Carriage Hill - Volcanoe Valley Miniture Golf
Revised CH 17 calcs due to redirection of SR 747 drainage

MSP No. 04476.06
DATE 7/31/2023

DESIGN FREQ = 100 YEAR
A = 290
B = 31

STRUCTURE	STA	Tc	INTEN	AREA	SUMAREA	C	A x C	SUM A x C	Q	D	S	n	CAP	VEL	LENGTH	Tp	INV IN	INV OUT	TOP EL	DEPTH	TYPE
651		10.00	7.07	4.60	4.60	0.80	3.6800	3.6800	26.03	36	0.008	0.013	59.66	8.44	36	0.07		777.65	782.5		Ex CB 2-4
652	10+00	10.07	7.06	0.25	4.85	0.60	0.1500	3.8300	27.04	36	0.008	0.013	59.66	8.44	23	0.05	777.36	777.36	783.40	6.04	Ex CB 3
653	10+00	10.12	7.05	0.53	5.38	0.66	0.3498	4.1798	29.48	36	0.008	0.013	59.66	8.44	30	0.06	777.18	777.18	783.40	6.22	Ex CB 3
654		10.18	7.04	0.00	5.38	0.00	0.0000	4.1798	29.44	36	0.008	0.013	59.66	8.44	75	0.15	776.94	776.94	784.0	7.06	Ex CB 2-4
655		10.32	7.02	0.15	8.36	0.66	0.0990	6.5145	45.72	36	0.008	0.013	59.66	8.44	82	0.16	776.34	776.34	784.0	7.66	Ex CB 2-4
656																	775.68				Ex HW
301		10.00	7.07	2.83	2.83	0.79	2.2357	2.2357	15.81	18	0.02	0.013	14.86	8.41	92	0.18	782.05	781.17	787.67	6.50	EX CB
655																	779.33				
Design Frequency 10 year																					
301		10.00	5.15	2.83	2.83	0.79	2.2357	2.2357	11.52	18	0.02	0.013	14.86	8.41	92	0.18	782.05	781.17	787.67	6.50	EX CB
655																	779.33				

651
DA=4.60 AC.
C=0.80

652
DA=0.25 AC.
C=0.60

653
DA=0.35 AC.
C=0.66

654
DA=0.12 AC.
C=0.66

655
DA=0.36 AC.
C=0.66

301
DA=2.35 AC.
C=0.80

741
DA 0.61AC.
C= 0.54

100 Yr=26.03 CFS
(as shown)
(4)48"x6"
windows=27.24 CFS
@0.75' depth

100 Yr=1.27 CFS
(as shown)
CB3 grate&inlet=1.9 CFS
@0.1' depth

100 Yr=1.63 CFS
(as shown)
CB3 grate&inlet=1.9 CFS
@0.1' depth

100 Yr=0.56 CFS
(as shown)
CB4 grate=0.6 CFS
@0.1' depth

100 Yr=1.68 CFS
(as shown)
CB4 grate=1.8 CFS
@0.2' depth

100 Yr=15.81 CFS
(as shown)
CB3 curb inlet=8.9 CFS
CB3 grate=7.0 CFS both
@0.6' depth

PROPOSED VOLCANO VALLEY
MINI GOLF

SR 747 PRINCETON GLENDALE ROAD

BREEDERS CUP CIRCLE

WINNERS CIRCLE DRIVE

Infield Circle (Private)

EX. STORM CULVER

EASEMENT FOR STORM WATER RETENTION/DETENTION

WINDING CREEK
AKA CARRIAGE HILL
EXISTING STORM SEWER
301, 651-655

SECTION 2, TOWN 2, RANGE 3
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO
STORM SEWER DRAINAGE MAP

SCALE IN FEET
0 25 50 100 150

McGill Smith Punshon, Inc.
3700 Park 42 Drive ▪ Suite 190B
Cincinnati, Ohio 45241-2097
Tel 513.759.0004 ▪ Fax 513.563.7099
www.mcgillsmithpunshon.com
Engineers ▪ Architects ▪ Surveyors ▪ Landscape Architects ▪ Planners

Drawn By	NAK	Date	07/31/17	Project No.	04476.23
Project Mgr.	RA	Scale	1"=50'	Points D.B.	04476
CAD	04476234-IMP-00-SECTION 17	X-Ref.		04476063-TOP-2014 MAY 14	

Sheet No. 1/1
File No. 04-476

N:\land projects\04000\04476\dwg\04476234-IMP-00-SECTION 17.dwg, EX-STM-Sect 17, 8/1/2023 8:54:49 AM, bernard

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 08 / 2 / 2023

Pond No. 1 - <New Pond>

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 782.70 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	782.70	00	0	0
0.50	783.20	21	3	3
0.75	783.45	50	9	12
1.00	783.70	90	17	29
1.30	784.00	150	36	65

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	6.00	0.00	0.00
Span (in)	= 36.00	48.00	0.00	0.00
No. Barrels	= 1	4	0	0
Invert El. (ft)	= 777.65	782.70	0.00	0.00
Length (ft)	= 36.00	0.50	0.00	0.00
Slope (%)	= 0.80	0.50	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

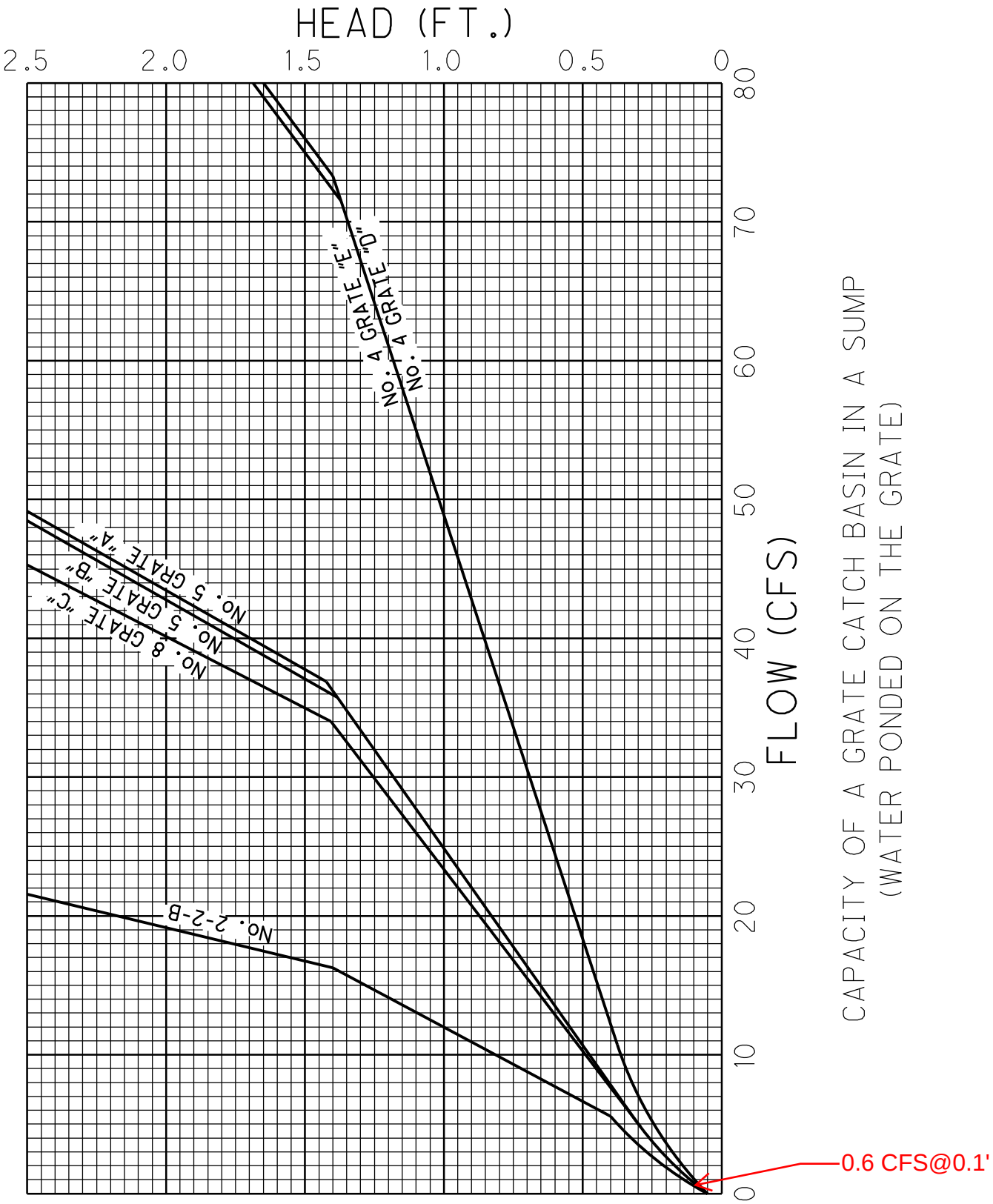
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	782.70	0.00	0.00	---	---	---	---	---	---	---	---	0.000
0.50	3	783.20	64.12 ic	19.26 ic	---	---	---	---	---	---	---	---	19.26
0.75	12	783.45	64.12 ic	27.24 ic	---	---	---	---	---	---	---	---	27.24
1.00	29	783.70	64.12 ic	33.36 ic	---	---	---	---	---	---	---	---	33.36
1.30	65	784.00	64.12 ic	39.47 ic	---	---	---	---	---	---	---	---	39.47

Check with Orifice Equation:
Cd*(#*w*d)*(2g)^0.5*(h)^0.5=Q
0.61*((4)*4ft*0.5ft)*(2*32.2ft/s/s)^0.5*(0.5ft)^0.5=27.69CFS

CAPACITY OF A GRATE CATCH BASIN IN A SUMP

1102-1

REFERENCE SECTION
1102.3.5

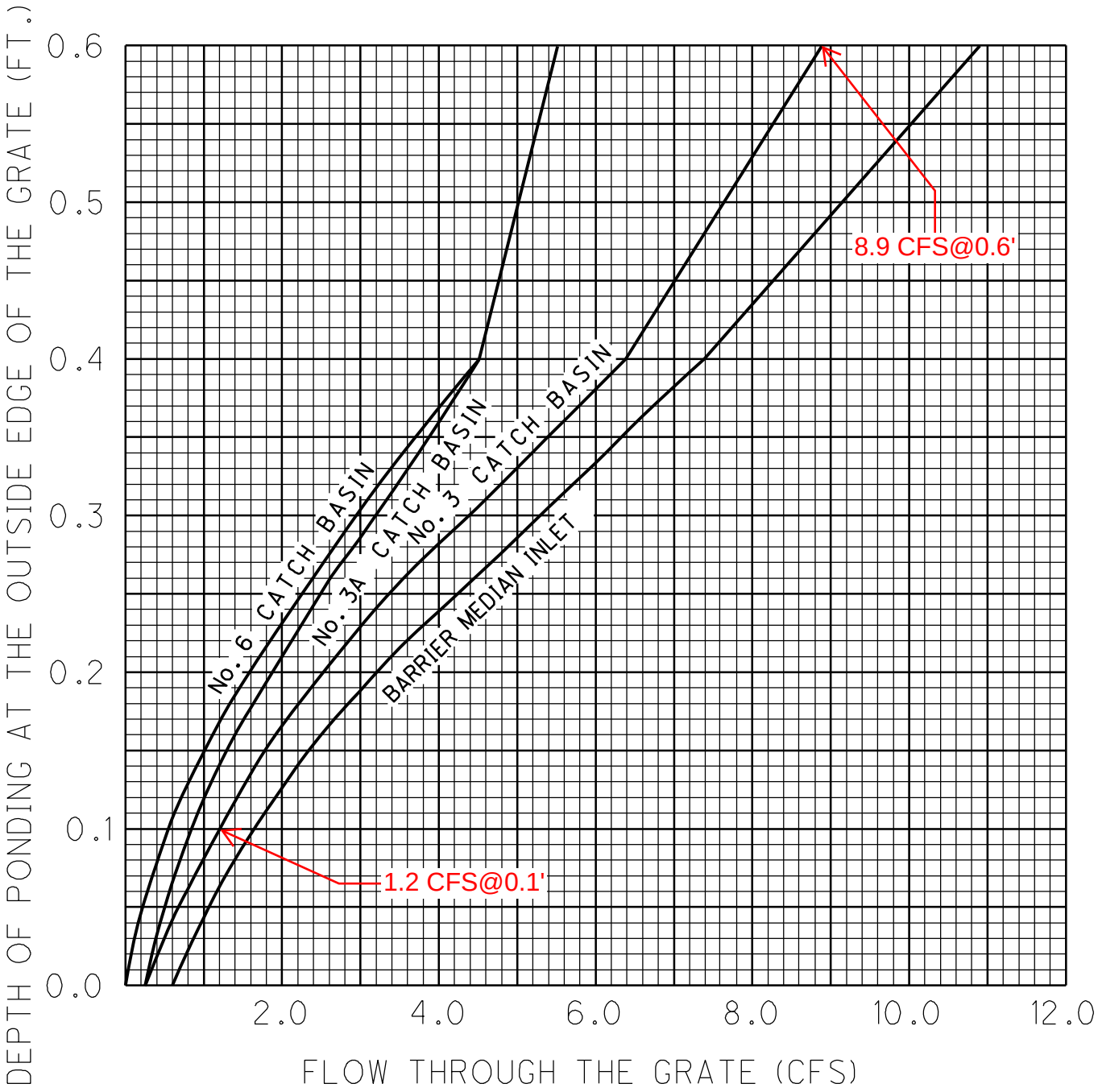


Revised July, 1999

CAPACITY OF STANDARD CATCH BASIN GRATES IN PAVEMENT SAGS

1103-3

REFERENCE SECTION
1103.6, 1103.7



Revised July, 1999

CAPACITY OF STANDARD INLETS AND CATCH BASINS IN PAVEMENT SAGS

1103-4

REFERENCE SECTION
1103.7

