



Drexel, Barrell & Co.

April 2, 2026

Engineers/Surveyors

**Colorado Springs
Lafayette**

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El Paso County
Department of Public Works
3275 Akers Drive
Colorado Springs, CO 80922

Attn: Brad Walters

RE: Falcon Marketplace Filing No. 1
Certification Letter

Mr. Walters,

Based upon information gathered from periodic site visits during significant/key phases of the project development, Drexel, Barrell & Co., is of the opinion that the subdivision improvements for Falcon Marketplace Filing No. 1 have been constructed in general conformance with the approved design plans as filed with El Paso County.

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.

Drainage improvements for the site consist of a sub-regional Extended Detention Basin, and two Water Quality facilities. This statement is specifically related to the sub-regional Extended Detention Basin (Pond SR4). Pond SR4 has been constructed in general compliance with the approved Erosion Control and Stormwater Quality Plan. The facility provides the required storage volume and meets the required release rate as documented by the attached MHFD design forms. The Engineering Record Drawings accurately depict the installation of the facility and verify the detention volume provided.

Tim D. McConnell, P.E.
Colorado No. 33797



DETENTION VOLUME BY THE FULL SPECTRUM

Project: Falcon Marketplace
Basin ID: North Pond 1 (SR4) - AS BUILT

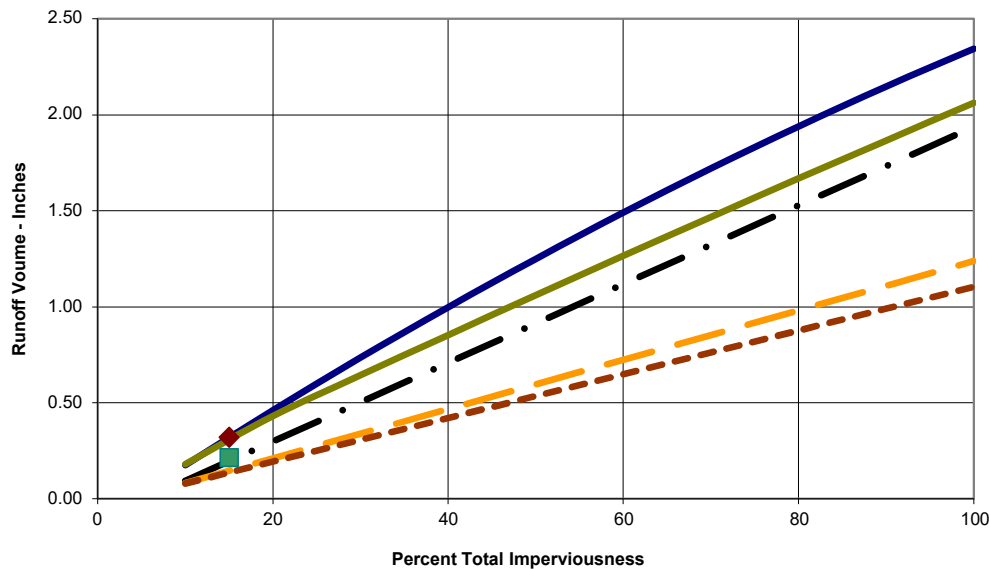
* User input data shown in blue.

Area of Watershed (acres)	740.00	
Subwatershed Imperviousness	15.0%	
Level of Minimizing Directly Connected Impervious Area (MDCIA)	0	0
Effective Imperviousness ¹	15.0%	
Hydrologic Soil Type	Percentage of Area	Area (acres)
Type A	100.0%	740.0
Type B		0.0
Type C or D		0.0

Recommended Horton's Equation Parameters for CUHP		
Infiltration (inches per hour)		Decay Coefficient-- α
Initial-- f_i	Final-- f_o	
5	1.0	0.0007
Detention Volumes ^{2,5}		Maximum Allowable Release Rate, cfs ³
(watershed inches)	(acre-feet)	
0.22	13.30	Design Outlet to Empty EURV in 72 Hours
0.32	19.72	370.00

Excess Urban Runoff Volume⁴

100-year Detention Volume Including WQCV⁵

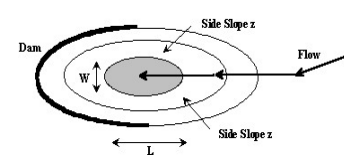


Notes:

- 1) Effective imperviousness is based on Figure ND-1 of the Urban Storm Drainage Criteria Manual (USDCM).
- 2) Results shown reflect runoff reduction from Level 1 or 2 MDCIA and are plotted at the watershed's total imperviousness value; the impact of MDCIA is reflected by the results being below the curves.
- 3) Maximum allowable release rates for 100-year event are based on Table SO-1. Outlet for the Excess Urban Runoff Volume (EURV) to be designed to empty out the EURV in 72 hours. Outlet design is similar to one for the WQCV outlet of an extended detention basin (i.e., perforated plate with a micro-pool) and extends to top of EURV water surface elevation.
- 4) EURV approximates the difference between developed and pre-developed runoff volume.
- 5) 100-yr detention volume includes EURV. No need to add more volume for WQCV or EURV

STAGE-STORAGE SIZING FOR DETENTION BASINS

Basin ID: NORTH POND 1 (SR4) - AS BUILT



Check Basin Shape

Right Triangle		OR...
Isosceles Triangle		OR...
Rectangle		OR...
Circle / Ellipse		OR...
Irregular		(Use Override values in cells G32:G52)

Storage Requirement from Sheet 'Modified FAA':
Storage Requirement from Sheet 'Hydrograph':
Storage Requirement from Sheet 'Full-Spectrum':

MINOR	MAJOR	
		acre-ft.
		acre-ft.
13.30	19.72	acre-ft.

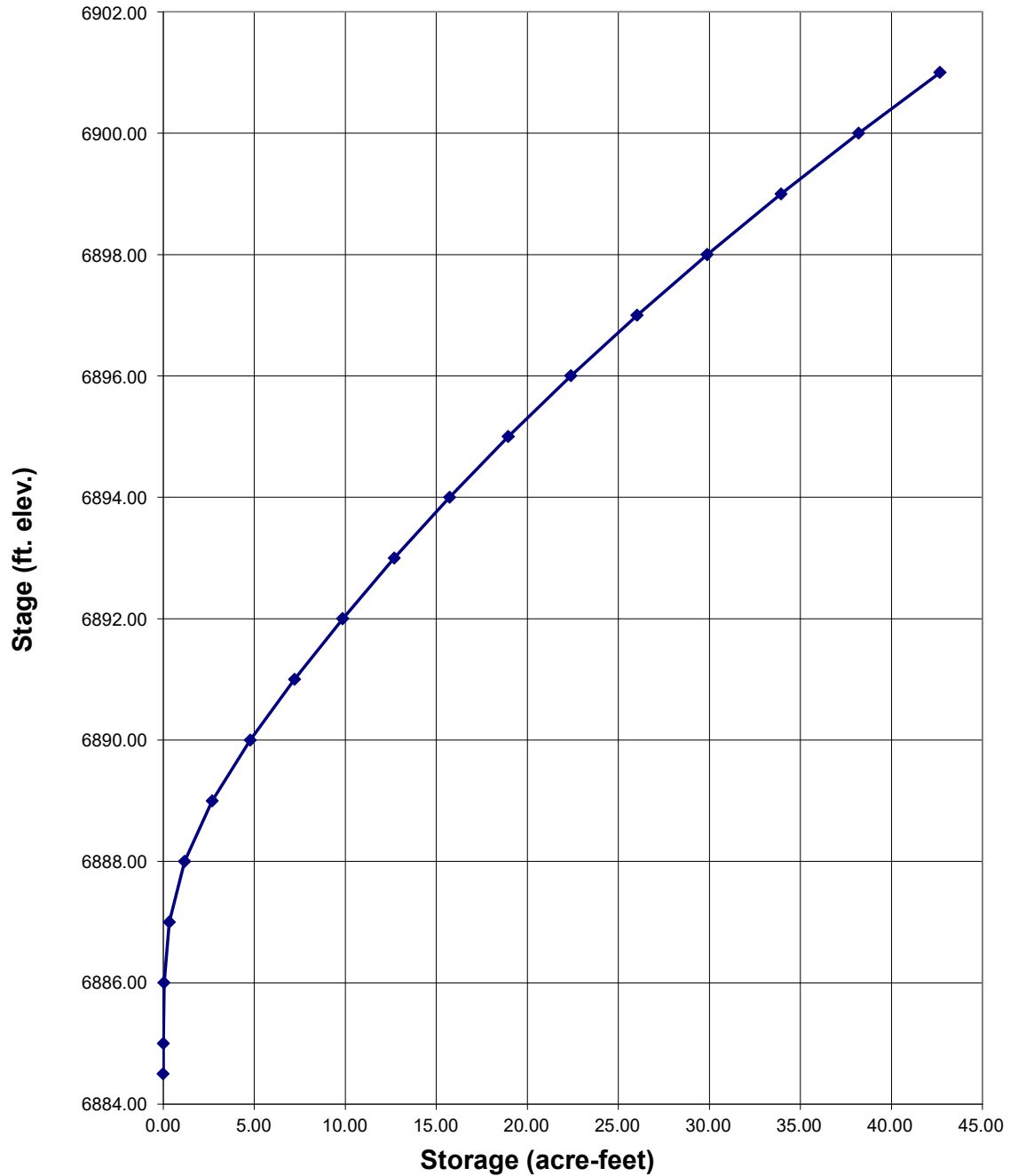
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STAGE-STORAGE SIZING FOR DETENTION BASINS

Project: _____

Basin ID: _____

STAGE-STORAGE CURVE FOR THE POND



STAGE-DISCHARGE SIZING OF THE WATER QUALITY CAPTURE VOLUME (WQCV) OUTLET	
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Project: **FALCON MARKETPLACE**

Basin ID: **NORTH POND 1 (SR4) - AS BUILT**

WQCV Design Volume (Input):

OR

Watershed Design Information (Input):

Perforated Plate Examples

Outlet Design Information (Output): Excess Urban Runoff Volume (From "Full-Spectrum Sheet") 0.216 watershed inches

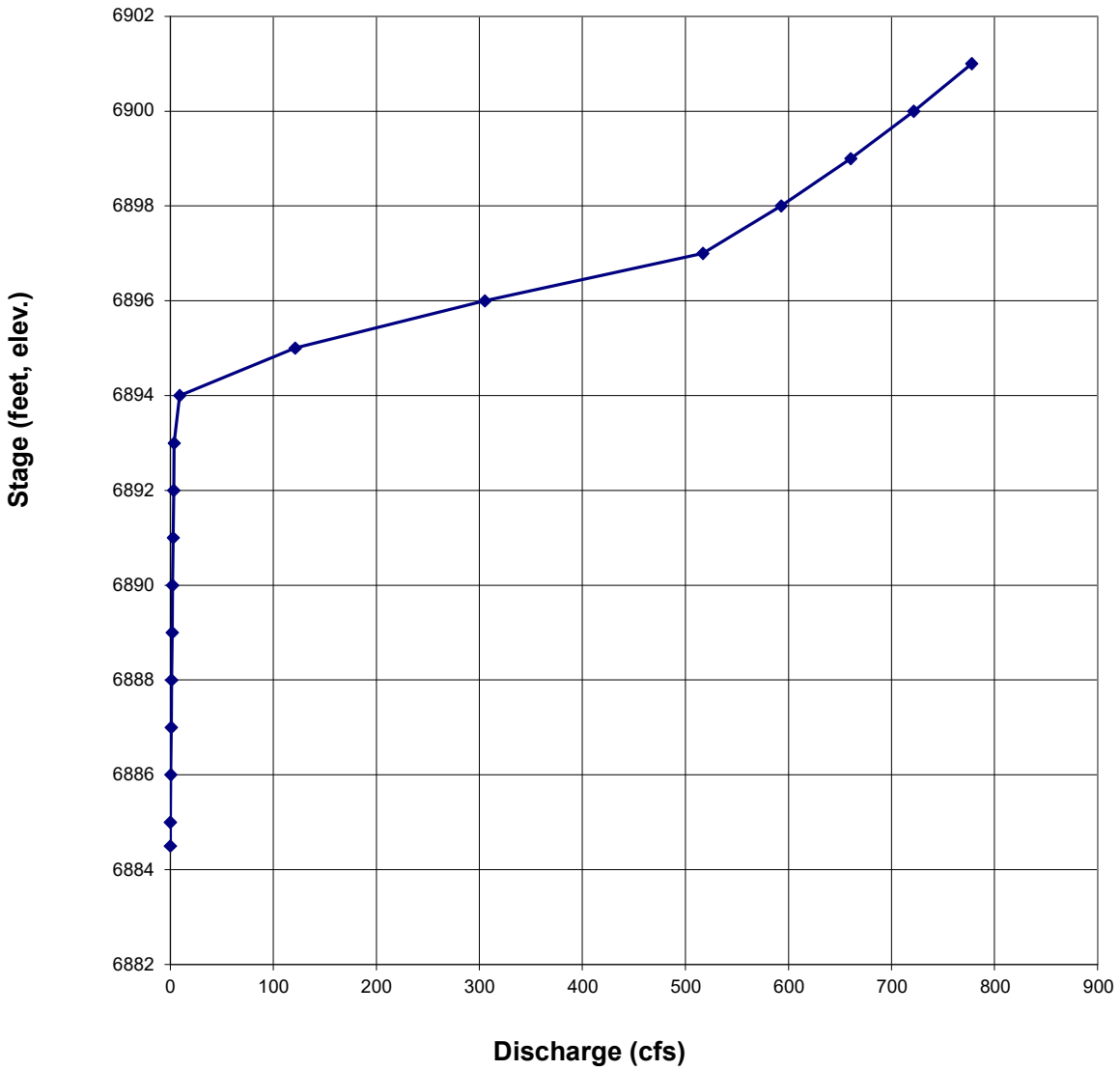
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STAGE-DISCHARGE SIZING OF THE WEIRS AND ORIFICES (INLET CONTROL)

Project: Falcon Marketplace #1

Basin ID: NORTH POND #1

STAGE-DISCHARGE CURVE FOR THE OUTLET STRUCTURE



Project: **FALCON MARKETPLACE**
Basin ID: **NORTH POND #1**

Circular Culvert: Barrel Diameter in Inches
Circular Culvert: Inlet Edge Type (choose from pull-down list)

Box Culvert: Barrel Height (Rise) in Feet
Box Culvert: Barrel Width (Span) in Feet
Box Culvert: Inlet Edge Type (choose from pull-down list)

D = 96 in.
Grooved End with Headwall

Height (Rise) =		ft.
Width (Span) =		ft.
Square Edge w/ 90-15 deg. Flared Wingwall		

No =	1	
I_{elev} =	6881.94	ft. elev.
O_{elev} =	6880.96	ft. elev.
L =	83.8	ft.
n =	0.0120	
K_b =	0.00	
K_x =	1.00	

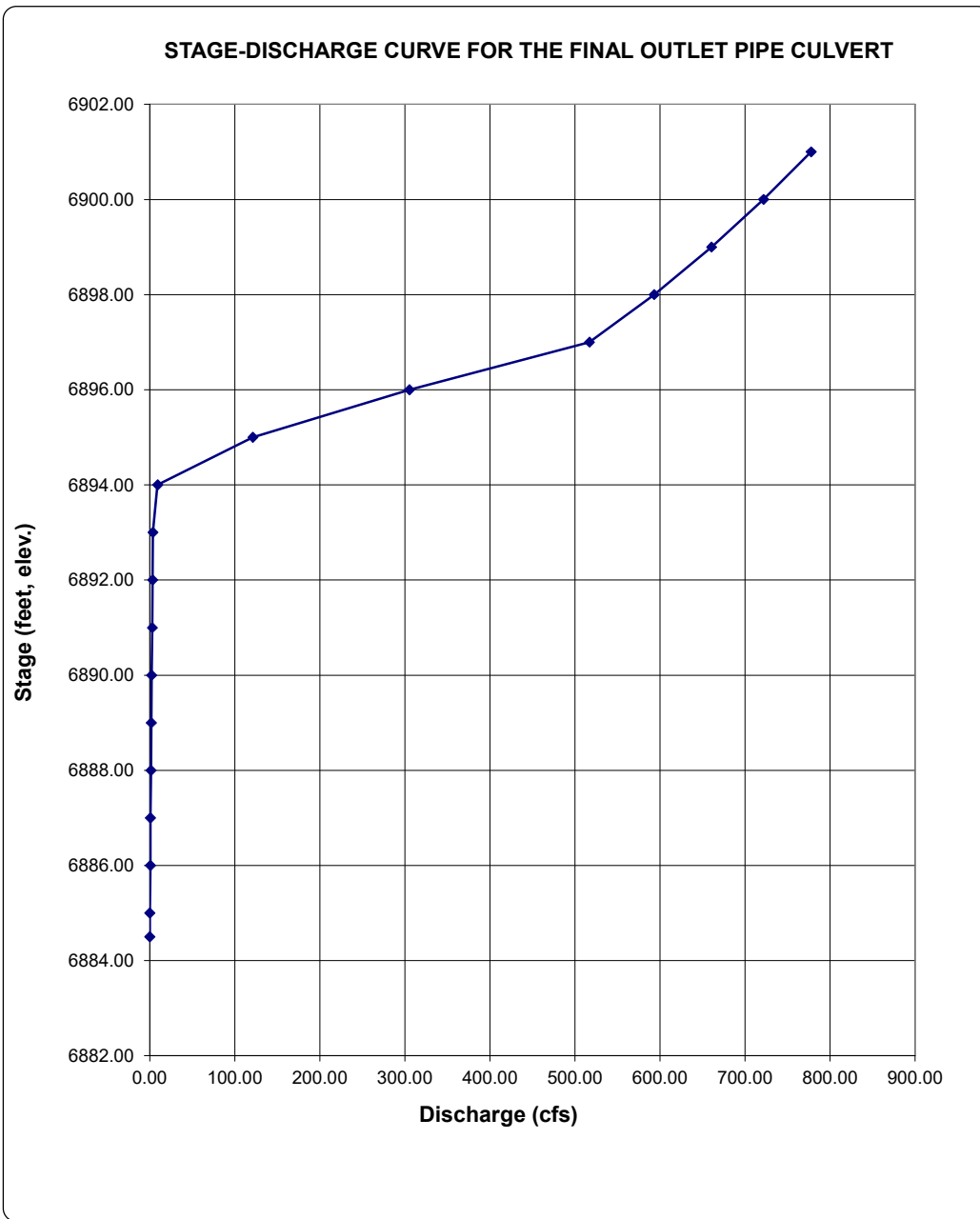
Entrance Loss Coefficient
Friction Loss Coefficient
Sum of All Loss Coefficients
Orifice Inlet Condition Coefficient
Minimum Energy Condition Coefficient

$K_e =$	0.20
$K_f =$	0.13
$K_s =$	1.33
$C_d =$	0.99
$KE_{low} =$	-0.04

[illegible]

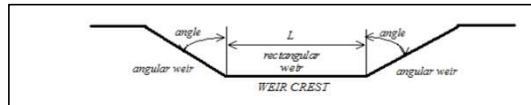
STAGE-DISCHARGE SIZING OF THE OUTLET CULVERT (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: **FALCON MARKETPLACE**
Basin ID: **NORTH POND #1**



STAGE-DISCHARGE SIZING OF THE SPILLWAY

Basin ID: NORTH POND #1



Design Information (input):

L =	160.00	feet
Angle =	75.96	degrees
EL. Crest =	6,898.00	feet
C _w =		
C _t =	3.50	

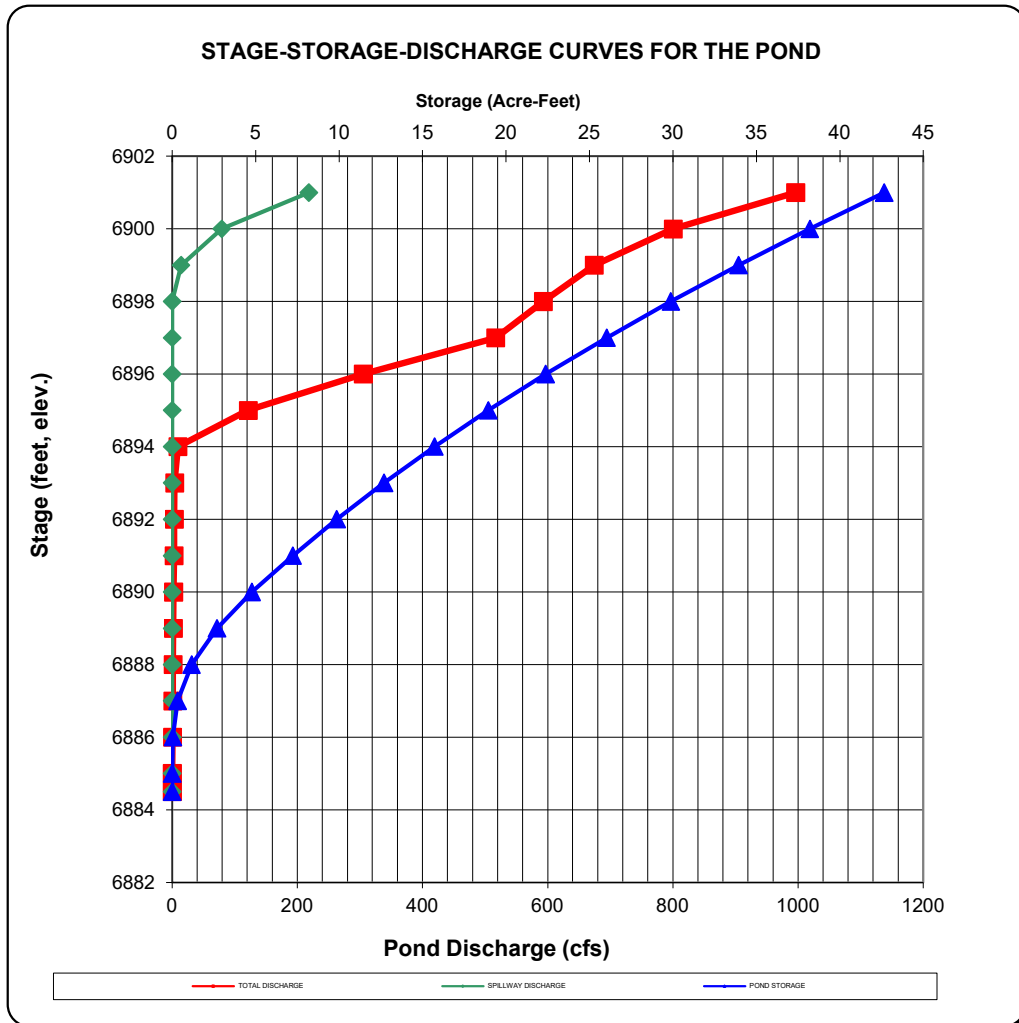
Calculation of Spillway Capacity (output):

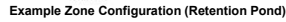
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STAGE-DISCHARGE SIZING OF THE SPILLWAY

Project: FALCON MARKETPLACE

Basin ID: NORTH POND #1





Area > 1 sq.mi. for WQ Facility

Optional User Overrides

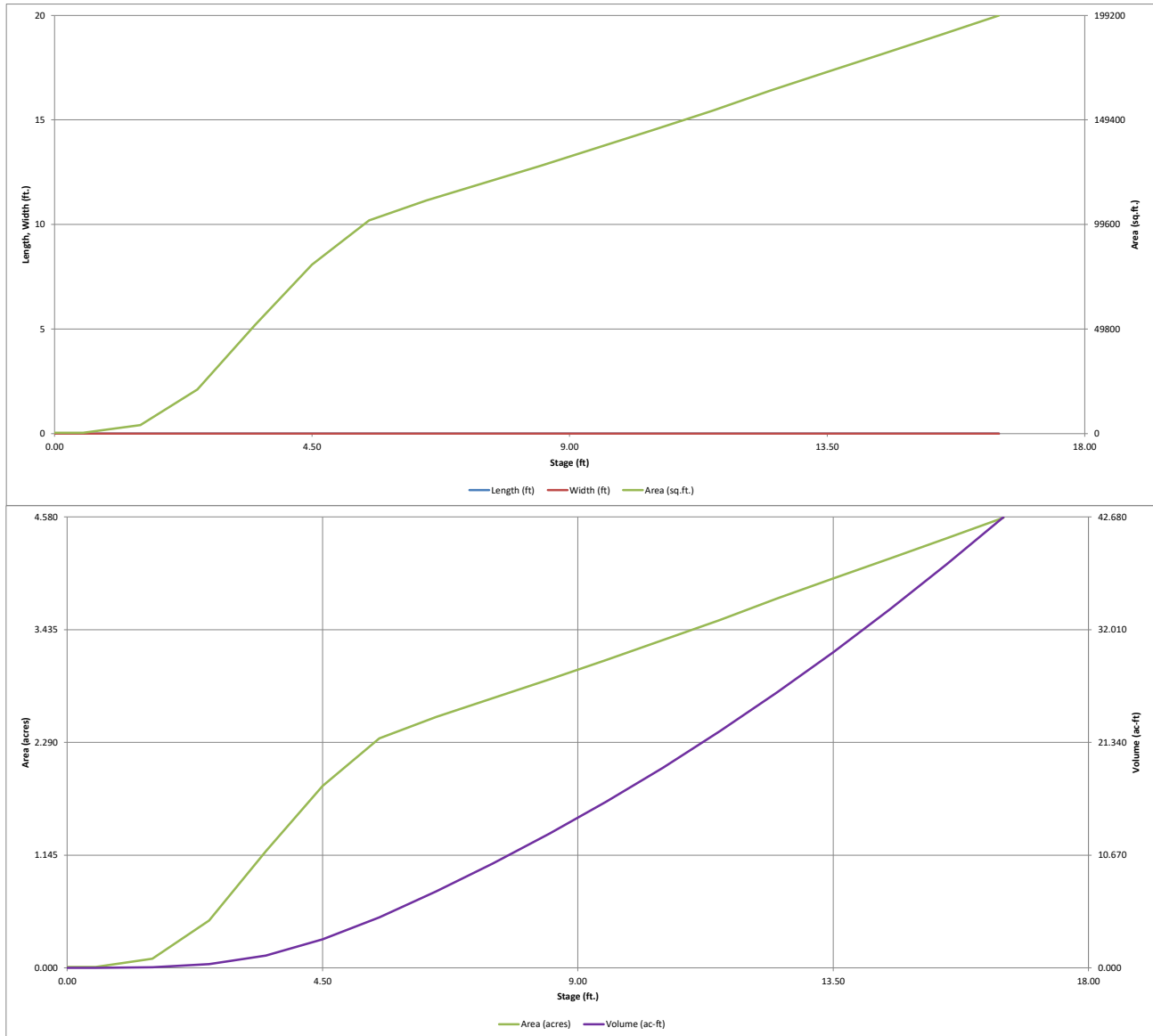
	acre-feet
	acre-feet
0.95	inches
1.22	inches
1.48	inches
1.86	inches
2.19	inches
2.54	inches
3.46	inches

Initial Surcharge Area (A_{ISV}) =	user	ft ²
Surcharge Volume Length (L_{ISV}) =	user	ft
Surcharge Volume Width (W_{ISV}) =	user	ft
Depth of Basin Floor (H_{FLOOR}) =	user	ft
Length of Basin Floor (L_{FLOOR}) =	user	ft
Width of Basin Floor (W_{FLOOR}) =	user	ft
Area of Basin Floor (A_{FLOOR}) =	user	ft ²
Volume of Basin Floor (V_{FLOOR}) =	user	ft ³
Depth of Main Basin (H_{MAIN}) =	user	ft
Length of Main Basin (L_{MAIN}) =	user	ft
Width of Main Basin (W_{MAIN}) =	user	ft
Area of Main Basin (A_{MAIN}) =	user	ft ²
Volume of Main Basin (V_{MAIN}) =	user	ft ³
Calculated Total Basin Volume (V_{TOTAL}) =	user	acre-feet

[illegible]

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

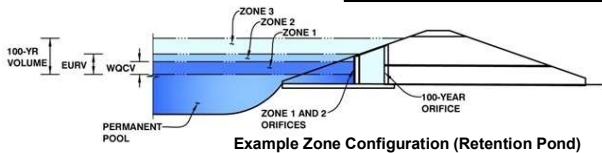
MHFD-Detention, Version 4.08 (April 2026)



DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.08 (April 2026)

Project: **Falcon Marketplace**
Basin ID: **Pond SR4 (AS BUILT)**



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	5.91	5.753	Orifice Plate
Zone 2 (EURV)	7.23	3.383	Orifice Plate
Zone 3 (100-year)	11.78	14.230	Weir&Pipe (Circular)
Total (all zones)		23.366	

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

Underdrain Orifice Invert Depth = ft (distance below the filtration media surface)
Underdrain Orifice Diameter = inches

Calculated Parameters for Underdrain
Underdrain Orifice Area = ft²
Underdrain Orifice Centroid = feet

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

Centroid of Lowest Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = inches
Orifice Plate: Orifice Area per Row = sq. inches

Calculated Parameters for Plate
WQ Orifice Area per Row = ft²
Elliptical Half-Width = feet
Elliptical Slot Centroid = feet
Elliptical Slot Area = ft²

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)	0.62	3.12	5.62					
Orifice Area (sq. inches)	19.60	19.60	19.60					

	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)

Invert of Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = inches

Calculated Parameters for Vertical Orifice
Vertical Orifice Area = ft²
Vertical Orifice Centroid = feet

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

Overflow Weir Front Edge Height, H_o = ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = feet
Overflow Weir Grate Slope = H:V
Horiz. Length of Weir Sides = feet
Overflow Grate Type =
Debris Clogging % = %

Calculated Parameters for Overflow Weir
Height of Grate Upper Edge, H_u = feet
Overflow Weir Slope Length = feet
Grate Open Area / 100-yr Orifice Area =
Overflow Grate Open Area w/o Debris = ft²
Overflow Grate Open Area w/ Debris = ft²

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

Depth to Invert of Outlet Pipe = ft (distance below basin bottom at Stage = 0 ft)
Circular Orifice Diameter = inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate
Outlet Orifice Area = ft²
Outlet Orifice Centroid = feet
Half-Central Angle of Restrictor Plate on Pipe = radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = feet
Spillway End Slopes = H:V
Freeboard above Max Water Surface = feet

Calculated Parameters for Spillway
Spillway Design Flow Depth = feet
Stage at Top of Freeboard = feet
Basin Area at Top of Freeboard = acres
Basin Volume at Top of Freeboard = acre-ft

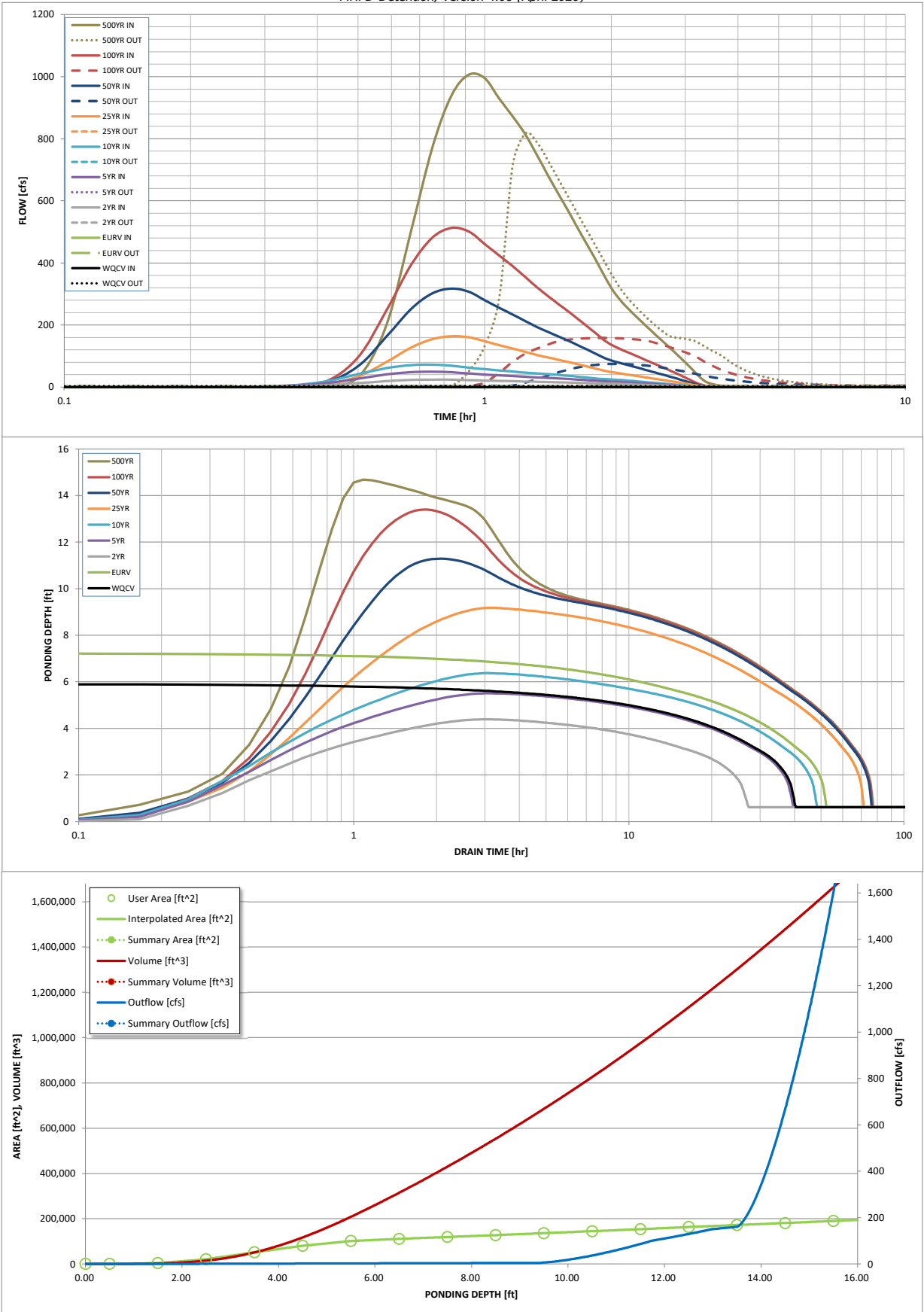
Routed Hydrograph Results

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

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period =	N/A	N/A	0.95	1.22	1.48	1.86	2.19	2.54	3.46
One-Hour Rainfall Depth (in) =	N/A	N/A	0.95	1.22	1.48	1.86	2.19	2.54	3.46
CUHP Runoff Volume (acre-ft) =	5.753	9.136	2.939	5.366	7.610	15.737	29.320	47.244	96.719
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	2.939	5.366	7.610	15.737	29.320	47.244	96.719
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	2.2	11.2	19.7	74.5	218.0	404.0	888.7
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.00	0.02	0.03	0.10	0.29	0.55	1.20
Peak Inflow Q (cfs) =	N/A	N/A	24.3	49.5	72.4	163.9	317.0	512.5	1006.1
Peak Outflow Q (cfs) =	2.9	3.8	2.0	2.5	3.3	4.8	74.6	158.6	817.1
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.2	0.2	0.1	0.3	0.4	0.9
Structure Controlling Flow =	Plate	Plate	Plate	Plate	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Spillway
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	1.0	2.3	2.6
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) =	37	48	25	37	44	64	64	60	51
Time to Drain 99% of Inflow Volume (hours) =	39	50	26	38	47	68	71	70	64
Maximum Ponding Depth (ft) =	5.91	7.23	4.39	5.51	6.37	9.18	11.29	13.41	14.69
Area at Maximum Ponding Depth (acres) =	2.42	2.69	1.78	2.33	2.52	3.06	3.49	3.93	4.20
Maximum Volume Stored (acre-ft) =	5.760	9.138	2.495	4.786	6.897	14.713	21.623	29.495	34.698

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.08 (April 2026)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

DETENTION BASIN OUTLET STRUCTURE DESIGN

Outflow Hydrograph Workbook Filename:

Inflow Hydrographs

The user can override the calculated inflow hydrographs from this workbook with inflow hydrographs developed in a separate program.

	SOURCE	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP
Time Interval	TIME	WQCV [cfs]	EURV [cfs]	2 Year [cfs]	5 Year [cfs]	10 Year [cfs]	25 Year [cfs]	50 Year [cfs]	100 Year [cfs]	500 Year [cfs]
5.00 min	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.33
	0:15:00	0.00	0.00	0.29	0.62	0.86	0.68	1.03	1.02	2.22
	0:20:00	0.00	0.00	2.00	3.14	4.07	3.01	4.01	4.33	7.18
	0:25:00	0.00	0.00	6.23	12.20	18.16	9.08	14.09	17.29	31.75
	0:30:00	0.00	0.00	12.82	27.37	41.54	34.12	67.13	96.01	198.11
	0:35:00	0.00	0.00	19.11	40.74	61.03	80.82	161.86	245.71	495.83
	0:40:00	0.00	0.00	22.96	47.91	70.86	126.57	250.14	390.78	769.14
	0:45:00	0.00	0.00	24.32	49.51	72.45	154.26	301.76	480.79	938.63
	0:50:00	0.00	0.00	23.88	47.72	69.21	163.91	317.01	512.48	1006.12
	0:55:00	0.00	0.00	22.61	43.87	62.75	160.55	306.99	500.96	994.97
	1:00:00	0.00	0.00	21.19	40.52	57.78	147.87	279.86	461.00	928.84
	1:05:00	0.00	0.00	20.16	37.94	53.85	135.09	255.43	423.32	871.34
	1:10:00	0.00	0.00	19.10	35.41	50.01	124.26	233.73	389.59	813.55
	1:15:00	0.00	0.00	18.09	33.17	46.72	113.54	212.68	354.26	746.41
	1:20:00	0.00	0.00	17.18	31.37	44.26	103.46	193.26	321.14	680.42
	1:25:00	0.00	0.00	16.36	29.72	41.87	95.31	177.38	292.81	621.26
	1:30:00	0.00	0.00	15.54	28.00	39.25	87.99	162.91	267.19	564.90
	1:35:00	0.00	0.00	14.73	26.24	36.48	80.80	148.83	242.82	511.06
	1:40:00	0.00	0.00	13.92	24.40	33.63	73.78	135.06	219.64	460.89
	1:45:00	0.00	0.00	13.11	22.48	30.81	66.87	121.46	196.84	411.97
	1:50:00	0.00	0.00	12.38	20.58	28.15	60.08	108.12	174.49	364.37
	1:55:00	0.00	0.00	11.72	19.05	26.15	53.60	95.38	153.14	319.34
	2:00:00	0.00	0.00	11.12	17.97	24.78	48.45	85.76	136.78	286.03
	2:05:00	0.00	0.00	10.47	16.93	23.37	44.65	78.77	124.90	260.50
	2:10:00	0.00	0.00	9.69	15.72	21.70	41.27	72.68	114.76	238.09
	2:15:00	0.00	0.00	8.83	14.39	19.86	37.89	66.75	105.26	217.36
	2:20:00	0.00	0.00	7.98	13.04	17.99	34.59	60.96	96.09	197.86
	2:25:00	0.00	0.00	7.17	11.72	16.17	31.39	55.31	87.20	179.16
	2:30:00	0.00	0.00	6.42	10.48	14.43	28.28	49.82	78.62	161.34
	2:35:00	0.00	0.00	5.73	9.32	12.82	25.33	44.56	70.42	144.55
	2:40:00	0.00	0.00	5.08	8.21	11.27	22.46	39.40	62.35	128.10
	2:45:00	0.00	0.00	4.45	7.14	9.78	19.66	34.33	54.37	111.83
	2:50:00	0.00	0.00	3.86	6.12	8.36	16.91	29.33	46.44	95.66
	2:55:00	0.00	0.00	3.29	5.13	6.97	14.21	24.39	38.56	79.55
	3:00:00	0.00	0.00	2.73	4.16	5.61	11.53	19.48	30.72	63.51
	3:05:00	0.00	0.00	2.20	3.25	4.32	8.91	14.65	22.97	47.60
	3:10:00	0.00	0.00	1.75	2.43	3.14	6.39	9.96	15.42	32.15
	3:15:00	0.00	0.00	1.42	1.93	2.49	4.12	5.94	9.00	19.82
	3:20:00	0.00	0.00	1.20	1.63	2.12	2.79	3.85	5.51	13.02
	3:25:00	0.00	0.00	1.03	1.39	1.82	2.14	2.84	3.80	8.94
	3:30:00	0.00	0.00	0.89	1.19	1.56	1.72	2.24	2.77	6.17
	3:35:00	0.00	0.00	0.76	1.02	1.33	1.39	1.77	2.07	4.24
	3:40:00	0.00	0.00	0.64	0.86	1.13	1.15	1.43	1.53	2.84
	3:45:00	0.00	0.00	0.54	0.71	0.94	0.94	1.14	1.13	1.82
	3:50:00	0.00	0.00	0.45	0.59	0.77	0.76	0.90	0.86	1.23
	3:55:00	0.00	0.00	0.37	0.48	0.63	0.62	0.73	0.70	0.95
	4:00:00	0.00	0.00	0.29	0.38	0.50	0.50	0.58	0.56	0.75
	4:05:00	0.00	0.00	0.23	0.30	0.39	0.39	0.46	0.45	0.59
	4:10:00	0.00	0.00	0.17	0.22	0.30	0.30	0.35	0.34	0.46
	4:15:00	0.00	0.00	0.13	0.16	0.22	0.23	0.26	0.26	0.34
	4:20:00	0.00	0.00	0.09	0.11	0.16	0.16	0.19	0.18	0.24
	4:25:00	0.00	0.00	0.05	0.07	0.10	0.11	0.12	0.12	0.15
	4:30:00	0.00	0.00	0.03	0.04	0.06	0.06	0.07	0.07	0.09
	4:35:00	0.00	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.04
	4:40:00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
	4:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00