

135
E
Maumee



FAX TRANSMISSION

TO: JOE KLEINER, P.E.

COMPANY: VILLAGE OF NAPOLEON

FAX NUMBER: 1-419-592-8393

FROM: BRICE SCHMITMEYER

DATE: 6/2/2003

SUBJECT: HOPE SERVICES

PROJECT NO: 30E00009

NO. OF PAGES: 1 (not including transmittal)

ORIGINAL TO FOLLOW: YES NO

If these items do not arrive as noted, please call our office at the number below

COMMENTS:

JOE,

THE COUNTY BOARD HAS DECIDED TO ADD SOME ADDITIONAL PARKING TO
THE HOPE SERVICES PROJECT AS SHOWN ON THE ATTACHED PAGE. THE PLAN IS
TO DRAIN THIS AREA TO THE GRASS AREA BEHIND THE BUILDING. COULD YOU
PLEASE TAKE A LOOK AT THIS AND LET ME KNOW IF THIS WOULD BE OK WITH
THE CITY, AND IF YOU NEED REVISED DRAWING, ETC. I WILL CALL YOU THIS
AFTERNOON TO DISCUSS.

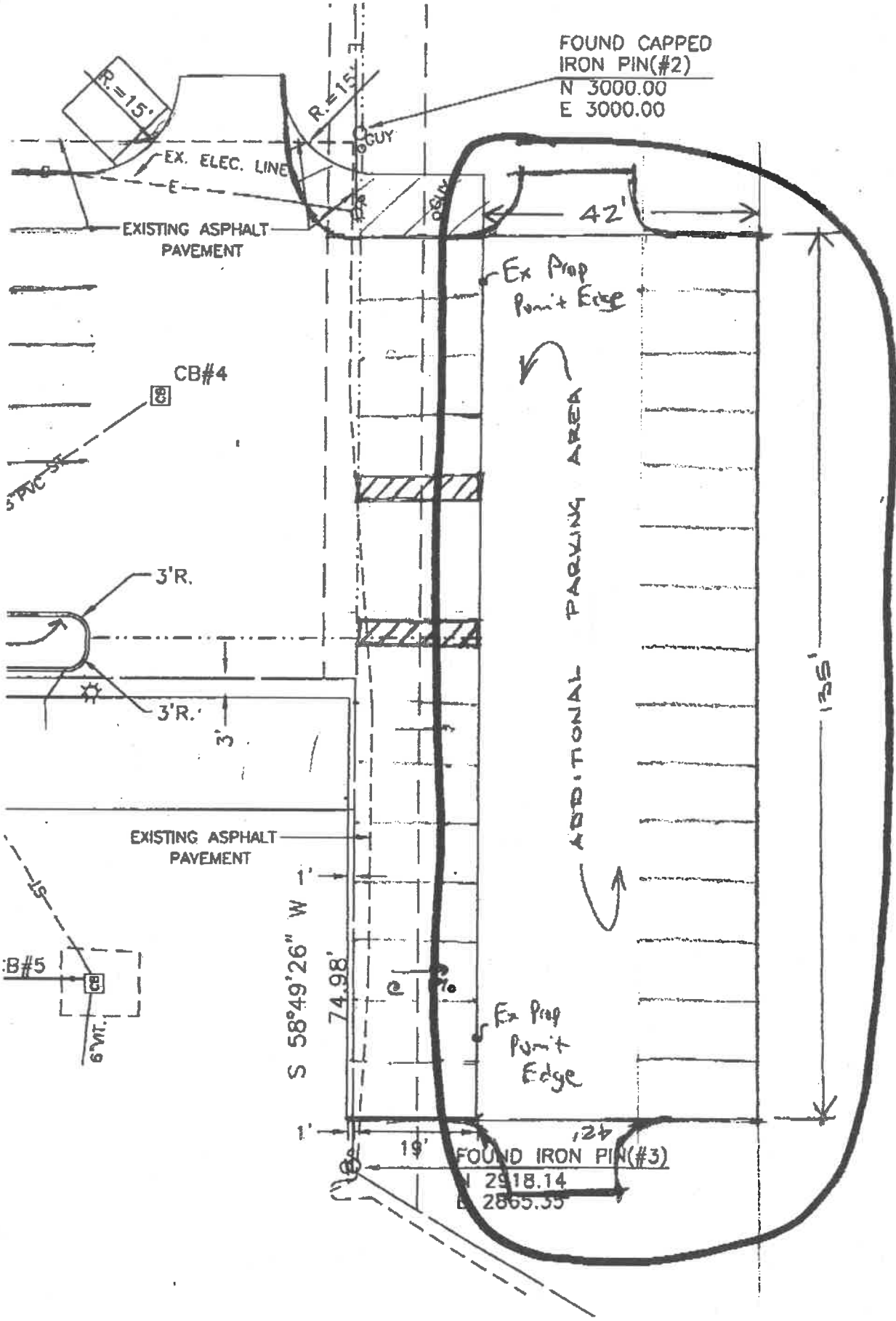
THANKS

BRICE

**Feller
Finch**
& Associates, Inc.
 Engineers • Surveyors

202 N. Washington Street • P.O. Box 432 • Delphos, Ohio 45833
 Also offices in Columbus and Maumee, Ohio, and Jackson, Michigan (419) 692-2270
 Fax (419) 692-2408
 www.fellerfinch.com

202.76'



30E00009

Hope Service Site Expansion
City of Napoleon, OH

STORM DRAINAGE

§

DETENTION CALCULATIONS

Summary of Detention Calculations

Assumed Data

- 1) C of 0.90 used for impervious areas
- 2) C of 0.15 used for grass areas
- 3) City of Toledo Storm Intensity Chart Used (Sheet A-1)

1) Figured existing runoff from site. See "Existing Drainage Map" and Sheet A-2

2) Calculated storm sewer flow from the post development storm sewer system A. This flow matched the existing runoff before development. Thus no detention is needed on storm sewer system A. See "Proposed Drainage Map" and Sheet A-3.

3) Calculated storm sewer flow from the post development storm sewer system B. This flow is greater than the existing flow from Area A-5 of "Existing Drainage Map." Thus detention will be needed to reduce flow to 0.4 cfs. See "Proposed Drainage Map" and sheet A-4.

4) Calculated Detention Volume (See Sheet A-5), sized meter line (See Sheet A-6), and sized detention area on proposed parking lot (See Sheet A-7).

Duration Time 2 Yr. 5 Yr. 10 Yr. 25 Yr.

A-1

CITY OF TOLEDO / U. S. DEPARTMENT OF COMMERCE
STORM INTENSITIES

10.0	3.30	4:30	5.18	6.00
15.0	2.70	3.60	4.30	5.03
15.5	2.65	3.55	4.25	4.96
16.0	2.60	3.50	4.18	4.90
16.5	2.56	3.45	4.13	4.83
17.0	2.51	3.40	4.07	4.76
17.5	2.48	3.35	4.00	4.70
18.0	2.45	3.30	3.95	4.65
18.5	2.41	3.28	3.90	4.60
19.0	2.38	3.25	3.85	4.55
19.5	2.34	3.20	3.80	4.50
20.0	2.30	3.16	3.75	4.43
20.5	2.27	3.12	3.70	4.35
21.0	2.23	3.08	3.65	4.30
21.5	2.20	3.05	3.60	4.25
22.0	2.17	3.01	3.56	4.20
22.5	2.15	2.97	3.52	4.15
23.0	2.12	2.93	3.48	4.12
23.5	2.09	2.90	3.44	4.06
24.0	2.07	2.86	3.40	4.02
24.5	2.04	2.82	3.37	3.97
25.0	2.02	2.79	3.34	3.93
25.5	1.99	2.75	3.29	3.89
26.0	1.97	2.72	3.25	3.85
26.5	1.94	2.69	3.21	3.81
27.0	1.92	2.66	3.17	3.77
27.5	1.90	2.63	3.14	3.74
28.0	1.88	2.60	3.11	3.69
28.5	1.86	2.57	3.08	3.64
29.0	1.84	2.55	3.05	3.62
29.5	1.82	2.52	3.02	3.60
30.0	1.80	2.50* QALL	2.99	3.57
30.5	1.78	2.47	2.96	3.53
31.0	1.76	2.44	2.92	3.49
31.5	1.74	2.41	2.89	3.46
32.0	1.72	2.38	2.86	3.43
32.5	1.70	2.36	2.83	3.39
33.0	1.68	2.34	2.80	3.36
33.5	1.66	2.32	2.78	3.33
34.0	1.65	2.30	2.76	3.31
34.5	1.64	2.28	2.74	3.29
35.0	1.63	2.26	2.72	3.27
40.0	1.52	2.03	2.62	3.00
45.0	1.42	1.93	2.40	2.79
50.0	1.32	1.78	2.18	2.58
55.0	1.25	1.68	2.05	2.44
60.0	1.18	1.58	1.92	2.30
65.0	1.11	1.50	1.84	2.16
70.0	1.05	1.42	1.77	2.03
75.0	1.00	1.35	1.67	1.94
80.0	0.95	1.28	1.58	1.86
85.0	0.91	1.22	1.52	1.78
90.0	0.86	1.16	1.44	1.70
95.0	0.82	1.11	1.39	1.63
100.0	0.79	1.06	1.33	1.56
110.0	0.73	0.98	1.22	1.46
120.0	0.68	0.92	1.18	1.38

A-4

PROJECT: Hope Service Site Plan
 LOCATION: Napoleon, OH
 BY: BDS

30E00009.123

PROJECT NUMBER: 30E00009
 DATE: 7/17/02

Outlet Ditch 10 Year HGL ????.??

LOCATION	D. A.		C	TIME		INTENSITY		Δ CA	Σ CA	DISCHARGE		PIPE LGTH	PIPE SIZE	PIPE SLOPE	VELOC	FRICT. SLOPE	HYD GRADE EL 10 YR	FLOWLINE PIPE EL	T/GRATE ELEV
	Δ A	Σ A		Δ T	Σ T	5 YR	10 YR			5 YR	10 YR								
CB10	0.58	0.58	0.40		20.00	3.16	3.75	0.23	0.23	0.7	0.9		80	12	0.22		69.07	0.29	71.00
CB11	0.08	0.66	0.70	0.53	20.53	3.12	3.70	0.06	0.29	0.9	1.1		50	12	0.22	0.01	69.07	0.11	72.50
CB12	0.15	0.81	0.85	0.33	20.87	3.08	3.65	0.13	0.42	1.3	1.5		45	0	0.00		69.06	0.00	71.50
CB13																	METER LINE		71.38

Handwritten notes:
 1/16" x 2.5 ft = 0.0875
 1/16" x 2.5 ft = 0.0875
 0.3 mhd

PROJECT: HOPE SERVICES SITE PLAN
LOCATION NAPOLEON, OH
BY: BDS

PROJECT NUMBER: 30E00009
DATE: 07/17/2002

AREA: 0.81 AC.
Cw = 0.51 CwA = 0.41
Qallow = 0.40 CFS

REQUIRED DETENTION VOLUME

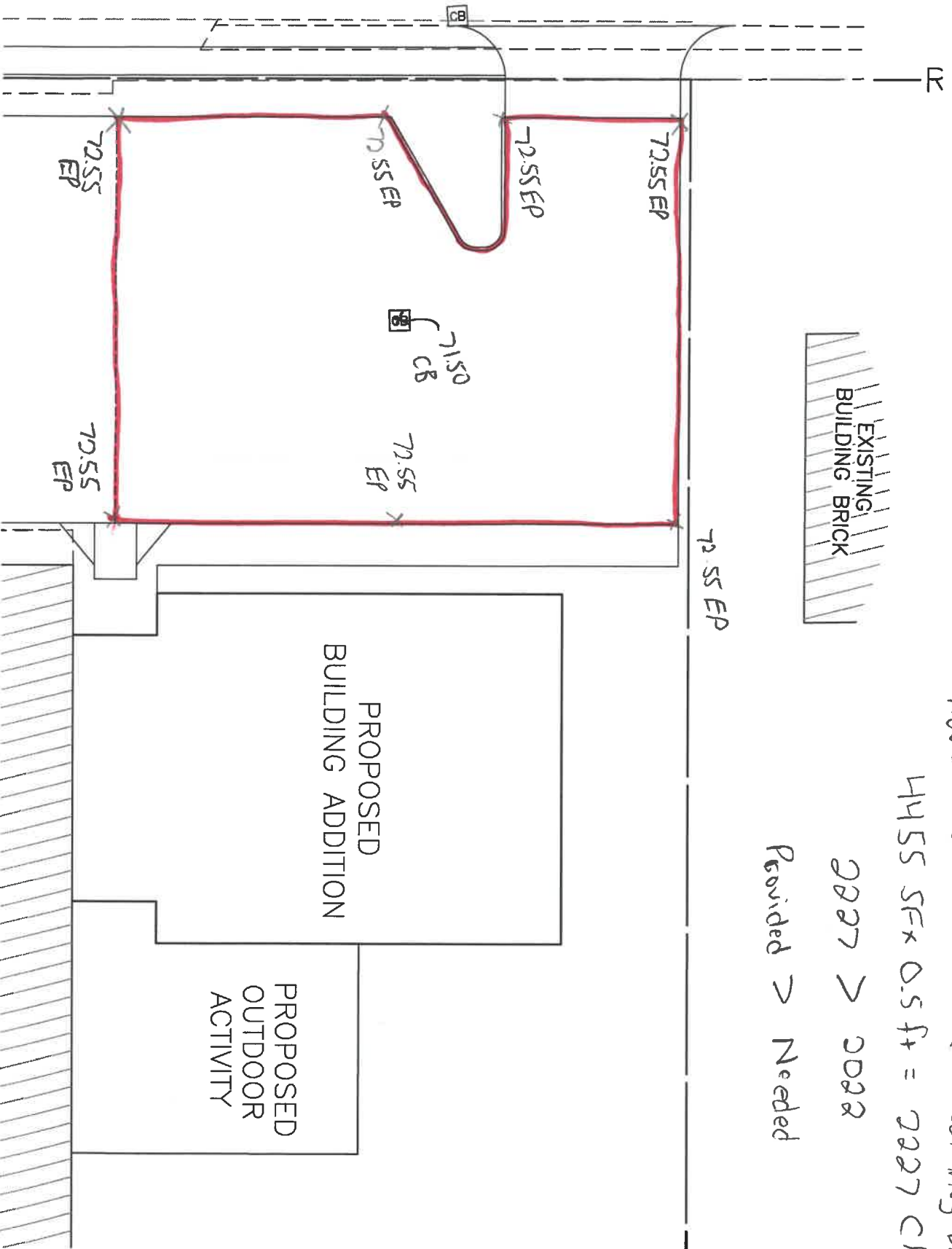
tc	i25	CwA	Qin Q25	Qout = Q allow	Qin-Qout	25 YEAR DETENTION VOLUME
20	4.40	0.41	1.82	0.40	1.42	1701
30	3.60	0.41	1.49	0.40	1.09	1957
40	3.00	0.41	1.24	0.40	0.84	2014
50	2.60	0.41	1.07	0.40	0.67	2022
60	2.30	0.41	0.95	0.40	0.55	1980
70	2.10	0.41	0.87	0.40	0.47	1964
80	1.90	0.41	0.78	0.40	0.38	1847
90	1.70	0.41	0.70	0.40	0.30	1632
100	1.60	0.41	0.66	0.40	0.26	1566
110	1.50	0.41	0.62	0.40	0.22	1450
120	1.40	0.41	0.58	0.40	0.18	1284
130	1.30	0.41	0.54	0.40	0.14	1069
140	1.20	0.41	0.50	0.40	0.10	804
150	1.15	0.41	0.48	0.40	0.08	676
160	1.10	0.41	0.45	0.40	0.05	522
170	1.05	0.41	0.43	0.40	0.03	344
180	1	0.41	0.41	0.40	0.01	141
190	0.89	0.41	0.37	0.40	-0.03	-369
200	0.79	0.41	0.33	0.40	-0.07	-884
210	0.67	0.41	0.28	0.40	-0.12	-1553
220	0.58	0.41	0.24	0.40	-0.16	-2117
230	0.5	0.41	0.21	0.40	-0.19	-2670
240	0.45	0.41	0.19	0.40	-0.21	-3083
300	0.42	0.41	0.17	0.40	-0.23	-4077
360	0.38	0.41	0.16	0.40	-0.24	-5249
420	0.35	0.41	0.14	0.40	-0.26	-6436
480	0.33	0.41	0.14	0.40	-0.26	-7594
540	0.31	0.41	0.13	0.40	-0.27	-8811
600	0.29	0.41	0.12	0.40	-0.28	-10087
660	0.28	0.41	0.12	0.40	-0.28	-11260
720	0.27	0.41	0.11	0.40	-0.29	-12462
780	0.25	0.41	0.10	0.40	-0.30	-13887
840	0.24	0.41	0.10	0.40	-0.30	-15163
900	0.22	0.41	0.09	0.40	-0.31	-16692
960	0.2	0.41	0.08	0.40	-0.32	-18281
1020	0.19	0.41	0.08	0.40	-0.32	-19676
1080	0.19	0.41	0.08	0.40	-0.32	-20834
1200	0.17	0.41	0.07	0.40	-0.33	-23744
1320	0.15	0.41	0.06	0.40	-0.34	-26772
1440	0.13	0.41	0.05	0.40	-0.35	-29920

PROJECT: HOPE SERVICES SITE PLAN
 BY: BDS DATE: 07/17/2002
 CHECKED: DATE:

METER LINE DESIGN

LENGTH OF METER LINE= 45 FT. AREA OF
 SLOPE OF METER LINE= 0.50 % PIPE (A) = 0.09
 SIZE OF METER LINE= 4 IN.
 PIPE TYPE & "N"= 0.013
 ENTRANCE COEFFICIENT(Ke)= 0.5
 ASSUMED MAXIMUM HEAD= 3 FT.
 HYDRAULIC RADIUS (R)= 0.08 FT.
 R⁴/3= 0.04 FT.
 Qallow= 0.40

ASSUMED HEAD	H x 2g	1+Ke+(29n ² L/R ⁴ /3)	v ²	v	AREA OF PIPE(A)	FLOW Q
0.10	6.44	7.56	0.85	0.92	0.09	0.08
0.20	12.88	7.56	1.70	1.31	0.09	0.11
0.30	19.32	7.56	2.56	1.60	0.09	0.14
0.40	25.76	7.56	3.41	1.85	0.09	0.16
0.50	32.20	7.56	4.26	2.06	0.09	0.18
0.75	48.30	7.56	6.39	2.53	0.09	0.22
1.00	64.40	7.56	8.52	2.92	0.09	0.25
1.50	96.60	7.56	12.78	3.57	0.09	0.31
2.00	128.80	7.56	17.04	4.13	0.09	0.36
2.50	161.00	7.56	21.30	4.62	0.09	0.40
2.92	188.05	7.56	24.88	4.99	0.09	0.44
3.00	193.20	7.56	25.56	5.06	0.09	0.44
3.50	225.40	7.56	29.82	5.46	0.09	0.48
4.00	257.60	7.56	34.08	5.84	0.09	0.51
4.50	289.80	7.56	38.34	6.19	0.09	0.54
5.00	322.00	7.56	42.60	6.53	0.09	0.57
5.50	354.20	7.56	46.86	6.85	0.09	0.60
6.00	386.40	7.56	51.12	7.15	0.09	0.62
6.50	418.60	7.56	55.38	7.44	0.09	0.65
7.00	450.80	7.56	59.64	7.72	0.09	0.67
7.50	483.00	7.56	63.90	7.99	0.09	0.70
8.00	515.20	7.56	68.16	8.26	0.09	0.72
8.50	547.40	7.56	72.42	8.51	0.09	0.74
9.00	579.60	7.56	76.68	8.76	0.09	0.76
9.50	611.80	7.56	80.94	9.00	0.09	0.78
10.00	644.00	7.56	85.20	9.23	0.09	0.81
10.50	676.20	7.56	89.46	9.46	0.09	0.82
11.00	708.40	7.56	93.72	9.68	0.09	0.84
11.50	740.60	7.56	97.98	9.90	0.09	0.86
12.00	772.80	7.56	102.23	10.11	0.09	0.88
12.50	805.00	7.56	106.49	10.32	0.09	0.90
13.00	837.20	7.56	110.75	10.52	0.09	0.92
13.50	869.40	7.56	115.01	10.72	0.09	0.94
14.00	901.60	7.56	119.27	10.92	0.09	0.95
14.50	933.80	7.56	123.53	11.11	0.09	0.97
15.00	966.00	7.56	127.79	11.30	0.09	0.99
15.50	998.20	7.56	132.05	11.49	0.09	1.00
16.00	1030.40	7.56	136.31	11.68	0.09	1.02
16.50	1062.60	7.56	140.57	11.86	0.09	1.03



Detention Area for Hope Services

Area Highlighted In Red = 4455 SF
Provide Detention Volume (1/2 foot Avg Depth)

$$4455 \text{ SF} \times 0.5 \text{ ft} = 2227 \text{ CF}$$

2227 > 2022

Provided > Needed

135 E. Maumee

FELLER, FINCH & ASSOCIATES, INC.

Engineers - Surveyors
202 N. Washington Street, P.O. Box 432
Delphos, Ohio 45833
(419) 692-2270 FAX (419) 692-2408

LETTER OF TRANSMITTAL

DATE	6/3/2003	JOB NO.	30E00009
ATTENTION:	MR. JOSEPH R. KLEINER		
RE:	HOPE SERVICES REVISED SHEETS SITE 2 AND SITE 3		

TO MR. JOSEPH R. KLEINER, P.E.
CITY OF NAPOLEON
P.O. BOX 151
NAPOLEON, OH 43545

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop drawings Prints Plans Samples Specifications
 Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
3		1	REVISED SHEET SITE-2
3		1	REVISED SHEET SITE-3

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REMARKS

JOE, _____

HERE ARE THE COPIES OF THE REVISED SHEET SHOWING THE ADDITIONAL PARKING AREA AT THE HOPE SERVICES BUILDING AS DISCUSSED ON JUNE 2, 2003. PLEASE CALL WITH ANY QUESTIONS OR COMMENTS.

BRICE _____

COPY TO: _____

SIGNED: Brice J. [Signature]

If enclosures are not as noted, kindly notify us at once.