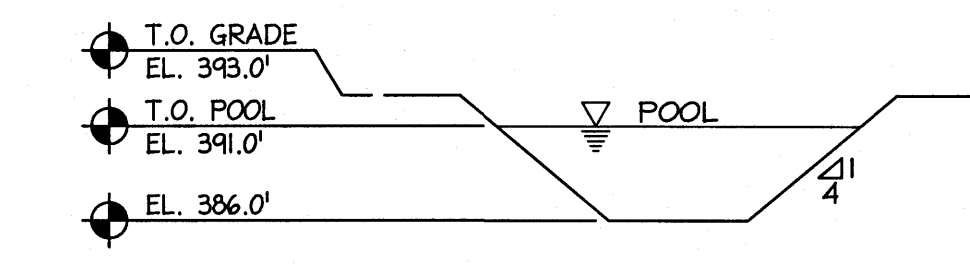


DETAIL 1
SCALE: N.T.S.
POND SPILLWAY INLET



SECTION 2
SCALE: N.T.S.
TYPICAL POND X-SECTION

UNDEVELOPED
KERBY FORMULA $t_c = K(LN/S^5)^{.467}$
 $= .827(1050(.24)/.02^5)^{.467}$
 $= 30.2 \text{ MIN.}$
 $K = .827$
 $L = 1050'$
 $N = .24$
 $S = \frac{\Delta}{L} = \frac{20'}{1050'} = .02$
 $\Delta = 409 - 389 = 20'$

$i_p = 3.23 \text{ IN/HR}$
 WATERSHED AREA = 14.00 A_c
 RUNOFF RATE = $C_p A = (.24)(3.23 \text{ IN/HR})(14.00A) = 10.85 \text{ cfs}$

DEVELOPED

	"A"	"C _n "
PAVED AREA	1.99	.94
BUILDING	.92	.94
MEADOW/LAWNS	11.09	.25

WEIGHTED $C_p = .38$
 SEE FORM 800 FOR REQUIRED RETENTION VOLUME.
 VOL $\geq .36 \text{ AC-FT} = 15,681 \text{ CF REQ'D.}$
 VOL₂₆ $\geq .38 \text{ AC-FT} = 16,553 \text{ CF PROVIDED}$

FORM 800
 This form must be completed and submitted with all drainage plans.
 Project: **FIRST CHRISTIAN CHURCH** Detention Facility Design Return Period: **25** yrs
 Designer: **PROFESSIONAL CONSULTANTS, INC.** Release Rate Return Period: **25** yrs
 Watershed Area: **14.00** acres
 Time of Concentration (Undeveloped Watershed): **30.2** minutes
 Rainfall Intensity (i): **0.24** inches/hr
 Undeveloped Runoff Coefficient (C_u): **0.24**
 Undeveloped Runoff Flow (Q=C_u i A_u): **0.85** cfs
 Developed Runoff Coefficient (C_d): **0.38**

Storm Duration (hrs.)	Rainfall Intensity (inches/hr)	Inflow Rate (Cfs)	Outflow Rate (Cfs)	Storage Rate (Cfs)	Required Storage (acre-ft)
0.08	7.208	38.35	10.85	27.49	0.18
0.17	5.925	31.52	10.85	20.67	0.28
0.25	5.033	26.78	10.85	15.92	0.33
0.50	3.649	19.40	10.85	8.54	0.36
1.00	2.078	11.05	10.85	0.20	0.32
2.00	1.400	7.45	10.85	-3.40	-0.57
3.00	1.019	5.42	10.85	-5.43	-1.38
4.00	0.836	4.45	10.85	-6.41	-2.14
5.00	0.684	3.64	10.85	-7.21	-3.01
6.00	0.589	3.13	10.85	-7.72	-3.88
7.00	0.516	2.75	10.85	-8.11	-4.73
8.00	0.463	2.46	10.85	-8.39	-5.58
9.00	0.415	2.21	10.85	-8.65	-6.48
10.00	0.379	2.02	10.85	-8.84	-7.38

POND DESIGN
 DIMENSIONS @ POOL: 360.0' x 80.0'
 POOL ELEV.: 391.0'
 POOL VOL.: 2.3 AC-FT
 25 YR STORM EL.: 391.64'
 25 YR STORM VOL.: 2.68 AC-FT

NORTH

Professional Consultants, Inc.
 Evansville • Rockport
 Engineering/Architecture
 Construction Management
 www.pcdesign.com

SITE STUDY
FIRST CHRISTIAN CHURCH
HIGHWAY 57
EVANSVILLE, INDIANA

ISSUE	DATE	DESCRIPTION
PROJECT NUMBER: 20030167.00.00		
DRAWN BY: APA	DATE: 06/26/03	
DESIGNED BY: JWB	DATE: 06/24/03	
TECH CHECKED BY: JWB	DATE:	
QC CHECKED BY:	DATE:	

DRAINAGE PLAN

C-105

SHEET NUMBER

DRAINAGE PLAN
SCALE: 1" = 50'-0"

FOR CONSTRUCTION