

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

Civil Engineers
Planners
Land Surveyors

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

397-1211

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

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 36.20 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 36.32 ACRES

DEVELOPED:

ONSITE: 33.56 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 33.68 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 36.20 ACRES x 1.27 CFS/ACRE
OFFSITE: 0.12 ACRES x 1.27 CFS/ACRE

Q = 45.97 CFS
Q = 0.15 CFS
TQ = 46.12 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 4.71 ACRES x 1.77 CFS/ACRE Q = 8.34 CFS
VIA FE. 209 (ONSITE): 0.63 ACRES x 1.77 CFS/ACRE Q = 1.12 CFS
VIA FE. 212 (ONSITE): 26.50 ACRES x 1.77 CFS/ACRE Q = 46.91 CFS
(OFFSITE): 0.12 ACRES x 1.27 CFS/ACRE Q = 0.15 CFS
VIA FE. 245 (ONSITE): 5.31 ACRES x 1.77 CFS/ACRE Q = 9.40 CFS
VIA FE. 258 (ONSITE): 0.66 ACRES x 1.77 CFS/ACRE Q = 1.17 CFS
VIA FE. 260 (ONSITE): 0.46 ACRES x 1.77 CFS/ACRE Q = 0.81 CFS

TQ = 67.90 CFS
(4,074.00 CFM)

DEVELOPED-BYPASS BASIN:

ONSITE: 0.20 ACRES x 1.77 CFS/ACRE

Q = 0.35 CFS
TQ = 0.35 CFS

DETENTION REQUIRED:

$67.90 \text{ CFS} + 0.35 \text{ CFS} = 68.25 \text{ CFS} - 46.12 \text{ CFS} = 22.13 \text{ CFS}$

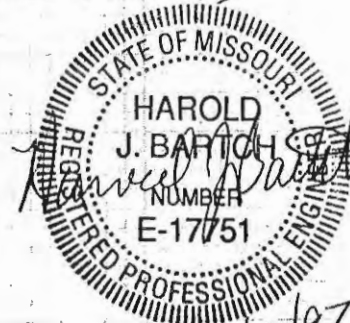
$22.13 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 39,834 \text{ CU. FT.}$
(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$67.90 \text{ CFS} - 22.13 \text{ CFS} \quad Q = 45.77 \text{ CFS}$

PEAK OUTFLOW:

16.28 CFS @ 36 MIN.



1/31/97

PROJECT NAME VILLAGE OF DARDENNE-PRAIRIE

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

DATE 1-12-97

DESIGNER V. Kendrick

PAGE 2 of 11.

PICKETT RAY & SILVER

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

Civil Engineers
Planners
Land Surveyors

397-1211

Pond "C"

2YR./20MIN.

* RECTANGULAR ORIFICE *
* 36 in W X 15 in H ELEV= 502 *
* *
* Outlet Pipe - 70 ft - 48 in pipe *
* UFL= 498.7 LFL= 498 n= .013 *
* *
* Overflow Structure - Box Structure *
* PERIMETER= 22 ft/SILL ELEV= 504 *
* *

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

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	203.70	203.70	0.00	203.70	502.00
2	407.40	611.10	0.16	610.94	502.01
3	611.10	1222.04	0.81	1221.23	502.03
4	814.80	2036.03	2.28	2033.75	502.05
5	1018.50	3052.25	4.91	3047.34	502.07
6	1222.20	4269.54	9.00	4260.54	502.10
7	1425.90	5686.44	14.88	5671.56	502.13
8	1629.60	7301.16	22.86	7278.31	502.17
9	1833.30	9111.61	33.22	9078.39	502.21
10	2037.00	11115.39	46.29	11069.10	502.26
11	2240.70	13309.80	62.31	13247.49	502.31
12	2444.40	15691.89	81.59	15610.30	502.37
13	2648.10	18258.40	104.36	18154.04	502.43
14	2851.80	21005.84	130.88	20874.96	502.49
15	3055.50	23930.46	161.37	23769.09	502.56
16	3259.20	27028.29	196.07	26832.22	502.63
17	3462.90	30295.12	235.18	30059.94	502.71
18	3666.60	33726.54	278.86	33447.68	502.79
19	3870.30	37317.98	327.31	36990.67	502.87
20	4074.00	41064.67	380.67	40684.00	502.96
21	3870.30	44554.30	439.08	44115.22	503.03
22	3666.60	47781.82	488.93	47292.89	503.09
23	3462.90	50755.79	529.76	50226.03	503.14
24	3259.20	53485.23	568.40	52916.83	503.19
25	3055.50	55972.33	604.61	55367.72	503.23
26	2851.80	58219.52	638.26	57581.26	503.27
27	2648.10	60229.37	884.02	59345.34	503.30
28	2444.40	61789.74	905.29	60884.45	503.33
29	2240.70	63125.15	923.45	62201.70	503.35
30	2037.00	64238.70	938.72	63299.98	503.37
31	1833.30	65133.28	951.26	64182.03	503.39
32	1629.60	65811.63	961.23	64850.41	503.40
33	1425.90	66276.31	968.69	65307.62	503.41
34	1222.20	66529.82	973.78	65556.04	503.41
35	1018.50	66574.54	976.53	65598.01	503.41
36	814.80	66412.81	976.99	65435.82	503.41
37	611.10	66046.93	975.20	65071.72	503.40
38	407.40	65479.12	971.15	64507.97	503.39
39	203.70	64711.67	964.88	63746.79	503.38
40	0.00	63746.79	956.32	62790.47	503.36

PEAK OUTFLOW= 16.28 CFS AT 36 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

Civil Engineers
Planners
Land Surveyors

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

397-1211

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

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 36.20 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 36.32 ACRES

DEVELOPED:

ONSITE: 33.56 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 33.68 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 36.20 ACRES x 1.55 CFS/ACRE
OFFSITE: 0.12 ACRES x 1.55 CFS/ACRE

Q = 56.11 CFS
Q = 0.19 CFS
TQ = 56.30 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 4.71 ACRES x 2.18 CFS/ACRE Q = 10.27 CFS
VIA F.E. 209 (ONSITE): 0.63 ACRES x 2.18 CFS/ACRE Q = 1.37 CFS
VIA F.E. 212 (ONSITE): 26.50 ACRES x 2.18 CFS/ACRE Q = 57.77 CFS
(OFFSITE): 0.12 ACRES x 1.55 CFS/ACRE Q = 0.19 CFS
VIA F.E. 245 (ONSITE): 5.31 ACRES x 2.18 CFS/ACRE Q = 11.58 CFS
VIA F.E. 258 (ONSITE): 0.66 ACRES x 2.18 CFS/ACRE Q = 1.44 CFS
VIA F.E. 260 (ONSITE): 0.46 ACRES x 2.18 CFS/ACRE Q = 1.00 CFS

TQ = 83.62 CFS
(5,017.2 CFM)

DEVELOPED-BYPASS BASIN:

ONSITE: 0.20 ACRES x 2.18 CFS/ACRE

Q = 0.44 CFS
TQ = 0.44 CFS

DETENTION REQUIRED:

$$83.62 \text{ CFS} + 0.44 \text{ CFS} = 84.06 \text{ CFS} - 56.30 \text{ CFS} = 27.76 \text{ CFS}$$

$$27.76 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 49,968 \text{ CU. FT.}$$

(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$$83.62 \text{ CFS} - 27.76 \text{ CFS} \quad Q = 55.86 \text{ CFS}$$

PEAK OUTFLOW:

18.79 CFS @ 36 MIN.

PROJECT NAME VILLAGE OF DARDENNE-PRAIRIE

PROJECT #/JOB ORDER # 95-0800/3596B

DATE 1-12-97

DESIGNER V. Kendrick

PAGE 4 of 11.

PICKETT RAY & SILVER

Civil Engineers
Planners
Land Surveyors

397-1211

333 Mid Rivers Mall Dr.
St. Peters, MO 63378

Pond "C"

5YR./20MIN.

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*                               *
* RECTANGULAR ORIFICE          *
* 36 in W X 15 in H   ELEV= 502 *
*                               *
* Outlet Pipe - 70 ft - 48 in pipe *
* UFL= 498.7   LFL= 498   n= .013 *
*                               *
* Overflow Structure - Box Structure *
* PERIMETER= 22 ft/SILL ELEV= 504 *
*                               *
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PRAIRIE "C" 1-12-97 SUBMITTAL DATE: 1-20-97

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	250.86	250.86	0.00	250.86	502.01
2	501.72	752.58	0.21	752.37	502.02
3	752.58	1504.95	1.10	1503.85	502.04
4	1003.44	2507.29	3.12	2504.17	502.06
5	1254.30	3758.47	6.71	3751.76	502.09
6	1505.16	5256.92	12.30	5244.62	502.12
7	1756.02	7000.64	20.32	6980.32	502.16
8	2006.88	8987.20	31.20	8956.00	502.21
9	2257.74	11213.74	45.35	11168.39	502.26
10	2508.60	13676.99	63.15	13613.84	502.32
11	2759.46	16373.30	85.00	16288.30	502.38
12	3010.32	19298.62	111.23	19187.39	502.45
13	3261.18	22448.57	142.22	22306.36	502.53
14	3512.04	25818.40	178.26	25640.15	502.60
15	3762.90	29403.05	219.69	29183.36	502.69
16	4013.76	33197.12	266.76	32930.36	502.78
17	4264.62	37194.98	319.75	36875.23	502.87
18	4515.48	41390.71	378.89	41011.82	502.97
19	4766.34	45778.16	444.40	45333.76	503.05
20	5017.20	50350.96	504.47	49846.49	503.13
21	4766.34	54612.83	563.33	54049.50	503.21
22	4515.48	58564.98	620.10	57944.88	503.28
23	4264.62	62209.50	888.45	61321.05	503.34
24	4013.76	65334.81	928.55	64406.26	503.39
25	3762.90	68169.18	963.73	67205.44	503.44
26	3512.04	70717.48	994.58	69722.90	503.49
27	3261.18	72984.07	1021.54	71962.53	503.53
28	3010.32	74972.85	1044.94	73927.93	503.56
29	2759.46	76687.38	1065.03	75622.36	503.59
30	2508.60	78130.96	1082.06	77048.90	503.62
31	2257.74	79306.65	1096.20	78210.44	503.64
32	2006.88	80217.32	1107.58	79109.75	503.65
33	1756.02	80865.78	1116.30	79749.47	503.66
34	1505.16	81254.63	1122.47	80132.16	503.67
35	1254.30	81386.46	1126.14	80260.31	503.67
36	1003.44	81263.75	1127.37	80136.38	503.67
37	752.58	80888.96	1126.19	79762.78	503.66
38	501.72	80264.50	1122.60	79141.90	503.65
39	250.86	79392.76	1116.62	78276.15	503.64
40	0.00	78276.15	1108.21	77167.93	503.62

PEAK OUTFLOW= 18.79 CFS AT 36 MINUTES

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

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

Civil Engineers
Planners
Land Surveyors

397-1211

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

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 36.20 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 36.32 ACRES

DEVELOPED:

ONSITE: 33.56 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 33.68 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 36.20 ACRES x 1.87 CFS/ACRE
OFFSITE: 0.12 ACRES x 1.87 CFS/ACRE

Q = 67.69 CFS
Q = 0.22 CFS
TQ = 67.91 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 4.71 ACRES x 2.64 CFS/ACRE Q = 12.43 CFS
VIA FE. 209 (ONSITE): 0.63 ACRES x 2.64 CFS/ACRE Q = 1.66 CFS
VIA FE. 212 (ONSITE): 26.50 ACRES x 2.64 CFS/ACRE Q = 69.96 CFS
(OFFSITE): 0.12 ACRES x 1.87 CFS/ACRE Q = 0.22 CFS
VIA FE. 245 (ONSITE): 5.31 ACRES x 2.64 CFS/ACRE Q = 14.02 CFS
VIA FE. 258 (ONSITE): 0.66 ACRES x 2.64 CFS/ACRE Q = 1.74 CFS
VIA FE. 260 (ONSITE): 0.46 ACRES x 2.64 CFS/ACRE Q = 1.21 CFS

TQ = 101.24 CFS
(6,074.4 CFM)

DEVELOPED-BYPASS BASIN:

ONSITE: 0.20 ACRES x 2.64 CFS/ACRE

Q = 0.53 CFS
TQ = 0.53 CFS

DETENTION REQUIRED:

$101.24 \text{ CFS} + 0.44 \text{ CFS} = 101.77 \text{ CFS} - 67.91 \text{ CFS} = 33.86 \text{ CFS}$

$33.86 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 60,948 \text{ CU. FT.}$
(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$101.24 \text{ CFS} - 33.86 \text{ CFS} \quad Q = 67.38 \text{ CFS}$

PEAK OUTFLOW:

21.36 CFS @ 36 MIN.

PROJECT NAME VILLAGE OF DARDENNE-PRAIRIE

PROJECT #/JOB ORDER # 95-0800/3596B

DATE 1-12-97

DESIGNER J. Kendrick

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PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MO 63378

Civil Engineers
Planners
Land Surveyors

397-1211

Pond "C"

15 YR./20 MIN.

*
* RECTANGULAR ORIFICE *
* 36 in W X 15 in H ELEV= 502 *
* *
* Outlet Pipe - 70 ft - 48 in pipe *
* UFL= 498.7 LFL= 498 n= .013 *
* *
* Overflow Structure - Box Structure *
* PERIMETER= 22 ft/SILL ELEV= 504 *
* *

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

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	303.72	303.72	0.00	303.72	502.01
2	607.44	911.16	0.28	910.88	502.02
3	911.16	1822.04	1.47	1820.57	502.04
4	1214.88	3035.45	4.16	3031.30	502.07
5	1518.60	4549.90	8.93	4540.97	502.11
6	1822.32	6363.29	16.37	6346.92	502.15
7	2126.04	8472.96	27.05	8445.91	502.20
8	2429.76	10875.67	41.53	10834.14	502.26
9	2733.48	13567.62	60.34	13507.28	502.32
10	3037.20	16544.48	83.99	16460.49	502.39
11	3340.92	19801.41	113.00	19688.41	502.46
12	3644.64	23333.05	147.83	23185.23	502.55
13	3948.36	27133.59	188.90	26944.69	502.63
14	4252.08	31196.77	236.67	30960.10	502.73
15	4555.80	35515.90	291.48	35224.42	502.83
16	4859.52	40083.94	353.74	39730.20	502.94
17	5163.24	44893.44	423.74	44469.70	503.04
18	5466.96	49936.66	493.44	49443.22	503.12
19	5770.68	55213.90	557.98	54655.92	503.22
20	6074.40	60730.32	628.42	60101.90	503.31
21	5770.68	65872.58	914.27	64958.31	503.40
22	5466.96	70425.28	969.89	69455.38	503.48
23	5163.24	74618.63	1018.71	73599.93	503.55
24	4859.52	78459.46	1061.70	77397.75	503.62
25	4555.80	81953.54	1099.63	80853.93	503.68
26	4252.08	85106.00	1133.04	83972.96	503.74
27	3948.36	87921.32	1162.36	86758.96	503.79
28	3644.64	90403.60	1187.96	89215.64	503.83
29	3340.92	92556.56	1210.07	91346.50	503.87
30	3037.20	94383.71	1228.92	93154.78	503.90
31	2733.48	95888.26	1244.69	94643.56	503.93
32	2429.76	97073.32	1257.54	95815.78	503.95
33	2126.04	97941.82	1267.55	96674.26	503.96
34	1822.32	98496.58	1274.85	97221.74	503.97
35	1518.60	98740.34	1279.47	97460.88	503.98
36	1214.88	98675.76	1281.49	97394.28	503.98
37	911.16	98305.44	1280.93	97024.52	503.97
38	607.44	97631.96	1277.80	96354.16	503.96
39	303.72	96657.88	1272.13	95385.76	503.94
40	0.00	95385.76	1263.89	94121.86	503.92

PEAK OUTFLOW= 21.36 CFS AT 36 MINUTES

PROJECT NAME VILLAGE OF DARDENNE-PRAIRIE

PROJECT #/JOB ORDER # 95-0800/35968

DATE 1-12-97

DESIGNER V. Kendrick

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PICKETT RAY & SILVER

Civil Engineers
Planners
Land Surveyors

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

397-1211

Pond "C"

25 YR./20 MIN.

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*****
* RECTANGULAR ORIFICE *
* 36 in W X 15 in H ELEV= 502 *
* *
* Outlet Pipe - 70 ft - 48 in pipe *
* UFL= 498.7 LFL= 498 n= .013 *
* *
* Overflow Structure - Box Structure *
* PERIMETER= 22 ft/SILL ELEV= 504 *
* *
*****

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

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	375.09	375.09	0.00	375.09	502.01
2	750.18	1125.27	0.39	1124.88	502.03
3	1125.27	2250.15	2.02	2248.13	502.05
4	1500.36	3748.49	5.70	3742.79	502.09
5	1875.45	5618.24	12.25	5605.99	502.13
6	2250.54	7856.53	22.46	7834.07	502.18
7	2625.63	10459.70	37.10	10422.60	502.25
8	3000.72	13423.32	56.93	13366.39	502.31
9	3375.81	16742.20	82.69	16659.51	502.39
10	3750.90	20410.41	115.06	20295.35	502.48
11	4125.99	24421.34	154.71	24266.63	502.57
12	4501.08	28767.71	202.26	28565.45	502.67
13	4876.17	33441.62	258.34	33183.28	502.78
14	5251.26	38434.54	323.44	38111.10	502.90
15	5626.35	43737.46	398.10	43339.36	503.02
16	6001.44	49340.80	479.14	48861.66	503.11
17	6376.53	55238.19	550.30	54687.89	503.22
18	6751.62	61439.51	628.87	60810.64	503.33
19	7126.71	67937.35	922.59	67014.76	503.44
20	7501.80	74516.56	992.51	73524.04	503.55
21	7126.71	80650.75	1060.93	79589.81	503.66
22	6751.62	86341.44	1120.93	85220.50	503.76
23	6376.53	91597.04	1173.90	90423.14	503.85
24	6001.44	96424.58	1220.79	95203.80	503.94
25	5626.35	100830.20	1262.34	99567.80	504.01
26	5251.26	104819.10	1304.51	103514.50	504.08
27	4876.17	108390.70	1403.88	106986.90	504.13
28	4501.08	111487.90	1525.59	109962.40	504.18
29	4125.99	114088.40	1652.03	112436.30	504.22
30	3750.90	116187.20	1765.59	114421.60	504.25
31	3375.81	117797.40	1869.12	115928.30	504.27
32	3000.72	118929.00	1947.66	116981.40	504.29
33	2625.63	119607.00	2004.29	117602.70	504.30
34	2250.54	119853.30	2038.38	117814.90	504.30
35	1875.45	119690.40	2050.17	117640.20	504.30
36	1500.36	119140.50	2040.50	117100.00	504.29
37	1125.27	118225.30	2010.78	116214.50	504.28
38	750.18	116964.70	1962.89	115001.90	504.26
39	375.09	115376.90	1899.04	113477.90	504.24
40	0.00	113477.90	1816.09	111661.80	504.21

PEAK OUTFLOW= 34.17 CFS AT 35 MINUTES

PICKETT RAY & SILVER

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

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

Civil Engineers
Planners
Land Surveyors

397-1211

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

TOTAL AREA TO DISCHARGE POINT:

PRE-DEVELOPED:

ONSITE: 36.20 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 36.32 ACRES

DEVELOPED:

ONSITE: 33.56 ACRES
OFFSITE: 0.12 ACRES (RES.)
TOTAL: 33.68 ACRES

PRE-DEVELOPED CONDITIONS:

ONSITE: 36.20 ACRES x 2.95 CFS/ACRE
OFFSITE: 0.12 ACRES x 2.95 CFS/ACRE
Q = 106.79 CFS
Q = 0.35 CFS
TQ = 107.14 CFS

DEVELOPED Q TO BASIN:

DIRECT RUNOFF: ONSITE: 4.71 ACRES x 4.17 CFS/ACRE Q = 19.64 CFS
VIA F.E. 209 (ONSITE): 0.63 ACRES x 4.17 CFS/ACRE Q = 2.63 CFS
VIA F.E. 212 (ONSITE): 26.50 ACRES x 4.17 CFS/ACRE Q = 110.51 CFS
(OFFSITE): 0.12 ACRES x 2.95 CFS/ACRE Q = 0.35 CFS
VIA F.E. 245 (ONSITE): 5.31 ACRES x 4.17 CFS/ACRE Q = 22.14 CFS
VIA F.E. 258 (ONSITE): 0.66 ACRES x 4.17 CFS/ACRE Q = 2.75 CFS
VIA F.E. 260 (ONSITE): 0.46 ACRES x 4.17 CFS/ACRE Q = 1.92 CFS
37.8
TQ = 159.94 CFS
(2596.4 CFM)

DEVELOPED-BYPASS BASIN:

ONSITE: 0.20 ACRES x 4.17 CFS/ACRE
Q = 0.83 CFS
TQ = 0.83 CFS

DETENTION REQUIRED:

$159.94 \text{ CFS} + 0.83 \text{ CFS} = 160.77 \text{ CFS} - 107.14 \text{ CFS} = 53.63 \text{ CFS}$

$53.63 \text{ CFS} \times 30 \text{ MIN.} \times 60 \text{ SEC./MIN.} = 96,534 \text{ CU. FT.}$
(ESTIMATED VOLUME)

ALLOWABLE RELEASE FROM BASIN:

$159.94 \text{ CFS} - 53.63 \text{ CFS} \quad Q = 106.31 \text{ CFS}$

PEAK OUTFLOW:

62.12 CFS @ 33 MIN.

PROJECT NAME VILLAGE OF DARDENNE-PRAIRIE

PROJECT #/JOB ORDER # 95-0800/35968

DATE 1-12-97

DESIGNER V. Kendrick

PAGE 10 of 11.

PICKETT RAY & SILVER

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

Civil Engineers
Planners
Land Surveyors

397-1211

Pond "C"

100 YR. / 20 MIN.

*
* RECTANGULAR ORIFICE *
* 36 in W X 15 in H ELEV= 502 *
* *
* .Outlet Pipe - 70 ft - 48 in pipe *
* UFL= 498.7 LFL= 498 n= .013 *
* *
* Overflow Structure - Box Structure *
* PERIMETER= 22 ft/SILL ELEV= 504 *
* *

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

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	479.82	479.82	0.00	479.82	502.01
2	959.64	1439.46	0.56	1438.90	502.03
3	1439.46	2878.36	2.92	2875.44	502.07
4	1919.28	4794.72	8.25	4786.47	502.11
5	2399.10	7185.57	17.72	7167.85	502.17
6	2878.92	10046.77	32.47	10014.30	502.24
7	3358.74	13373.04	53.62	13319.42	502.31
8	3838.56	17157.98	82.25	17075.73	502.40
9	4318.38	21394.11	119.40	21274.71	502.50
10	4798.20	26072.91	166.04	25906.87	502.61
11	5278.02	31184.89	223.13	30961.76	502.73
12	5757.84	36719.60	291.50	36428.10	502.86
13	6237.66	42665.76	372.02	42293.74	503.00
14	6717.48	49011.22	465.41	48545.81	503.11
15	7197.30	55743.11	546.14	55196.97	503.23
16	7677.12	62874.09	635.91	62238.18	503.35
17	8156.94	70395.12	939.14	69456.00	503.48
18	8636.76	78092.75	1018.71	77074.04	503.62
19	9116.58	86190.62	1096.44	85094.18	503.76
20	9596.40	94690.58	1172.73	93517.84	503.91
21	9116.58	102634.40	1247.84	101386.60	504.04
22	8636.76	110023.40	1343.98	108679.40	504.16
23	8156.94	116836.30	1596.93	115239.40	504.26
24	7677.12	122916.50	1911.41	121005.10	504.36
25	7197.30	128202.40	2243.41	125959.00	504.43
26	6717.48	132676.40	2554.45	130122.00	504.50
27	6237.66	136359.60	2862.52	133497.10	504.55
28	5757.84	139255.00	3138.09	136116.90	504.60
29	5278.02	141394.90	3339.26	138055.60	504.63
30	4798.20	142853.90	3492.29	139361.60	504.65
31	4318.38	143679.90	3597.31	140082.60	504.66
32	3838.56	143921.20	3716.71	140204.50	504.66
33	3358.74	143563.20	3727.00	139836.20	504.66
34	2878.92	142715.10	3696.15	139019.00	504.64
35	2399.10	141418.10	3569.56	137848.50	504.62
36	1919.28	139767.80	3475.78	136292.00	504.60
37	1439.46	137731.50	3352.90	134378.60	504.57
38	959.64	135338.20	3204.96	132133.30	504.53
39	479.82	132613.10	3007.24	129605.90	504.49
40	0.00	129605.90	2826.06	126779.80	504.45

PEAK OUTFLOW= 62.12 CFS AT 33 MINUTES

PROJECT NAME VILLAGE OF DARDENNE-PRAIRIE

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

DATE 1-12-97

DESIGNER J. Kendrick

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PICKETT RAY & SILVER

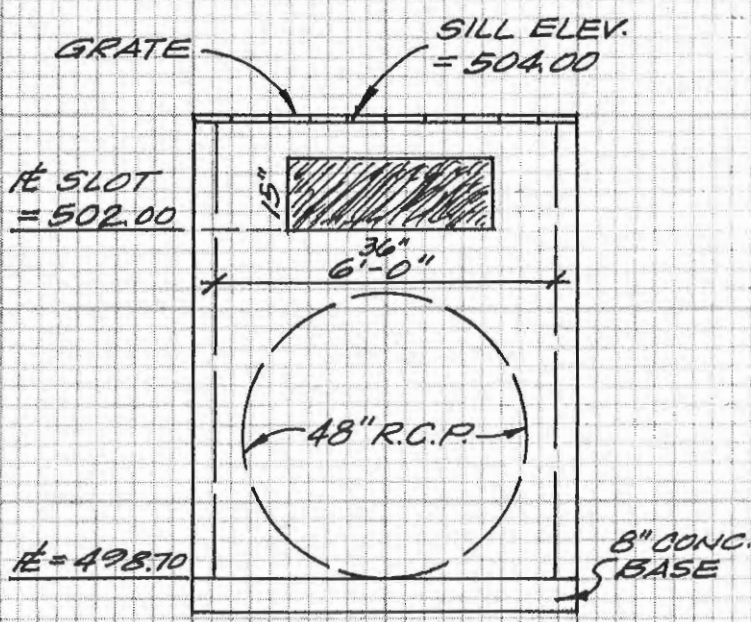
333 Mid Rivers Mall Dr.
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Pond "C"

ELEVATION	AREA	VOLUME	CUM. VOLUME
502.00	31620	42451	42451
503.00	53282	56208	98659
504.00	59134	125670	224329
506.00	66536	70255	294584
507.00	73974		



OUTFALL STRUCTURE
O.S. #263

6'x5' CONCRETE BOX
W/ STEEL GRATE ON SILL

CHECK LOWFLOW BLOCKED:

WEIR EQUATION:

(25YR./20MIN.)

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

$$125.03 = (3.0)(22.0) H^{3/2}$$

$$\frac{125.03}{66.0} = H^{3/2}$$

$$1.89 = H^{3/2}$$

$$(1.89)^{2/3} = H$$

$$1.53' = H$$

$$504.00(\text{SILL}) + 1.53' = 505.53$$

$$\text{DAM ELEV.} = 507.00$$

$$\text{NORMAL WATER LEVEL} = 502.00$$

$$25\text{YR. FREEBOARD (WEIR)} = 1.47'$$

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

$$507.00 - 504.30 = 2.70'$$

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

$$507.00 - 504.66 = 2.34'$$

$$507.00 - 505.53 = 1.47' \checkmark$$