



Professional **E**ngineering **C**onsultants, P.A.

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The Collective
Wichita, Sedgwick County, Kansas
07/26/2001

The Collective is a commercial plat at the corner of 21st Street North and K-96 Highway. A portion of the plat is re-platted from Lanzrath Addition. The plat will consist of 5 commercial lots, a private street, utilities and storm water detention reserves. The drainage plan and supporting computations for The Collective are presented herein.

Hydrology

The proposed plat lies within the NW ¼, NE ¼, Section 10, T27S, R2E. The existing landscape is grass pasture and cultivated agricultural with some trees on the western half of the property.

Surrounding drainage is intercepted on three sides of this plat. The drainage from the west is intercepted by K-96 Highway, drainage from the north is collected in the ditches along 21st Street North and water from the east is diverted south by ditches along Wawona. The property slopes toward the west and southwest, to the existing ditch along K-96 and the western property line. There is also drainage to the south in an existing swale to an existing pond approximately 150 feet to the south.

To accommodate the commercial development, most of the storm water runoff will be directed to the two ponds in the drainage reserves. There are also storm sewer systems to collect the water from the private street and lots 1, Block 1 and 1, Block 2. Lots 2 & 3, Block 1 can drain directly into Pond #2 and Lot 2, Block 2 can drain directly into Pond #1. Drainage from a small amount of area along the western edge of this plat will be routed to the existing ditch along K-96 Highway. This is where existing drainage is routed and the peak runoff will be decreased after development.

In order to restrict the developed runoff to acceptable flows, detention storage is required. The detention area will consist of two ponds, connected by a 24" RCP and a drop inlet structure in Pond #1. The lower pond (Pond #2) will have a 5' weir as an outfall. This system is designed for the 100-year storm event and should reduce the amount of storm water that leaves the site.

Runoff coefficients were estimated based on the City of Wichita's Interim Drainage and Storm Sewer Policy for Design Criteria and Documentation and proposed development. A map showing the basin boundaries, drainage calculations and HEC-HMS models are included.

The analysis made is based on the available site data which includes the following: 1" = 50' topographic map with 1' contours of the site and adjacent areas, USGS topographic map and references noted herein.

Storm Sewer Design

Storm sewer systems were designed for this property using Haestad's StormCAD. One system will convey water from the northern lots of the plat and a separate system will drain the southern portion of the private drive. The systems allows Lot 1, Block 1 and Lot 1, Block 2 to drain directly into the storm sewer system and avoid large water volumes in the streets. These systems were designed using the 100-year runoff volumes.

Culvert Sizing

The Federal Highway Administration's culvert program, HY8 Ver. 6.1, was used to aid in the design of the outfall for Pond #1. A 24" RCP is required for the outfall from the northern pond to the southern pond to limit the discharge and use the maximum available detention storage. The program output is included.

Culverts will also be needed under the private drive into the plat. The culvert along 21st Street North will be an 18" RCP and the culvert along Wawona needs to be an 18" RCP also.

Design Aids

This section includes material used to assist in designing the drainage system. A 1"=50' scale drainage plan map is enclosed in the pocket.

References

Design of Urban Highway Drainage - The State of the Art, by Reitz & Jens, Inc., April 1980.

Drainage of Highway Pavements, Hydraulic Engineering Circular #12, by Tye Engineering, Inc., March 1984.

Interim Drainage and Storm Sewer Policy for Design Criteria and Documentation, by City of Wichita, Kansas, May 1985.

The Collective

Existing Conditions

Soil Types:

Irwin silty clay loam, 1-3% Slopes, Hydrologic group D
 Irwin silty clay loam, 2-6% Slopes, Hydrologic group D

Land Use:

60% Cultivated Agricultural
 40% Pasture

Slopes 1-4%

Runoff Coefficients

Cultivated Agricultural		Pasture		Average	
C ₂ =	0.32	C ₂ =	0.26	C ₂ =	0.30
C ₅ =	0.37	C ₅ =	0.31	C ₅ =	0.35
C ₁₀ =	0.47	C ₁₀ =	0.41	C ₁₀ =	0.45
C ₁₀₀ =	0.67	C ₁₀₀ =	0.61	C ₁₀₀ =	0.65

Time of Concentration

Slope = 1.8%	23 Minutes
Velocity = 0.7 ft/sec	i ₂ = 3.06 in/hr
Length = 990 ft	i ₅ = 3.78 in/hr
	i ₁₀ = 4.30 in/hr
t _c = 23.6 minutes	i ₁₀₀ = 6.23 in/hr

Areas

There are currently three storm water discharge points from this plat. Two swales are routed to the drainage ditch along K-96 and one swale goes south to an existing pond.

Rational Method

Basin	Area (Ac.)	Q ₂ cfs	Q ₅ cfs	Q ₁₀ cfs	Q ₁₀₀ cfs
North K-96	2.43	2.2	3.2	4.7	9.8
South K-96	5.20	4.8	6.9	10.1	21.1
South	7.14	6.6	9.4	13.8	28.9
TOTAL	14.77	13.6	19.5	28.6	59.8

Existing Discharge to K-96 (Q₁₀₀)= 30.9 cfs

The Collective

Developed Conditions

Land Use:

Commercial Development - 80% Impervious

Runoff Coefficients

Commercial (80% Impervious)

$C_2 = 0.74$

$C_5 = 0.76$

$C_{10} = 0.79$

$C_{100} = 0.84$

Time of Concentration

15 Minutes

$i_2 = 3.80$ in/hr

$i_5 = 4.62$ in/hr

$i_{10} = 5.21$ in/hr

$i_{100} = 7.40$ in/hr

Rational Method

Basin	Area (Ac.)	Q_2 cfs	Q_5 cfs	Q_{10} cfs	Q_{100} cfs
A	3.10	8.7	10.9	12.8	19.3
B	0.46	1.3	1.6	1.9	2.9
C	1.25	3.5	4.4	5.1	7.8
D	2.35	6.6	8.3	9.7	14.6
E	1.53	4.3	5.4	6.3	9.5
F	0.43	1.2	1.5	1.8	2.7
G	0.31	0.9	1.1	1.3	1.9
H	4.96	13.9	17.4	20.4	30.8
TOTAL	14.39	40.5	50.5	59.2	89.4

Developed Discharge to K-96 - Basin E (Q_{100}) = 9.5 cfs

Culvert Sizing

Basin	Area (Ac.)	Q_2 cfs	Q_5 cfs	Q_{10} cfs	Q_{100} cfs
J	0.41	1.2	1.4	1.7	2.5
K	0.58	1.6	2.0	2.4	3.6

18" RCP along 21st Street

18" RCP along Wawona

See attached HY8 outputs for culvert sizing.

CURRENT DATE: 07-26-2001
CURRENT TIME: 11:08:53

FILE DATE: 07-26-2001
FILE NAME: COLLTVE1

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

C U L V E R N O.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	76.00	75.50	65.00	1 RCP	1.50	1.50	.012	CONVENTIONAL
2								
3								
4								
5								
6								

18" RCP along
21st Street North

SUMMARY OF CULVERT FLOWS (cfs) FILE: COLLTVE1 DATE: 07-26-2001

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
76.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
76.48	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
76.72	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
76.92	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
77.09	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
77.24	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
77.38	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
77.53	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
77.68	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
77.85	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
78.04	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: COLLTVE1 DATE: 07-26-2001

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
76.00	0.000	0.00	0.00	0.00
76.48	0.000	1.00	0.00	0.00
76.72	0.000	2.00	0.00	0.00
76.92	0.000	3.00	0.00	0.00
77.09	0.000	4.00	0.00	0.00
77.24	0.000	5.00	0.00	0.00
77.38	0.000	6.00	0.00	0.00
77.53	0.000	7.00	0.00	0.00
77.68	0.000	8.00	0.00	0.00
77.85	0.000	9.00	0.00	0.00
78.04	0.000	10.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010

<2> TOLERANCE (%) = 1.000

PRINT DATE: 07-26-2001
PRINT TIME: 11:08:53

FILE DATE: 07-26-2001
FILE NAME: COLLTVE1

TAILWATER

***** REGULAR CHANNEL CROSS SECTION *****

SIDE SLOPE H/V (X:1) 4.0
CHANNEL SLOPE V/H (ft/ft) 0.020
MANNING'S n (.01-0.1) 0.040
CHANNEL INVERT ELEVATION 75.50 ft
CULVERT NO.1 OUTLET INVERT ELEVATION 75.50 ft

***** UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	75.50	0.000	0.00	0.00	0.00
1.00	75.88	0.487	0.38	1.71	0.48
2.00	76.00	0.508	0.50	2.03	0.62
3.00	76.08	0.521	0.58	2.25	0.72
4.00	76.14	0.531	0.64	2.42	0.80
5.00	76.20	0.538	0.70	2.56	0.87
6.00	76.25	0.545	0.75	2.67	0.94
7.00	76.29	0.550	0.79	2.78	0.99
8.00	76.33	0.554	0.83	2.87	1.04
9.00	76.37	0.558	0.87	2.96	1.09
10.00	76.41	0.562	0.91	3.04	1.13

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE PAVED
EMBANKMENT TOP WIDTH 40.00 ft
CREST LENGTH 40.00 ft
OVERTOPPING CREST ELEVATION 80.00 ft

CURRENT DATE: 07-26-2001

FILE DATE: 07-26-2001

START TIME: 11:10:55

FILE NAME: COLLTVE2

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

18" RCP along Wawona

C U L V N O.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	74.40	74.10	60.00	1 RCP	1.50	1.50	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: COLLTVE2 DATE: 07-26-2001

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
74.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
74.88	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
75.13	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
75.33	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
75.49	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
75.64	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
75.83	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
75.97	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
76.12	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
76.26	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
76.44	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: COLLTVE2 DATE: 07-26-2001

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
74.40	0.000	0.00	0.00	0.00
74.88	0.000	1.00	0.00	0.00
75.13	0.000	2.00	0.00	0.00
75.33	0.000	3.00	0.00	0.00
75.49	0.000	4.00	0.00	0.00
75.64	0.000	5.00	0.00	0.00
75.83	0.000	6.00	0.00	0.00
75.97	0.000	7.00	0.00	0.00
76.12	0.000	8.00	0.00	0.00
76.26	0.000	9.00	0.00	0.00
76.44	0.000	10.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010

<2> TOLERANCE (%) = 1.000

PRINT DATE: 07-26-2001
 CURRENT TIME: 11:10:55

FILE DATE: 07-26-2001
 FILE NAME: COLLTVE2

TAILWATER

***** REGULAR CHANNEL CROSS SECTION *****

SIDE SLOPE H/V (X:1) 4.0
 CHANNEL SLOPE V/H (ft/ft) 0.010
 MANNING'S n (.01-0.1) 0.040
 CHANNEL INVERT ELEVATION 74.10 ft
 CULVERT NO.1 OUTLET INVERT ELEVATION 74.10 ft

***** UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	74.10	0.000	0.00	0.00	0.00
1.00	74.54	0.352	0.44	1.32	0.27
2.00	74.67	0.367	0.57	1.57	0.35
3.00	74.76	0.377	0.66	1.73	0.41
4.00	74.83	0.384	0.73	1.86	0.46
5.00	74.90	0.389	0.80	1.97	0.50
6.00	74.95	0.393	0.85	2.06	0.53
7.00	75.00	0.397	0.90	2.14	0.56
8.00	75.05	0.401	0.95	2.21	0.59
9.00	75.09	0.404	0.99	2.28	0.62
10.00	75.13	0.406	1.03	2.34	0.64

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE PAVED
 EMBANKMENT TOP WIDTH 40.00 ft
 CREST LENGTH 40.00 ft
 OVERTOPPING CREST ELEVATION 77.00 ft

The Collective

Detention Storage

Pond #1

Collects storm water runoff from Basins A, B, C & D

Elevation N.G.V.D.	Area (Ac.)	Storage Volume (Ac.-Ft.)	Q _{out} cfs
1368	0.34	0	0
1369	0.39	0.365	16.9
1370	0.45	0.785	23.3
1371	0.51	1.265	28.4
1372	0.57	1.805	32.6

Pond #1 Discharges to Pond #2

24" RCP with a drop inlet structure in Pond #1

Length = 90 feet

Flowline Pond #1 = 1364.5

Flowline Pond #2 = 1363.0

Tailwater (Pond #2) = 1367.9

See HY8 report for 24" RCP rating curve.

Pond #2

Collects storm water runoff from Basins F, G, H and Pond #1

Elevation N.G.V.D.	Area (Ac.)	Storage Volume (Ac.-Ft.)	Q _{out} cfs
1366	0.65	0	0
1367	0.72	0.685	16
1368	0.78	1.435	45
1369	0.85	2.25	83
1370	0.92	3.135	128

Pond #2 discharges to the south to another pond through an improved channel

5' Broad-crested Weir

Length = 5'

C=3.2

$Q=C*L*h^{3/2}$

CURRENT DATE: 07-17-2001
START TIME: 11:45:35

FILE DATE: 07-17-2001
FILE NAME: COLLECTV

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

C U L V N O.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1364.50	1363.00	90.01	1 RCP	2.00	2.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: COLLECTV DATE: 07-17-2001

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1367.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1367.96	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1368.14	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1368.45	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1368.88	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1369.44	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1370.11	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1370.92	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1371.84	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1372.89	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1374.06	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: COLLECTV DATE: 07-17-2001

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1367.90	0.000	0.00	0.00	0.00
1367.96	0.000	4.00	0.00	0.00
1368.14	0.000	8.00	0.00	0.00
1368.45	0.000	12.00	0.00	0.00
1368.88	0.000	16.00	0.00	0.00
1369.44	0.000	20.00	0.00	0.00
1370.11	0.000	24.00	0.00	0.00
1370.92	0.000	28.00	0.00	0.00
1371.84	0.000	32.00	0.00	0.00
1372.89	0.000	36.00	0.00	0.00
1374.06	0.000	40.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010

<2> TOLERANCE (%) = 1.000

REPORT DATE: 07-17-2001
 REPORT TIME: 11:45:35

FILE DATE: 07-17-2001
 FILE NAME: COLLECTV

PERFORMANCE CURVE FOR CULVERT 1 - 1(2.00 (ft) BY 2.00 (ft)) RCP

DIS- CHARGE FLOW (cfs)	HEAD- WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW NORMAL TYPE <F4>	DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1367.90	0.00	3.40	0-NF	0.00	0.00	0.00	4.90	0.00	0.00
4.00	1367.96	0.95	3.46	4-FFt	0.47	0.69	2.00	4.90	1.27	0.00
8.00	1368.14	1.47	3.64	4-FFt	0.68	1.01	2.00	4.90	2.55	0.00
12.00	1368.45	1.90	3.95	4-FFt	0.85	1.24	2.00	4.90	3.82	0.00
16.00	1368.88	2.36	4.38	4-FFt	1.00	1.44	2.00	4.90	5.09	0.00
20.00	1369.44	2.93	4.94	4-FFt	1.15	1.60	2.00	4.90	6.37	0.00
24.00	1370.11	3.62	5.61	4-FFt	1.30	1.72	2.00	4.90	7.64	0.00
28.00	1370.92	4.46	6.42	4-FFt	1.46	1.84	2.00	4.90	8.91	0.00
32.00	1371.84	5.44	7.34	4-FFt	1.67	1.96	2.00	4.90	10.19	0.00
36.00	1372.89	6.54	8.39	4-FFt	2.00	2.00	2.00	4.90	11.46	0.00
40.00	1374.06	7.76	9.56	4-FFt	2.00	2.00	2.00	4.90	12.73	0.00

El. inlet face invert 1364.50 ft El. outlet invert 1363.00 ft
 El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT *****

INLET STATION 0.00 ft
 INLET ELEVATION 1364.50 ft
 OUTLET STATION 90.00 ft
 OUTLET ELEVATION 1363.00 ft
 NUMBER OF BARRELS 1
 SLOPE (V/H) 0.0167
 CULVERT LENGTH ALONG SLOPE 90.01 ft

***** CULVERT DATA SUMMARY *****

BARREL SHAPE CIRCULAR
 BARREL DIAMETER 2.00 ft
 BARREL MATERIAL CONCRETE
 BARREL MANNING'S n 0.012
 INLET TYPE CONVENTIONAL
 INLET EDGE AND WALL SQUARE EDGE WITH HEADWALL
 INLET DEPRESSION NONE

COUNT DATE: 07-17-2001
COUNT TIME: 11:45:35

FILE DATE: 07-17-2001
FILE NAME: COLLECTV

TAILWATER

CONSTANT WATER SURFACE ELEVATION
1367.90

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	1373.00 ft

HMS * Summary of Results

Project : The Collective

Run Name : Run 2

Start of Run : 11Jan00 0000 Basin Model : Developed
 End of Run : 12Jan00 0600 Met. Model : 2-Year Storm
 Execution Time : 18Jul01 1314 Control Specs : 24 Hour Rainfall

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
Basin A	8.3050	11 Jan 00 1210	0.84645	0.005
Basin B	1.2304	11 Jan 00 1210	0.12540	0.001
Basin C	3.3220	11 Jan 00 1210	0.33858	0.002
Basin D	6.2441	11 Jan 00 1210	0.63641	0.004
Pond #1	14.375	11 Jan 00 1220	1.9468	0.012
Basin G	0.83050	11 Jan 00 1210	0.084645	0.001
Basin F	1.1535	11 Jan 00 1210	0.11756	0.001
Basin H	13.226	11 Jan 00 1210	1.3481	0.009
Pond #2	18.300	11 Jan 00 1230	3.4971	0.022
Basin E	4.1064	11 Jan 00 1210	0.41852	0.003

HMS * Summary of Results for Pond #1

Project : The Collective Run Name : Run 2

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 2-Year Storm
Execution Time : 18Jul01 1314 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 19.101 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 14.375 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1220
Total Inflow : 2.94 (in) Peak Storage : 0.31121 (in)
Total Outflow : 2.94 (in) Peak Elevation : 1368.9 (in)

HMS * Summary of Results for Pond #2

Project : The Collective Run Name : Run 2

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 2-Year Storm
Execution Time : 18Jul01 1314 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 28.112 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 18.300 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1230
Total Inflow : 2.94 (in) Peak Storage : 0.73949 (in)
Total Outflow : 2.94 (in) Peak Elevation : 1367.1 (in)

HMS * Summary of Results

Project : The Collective

Run Name : Run 3

Start of Run : 11Jan00 0000 Basin Model : Developed
 End of Run : 12Jan00 0600 Met. Model : 5-Year Storm
 Execution Time : 18Jul01 1314 Control Specs : 24 Hour Rainfall

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
Basin A	11.170	11 Jan 00 1210	1.1588	0.005
Basin B	1.6548	11 Jan 00 1210	0.17167	0.001
Basin C	4.4679	11 Jan 00 1210	0.46352	0.002
Basin D	8.3981	11 Jan 00 1210	0.87124	0.004
Pond #1	17.941	11 Jan 00 1220	2.6652	0.012
Basin G	1.1170	11 Jan 00 1210	0.11588	0.001
Basin F	1.5514	11 Jan 00 1210	0.16094	0.001
Basin H	17.789	11 Jan 00 1210	1.8455	0.009
Pond #2	25.886	11 Jan 00 1230	4.7875	0.022
Basin E	5.5229	11 Jan 00 1210	0.57296	0.003

HMS * Summary of Results for Pond #1

Project : The Collective Run Name : Run 3

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 5-Year Storm
Execution Time : 18Jul01 1314 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 25.691 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 17.941 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1220
Total Inflow : 4.02 (in) Peak Storage : 0.43506 (in)
Total Outflow : 4.02 (in) Peak Elevation : 1369.2 (in)

HMS * Summary of Results for Pond #2

Project : The Collective Run Name : Run 3

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 5-Year Storm
Execution Time : 18Jul01 1314 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 37.570 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 25.886 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1230
Total Inflow : 4.02 (in) Peak Storage : 0.93568 (in)
Total Outflow : 4.02 (in) Peak Elevation : 1367.3 (in)

HMS * Summary of Results

Project : The Collective

Run Name : Run 4

Start of Run : 11Jan00 0000 Basin Model : Developed
 End of Run : 12Jan00 0600 Met. Model : 10-Year Storm
 Execution Time : 18Jul01 1315 Control Specs : 24 Hour Rainfall

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
Basin A	12.981	11 Jan 00 1210	1.3584	0.005
Basin B	1.9231	11 Jan 00 1210	0.20125	0.001
Basin C	5.1924	11 Jan 00 1210	0.54338	0.002
Basin D	9.7597	11 Jan 00 1210	1.0214	0.004
Pond #1	19.539	11 Jan 00 1220	3.1244	0.012
Basin G	1.2981	11 Jan 00 1210	0.13584	0.001
Basin F	1.8029	11 Jan 00 1210	0.18867	0.001
Basin H	20.673	11 Jan 00 1210	2.1635	0.009
Pond #2	29.595	11 Jan 00 1230	5.6124	0.022
Basin E	6.4183	11 Jan 00 1210	0.67168	0.003

HMS * Summary of Results for Pond #1

Project : The Collective Run Name : Run 4

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 10-Year Storm
Execution Time : 18Jul01 1315 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 29.856 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 19.539 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1220
Total Inflow : 4.72 (in) Peak Storage : 0.53861 (in)
Total Outflow : 4.72 (in) Peak Elevation : 1369.4 (in)

HMS * Summary of Results for Pond #2

Project : The Collective Run Name : Run 4

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 10-Year Storm
Execution Time : 18Jul01 1315 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 42.042 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 29.595 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1230
Total Inflow : 4.72 (in) Peak Storage : 1.0316 (in)
Total Outflow : 4.72 (in) Peak Elevation : 1367.5 (in)

HMS * Summary of Results

Project : The Collective

Run Name : Run 1

Start of Run : 11Jan00 0000 Basin Model : Developed
 End of Run : 12Jan00 0600 Met. Model : 100-Year Storm
 Execution Time : 18Jul01 1308 Control Specs : 24 Hour Rainfall

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
Basin A	19.402	11 Jan 00 1210	2.0742	0.005
Basin B	2.8744	11 Jan 00 1210	0.30729	0.001
Basin C	7.7609	11 Jan 00 1210	0.82968	0.002
Basin D	14.588	11 Jan 00 1210	1.5595	0.004
Pond #1	24.848	11 Jan 00 1220	4.7707	0.012
Basin G	1.9402	11 Jan 00 1210	0.20742	0.001
Basin F	2.6948	11 Jan 00 1210	0.28808	0.001
Basin H	30.900	11 Jan 00 1210	3.3034	0.009
Pond #2	42.273	11 Jan 00 1230	8.5696	0.022
Basin E	9.5933	11 Jan 00 1210	1.0256	0.003

HMS * Summary of Results for Pond #1

Project : The Collective Run Name : Run 1

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 100-Year Storm
Execution Time : 18Jul01 1308 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 44.625 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 24.848 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1220
Total Inflow : 7.20 (in) Peak Storage : 0.92946 (in)
Total Outflow : 7.20 (in) Peak Elevation : 1370.3 (in)

HMS * Summary of Results for Pond #2

Project : The Collective Run Name : Run 1

Start of Run : 11Jan00 0000 Basin Model : Developed
End of Run : 12Jan00 0600 Met. Model : 100-Year Storm
Execution Time : 18Jul01 1308 Control Specs : 24 Hour Rainfall

Computed Results

Peak Inflow : 58.263 (cfs) Date/Time of Peak Inflow : 11 Jan 00 1210
Peak Outflow : 42.273 (cfs) Date/Time of Peak Outflow : 11 Jan 00 1230
Total Inflow : 7.20 (in) Peak Storage : 1.3595 (in)
Total Outflow : 7.20 (in) Peak Elevation : 1367.9 (in)

I-1
Node 101
Area Inlet
Basin A

Top = 1372.50
Q₁₀₀ = 19.3 cfs
E_{Out} = 1369.50

P-1

Node 102
Curb Inlet
Basin B
Top = 1373.0
Q₁₀₀ = 2.9 cfs
E_{In} = 1369.35
E_{Out} = 1368.75

I-2

P-2

I-3

Node 103
Curb Inlet
Basin C2
Top = 1373.0
Q₁₀₀ = 3.0 cfs
E_{In} = 1368.55 (NW)
E_{In} = 1368.95 (NE)
E_{Out} = 1368.45

P-3

J-1

Node 104
Manhole
Top = 1373.0
E_{In} = 1369.70
E_{Out} = 1369.60

P-5

P-4

I-4

Node 105
Area Inlet
Basin C1
Top = 1376.0
Q₁₀₀ = 4.8 cfs
E_{Out} = 1370.15

POND #1
Outlet

TW = 1370.6
E = 1365.0
Q₁₀₀ = 30 cfs
Total

SWS Line No. 1
100-yr design storm
Outlet to Pond #1

----- Beginning Calculation Cycle -----

Discharge: 19.30 cfs at node I-1
 Discharge: 22.20 cfs at node I-2
 Discharge: 4.80 cfs at node I-4
 Discharge: 4.80 cfs at node J-1
 Discharge: 30.00 cfs at node I-3
 Discharge: 30.00 cfs at node Outlet
 Beginning iteration 1
 Discharge: 19.30 cfs at node I-1
 Discharge: 22.20 cfs at node I-2
 Discharge: 4.80 cfs at node I-4
 Discharge: 4.80 cfs at node J-1
 Discharge: 30.00 cfs at node I-3
 Discharge: 30.00 cfs at node Outlet
 Discharge Convergence Achieved in 1 iterations: relative error: 0.0
 Warning: No Duration data exists in IDF Table
 Information: P-5 Surcharged condition
 ----- Calculations Complete -----

** Analysis Options **

Friction method: Manning's Formula
 HGL Convergence Test: 0.001000
 Maximum Network Traversals: 5
 Number of Pipe Profile Steps: 5
 Discharge Convergence Test: 0.001000
 Maximum Design Passes: 3

----- Network Quick View -----

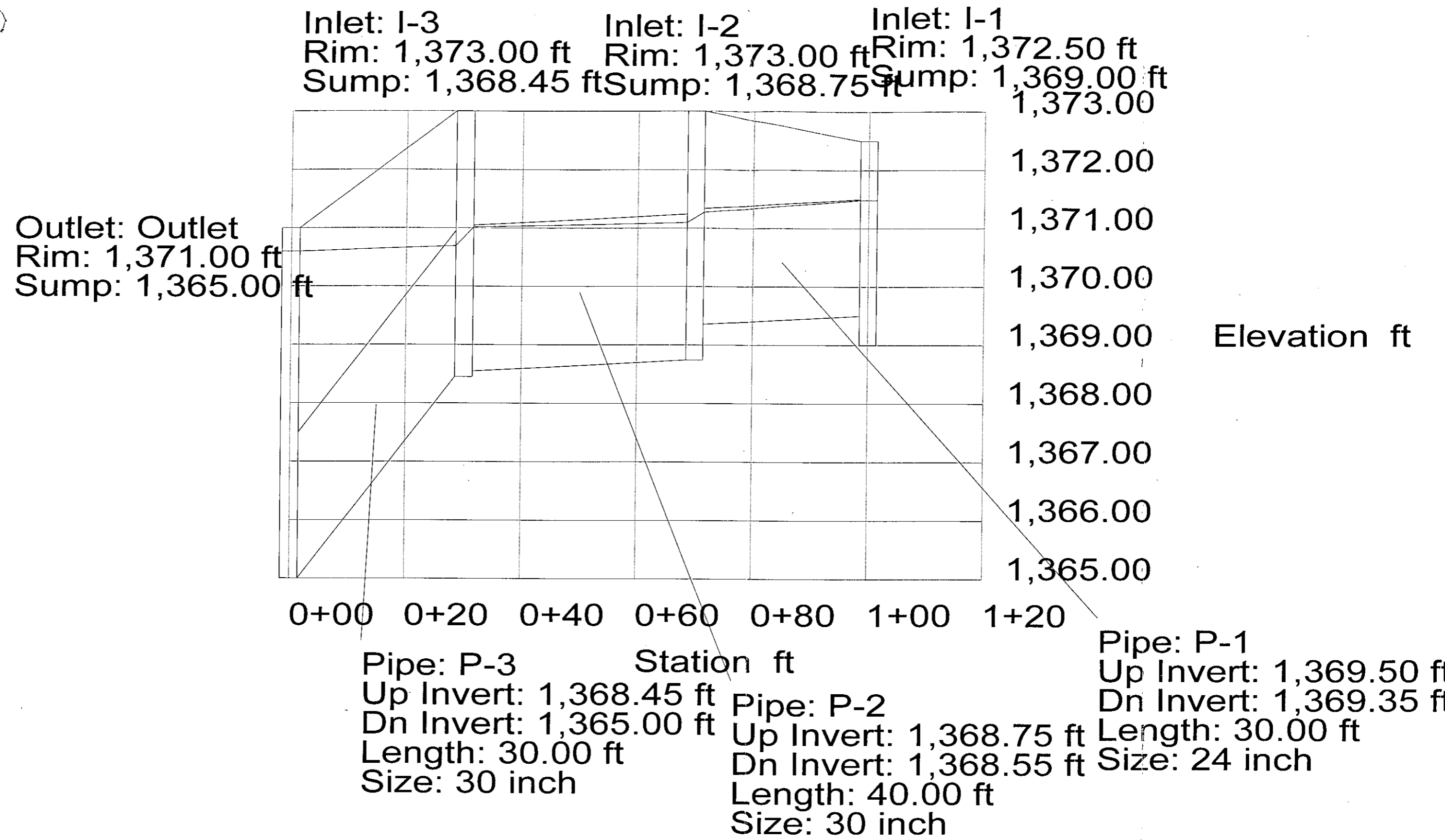
Label	Length	Size	Discharge	Hydraulic Grade	
				Upstream	Downstream
P-1	30.00	24 inch	19.30	1,371.48	1,371.27
P-2	40.00	30 inch	22.20	1,371.11	1,371.01
P-3	30.00	30 inch	30.00	1,370.69	1,370.60
P-4	90.00	18 inch	4.80	1,371.51	1,371.34
P-5	130.00	18 inch	4.80	1,371.29	1,371.01

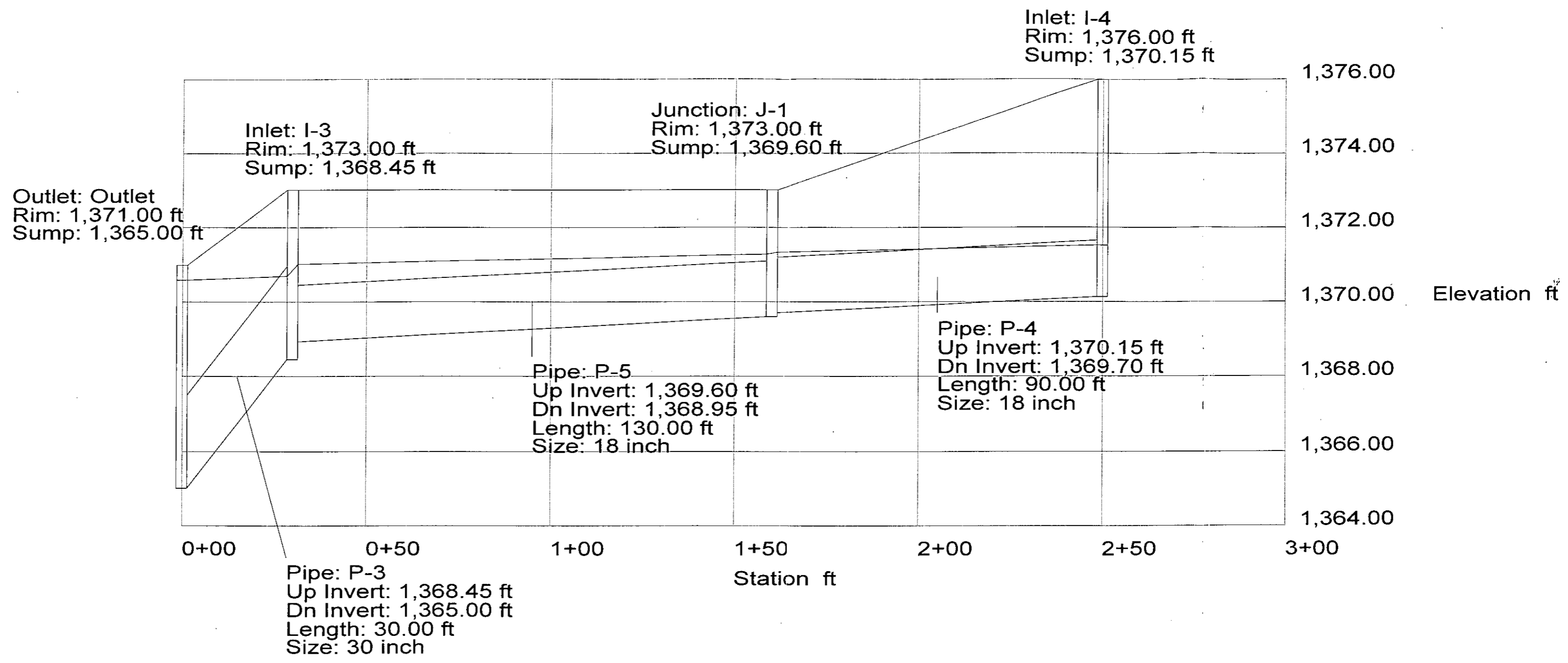
Label	Discharge	Elevations		
		Ground	Upstream HGL	Downstream HGL
I-1	19.30	1,372.50	1,371.48	1,371.48
I-2	22.20	1,373.00	1,371.27	1,371.11
I-3	30.00	1,373.00	1,371.01	1,370.69
Outlet	30.00	1,371.00	1,370.60	1,370.60
I-4	4.80	1,376.00	1,371.51	1,371.51
J-1	4.80	1,373.00	1,371.34	1,371.29

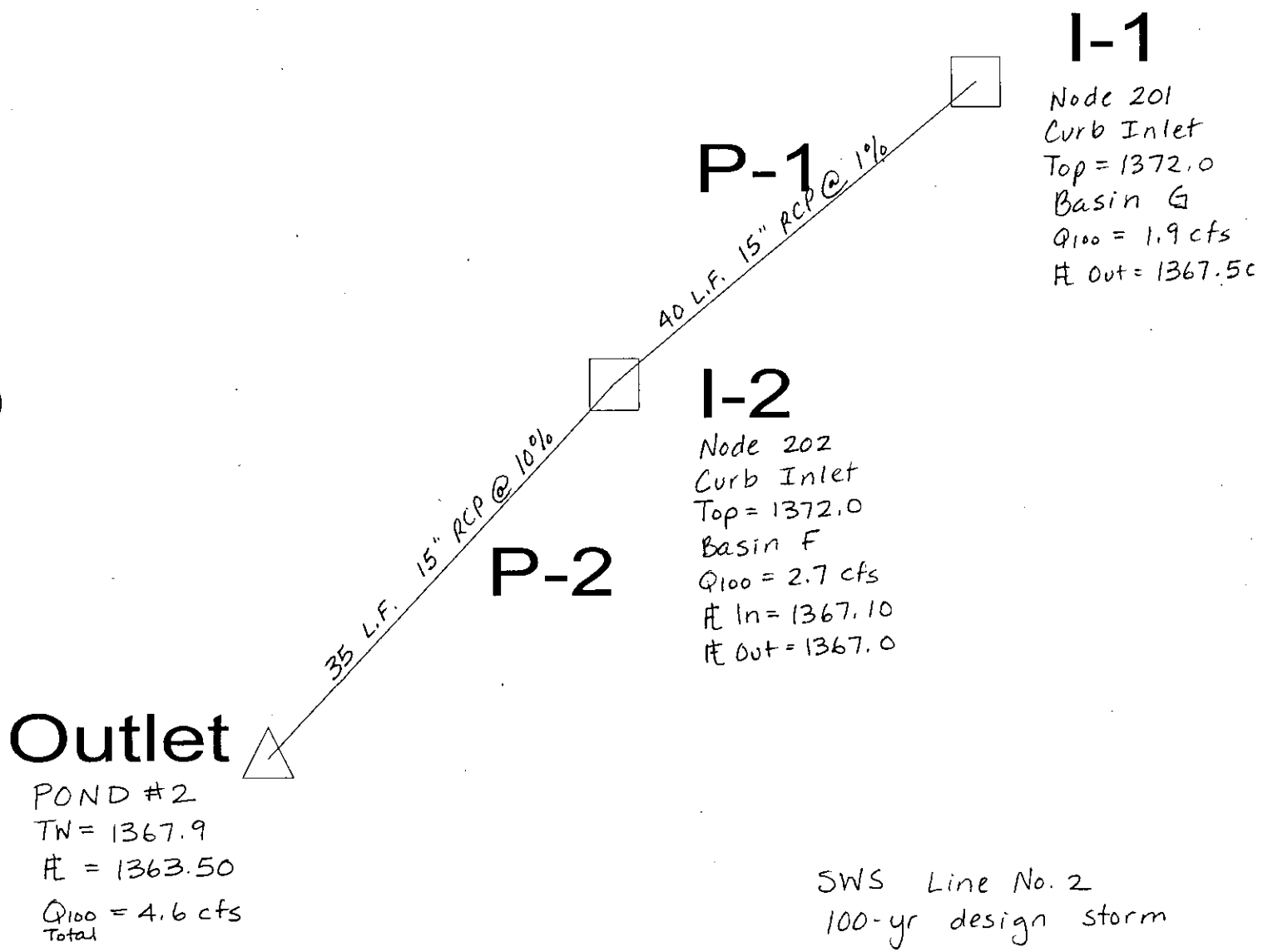
Elapsed: 0 minute(s) 0 second(s)

Pipe Report

Pipe	Upstream Node	Downstream Node	Additional Flow (cfs)	Discharge (cfs)	Length (ft)	Constructed Slope (ft/ft)	Section Size	Roughness	Capacity (cfs)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Upstream Ground Elevation (ft)	Downstream Ground Elevation (ft)	Upstream Cover (ft)	Downstream Cover (ft)	Upstream HGL (ft)	Downstream HGL (ft) ¹	Average Velocity (ft/s)
P-4	I-4	J-1	4.80	4.80	90.00	0.005000	18 inch	0.013	7.43	1,370.15	1,369.70	1,376.00	1,373.00	4.35	1.80	1,371.51	1,371.34	2.78
P-5	J-1	I-3	N/A	4.80	130.00	0.005000	18 inch	0.013	7.43	1,369.60	1,368.95	1,373.00	1,373.00	1.90	2.55	1,371.29	1,371.01	2.72
P-1	I-1	I-2	19.30	19.30	30.00	0.005000	24 inch	0.013	16.00	1,369.50	1,369.35	1,372.50	1,373.00	1.00	1.65	1,371.48	1,371.27	6.19
P-2	I-2	I-3	2.90	22.20	40.00	0.005000	30 inch	0.013	29.00	1,368.75	1,368.55	1,373.00	1,373.00	1.75	1.95	1,371.11	1,371.01	4.58
P-3	I-3	Outlet	3.00	30.00	30.00	0.115000	30 inch	0.013	139.09	1,368.45	1,365.00	1,373.00	1,371.00	2.05	3.50	1,370.69	1,370.60	6.29
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A







```

----- Beginning Calculation Cycle -----
Discharge: 1.90 cfs at node I-1
Discharge: 4.60 cfs at node I-2
Discharge: 4.60 cfs at node Outlet
Beginning iteration 1
Discharge: 1.90 cfs at node I-1
Discharge: 4.60 cfs at node I-2
Discharge: 4.60 cfs at node Outlet
Discharge Convergence Achieved in 1 iterations: relative error: 0.0
Warning: No Duration data exists in IDF Table
----- Calculations Complete -----

```

```

** Analysis Options **
Friction method: Manning's Formula
HGL Convergence Test: 0.001000
Maximum Network Traversals: 5
Number of Pipe Profile Steps: 5
Discharge Convergence Test: 0.001000
Maximum Design Passes: 3

```

----- Network Quick View -----

Label	Length	Size	Discharge	Hydraulic Grade	
				Upstream	Downstream
P-1	40.00	15 inch	1.90	1,368.08	1,368.15
P-2	35.00	15 inch	4.60	1,368.00	1,367.90

Label	Discharge	Elevations		
		Ground	Upstream HGL	Downstream HGL
I-1	1.90	1,372.00	1,368.08	1,368.08
I-2	4.60	1,372.00	1,368.15	1,368.00
Outlet	4.60	1,368.00	1,367.90	1,367.90

Elapsed: 0 minute(s) 0 second(s)

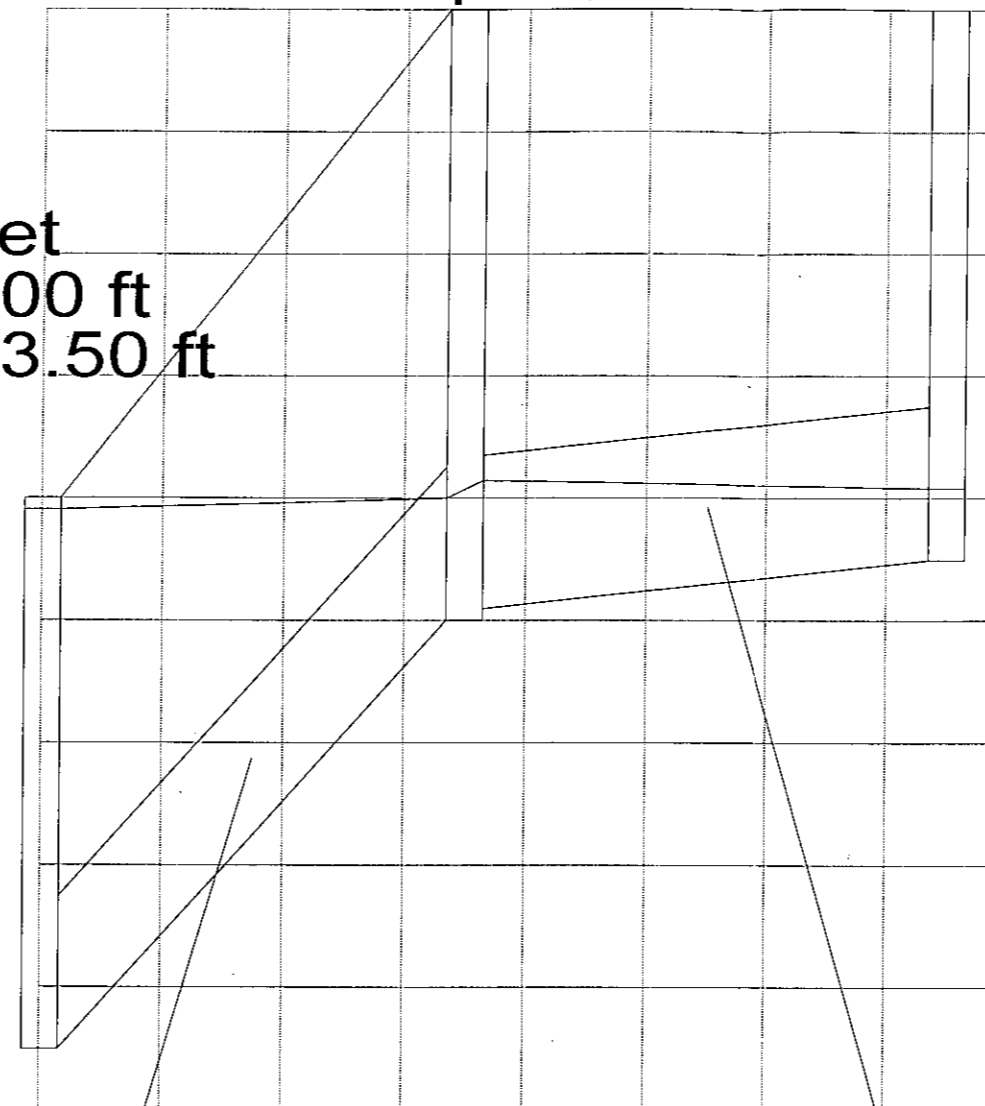
Pipe Report

Pipe	Upstream Node	Downstream Node	Additional Flow (cfs)	Discharge (cfs)	Length (ft)	Constructed Slope (ft/ft)	Section Size	Roughness	Capacity (cfs)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Upstream Ground Elevation (ft)	Downstream Ground Elevation (ft)	Upstream Cover (ft)	Downstream Cover (ft)	Upstream HGL (ft)	Downstream HGL (ft)	Average Velocity (ft/s)
P-1	I-1	I-2	1.90	1.90	40.00	0.010000	15 inch	0.013	6.46	1,367.50	1,367.10	1,372.00	1,372.00	3.25	3.65	1,368.08	1,368.15	2.56
P-2	I-2	Outlet	2.70	4.60	35.00	0.100000	15 inch	0.013	20.43	1,367.00	1,363.50	1,372.00	1,368.00	3.75	3.25	1,368.00	1,367.90	4.07
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Outlet: Outlet
 Rim: 1,368.00 ft
 Sump: 1,363.50 ft

Inlet: I-2
 Rim: 1,372.00 ft
 Sump: 1,367.00 ft

Inlet: I-1
 Rim: 1,372.00 ft
 Sump: 1,367.50 ft



1,372.00
 1,371.00
 1,370.00
 1,369.00
 1,368.00
 1,367.00
 1,366.00
 1,365.00
 1,364.00
 1,363.00

Elevation ft

0+00+10+20+30+40+50+60+70+80

Pipe: P-2 Station ft
 Up Invert: 1,367.00 ft
 Dn Invert: 1,363.50 ft
 Length: 35.00 ft
 Size: 15 inch

Pipe: P-1
 Up Invert: 1,367.50 ft
 Dn Invert: 1,367.10 ft
 Length: 40.00 ft
 Size: 15 inch

The Collective

Inlet Sizing

100-Year Design Storm

All inlets are in sump locations

Basin	Node	Q ₁₀₀	Type	Minimum Size	Ponding Depth
A	101	19.3	Area Inlet	2'x4'	0.75'
B	102	2.9	Curb Inlet	5'	0.28'
C1	105	4.8	Area Inlet	2'x2'	0.36'
C2	103	3	Curb Inlet	5'	0.29'
F	202	2.7	Curb Inlet	5'	0.27'
G	201	1.9	Curb Inlet	5'	0.22'

Inlet Sizing was based on City of Wichita Std. Type 1A Curb Inlets with openings of 5 or 10 feet.

Curb Inlets

Ponding depth <0.8' for Standard Curb (6 5/8")

Ponding depth <0.6' for Roll Curb (3 5/8")

Area Inlets were sized as follows:

2'x2' Area Inlet

Neenah Grate R-4826

1.3 Square Feet of Open Area
8 feet Perimeter

2'x4' Area Inlet

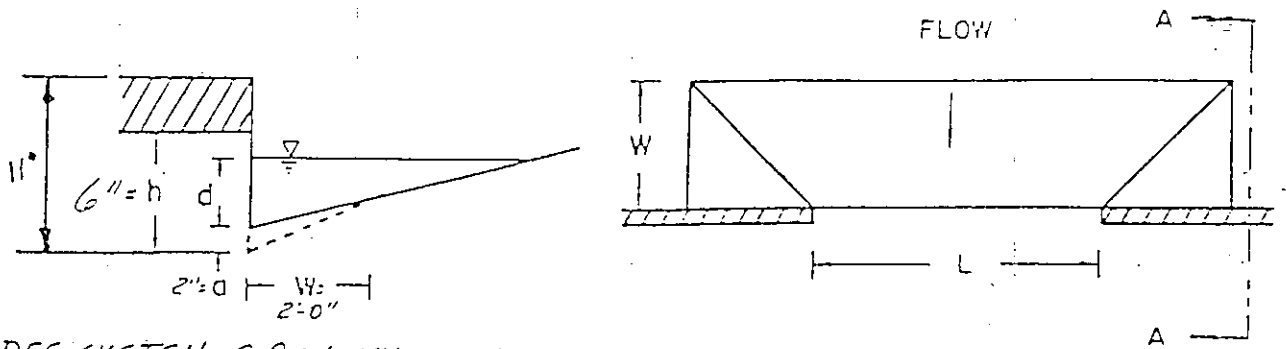
Neenah Grate R-4853-A

3.1 Square Feet of Open Area
11.5 feet Perimeter

4'x4' Area Inlet

2- Neenah Grates R-4853-A

6.2 Square Feet of Open Space
15.5 feet Perimeter



DEF. SKETCH, C.D.W. TYPE 1A INLET

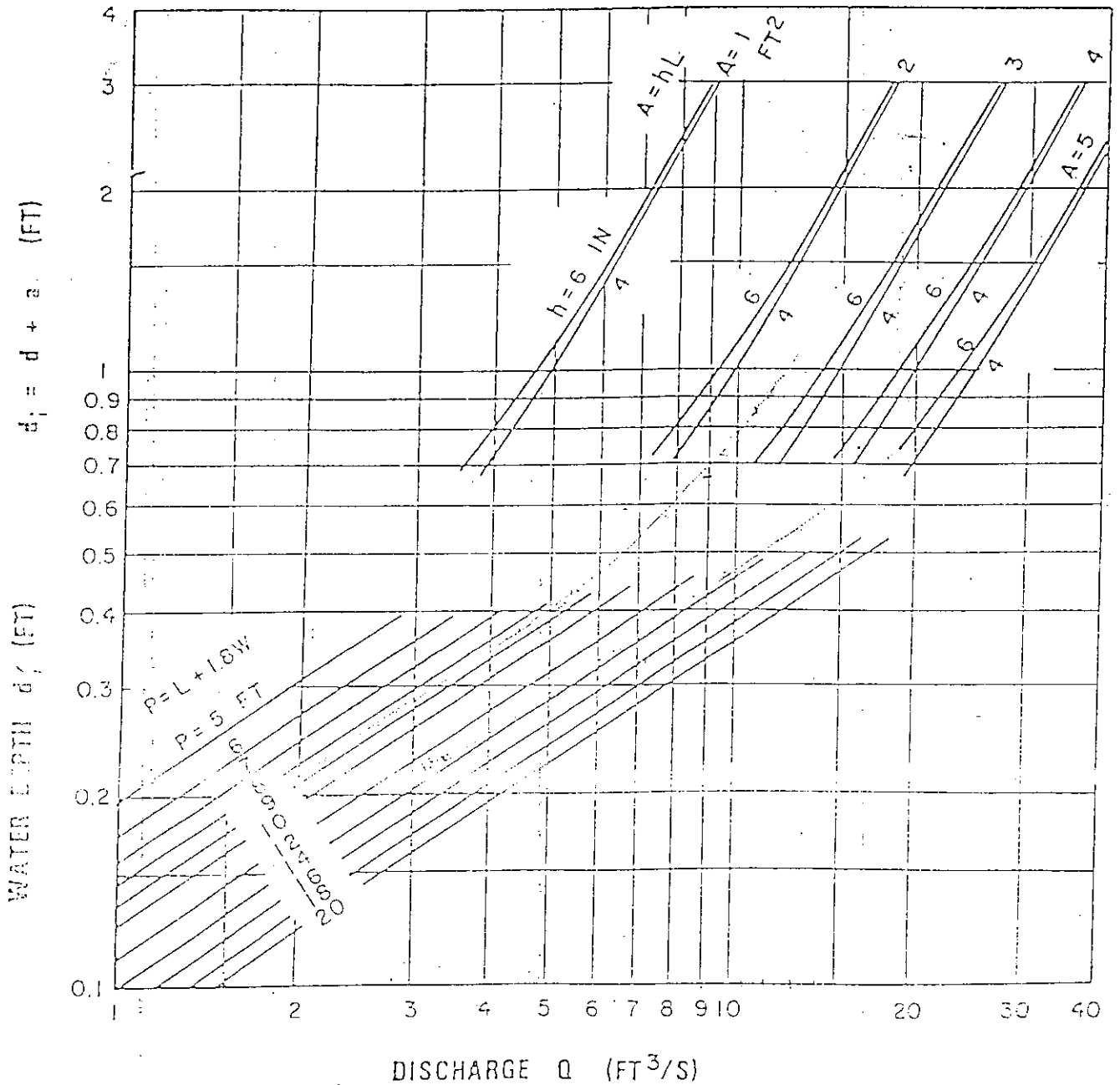


CHART 12. Depressed curb-opening inlet capacity in sump locations.

FROM: HEC-12, DRAINAGE OF HIGHWAY PAVEMENTS, F.H.W.A., MAR., 1984

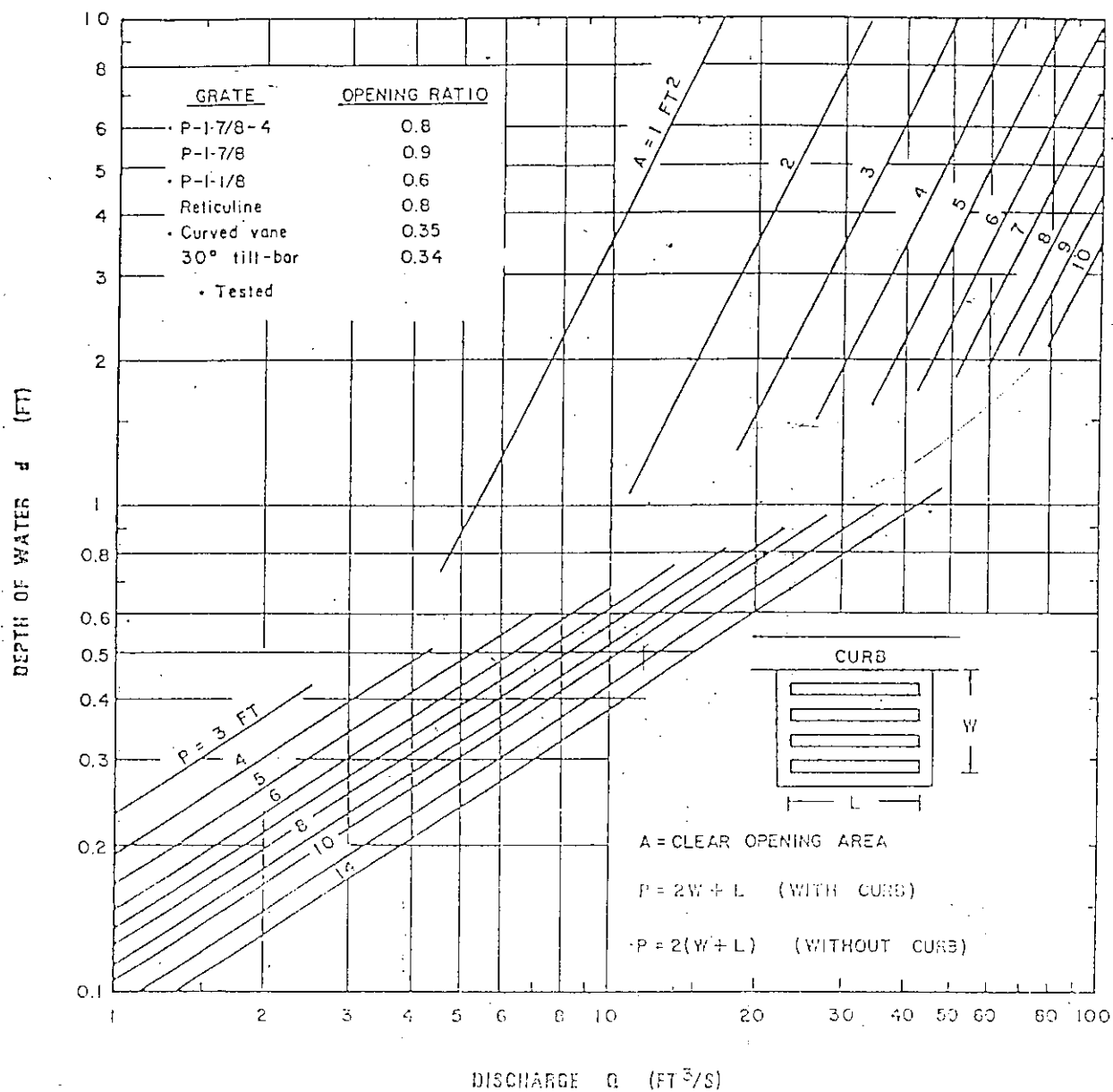


CHART 11: Grate inlet capacity in sump conditions.

From: HEC-12, DRAINAGE OF HIGHWAY PAVEMENTS, FHWA, Mar 1984

The Collective

Street Capacity

5-Year Design Storm (Minimum)

Constraints:

- No curb overtopping in the 5-Year Design Storm
- An 8' lane must be kept free of water

Assumptions:

- 29' Bk-Bk street with 3/8"/ft cross slope
- Maximum depth to keep one lane free is 0.30'

Basin	Minimum Street Slope	Q ₅ cfs	d ₅ feet	Q ₁₀ cfs	d ₁₀ feet	Q ₁₀₀ cfs	d ₁₀₀ feet
B	2%	1.6	0.19	1.9	0.2	2.9	0.23
C	2%	4.4	0.27	5.1	0.285	7.8	0.33
G	1%	1.1	0.18	1.3	0.19	1.9	0.22
F	1%	1.5	0.2	1.8	0.22	2.7	0.25

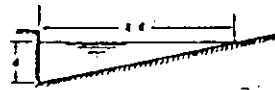
A portion of the runoff from Basin C will be collected in the storm sewer system before reaching the street.

No inlets on grade needed.

Roll type curb (0.30') can be used on the private drive.

Recommend a walk grade of TC + 0.30' at the 15' Street, Drainage & Utility Easement.

NOMOGRAPH FOR FLOW IN TRIANGULAR CHANNELS

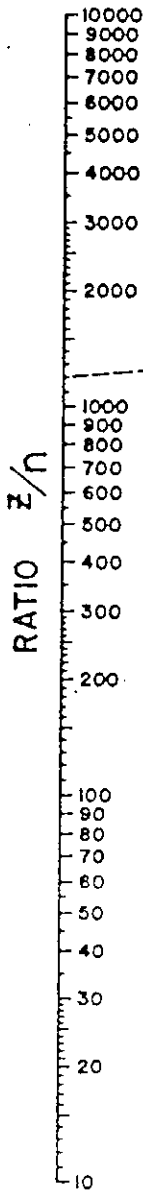


EQUATION: $Q = 0.58 (K) z^{2.48} s^{0.78}$

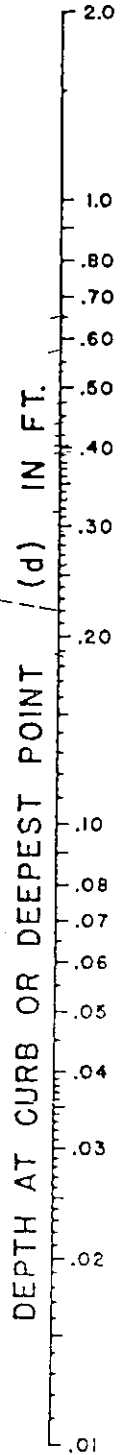
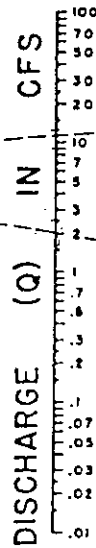
n IS ROUGHNESS COEFFICIENT IN MANNING FORMULA APPROPRIATE TO MATERIAL IN BOTTOM OF CHANNEL
 z IS RECIPROCAL OF CROSS SLOPE
 REFERENCE: H. R. B. PROCEEDINGS 1948, PAGE 190, EQUATION (14)

EXAMPLE (SEE DASHED LINES)

GIVEN: $n = 0.03$
 $z = 24$
 $n = .02$ } $z/n = 1200$
 $s = 0.22$
 FIND: $Q = 20$ CFS



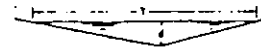
TURNING LINE



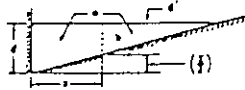
INSTRUCTIONS

1. CONNECT z/n RATIO WITH SLOPE (S) AND CONNECT DISCHARGE (Q) WITH DEPTH (d). THESE TWO LINES MUST INTERSECT AT TURNING LINE FOR COMPLETE SOLUTION.

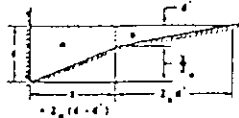
2. FOR SHALLOW V-SHAPED CHANNEL AS SHOWN USE NOMOGRAPH WITH $z = \frac{1}{2}$



3. TO DETERMINE DISCHARGE Q_1 IN PORTION OF CHANNEL HAVING WIDTH z_1 :
 DETERMINE DEPTH d FOR TOTAL DISCHARGE IN ENTIRE SECTION z . THEN USE NOMOGRAPH TO DETERMINE Q_1 IN SECTION z_1 FOR DEPTH $d' = d \cdot (\frac{z_1}{z})^2$



4. TO DETERMINE DISCHARGE IN COMPOSITE SECTION-- FOLLOW INSTRUCTION 3. TO OBTAIN DISCHARGE IN SECTION z_1 AT ASSUMED DEPTH d ; OBTAIN Q_2 FOR SLOPE RATIO s_1 AND DEPTH d' THEN $Q_1 + Q_2 = Q_3$



One foot is 0.3048m
 One cubic foot is 0.0283m³

ATTACHMENT D

DRAINAGE CRITERIA

CITY OF WICHITA, KANSAS

RECOMMENDED RUNOFF COEFFICIENTS FOR RATIONAL METHOD
AND PERCENT IMPERVIOUS FOR UNIT HYDROGRAPH METHOD

Land Use or Surface Characteristics	Percent Impervious	Frequency			
		2	5	10	100
1. Business:					
Downtown Areas	95	0.84	0.85	0.87	0.91
Neighborhood Areas	70	0.68	0.69	0.73	0.80
2. Residential:					
<u>Single Family (Soil Group D)</u>					
1/8 Acre	50	0.57	0.61	0.66	0.79
1/4 Acre	38	0.50	0.54	0.62	0.76
1/3 Acre	30	0.46	0.50	0.59	0.73
1/2 Acre	25	0.42	0.48	0.56	0.72
3/4 Acre	22	0.42	0.46	0.55	0.71
1 Acre	20	0.41	0.45	0.54	0.71
<u>Multi-Family (Soil Group D)</u>					
Multi-Unit (detached)	60	0.62	0.66	0.72	0.82
Multi-Unit (attached)	65	0.64	0.68	0.73	0.83
Apartments	75	0.70	0.73	0.79	0.86
<u>Single Family (Soil Group C)</u>					
1/8 Acre	50	0.55	0.58	0.64	0.73
1/4 Acre	38	0.48	0.51	0.57	0.68
1/3 Acre	30	0.43	0.46	0.53	0.65
1/2 Acre	25	0.40	0.43	0.50	0.63
3/4 Acre	22	0.39	0.42	0.49	0.62
1 Acre	20	0.37	0.40	0.48	0.61
<u>Multi-Family (Soil Group C)</u>					
Multi-Unit (detached)	60	0.60	0.63	0.69	0.77
Multi-Unit (attached)	65	0.63	0.66	0.71	0.79
Apartments	75	0.68	0.72	0.77	0.83
<u>Single-Family (Soil Group B)</u>					
1/8 Acre	50	0.52	0.54	0.59	0.67
1/4 Acre	38	0.44	0.46	0.52	0.61
1/3 Acre	30	0.39	0.41	0.47	0.57
1/2 Acre	25	0.36	0.38	0.44	0.54
3/4 Acre	22	0.34	0.36	0.42	0.52
1 Acre	20	0.33	0.35	0.40	0.51
<u>Multi-Family (Soil Group B)</u>					
Multi-Unit (detached)	60	0.58	0.60	0.65	0.72
Multi-Unit (attached)	65	0.61	0.64	0.68	0.75
Apartments	75	0.67	0.70	0.74	0.80

Land Use or Surface Characteristics	Percent Impervious	Frequency			
		<u>2</u>	<u>5</u>	<u>10</u>	<u>100</u>
<u>Single Family (Soil Group A)</u>					
1/8 Acre	50	0.47	0.50	0.54	0.60
1/4 Acre	38	0.39	0.41	0.45	0.52
1/3 Acre	30	0.33	0.35	0.39	0.47
1/2 Acre	25	0.30	0.31	0.35	0.44
3/4 Acre	22	0.28	0.29	0.33	0.42
1 Acre	20	0.26	0.28	0.32	0.40
<u>Multi-Family (Soil Group A)</u>					
Multi-Unit (detached)	60	0.55	0.57	0.61	0.67
Multi-Unit (attached)	65	0.58	0.60	0.64	0.70
Apartments	75	0.65	0.68	0.72	0.77
3. Industrial:					
Light Areas	70	0.68	0.69	0.73	0.80
Heavy Areas	80	0.74	0.76	0.79	0.84
4. Playgrounds:	15	0.33	0.35	0.42	0.55
Schools:	40	0.49	0.51	0.56	0.66
Railroad Yard Areas:	30	0.43	0.45	0.50	0.62
7. Undeveloped Urban Areas: Offsite Flow Analysis (when land use not defined)	45	0.52	0.54	0.59	0.68
8. Streets:					
Paved	99	0.87	0.88	0.90	0.93
Gravel	00	0.24	0.26	0.33	0.48
9. Drive, Parking Lots and Walks:	96	0.87	0.87	0.88	0.89
10. Roofs:	90	0.80	0.85	0.90	0.93
11. Urban Lawn Areas (See Note No. 1 below):					
<u>Soil Group A</u>					
Slope less than 1%	00	0.08	0.09	0.13	0.23
Slope 1% to 4%	00	0.12	0.13	0.17	0.27
Slope more than 4%	00	0.16	0.17	0.21	0.31
<u>Soil Group B</u>					
Slope less than 1%	00	0.26	0.18	0.24	0.37
Slope 1% to 4%	00	0.20	0.22	0.28	0.41
Slope more than 4%	00	0.24	0.26	0.32	0.45
<u>Soil Group C</u>					
Slope less than 1%	00	0.24	0.27	0.35	0.51
Slope 1% to 4%	00	0.26	0.29	0.37	0.53
Slope more than 4%	00	0.28	0.31	0.39	0.55

<u>Land Use or Surface Characteristics</u>	<u>Percent Impervious</u>	<u>Frequency</u>			
		<u>2</u>	<u>5</u>	<u>10</u>	<u>100</u>
<u>Soil Group D</u>					
Slope less than 1%	00	0.28	0.33	0.43	0.63
Slope 1% to 4%	00	0.30	0.35	0.45	0.65
Slope more than 4%	00	0.32	0.37	0.47	0.67

Note No. 1: Coefficients shown in the above table are for pervious open space areas with thick turf which includes pervious areas in parks and cemeteries. Coefficients shown above must be increased 0.02 for use with agricultural pasture areas. Coefficients shown above must be reduced by 0.04 for use with agricultural cultivated areas. Group A soils are well-drained, coarse textured sands with high infiltration rates. Group B soils are moderately well-drained, moderately coarse textured soils with moderate infiltration rates. Group C soils are moderately poor-drained, moderately fine textured soils with slow infiltration rates. Group D soils are poor-drained, fine textured soils with very slow infiltration rates.

GENERAL NOTE: These Rational Formula Coefficients may not be valid for large basins.

RAINFALL INTENSITY TABLE

SEDGWICK COUNTY
KANSAS

THIS TABLE CONTAINS AVERAGE RAINFALL INTENSITIES
IN INCHES PER HOUR.

DURATION, HR:MIN	RETURN PERIOD						
	1 YR	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
0:05	4.77	5.52	6.56	7.32	8.44	9.32	10.20
0:06	4.53	5.26	6.27	7.02	8.11	8.96	9.81
0:07	4.33	5.04	6.03	6.76	7.82	8.65	9.48
0:08	4.16	4.85	5.82	6.52	7.55	8.36	9.17
0:09	4.00	4.67	5.61	6.30	7.30	8.09	8.87
0:10	3.85	4.50	5.42	6.08	7.06	7.82	8.58
0:11	3.71	4.34	5.23	5.88	6.83	7.56	8.30
0:12	3.58	4.19	5.06	5.69	6.60	7.32	8.04
0:13	3.45	4.05	4.90	5.51	6.40	7.10	7.79
0:14	3.34	3.92	4.75	5.34	6.21	6.89	7.57
0:15	3.23	3.80	4.61	5.19	6.04	6.70	7.36
0:16	3.13	3.69	4.48	5.05	5.88	6.53	7.17
0:17	3.03	3.58	4.36	4.92	5.73	6.37	7.00
0:18	2.94	3.48	4.25	4.80	5.60	6.22	6.84
0:19	2.86	3.39	4.14	4.69	5.47	6.09	6.70
0:20	2.78	3.30	4.05	4.58	5.35	5.96	6.56
0:21	2.70	3.21	3.95	4.48	5.24	5.84	6.43
0:22	2.63	3.14	3.87	4.39	5.14	5.72	6.30
0:23	2.56	3.06	3.78	4.30	5.04	5.61	6.19
0:24	2.50	2.99	3.71	4.21	4.94	5.51	6.07
0:25	2.44	2.93	3.63	4.13	4.85	5.41	5.97
0:26	2.38	2.86	3.56	4.05	4.76	5.31	5.86
0:27	2.33	2.80	3.49	3.98	4.68	5.22	5.76
0:28	2.28	2.75	3.43	3.91	4.59	5.13	5.66
0:29	2.23	2.69	3.36	3.84	4.52	5.04	5.57
0:30	2.19	2.64	3.30	3.77	4.44	4.96	5.48
0:31	2.14	2.59	3.24	3.71	4.37	4.88	5.39
0:32	2.10	2.54	3.19	3.64	4.30	4.80	5.31
0:33	2.06	2.50	3.14	3.58	4.23	4.73	5.22
0:34	2.02	2.45	3.08	3.53	4.16	4.65	5.14
0:35	1.99	2.41	3.03	3.47	4.10	4.58	5.07
0:36	1.95	2.37	2.99	3.42	4.03	4.51	4.99
0:37	1.92	2.33	2.94	3.36	3.97	4.45	4.92
0:38	1.89	2.30	2.89	3.31	3.91	4.38	4.84
0:39	1.86	2.26	2.85	3.27	3.86	4.32	4.77
0:40	1.83	2.23	2.81	3.22	3.80	4.26	4.71
0:41	1.80	2.19	2.77	3.17	3.75	4.20	4.64
0:42	1.77	2.16	2.73	3.13	3.70	4.14	4.58
0:43	1.75	2.13	2.69	3.08	3.65	4.08	4.52
0:44	1.72	2.10	2.65	3.04	3.60	4.03	4.46
0:45	1.70	2.07	2.62	3.00	3.55	3.97	4.40

RAINFALL INTENSITY TABLE

SEDGWICK COUNTY
KANSAS

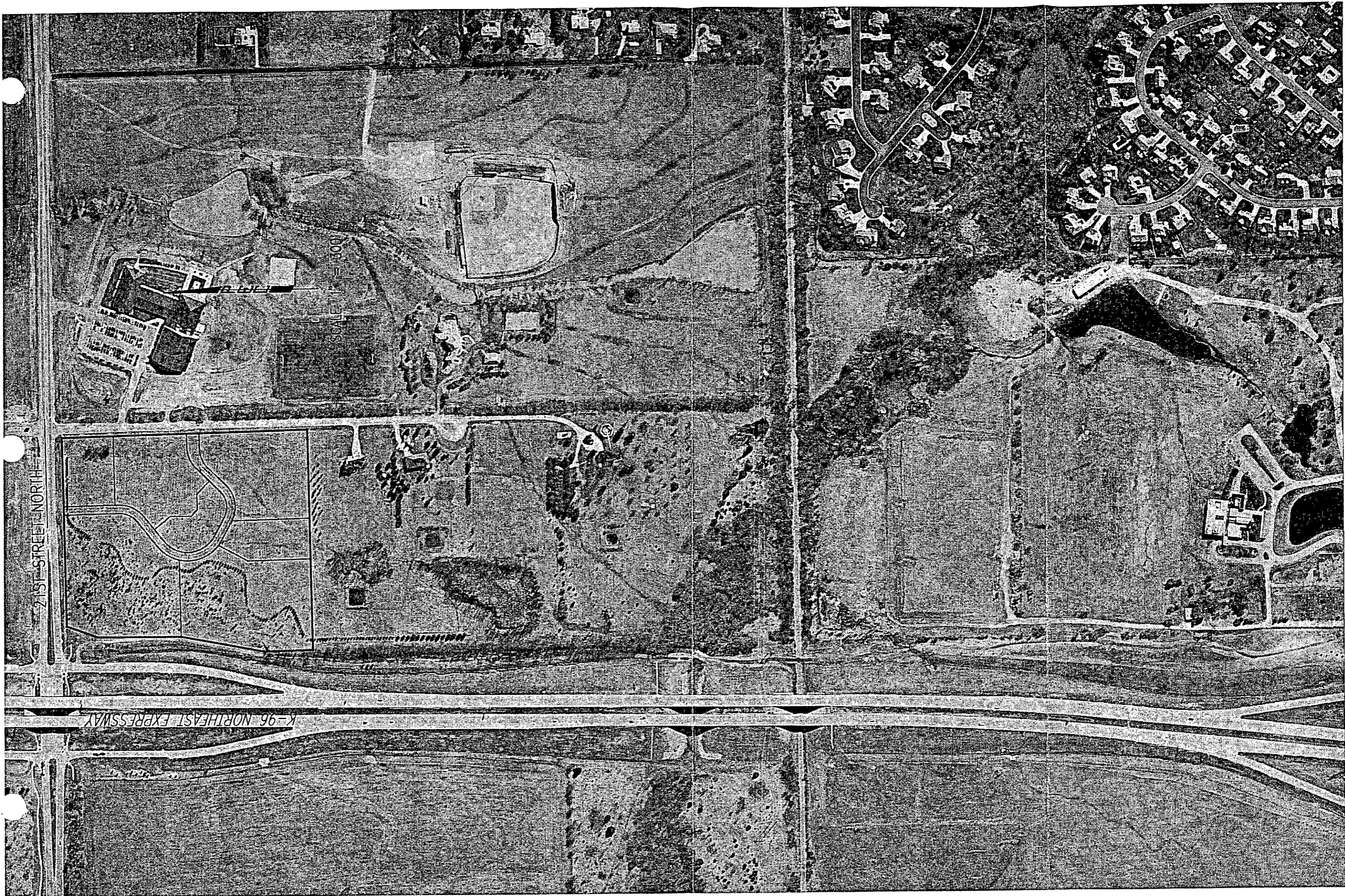
THIS TABLE CONTAINS AVERAGE RAINFALL INTENSITIES
IN INCHES PER HOUR.

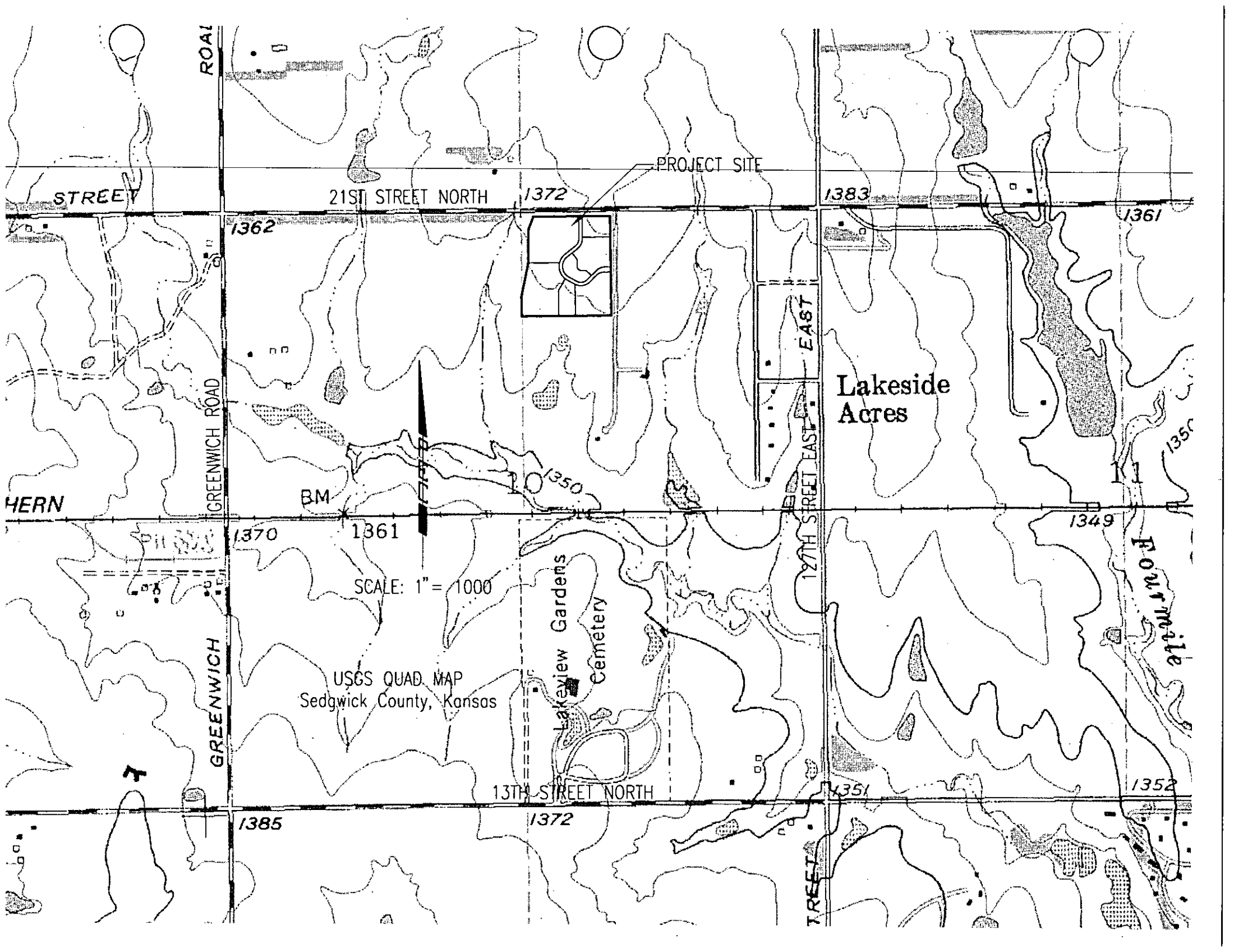
DURATION, HR:MIN	RETURN PERIOD						
	1 YR	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
0:46	1.67	2.04	2.58	2.96	3.50	3.92	4.34
0:47	1.65	2.01	2.55	2.92	3.46	3.87	4.29
0:48	1.63	1.98	2.51	2.88	3.41	3.82	4.23
0:49	1.60	1.96	2.48	2.85	3.37	3.78	4.18
0:50	1.58	1.93	2.45	2.81	3.33	3.73	4.13
0:51	1.56	1.91	2.42	2.78	3.29	3.68	4.08
0:52	1.54	1.88	2.39	2.74	3.25	3.64	4.03
0:53	1.52	1.86	2.36	2.71	3.21	3.60	3.98
0:54	1.50	1.84	2.33	2.68	3.17	3.55	3.94
0:55	1.48	1.81	2.30	2.65	3.13	3.51	3.89
0:56	1.46	1.79	2.28	2.62	3.10	3.47	3.85
0:57	1.45	1.77	2.25	2.59	3.06	3.43	3.80
0:58	1.43	1.75	2.23	2.56	3.03	3.40	3.76
0:59	1.41	1.73	2.20	2.53	3.00	3.36	3.72
1:00	1.39	1.71	2.18	2.50	2.96	3.32	3.68
1:05	1.32	1.62	2.06	2.37	2.81	3.15	3.49
1:10	1.25	1.53	1.96	2.25	2.67	3.00	3.33
1:15	1.18	1.46	1.87	2.15	2.55	2.86	3.17
1:20	1.13	1.39	1.78	2.05	2.44	2.74	3.04
1:25	1.07	1.33	1.70	1.97	2.34	2.63	2.91
1:30	1.03	1.27	1.63	1.89	2.24	2.52	2.80
1:35	0.98	1.22	1.57	1.81	2.16	2.43	2.69
1:40	0.94	1.17	1.51	1.75	2.08	2.34	2.60
1:45	0.91	1.13	1.46	1.69	2.01	2.26	2.51
1:50	0.87	1.09	1.41	1.63	1.94	2.18	2.42
1:55	0.84	1.05	1.36	1.57	1.88	2.11	2.35
2:00	0.81	1.02	1.32	1.52	1.82	2.05	2.28
2:05	0.79	0.98	1.28	1.48	1.76	1.99	2.21
2:10	0.76	0.95	1.24	1.43	1.71	1.93	2.14
2:15	0.74	0.92	1.20	1.39	1.67	1.88	2.08
2:20	0.72	0.90	1.17	1.36	1.62	1.82	2.03
2:25	0.70	0.87	1.14	1.32	1.58	1.78	1.98
2:30	0.68	0.85	1.11	1.29	1.54	1.73	1.93
2:35	0.66	0.83	1.08	1.25	1.50	1.69	1.88
2:40	0.64	0.81	1.05	1.22	1.46	1.65	1.83
2:45	0.62	0.79	1.03	1.19	1.43	1.61	1.79
2:50	0.61	0.77	1.00	1.17	1.40	1.57	1.75
2:55	0.59	0.75	0.98	1.14	1.37	1.54	1.71
3:00	0.58	0.73	0.96	1.12	1.34	1.51	1.68

RAINFALL INTENSITY TABLE
 SEDGWICK COUNTY
 KANSAS

THIS TABLE CONTAINS AVERAGE RAINFALL INTENSITIES
 IN INCHES PER HOUR.

DURATION, HR:MIN	RETURN PERIOD						
	1 YR	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
3:15	0.54	0.69	0.90	1.05	1.26	1.42	1.58
3:30	0.51	0.65	0.85	0.99	1.19	1.34	1.49
3:45	0.48	0.61	0.80	0.94	1.12	1.27	1.41
4:00	0.46	0.58	0.76	0.89	1.07	1.21	1.34
4:15	0.44	0.55	0.73	0.85	1.02	1.15	1.28
4:30	0.42	0.53	0.70	0.81	0.98	1.10	1.23
4:45	0.40	0.51	0.67	0.78	0.94	1.06	1.18
5:00	0.38	0.49	0.64	0.75	0.90	1.02	1.13
5:15	0.37	0.47	0.62	0.72	0.87	0.98	1.09
5:30	0.35	0.45	0.60	0.70	0.83	0.94	1.05
5:45	0.34	0.44	0.58	0.67	0.81	0.91	1.01
6:00	0.33	0.42	0.56	0.65	0.78	0.88	0.98
6:30	0.31	0.40	0.52	0.61	0.73	0.83	0.92
7:00	0.30	0.38	0.50	0.58	0.69	0.78	0.87
7:30	0.28	0.36	0.47	0.55	0.66	0.74	0.83
8:00	0.27	0.34	0.45	0.52	0.62	0.70	0.78
8:30	0.26	0.33	0.43	0.50	0.60	0.67	0.75
9:00	0.25	0.31	0.41	0.48	0.57	0.64	0.72
9:30	0.24	0.30	0.39	0.46	0.55	0.62	0.69
10:00	0.23	0.29	0.38	0.44	0.52	0.59	0.66
10:30	0.22	0.28	0.36	0.42	0.50	0.57	0.63
11:00	0.21	0.27	0.35	0.41	0.49	0.55	0.61
11:30	0.21	0.26	0.34	0.39	0.47	0.53	0.59
12:00	0.20	0.25	0.33	0.38	0.45	0.51	0.57
13:00	0.19	0.24	0.31	0.36	0.43	0.48	0.53
14:00	0.18	0.22	0.29	0.34	0.40	0.45	0.50
15:00	0.17	0.21	0.27	0.32	0.38	0.43	0.47
16:00	0.16	0.20	0.26	0.30	0.36	0.40	0.45
17:00	0.15	0.19	0.25	0.29	0.34	0.38	0.43
18:00	0.15	0.18	0.24	0.27	0.33	0.37	0.41
19:00	0.14	0.18	0.23	0.26	0.31	0.35	0.39
20:00	0.14	0.17	0.22	0.25	0.30	0.34	0.37
21:00	0.13	0.16	0.21	0.24	0.29	0.32	0.36
22:00	0.13	0.16	0.20	0.23	0.28	0.31	0.34
23:00	0.12	0.15	0.19	0.22	0.27	0.30	0.33
24:00	0.12	0.15	0.19	0.22	0.26	0.29	0.32





ROAD

STREET

21ST STREET NORTH

1372

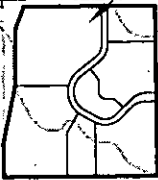
PROJECT SITE

1383

1361

1362

GREENWICH ROAD



EAST

Lakeside Acres

1350

HERN

BM

1370

1361

SCALE: 1" = 1000

Lakeview Gardens Cemetery

1349

USGS QUAD MAP
Sedgwick County, Kansas

GREENWICH

13TH STREET NORTH

1372

127TH STREET EAST

1351

Four Mile

1352

1385

NW Corner, NE 1/4, Sec. 10, T27S, R2E of the 6th P.M.

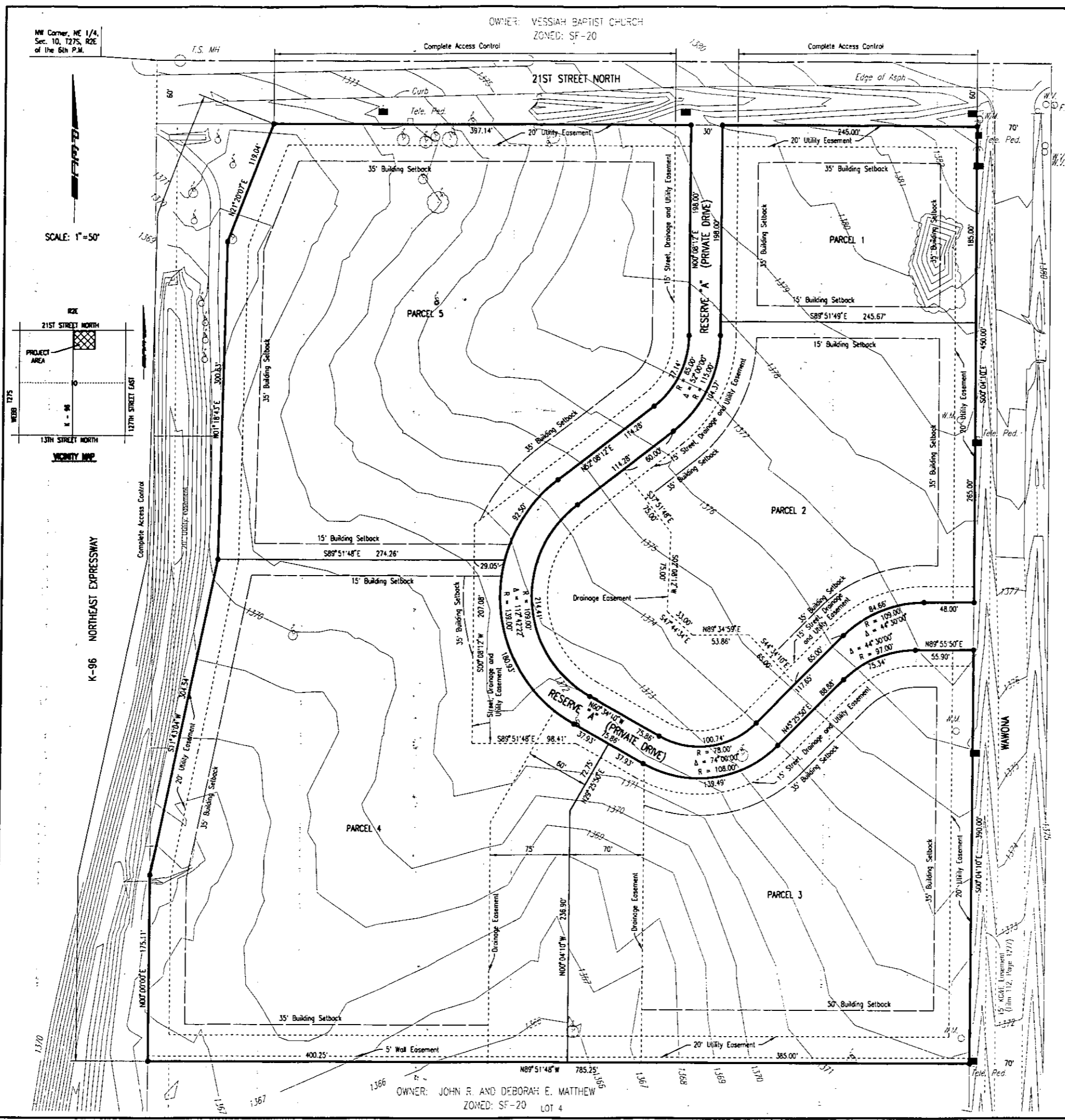
OWNER: VESSIAH BAPTIST CHURCH ZONED: SF-20

COMMERCIAL COMMUNITY UNIT PLAN D.P.-256

THE COLLECTIVE

WICHITA, SEDGWICK COUNTY, KANSAS
JULY 30, 2001

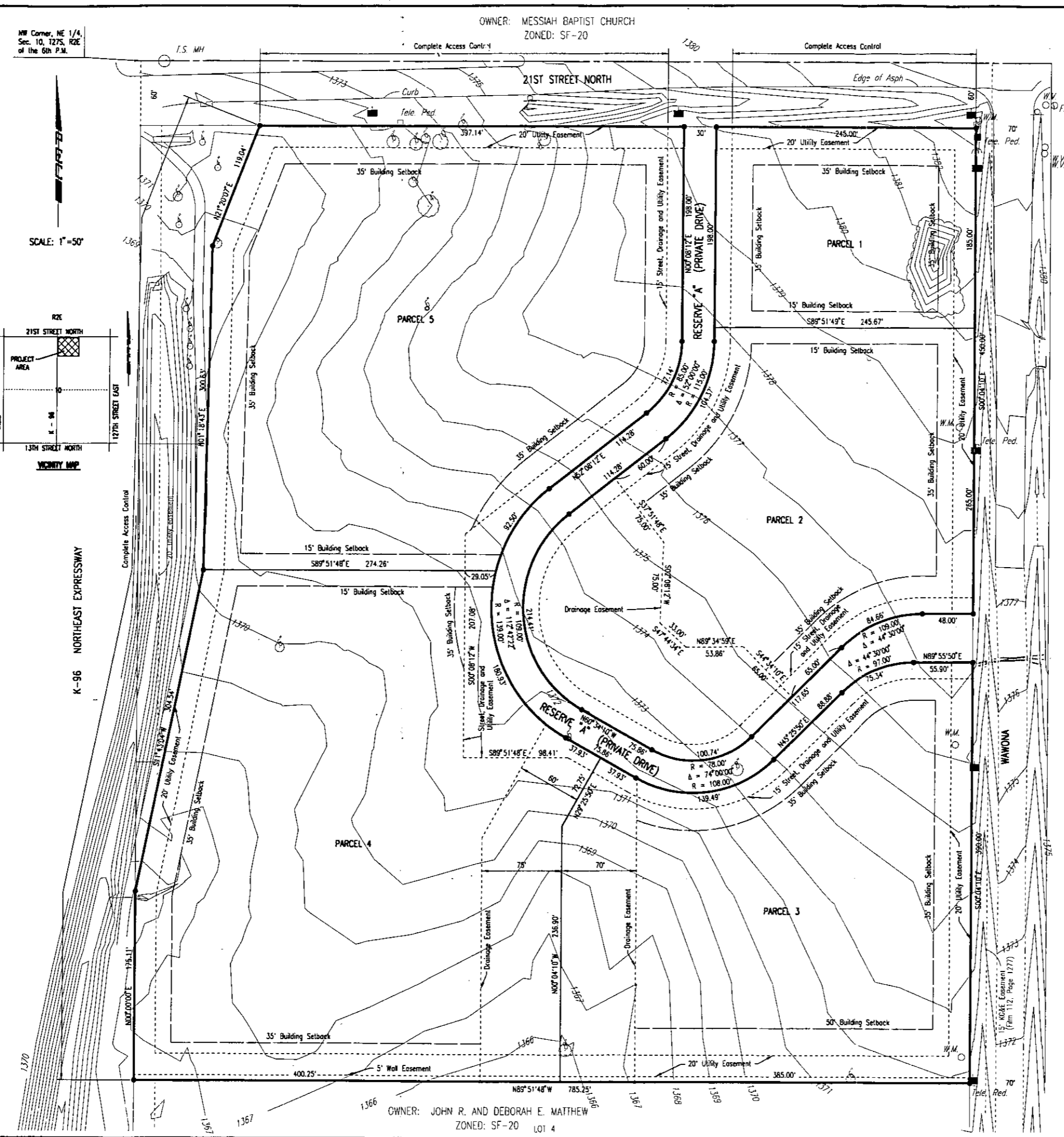
LEGAL DESCRIPTION: LOTS 1, 2 AND 3, BLOCK 1, LANZBATH ADDITION TO SEDGWICK COUNTY, KANSAS
OWNER: RALPH LANZBATH 1857 WAWONA WICHITA, KANSAS 67208 (316) 638-5175
ENGINEER: PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 S. TOPERA WICHITA, KANSAS 67202



- THE COLLECTIVE COMMERCIAL COMMUNITY UNIT PLAN
- GENERAL:
- TOTAL NET AREA = 15.05 ACRES ± (EXCLUSIVE OF PUBLIC STREET R/W)
THIS DEVELOPMENT IS PROPOSED TO CONTAIN 15 NET ACRES ± OF "LC" ZONING.
- GENERAL PROVISIONS:
- ACCESS CONTROL: ACCESS TO 21ST STREET SHALL BE LIMITED TO ONE OPENING.
 - ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.
 - DRAINAGE WILL BE HANDLED AT THE TIME OF PLANTING, ANY REQUIRED DRAINAGE IMPROVEMENTS WILL BE GUARANTEED WITH THE FINAL PLAN.
 - BUILDING SETBACKS: MINIMUM BUILDING SETBACKS SHALL BE AS INDICATED ON THE PLAN. IN THE EVENT MORE THAN ONE PARCEL IS DEVELOPED UNDER THE SAME OWNERSHIP, THE SETBACK BETWEEN PARCELS WILL NOT BE REQUIRED.
 - PARKING RATIOS SHALL BE IN ACCORDANCE WITH THE APPROPRIATE CODE OF THE CITY OF WICHITA OR AS NOTED IN THE PARCEL DESCRIPTIONS.
 - SIGNS: NO OFF-SITE OR PORTABLE SIGNS SHALL BE ALLOWED. FLASHING SIGNS (EXCEPT TIME AND TEMP SIGNS AND PUBLIC SERVICE MESSAGES), ROTATING OR MOVING SIGNS, SIGNS WITH MOVING LIGHTS OR SIGNS WHICH CREATE ILLUSIONS OF MOVEMENT ARE NOT PERMITTED.
- K-98 FRONTAGE:
- PARCEL 4: 2-10' MONUMENT SIGNS WITH A MAXIMUM OF 50 SQUARE FEET.
1-OPTIONAL 35' SIGN WITH A MAXIMUM OF 150 SQUARE FEET WHICH MUST BE A MINIMUM OF 450' FROM THE SOUTH PROPERTY LINE.
- PARCEL 5: 2-10' MONUMENT SIGNS WITH A MAXIMUM OF 50 SQUARE FEET.
1-OPTIONAL 35' SIGN WITH A MAXIMUM OF 150 SQUARE FEET.
NOTE: THERE IS ONLY 1-35' SIGN PERMITTED. IT MAY BE ON EITHER PARCEL 4 OR PARCEL 5. SPACING BETWEEN SIGNS SHALL BE 150 FEET MINIMUM.
- 21ST STREET NORTH FRONTAGE:
- PARCEL 1: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET.
1-35' SIGN WITH A MAXIMUM OF 150 SQUARE FEET AT THE NORTHEAST CORNER. SPACING BETWEEN SIGNS SHALL BE 150' MINIMUM EXCEPT FOR THE ENTRY MARKER SIGN AT THE MAJOR ENTRANCE, WHICH CAN BE REDUCED TO 75'.
- PARCEL 5: 2-10' MONUMENT SIGNS WITH A MAXIMUM OF 50 SQUARE FEET. SPACING BETWEEN SIGNS SHALL BE 150' MINIMUM EXCEPT FOR THE ENTRY MARKER SIGN AT THE MAJOR ENTRANCE, WHICH CAN BE REDUCED TO 75'.
NOTE: IN ADDITION TO THE MONUMENT SIGNS, THERE SHALL BE ENTRY MARKER SIGNS ON EITHER SIDE OF THE MAJOR ENTRY OFF OF 21ST STREET NORTH. THESE SIGNS SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. THESE SIGNS SHALL NOT BE SUBJECT TO THE 150' SPACING REQUIREMENTS.
- WAWONA STREET FRONTAGE:
- PARCEL 1: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET MAY BE LOCATED WITHIN 75' OF THE 35' SIGN AT THE NORTHEAST CORNER.
- PARCEL 2: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET.
1-ENTRY MARKER SIGN AT THE MAJOR ENTRANCE. THIS SIGN SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. MINIMUM SPACING SHALL BE 150'.
- PARCEL 3: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET.
1-ENTRY MARKER SIGN AT THE MAJOR ENTRANCE. THIS SIGN SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. MINIMUM SPACING SHALL BE 150'.
NOTE: NO SIGN SHALL BE PERMITTED ON THE SOUTH 150' OF PARCEL 3.
- FIRE LANES: FIRE LANES SHALL BE IN ACCORDANCE WITH THE FIRE CODE OF THE CITY OF WICHITA. NO PARKING SHALL BE IN SAID FIRE LANES, ALTHOUGH THEY MAY BE USED FOR PASSENGER LOADING AND UNLOADING. PRIOR TO FINAL APPROVAL OF THE PARKING PLAN, THE FIRE CHIEF OR HIS DESIGNATED REPRESENTATIVE, SHALL APPROVE THE PLAN AS TO LOCATION AND DESIGN OF FIRE LANE(S).
 - SCREENING AND LANDSCAPING: SCREENING AND LANDSCAPING SHALL BE ACCORDING TO THE CITY OF WICHITA LANDSCAPE ORDINANCE, EXCEPT LANDSCAPING ALONG THE SOUTH PROPERTY LINE OF PARCEL 3 WHICH SHALL BE 1 1/2 TIMES THE CITY CODE.
FAILURE TO PROPERLY MAINTAIN THE SCREENING AND LANDSCAPING SHALL BE CONSIDERED A VIOLATION OF THE C.U.P. AFTER A JOINT DETERMINATION BY THE DIRECTOR OF PLANNING AND SUPERINTENDENT OF CENTRAL INSPECTION.
A SOLID OR SEMI-SOLID WALL AT LEAST SIX FEET, BUT NOT MORE THAN 8' HIGH, CONSTRUCTED OF BRICK, STONE, MASONRY, ARCHITECTURAL TILE OR OTHER SIMILAR MATERIAL, SPECIFICALLY EXCLUDING WOOD OR WOVEN WIRE, SHALL BE CONSTRUCTED WITHIN THE 5' WALL EASEMENT SHOWN ON THE SOUTH LINE OF PARCELS 3 AND 4. CONSTRUCTION AND MAINTENANCE OF THIS WALL SHALL BE THE RESPONSIBILITY OF THE OWNER(S) OF PARCELS 3 AND 4.
 - A LANDSCAPE PLAN, INDICATING THE TYPE, SIZE AND COND. OF NEW PLANT MATERIALS, AND METHOD OF IRRIGATION, SHALL BE SUBMITTED TO THE PLANNING DEPARTMENT FOR THEIR REVIEW AND APPROVAL PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT(S).
 - A FINANCIAL GUARANTEE FOR THE PLANT MATERIALS APPROVED IN THE LANDSCAPE PLAN SHALL BE REQUIRED PRIOR TO THE ISSUANCE OF ANY OCCUPANCY PERMIT IF THE REQUIRED LANDSCAPING HAS NOT BEEN PLANTED.
 - A PLAN FOR A PEDESTRIAN WALK SYSTEM SHALL BE A REQUIREMENT OF THIS C.U.P. THIS WALK SYSTEM SHALL LINK PROPOSED BUILDINGS WITH THE ENTRANCES AND SIDEWALKS ALONG 21ST STREET. THE PEDESTRIAN SYSTEM SHALL BE ASSURED BY REQUIRED SUBMISSION AND APPROVAL OF CIRCULATION PLANS BY THE DIRECTOR OF PLANNING PRIOR TO ISSUING BUILDING PERMITS. SAID WALK SYSTEM SHALL BE DESIGNED, LIGHTED, AND LANDSCAPED TO HUMAN CONSISTENT WITH THE ARCHITECTURAL CHARACTER OF THE OVERALL DEVELOPMENT.
 - AN OVERALL SITE TRAFFIC CIRCULATION PLAN SHALL BE SUBMITTED TO THE DIRECTOR OF PLANNING FOR APPROVAL PRIOR TO THE ISSUANCE OF BUILDING PERMITS. CROSS-LOT CIRCULATION AGREEMENTS SHALL BE REQUIRED AT THE TIME OF PLANTING TO ASSURE MOVEMENT BETWEEN PARCELS WITHIN THE C.U.P.
 - LIGHTING: ALL LIGHTING WITHIN PARCELS SHALL BE SHIELDED TO REFLECT OR DIRECT LIGHT AWAY FROM THE ADJOINING RESIDENTIAL DISTRICTS.
 - TRANSPORTATION IMPROVEMENTS:
 - EXTEND THE DECEL LANE ON 21ST STREET NORTH FROM ITS CURRENT TERMINUS AT THE EASTERN EDGE OF THE RAISED MEDIAN TO WAWONA STREET.
 - PROVIDE A WESTBOUND LEFT-TURN STORAGE LANE ON 21ST STREET NORTH FROM THE PRIVATE DRIVE ENTRANCE EXTENDING EAST OF WAWONA WITH 150 FEET STORAGE LENGTH TAPER.
 - IMPROVE WAWONA WITH CONTINUOUS LEFT-TURN LANE FROM 21ST STREET NORTH TO THE SOUTHERN EDGE OF THE PRIVATE DRIVE FROM THE PROPOSED DEVELOPMENT.
 - THE TRANSFER OF TITLE OF ALL OR ANY PORTION OF THE LAND INCLUDED WITHIN THE COMMUNITY UNIT PLAN DOES NOT CONSTITUTE A TERMINATION OF THE PLAN OR ANY PORTION THEREOF, BUT SAID PLAN SHALL RUN THE LAND FOR THE COMMERCIAL AND OFFICE DEVELOPMENT AND BE BINDING UPON THE PRESENT OWNERS, THEIR SUCCESSORS AND ASSIGNS, UNLESS AMENDED.
- 15) IF MULTIPLE OWNERSHIP IS ANTICIPATED, AN OWNERS ASSOCIATED AGREEMENT PROVIDING FOR THE MAINTENANCE OF RESERVES, OPEN SPACE, INTERNAL DRIVES, PARKING AREAS, DRAINAGE IMPROVEMENTS, WALLS, ETC. SHALL BE FILED WITH THE PLAN. ALL DRIVES AND PARKING AREAS SHALL BE OWNED AND MAINTAINED BY THE OWNER'S ASSOCIATION(S).
- 16) ALL ROOFTOP EQUIPMENT SHALL BE SCREENED FROM GROUND LEVEL VIEWS.
- 17) LOADING AREAS, TRASH RECEPTACLES, OUTDOOR STORAGE, AND DOCKS IN THE C.U.P. SHALL BE SCREENED FROM GROUND LEVEL VIEW. SCREENING OF ALL TRASH DUMPSTERS, OUTDOOR STORAGE, AND MECHANICAL EQUIPMENT WILL BE CONSTRUCTED OF MATERIAL TO MATCH AND PREFERABLY BE CONNECTED TO THE BUILDINGS THEY SUPPORT.
- 18) ALL BUILDINGS SHALL HAVE THE SAME PREDOMINANT EXTERIOR BUILDING MATERIALS WITH CONSISTENT ARCHITECTURAL CHARACTER, COLOR AND TEXTURE, AND CONSISTENT LIGHTING DESIGN (FIXTURES, POLES, LAMPS, ETC.) AS APPROVED BY THE DIRECTOR OF PLANNING. METAL SHALL NOT BE PERMITTED AS A PREDOMINANT EXTERIOR BUILDING MATERIAL ON ANY FACADE FOR ANY BUILDING ON THE SITE.
- 19) NO PARCEL WITHIN THE C.U.P. SHALL ALLOW THE USE OF ADULT ENTERTAINMENT ESTABLISHMENTS, GROUP HOMES, CORRECTIONAL PLACEMENT RESIDENCES, PRIVATE CLUBS, LAUNDRIES, CONVENIENCE STORES, DRIVE THRU RESTAURANTS AND DRINKING ESTABLISHMENTS. RESTAURANTS THAT SERVE LIQUOR CAN BE DEVELOPED AS LONG AS FOOD IS THE PRIMARY SERVICE OF THE ESTABLISHMENT.
- 20) PARCEL DESCRIPTIONS:
- PARCEL NUMBER 1:
PROPOSED USE: ALL USES ALLOWED IN "LC" ZONING EXCEPT FOR THOSE LISTED IN GENERAL PROVISION NO. 19
GROSS AREA - 1.04 ACRES (45,386 S.F.)
MAXIMUM BUILDING COVERAGE - 13,616 S.F. (30% MAXIMUM)
MAXIMUM GROSS FLOOR AREA - 13,616 S.F.
FLOOR AREA RATIO - 0.300
MAXIMUM BUILDING HEIGHT - 35'
MAXIMUM NUMBER OF BUILDINGS - 1
PARKING - AS PER CITY CODE
SETBACKS - 35' ALONG 21ST STREET, WAWONA AND PRIVATE DRIVE (RES. "A"), AND 15' ADJACENT TO PARCEL 2. (SEE C.P. NO. 4)
- PARCEL NUMBER 2:
PROPOSED USE: ALL USES ALLOWED IN "LC" ZONING EXCEPT FOR THOSE LISTED IN GENERAL PROVISION NO. 19
GROSS AREA - 2.70 ACRES (117,433 S.F.)
MAXIMUM BUILDING COVERAGE - 35,230 S.F. (30% MAXIMUM)
MAXIMUM GROSS FLOOR AREA - 35,230 S.F.
FLOOR AREA RATIO - 0.300
MAXIMUM BUILDING HEIGHT - 35'
MAXIMUM NUMBER OF BUILDINGS - 4
PARKING - AS PER CITY CODE
SETBACKS - 35' ALONG WAWONA AND PRIVATE DRIVE (RES. "A") AND 50' ADJACENT TO PARCEL 1. (SEE C.P. NO. 4)
- PARCEL NUMBER 3:
PROPOSED USE: ALL USES ALLOWED IN "NR" ZONING. NO RESTAURANTS SHALL BE PERMITTED ON THE SOUTH 150 FEET OF THE PARCEL.
GROSS AREA - 2.83 ACRES (123,396 S.F.)
MAXIMUM BUILDING COVERAGE - 37,019 S.F. (30% MAXIMUM)
MAXIMUM GROSS FLOOR AREA - 37,019 S.F.
FLOOR AREA RATIO - 0.300
MAXIMUM BUILDING HEIGHT - 35'
MAXIMUM NUMBER OF BUILDINGS - 4
PARKING - AS PER CITY CODE
SETBACKS - 35' ALONG WAWONA AND PRIVATE DRIVE (RES. "A"), AND 50' ALONG SOUTH PROPERTY LINE.
- PARCEL NUMBER 4:
PROPOSED USE: ALL USES ALLOWED IN "NR" ZONING. NO RESTAURANTS SHALL BE PERMITTED ON THE SOUTH 150 FEET OF THE PARCEL.
GROSS AREA - 3.99 ACRES (173,674 S.F.)
MAXIMUM BUILDING COVERAGE - 52,183 S.F. (30% MAXIMUM)
MAXIMUM GROSS FLOOR AREA - 52,183 S.F.
FLOOR AREA RATIO - 0.300
MAXIMUM BUILDING HEIGHT - 35'
MAXIMUM NUMBER OF BUILDINGS - 5
PARKING - AS PER CITY CODE
SETBACKS - 35' ALONG SOUTH AND WEST PROPERTY LINE AND PRIVATE DRIVE (RES. "A"), AND 15' ADJACENT TO PARCEL 5. (SEE C.P. NO. 4)
- PARCEL NUMBER 5:
PROPOSED USE: ALL USES ALLOWED IN "LC" ZONING EXCEPT FOR THOSE LISTED IN GENERAL PROVISION NO. 19
GROSS AREA - 3.71 ACRES (161,869 S.F.)
MAXIMUM BUILDING COVERAGE - 48,513 S.F. (30% MAXIMUM)
MAXIMUM GROSS FLOOR AREA - 48,513 S.F.
FLOOR AREA RATIO - 0.300
MAXIMUM BUILDING HEIGHT - 35'
MAXIMUM NUMBER OF BUILDINGS - 5
PARKING - AS PER CITY CODE
SETBACKS - 35' ALONG NORTH AND WEST PROPERTY LINES AND THE PRIVATE DRIVE (RES. "A"), AND 15' ADJACENT TO PARCEL 4. (SEE C.P. NO. 4)

OWNER: TRINITY HIGH SCHOOL ZONED: SF-20

OWNER: JOHN R. AND DEBORAH E. MATTHEW ZONED: SF-20 LOT 4

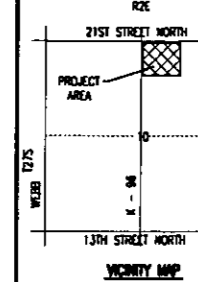


COMMERCIAL COMMUNITY UNIT PLAN D.P.-256
THE COLLECTIVE
 WICHITA, SEDGWICK COUNTY, KANSAS
 JULY 30, 2001
LEGAL DESCRIPTION: LOTS 1, 2 AND 3, BLOCK 1, LANZMATH ADDITION TO SEDGWICK COUNTY, KANSAS
OWNER: RALPH LANZMATH 1857 WAWONA WICHITA, KANSAS 67208 (316) 638-5175
ENGINEER: PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 S. TOPEKA WICHITA, KANSAS 67202

- THE COLLECTIVE COMMERCIAL COMMUNITY UNIT PLAN
- GENERAL:**
 TOTAL NET AREA = 15.05 ACRES ± (EXCLUSIVE OF PUBLIC STREET R/W)
 THIS DEVELOPMENT IS PROPOSED TO CONTAIN 15 NET ACRES ± OF "LC" ZONING.
- GENERAL PROVISIONS:**
- ACCESS CONTROL: ACCESS TO 21ST STREET SHALL BE LIMITED TO ONE OPENING.
 - ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.
 - DRAINAGE WILL BE HANDLED AT THE TIME OF PLATTING. ANY REQUIRED DRAINAGE IMPROVEMENTS WILL BE GUARANTEED WITH THE FINAL PLAN.
 - BUILDING SETBACKS: MINIMUM BUILDING SETBACKS SHALL BE AS INDICATED ON THE PLAN. IN THE EVENT MORE THAN ONE PARCEL IS DEVELOPED UNDER THE SAME OWNERSHIP, THE SETBACK BETWEEN PARCELS WILL NOT BE REQUIRED.
 - PARKING RATIOS SHALL BE IN ACCORDANCE WITH THE APPROPRIATE CODE OF THE CITY OF WICHITA, OR AS NOTED IN THE PARCEL DESCRIPTIONS.
 - SIGNS: NO OFF-SITE OR PORTABLE SIGNS SHALL BE ALLOWED. FLASHING SIGNS (EXCEPT TIME AND TEMPERATURE SIGNS AND PUBLIC SERVICE MESSAGES), ROTATING OR MOVING SIGNS, SIGNS WITH MOVING LIGHTS OR SIGNS WHICH CREATE ILLUSIONS OF MOVEMENT ARE NOT PERMITTED.
- K-96 FRONTAGE:**
- PARCEL 4: 2-10' MONUMENT SIGNS WITH A MAXIMUM OF 50 SQUARE FEET.
 1-OPTIONAL 35' SIGN WITH A MAXIMUM OF 150 SQUARE FEET WHICH MUST BE A MINIMUM OF 450' FROM THE SOUTH PROPERTY LINE.
- PARCEL 5: 2-10' MONUMENT SIGNS WITH A MAXIMUM OF 50 SQUARE FEET.
 1-OPTIONAL 35' SIGN WITH A MAXIMUM OF 150 SQUARE FEET.
 NOTE: THERE IS ONLY 1-35' SIGN PERMITTED. IT MAY BE ON EITHER PARCEL 4 OR PARCEL 5. SPACING BETWEEN SIGNS SHALL BE 150 FEET MINIMUM.
- 21ST STREET NORTH FRONTAGE:**
- PARCEL 1: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET.
 1-35' SIGN WITH A MAXIMUM OF 150 SQUARE FEET AT THE NORTHEAST CORNER. SPACING BETWEEN SIGNS SHALL BE 150' MINIMUM, EXCEPT FOR THE ENTRY MARKER SIGN AT THE MAJOR ENTRANCE, WHICH CAN BE REDUCED TO 75'.
- PARCEL 2: 2-10' MONUMENT SIGNS WITH A MAXIMUM OF 50 SQUARE FEET. SPACING BETWEEN SIGNS SHALL BE 150' MINIMUM, EXCEPT FOR THE ENTRY MARKER SIGN AT THE MAJOR ENTRANCE, WHICH CAN BE REDUCED TO 75'.
 NOTE: IN ADDITION TO THE MONUMENT SIGNS, THERE SHALL BE ENTRY MARKER SIGNS ON EITHER SIDE OF THE MAJOR ENTRY OFF OF 21ST STREET NORTH. THESE SIGNS SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. THESE SIGNS SHALL NOT BE SUBJECT TO THE 150' SPACING REQUIREMENTS.
- PARCEL 3: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET. SPACING BETWEEN SIGNS SHALL BE 150' MINIMUM, EXCEPT FOR THE ENTRY MARKER SIGN AT THE MAJOR ENTRANCE, WHICH CAN BE REDUCED TO 75'.
 NOTE: IN ADDITION TO THE MONUMENT SIGNS, THERE SHALL BE ENTRY MARKER SIGNS ON EITHER SIDE OF THE MAJOR ENTRY OFF OF 21ST STREET NORTH. THESE SIGNS SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. THESE SIGNS SHALL NOT BE SUBJECT TO THE 150' SPACING REQUIREMENTS.
- WAWONA STREET FRONTAGE:**
- PARCEL 1: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET MAY BE LOCATED WITHIN 75' OF THE 35' SIGN AT THE NORTHEAST CORNER.
- PARCEL 2: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET.
 1-ENTRY MARKER SIGN AT THE MAJOR ENTRANCE. THIS SIGN SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. MINIMUM SPACING SHALL BE 150'.
- PARCEL 3: 1-10' MONUMENT SIGN WITH A MAXIMUM OF 50 SQUARE FEET.
 1-ENTRY MARKER SIGN AT THE MAJOR ENTRANCE. THIS SIGN SHALL NOT EXCEED 20 SQUARE FEET OR 8' IN HEIGHT. MINIMUM SPACING SHALL BE 150'.
 NOTE: NO SIGN SHALL BE PERMITTED ON THE SOUTH 150' OF PARCEL 3.
- 7.) FIRE LINES:** FIRE LINES SHALL BE IN ACCORDANCE WITH THE FIRE CODE OF THE CITY OF WICHITA. NO PARKING SHALL BE IN SAID FIRE LINES, ALTHOUGH THEY MAY BE USED FOR PASSENGER LOADING AND UNLOADING. PRIOR TO FINAL APPROVAL OF THE PARKING PLAN, THE FIRE CHIEF OR HIS DESIGNATED REPRESENTATIVE, SHALL APPROVE THE PLAN AS TO LOCATION AND DESIGN OF FIRE LANE(S).
- 8.) SCREENING AND LANDSCAPING:** SCREENING AND LANDSCAPING SHALL BE ACCORDING TO THE CITY OF WICHITA LANDSCAPE ORDINANCE, EXCEPT LANDSCAPING ALONG THE SOUTH PROPERTY LINE OF PARCEL 3 WHICH SHALL BE 1 1/2 TIMES THE CITY CODE.
- FAILURE TO PROPERLY MAINTAIN THE SCREENING AND LANDSCAPING SHALL BE CONSIDERED A VIOLATION OF THE C.U.P. AFTER A JOINT DETERMINATION BY THE DIRECTOR OF PLANNING AND SUPERINTENDENT OF CENTRAL INSPECTION.
- A SOLID OR SEMI-SOLID WALL AT LEAST SIX FEET, BUT NOT MORE THAN 8' HIGH, CONSTRUCTED OF BRICK, STONE, MASONRY, ARCHITECTURAL TILE OR OTHER SIMILAR MATERIAL, SPECIFICALLY EXCLUDING WOOD OR WOVEN WIRE, SHALL BE CONSTRUCTED WITHIN THE 5' WALL EASEMENT SHOWN ON THE SOUTH LINE OF PARCELS 3 AND 4. CONSTRUCTION AND MAINTENANCE OF THIS WALL SHALL BE THE RESPONSIBILITY OF THE OWNER(S) OF PARCELS 3 AND 4.
- 9.) A LANDSCAPE PLAN,** INDICATING THE TYPE, SIZE, AND COND. OF NEW PLANT MATERIALS, AND METHOD OF IRRIGATION, SHALL BE SUBMITTED TO THE PLANNING DEPARTMENT FOR THEIR REVIEW AND APPROVAL PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT(S).
- A FINANCIAL GUARANTEE FOR THE PLANT MATERIALS APPROVED IN THE LANDSCAPE PLAN SHALL BE REQUIRED PRIOR TO THE ISSUANCE OF ANY OCCUPANCY PERMIT IF THE REQUIRED LANDSCAPING HAS NOT BEEN PLANTED.
- 10.) A PLAN FOR A PEDESTRIAN WALK SYSTEM** SHALL BE A REQUIREMENT OF THIS C.U.P. THIS WALK SYSTEM SHALL LINK PROPOSED BUILDINGS WITH THE ENTRANCES AND SIDEWALKS ALONG 21ST STREET. THE PEDESTRIAN SYSTEM SHALL BE ASSURED BY REQUIRED SUBMISSION AND APPROVAL OF CIRCULATION PLANS BY THE DIRECTOR OF PLANNING PRIOR TO ISSUING BUILDING PERMITS. SAID WALK SYSTEM SHALL BE DESIGNED, LIGHTED, AND LANDSCAPED TO REMAIN CONSISTENT WITH THE ARCHITECTURAL CHARACTER OF THE OVERALL DEVELOPMENT.
- 11.) AN OVERALL SITE TRAFFIC CIRCULATION PLAN** SHALL BE SUBMITTED TO THE DIRECTOR OF PLANNING FOR APPROVAL PRIOR TO THE ISSUANCE OF BUILDING PERMITS. CROSS-LOT CIRCULATION AGREEMENTS SHALL BE REQUIRED AT THE TIME OF PLATTING TO ASSURE MOVEMENT BETWEEN PARCELS WITHIN THE C.U.P.
- 12.) LIGHTING:** ALL LIGHTING WITHIN PARCELS SHALL BE SHIELDED TO REFLECT OR DIRECT LIGHT AWAY FROM THE ADJOINING RESIDENTIAL DISTRICTS.
- 13.) TRANSPORTATION IMPROVEMENTS:**
- EXTEND THE PECEL LANE ON 21ST STREET NORTH FROM ITS CURRENT TERMINUS AT THE EASTERN EDGE OF THE RAISED MEDIAN TO WAWONA STREET.
 - PROVIDE A WESTBOUND LEFT-TURN STORAGE LANE ON 21ST STREET NORTH FROM THE PRIVATE DRIVE ENTRANCE EXTENDING EAST OF WAWONA WITH 150 FEET STORAGE LENGTH TAPER.
 - IMPROVE WAWONA WITH CONTINUOUS LEFT-TURN LANE FROM 21ST STREET NORTH TO THE SOUTHERN EDGE OF THE PRIVATE DRIVE FROM THE PROPOSED DEVELOPMENT.
- 14.) THE TRANSFER OF TITLE OF ALL OR ANY PORTION OF THE LAND INCLUDED WITHIN THE COMMUNITY UNIT PLAN DOES NOT CONSTITUTE A TERMINATION OF THE PLAN OR ANY PORTION THEREOF, BUT SAID PLAN SHALL RUN WITH THE LAND FOR THE COMMERCIAL AND OFFICE DEVELOPMENT AND BE BINDING UPON THE PRESENT OWNERS, THEIR SUCCESSORS AND ASSIGNS, UNLESS AMENDED.**
- 15.) IF MULTIPLE OWNERSHIP IS ANTICIPATED,** AN OWNERS ASSOCIATED AGREEMENT PROVIDING FOR THE MAINTENANCE OF RESERVES, OPEN SPACE, INTERVAL DRIVES, PARKING AREAS, DRAINAGE IMPROVEMENTS, WALLS, ETC. SHALL BE FILED WITH THE PLAN. ALL DRIVES AND PARKING AREAS SHALL BE OWNED AND MAINTAINED BY THE OWNER'S ASSOCIATION(S).
- 16.) ALL ROOFTOP EQUIPMENT** SHALL BE SCREENED FROM GROUND LEVEL VIEWS.
- 17.) LOADING AREAS, TRASH RECEPTACLES, OUTDOOR STORAGE, AND DOCKS** IN THE C.U.P. SHALL BE SCREENED FROM GROUND LEVEL VIEW. SCREENING OF ALL TRASH CHUMPERS, OUTDOOR STORAGE, AND MECHANICAL EQUIPMENT WILL BE CONSTRUCTED OF MATERIAL TO MATCH AND PREFERABLY BE CONNECTED TO THE BUILDINGS THEY SUPPORT.
- 18.) ALL BUILDINGS** SHALL HAVE THE SAME PREDOMINANT EXTERIOR BUILDING MATERIALS WITH CONSISTENT ARCHITECTURAL CHARACTER, COLOR AND TEXTURE, AND CONSISTENT LIGHTING DESIGN (FIXTURES, POLES, LAMPS, ETC.) AS APPROVED BY THE DIRECTOR OF PLANNING. METAL SHALL NOT BE PERMITTED AS A PREDOMINANT EXTERIOR BUILDING MATERIAL ON ANY FACADE FOR ANY BUILDING ON THE SITE.
- 19.) NO PARCEL WITHIN THE C.U.P.** SHALL ALLOW THE USE OF ADULT ENTERTAINMENT ESTABLISHMENTS, GROUP HOUSES, CORRECTIONAL PLACEMENT RESIDENCES, PRIVATE CLUBS, TAVENES, CONVENIENCE STORES, DRIVE THRU RESTAURANTS AND DRINKING ESTABLISHMENTS. RESTAURANTS THAT SERVE LIQUOR CAN BE DEVELOPED AS LONG AS FOOD IS THE PRIMARY SERVICE OF THE ESTABLISHMENT.
- 20.) PARCEL DESCRIPTIONS:**
- PARCEL NUMBER 1:
 PROPOSED USE: ALL USES ALLOWED IN "LC" ZONING EXCEPT FOR THOSE LISTED IN GENERAL PROVISION NO. 19
 GROSS AREA - 1.04 ACRES (45,386 S.F.)
 MAXIMUM BUILDING COVERAGE - 13,616 S.F. (30% MAXIMUM)
 MAXIMUM GROSS FLOOR AREA - 13,616 S.F.
 FLOOR AREA RATIO - 0.300
 MAXIMUM BUILDING HEIGHT - 35'
 MAXIMUM NUMBER OF BUILDINGS - 1
 PARKING - AS PER CITY CODE
 SETBACKS - 35' ALONG 21ST STREET, WAWONA AND PRIVATE DRIVE (RES. "A"), AND 15' ADJACENT TO PARCEL 2. (SEE G.P. NO. 4)
- PARCEL NUMBER 2:
 PROPOSED USE: ALL USES ALLOWED IN "LC" ZONING EXCEPT FOR THOSE LISTED IN GENERAL PROVISION NO. 19
 GROSS AREA - 2.70 ACRES (117,433 S.F.)
 MAXIMUM BUILDING COVERAGE - 35,230 S.F. (30% MAXIMUM)
 MAXIMUM GROSS FLOOR AREA - 35,230 S.F.
 FLOOR AREA RATIO - 0.300
 MAXIMUM BUILDING HEIGHT - 35'
 MAXIMUM NUMBER OF BUILDINGS - 4
 PARKING - AS PER CITY CODE
 SETBACKS - 35' ALONG WAWONA AND PRIVATE DRIVE (RES. "A") AND 15' ADJACENT TO PARCEL 1. (SEE G.P. NO. 4)
- PARCEL NUMBER 3:
 PROPOSED USE: ALL USES ALLOWED IN "NR" ZONING; NO RESTAURANTS SHALL BE PERMITTED ON THE SOUTH 150 FEET OF THE PARCEL.
 GROSS AREA - 2.83 ACRES (123,396 S.F.)
 MAXIMUM BUILDING COVERAGE - 37,019 S.F. (30% MAXIMUM)
 MAXIMUM GROSS FLOOR AREA - 37,019 S.F.
 FLOOR AREA RATIO - 0.300
 MAXIMUM BUILDING HEIGHT - 35'
 MAXIMUM NUMBER OF BUILDINGS - 4
 PARKING - AS PER CITY CODE
 SETBACKS - 35' ALONG WAWONA AND PRIVATE DRIVE (RES. "A"), AND 50' ALONG SOUTH PROPERTY LINE.
- PARCEL NUMBER 4:
 PROPOSED USE: ALL USES ALLOWED IN "NR" ZONING; NO RESTAURANTS SHALL BE PERMITTED ON THE SOUTH 150 FEET OF THE PARCEL.
 GROSS AREA - 3.99 ACRES (173,674 S.F.)
 MAXIMUM BUILDING COVERAGE - 52,163 S.F. (30% MAXIMUM)
 MAXIMUM GROSS FLOOR AREA - 52,163 S.F.
 FLOOR AREA RATIO - 0.300
 MAXIMUM BUILDING HEIGHT - 35'
 MAXIMUM NUMBER OF BUILDINGS - 5
 PARKING - AS PER CITY CODE
 SETBACKS - 35' ALONG SOUTH AND WEST PROPERTY LINE AND PRIVATE DRIVE (RES. "A"), AND 15' ADJACENT TO PARCEL 5. (SEE G.P. NO. 4)
- PARCEL NUMBER 5:
 PROPOSED USE: ALL USES ALLOWED IN "LC" ZONING EXCEPT FOR THOSE LISTED IN GENERAL PROVISION NO. 19
 GROSS AREA - 3.71 ACRES (161,869 S.F.)
 MAXIMUM BUILDING COVERAGE - 48,513 S.F. (30% MAXIMUM)
 MAXIMUM GROSS FLOOR AREA - 48,513 S.F.
 FLOOR AREA RATIO - 0.300
 MAXIMUM BUILDING HEIGHT - 35'
 MAXIMUM NUMBER OF BUILDINGS - 5
 PARKING - AS PER CITY CODE
 SETBACKS - 35' ALONG NORTH AND WEST PROPERTY LINES AND THE PRIVATE DRIVE (RES. "A"), AND 15' ADJACENT TO PARCEL 4. (SEE G.P. NO. 4)

NE Corner, NE 1/4, Sec. 10, T27S, R2E of the 6th P.M.

SCALE: 1"=50'



K-96 NORTHEAST EXPRESSWAY

OWNER: MESSIAH BAPTIST CHURCH
 ZONED: SF-20

OWNER: TRINITY HIGH SCHOOL
 ZONED: SF-20

OWNER: JOHN R. AND DEBORAH E. MATTHEW
 ZONED: SF-20 LOT 4