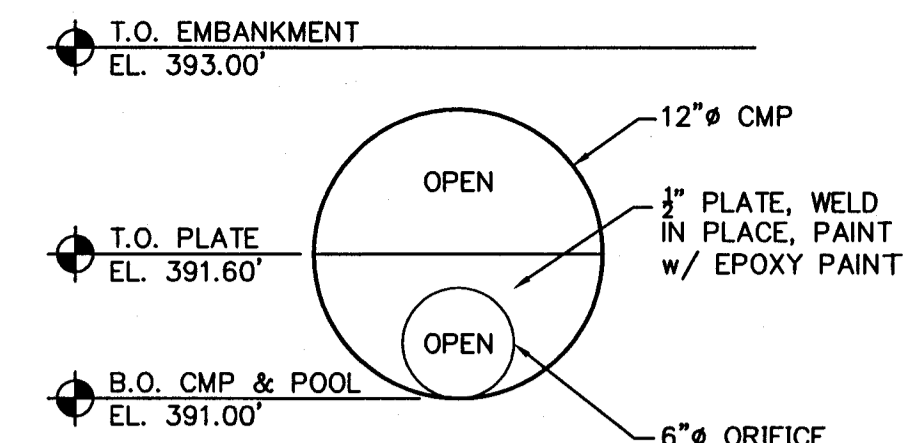
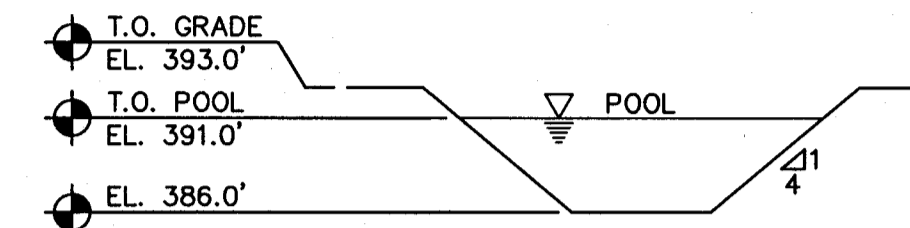


SITE DRAINAGE DESCRIPTION
 SITE DRAINAGE WAS ORIGINALLY SUBMITTED IN 2003 FOR THE ENTIRE SITE. APPROVAL WAS GIVEN FOR THIS DESIGN AT THAT TIME. AT THIS TIME THE REMAINDER OF THE HARD SURFACE PARKING IS TO BE INSTALLED AND THE MULTI-PURPOSE BUILDING IS TO BE CONSTRUCTED. NO CHANGES TO THE ORIGINAL DESIGN ARE PLANNED.



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



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

UNDEVELOPED
 KERBY FORMULA $t_c = K(LN/S^5)^{.487}$
 $= .827(1050(.24)/.02^5)^{.487}$
 $= 30.2 \text{ MIN.}$
 $K = .827$
 $L = 1050'$
 $N = 0.24$
 $S = \Delta/L = 20'/1050' = 0.02$
 $= 389 - 369 = 20'$

$i_{10} = 3.23 \text{ IN/HR}$
 WATERSHED AREA = 14.00 A_c
 RUNOFF RATE = $C_d A = (.24)(3.23 \text{ IN/HR})(14.00A) = 10.85 \text{ cfs}$

DEVELOPED

	"A"	"C _n "
PAVED AREA	1.99	0.94
BUILDING	0.92	0.94
MEADOW/LAWNS	11.09	0.25

WEIGHTED C_n = 0.38
 SEE FORM 800 FOR REQUIRED RETENTION VOLUME.
 VOL ≥ 36 AC-FT = 15,681 cf REQ'D.
 VOL₂₅ ≥ 38 AC-FT = 16,553 cf PROVIDED

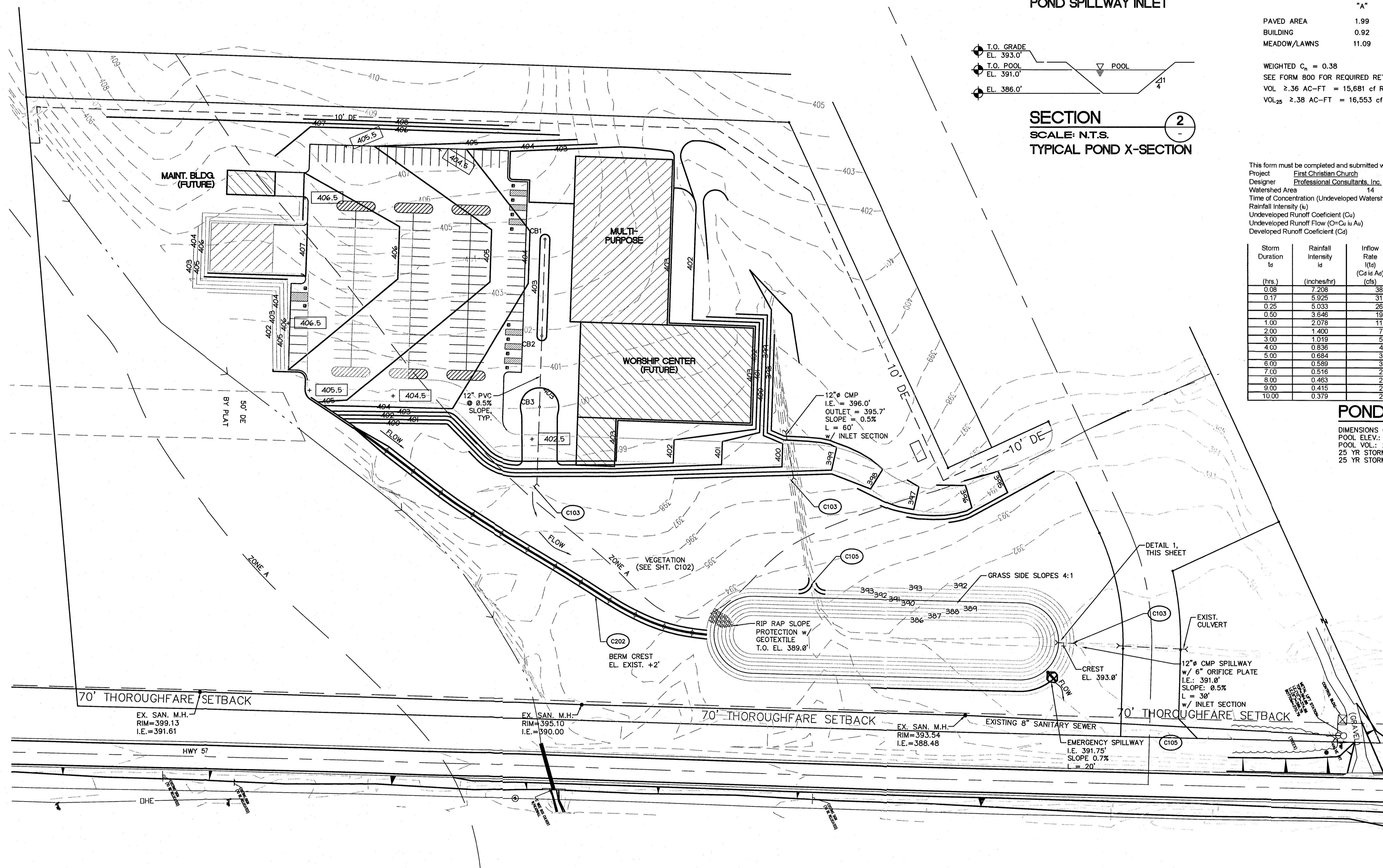
FORM 800
 This form must be completed and submitted with all drainage plans.

Project	First Christian Church	Detention Facility Design Return Period	25	yrs
Designer	Professional Consultants, Inc.	Release Rate Return Period	25	yrs
Watershed Area	14	acres		
Time of Concentration (Undeveloped Watershed)			30.2	minutes
Rainfall Intensity (i)			3.23	inches/hr
Undeveloped Runoff Coefficient (C _u)			0.24	
Undeveloped Runoff Flow (O=C _u i u A _w)			10.85	cfs
Developed Runoff Coefficient (C _d)			0.38	

Storm Duration (hrs)	Rainfall Intensity (inches/hr)	Inflow Rate (C _d i u A _w) (cfs)	Outflow Rate (C _u i u A _w) (cfs)	Storage Rate (I(t)-O) (cfs)	Required Storage ((I(t)-O)t)/12 (acre-ft)
0.08	7.208	38.35	10.85	27.49	0.18
0.17	5.925	31.52	10.85	20.67	0.29
0.25	5.033	26.78	10.85	15.92	0.33
0.50	3.646	19.40	10.85	8.54	0.36
1.00	2.078	11.05	10.85	0.20	0.02
2.00	1.400	7.45	10.85	-3.40	-0.57
3.00	1.019	5.42	10.85	-5.43	-1.36
4.00	0.835	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	-3.86
7.00	0.516	2.75	10.85	-8.11	-4.73
8.00	0.463	2.46	10.85	-8.39	-5.59
9.00	0.415	2.21	10.85	-8.65	-6.48
10.00	0.379	2.02	10.85	-8.84	-7.36

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



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

PC!
 ENGINEER • PROCURE • CONSTRUCT

112 INGLE STREET
 EVANSVILLE, IN 47708
 (812) 425-4264 PHONE
 (812) 464-7388 FAX
 www.pcdesign.com

SITE LAYOUT
FIRST CHRISTIAN CHURCH
 2485 BEAUMONT DR
 EVANSVILLE, INDIANA 47725

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PROJECT NUMBER: 20100049.00.00
DRAINAGE PLAN

C-105
 SHEET NUMBER

ISSUE
P2
 3/8/10

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