M.V.E., Inc.

October 5, 2026

El Paso County
Department of Public Works
2880 International Circle, Suite 110
Colorado Springs, CO 80910

Attn: Glenn Reese, PE, CFM
Principal Engineer - Stormwater

Re: **Townhomes at Western *(ASB2620)***
Stormwater Permanent Control Measures (PCM) – Engineer's Letter
M.V.E. Project No. 61203

add "Pond 1" name

Dear Mr. Reese:

The stormwater Permanent Control Measures (PCMs) for the Townhomes at Western project consists of one Full Spectrum Extended Basin located in Tract A, Townhomes at Western. The PCM includes the runoff storage impoundment area and earth embankments, concrete outlet structure with integrated micro-pool, two concrete forebays, concrete trickle channel, concrete and riprap emergency spillway, 18" diameter HDPE outlet pipe with HDPE flared end section, gravel access drive and riprap stilling basins with concrete level spreader. Based upon the information gathered in the field during periodic visits to the site, our final observation of the PCM on September 11, 2026, and review of the as-built survey data, M.V.E., Inc. is of the opinion that the Permanent Control Measures (PCMs) for the Townhomes at Western project have been constructed in general compliance with the approved Construction Plans and Grading and Erosion Control Plan prepared by M.V.E., Inc., as filed with the County.

The stage-storage values of the as-built PCM vary slightly from the MHFD Detention worksheet values contained in the approved Final Drainage Report. However, the as-built pond volume is within 0.8% of the design volume and the resulting adjusted MHFD pond routing calculations indicate satisfactory results. The updated MHFD calculations for the Extended Detention Basin storm flow routing based on the as-built survey data are attached.

Statement Of Engineer In Responsible Charge:
I, David R. Gorman, a registered Professional Engineer in the State of Colorado, in accordance with Sections 5.2 and 5.3 of the Bylaws and Rules of the State Board of Registration for Professional Engineers and Professional Land Surveyors, do hereby state and declare that I or a person under my responsible charge observed the constructed facilities of the above mentioned project. Based on the on-site field observations and review of pertinent documentation, it is my professional opinion that the Permanent Control Measures have been installed and are in general compliance with the approved Construction Plans as filed with the El Paso County.

COLORADO LICENSED
DAVID RAYMOND GORMAN
10/5/26
31672
PROFESSIONAL ENGINEER

David R. Gorman, P.E.
Colorado No. 31672
For and on Behalf of M.V.E., Inc.

Z:\61203\Documents\Certification Letters\61203 Town

Revise the PCM Certification Letter to include the required statements listed in ECM Section 5.10.6.B (something similar is even required for Runoff Reduction):

"The site and adjacent properties (as affected by work performed under the County permit) are stable with respect to settlement and subsidence, sloughing of cut and fill slopes, revegetation or other ground cover, and that the improvements (public improvements, common development improvements, site grading and paving) meet or exceed the minimum design requirements. The PCM(s) provide the required storage volume and meet the required release rates, stage areas, elevations, and outlet dimensions, as documented by the attached revised MHFD-Detention spreadsheet that shows the as-built conditions."

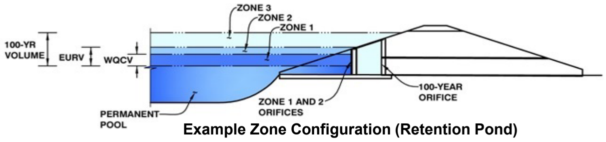
1903 Lelaray Street, Suite 200
Fax 719-63

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.06 (July 2022)

Project: **Townhomes at Western**

Basin ID: **FS-EDB Pond 1 - AsBuilt**



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	**EDB**	
Watershed Area =	5.22	acres
Watershed Length =	800	ft
Watershed Length to Centroid =	400	ft
Watershed Slope =	0.050	ft/ft
Watershed Imperviousness =	61.40%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	100.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	User Input	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	0.105	acre-feet		acre-feet
Excess Urban Runoff Volume (EURV) =	0.348	acre-feet		acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	0.308	acre-feet	1.19	inches
5-yr Runoff Volume (P1 = 1.5 in.) =	0.424	acre-feet	1.50	inches
10-yr Runoff Volume (P1 = 1.75 in.) =	0.523	acre-feet	1.75	inches
25-yr Runoff Volume (P1 = 2 in.) =	0.647	acre-feet	2.00	inches
50-yr Runoff Volume (P1 = 2.25 in.) =	0.753	acre-feet	2.25	inches
100-yr Runoff Volume (P1 = 2.52 in.) =	0.883	acre-feet	2.52	inches
500-yr Runoff Volume (P1 = 3.25 in.) =	1.201	acre-feet	3.25	inches
Approximate 2-yr Detention Volume =	0.268	acre-feet		
Approximate 5-yr Detention Volume =	0.362	acre-feet		
Approximate 10-yr Detention Volume =	0.465	acre-feet		
Approximate 25-yr Detention Volume =	0.502	acre-feet		
Approximate 50-yr Detention Volume =	0.523	acre-feet		
Approximate 100-yr Detention Volume =	0.569	acre-feet		

Define Zones and Basin Geometry

Zone 1 Volume (WQCV) =	0.105	acre-feet
Zone 2 Volume (EURV - Zone 1) =	0.244	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	0.221	acre-feet
Total Detention Basin Volume =	0.569	acre-feet
Initial Surcharge Volume (ISV) =	user	ft^3
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

Depth Increment = 0.25 ft

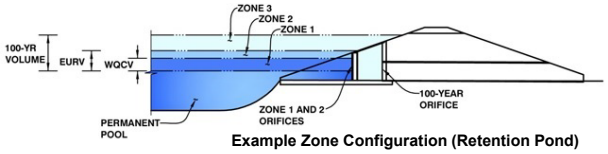
Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	10	0.000		
MP=6268.0	--	0.33	--	--	--	10	0.000	3	0.000
	--	1.00	--	--	--	468	0.011	163	0.004
	--	2.00	--	--	--	3,485	0.080	2,140	0.049
	--	3.00	--	--	--	7,818	0.179	7,791	0.179
	--	4.00	--	--	--	9,448	0.217	16,424	0.377
Spillway=6273.5	--	5.00	--	--	--	10,925	0.251	26,611	0.611
	--	6.00	--	--	--	12,423	0.285	38,285	0.879
Top Berm=6275.0	--	7.00	--	--	--	13,667	0.314	51,330	1.178
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DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: **Townhomes at Western**

Basin ID: **FS-EDB Pond 1 - AsBuilt**



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.53	0.105	Orifice Plate
Zone 2 (EURV)	3.87	0.244	Orifice Plate
Zone 3 (100-year)	4.84	0.221	Weir&Pipe (Restrict)
Total (all zones)		0.569	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Diameter =	N/A	inches	Underdrain Orifice Centroid =	N/A	feet

Calculated Parameters for Underdrain

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Centroid of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)	WQ Orifice Area per Row =	N/A	ft^2
Depth at top of Zone using Orifice Plate =	3.75	ft (relative to basin bottom at Stage = 0 ft)	Elliptical Half-Width =	N/A	feet
Orifice Plate: Orifice Vertical Spacing =	N/A	inches	Elliptical Slot Centroid =	N/A	feet
Orifice Plate: Orifice Area per Row =	N/A	sq. inches	Elliptical Slot Area =	N/A	ft^2

Calculated Parameters for Plate

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.25	2.50					
Orifice Area (sq. inches)	0.50	0.50	2.07					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected			Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Area =	N/A	N/A	ft^2
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Centroid =	N/A	N/A	feet
Vertical Orifice Diameter =	N/A	N/A	inches				

Calculated Parameters for Vertical Orifice

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

	Zone 3 Weir	Not Selected			Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	3.90	N/A	ft (relative to basin bottom at Stage = 0 ft)	Height of Grate Upper Edge, H_t =	3.90	N/A	feet
Overflow Weir Front Edge Length =	2.92	N/A	feet	Overflow Weir Slope Length =	3.50	N/A	feet
Overflow Weir Grate Slope =	0.00	N/A	H:V	Grate Open Area / 100-yr Orifice Area =	11.30	N/A	
Horiz. Length of Weir Sides =	3.50	N/A	feet	Overflow Grate Open Area w/o Debris =	7.11	N/A	ft^2
Overflow Grate Type =	Type C Grate	N/A		Overflow Grate Open Area w/ Debris =	3.56	N/A	ft^2
Debris Clogging % =	50%	N/A	%				

Calculated Parameters for Overflow Weir

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected			Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.33	N/A	ft (distance below basin bottom at Stage = 0 ft)	Outlet Orifice Area =	0.63	N/A	ft^2
Outlet Pipe Diameter =	18.00	N/A	inches	Outlet Orifice Centroid =	0.34	N/A	feet
Restrictor Plate Height Above Pipe Invert =	6.95		inches	Half-Central Angle of Restrictor Plate on Pipe =	1.34	N/A	radians

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	5.50	ft (relative to basin bottom at Stage = 0 ft)	Spillway Design Flow Depth=	0.40	feet
Spillway Crest Length =	20.00	feet	Stage at Top of Freeboard =	6.90	feet
Spillway End Slopes =	3.00	H:V	Basin Area at Top of Freeboard =	0.31	acres
Freeboard above Max Water Surface =	1.00	feet	Basin Volume at Top of Freeboard =	1.15	acre-ft

Calculated Parameters for Spillway

Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.25
CUHP Runoff Volume (acre-ft) =	0.105	0.348	0.308	0.424	0.523	0.647	0.753	0.883	1.201
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	0.308	0.424	0.523	0.647	0.753	0.883	1.201
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.6	1.7	2.6	4.6	5.7	7.1	10.5
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.12	0.33	0.49	0.87	1.09	1.37	2.01
Peak Inflow Q (cfs) =	N/A	N/A	5.6	7.7	9.2	11.6	13.5	16.1	21.6
Peak Outflow Q (cfs) =	0.1	0.1	0.1	0.7	1.8	4.3	6.1	6.5	7.0
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.4	0.7	0.9	1.1	0.9	0.7
Structure Controlling Flow =	Plate	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Outlet Plate 1
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	0.1	0.2	0.6	0.8	0.9	1.0
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	35	58	56	61	60	58	57	55	52
Time to Drain 99% of Inflow Volume (hours) =	**37**	63	60	66	65	65	64	63	61
Maximum Ponding Depth (ft) =	2.53	3.87	3.58	3.99	4.09	4.24	4.34	4.59	5.35
Area at Maximum Ponding Depth (acres) =	0.13	0.21	0.20	0.22	0.22	0.23	0.23	0.24	0.26
Maximum Volume Stored (acre-ft) =	0.105	0.349	0.287	0.375	0.395	0.430	0.450	0.509	0.698