

CHADSWORTH 2ND COMMERCIAL ADDITION
BAUGHMAN COMPANY, P.A. - JDS

SUB AREA	AREA (ACRES)	"C"	INTENSITY (IN/HR)		FLOW RATE (CFS)	
			2 YR.	100 YR.	2 YR.	100 YR.
1	1.66	0.90	4.56	7.37	5.8	11.0
2	2.96	0.90	4.56	7.37	12.1	19.6
3	2.85	0.90	4.56	7.37	11.7	18.9
4	1.37	0.90	4.56	7.37	5.6	9.1
5	1.08	0.90	4.56	7.37	4.4	7.2
6	0.92	0.90	4.56	7.37	3.8	6.1
7	1.26	0.90	4.56	7.37	5.2	8.4
8	1.29	0.90	4.56	7.37	5.3	8.6
9	1.72	0.90	4.56	7.37	7.1	11.4
10	1.96	0.90	4.56	7.37	8.0	13.0
11	0.28	0.90	4.56	7.37	1.1	1.9
12	0.64	0.90	4.56	7.37	2.6	4.2
13	0.34	0.90	4.56	7.37	1.4	2.3

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE 9-8

Solve For Full Flow Slope

Given Input Data:
Diameter..... 1.50 ft
Manning's n..... 0.012
Discharge..... 7.10 cfs

Computed Results:
Full Flow Channel Slope 0.0039 ft/ft
Full Flow Depth..... 1.50 ft
Velocity..... 4.02 fps
Flow Area..... 1.77 sf
Critical Depth..... 1.03 ft
Critical Slope..... 0.0058 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 7.10 cfs
QMAX @.94D..... 7.64 cfs
Froude Number..... FULL

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Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE 8-7

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.00 ft
Manning's n..... 0.012
Discharge..... 17.40 cfs

Computed Results:
Full Flow Channel Slope 0.0026 ft/ft
Full Flow Depth..... 2.00 ft
Velocity..... 3.95 fps
Flow Area..... 3.14 sf
Critical Depth..... 1.27 ft
Critical Slope..... 0.0048 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 12.40 cfs
QMAX @.94D..... 13.34 cfs
Froude Number..... FULL

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Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE 7-5

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.50 ft
Manning's n..... 0.012
Discharge..... 17.60 cfs

Computed Results:
Full Flow Channel Slope 0.0016 ft/ft
Full Flow Depth..... 2.50 ft
Velocity..... 3.59 fps
Flow Area..... 4.91 sf
Critical Depth..... 1.42 ft
Critical Slope..... 0.0041 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 17.60 cfs
QMAX @.94D..... 18.93 cfs
Froude Number..... FULL

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Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE 5-5

Solve For Full Flow Slope

Given Input Data:
Diameter..... 1.25 ft
Manning's n..... 0.012
Discharge..... 4.40 cfs

Computed Results:
Full Flow Channel Slope 0.0040 ft/ft
Full Flow Depth..... 1.25 ft
Velocity..... 3.59 fps
Flow Area..... 1.23 sf
Critical Depth..... 0.85 ft
Critical Slope..... 0.0061 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 4.40 cfs
QMAX @.94D..... 4.73 cfs
Froude Number..... FULL

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Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE 5-OUT

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.50 ft
Manning's n..... 0.012
Discharge..... 22.00 cfs

Computed Results:
Full Flow Channel Slope 0.0025 ft/ft
Full Flow Depth..... 2.50 ft
Velocity..... 4.48 fps
Flow Area..... 4.91 sf
Critical Depth..... 1.60 ft
Critical Slope..... 0.0045 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 22.00 cfs
QMAX @.94D..... 23.67 cfs
Froude Number..... FULL

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Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE ENTRANCE SUB-2

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.00 ft
Manning's n..... 0.015
Discharge..... 18.90 cfs

Computed Results:
Full Flow Channel Slope 0.0093 ft/ft
Full Flow Depth..... 2.00 ft
Velocity..... 5.02 fps
Flow Area..... 3.14 sf
Critical Depth..... 1.56 ft
Critical Slope..... 0.0102 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 18.90 cfs
QMAX @.94D..... 20.33 cfs
Froude Number..... FULL

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Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE ENTRANCE SUB-3

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.50 ft
Manning's n..... 0.015
Discharge..... 30.60 cfs

Computed Results:
Full Flow Channel Slope 0.0074 ft/ft
Full Flow Depth..... 2.50 ft
Velocity..... 6.23 fps
Flow Area..... 4.91 sf
Critical Depth..... 1.89 ft
Critical Slope..... 0.0088 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 30.60 cfs
QMAX @.94D..... 32.92 cfs
Froude Number..... FULL

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Circular Channel Analysis & Design
Solved with Manning's Equation
Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

Comment: PIPE ENTRANCE SUB-4

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.50 ft
Manning's n..... 0.015
Discharge..... 30.60 cfs

Computed Results:
Full Flow Channel Slope 0.0074 ft/ft
Full Flow Depth..... 2.50 ft
Velocity..... 6.23 fps
Flow Area..... 4.91 sf
Critical Depth..... 1.87 ft
Critical Slope..... 0.0089 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 30.60 cfs
QMAX @.94D..... 32.92 cfs
Froude Number..... FULL

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Circular Channel Analysis & Design
Solved with Manning's Equation
Open Channel - Uniform flow

Worksheet Name: CHADSWORTH 2ND COMM.

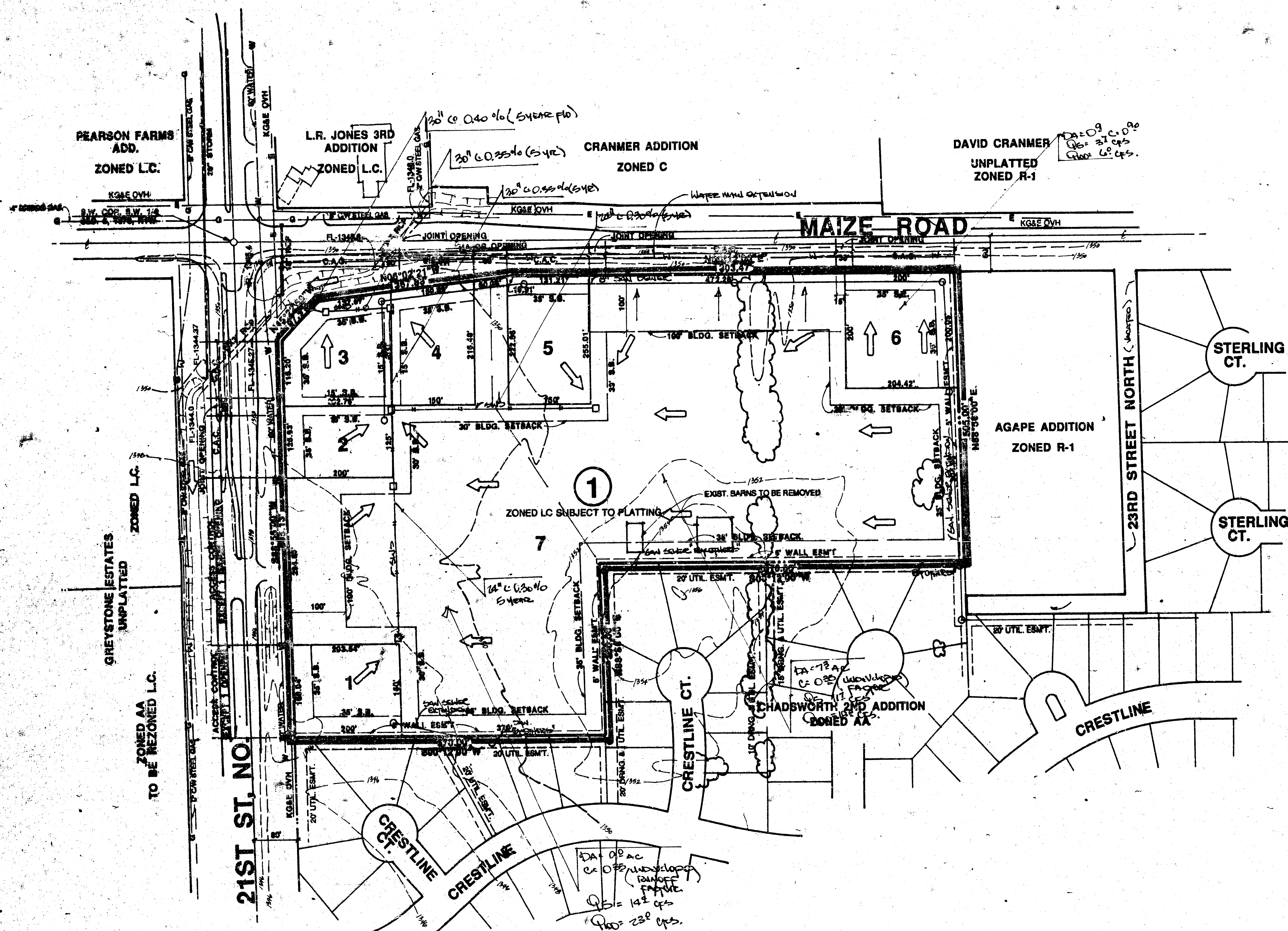
Comment: PIPE ENTRANCE SUB-5

Solve For Full Flow Slope

Given Input Data:
Diameter..... 2.50 ft
Manning's n..... 0.015
Discharge..... 30.60 cfs

Computed Results:
Full Flow Channel Slope 0.0074 ft/ft
Full Flow Depth..... 2.50 ft
Velocity..... 6.23 fps
Flow Area..... 4.91 sf
Critical Depth..... 1.87 ft
Critical Slope..... 0.0089 ft/ft
Percent Full..... 100.00 %
Full Capacity..... 30.60 cfs
QMAX @.94D..... 32.92 cfs
Froude Number..... FULL

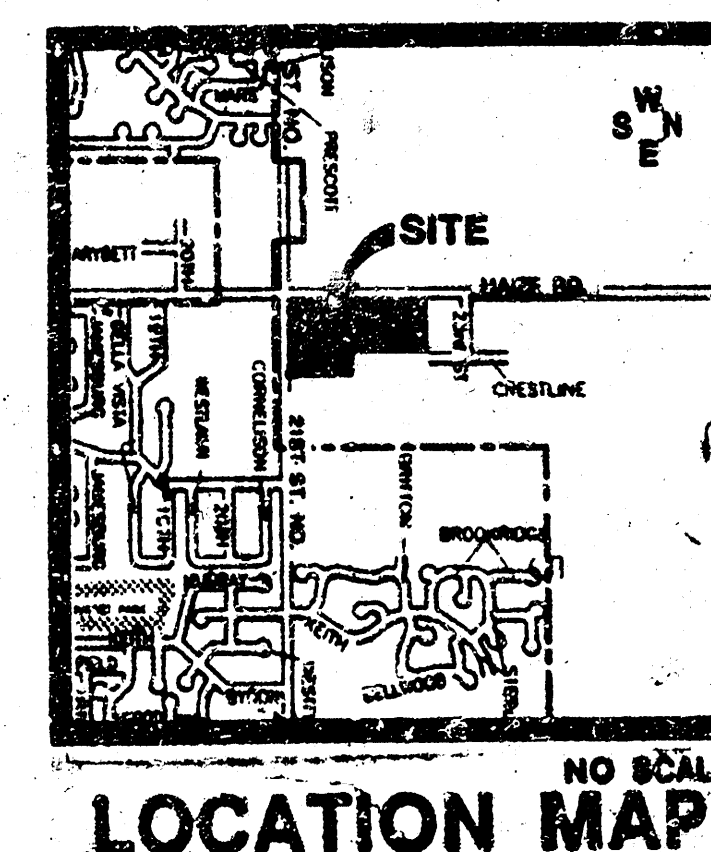
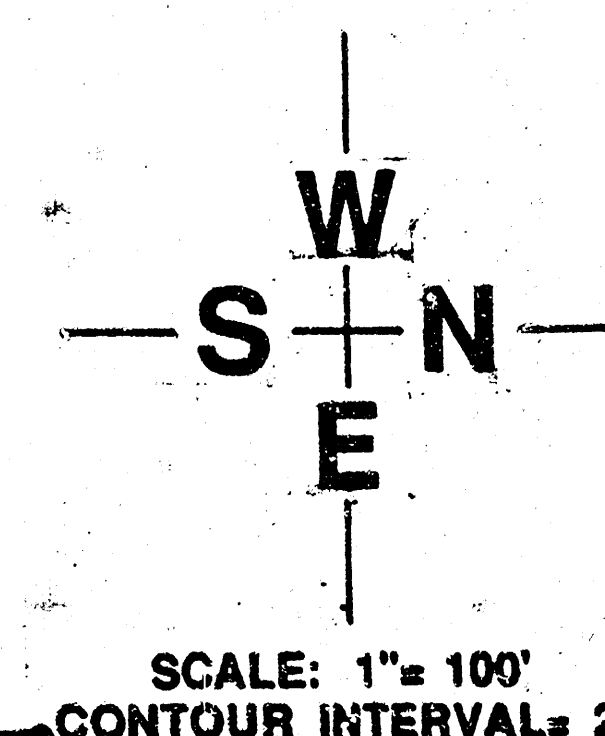
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NOTES:

- 1) BENCHMARK: CITY DISC 64' E. AND 99' S. OF CENTERLINE OF MAIZE AND 21ST STREET NORTH. ELEV.- 164.3 CITY DATUM. 1351.7 MSL.
 - 2) DRAINAGE CONCEPT PLAN TO BE PREPARED BY BAUGHMAN CO. AND SUBMITTED TO CITY ENGINEER.
 - 3) SEE CHADSWORTH COMMERCIAL C.U.P. DP-204 FOR ADDITIONAL REQUIREMENTS.
 - 4) MAJOR STREET IMPROVEMENTS FOR MAIZE ROAD AND 21ST STREET NORTH SHALL BE IN CONFORMANCE WITH THE CHADSWORTH COMMERCIAL C.U.P. PRELIMINARY TRAFFIC STUDY DRAWING UNLESS OTHERWISE DETERMINED NECESSARY BY THE CITY ENGINEER.
- 5) THE COMMERCIAL DEVELOPMENT SITE WILL NEED TO RETAIN DEVELOPED SPERM WATER RUNOFF ON SITE TO BE DESIGNATED INTO THE PARKING LOTS. THE PENDING PLANS WILL BE GENERATED AT THE TIME THE DEVELOPMENT OCCURS.

TOTAL AREA- 18.0 AC.



PRELIMINARY PLAT

CHADSWORTH COMMERCIAL

BRUCE A. & ESTHER L. PEARSON 10216 W. 21ST ST. N. WICHITA, KANSAS 67213

DRAINAGE PLAN — UTILITY PLAN —



BILL G. YUNG DESIGN
4112 E. 21ST STREET NORTH
WICHITA, KS 67213
316-263-8557

DATE: 10/12/10
REV: 1

SHEET TITLE
PRELIMINARY PLAT

PROJECT