



ENGINEERING AND ENVIRONMENTAL SERVICES

Stormwater Division

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LEVEL SPREADER/FILTER STRIP DESIGN SUMMARY

Stormwater Management Construction Plan Review:

A complete Stormwater management construction plan submittal includes a design summary for each Stormwater BMP, design calculations, plans and specifications showing BMP, inlet and outlet structure details.

I. PROJECT INFORMATION

For projects with multiple SCMs, specify which SCM this worksheet applies to:

Project Name: _____ Phase: _____

PIN: _____ Case #: _____

Legal Name of Owner: _____

Owner Contact: _____ Phone: _____

Owner Address: _____

Design Contact Person: _____ Phone: _____

II. GENERAL MINIMUM DESIGN CRITERIA FOR ALL SCMs *(Revised 1/3/2017)*

GENERAL MDC 1: SIZING

Design storm depth	ft	<i>(One year, 24 hour storm event)</i>
Design runoff volume	ft ³	<i>(Minimum calculation of entire drainage area)</i>

GENERAL MDC 2: CONTAMINATED SOILS

Contaminated soils within footprint?	Y / N	<i>(Brownfield location?)</i>
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GENERAL MDC 3: SIDE SLOPES

Maximum vegetated side slopes	: 1	<i>(Maximum 3:1 vegetated slopes)</i>
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GENERAL MDC 4: EROSION PROTECTION

10 year storm outlet discharge	cfs	<i>(Must be non-erosive)</i>
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GENERAL MDC 5: EXCESS FLOW

Emergency outlet elevation	ft
Emergency spillway width	ft
Emergency spillway side slopes	: 1
Emergency spillway slope	%

GENERAL MDC 6: DEWATERING

Dewatering method	
Drawdown orifice size	in <i>(If applicable)</i>

GENERAL MDC 7: CLEAN OUT AFTER CONSTRUCTION

Every SCM impacted by sediment and erosion control during the construction phase shall be cleaned out and converted to its approved design state
In addition, installed SCM's should be inspected and cleaned after each heavy rainfall

GENERAL MDC 8: MAINTENANCE ACCESS

Maintenance access width	ft	<i>(Minimum width of 25 feet)</i>
Side slopes within maintenance access	: 1	<i>(Maximum 3:1)</i>
Access extend to public right of way	Y / N	

GENERAL MDC 9: EASEMENTS

All SCMs and associated maintenance accesses located in permanent recorded easement? (shown and labeled in easement)	Y / N	<i>(Does not include single family residential lots)</i>
Maintenance access width around SCM	ft	<i>(Minimum width of 10 feet)</i>

GENERAL MDC 10: SINGLE FAMILY RESIDENTIAL LOTS

Plats for residential lots that contain an SCM shall include: <ul style="list-style-type: none"> (a) The specific location of the SCM on the lot (b) A typical detail for the SCM to be used (c) A note that the SCM on the property has been required to meet stormwater regulations and that the property owner may be subject to enforcement actions if the SCM is removed, relocated, or altered without prior approval
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GENERAL MDC 11: OPERATION AND MAINTENANCE AGREEMENT

Acknowledgement that the association shall continuously operate and maintain the stormwater control and management facilities	<input type="checkbox"/>
Establishment of an escrow account which can be spent solely for sediment removal, structural, biological or vegetative replacement, major repair, or construction of the SCM	<input type="checkbox"/>

(Check box when completed)

GENERAL MDC 12: OPERATION AND MAINTENANCE PLAN

Specify all operation and maintenance work necessary for the function of all SCM components	<input type="checkbox"/>
Specify methods to be used to maintain or restore the SCMs to design specifications in the event of failure	<input type="checkbox"/>
O&M plan shall be signed by the owner and notarized	<input type="checkbox"/>

(Check box when completed)

III. LEVEL SPREADER/FILTER STRIP (LS-FS) MINIMUM DESIGN CRITERIA *(Revised 1/3/2017)*

LS-FS MDC 1: LEVEL SPREADER LENGTH

Design storm intensity	in/hr
Peak flow during design storm	cfs
Level spreader length	ft

(Confirm 0.75 inches per hour)

(Min. 10% of level spreader length)

(Minimum 10 feet)

LS-FS MDC 2: REQUIRED STORM INTENSITY AND BYPASS

Receives flow from drainage area?	Y / N
Receives flow from SCM?	Y / N
Flow bypass provided?	Y / N
Design flow rate	cfs

(0.75 cfs if receiving directly from drainage area, or draw down rate of design volume from SCM)

LS-FS MDC 3: EXCEPTION FROM FLOW BYPASS REQUIREMENT

Storm event design size	yr
Flow bypass required?	Y / N

(YES if sized for less than 10 year event)

LS-FS MDC 4: BLIND SWALE

Blind swale provided?	Y / N
Entrance angle to LS	deg.

(Required upslope of LS)

(Entrance angle should be near parallel to LS)

LS-FS MDC 5: LEVEL SPREADER SPECIFICATIONS

Level spreader material	in	<i>(Concrete or other stable material)</i>
Top elevation of LS lip	ft	<i>(Lip of LS shall be 3 inches higher than downslope existing ground)</i>
Downslope ground elevation	ft	

LS-FS MDC 6: LEVEL SPREADER SHAPE

LS Shape		<i>(Shall be straight or convex)</i>
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LS-FS MDC 7: TRANSITION ZONE

Transition zone material		<i>(Shall be aggregate or matting)</i>
Transition zone width	in	<i>(Minimum 12 inches)</i>

LS-FS MDC 8: MINIMUM WIDTH OF FILTER STRIP

Width of FS	in	<i>(Minimum 30 feet)</i>
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LS-FS MDC 9: NO DRAWS OR CHANNELS IN THE FILTER STRIP

Maximum design slope within FS	%
Plan and profile design views provided?	Y / N

IV. REQUIRED ITEMS CHECKLIST

The following checklist outlines design requirements. Initial in the space provided to indicate the following design requirements have been met and supporting documentation is attached.

Applicant's Initials

- _____ a. The level spreader shall be a minimum of ten feet in length.
- _____ b. Level spreaders that receive flow directly from a drainage area shall be sized based on the flow rate during the 0.75 inch per hour storm, with a flow bypass system for larger storm events; or a level spreader that receives flow from a SCM shall be sized based on the draw down rate of the design volume, with a flow bypass for larger storm events.
- _____ c. Pretreatment is provided via a forebay if receiving flow directly from a drainage area.
- _____ d. Immediately upslope of the level spreader, a blind swale or other method of ponding water is required.

- _____ e. The lip of the level spreader shall be at uniform elevation with a construction tolerance of plus or minus 0.25 inch at any point along its length.
- _____ f. Non-clumping, native, deep-rooted grasses are specified.
- _____ g. Downslope from the level spreader, there shall be a one to three-inch drop followed by a transition zone that is a minimum of 12 inches wide.
- _____ h. The minimum width of the filter strip shall be 30 feet, measured perpendicular to the level spreader lip. It shall contain no draws or channels.
- _____ i. A profile view of the LS-FS is provided.
- _____ j. A plan view of the LS-FS is provided with dimensions and spot elevations shown.

NOTE: Executed Stormwater Facility Operations and Maintenance Permit Agreement and payment of surety are required prior to Stormwater Permit issuance.