

PROJECT NAME POST MEADOWS
PROJECT #/JOB ORDER # 96-028-12
DATE Feb. 6, 1997
DESIGNER V. Kendrick
PAGE 1 of 11.

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MO 63376
Civil Engineers
Planners
Land Surveyors
397-1211

DETENTION BASIN
DESIGN STORM: 2 YEAR/20MIN.

AREA OF TRACT: 66.45 ACRES

PRE-DEVELOPED CONDITIONS:

$66.45 \text{ AC.} \times 1.20 \text{ cfs/AC.} \quad Q = 79.74 \text{ cfs}$

POST-DEVELOPED CONDITIONS:

$66.45 \text{ AC.} \times 1.67 \text{ cfs/AC.} \quad Q = 110.97 \text{ cfs}$

DIFFERENTIAL RUN-OFF:

$66.45 \text{ AC.} \times (1.67 - 1.20) \quad Q = 31.23 \text{ cfs (Required Detention)}$

ESTIMATED VOLUME OF DETENTION:

$31.23 \text{ cfs} \times 30 \text{ min.} \times 60 \text{ sec./min.} = 56,214 \text{ Cu. ft. (Volume)}$

POST-DEVELOPED Q TO BASIN:

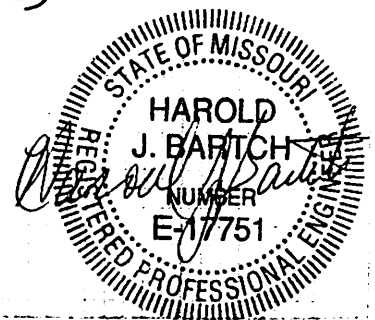
Onsite: $0.98 \text{ AC.} \times 1.67 \text{ cfs/AC.} \quad Q = 1.64 \text{ cfs (Via FE. 31)}$
 $1.94 \text{ AC.} \times 1.67 \text{ cfs/AC.} \quad Q = 3.24 \text{ cfs (Via Direct to Basin)}$
Offsite: $213.14 \text{ AC.} \times 1.20 \text{ cfs/AC.} \quad Q = 255.77 \text{ cfs (Via Creek Runoff)}$
 $TQ = 260.65 \text{ cfs}$

DETENTION PROVIDED:

Runoff to Basin - Peak Outflow = TQ (Detention)
 $260.65 \text{ cfs} - 177.62 \text{ cfs} = 83.03 \text{ cfs}$
Volume of Detention = $149,454 \text{ Cu. ft. (Storage)}$

PEAK OUTFLOW:

$177.62 \text{ cfs @ 27 Minutes}$



2/10/97

PROJECT NAME POST MEADOWS
 PROJECT #/JOB ORDER # 96-028
 DATE Feb. 6, 1997
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 PAGE 2 of 11.

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
 St. Peters, MD 63376

Civil Engineers
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397-1211

DESIGN STORM: 2 YR./20MIN.

 *
 * PIPE OUTLET
 * 1 95 ft - 78 in pipe(s)
 * UFL= 530.8 LFL= 529.85 n= .013
 *

POST MEADOWS 2-5-97 SUBMITTAL DATE:

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	781.95	781.95	0.00	781.95	531.04
2	1563.90	2345.85	33.72	2312.13	531.50
3	2345.85	4657.98	259.55	4398.43	532.03
4	3127.80	7526.23	758.54	6767.69	532.17
5	3909.75	10677.44	924.97	9752.47	532.35
6	4691.70	14444.17	1189.08	13255.10	532.56
7	5473.65	18728.75	1496.77	17231.98	532.80
8	6255.60	23487.58	1934.02	21553.56	533.06
9	7037.55	28591.11	2428.95	26162.16	533.34
10	7819.50	33981.66	2979.48	31002.18	533.63
11	8601.45	39603.63	3691.93	35911.70	533.93
12	9383.40	45295.10	4345.47	40949.63	534.12
13	10165.35	51114.98	4840.98	46273.99	534.29
14	10947.30	57221.29	5330.87	51890.42	534.47
15	11729.25	63619.67	5716.53	57903.15	534.65
16	12511.20	70414.35	6107.98	64306.37	534.86
17	13293.15	77599.53	6796.49	70803.03	535.06
18	14075.10	84878.14	7482.56	77395.57	535.27
19	14857.05	92252.62	8052.55	84200.06	535.48
20	15639.00	99839.06	8628.25	91210.82	535.70
21	14857.05	106067.90	9223.07	96844.80	535.88
22	14075.10	110919.90	9759.69	101160.20	536.01
23	13293.15	114453.40	10141.86	104311.50	536.09
24	12511.20	116822.70	10323.46	106499.20	536.14
25	11729.25	118228.50	10497.99	107730.50	536.17
26	10947.30	118677.80	10650.04	108027.80	536.18
27	10165.35	118193.10	10657.29	107535.90	536.17
28	9383.40	116919.20	10645.26	106274.00	536.14
29	8601.45	114875.40	10492.47	104383.00	536.09
30	7819.50	112202.50	10325.19	101877.30	536.03
31	7037.55	108914.90	10159.12	98755.71	535.94
32	6255.60	105011.30	9951.70	95059.60	535.82
33	5473.65	100533.30	9587.42	90945.84	535.69
34	4691.70	95637.56	9215.26	86422.28	535.55
35	3909.75	90332.04	8821.71	81510.32	535.40
36	3127.80	84638.12	8422.76	76215.36	535.23
37	2345.85	78561.21	7894.18	70667.03	535.06
38	1563.90	72230.93	7342.83	64888.10	534.87
39	781.95	65670.06	6931.56	58738.50	534.68
40	0.00	58738.50	6388.48	52350.03	534.48

PEAK OUTFLOW= 177.62 CFS AT 27 MINUTES

PROJECT NAME POST MEADOWS

PROJECT #/JOB ORDER # 96-028

DATE Feb. 6, 1997

DESIGNER V. Kendrick

PAGE 3 of 11.

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MO 63376

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397-1211

DETENTION BASIN
DESIGN STORM: 5 YEAR/20MIN.

AREA OF TRACT: 66.45 ACRES

PRE-DEVELOPED CONDITIONS:

$$66.45 \text{ AC.} \times 1.51 \text{ cfs/AC.} \quad Q = 100.34 \text{ cfs}$$

POST-DEVELOPED CONDITIONS:

$$66.45 \text{ AC.} \times 2.12 \text{ cfs/AC.} \quad Q = 140.87 \text{ cfs}$$

DIFFERENTIAL RUN-OFF:

$$66.45 \text{ AC.} \times (2.12 - 1.51) \quad Q = 40.53 \text{ cfs (Required Detention)}$$

ESTIMATED VOLUME OF DETENTION:

$$40.53 \text{ cfs} \times 30 \text{ min.} \times 60 \text{ sec./min.} = 72,954 \text{ Cu. Ft. (Volume)}$$

POST-DEVELOPED Q TO BASIN:

Onsite: $0.98 \text{ AC.} \times 2.12 \text{ cfs/AC.} \quad Q = 2.08 \text{ cfs (Via FE. 31)}$
 $1.94 \text{ AC.} \times 2.12 \text{ cfs/AC.} \quad Q = 4.11 \text{ cfs (Via Direct to Basin)}$
Offsite: $213.14 \text{ AC.} \times 1.51 \text{ cfs/AC.} \quad Q = 321.84 \text{ cfs (Via Creek Runoff)}$
 $TQ = 328.03 \text{ cfs}$

DETENTION PROVIDED:

$$\text{Runoff to Basin} - \text{Peak Outflow} = TQ \text{ (Detention)}$$
$$328.03 \text{ cfs} - 212.25 \text{ cfs} = 115.78 \text{ cfs}$$
$$\text{Volume of Detention} = 208,404 \text{ Cu. Ft. (Storage)}$$

PEAK OUTFLOW:

$$212.25 \text{ cfs @ 28 Minutes}$$

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PROJECT NAME POST MEADOWS

PROJECT #/JOB ORDER # 96-028

DATE Feb. 6, 1997

DESIGNER J. Kendrick

PAGE 4 of 11.

DESIGN STORM: 5 YR./20 MIN.

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*****
*
* PIPE OUTLET
* 1 95 ft - 78 in pipe(s)
* UFL= 530.8 LFL= 529.85 n= .013
*
*****
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POST MEADOWS		2-5-97		SUBMITTAL DATE:	
MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	984.09	984.09	0.00	984.09	531.10
2	1968.18	2952.27	52.96	2899.31	531.68
3	2952.27	5851.58	413.09	5438.49	532.09
4	3936.36	9374.85	836.84	8538.01	532.28
5	4920.45	13458.46	1093.34	12365.12	532.51
6	5904.54	18269.66	1397.97	16871.69	532.78
7	6888.63	23760.32	1838.14	21922.18	533.08
8	7872.72	29794.90	2440.88	27354.02	533.41
9	8856.81	36210.83	3125.78	33085.05	533.76
10	9840.90	42925.96	3998.58	38927.38	534.06
11	10824.99	49752.37	4675.45	45076.92	534.25
12	11809.08	56886.00	5057.13	51828.88	534.46
13	12793.17	64622.05	5715.00	58907.04	534.69
14	13777.26	72684.30	6392.85	66291.46	534.92
15	14761.35	81052.81	6968.99	74083.82	535.16
16	15745.44	89829.26	7696.57	82132.69	535.42
17	16729.53	98862.22	8440.63	90421.60	535.68
18	17713.62	108135.20	9199.73	98935.48	535.95
19	18697.71	117633.20	9957.20	107676.00	536.17
20	19681.80	127357.80	10648.71	116709.10	536.40
21	18697.71	135406.80	11210.66	124196.20	536.58
22	17713.62	141909.80	11695.55	130214.20	536.73
23	16729.53	146943.80	12037.59	134906.20	536.85
24	15745.44	150651.60	12332.93	138318.70	536.93
25	14761.35	153080.10	12500.26	140579.80	536.99
26	13777.26	154357.10	12639.04	141718.00	537.01
27	12793.17	154511.20	12733.47	141777.70	537.02
28	11809.08	153586.80	12734.97	140851.80	536.99
29	10824.99	151676.80	12645.90	139030.90	536.95
30	9840.90	148871.90	12599.88	136271.90	536.88
31	8856.81	145128.80	12448.57	132680.20	536.79
32	7872.72	140552.90	12196.05	128356.90	536.68
33	6888.63	135245.50	11990.92	123254.60	536.56
34	5904.54	129159.10	11672.01	117487.10	536.42
35	4920.45	122407.60	11229.90	111177.70	536.26
36	3936.36	115114.10	10841.93	104272.10	536.09
37	2952.27	107224.40	10322.51	96901.90	535.88
38	1968.18	98870.08	9761.39	89108.71	535.64
39	984.09	90092.80	9030.23	81062.56	535.38
40	0.00	81062.56	8409.83	72652.75	535.12

PEAK OUTFLOW= 212.25 CFS AT 28 MINUTES

PROJECT NAME POST MEADOWS

PROJECT #/JOB ORDER # 96-028

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PAGE 5 of 11.

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MO 63376

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397-1211

DETENTION BASIN
DESIGN STORM: 15 YEAR/20MIN.

AREA OF TRACT: 66.45 ACRES

PRE-DEVELOPED CONDITIONS:

$$66.45 \text{ AC.} \times 1.87 \text{ cfs/AC.} \quad Q = 124.26 \text{ cfs}$$

POST-DEVELOPED CONDITIONS:

$$66.45 \text{ AC.} \times 2.64 \text{ cfs/AC.} \quad Q = 175.43 \text{ cfs}$$

DIFFERENTIAL RUN-OFF:

$$66.45 \text{ AC.} \times (2.64 - 1.87) \quad Q = 51.17 \text{ cfs (Required Detention)}$$

ESTIMATED VOLUME OF DETENTION:

$$51.17 \text{ cfs} \times 30 \text{ min.} \times 60 \text{ sec./min.} = 92,106 \text{ Cu. Ft. (Volume)}$$

POST-DEVELOPED Q TO BASIN:

Onsite: 0.98 AC. \times 2.64 cfs/AC. $Q = 2.59 \text{ cfs}$ (Via FE. 31)
1.94 AC. \times 2.64 cfs/AC. $Q = 5.12 \text{ cfs}$ (Via Direct to Basin)

Offsite: 213.14 AC. \times 1.87 cfs/AC. $Q = 398.51 \text{ cfs}$ (Via Creek Runoff)

$$TR = 406.28 \text{ cfs}$$

DETENTION PROVIDED:

$$\text{Runoff to Basin} - \text{Peak Outflow} = TR \text{ (Detention)}$$
$$406.28 \text{ cfs} - 306.34 \text{ cfs} = 99.94 \text{ cfs}$$
$$\text{Volume of Detention} = 179,892 \text{ Cu. Ft. (Storage)}$$

PEAK OUTFLOW:

$$306.34 \text{ cfs @ 25 MINUTES}$$

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PAGE 6 of 11.

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397-1211

DESIGN STORM: 15 YR./20MIN.

*
* PIPE OUTLET
* 1 95 ft - 78 in pipe(s)
* UFL= 530.8 LFL= 529.85 n= .013
*

POST MEADOWS 2-5-97 SUBMITTAL DATE:

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	1218.84	1218.84	0.00	1218.84	531.17
2	2437.68	3656.52	76.98	3579.54	531.89
3	3656.52	7236.06	608.11	6627.95	532.16
4	4875.36	11503.31	922.11	10581.20	532.40
5	6094.20	16675.40	1279.82	15395.58	532.69
6	7313.04	22708.62	1712.92	20995.70	533.03
7	8531.88	29527.58	2317.32	27210.26	533.40
8	9750.72	36960.98	3120.59	33840.39	533.80
9	10969.56	44809.96	4029.31	40780.64	534.12
10	12188.40	52969.04	4837.11	48131.93	534.35
11	13407.24	61539.17	5499.45	56039.73	534.60
12	14626.08	70665.81	6061.38	64604.44	534.87
13	15844.92	80449.36	6923.97	73525.40	535.15
14	17063.76	90589.16	7681.05	82908.11	535.44
15	18282.60	101190.70	8462.92	92727.80	535.75
16	19501.44	112229.20	9385.18	102844.10	536.05
17	20720.28	123564.40	10288.02	113276.30	536.31
18	21939.12	135215.40	11017.05	124198.40	536.58
19	23157.96	147356.40	11695.62	135660.80	536.86
20	24376.80	160037.60	12351.97	147685.60	537.16
21	23157.96	170843.60	13000.03	157843.60	537.41
22	21939.12	179782.70	17872.44	161910.20	537.51
23	20720.28	182630.50	18137.46	164493.10	537.58
24	19501.44	183994.50	18303.87	165690.60	537.61
25	18282.60	183973.20	18380.37	165592.90	537.60
26	17063.76	182656.60	18374.22	164282.40	537.57
27	15844.92	180127.30	18290.25	161837.10	537.51
28	14626.08	176463.20	18132.66	158330.50	537.42
29	13407.24	171737.70	17904.36	153833.40	537.31
30	12188.40	166021.80	17607.06	148414.70	537.18
31	10969.56	159384.30	13018.42	146365.90	537.13
32	9750.72	156116.60	12916.88	143199.70	537.05
33	8531.88	151731.60	12770.94	138960.60	536.95
34	7313.04	146273.70	12598.13	133675.60	536.82
35	6094.20	139769.80	12301.89	127467.90	536.66
36	4875.36	132343.30	11888.72	120454.50	536.49
37	3656.52	124111.10	11507.32	112603.70	536.29
38	2437.68	115041.40	11000.44	104041.00	536.08
39	1218.84	105259.80	10316.97	94942.84	535.82
40	0.00	94942.84	9583.93	85358.92	535.52

PEAK OUTFLOW= 306.34 CFS AT 25 MINUTES

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
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PROJECT NAME POST MEADOWS

PROJECT #/JOB ORDER # 96-028

DATE Feb. 6, 1997

DESIGNER V. Kendrick

PAGE 7 of 11.

DETENTION BASIN
DESIGN STORM: 25 YEAR/20 MIN.

AREA OF TRACT: 66.45 ACRES

PRE-DEVELOPED CONDITIONS:

$66.45 \text{ AC} \times 2.31 \text{ cfs/AC} \quad Q = 153.50 \text{ cfs}$

POST-DEVELOPED CONDITIONS:

$66.45 \text{ AC} \times 3.26 \text{ cfs/AC} \quad Q = 216.63 \text{ cfs}$

DIFFERENTIAL RUN-OFF:

$66.45 \text{ AC} \times (3.26 - 2.31) \quad Q = 63.13 \text{ cfs (Required Detention)}$

ESTIMATED VOLUME OF DETENTION:

$63.13 \text{ cfs} \times 30 \text{ min} \times 60 \text{ sec./min} = 113,634 \text{ Cu. ft. (Volume)}$

POST-DEVELOPED Q TO BASIN:

Onsite: $0.98 \text{ AC} \times 3.26 \text{ cfs/AC} \quad Q = 3.19 \text{ cfs (Via FE. 31)}$

$1.94 \text{ AC} \times 3.26 \text{ cfs/AC} \quad Q = 6.32 \text{ cfs (Via Direct to Basin)}$

Offsite: $213.14 \text{ AC} \times 2.31 \text{ cfs/AC} \quad Q = 492.35 \text{ (Via Creek Runoff)}$

$TQ = 501.86 \text{ cfs}$

DETENTION PROVIDED:

Runoff to Basin - Peak Outflow = TQ (Detention)

$501.86 \text{ cfs} - 343.75 \text{ cfs} = 158.11 \text{ cfs}$

Volume of Detention = $284,598 \text{ Cu. ft. (Storage)}$

PEAK OUTFLOW:

$343.75 \text{ cfs @ 27 Minutes}$

PROJECT NAME POST MEADOWS

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PAGE 8 of 11.

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397-1211

DESIGN STORM: 25 YR. / 20 MIN.

*
* PIPE OUTLET
* 1 95 ft - 78 in pipe(s)
* UFL= 530.8 LFL= 529.85 n= .013
*

POST MEADOWS 2-5-97 SUBMITTAL DATE:

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	1505.58	1505.58	0.00	1505.58	531.26
2	3011.16	4516.74	107.84	4408.90	532.03
3	4516.74	8925.64	758.74	8166.90	532.25
4	6022.32	14189.22	1018.25	13170.98	532.56
5	7527.90	20698.88	1494.61	19204.27	532.92
6	9033.48	28237.75	2169.21	26068.54	533.34
7	10539.06	36607.60	2976.18	33631.42	533.79
8	12044.64	45676.06	4020.83	41655.24	534.14
9	13550.22	55205.46	4857.15	50348.31	534.42
10	15055.80	65404.11	5678.57	59725.54	534.71
11	16561.38	76286.93	6413.95	69872.98	535.03
12	18066.96	87939.94	7321.27	80618.68	535.37
13	19572.54	100191.20	8270.20	91921.02	535.72
14	21078.12	112999.10	9361.08	103638.10	536.07
15	22583.70	126221.80	10307.19	115914.60	536.38
16	24089.28	140003.90	11190.96	128812.90	536.70
17	25594.86	154407.80	12002.42	142405.40	537.03
18	27100.44	169505.80	12750.84	156755.00	537.39
19	28606.02	185361.00	17800.77	167560.20	537.65
20	30111.60	197671.80	18499.37	179172.40	537.94
21	28606.02	207778.40	19221.92	188556.50	538.14
22	27100.44	215657.00	19710.97	195946.00	538.29
23	25594.86	221540.90	20067.04	201473.80	538.40
24	24089.28	225563.10	20329.26	205233.80	538.48
25	22583.70	227817.50	20505.74	207311.80	538.52
26	21078.12	228389.90	20602.64	207787.20	538.53
27	19572.54	227359.80	20624.72	206735.10	538.51
28	18066.96	224802.10	20575.74	204226.30	538.46
29	16561.38	220787.70	20458.62	200329.10	538.38
30	15055.80	215384.90	20275.29	195109.60	538.27
31	13550.22	208659.80	20026.99	188632.80	538.14
32	12044.64	200677.40	19714.65	180962.80	537.98
33	10539.06	191501.90	19330.95	172170.90	537.77
34	9033.48	181204.40	18789.66	162414.70	537.53
35	7527.90	169942.60	18170.03	151772.60	537.26
36	6022.32	157794.90	13136.29	144658.70	537.09
37	4516.74	149175.40	12873.77	136301.60	536.88
38	3011.16	139312.80	12449.32	126863.50	536.65
39	1505.58	128369.00	11873.54	116495.50	536.39
40	0.00	116495.50	11205.34	105290.20	536.11

PEAK OUTFLOW= 343.75 CFS AT 27 MINUTES

PICKETT RAY & SILVER

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PROJECT NAME POST MEADOWS

PROJECT #/JOB ORDER # 96-028

DATE Feb. 6, 1997

DESIGNER V. Kendrick

PAGE 9 of 11.

DETENTION BASIN
DESIGN STORM: 100 YEAR/20 MIN.

AREA OF TRACT: 66.45 ACRES

PRE-DEVELOPED CONDITIONS:

66.45 AC. x 2.95 cfs/AC. Q = 196.03 cfs

POST-DEVELOPED CONDITIONS:

66.45 AC. x 4.17 cfs/AC. Q = 277.10 cfs

DIFFERENTIAL RUN-OFF:

66.45 AC. x (4.17 - 2.95) Q = 81.07 cfs (Required Detention)

ESTIMATED VOLUME OF DETENTION:

81.07 cfs x 30 min x 60 sec./min. = 145,926 Cu. Ft.
(Volume)

POST-DEVELOPED Q TO BASIN:

Onsite: 0.98 AC. x 4.17 cfs/AC. Q = 4.09 cfs (Via FE. 31)
1.94 AC. x 4.17 cfs/AC. Q = 8.09 cfs (Via Direct to Basin)
Offsite: 213.14 AC. x 2.95 cfs/AC. Q = 628.76 cfs (Via Creek Runoff)
TR = 640.94 cfs

DETENTION PROVIDED:

Runoff to Basin - Peak Outflow = TR (Detention)
640.94 cfs - 398.94 cfs = 242.00 cfs
Volume of Detention = 435,600 Cu. Ft.
(Storage)

PEAK OUTFLOW:

398.94 cfs @ 28 Minutes

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MD 63376

Civil Engineers
Planners
Land Surveyors

397-1211

PROJECT NAME POST MEADOWS

PROJECT #/JOB ORDER # 96-028

DATE Feb. 6, 1997

DESIGNER J. Kendrick

PAGE 10 of 11.

DESIGN STORM: 100 YR. / 20 MIN.

```
*****
*
* PIPE OUTLET
* 1 95 ft - 78 in pipe(s)
* UFL= 530.8 LFL= 529.85 n= .013
*
*****
```

POST MEADOWS		2-5-97	SUBMITTAL DATE:		
MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	1922.82	1922.82	0.00	1922.82	531.38
2	3845.64	5768.46	176.26	5592.20	532.10
3	5768.46	11360.66	839.85	10520.82	532.40
4	7691.28	18212.10	1278.36	16933.74	532.78
5	9614.10	26547.84	1925.30	24622.54	533.25
6	11536.92	36159.46	2824.44	33335.02	533.77
7	13459.74	46794.76	4008.79	42785.96	534.18
8	15382.56	58168.52	5004.04	53164.48	534.51
9	17305.38	70469.86	5861.85	64608.01	534.87
10	19228.20	83836.21	6924.08	76912.13	535.25
11	21151.02	98063.16	8038.85	90024.32	535.67
12	23073.84	113098.20	9187.93	103910.20	536.08
13	24996.66	128906.90	10313.81	118593.10	536.44
14	26919.48	145512.60	11351.09	134161.50	536.83
15	28842.30	163003.80	12314.18	150689.60	537.24
16	30765.12	181454.70	13109.09	168345.60	537.67
17	32687.94	201033.60	18549.14	182484.40	538.02
18	34610.76	217095.20	19413.40	197681.80	538.32
19	36533.58	234215.40	20149.65	214065.70	538.65
20	38456.40	252522.10	20914.47	231607.60	539.01
21	36533.58	268141.20	21703.38	246437.80	539.31
22	34610.76	281048.60	22348.67	258699.90	539.56
23	32687.94	291387.80	22868.36	268519.50	539.75
24	30765.12	299284.60	23276.32	276008.30	539.90
25	28842.30	304850.60	23582.55	281268.00	540.01
26	26919.48	308187.50	23792.19	284395.30	540.06
27	24996.66	309392.00	23899.05	285492.90	540.08
28	23073.84	308566.80	23936.38	284630.40	540.07
29	21151.02	305781.40	23907.06	281874.40	540.02
30	19228.20	301102.50	23812.90	277289.60	539.93
31	17305.38	294595.00	23634.61	270960.40	539.80
32	15382.56	286343.00	23376.61	262966.30	539.64
33	13459.74	276426.10	23046.53	253379.50	539.45
34	11536.92	264916.50	22644.28	242272.20	539.22
35	9614.10	251886.20	22169.34	229716.90	538.97
36	7691.28	237408.20	21619.74	215788.50	538.69
37	5768.46	221556.90	20993.19	200563.70	538.38
38	3845.64	204409.40	20286.30	184123.10	538.05
39	1922.82	186045.90	19494.17	166551.70	537.63
40	0.00	166551.70	18435.33	148116.40	537.17

PEAK OUTFLOW= 398.94 CFS AT 28 MINUTES

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MO 63376

Civil Engineers
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Land Surveyors

397-1211

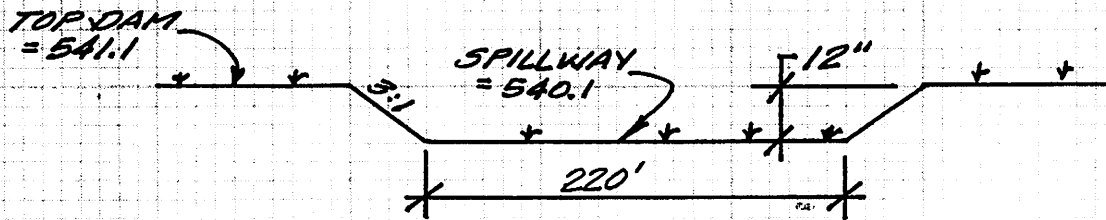
PROJECT NAME POST MEADOWS
PROJECT #/JOB ORDER # 96-028
DATE Feb. 6, 1997
DESIGNER V. Kendrick
PAGE 11 of 11.

STORAGE:

ELEVATION	AREA	VOLUME	CUM. VOLUME
530.80	0	3952	3952
532.00	6587	33130	37082
534.00	26543	63588	100670
536.00	37045	80945	181615
538.00	43900	99120	280735
540.00	55220	64109	344845
541.10	61346		

TOP DAM: 541.10

SPILLWAY: 540.10



SPILLWAY DETAIL ~ N.T.S.
(GRASS)

WEIR CALCULATION:

$$Q = CLH^{3/2}$$

$$640.94 = (3.0)(220)(H^{3/2})$$

$$640.94 = (660) H^{3/2}$$

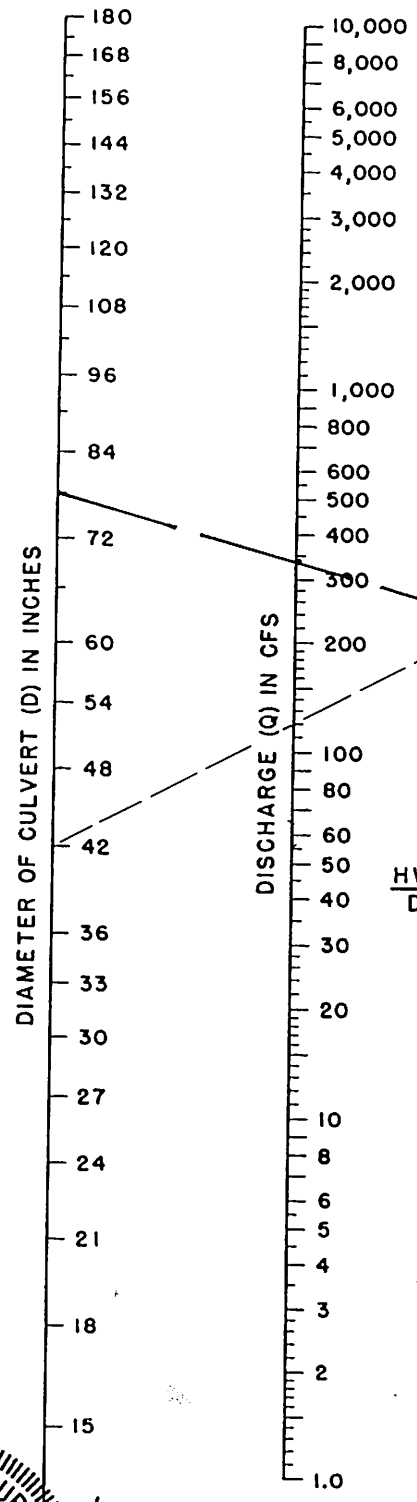
$$\left(\frac{640.94}{660}\right)^{2/3} = H$$

$$0.98' = H$$

100YR. H.W. = 540.08
FREEBOARD₁₀₀ = 1.08'

210-028
 2-6-97
 J. Kendrick
 Post Meadows
 1 of 2.

CHART 2



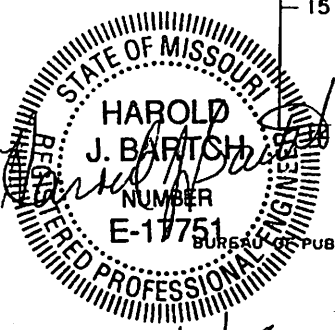
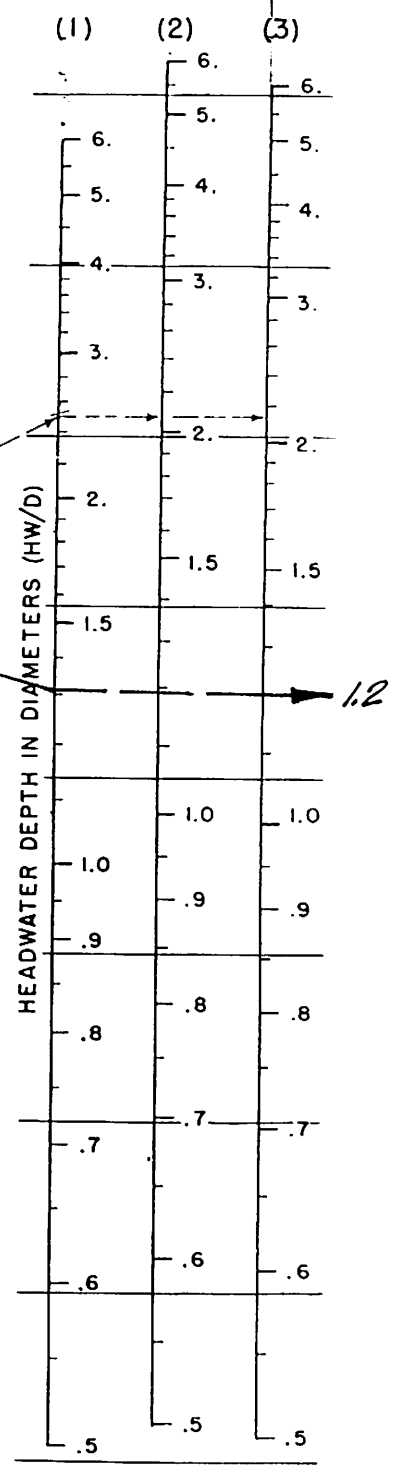
EXAMPLE
 D = 42 inches (3.5 feet)
 Q = 120 cfs

	$\frac{HW}{D}$	HW feet
(1)	2.5	8.8
(2)	2.1	7.4
(3)	2.2	7.7

*D in feet

$\frac{HW}{D}$ SCALE	ENTRANCE TYPE
(1)	Square edge with headwall
(2)	Groove end with headwall
(3)	Groove end projecting

To use scale (2) or (3) project horizontally to scale (1), then use straight inclined line through D and Q scales, or reverse as illustrated.



HEADWATER SCALES 2&3
 REVISED MAY 1964

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

78" RCP Q = 343.75 cfs
 $H_w/D = 1.2$
 $1.2 \times 6.5' = 7.8'$
 H.W. @ Inlet Control = 538.60

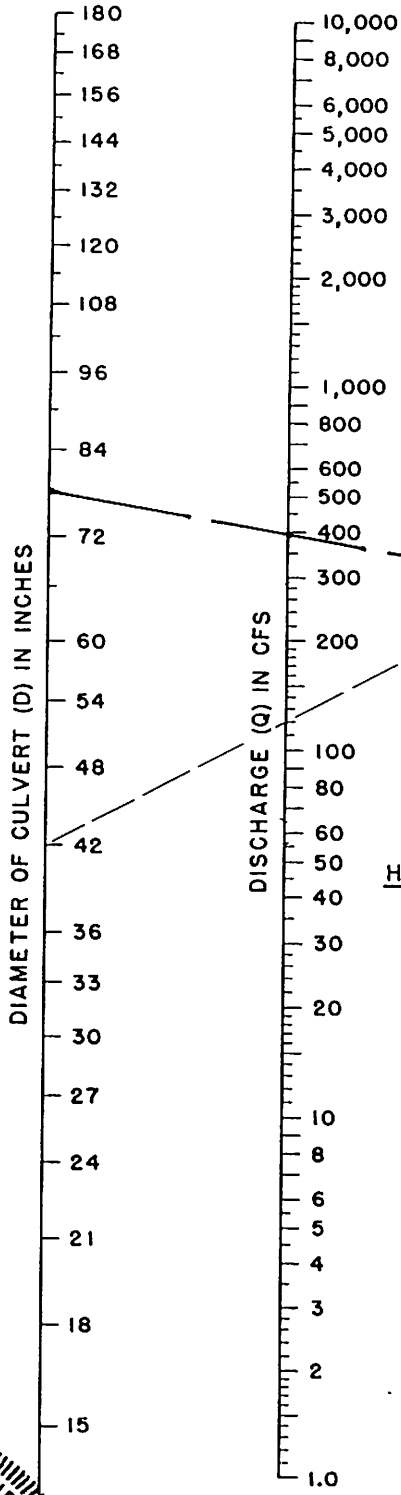
5-22

25 yr.

2/10/97

96-028
 2-6-97
 V. Kendrick
 Post Meadows
 2 of 2.

CHART 2



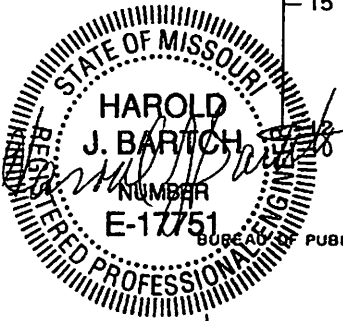
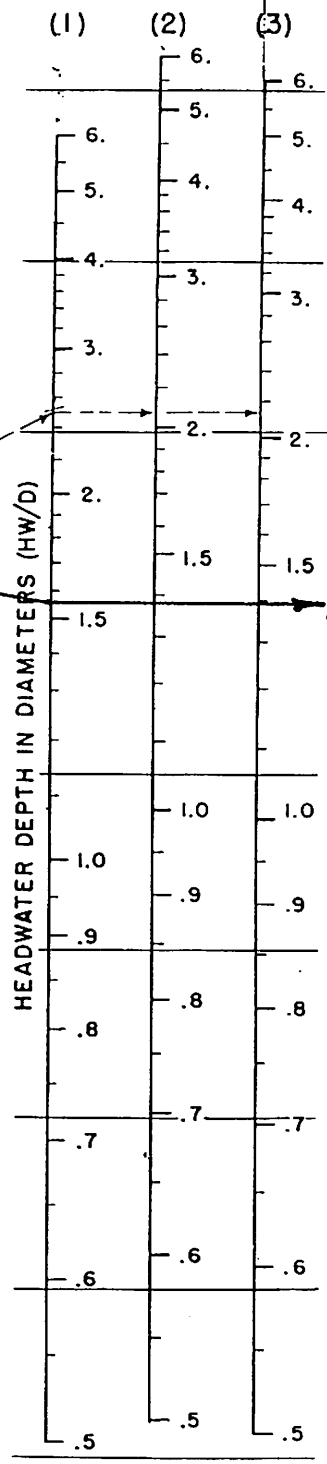
EXAMPLE
 D = 42 inches (3.5 feet)
 Q = 120 cfs

	$\frac{HW^*}{D}$	HW feet
(1)	2.5	8.8
(2)	2.1	7.4
(3)	2.2	7.7

*D in feet

$\frac{HW}{D}$ SCALE	ENTRANCE TYPE
(1)	Square edge with headwall
(2)	Groove end with headwall
(3)	Groove end projecting

To use scale (2) or (3) project horizontally to scale (1), then use straight inclined line through D and Q scales, or reverse as illustrated.



HEADWATER SCALES 2 & 3
 REVISED MAY 1964

5-22

100Yr.

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

78" RCP Q = 398.94 cfs
 $H_w/D = 1.4$
 $1.4 \times 6.5 = 9.1'$
 $H.W. @ \text{Inlet Control} = 539.90$

2/10/97