

APPROVED

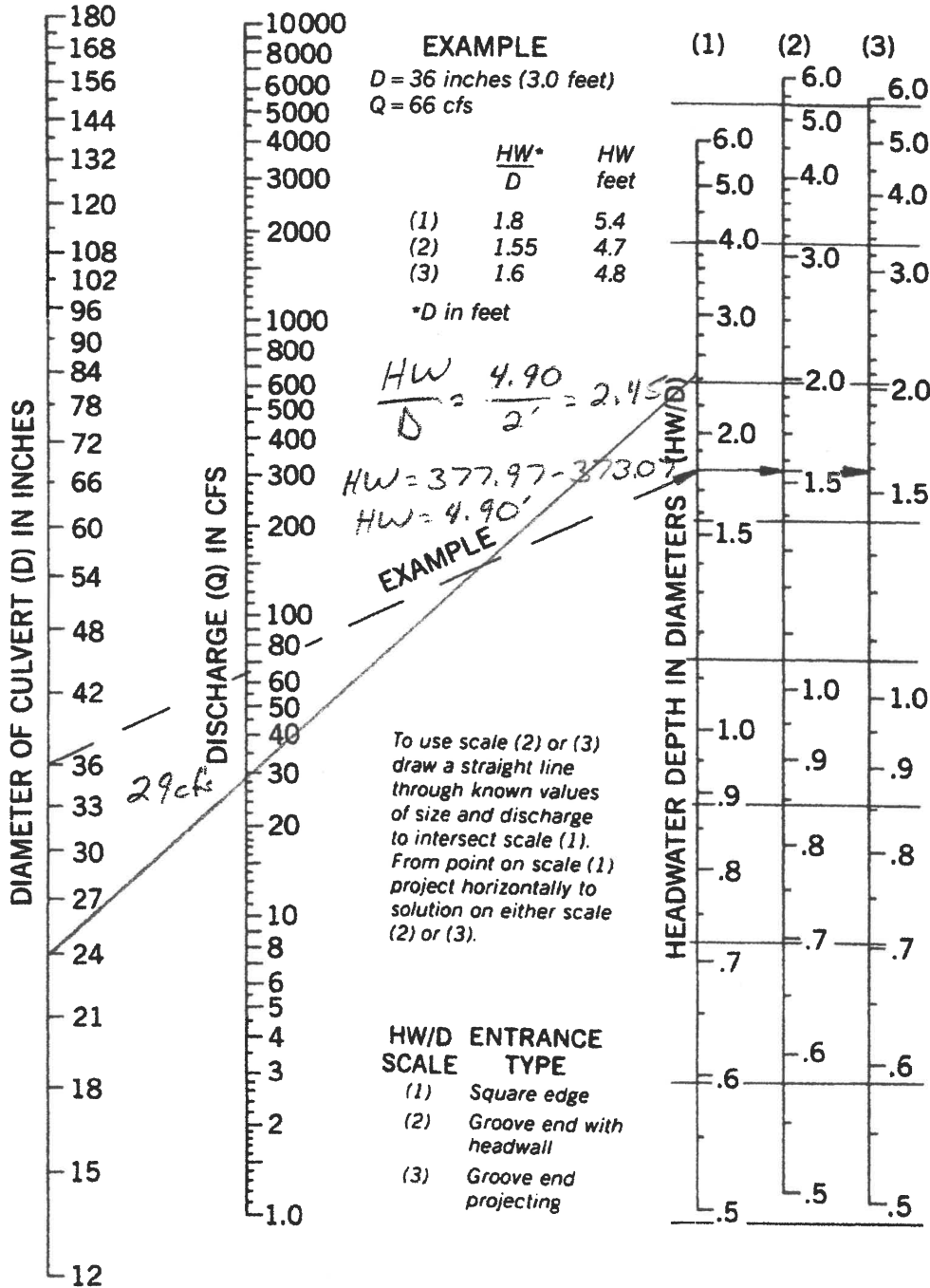
JUL 11 2023

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VANDERBURGH COUNTY Concrete Pipe Design Manual
DRAINAGE BOARD
Figure 33

Existing 24" RCP
between CI # 1 +

AD # 613

HEADWATER DEPTH FOR CIRCULAR CONCRETE PIPE CULVERTS WITH INLET CONTROL



STORM SEWER CALCULATIONS

Design Return Period: 25 Year										Project Name: MACWIL Subdivision										
Mannings 'n': 0.011										Project #: 22-5341 Date: 7/12/23										
1	SUB-BASIN NO.	UPSTREAM STRUCTURE	PIPE #	DOWNSTREAM STRUCTURE	LENGTH (ft)	Cj	Aj (ac.)	CjAj	SUM CjAj	Tj (min)	Tcum (min)	I (In/hr)	PIPE Q (cfs)	PIPE DIA. (In)	PIPE SLOPE (ft/ft)	I.E. (Upstream)	I.E. (Downstream)	CAP. (cfs)	TRAVEL VELOCITY (ft/sec)	TIME (min)
1	2	AD 500	501	AD 504	83	0.920	0.22	0.20	0.20	5.00	5.00	7.810	1.58	12	0.0040	376.97	376.64	2.66	3.39	0.41
1	1	FES 502	503	AD 504	41	0.250	0.14	0.04	0.04	6.44	6.44	7.382	0.26	12	0.0320	377.95	376.64	7.53	9.59	0.07
1	3	AD 504	505	AD 508	55	0.920	0.09	0.08	0.32	5.00	6.51	7.360	2.36	12	0.0040	376.64	376.42	2.66	3.39	0.27
1	4	AD 506	507	AD 508	83	0.920	0.21	0.19	0.19	5.00	5.00	7.810	1.51	12	0.0066	376.97	376.42	3.42	4.36	0.32
1	5	AD 508	509	AD 512	55	0.920	0.09	0.08	0.60	5.00	6.78	7.280	4.34	15	0.0040	376.42	376.20	4.83	3.94	0.23
1	6	AD 510	511	AD 512	83	0.920	0.21	0.19	0.19	5.00	5.00	7.810	1.51	12	0.0093	376.97	376.20	4.06	5.17	0.27
1	7	AD 512	513	AD 516	55	0.920	0.09	0.08	0.87	5.00	7.01	7.211	6.29	15	0.0084	376.20	375.74	6.99	5.70	0.16
1	8	AD 514	515	AD 516	83	0.920	0.28	0.26	0.26	5.00	5.00	7.810	2.01	12	0.0148	376.97	375.74	5.12	6.52	0.21
1	9	AD 516	517	AD 520	118	0.920	0.12	0.11	1.24	5.00	7.18	7.160	8.88	18	0.0064	375.74	374.99	9.93	5.62	0.35
1	10	AD 518	519	AD 520	208	0.920	0.95	0.87	0.87	5.00	5.00	7.810	6.83	15	0.0086	376.62	374.83	7.08	5.77	0.60
1	11	AD 520	521	AD 524	103	0.920	0.39	0.36	2.47	5.00	7.53	7.056	17.45	24	0.0047	374.83	374.35	18.32	5.84	0.29
1	12	AD 522	523	AD 524	78	0.920	0.24	0.22	0.22	5.00	5.00	7.810	1.72	12	0.0336	376.97	374.35	7.72	9.83	0.13
1	13	AD 524	525	AD 526	55	0.920	0.10	0.09	2.79	5.00	7.82	6.976	19.43	24	0.0059	374.35	374.02	20.53	6.54	0.14
1	15	AD 530	531	AD 526	104	0.858	0.26	0.22	0.22	7.13	7.13	7.176	1.60	12	0.0100	376.70	375.66	4.21	5.36	0.32
1	14	AD 526	527	MH 528	28	0.920	0.22	0.20	3.21	5.00	7.96	6.928	22.25	24	0.0073	374.02	373.82	22.83	7.27	0.06
1		MH 528	529	Exist AD#3	40				3.21		8.02	6.910	22.19	24	0.0073	373.82	373.53	22.83	7.27	0.09
17	Exist AD #3	24" RCP	Exist CI #2	42	0.400	0.07	0.03	3.24	5.74	8.12	5.868	19.01	24	0.0052	373.45	373.23	19.27	6.14	0.11	
Values from Original Morley Drainage Report																				
	Exist CI #2	24" RCP	Exist CI #1	26	0.790	0.30	0.24	3.48	5.00	8.23	5.840	20.30	24	0.0062	373.23	373.07	20.96	6.67	0.06	
	Exist CI #1	24" RCP	Exist AD #613	80	0.790	0.32	0.25	3.73	5.56	8.29	5.824	21.72	24	0.0031	373.07	372.82	14.88	4.74	0.28	
	Exist AD #613	30" HDPE	Exist AD #615	510	0.340	0.34	0.12	3.84	5.41	8.58	5.751	22.11	30	0.0022	372.82	371.70	25.00	5.10	1.67	
	Exist AD #615	36" HDPE	Exist AD #620	151	0.150	0.15	0.02	3.87	16.85	16.85	4.267	16.50	36	0.0009	371.70	371.56	26.39	3.74	0.67	
	Exist AD #620	36" HDPE	Exist 36" FES	43				3.87	17.52	17.52	4.193	16.22	36	0.0017	371.56	371.49	35.74	5.06	0.14	
2	24	AD 532	533	AD 534	24	0.787	0.30	0.24	0.24	9.89	9.89	6.352	1.50	12	0.0200	376.17	375.69	5.95	7.58	0.05



**CASH WAGGNER
& ASSOCIATES, PC**

CONSULTING ENGINEERS • LAND SURVEYORS

July 12, 2023

Vanderburgh County Drainage Board
Civic Center Complex – Room 305
Evansville, IN 47708

**RE: MACWIL Subdivision
Variance Request
Project No.: 22-5341**

On behalf of the owner, Macwill, LLC, we request a variance to allow the existing dry detention basin #1, that was constructed in 1998, to be left-as-is with the emergency spillway not constructed with the required 6" of freeboard. We also request a variance to allow the storm water runoff from sub-basins #19, #20 & #24 to flow offsite undetained to the existing Green River Road storm sewer trunk line.

If you have any questions or require additional information, please contact our office.

Sincerely,

Glen Meritt, Jr.
Project Engineer

Approved by the Vanderburgh County Drainage Board on this _____ day of _____, 2023.

Cheryl Musgrave, President

Justin Elpers, Vice President

Ben Shoulders, Member