

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE
 PROJECT #/JOB ORDER # 95-080C/35968
 DATE 1-12-97
 DESIGNER J. Kendrick
 PAGE 1 of 11

PICKETT RAY & SILVER

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

Civil Engineers
 Planners
 Land Surveyors

397-1211

**STORMWATER DETENTION "B"
 DESIGN STORM: 2 YR./20 MIN.**

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 10.04 ACRES
OFFSITE: 2.16 ACRES (COMM.)
TOTAL: 12.20 ACRES

DEVELOPED:

ONSITE: 11.25 ACRES
OFFSITE: 2.16 ACRES (COMM.)
TOTAL: 13.41 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 10.04 ACRES x 1.27 CFS/ACRE
OFFSITE: 2.16 ACRES x 1.27 CFS/ACRE

Q = 12.75 CFS
Q = 2.74 CFS
TQ = 15.49 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 3.06 ACRES x 1.77 CFS/ACRE Q = 5.42 CFS
OFFSITE: 1.14 ACRES x 1.27 CFS/ACRE Q = 1.45 CFS
VIA F.E. 3: ONSITE: 7.13 ACRES x 1.77 CFS/ACRE Q = 12.62 CFS

TQ = 19.49 CFS
(1,169.4 CFM)

DEVELOPED - BYPASS BASIN:

ONSITE: 1.06 ACRES x 1.77 CFS/ACRE
OFFSITE: 1.02 ACRES x 1.27 CFS/ACRE

Q = 1.88 CFS
Q = 1.30 CFS
TQ = 3.18 CFS

DETENTION REQUIRED:

$19.49 \text{ CFS} + 3.18 \text{ CFS} = 22.67 \text{ CFS} - 15.49 \text{ CFS} = 7.18 \text{ CFS}$

$7.18 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 12,924 \text{ CU. FT.}$

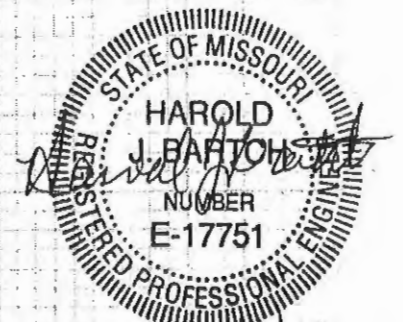
(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$19.49 \text{ CFS} - 7.18 \text{ CFS} \quad Q = 12.31 \text{ CFS}$

PEAK OUTFLOW:

3.52 CFS @ 37 MIN.



1/31/97

PICKETT RAY & SILVER

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PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE
PROJECT #/JOB ORDER # 95-0800/35968
DATE 1-12-97
DESIGNER J. Kendrick
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Basin "B"

2 YR./20 MIN.

* RECTANGULAR ORIFICE *
* 6 in W X 12 in H ELEV= 537.8 *
* * * * *
* Outlet Pipe - 66 ft - 36 in pipe *
* UFL= 537.8 LFL= 537.14 n= .013 *
* * * * *
* Overflow Structure - Standpipe *
* DIAM= 60 in STANDPIPE ELEV= 542 *
* * * * *

PRAIRIE "B" 1-12-97 SUBMITTAL DATE: 1-20-97

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	58.47	58.47	0.00	58.47	537.84
2	116.94	175.41	0.68	174.73	537.93
3	175.41	350.14	3.53	346.61	538.01
4	233.88	580.49	7.55	572.94	538.04
5	292.35	865.29	9.44	855.85	538.09
6	350.82	1206.67	12.00	1194.67	538.14
7	409.29	1603.96	15.32	1588.64	538.20
8	467.76	2056.40	19.52	2036.88	538.26
9	526.23	2563.11	24.68	2538.43	538.34
10	584.70	3123.13	30.91	3092.22	538.42
11	643.17	3735.39	38.33	3697.06	538.51
12	701.64	4398.70	47.00	4351.70	538.61
13	760.11	5111.81	57.04	5054.77	538.72
14	818.58	5873.35	68.51	5804.84	538.83
15	877.05	6681.89	106.88	6575.01	538.95
16	935.52	7510.53	117.96	7392.57	539.07
17	993.99	8386.56	128.69	8257.87	539.20
18	1052.46	9310.33	139.14	9171.19	539.33
19	1110.93	10282.12	149.39	10132.74	539.48
20	1169.40	11302.14	159.46	11142.68	539.63
21	1110.93	12253.61	169.40	12084.21	539.77
22	1052.46	13136.67	178.16	12958.51	539.90
23	993.99	13952.50	185.93	13766.57	540.01
24	935.52	14702.09	192.14	14509.95	540.07
25	877.05	15387.00	195.14	15191.86	540.12
26	818.58	16010.44	197.86	15812.58	540.16
27	760.11	16572.69	200.30	16372.39	540.20
28	701.64	17074.03	202.47	16871.56	540.24
29	643.17	17514.73	204.40	17310.33	540.27
30	584.70	17895.03	206.07	17688.96	540.30
31	526.23	18215.19	207.50	18007.69	540.32
32	467.76	18475.45	208.70	18266.75	540.34
33	409.29	18676.04	209.67	18466.37	540.35
34	350.82	18817.19	210.42	18606.77	540.36
35	292.35	18899.12	210.94	18688.18	540.37
36	233.88	18922.06	211.24	18710.82	540.37
37	175.41	18886.23	211.32	18674.91	540.37
38	116.94	18791.85	211.19	18580.66	540.36
39	58.47	18639.13	210.84	18428.29	540.35
40	0.00	18428.29	210.28	18218.01	540.33

PEAK OUTFLOW= 3.52 CFS AT 37 MINUTES

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
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Civil Engineers
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PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE

PROJECT #/JOB ORDER # 95-080C/3596B

DATE 1-12-97

DESIGNER J. Kendrick

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**STORMWATER DETENTION "B"
DESIGN STORM: 5 YR./20 MIN.**

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 10.04 ACRES

OFFSITE: 2.16 ACRES (COMM.)

TOTAL: 12.20 ACRES

DEVELOPED:

ONSITE: 11.25 ACRES

OFFSITE: 2.16 ACRES (COMM.)

TOTAL: 13.41 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 10.04 ACRES x 1.55 CFS/ACRE

OFFSITE: 2.16 ACRES x 1.55 CFS/ACRE

Q = 15.56 CFS

Q = 3.35 CFS

TQ = 18.91 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 3.06 ACRES x 2.18 CFS/ACRE Q = 6.67 CFS

OFFSITE: 1.14 ACRES x 1.55 CFS/ACRE Q = 1.77 CFS

VIA F.E. 3: ONSITE: 7.13 ACRES x 2.18 CFS/ACRE Q = 15.54 CFS

TQ = 23.98 CFS

(1,438.8 CFM)

DEVELOPED - BYPASS BASIN:

ONSITE: 1.06 ACRES x 2.18 CFS/ACRE

OFFSITE: 1.02 ACRES x 1.55 CFS/ACRE

Q = 2.31 CFS

Q = 1.58 CFS

TQ = 3.89 CFS

DETENTION REQUIRED:

$23.98 \text{ CFS} + 3.89 \text{ CFS} = 27.87 \text{ CFS} - 18.91 \text{ CFS} = 8.96 \text{ CFS}$

$8.96 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 16,128 \text{ CU. FT.}$

(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$23.98 \text{ CFS} - 8.96 \text{ CFS} \quad Q = 15.02 \text{ CFS}$

PEAK OUTFLOW:

3.81 CFS @ 37 MIN.

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE

PROJECT #/JOB ORDER # 95-0800/35968

DATE 1-12-97

DESIGNER J. Kendrick

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PICKETT RAY & SILVER

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St. Peters, MO 63376

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Basin "B"

5 YR. / 20 MIN.

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*****
*                               *
*   RECTANGULAR ORIFICE       *
*   6 in W X 12 in H   ELEV= 537.8   *
*                               *
*   Outlet Pipe - 66 ft - 36 in pipe *
*   UFL= 537.8   LFL= 537.14   n= .013 *
*                               *
*   Overflow Structure - Standpipe *
*   DIAM= 60 in   STANDPIPE ELEV= 542 *
*                               *
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PRAIRIE "B" 1-12-97 SUBMITTAL DATE: 1-20-97

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	71.94	71.94	0.00	71.94	537.85
2	143.88	215.82	0.93	214.89	537.96
3	215.82	430.71	4.81	425.90	538.02
4	287.76	713.66	8.19	705.47	538.06
5	359.70	1065.17	10.62	1054.55	538.12
6	431.64	1486.19	13.92	1472.27	538.18
7	503.58	1975.85	18.25	1957.60	538.25
8	575.52	2533.12	23.74	2509.38	538.34
9	647.46	3156.84	30.54	3126.30	538.43
10	719.40	3845.70	38.80	3806.90	538.53
11	791.34	4598.24	48.64	4549.60	538.64
12	863.28	5412.88	60.19	5352.69	538.76
13	935.22	6287.91	73.58	6214.33	538.89
14	1007.16	7221.49	112.91	7108.58	539.03
15	1079.10	8187.68	125.07	8062.61	539.17
16	1151.04	9213.65	136.85	9076.80	539.32
17	1222.98	10299.78	148.36	10151.42	539.48
18	1294.92	11446.34	159.65	11286.69	539.65
19	1366.86	12653.55	170.77	12482.78	539.83
20	1438.80	13921.58	181.75	13739.83	540.01
21	1366.86	15106.69	192.03	14914.66	540.10
22	1294.92	16209.58	196.76	16012.82	540.17
23	1222.98	17235.80	201.08	17034.72	540.25
24	1151.04	18185.76	205.02	17980.74	540.32
25	1079.10	19059.84	208.60	18851.24	540.38
26	1007.16	19858.40	211.84	19646.56	540.44
27	935.22	20581.78	214.76	20367.02	540.49
28	863.28	21230.30	217.37	21012.93	540.54
29	791.34	21804.27	219.69	21584.58	540.58
30	719.40	22303.98	221.71	22082.27	540.62
31	647.46	22729.73	223.47	22506.27	540.65
32	575.52	23081.79	224.94	22856.85	540.67
33	503.58	23360.43	226.16	23134.27	540.69
34	431.64	23565.91	227.12	23338.79	540.71
35	359.70	23698.49	227.82	23470.67	540.72
36	287.76	23758.43	228.28	23530.15	540.72
37	215.82	23745.97	228.48	23517.49	540.72
38	143.88	23661.37	228.44	23432.93	540.71
39	71.94	23504.87	228.15	23276.72	540.70
40	0.00	23276.72	227.61	23049.11	540.69

PEAK OUTFLOW= 3.81 CFS AT 37 MINUTES

PICKETT RAY & SILVER

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

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PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE

PROJECT #/JOB ORDER # 95-080C/35968

DATE 1-12-97

DESIGNER J. Kandrick

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**STORMWATER DETENTION "B"
DESIGN STORM: 15 YR./20 MIN.**

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 10.04 ACRES
OFFSITE: 2.16 ACRES (COMM.)
TOTAL: 12.20 ACRES

DEVELOPED:

ONSITE: 11.25 ACRES
OFFSITE: 2.16 ACRES (COMM.)
TOTAL: 13.41 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 10.04 ACRES x 1.87 CFS/ACRE
OFFSITE: 2.16 ACRES x 1.87 CFS/ACRE

Q = 18.77 CFS
Q = 4.04 CFS
TQ = 22.81 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 3.06 ACRES x 2.64 CFS/ACRE Q = 8.08 CFS
OFFSITE: 1.14 ACRES x 1.87 CFS/ACRE Q = 2.13 CFS
VIA F.E. 3: ONSITE: 7.13 ACRES x 2.64 CFS/ACRE Q = 18.82 CFS

TQ = 29.03 CFS
(1,741.8 CFM)

DEVELOPED - BYPASS BASIN:

ONSITE: 1.06 ACRES x 2.64 CFS/ACRE
OFFSITE: 1.02 ACRES x 1.87 CFS/ACRE

Q = 2.80 CFS
Q = 1.91 CFS
TQ = 4.71 CFS

DETENTION REQUIRED:

$29.03 \text{ CFS} + 4.71 \text{ CFS} = 33.74 \text{ CFS} - 22.81 \text{ CFS} = 10.93 \text{ CFS}$

$10.93 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 19,674 \text{ CU. FT.}$
(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$29.03 \text{ CFS} - 10.93 \text{ CFS} = 18.10 \text{ CFS}$

PEAK OUTFLOW:

4.11 CFS @ 38 MIN.

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE
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PICKETT RAY & SILVER

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Basin "B"

15YR./20MIN.

 *
 * RECTANGULAR ORIFICE *
 * 6 in W X 12 in H ELEV= 537.8 *
 *
 * Outlet Pipe - 66 ft - 36 in pipe *
 * UFL= 537.8 LFL= 537.14 n= .013 *
 *
 * Overflow Structure - Standpipe *
 * DIAM= 60 in STANDPIPE ELEV= 542 *
 *

PRAIRIE "B" 1-12-97 SUBMITTAL DATE: 1-20-97

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	87.09	87.09	0.00	87.09	537.86
2	174.18	261.27	1.24	260.03	537.99
3	261.27	521.30	6.41	514.89	538.04
4	348.36	863.25	8.94	854.31	538.09
5	435.45	1289.76	11.99	1277.77	538.15
6	522.54	1800.31	16.18	1784.13	538.23
7	609.63	2393.76	21.72	2372.04	538.31
8	696.72	3068.76	28.79	3039.97	538.41
9	783.81	3823.78	37.60	3786.18	538.53
10	870.90	4657.08	48.33	4608.75	538.65
11	957.99	5566.74	61.15	5505.59	538.78
12	1045.08	6550.67	76.22	6474.45	538.93
13	1132.17	7606.62	116.58	7490.04	539.08
14	1219.26	8709.30	129.91	8579.39	539.25
15	1306.35	9885.74	142.83	9742.91	539.42
16	1393.44	11136.35	155.46	10980.90	539.61
17	1480.53	12461.43	167.85	12293.58	539.80
18	1567.62	13861.20	180.06	13681.15	540.01
19	1654.71	15335.86	191.79	15144.07	540.11
20	1741.80	16885.87	197.67	16688.20	540.22
21	1654.71	18342.91	203.69	18139.22	540.33
22	1567.62	19706.84	209.20	19497.65	540.43
23	1480.53	20978.18	214.22	20763.96	540.52
24	1393.44	22157.40	218.80	21938.60	540.61
25	1306.35	23244.95	222.96	23021.99	540.68
26	1219.26	24241.25	226.73	24014.52	540.76
27	1132.17	25146.69	230.13	24916.56	540.82
28	1045.08	25961.64	233.18	25728.46	540.88
29	957.99	26686.45	235.89	26450.56	540.93
30	870.90	27321.46	238.28	27083.19	540.98
31	783.81	27867.00	240.35	27626.66	541.02
32	696.72	28323.38	242.11	28081.27	541.05
33	609.63	28690.90	243.57	28447.33	541.08
34	522.54	28969.87	244.75	28725.12	541.10
35	435.45	29160.57	245.64	28914.93	541.11
36	348.36	29263.29	246.24	29017.05	541.12
37	261.27	29278.32	246.56	29031.76	541.12
38	174.18	29205.94	246.61	28959.33	541.11
39	87.09	29046.42	246.38	28800.04	541.10
40	0.00	28800.04	245.87	28554.17	541.09

PEAK OUTFLOW= 4.11 CFS AT 38 MINUTES

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE

PROJECT #/JOB ORDER # 95-080C/35968

DATE 1-12-97

DESIGNER J. Kendrick

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PICKETT RAY & SILVER

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St. Peters, MO 63376

Civil Engineers
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397-1211

**STORMWATER DETENTION "B"
DESIGN STORM: 25 YR./20 MIN.**

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 10.04 ACRES

OFFSITE: 2.16 ACRES (COMM.)

TOTAL: 12.20 ACRES

DEVELOPED:

ONSITE: 11.25 ACRES

OFFSITE: 2.16 ACRES (COMM.)

TOTAL: 13.41 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 10.04 ACRES x 2.31 CFS/ACRE

OFFSITE: 2.16 ACRES x 2.31 CFS/ACRE

Q = 23.19 CFS

Q = 4.99 CFS

TQ = 28.18 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 3.06 ACRES x 3.26 CFS/ACRE Q = 9.98 CFS

OFFSITE: 1.14 ACRES x 2.31 CFS/ACRE Q = 2.63 CFS

VIA F.E. 3: ONSITE: 7.13 ACRES x 3.26 CFS/ACRE Q = 23.24 CFS

TQ = 35.85 CFS

(2,151.0 CFM)

DEVELOPED - BYPASS BASIN:

ONSITE: 1.06 ACRES x 3.26 CFS/ACRE

OFFSITE: 1.02 ACRES x 2.31 CFS/ACRE

Q = 3.46 CFS

Q = 2.36 CFS

TQ = 5.82 CFS

DETENTION REQUIRED:

$$35.85 \text{ CFS} + 5.82 \text{ CFS} = 41.67 \text{ CFS} - 28.18 \text{ CFS} = 13.49 \text{ CFS}$$

$$13.49 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 24,282 \text{ CU. FT.}$$

(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$$35.85 \text{ CFS} - 13.49 \text{ CFS} = Q = 22.36 \text{ CFS}$$

PEAK OUTFLOW:

4.49 CFS @ 38 MIN.

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE

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DATE 1-12-97

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

397-1211

Basin "B"

25YR./20MIN.

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*                               *
*   RECTANGULAR ORIFICE         *
*   6 in W X 12 in H   ELEV= 537.8   *
*                               *
*   Outlet Pipe - 66 ft - 36 in pipe *
*   UFL= 537.8   LFL= 537.14   n= .013 *
*                               *
*   Overflow Structure - Standpipe *
*   DIAM= 60 in   STANDPIPE ELEV= 542 *
*                               *
*****

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PRAIRIE "B" 1-12-97 SUBMITTAL DATE: 1-20-97

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	107.55	107.55	0.00	107.55	537.88
2	215.10	322.65	1.71	320.94	538.01
3	322.65	643.59	7.34	636.25	538.05
4	430.20	1066.45	10.00	1056.45	538.12
5	537.75	1594.20	13.93	1580.27	538.20
6	645.30	2225.57	19.42	2206.15	538.29
7	752.85	2959.00	26.73	2932.27	538.40
8	860.40	3792.67	36.13	3756.54	538.52
9	967.95	4724.49	47.89	4676.60	538.66
10	1075.50	5752.10	62.25	5689.85	538.81
11	1183.05	6872.90	105.12	6767.78	538.97
12	1290.60	8058.38	120.58	7937.80	539.15
13	1398.15	9335.95	135.37	9200.58	539.34
14	1505.70	10706.28	149.70	10556.58	539.54
15	1613.25	12169.83	163.71	12006.13	539.76
16	1720.80	13726.93	177.45	13549.48	539.99
17	1828.35	15377.83	191.01	15186.82	540.11
18	1935.90	17122.72	197.84	16924.88	540.24
19	2043.45	18968.33	204.60	18763.73	540.37
20	2151.00	20914.73	211.52	20703.21	540.52
21	2043.45	22746.66	218.58	22528.08	540.65
22	1935.90	24463.98	225.02	24238.96	540.77
23	1828.35	26067.31	230.90	25836.42	540.89
24	1720.80	27557.22	236.25	27320.97	541.00
25	1613.25	28934.22	241.12	28693.10	541.10
26	1505.70	30198.80	245.53	29953.26	541.19
27	1398.15	31351.41	249.52	31101.89	541.27
28	1290.60	32392.49	253.10	32139.39	541.35
29	1183.05	33322.44	256.29	33066.16	541.41
30	1075.50	34141.66	259.10	33882.56	541.47
31	967.95	34850.51	261.56	34588.95	541.52
32	860.40	35449.35	263.66	35185.69	541.57
33	752.85	35938.54	265.43	35673.12	541.60
34	645.30	36318.42	266.86	36051.56	541.63
35	537.75	36589.31	267.97	36321.34	541.65
36	430.20	36751.54	268.76	36482.78	541.66
37	322.65	36805.43	269.23	36536.20	541.66
38	215.10	36751.30	269.38	36481.92	541.66
39	107.55	36589.47	269.22	36320.25	541.65
40	0.00	36320.25	268.75	36051.50	541.63

PEAK OUTFLOW= 4.49 CFS AT 38 MINUTES

PICKETT RAY & SILVER

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

Civil Engineers
Planners
Land Surveyors
397-1211

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE
PROJECT #/JOB ORDER # 95-080C/35968
DATE 1-12-97
DESIGNER J. Kendrick
PAGE 9 of 11

**STORMWATER DETENTION "B"
DESIGN STORM: 100 YR./20 MIN.**

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 10.04 ACRES
OFFSITE: 2.16 ACRES (COMM.)
TOTAL: 12.20 ACRES

DEVELOPED:

ONSITE: 11.25 ACRES
OFFSITE: 2.16 ACRES (COMM.)
TOTAL: 13.41 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 10.04 ACRES x 2.95 CFS/ACRE
OFFSITE: 2.16 ACRES x 2.95 CFS/ACRE

Q = 29.62 CFS
Q = 6.37 CFS
TQ = 35.99 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 3.06 ACRES x 4.17 CFS/ACRE Q = 12.76 CFS
OFFSITE: 1.14 ACRES x 2.95 CFS/ACRE Q = 3.36 CFS
VIA F.E. 3: ONSITE: 7.13 ACRES x 4.17 CFS/ACRE Q = 29.73 CFS

TQ = 45.85 CFS
(2,751.0 CFM)

DEVELOPED - BYPASS BASIN:

ONSITE: 1.06 ACRES x 4.17 CFS/ACRE
OFFSITE: 1.02 ACRES x 2.95 CFS/ACRE

Q = 4.42 CFS
Q = 3.01 CFS
TQ = 7.43 CFS

DETENTION REQUIRED:

$45.85 \text{ CFS} + 7.43 \text{ CFS} = 53.28 \text{ CFS} - 35.99 \text{ CFS} = 17.29 \text{ CFS}$
 $17.29 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 31,122 \text{ CU. FT.}$
(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$45.85 \text{ CFS} - 17.29 \text{ CFS} = Q = 28.56 \text{ CFS}$

PEAK OUTFLOW:

10.37 CFS @ 36 MIN.

PICKETT RAY & SILVER

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PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE
PROJECT #/JOB ORDER # 95-0800/35968
DATE 1-12-97
DESIGNER J. Kendrick
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Basin "B"

100 YR./20 MIN.

```

*****
*                               *
* RECTANGULAR ORIFICE          *
* 6 in W X 12 in H  ELEV= 537.8 *
*                               *
* Outlet Pipe - 66 ft - 36 in pipe *
* UFL= 537.8  LFL= 537.14  n= .013 *
*                               *
* Overflow Structure - Standpipe *
* DIAM= 60 in  STANDPIPE ELEV= 542 *
*                               *
*****
    
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PRAIRIE "B" 1-12-97 SUBMITTAL DATE: 1-20-97

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	137.55	137.55	0.00	137.55	537.90
2	275.10	412.65	2.47	410.18	538.02
3	412.65	822.83	8.06	814.77	538.08
4	550.20	1364.97	11.62	1353.35	538.16
5	687.75	2041.10	16.97	2024.13	538.26
6	825.30	2849.43	24.53	2824.90	538.38
7	962.85	3787.75	34.68	3753.07	538.52
8	1100.40	4853.47	47.83	4805.64	538.68
9	1237.95	6043.59	64.36	5979.23	538.86
10	1375.50	7354.73	109.49	7245.24	539.05
11	1513.05	8758.29	126.82	8631.47	539.25
12	1650.60	10282.07	143.42	10138.65	539.48
13	1788.15	11926.80	159.52	11767.28	539.72
14	1925.70	13692.98	175.26	13517.72	539.99
15	2063.25	15580.97	190.74	15390.23	540.13
16	2200.80	17591.03	198.64	17392.39	540.27
17	2338.35	19730.74	206.38	19524.36	540.43
18	2475.90	22000.26	214.32	21785.95	540.59
19	2613.45	24399.40	222.42	24176.98	540.77
20	2751.00	26927.98	230.69	26697.30	540.95
21	2613.45	29310.75	239.09	29071.67	541.12
22	2475.90	31547.57	246.74	31300.83	541.28
23	2338.35	33639.18	253.71	33385.47	541.44
24	2200.80	35586.27	260.06	35326.20	541.58
25	2063.25	37389.45	265.84	37123.61	541.71
26	1925.70	39049.31	271.08	38778.23	541.83
27	1788.15	40566.38	275.82	40290.56	541.94
28	1650.60	41941.16	280.08	41661.08	542.03
29	1513.05	43174.13	293.99	42880.14	542.09
30	1375.50	44255.64	352.13	43903.52	542.14
31	1237.95	45141.47	422.09	44719.38	542.18
32	1100.40	45819.78	491.04	45328.74	542.21
33	962.85	46291.59	546.12	45745.47	542.23
34	825.30	46570.77	586.15	45984.62	542.25
35	687.75	46672.37	609.86	46062.51	542.25
36	550.20	46612.71	621.98	45990.74	542.25
37	412.65	46403.39	610.59	45792.80	542.24
38	275.10	46067.90	590.75	45477.15	542.22
39	137.55	45614.70	560.17	45054.53	542.20
40	0.00	45054.53	520.82	44533.72	542.17

PEAK OUTFLOW= 10.37 CFS AT 36 MINUTES

PROJECT NAME VILLAGE @ DARDENNE - PRAIRIE

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DATE 1-12-97

DESIGNER J. Kendrick

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PICKETT RAY & SILVER

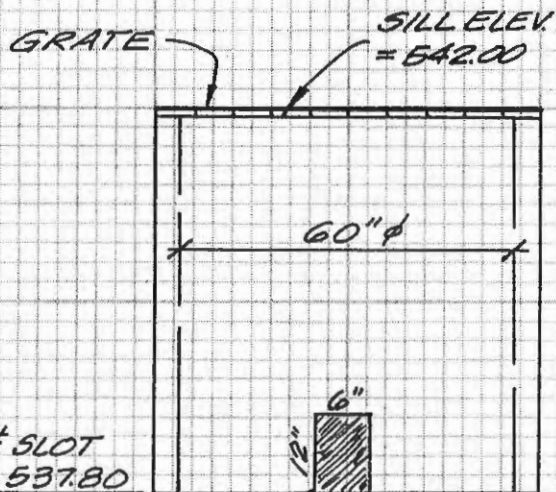
333 Mid Rivers Mall Dr.
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Basin "B"

ELEVATION	AREA	VOLUME	CUM. VOLUME
537.80	0	275	275
538.00	2752	13330	13605
540.00	10578	27550	41155
542.00	16972	39254	80409
544.00	22282	50066	130475
546.00	27784		



OUTFALL STRUCTURE
O.S. # 2
N.T.S.

60" ϕ STANDPIPE
w/ GRATE ON SILL.

CHECK LOWFLOW BLOCKED
WEIR EQUATION:
(25 YR./20 MIN.)
 $Q = CLH^{3/2}$

$$35.85 = (3.0)(15.71)(H^{3/2})$$

$$35.85 = (47.13) H^{3/2}$$

$$\left(\frac{35.85}{47.13}\right)^{2/3} = H$$

$$0.76^{2/3} = H$$

$$0.83' = H$$

$$542.00(\text{SILL}) + 0.83' = 542.83$$

$$\text{DAM ELEV.} = 546.00$$

$$25\text{YR. FREEBOARD (WEIR)} = 3.17'$$

$$25\text{YR. FREEBOARD (H.W.)} =$$

$$546.00 - 541.66 = 4.34'$$

$$100\text{YR. FREEBOARD (H.W.)} =$$

$$546.00 - 542.25 = 3.75'$$

$$546.00 - 542.83 = 3.17' \checkmark$$