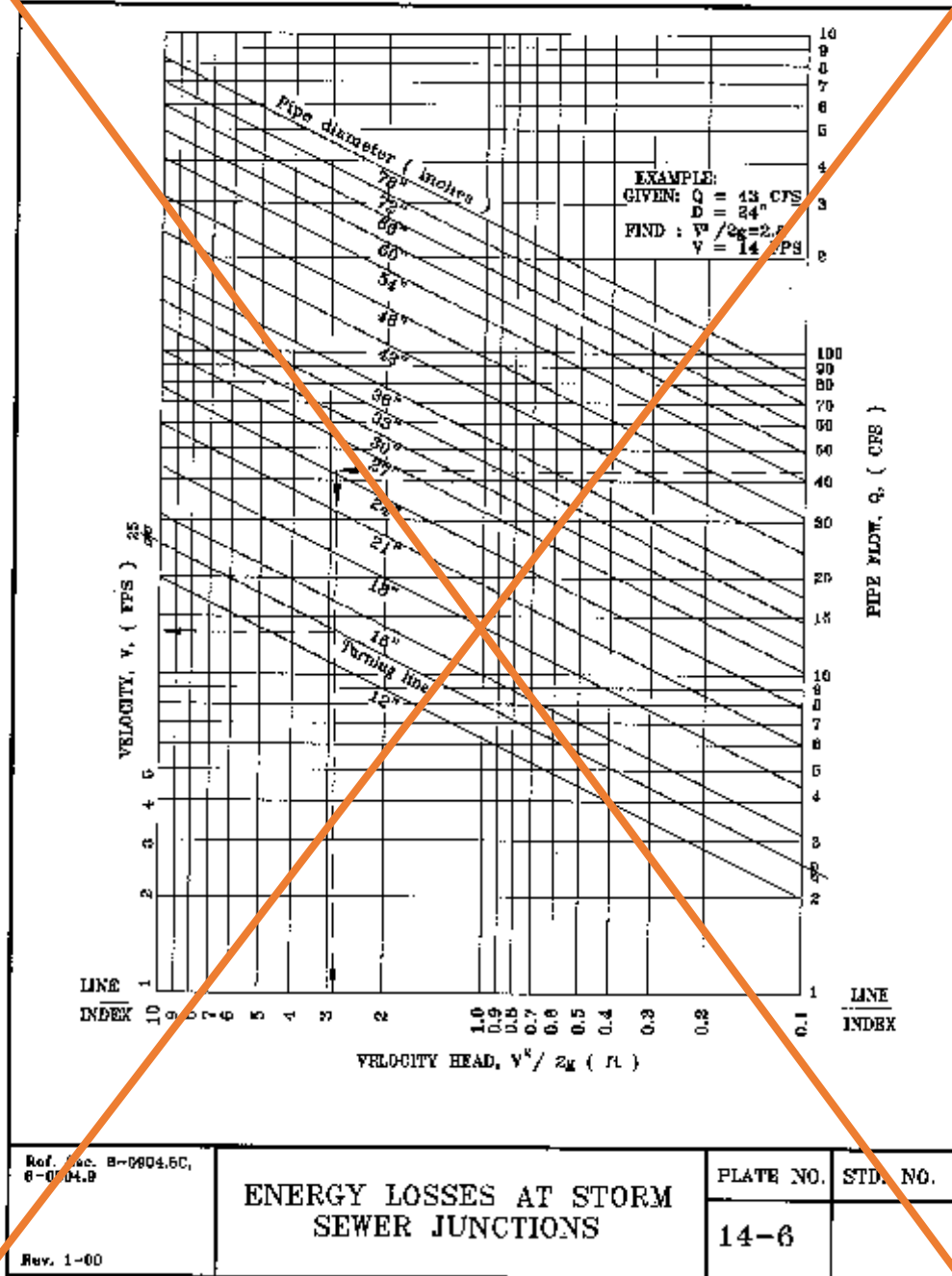
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<p>NON-PRESSURE FLOW</p> $\text{Drop} = Z_1 - Z_2 = (D_1 - D_2) + \left(\frac{V_1^2}{2g} - \frac{V_2^2}{2g} \right) + H_L$ $H_L = h_f + h_j + h_a$ <p>For non-pressure flow, and approximation of drop, $Z_1 - Z_2$, equal to H_L may be used.</p>	<p>PRESSURE FLOW</p> $\text{Drop} = Z_1 - Z_2 = (P_2 - P_1) + \left(\frac{V_2^2}{2g} - \frac{V_1^2}{2g} \right) + H_L$ $H_L = h_f + h_j + h_a$					
<p>Z_1, Z_2 = Incoming and outgoing pipe invert D_1, D_2 = Incoming and outgoing depth of flow, assumed to be pipe diameter P_1, P_2 = Pressure heads for incoming and outgoing pipes $\frac{V_1^2}{2g}, \frac{V_2^2}{2g}$ = Velocity heads for incoming and outgoing pipes EGL = Energy grade line HGL = Hydraulic grade line H_L = Total energy loss thru junction</p>						
<p>Ref. Sec. 6-0904.12</p> <p>Rev. 1-00</p>	<p>CLOSED CONDUIT JUNCTION</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">PLATE NO.</td> <td style="padding: 2px;">STL. NO.</td> </tr> <tr> <td style="padding: 2px;">15-6</td> <td style="padding: 2px;"></td> </tr> </table>	PLATE NO.	STL. NO.	15-6	
PLATE NO.	STL. NO.					
15-6						

Debris Control Devices (Trash Racks)

207 **Amend Chapter 6-1604 (Design Guidelines for Spillways), paragraph 8B and 8C, where**
208 **deletions are shown as strikeouts and insertions are underlined, to read as follows:**

209
210 6-1604.8B Debris control devices for dry stormwater management ponds are ~~may be~~ required for
211 low level intakes ~~at the pond bottom.~~ that are less than 15 inches in diameter or equivalent size
212 opening, and may be required for other opening sizes in accordance with §6-1604.8. The
213 preferred debris control structure is shown in Plates 61A-6 and 61B-6. In these situations, debris
214 control structures such as those discussed in the FHWA publication entitled “Debris Control
215 Structures (HEC No. 9)” should be considered where appropriate.

216
217 6-1604.8C Debris control devices for extended dry stormwater management facilities are
218 required for the low flow orifice controlling the extended drawdown period. The preferred trash
219 rack detail for those facilities is shown in Plates ~~61-6~~ 61A-6 and 61B-6.

220

221

222 **Amend Chapter 6-1604 (Design Guidelines for Spillways), to add paragraph 12, to read as**
223 **follows:**

224

225 6-1604.12 Concrete Apron

226

227 6-1604.12A Unless otherwise approved by the Director, a concrete apron shall must be provided
228 in front of low level intakes or low flow orifices to provide a stable working platform for
229 maintenance personnel and facilitate easy cleanout of debris in accordance with Plate 61B-6.

230

231

232 **Amend Chapter 6, Table of Contents and List of Plates in accordance with the amendment.**

233 **Amend Chapter 6, to delete existing Plate 61-6 (BMP Extended Drawdown Device**
234 **(Example Detail), and add Plates 61A-6 (Low Flow/BMP Drawdown Device) and 61B-6**
235 **(Low Flow/BMP Drawdown Device (Mounting Details), to read as follows:**

236

237

238

Stormwater Maintenance Specifications

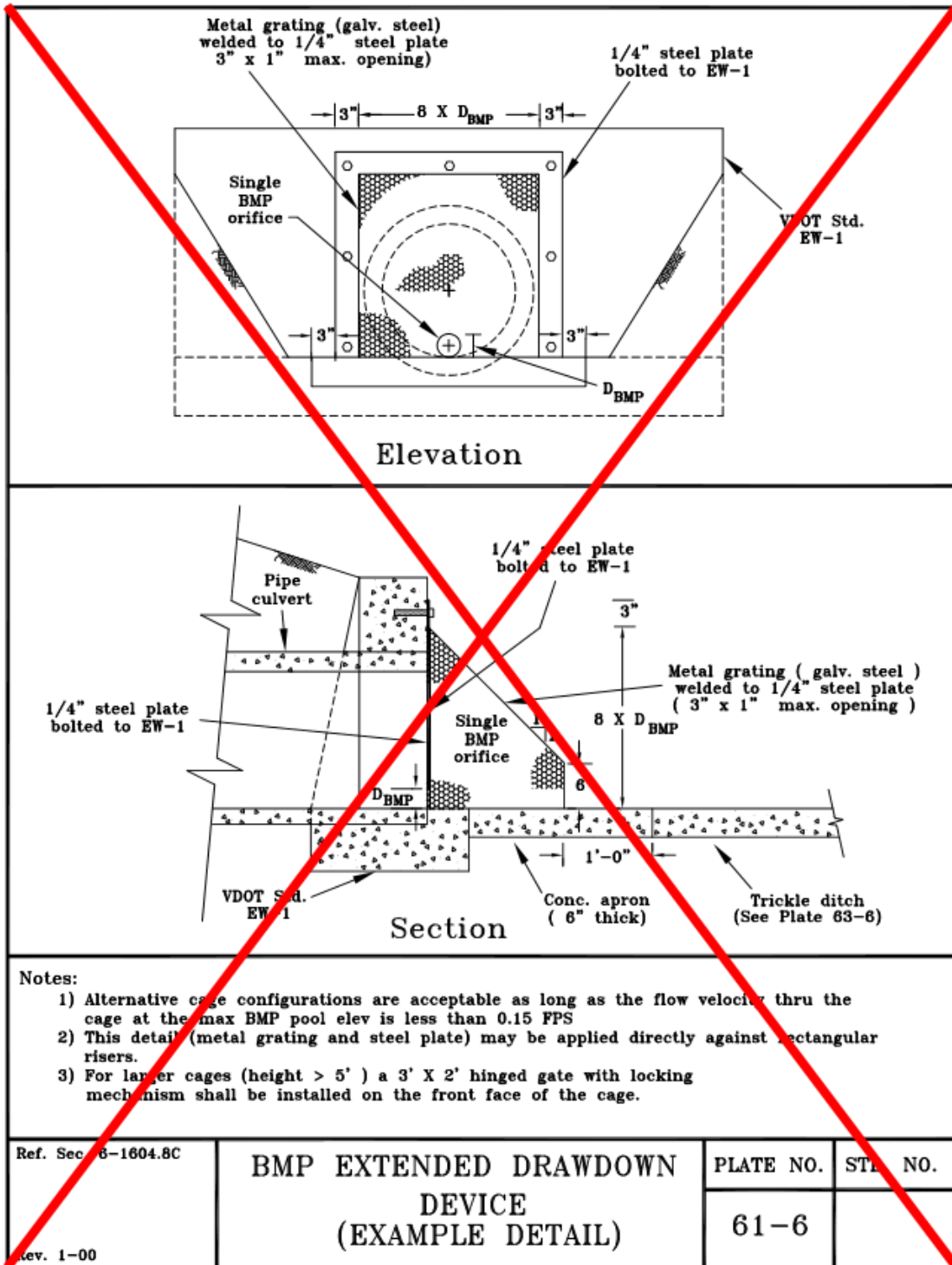
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240 **Amend Public Facilities Manual Section 6-1306 (Maintenance Design Considerations), to**
241 **add paragraph 4, to read as follows:**

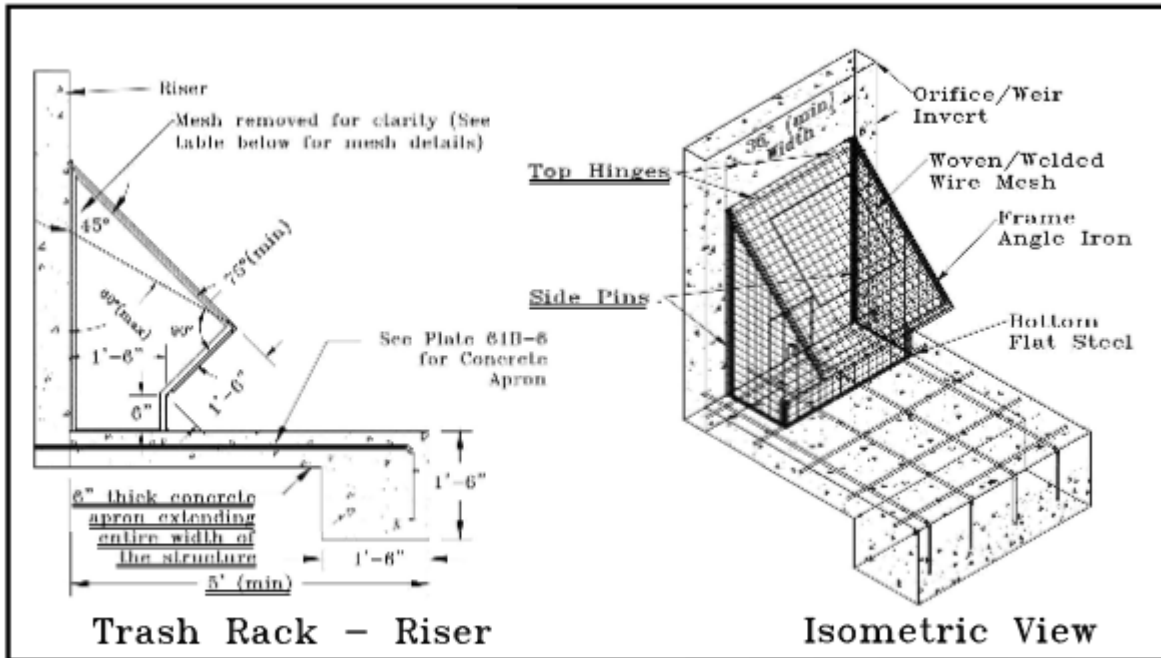
242

243 6-1306.4 The standard maintenance specifications for the proposed privately maintained
244 stormwater management/BMP facilities must be incorporated into the construction plan.

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Trash Rack - Riser

Isometric View

Mesh Details

Component → Trash Rack Width ↓	Frame Angle Iron	Bottom Flat Steel	Woven/Welded Wire Mesh	Steel Rod for Grate	Min. Mesh Opening Size	
					Low Flow-See 6-1604B	BMP-See 6-1604.8C
up to 36"	1½"X1½"X¼"	1½"X¼"	¼"		4"	1"
between 36"-60"	2"X2"X¼"	2"X¼"	⅜"			
60" and larger	3"X3"X⅜"	3"X⅜"		⅝"		

Trash Rack General Notes:

- 3' minimum trash rack width is required where available.
- Trash rack/mounting components to be Hot-dip galvanized dip.
- All mounting hardware shall be stainless steel and threads to be coated in anti-sieze. Minimum ½" x 3" mounting bolts to be used for trash rack.
- Trash racks to be mounted using top hinge or side pin connection as per details shown in 61B-6. All hinged/pinned trash racks to have locking mechanism. Mechanism to be installed on the upper half to minimize potential to become inaccessible due to submergence under water/sediment.
- Mesh opening size shall to be ½ of the diameter/width of orifice being protected, but not smaller than minimum mesh opening size provided in table above.

Additional Notes

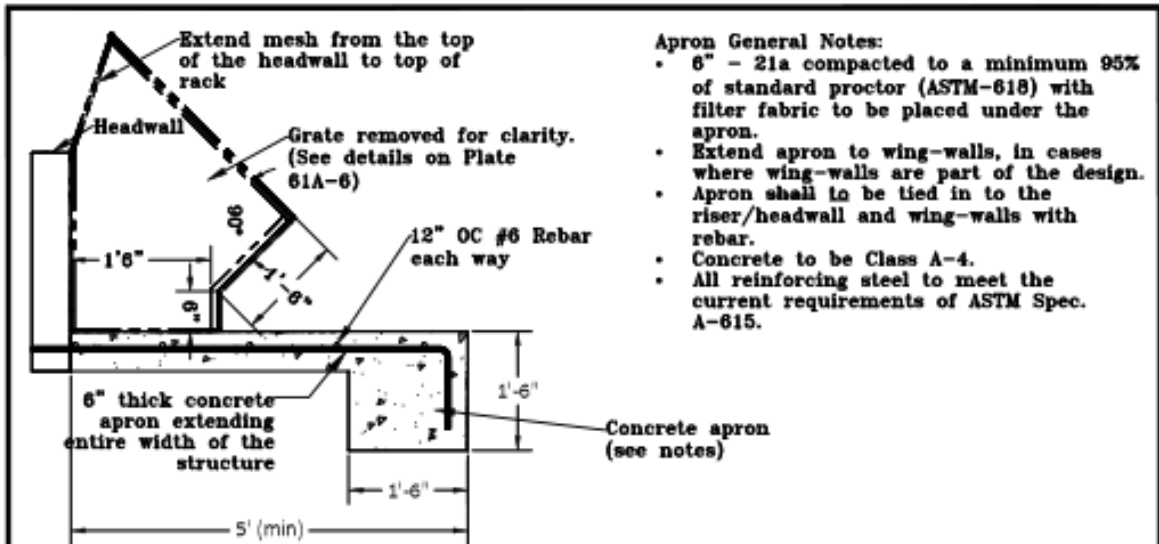
- Trash Racks 60" and wider:
- Large trash racks may be painted with dark anti-corrosive paint, in lieu of galvanizing.
 - Additional structural reinforcements shall to be added to trash rack frame as deemed necessary to support all anticipated loads.
 - A 3' x 3' (min) access door with locking mechanism shall to be installed on front face.
- Trash Racks mounted on Headwalls:
- In case of space restrictions at headwalls, use 2' min width of trash rack.
 - Add wire mesh on the back of trash rack to the top of headwall as shown in 61B-6.

Ref. Sec. 6-1604.8B,8C

LOW FLOW/BMP DRAWDOWN
DEVICE

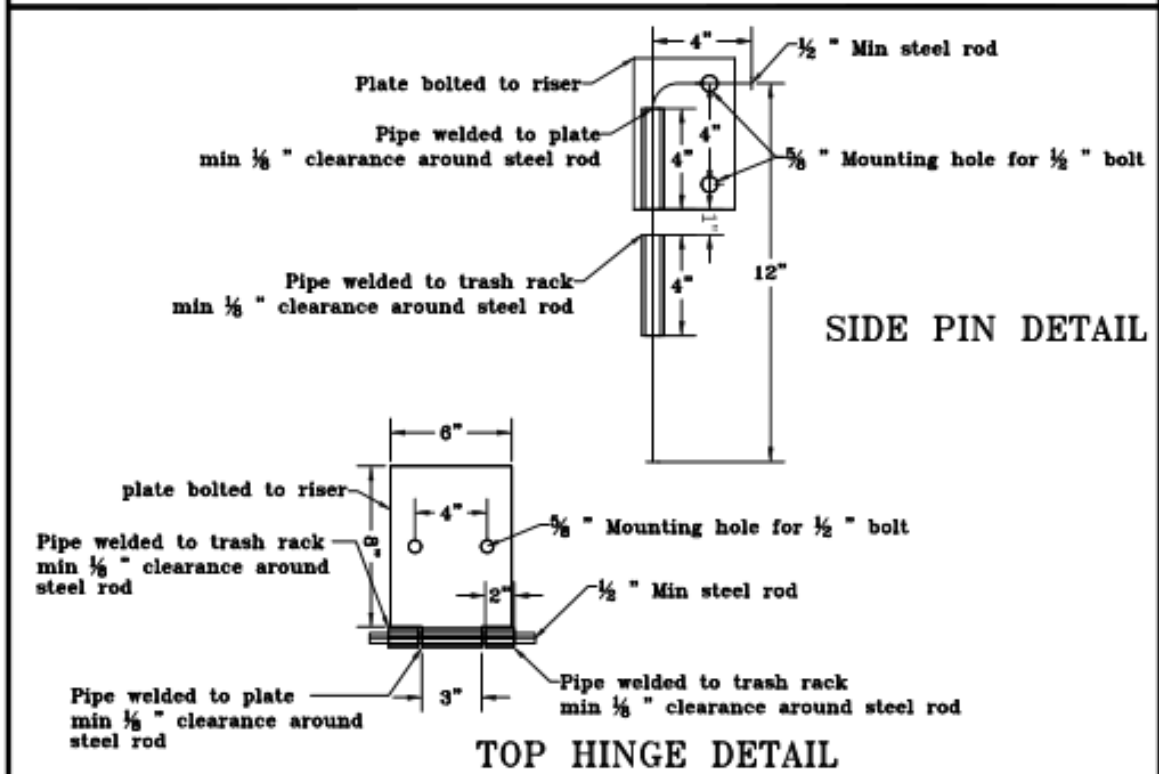
PLATE NO.	STD. NO.
61A-6	

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- Apron General Notes:
- 6" - 21a compacted to a minimum 95% of standard proctor (ASTM-618) with filter fabric to be placed under the apron.
 - Extend apron to wing-walls, in cases where wing-walls are part of the design.
 - Apron shall to be tied in to the riser/headwall and wing-walls with rebar.
 - Concrete to be Class A-4.
 - All reinforcing steel to meet the current requirements of ASTM Spec. A-615.

Trash Rack on Headwall



Ref. Sec. 6-1604.8B,8C	LOW FLOW/BMP DRAWDOWN DEVICE (MOUNTING DETAILS)	PLATE NO.	STD. NO.
		61B-6	

**Proposed Amendment to
Appendix Q (Land Development Services Fee Schedule) of
*The Code of the County of Fairfax, Virginia***

Amend Appendix Q (Land Development Services Fee Schedule), Table of Contents, I. Building Development Fees, where deletions are shown as strikeouts and insertions are underlined, to read as follows:

TABLE OF CONTENTS

I. Building Development Fees	
A. Standard Fees	Appendix Q—2
B. Building Permit and Other Fees	Appendix Q—2
C. Mechanical Permit Fees	Appendix Q—5
D. Electrical Permit Fees	Appendix Q—7
E. Plumbing Permit Fees	Appendix Q—9
F. Household Appliance Permit Fees	Appendix Q—10
G. Vertical Transportation Permit Fees	Appendix Q—10
H. Fire Prevention Division (Fire Marshal) Fees	Appendix Q—11
I. Amusement Device Permit Fees	Appendix Q—12
<u>J. Building and Fire Prevention Code Modifications and Local Board of Building Code Appeals Fees.....</u>	<u>Appendix Q—12</u>

Amend Part I (Building Development Fees), Section A (Standard Fees), Paragraph 3, where deletions are shown as strikeouts and insertions are underlined, to read as follows:

3. After-hours re-energization or time-specific inspection fee for each 30- minute period or fraction thereof \$241.20

Amend Part I (Building Development Fees), Section G (Vertical Transportation Permit Fees), where insertions are underlined and deletions are struck, to read as follows:

G. VERTICAL TRANSPORTATION PERMIT
FEES

4/5/2018

(A) <u>Commercial Mechanical Equipment Installation Fees</u> : The permit fee for installation, repair, <u>modernization</u> , or replacement of all mechanical equipment installed in buildings other than within individual residences. This fee is in addition to the equipment fees listed below in this section.	Percentage of the contract value less the value of the equipment listed below	2.00%
	<u>With a minimum fee of</u>	<u>\$135.00</u>
1. Commercial (new or replacement):		
• Chair/platform lifts		\$142.00
• Dumbwaiters/material lifts		
◦ Hand-operated		\$142.00
◦ Power-driven		\$142.00
• Elevators		
◦ Construction <u>Use/Hoist, plus floor charge</u>		\$306.00 <u>\$289.00</u>
◦ Freight, plus floor charge (<u>see 'floor charge' below</u>)		\$289.00
◦ Passenger, plus floor charge (<u>see 'floor charge' below</u>)		\$289.00
• Escalators, per floor/moving walks		\$497.00
• Man lifts		\$146.00
◦ Hand-driven		\$113.00
Floor charge: Fee charged for each floor in the building where a passenger or freight elevator is installed. This charge shall be computed and added to the cost-fee for <u>of the first piece of equipment only that has the most stops.</u>		\$47.00
Alterations or repairs shall be charged at a percentage of the estimated cost of repairs	Percentage of the estimated cost of repairs	1.50%
	With a minimum fee of	\$135.00
2. <u>(B) Residential Mechanical Equipment Installation Fees (new, repair, modernization, or replacement):</u>		
• Chair/platform lifts		\$142.00
• Dumbwaiters		
◦ Hand-operated		\$142.00
◦ Power-driven		\$142.00
• Private residence elevators		\$306.00

(~~BC~~) Periodic Mechanical Inspection Fee: All vertical transportation equipment, other than that which is installed within individual residences, and other than conveyors, requires an annual certificate of compliance. For an annual certificate of compliance, the annual fee payable by the owner of the building to the County of Fairfax ~~on or~~ before the expiration of the certificate shall be as follows:

• Chair/platform lifts	\$146.00
• Dumbwaiters/material lifts	
◦ Hand-operated	\$122.00
◦ Power-driven	\$134.00
• Elevators	
◦ Construction	\$266.00
◦ Freight, plus floor charge (<u>see 'floor charge' below</u>)	\$266.00
◦ Passenger, plus floor charge (<u>see 'floor charge' below</u>)	\$266.00
• Escalators, per floor/moving walks	\$146.00
• Man lifts	\$146.00
• Sidewalk elevators	
◦ Hand-driven	\$113.00
◦ Power-driven	\$150.00

Floor charge: Fee charged for each floor in the building where a passenger or freight elevator is installed. This charge shall be computed and added to the ~~cost~~ fee for ~~of the first piece of equipment only that has~~ the most stops. \$47.00

Freight and passenger elevator tests: The following fees apply to freight and passenger elevator tests which are not performed in conjunction with regularly scheduled periodic inspections:

• Temporary inspection	\$246.00
• Temporary inspection (extension)	\$115.00
• Governor test	\$296.00
• Load test	\$445.00
• Speed test	\$296.00
• Static pressure/hydraulic	\$296.00
• Fire and smoke test	\$213.00

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Amend Part I (Building Development Fees), to Add Section J (Building and Fire Prevention Code Modifications and Local Board of Building Code Appeals Fees), to read as follows:

J. BUILDING AND FIRE PREVENTION CODE MODIFICATIONS AND LOCAL BOARD OF BUILDING CODE APPEALS FEES:

- Building and Fire Prevention Code Modification Fees \$208.00
- Applications for appeals to local Board of Building Code Appeals based on the VUSBC, the VSFPC, the Virginia Amusement Device Regulations (VADR) and Chapters 61, 64, 65, and 66 of the Code of the County of Fairfax \$208.00

Amend Part II (Site Development Fees), Section A (Plan and Document Review Fees), Subsection B (Subdivision Plans, Site Plans, and Site Plans for Public Improvements Only), paragraphs 1- 3, where insertions are underlined and deletions are struck, to read as follows:

(B) Subdivision Plans, Site Plans, and Site Plans for Public Improvements Only: The following schedule shall be used to tabulate the fees for review of subdivision and site plans, and site plans for public improvements only.

1. Base Fee:

- Subdivision Plan
 - 1st submission \$5,796.00
 - ~~◦ Plus, fee per disturbed acre or any fraction thereof~~ ~~\$1,060.80~~
- Site Plan
 - 1st submission \$8,755.20
 - ~~◦ Plus, fee per disturbed area or any fraction thereof~~ ~~\$1,060.80~~
- Site plans for public improvements only including sanitary sewer, trail, sidewalk, storm sewer, channel improvements, waterline, and/or road construction pursuant to Chapter 2 of the Code.
 - 1st submission \$4,222.80
 - ~~◦ Plus, per linear foot or fraction thereof, of each improvement~~ ~~\$1.45~~

2. Fees in addition to base fees:

<u>Site Plan and Subdivision Plan</u>	<u>Additional fee per disturbed acre or any fraction thereof</u>	<u>\$1,060.80</u>
<u>Site Plans for the following public improvements only including sanitary sewer, trail, sidewalk, storm sewer, channel improvements, waterline, and/or road construction pursuant to Chapter 2 of the Code.</u>	<u>Additional fee per linear foot or fraction thereof, of each improvement</u>	<u>\$1.45</u>
• Additional plan review, as a result of an approved zoning action associated with the proposed construction to include the following	with a maximum cumulative fee of	\$4,158.00
◦ Sites subject to rezoning		\$2,442.00
◦ Sites subject to special exception		\$1,713.60
◦ Sites subject to special permit		\$1,713.60
◦ Sites subject to variance		\$1,269.60
• Review resulting from site conditions and proposed improvements		
◦ SWM/BMP facility, for each facility serving the site (on or off-site), except as noted,	with a maximum cumulative fee of	\$7,500.00
◇ Constructed Wetland or Ponds		\$3,200.00
◇ Bioretention Basin or Filter, Infiltration Facility, Filtering Practice ¹ , Innovative BMP ² , or Detention-Only Facility ³		\$1,900.00
◇ Dry Swale, Wet Swale, or Grass Channel (per linear foot)	with a minimum of	\$5.00 \$1,500.00
◇ Rainwater Harvesting System, per square foot of collection area,	with a minimum of	\$0.12 \$1,900.00
◇ Permeable Pavement, Vegetated Roof, per square foot of surface	with a minimum of	\$0.12 \$1,500.00
◇ Manufactured BMP ⁴ , Micro- or Urban Bioretention ⁵		\$1,200.00
◇ Rooftop Disconnection, for each building served		\$500.00
◇ Sheet Flow to Vegetated Filter Strip or Conserved Open Space, Soil Amendments, Reforestation, flat fee per plan		\$500.00

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◦ Floodplain area (existing and proposed)	\$856.80
◦ Natural drainage way (non-floodplain watersheds)	\$856.80
◦ Problem soils (area with soil types A or B, per the official map adopted by the Board or as deemed by the Director)	\$1,269.60

Footnotes;

1. Filtering practices include facilities such as sand filters.
2. BMPs not on the Virginia Stormwater BMP Clearinghouse approved list or listed with a Pilot Use Designation or Conditional Use Designation.
3. Vaults or other underground storage systems providing detention only.
No ponds.
4. Includes proprietary devices.
5. Includes residential rain gardens, urban stormwater planters, expanded tree pits, and stormwater curb extensions.

3. Resubmissions:

• 2nd submission base fee: fee tabulated at a percentage of the first submission fee assessed in accordance with (B1) and (B2) above	Percentage of the Original Fee	50.00%
◦ Plus, additional fees charged in accordance (B1) and (B2) above for changes in the amount of disturbed area, zoning action, site conditions, and/or proposed improvements from that indicated on the first submission.	Tabulated Fee	
• The maximum combined first and second submission base fees:		
◦ For subdivision plans		\$15,907.20
◦ For site plans		\$56,772.00
◦ Resubmission site and subdivision plan after 2nd submission, per submission (does not apply to site plans with public improvements only)		\$5,604.00
• 2nd submission fee for site plans with public improvements only, per submission		\$0.00
◦ Resubmissions after 2nd submission for site plans with public improvements only, per submission: fee tabulated at a percentage of the first submission fee in accordance with (B1) and (B2) above.	Percentage of the Original Fee	50.00%

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Amend Part II (Site Development Fees), Section A (Plan and Document Review Fees), Subsection D (Processing of Studies, Soils Reports and Other Plans), Item 1 (Studies), where insertions are underlined and deletions are struck, to read as follows:

1. Studies:

- | | |
|---|-------------|
| ▪ Drainage study, per submissions (non-floodplain watersheds) | \$1,960.80 |
| ▪ Floodplain study | |
| ▪ Per submission, per linear foot of baseline or fraction thereof | \$2.76 |
| ▪ Plus, fee per road crossing and per dam, | \$610.80 |
| Not to exceed total fee, per submission | \$11,226.00 |
| ▪ Parking study | |
| ▪ Parking tabulation for change in use, per submission | \$980.40 |
| ▪ Parking redesignation plan, per submission | \$980.40 |
| ▪ Administrative parking reduction for churches, temples, synagogues and other such places of worship with child care center, nursery school or private school of general or special education, per submission | \$980.40 |
| ▪ Parking reduction based on the sum of the hourly parking demand or the sum of the hourly parking demand in combination with other factors when the required spaces are: | |
| ♦ Under 225 spaces | \$2,811.60 |
| ♦ 225 to 350 spaces | \$4,882.80 |
| ♦ 351 to 599 spaces | \$7,806.00 |
| ♦ 600 spaces or more | \$16,351.20 |
| ▪ Parking reduction based on proximity to a mass transit station, transportation facility, or bus service or a parking reduction within a Transit Station Area | \$2,811.60 |
| ▪ Parking reduction based on the unique nature of the proposed use(s) | \$2,811.60 |
| ▪ Recycling study: When the plan or study is submitted to the County for the sole purpose of placing recycling containers on a commercial or industrial site, as required by the Fairfax County Business Implementation Recycling Plan, per submission. | \$0.00 |
| ▪ Water Quality Fees* | |
| ▪ Resource Protection Area (RPA) Boundary Delineations and Resources Management Area (RMA) Boundary Delineations | |

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- ♦ Non-bonded lots: existing lots and acreage, rough grading ~~and minor site plans~~, and filling parcels, and parcels with lots of 5 acres or more not within a subdivision or site plan development currently bonded with the County: and minor site plans; per submission \$418.80
- ♦ Bonded lots: lots in conjunction with multiple construction within a subdivision currently bonded with the County, per submission:
 - Projects with 150 linear feet or less of baseline \$418.80
 - Project with greater than 150 linear feet of baseline \$418.80
 - Plus, fee per linear foot of baseline or fraction thereof, in excess of 150 linear feet \$0.96
- Water Quality Impact Assessments (WQIA)
 - ♦ Non-bonded lots: existing lots and acreage, rough grading ~~and minor site plans~~, and filling parcels, and parcels with lots of 5 acres or more not within a subdivision or site plan development currently bonded with the County: and minor site plans; per submission \$432.00
 - ♦ Bonded lots: lots in conjunction with multiple construction within a subdivision or site plan currently bonded with the County, per submission \$1,652.40

* In the event that a RPA and RMA Boundary Delineation and a WQIA are submitted simultaneously, only one fee shall be required and such fee shall be the higher of the fees required for the individual studies.

Amend Part II (Site Development Fees), Section A (Plan and Document Review Fees), Subsection D (Processing of Studies, Soils Reports and Other Plans), Paragraph 2 (Soils Reports), where insertions are underlined and deletions are struck, to read as follows:

2. Soils Reports:

- Commercial and multi-family development, bonded residential ~~Bonded~~ lots: lots in conjunction with multiple constructions in a newly bonded subdivision development, site plan or site plan for public improvements only
 - 1st submission, ~~per lot~~ \$3,422.40
 - Resubmission and revisions, per submission \$1,122.00
- Non-bonded residential ~~and minor site plans~~ lots: existing lots and acreage, rough grading and filling parcels, and parcels with lots of 5 acres or

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of more, not within a subdivision or site plan development currently bonded with the County; and minor site plans; per submission

◦ 1 st submission, per lot	\$2,200.80
	Not to exceed \$4,386.00
◦ Resubmissions and revisions, per submission	\$1,122.00

Amend Part II (Site Development Fees), Section C (Site Inspection Fees), Subsection B (Fees in Addition to the Base Fee), Paragraph 1 (Public Utility Fees), where insertions are underlined and deletions are struck, to read as follows:

1. Public Utility Fees:

• Storm drainage	
◦ Base fee for <u>the</u> first 100 linear feet	\$1,862.40
◦ Plus, fee f For each additional linear foot or fraction thereof	\$4.02
• Stormwater management ponds	
◦ Embankment less than or equal to 6 feet high	\$1,856.40
◦ Embankment greater than 6 feet high	\$3,699.60
• Dedicated streets	
◦ For <u>the</u> first 100 linear feet <u>556 square yards</u>	\$2,601.60
◦ Plus, fee f For each additional linear foot <u>square yard</u> or fraction thereof	\$10.80 <u>\$1.94</u>
• Private streets	
◦ For the first 100 linear feet <u>556 square yards</u>	\$2,110.80
◦ Plus, fee f For each additional linear foot <u>square yard</u> or fraction thereof	\$8.70 <u>\$1.57</u>
• Other paved area, per square yard or fraction thereof	\$1.92
◦ Driveway entrances, for each entrance	\$194.40
◦ Pedestrian walkways/trails	
◊ For the first 100 linear feet <u>56 square yards</u>	\$446.40
◊ Plus, fee f For each additional linear foot <u>square yard</u> or fraction thereof	\$2.22 <u>\$4.00</u>
• Sanitary sewer systems	
◦ Base fee for <u>the</u> first 100 linear feet of main	\$2,594.40
◦ Plus, fee f For each additional linear foot or fraction thereof	\$8.40

Amend Part II (Site Development Fees), Section F (Waiver, Exception, Modification and Exemption Fees), Subsection (Best Management Practices (BMP) and Stormwater Management (SWM) Applications), Item 5 (PFM 6-0303.6 SWM Modification), where insertions are underlined and deletions are struck, to read as follows:

5. PFM 6-0303.6 SWM Modification to construct ~~locate~~ an underground detention facility with non-standard materials ~~on a residential development. Must be approved by the Board in conjunction with a rezoning or special exception application.~~

Pursuant to Chapter 101 \$876

Pursuant to Chapter 104

Pursuant to Chapter 112 \$876

Proposed Amendment
to
Chapter 101 (Subdivision Provisions)

**Amend Article 2 (Subdivision Application Procedure and Approval Process),
Section 101-2-1 (Procedure), Paragraph (1)(A), to read as follows:**

101-2-1(1)(A) The subdivider ~~must shall~~ submit a preliminary subdivision plat for all proposed subdivisions creating more than fifty (50) lots and may submit a preliminary subdivision plat for all proposed subdivisions creating fifty (50) or fewer lots. Preliminary subdivision plats must ~~which conforms with~~ to the requirements of this Article, ~~and with~~ to the regulations adopted under this Article, and to the rules and regulations of the State Health Department concerning the sewage plan, the water plan, and the solid waste plan. However, a preliminary subdivision plat will shall not be required for a property subject to a proffered generalized development plan, proffered or approved final development plan or approved special exception plat for a cluster subdivision or waiver of minimum lot size requirements, which plan or plat is certified by a professional engineer, architect, landscape architect or land surveyor authorized to practice as such by the State.