SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION

AGENDA ITEM NO. 7

June 22, 1995

STAFF REPORT
(Preliminary Plat)

CASE NUMBER: S/D 95-45 HORSESHOE LAKE ADDITION

OWNER/APPLICANT: Grandview, Inc., 8100 E. 22nd Street North - Building 1000, Wichita, KS 67226

SURVEYOR/ENGINEER: P.E.C., P.A., c/o Gary Wiley, 303 South Topeka, Wichita, KS 67202

LOCATION: North of 21st Street North and east of Ridge

SITE SIZE: 61.95 Acres

NUMBER OF LOTS

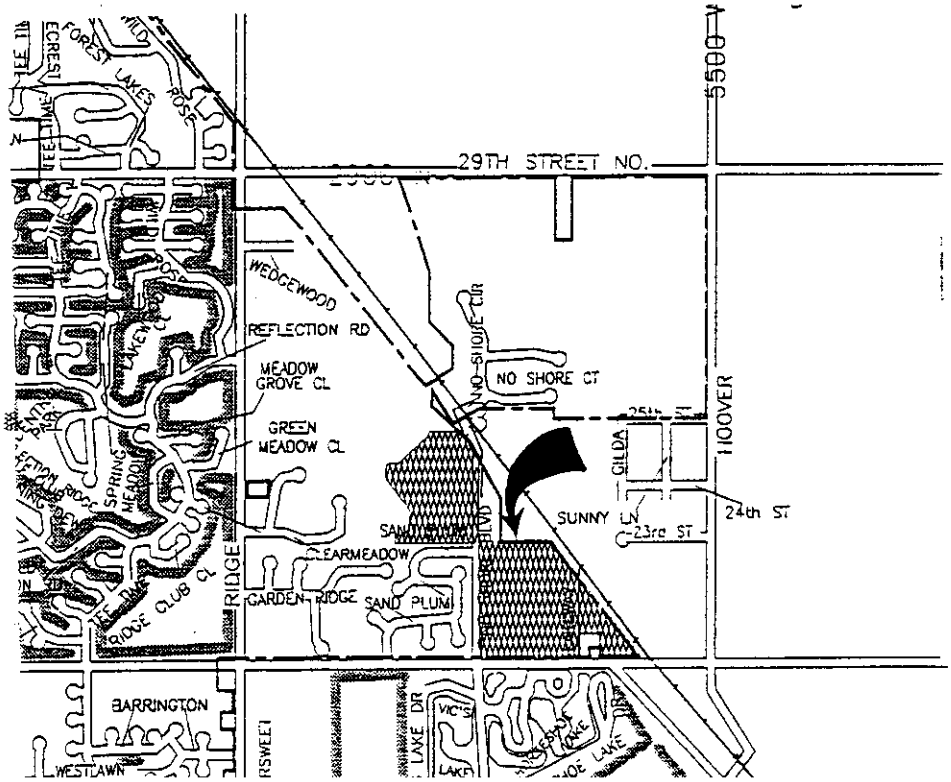
Residential:	56
Office:	
Commercial:	5
Industrial:	
Total:	61

MINIMUM LOT AREA: 8,000 sq. ft.

CURRENT ZONING: "R-5" Under CUP DP-75

PROPOSED ZONING: "R-5", "BB", "LC", and "C"

VICINITY MAP:



STAFF COMMENTS:

NOTE: This plat is subject to DP-75 and subsequent amendments.

A. The applicant shall guarantee the extension of sanitary sewer to serve the lots being platted.

B. The applicant shall guarantee the extension of water service to the lots being platted.

C. **Engineering** needs to comment on the status to the applicant's drainage plan. The applicant shall guarantee construction of any storm sewers or drainage improvements required by this plat.

D. **Traffic Engineering** needs to indicate what roadway improvements or dedications, traffic controls and access control improvements may be required and the applicant shall guarantee or grant same. Specifically, Engineering needs to comment on street right-of-way and pavement widths. Per the C.U.P.: the applicant shall guarantee an accel/decel lane along the south line of parcels 3 and 4, a left turn lane on 21st if the parcel is developed with non-residential uses, file a restrictive covenant requiring 4 parking spaces per dwelling unit if the streets are designed with parking restrictions, and cross lot circulation agreements shall be filed.

E. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.

F. **Fire Department** needs to comment on access to the site or fire lanes needed around the site.

G. The applicant's engineer is advised that the Register of Deeds is requiring the name(s) of the notary public, who acknowledges the signatures on this plat, to be printed beneath the notary's signature.

H. The plat shall indicate the recording information for the pipeline easement. If Lakeway Circle is in the pipeline easement, the applicant shall provide proof, by letter or by copy of the pipeline easement, that the dedication of street right-of-way over a portion of this easement is acceptable. Any relocation, lowering or encasement of the pipeline, caused by the development of this property, will not be at the expense of the City.

I. **Central Inspection** and/or **Fire Department** needs to comment on street names.

J. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the MAPC Subdivision Regulations. (Water service and fire hydrants required by Article 8 for fire protection shall be as per the direction and approval of the Chief of the Fire Department.)

K. Requirements for a final plat (see pages 5-5 through 5-10, Part 4, Article 5 of the MAPC Subdivision Regulations).

PROFESSIONAL ENGINEERING CONSULTANTS, PA
303 South Topeka
WICHITA, KANSAS 67202

(316) 262-2691

LETTER OF TRANSMITTAL

DATE	JOB NO.
7-24-95	36-94341-2051

ATTENTION: VICKY HUANG, P.E.

RE: HORSESHOE CAKE

TO ENGINEERING DEPARTMENT
7TH FLOOR
CITY HALL

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
2			DRAINAGE PLAN
1			SANITARY SEWER LAYOUT

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO FILE

SIGNED: CARL WILLIAMS

FESSIONAL
NEERING
SULTANTS
PROFESSIONAL ASSOCIATION
303 S. TOPEKA
WICHITA, KANSAS
ZIP CODE / 67202

Date _____ Page _____ of _____

Project HORSESHOE LK.

Item HYDROLOGY

BASIN	AREA (AC.)	C_2	C_{100}	t_2	t_{100}	Q_2	Q_{100}
1A	1.1	0.58	0.72	3.80	7.36	2.4	5.8
1B	0.8	0.58	0.72			1.8	4.2
2A	1.15	0.58	0.72			2.5	6.1
2B	1.6	0.58	0.72			3.5	8.5
3A	2.8	0.48	0.68			5.1	14.0
3B	2.8	0.48	0.68			5.1	14.0
4A	1.6	0.48	0.68			2.9	8.0
4B	2.8	0.48	0.68			5.1	14.0

Hydrologic Calculations for Lots 10 thru 14, Block 2, have been omitted due to the unknown nature of how these lots will be developed. It is assumed that further drainage computation and analysis will be performed at such time as the lots are to be developed, and will be done so on an individual basis.

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Project _____

Item STREET FLOW

2-Year

Q	Basin	Slope	d	dmax	
0.7×5.1 = 3.6	70% of 3A	0.43%	0.32'	0.30'	OK
0.6×5.1 = 3.1	60% of 4B	0.36%	0.31'	0.30'	OK

BY INSPECTION, ROLL-TYPE CAN BE USED FOR ALL LOTS.

100-YR.

Basin	Q	Slope	Qmax	
3A - 70%	0.7×14 = 9.8	0.43%	27.8	OK

Note: Above Street width uses 29' BK-BK, not 35'. Used to show that most conservative conditions are more than adequate.

By Inspection, 0.3' WK-Gd is OK for all streets.

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Item Inlet / Pipe Sizing

Node	Q_2	Location	Size	d	dmax	
301	5.1	Sump	5'	0.4'	0.55'	OK

By Inspection, all inlets will be 5' - Type 1A curb inlets.

Pipes

Node	Q_2	T_c	
100	ϕ		STARTING HGL = 130
101	2.4	15	
102	1.8	15	
103	42.0	23	
200	ϕ		starting HGL = 130
201	2.5	15	
202	3.5	15	
300	ϕ		
301	5.1	15	Starting HGL = 133
302	5.1	15	

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Item _____

Node	Q2	Tc
400	∅	
401	2.9	15
402	5.1	15

Starting HGL = 133.0

Date: 07-24-1995
Time: 10:12:15

Input File: horssys1.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #1
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDROLOGY * * *

Tributary Area									Hydrology Summation				Conduit Data				
Node	to Node	C	Area (Ac)	Slope (%)	Length (Ft)	TC(0) (Min)	I(0) (In/Hr)	Q(0) (CFS)	TC (Min)	I (In/Hr)	Q (CFS)	Sum Q (CFS)	Size	Velocity (Ft/Sec)	Length (Ft)	TT (Min)	TT+TC (Min)
103	102	.00	.00	.00	.0	23.00	3.10	42.00	23.00	3.10	42.00	42.00	42"	4.37	120.00	.46	23.46
102	101	.00	.00	.00	.0	15.00	3.83	1.80	23.46	3.07	1.44	43.44	42"	4.52	30.00	.11	23.57
101	100	.00	.00	.00	.0	15.00	3.83	2.40	23.57	3.06	1.92	45.36	42"	4.71	160.00	.57	24.13

Date: 07-24-1995
Time: 10:12:15

Input File: horssys1.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #1
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDRAULICS * * *

Node	Hyd-Slope (Ft/Ft)	Friction (Ft)	Bend (Ft)	Transition (Ft)	Manhole (Ft)	Deflection (Ft)	Junction (Ft)	Total (Ft)	Hyd-Gl Elevation	Desired Elevation	Diff. (Ft)
100	.00000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	130.0000	130.0000	.00
101	.00203	.3252	.0000	.0029	.0000	.0000	.0670	.3950	130.3951	139.0000	8.60
102	.00186	.0559	.0000	.0021	.0000	.0000	.0504	.1084	130.5035	139.0000	8.50
103	.00174	.2091	.0000	.0000	.0000	.0000	.0000	.2091	130.7126	135.1000	4.39

Date: 07-24-1995
Time: 10:28:12

Input File: horssys2.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #2
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDROLOGY * * *

Tributary Area									Hydrology Summation				Conduit Data				
Node	to Node	C	Area (Ac)	Slope (%)	Length (Ft)	TC(0) (Min)	I(0) (In/Hr)	Q(0) (CFS)	TC (Min)	I (In/Hr)	Q (CFS)	Sum Q (CFS)	Size	Velocity (Ft/Sec)	Length (Ft)	TT (Min)	TT+TC (Min)
202	201	.00	.00	.00	.0	15.00	3.83	3.50	15.00	3.83	3.50	3.50	15"	2.85	50.00	.29	15.29
201	200	.00	.00	.00	.0	15.00	3.83	2.50	15.29	3.80	2.48	5.98	15"	4.87	50.00	.17	15.46

Date: 07-24-1995
Time: 10:11:12

Input File: horssys2.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #2
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDRAULICS * * *

Node	Hyd-Slope (Ft/Ft)	Friction (Ft)	Bend (Ft)	Transition (Ft)	Manhole (Ft)	Deflection (Ft)	Junction (Ft)	Total (Ft)	Hyd-Gl Elevation	Desired Elevation	Diff. (Ft)
200	.00000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	130.0000	130.0000	.00
201	.00856	.4282	.0000	.0242	.0000	.0000	.5140	.9665	130.9665	139.0000	8.03
202	.00294	.1468	.0000	.0000	.0000	.0000	.0000	.1468	131.1133	139.0000	7.89

Date: 07-24-1995
Time: 10:20:27

Input File: horssys3.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #3
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDROLOGY * * *

Tributary Area									Hydrology Summation				Conduit Data				
Node to Node		C	Area (Ac)	Slope (%)	Length (Ft)	TC(0) (Min)	I(0) (In/Hr)	Q(0) (CFS)	TC (Min)	I (In/Hr)	Q (CFS)	Sum Q (CFS)	Size	Velocity (Ft/Sec)	Length (Ft)	TT (Min)	TT+TC (Min)
302	301	.00	.00	.00	.0	15.00	3.83	5.10	15.00	3.83	5.10	5.10	15"	4.16	50.00	.20	15.20
301	300	.00	.00	.00	.0	15.00	3.83	5.10	15.20	3.81	5.07	10.17	18"	5.75	50.00	.14	15.35

Date: 07-24-1995
Time: 10:20:27

Input File: horssys3.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #3
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDRAULICS* * *

Node	Hyd-Slope (Ft/Ft)	Friction (Ft)	Bend (Ft)	Transition (Ft)	Manhole (Ft)	Deflection (Ft)	Junction (Ft)	Total (Ft)	Hyd-Gl Elevation	Desired Elevation	Diff. (Ft)
300	.00000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	133.0000	133.0000	.00
301	.00937	.4686	.0000	.0246	.0000	.0000	.8147	1.3080	134.3080	139.5000	5.19
302	.00623	.3117	.0000	.0000	.0000	.0000	.0000	.3117	134.6196	139.5000	4.88

Date: 07-24-1995
Time: 10:24:59

Input File: horssys4.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #4
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDROLOGY * * *

Tributary Area									Hydrology Summation				Conduit Data				
Node to Node		C	Area (Ac)	Slope (%)	Length (Ft)	TC(0) (Min)	I(0) (In/Hr)	Q(0) (CFS)	TC (Min)	I (In/Hr)	Q (CFS)	Sum Q (CFS)	Size	Velocity (Ft/Sec)	Length (Ft)	TT (Min)	TT+TC (Min)
402	401	.00	.00	.00	.0	15.00	3.83	5.10	15.00	3.83	5.10	5.10	15"	4.16	50.00	.20	15.20
401	400	.00	.00	.00	.0	15.00	3.83	2.90	15.20	3.81	2.88	7.98	15"	6.50	50.00	.13	15.33

Date: 07-24-1995
Time: 10:24:59

Input File: horssys4.stm

HORSESHOE LAKE DRAINAGE PLAN
SYSTEM #4
DRC 7-24-95

Storm Frequency = 2-Year

* * * HYDRAULICS* * *

Node	Hyd-Slope (Ft/Ft)	Friction (Ft)	Bend (Ft)	Transition (Ft)	Manhole (Ft)	Deflection (Ft)	Junction (Ft)	Total (Ft)	Hyd-Gl Elevation	Desired Elevation	Diff. (Ft)
400	.00000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	133.0000	133.0000	.00
401	.01527	.7635	.0000	.0389	.0000	.0000	.8329	1.6353	134.6353	139.5000	4.86
402	.00623	.3117	.0000	.0000	.0000	.0000	.0000	.3117	134.9470	139.5000	4.55

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Item _____

Lots in Blocks 1, 3, and 4 and Lots 1 thru 9, Block 2, lie within an area defined as Floodplain by FEMA's FIRM map, Panel 200328 0005B. Based on a restudy of the Big Slough by Baughman Co., Les Eck's Lake (west of Northshore Blvd.) has a B.F.E. of 1323.0 or 136.0 City Datum. Horseshoe Lake (east of North Shore Blvd) has a lower BFE, but because the only outlet is a 30" CMP in 21st St., & the emergency overflow for the Lake is to be 21st St. at elev. 1323.0 (136.0 City), the min. opening and low floor for both lakes will be the same; 137.0.

Additionally, the three proposed ponds will be provided a 36" equalizer pipe to maintain elevations equal to the larger lakes.

C values

(3 pages)

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:					
Single Family (Soil Group D)					
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
Multi-Family (Soil Group D)					
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
Single Family (Soil Group C)					
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
Multi-Family (Soil Group C)					
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
Single-Family (Soil Group B)					
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
Multi-Family (Soil Group B)					
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 face Characteristics	Percent Impervious	Frequency 2	5	10	100
Single Family (Soil Group A)					
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
Multi-Family (Soil Group A)					
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
5. Schools:	40	0.49	0.51	0.56	0.66
6. Railroad Yard Areas:	30	0.43	0.45	0.50	0.62
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):					
Soil Group A					
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
Soil Group B					
Slope less than 1%	00	0.16	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
Soil Group C					
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

Land Use or Surface Characteristics	Percent Impervious	Frequency 2	5	10	100
Soil Group D					
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 basins 320 acres or larger.

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

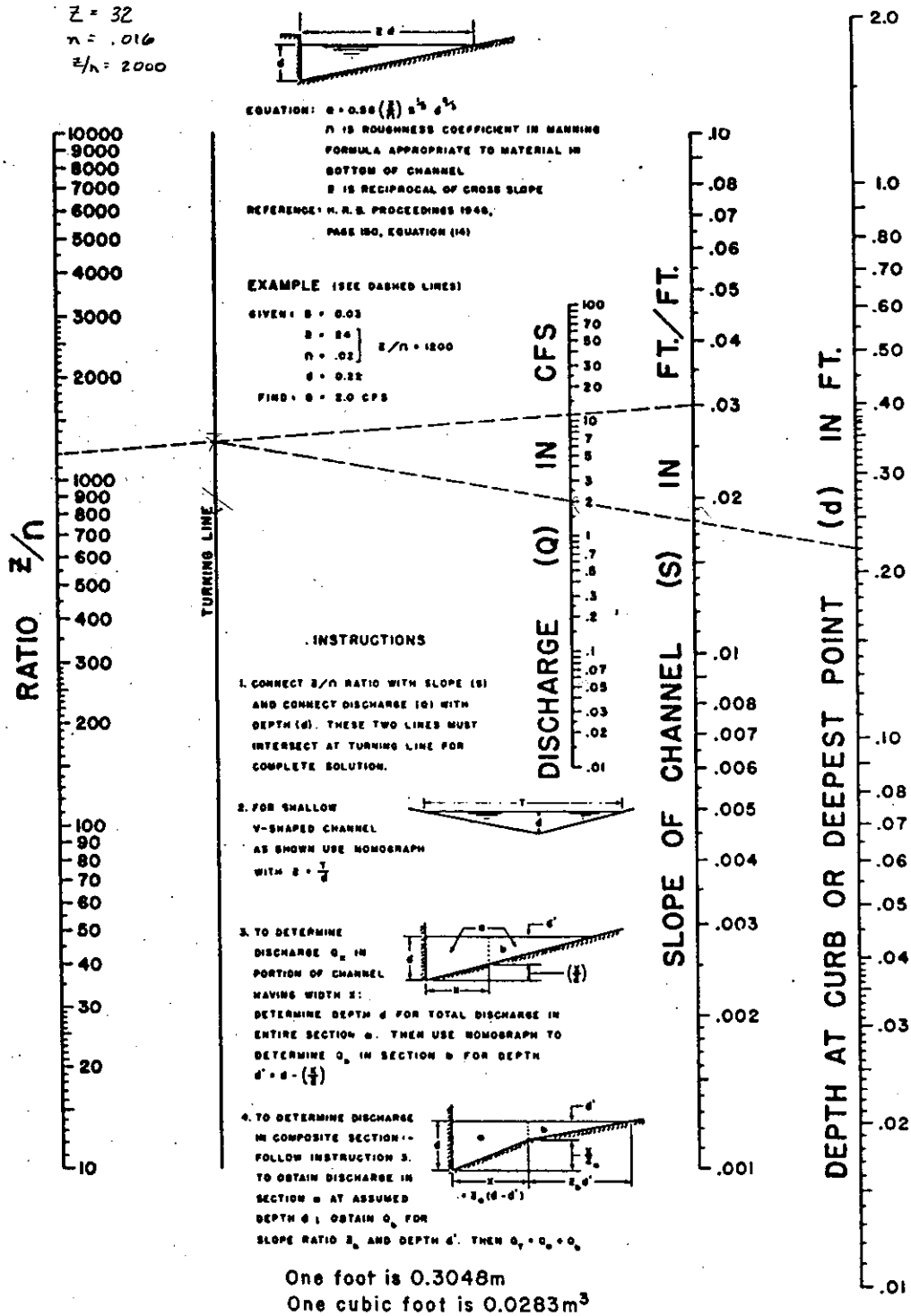
RAINFALL INTENSITY TABLE

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

NOMOGRAPH FOR FLOW IN TRIANGULAR CHANNELS



One foot is 0.3048m

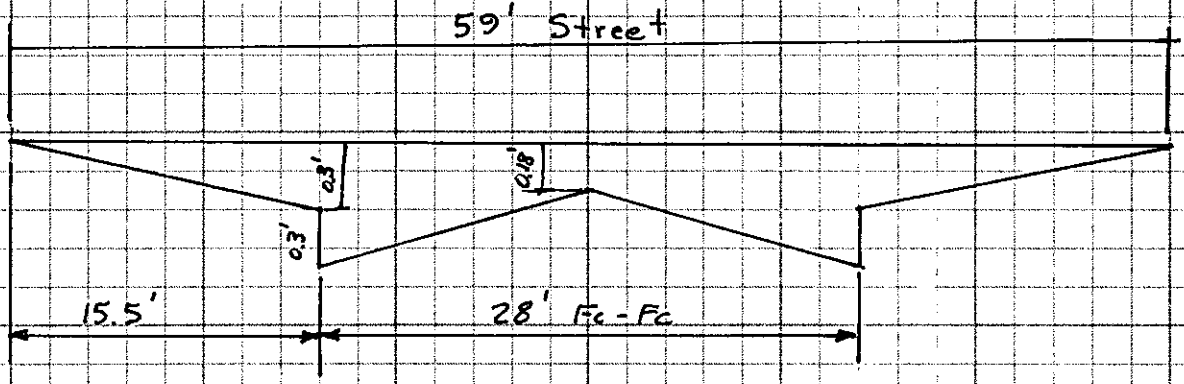
One cubic foot is 0.0283m^3

PROFESSIONAL ENGINEERING CONSULTANTS
303 S. TOPEKA
WICHITA, KANSAS
ZIP CODE / 67202

Date _____ Page _____ of _____

Project _____

Item _____



$$n = \frac{2(.03 \times 15) + 2(.013 \times 2.8) + 2(.016 \times 12)}{2(2.8 + 15 + 12)} = 0.02277$$

$$A = (0.18 \times 28) + 2\left(\tfrac{1}{2} \times 0.3 \times 15.5\right) + 2\left(\tfrac{1}{2} \times 0.42 \times 14\right)$$

$$= 15.57$$

$$P = 2(2.8 + 15 + 12) = 59.6$$

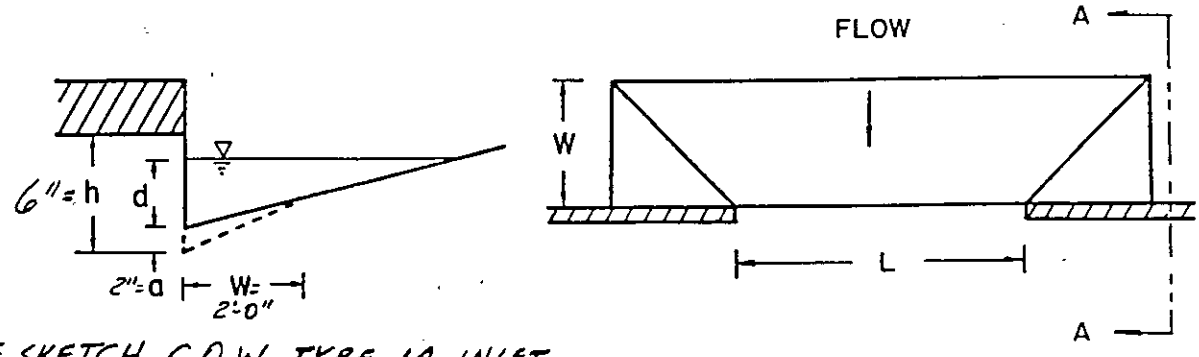
$$R = \frac{A}{P} = \frac{15.57}{59.6} = 0.26$$

$$R^{2/3} = 0.41$$

$$Q = \frac{1.486}{n} A R^{2/3} S^{1/2}$$

$$Q = \frac{1.486}{.02277} \times 15.57 \times 0.41 \times S^{1/2}$$

$$Q = 416\sqrt{S}$$



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

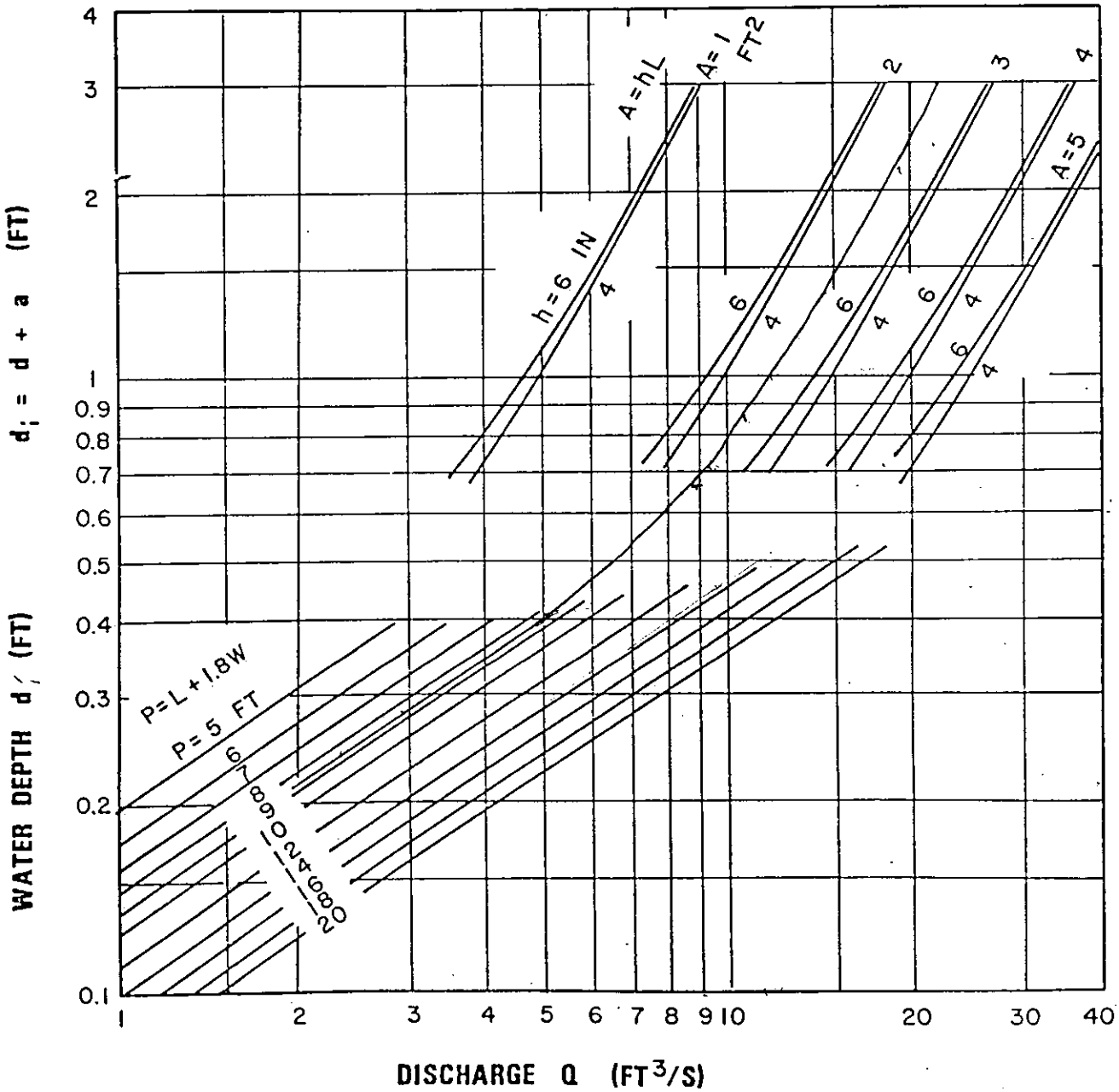


CHART 12. Depressed curb-opening inlet capacity in sump locations.

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

SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION

AGENDA ITEM NO. 6

August 10, 1995

STAFF REPORT
(Final Plat, Preliminary Plat Approved 6/22/95)

CASE NUMBER: S/D 95-45 HORSESHOE LAKE ADDITION

OWNER/APPLICANT: Grandview, Inc., 8100 E. 22nd Street North - Building 1000, Wichita, KS 67226

SURVEYOR/ENGINEER: P.E.C., P.A., c/o Gary Wiley, 303 South Topeka, Wichita, KS 67202

LOCATION: North of 21st Street North and east of Ridge

SITE SIZE: 61.95 Acres

4-5
1, 5
2, 5

NUMBER OF LOTS

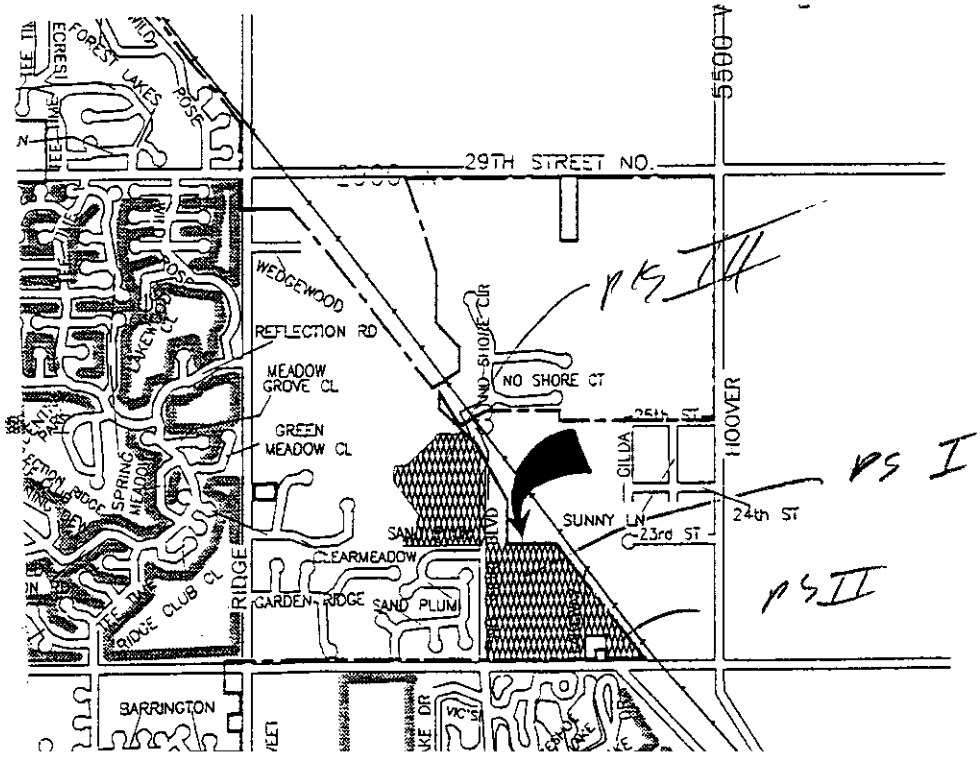
Residential:	56
Office:	
Commercial:	5
Industrial:	
Total:	61

MINIMUM LOT AREA: 8,000 sq. ft.

CURRENT ZONING: "R-5" Under CUP DP-75

PROPOSED ZONING: "R-5", "BB", "LC", and "C" (Z-3155)

VICINITY MAP:



STAFF COMMENTS:

NOTE: This plat is subject to DP-75 and subsequent amendments.

A. The applicant shall guarantee the extension of sanitary sewer to serve the lots being platted.

B. The applicant shall guarantee the extension of water service to the lots being platted.

C. The applicant shall guarantee construction of any storm sewers or drainage improvements required by this plat.

D The applicant shall guarantee the paving of the proposed interior streets. As requested by City Engineering, an agreement shall be provided regarding the paving of North Shore Boulevard in the area of this plat.

E. Per the C.U.P.: the applicant shall guarantee an accel/decel lane along the south line of Lots 10 and 11, and a left turn lane on 21st if the site is developed with non-residential uses.

F. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.

G. As noted in the CUP, cross-lot access agreements for Lots 10 and 11, and Lots 13 and 14 shall also be provided with the plat tracing for recording.

H. Provisions shall be made for ownership and maintenance of the proposed reserves. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserves will be deeded to the association and who is to own and maintain the reserves prior to the association taking over those responsibilities.

I. For those reserves being platted for drainage purposes, the required covenant which provides for ownership and maintenance of the reserves shall grant, to the City, the authority to maintain the drainage reserves in the event the owner(s) fail to do so. The covenant shall provide for the cost of such maintenance to be charged back to the owner(s) by a method similar to special assessments.

J. The applicant shall submit a covenant which provides for four (4) off-street parking spaces per dwelling unit on each lot which abuts a 58-foot or 32-foot street. The covenant shall inventory the affected lots by lot and block number and shall state that the covenant runs with the land and is binding on future owners and assigns.

K. Since this plat proposes the platting of narrow street right-of-way with adjacent "15-foot street, drainage and utility easements," a restrictive covenant shall be submitted which calls out restrictions for lot-owner use of these easements. Retaining walls and change of grade shall be prohibited within these easements as well as fences, earth berms and mass plantings. Any plantings within the easement shall be reviewed by the City Forestry Division prior to installation.

L. The applicant's engineer is advised that the Register of Deeds is requiring the name(s) of the notary public, who acknowledges the signatures on this plat, to be printed beneath the notary's signature.

M. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the MAPC Subdivision Regulations. (Water service and fire hydrants required by Article 8 for fire protection shall be as per the direction and approval of the Chief of the Fire Department.)

N. The applicant is advised that various State and Federal requirements [specifically but not limited to the Army Corps of Engineers, David Hibbs, Kanopolis Project Office, Rt. 1, Box 30, Marquette, KS 67464 (913-546-2294) or Ron Little, Kansas Department of Wildlife and Parks, P. O. Box 317, Valley Center, KS 67147] for the control of soil and wind erosion and the protection of wetlands may impact how this site can be developed. It is the applicant's responsibility to contact all appropriate agencies to determine any such requirements.

O. On the final plat tracing, the surveyor's text shall correctly note the sanitary sewer easement being vacated and replatted. Based on the platting binder and separate instrument, Film 1456 instead of 1436 should be indicated.

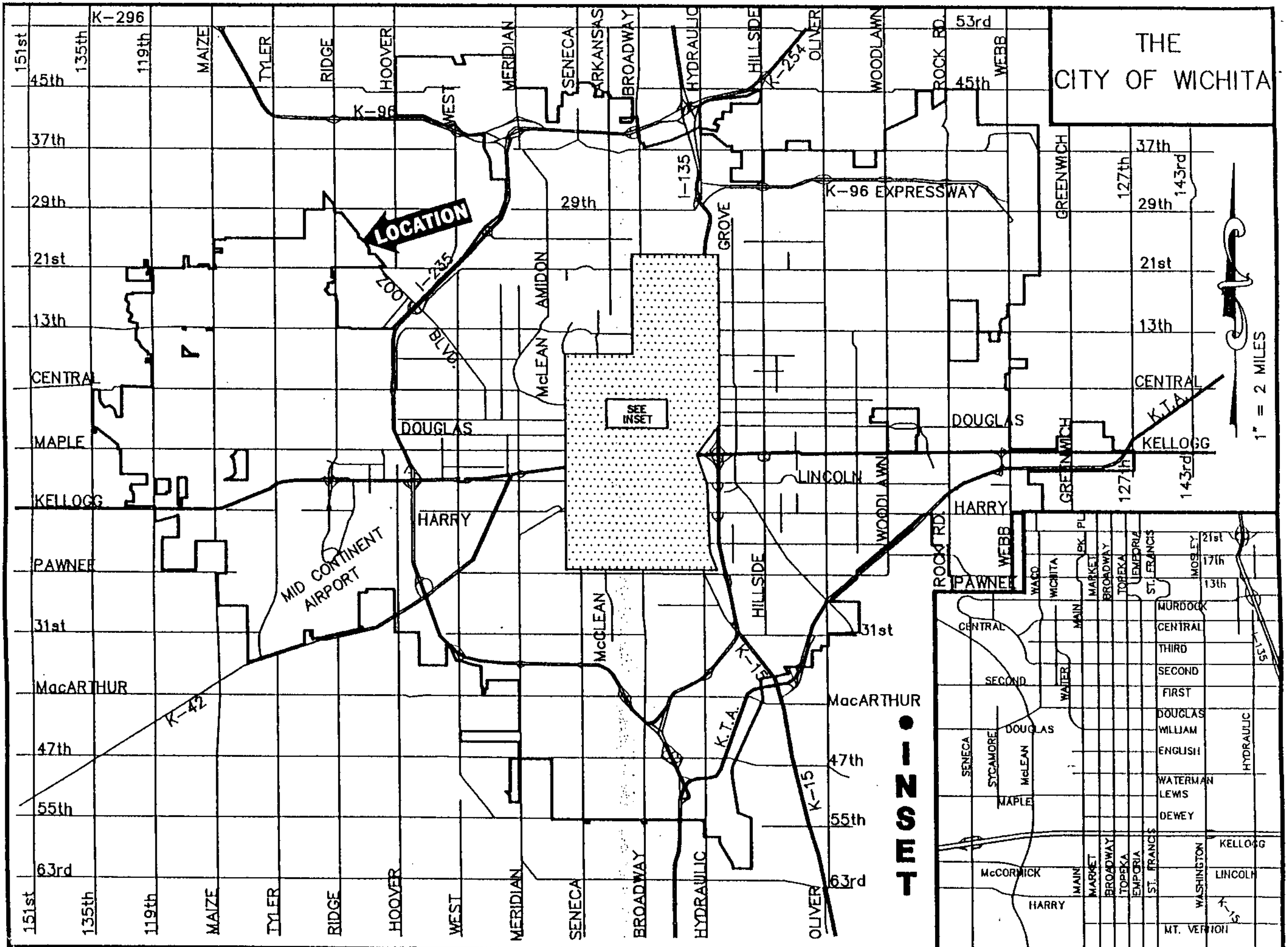
P. The representative from Southwestern Bell needs to indicate if the utility easements being platted are sufficient. A 20-foot easement along the north line of Lot 10, Block 2 and a 30-foot easement along the west and northerly lines of Lot 14, Block 2, were originally requested.

Q. Perimeter closure computations shall be submitted with the final plat tracing. Section 5-101(c).

R. Recording of the plat within 30 days after approval by the City Council.

S. The representatives from <u>City Engineering</u> should be prepared to comment on the status of the applicant's drainage plan. Engineering also needs to indicate if the minimum building pad elevations are acceptable.

T. The applicant's agent needs to comment upon whether or not this site is impacted by a pipeline. No such pipeline is noted in the platting binder, while the CUP indicates a pipeline in the area of Lakeway Circle.


THE
CITY OF WICHITA
1" = 2 MILES
LOCATION
SEE INSET
INSET
MID CONTINENT AIRPORT
K-96 EXPRESSWAY
K-96
K-296
K-254
K-42
K-15
K.T.A.
I-135
I-235
ZOO BLVD.
151st
135th
119th
MAIZE
TYLER
RIDGE
HOOVER
WEST
MERIDIAN
SENECA
ARKANSAS
BROADWAY
HYDRAULIC
HILLSIDE
OLIVER
WOODLAWN
ROCK RD.
WEBB
GREENWICH
127th
143rd
53rd
45th
37th
29th
21st
13th
CENTRAL
DOUGLAS
MAPLE
KELLOGG
LINCOLN
HARRY
PAWNEE
31st
MacARTHUR
47th
55th
63rd
GROVE
AMIDON
McLEAN
WACO
WICHITA
MAIN
MARKET
BROADWAY
TOPEKA
EMPORIA
ST. FRANCIS
MOSLEY
MURDOCK
THIRD
SECOND
FIRST
WILLIAM
ENGLISH
WATERMAN
LEWIS
DEWEY
WATER
SYCAMORE
WASHINGTON
McCORMICK
MT. VERNON
PK. PL

MEMO

PROFESSIONAL ENGINEERING CONSULTANTS PROFESSIONAL ASSOCIATION
303 S. TOPEKA
WICHITA, KANSAS
ZIP CODE / 67202

TO: Office of the City Engineer
7th Floor - 455 N. Main
Wichita, Ks 67202

PROJECT NO. 36- 94341-2051
PROJECT: Horseshoe Lake

COPIES TO:
Ron Spangenberg, SPA
Jack Ritchie, Ritchie Associates, Inc.
Jim Stockton, Ritchie Associates, Inc.
File through GLW ES

ATTN: V.R. Huang, P.E.

DATE: 11/20/95

FROM: Michael W. Berry, P.E. MWB

REFERENCE: Minimum floor elevation determination

PLEASE ADVISE IMMEDIATELY OF ANY MISCONCEPTIONS OR OMISSIONS YOU BELIEVE TO BE CONTAINED HEREIN.

As discussed at our meeting of 11/13/95, PEC has reviewed two reports relative to the movement of groundwater in areas similar to Horseshoe Lake.

The first report was a series of groundwater observation well records from the area of Zoo Blvd. and Windmill Road adjacent to the Wichita-Valley Center Floodway. The data from these holes was deemed unrepresentative of conditions at Horseshoe Lake, because the fluctuations in water table elevations observed did not coincide with field observations at the Horseshoe Lake site for the same time period.

The second report was a report relative to groundwater observations at Lakeridge 2nd Addition, immediately west of the subject property. In a report dated 3/11/94 and prepared by PEC, observations of the groundwater table levels at varying distances from the newly constructed lake were reported after a period of intense groundwater pumping. This study was made in order to monitor the rate of groundwater rise. This report indicates that the groundwater rise is greatest nearer the lake, and that the change of water elevation in the lake is much greater than that in the aquifer. It further demonstrated that it took a period of ten days to two weeks for the system to reach an equilibrium condition, where the groundwater and the lake level are the same.

In light of the above data, it is our opinion that the recommended lowest floor elevation for Lot 10 Block 2 of 1319.5 MSL or higher is satisfactory.

Mr. Ron Spangenberg of SP Architects was notified of our opinion by telephone on 11/17/95.

Ritchie Associates Inc.

TELECOMMUNICATIONS LETTER

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME Mike Berry

FROM Karen Peterson

DATE 5-6-96

TOTAL NUMBER OF PAGES TO FOLLOW 6

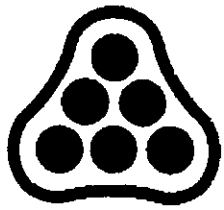
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL BACK AS SOON AS POSSIBLE.

TELEPHONE NUMBER: (316) 684-7300

TELECOPIER NUMBER: (316) 684-0227

COMMENTS:

RECEIVED
MAY - 7 1996
CITY - ENGINEERING



PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION

[redacted]

February 2, 1996

Mr. Jack Ritchie, C.E.O.
Ritchie Associates, Inc.
8100 E. 22nd, Bldg. 1000
Wichita, KS 67226

Reference: Horseshoe Lake
PEC File No. 36-94341-2051

Dear Mr. Ritchie:

Transmitted herewith are NPDES Permit Application Forms for the referenced project. These are being submitted to you for your signature as required by the City Engineer's Office.

Please execute the original of each form and forward to KDHE at the following address: -mailed 2-14-96

David Freise, P.E.
Bureau of Water
Department of Health & Environment
Forbes Field, Bldg 283
Topeka, KS 66620

A copy of the executed forms should be forwarded to the City at the following address: mailed 2-14-96

Vicky Huang, P.E.
7th Floor City Hall
455 N. Main
Wichita, KS 67202

Please note that the enclosed certification form states that a Stormwater Pollution Prevention Plan (SWPPP) will be implemented prior to the start of construction. Beyond the sediment/erosion control measures which are to be incorporated into the City construction project by their Contractor, no SWPPP documentation has been developed by PEC. If you require assistance in formulating the SWPPP, feel free to contact us.

If there are any questions, please advise.

Very truly yours,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

Michael W. Berry

Michael W. Berry, P.E.
Manager, Land Development Division

MWB:kaf

Encl: As noted

303 S. TOPEKA
WICHITA, KANSAS 67202
(316) 262-2691
FAX (316) 262-3003

Please print or type in the unshaded areas only
(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2040-0086 Approval expires 7-31-83

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F NOT REQUIRED D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, erase through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill—in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold—faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP HORESHOE LAKE

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 RITCHIE, JACK PRESIDENT	316 684 7300

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX			
3 8100 E. 22ND #1000			
B. CITY OR TOWN	**C. STATE**	**D. ZIP CODE**	
4 WICHITA	KS	67226	

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
5 SE 1/4 SEC 3 T27S R1W			
B. COUNTY NAME			
SEDGWICK			
C. CITY OR TOWN	**D. STATE**	**E. ZIP CODE**	**F. COUNTY CODE** *(if known)*
6 WICHITA	KS	67205	

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
7 1521 (specify) SINGLE-FAMILY RESIDENTIAL CONST.	7 1611 (specify) STREET CONSTRUCTION
C. THIRD	**D. FOURTH**
7 1623 (specify) UTILITY CONSTRUCTION	7 1542 (specify) COMMERCIAL CONSTRUCTION

VIII. OPERATOR INFORMATION

A. NAME

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL M = PUBLIC (other than federal or state)
S = STATE O = OTHER (specify)
P = PRIVATE
(specify)

D. PHONE (area code & no.)

E. STREET OR P.O. BOX

F. CITY OR TOWN

G. STATE

H. ZIP CODE

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☐ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
9 N NONE	9 P NONE
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**
9 U NONE	9 NONE (specify)
C. RCRA (Hazardous Wastes)	**E. OTHER (specify)**
9 R NONE	9 NONE (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

DEVELOPER OF SINGLE-FAMILY RESIDENTIAL & COMMERCIAL DEVELOPMENT AT SOUTHEAST 1/4, SECTION 3, TOWNSHIP 27 SOUTH, RANGE 1 WEST, SEDGWICK COUNTY, KANSAS

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
JACK RITCHIE, PRESIDENT RITCHIE ASSOCIATES, INC.		2/13/96

COMMENTS FOR OFFICIAL USE ONLY

C

* U.S. Government Printing Office : 1985 - 486-765/32991

Horseshoe Lake Addition
NPDES Permit Application for Construction Activity
Supplemental Information

1. Horseshoe Lake Addition is a single family residential development with some light commercial development in Northwest Wichita, KS. For location see enclosed map. It consists of 56 residential lot units and 5 commercial lot units on 62 acres. Construction activities on the site are as follows:
   - Infrastructure improvements, including sanitary sewers, water distribution systems, storm water sewers, paving and sidewalks.
   - Utility construction by the utility companies.
   - Commercial and housing construction by the lot owners or builders.
   - Grading.

2. The total development area is 62 acres, approximately 18 acres commercial development and 44 acres residential development. 90% of the total area, 56 acres, will be disturbed during the project.

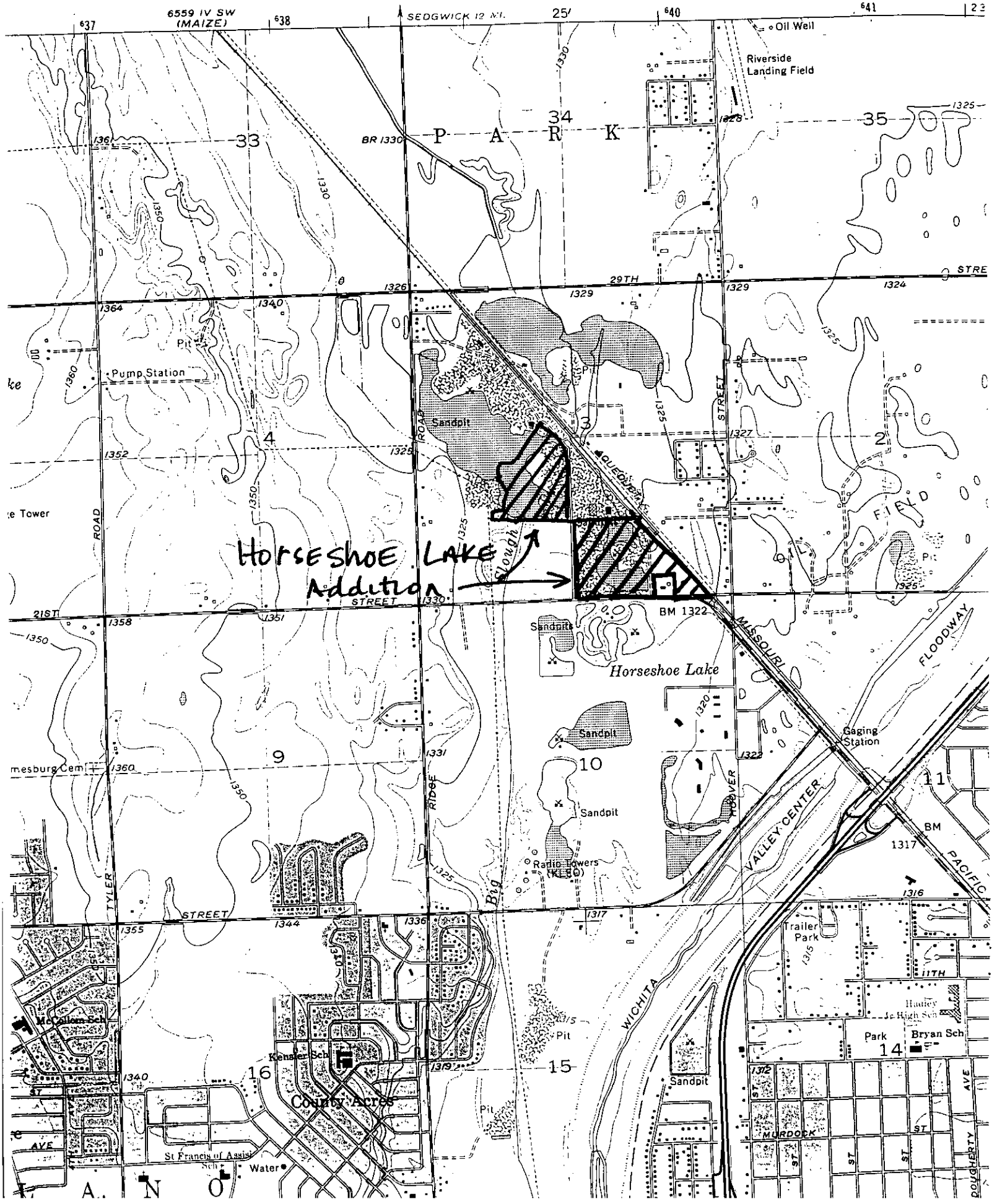
3. No local or state erosion and sediment control regulations regarding storm water runoff quality apply. However, local requirements dictate that post development peak runoff discharge be less than or equal to pre-development peak runoff values. BMP's to be used during construction are:
   - Installation of sediment control barriers at strategic locations, including all city storm sewer inlets.
   - Seeding and mulching affected areas after City infrastructure projects and utility installation.
   - All building lots and open areas will be seeded or sodded upon completion of construction.

4. The existing site is reclaimed sand pits with an estimated runoff coefficient of 0.2. The post development runoff coefficient is estimated to be 0.44 for residential areas and .68 for commercial areas. The total impervious area is anticipated 38% for residential area and 70% for commercial area. Existing soils are disturbed sand with poor drainage.

5. The receiving body of water is Big Slough Creek.

STATE OF KANSAS

7.5



STORMWATER POLLUTION PREVENTION PLAN CERTIFICATION

I, the undersigned, certify that a Stormwater Pollution Prevention Plan (SWPPP) will be or has been developed for the indicated construction project. I also certify that the SWPPP will be implemented at the time construction begins.

HORSESHOE LAKE

Name of Construction Project

Owner's Signature

2/13/96

Date

Kansas Department of Health and Environment
Bureau of Water - Industrial Programs Section
Forbes Field - Bldg. 283
Topeka, KS 66620-0001
(913)296-5524

SWPPP.CRT

Return to SHS

AGREEMENT

BY AND BETWEEN

THE CITY OF WICHITA, KANSAS,

Party of the First Part

and

BAREFOOT BAY DEVELOPMENT, INC.

Party of the Second Part

WHEREAS, Party of the First Part has constructed certain municipal improvements in the area of Horseshoe Lake Addition, within the City Limits of the City of Wichita; and

WHEREAS, Party of the Second Part is the landowner of part of the improvement district; and

WHEREAS, a portion of the improvement district of said improvements has been replatted; and

WHEREAS, Party of the Second Part desires that a reassessment be made to reflect the changes in platting; and

WHEREAS, the Party of the First Part and Party of the Second Part are both desirous of accomplishing such a reassessment.

NOW, THEREFORE, in consideration of the mutual covenants and promises herein contained, the parties agree as follows:

1. Lots 1 through 21, Block 3; and Lots 1 through 18, Block 4, Horseshoe Lake, an Addition to Wichita, Sedgwick County, Kansas was part of the improvement district for the following City project(s):

Side Street Paving (North Shore Boulevard) - Project No. 472-82376

Submain Sewer - Project No. 468-82235

Water - Project No. 448-88843

Said property was replatted as Lots 1 thru 28, Block 1, and Lots 1 thru 26, Block 2, Horseshoe Bay, an Addition to Wichita, Sedgwick County, Kansas.

2. The Party agree to make a reassessment for said projects in the following manner: The assessment for side street paving, North Shore Blvd., Project No. 472-82376; submain sewer, Project No. 468-82235; and water, Project No. 448-88843, shall be reassessed on a fractional basis; Lots 1 through 28, Block 1, and Lots 1 through 26, Block 2, shall each pay 1/54 of the total cost.

3. The Party of the Second Part is the owner of the property described in section one above and said Party of the Second Part hereby waive their notice and hearing requirements of K.S.A. 12-6a12(b) with respect to the reassessment herein described.

4. The Party of the Second Part further waive their right to appeal the special assessments for the above mentioned projects (including this described reassessment) and agree that no suit to set aside said assessment shall be brought by them nor shall they in any other way bring an action to question the validity of the proceedings taken by the Party of the First Part in constructing this project and levying the special assessments therefor.

5. The Party of the Second Part further agrees that they will indemnify the Party of the First Part against any and all costs, expenses, claims and judgments for which the Party of the First Part is held responsible or which are entered against the Party of the First Part arising out of or as a result of the reassessment herein described.

6. Where the ownership of a single lot is or may be divided into two or more parcels, the assessment to the lot so divided shall be assessed to each ownership or parcel on a square foot basis.

IN WITNESS WHEREOF, the Parties hereto have executed this agreement the _____ of _____, 1996.

THE CITY OF WICHITA, KANSAS

Approved as to form:

Gary E. Rebenstorf

Gary Rebenstorf, Director of Law

BY _____
Bob Knight, Mayor
Party of the First Part

Attest:

_____
Pat Burnett, City Clerk

BAREFOOT BAY DEVELOPMENT, INC.

BY: _____
Jack D. Ritchie, Vice President

STATE OF KANSAS)
) SS:
SEDGWICK COUNTY)

BE IT REMEMBERED, That on this 28th day of June, 1996, before me, that undersigned, a Notary Public in and for the County and State aforesaid, came Jack D. Ritchie, Vice President of Barefoot Bay Development, Inc., personally known to me to be the same person who executed the within instrument of writing and such person duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Karen L. Peterson
Notary Public

My Appointment Expires: 6/10/98

KAREN L. PETERSON
Notary Public - State of Kansas
My Appt. Expires 6/10/98

Agenda Item No._____

City of Wichita
City Council Meeting
July 2, 1996

Agenda Report No. _____

TO: Mayor and City Council Members

SUBJECT: Agreement to Respread Special Assessments in Horseshoe Lake Addition (North of 21st Street, East of Ridge Road) (District V)

INITIATED BY: Department of Public Works

AGENDA: Consent

Recommendation: Approve the Agreement.

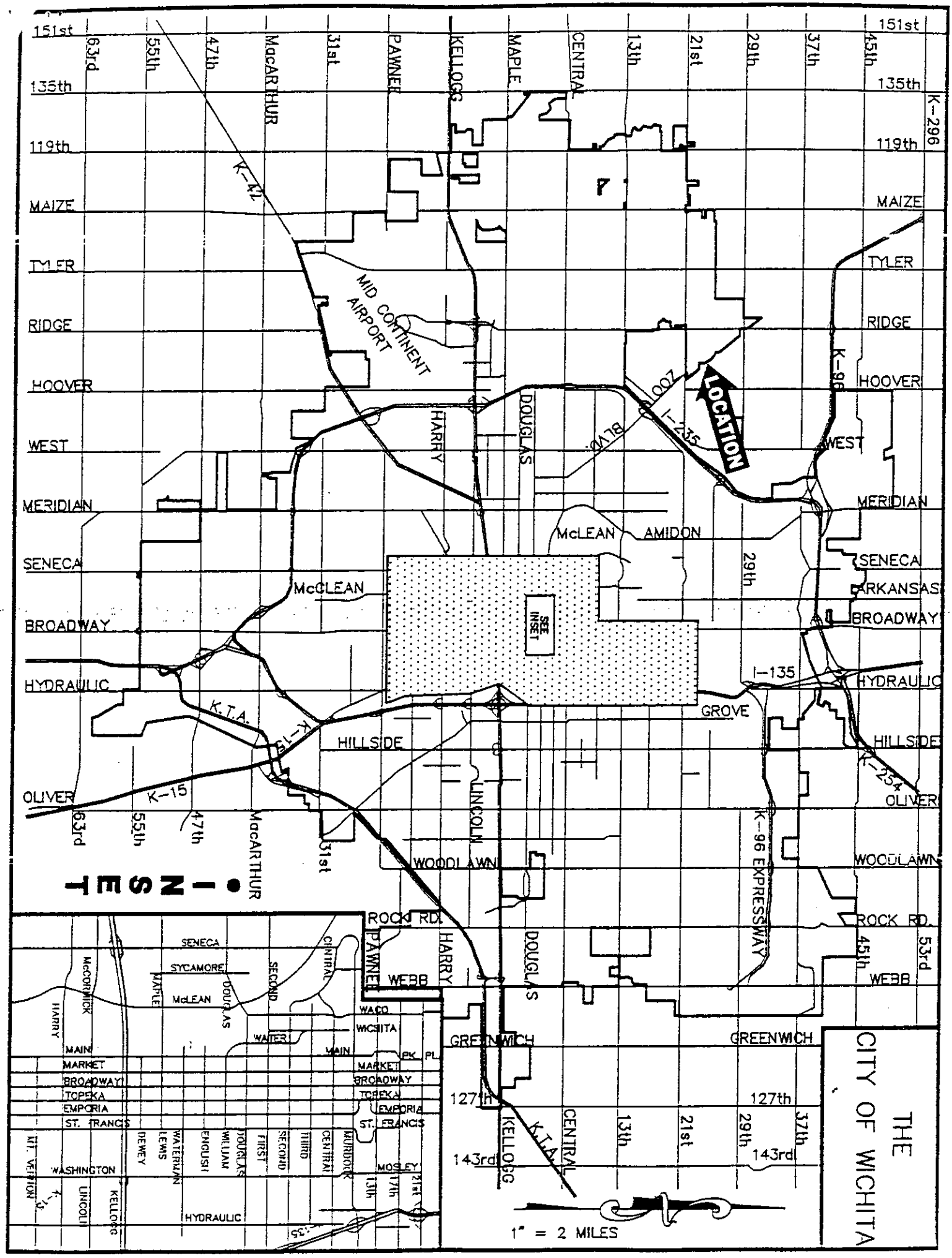
Background: The developer, Ritchie Associates, Inc. platted an addition called Horseshoe Lake Addition, and has submitted an Agreement to respread Special Assessments in the Addition.

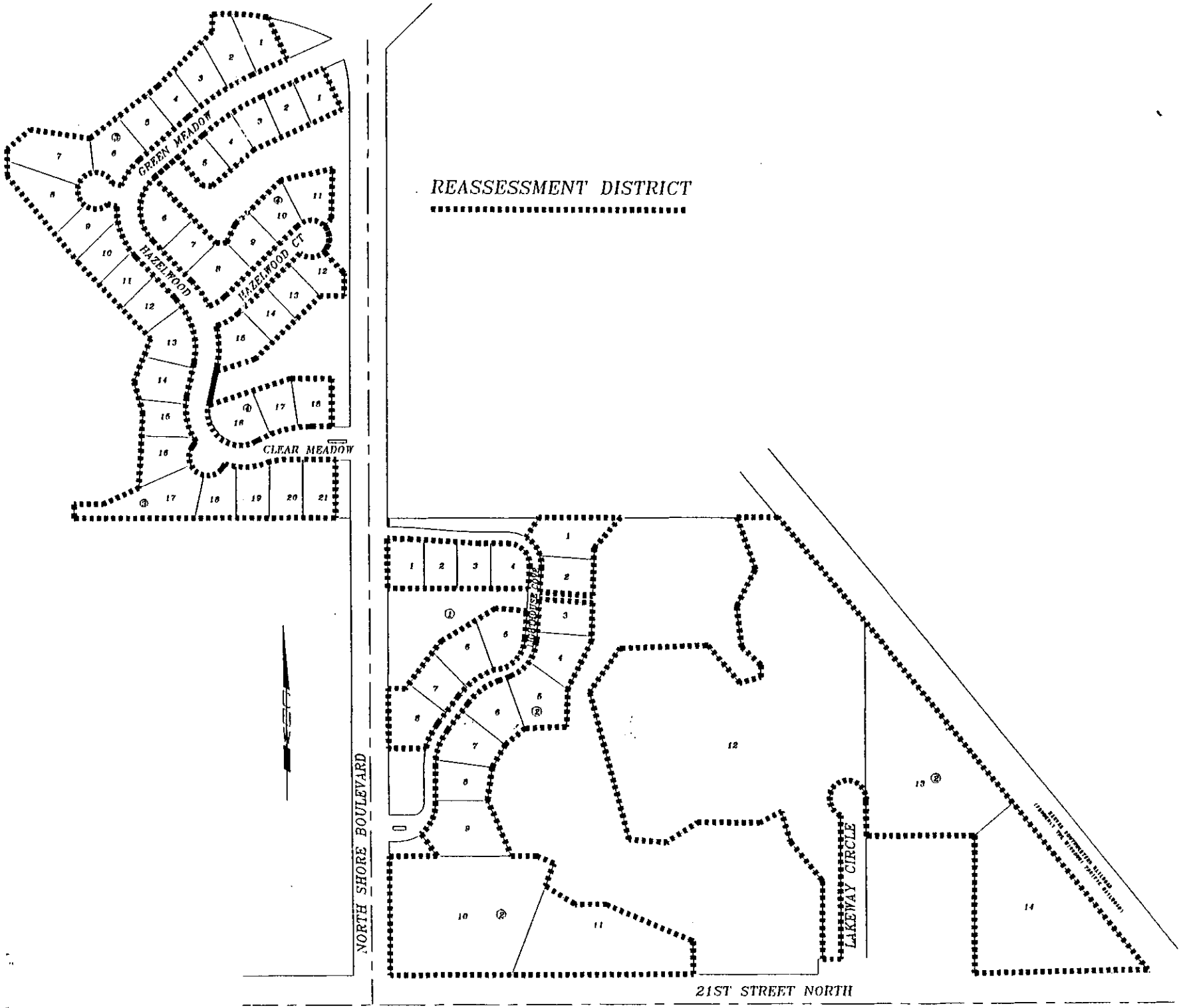
Analysis: The land was originally included in numerous improvement districts for a number of public improvement projects. The purpose of the Agreement is to respread Special Assessments on an equal share basis for each lot. Without the Agreement, the assessments will be spread on a square foot basis. The Agreement will save the City time in recalculating Special Assessments for each newly platted lot and will equalize the assessments for each lot, making it easier for the developer to market the lots.

Financial Considerations: There is no cost to the City.

Legal Considerations: The Agreement has been approved as to form by the Law Department.

Recommendation/Action: It is recommended that the City Council 1) Approve the Agreement, and 2) Authorize the Mayor to execute.


THE CITY OF WICHITA
LOCATION
MID CONTINENT AIRPORT
SEE INSET
1" = 2 MILES
151st
135th
119th
MAIZE
TYLER
RIDGE
HOOVER
WEST
MERIDIAN
SENECA
BROADWAY
HYDRAULIC
HILLSIDE
OLIVER
WOODLAWN
ROCK RD.
WEBB
GREENWICH
127th
143rd
63rd
55th
47th
MacARTHUR
31st
PAWNEE
KELLOGG
MAPLE
CENTRAL
13th
21st
29th
37th
45th
53rd
HARRY
DOUGLAS
LINCOLN
McLEAN
AMIDON
ZOO BLVD.
I-135
K-96
K-96 EXPRESSWAY
K-254
K-42
K-15
K.T.A.
K-296
ARKANSAS
SYCAMORE
WACO
WICHITA
WATER
MAIN
MARKET
BROADWAY
TOPEKA
EMPORIA
ST. FRANCIS
PK. PL.
McCORMICK
SECOND
THIRD
FIRST
WILLIAM
ENGLISH
LEWIS
WATERMAN
DEWEY
WASHINGTON
MT. VERNON
MOSLEY
17th
21st


REASSESSMENT DISTRICT
GREEN MEADOW
HAZELWOOD
HAZELWOOD CT
CLEAR MEADOW
NORTH SHORE BOULEVARD
LAKEWAY CIRCLE
21ST STREET NORTH

THE CITY OF WICHITA
OFFICE OF LAW DEPARTMENT **DATE:** May 14, 1996

TO: Michael E. Lindebak, P.E., City Engineer

FROM: Douglas J. Moshier, Senior Assistant City Attorney

SUBJECT: Agreement for Respread Assessments

The attached Agreement for respreading assessments in Horseshoe Lake Addition is approved as to form.

Douglas J. Moshier
Senior Assistant City Attorney

DJM:cdh

Attachment

AGREEMENT

BY AND BETWEEN

THE CITY OF WICHITA, KANSAS,

Party of the First Part

and

RITCHIE ASSOCIATES, INC.

BAREFOOT BAY DEVELOPMENT, INC.

TELEPHONE EMPLOYEES CREDIT UNION

JACK D. RITCHIE AND KEVIN M. MULLEN

Party of the Second Part

WHEREAS, Party of the First Part has constructed certain municipal improvements in the area of North Lake Addition, within the City Limits of the City of Wichita; and

WHEREAS, Parties of the Second Part are the landowners of part of the improvement district; and

WHEREAS, portion of the improvement district of said improvements has been platted and/or replatted; and

WHEREAS, Parties of the Second Part desire that a reassessment be made to reflect the changes in platting; and

WHEREAS, the Party of the First Part and Parties of the Second Part are both desirous of accomplishing such a reassessment.

NOW, THEREFORE, in consideration of the mutual covenants and promises herein contained, the parties agree as follows:

1. Lots 1, 2, and 3, Block 1, except that part platted as Mere Ridge; Lots 1, 2, and 3, Block 2; and Lot 1, Block 3, North Lakes Addition to Wichita, Sedgwick County, Kansas was part of the improvement district for the following City project(s):

Side Street Paving (North Shore Boulevard) - Project No. 472-82376

Submain Sewer - Project No. 468-82235

Water - Project No. 448-88843

Said property was replatted as Lots 1 thru 8, Block 1, Lots 1 thru 14, Block 2, Lots 1 thru 21, Block 3, and Lots 1 thru 18, Block 4, Horseshoe Lake, an Addition to Wichita, Sedgwick County, Kansas.

2. The Parties agree to make a reassessment for said projects in the following manner:

The proportionate share of the assessment for side street paving, North Shore Blvd., Project No. 472-82376, shall be pro-rated on a fractional basis as follows:

Lots 1 thru 8, Block 1, and Lots 1 thru 9, Block 2, shall each pay 257/20,517
Lot 10, Block 2, shall pay 1,735/20,517
Lot 11, Block 2, shall pay 20,590/20,517
Lot 12, Block 2, shall pay 2,967/20,517
Lot 13, Block 2, shall pay 900/20,517
Lot 14, Block 2, shall pay 921/20,517
Lots 1 thru 21, Block 3, and Lots 1 thru 18, Block 4, shall each pay 194/20,517

The proportionate share of the assessment for submain sewer, Project No. 468-82235, shall be pro-rated on a fractional basis as follows:

Lots 1 thru 8, Block 1, and Lots 1 thru 9, Block 2, shall each pay 120/11,952
Lot 11, Block 2, shall pay 1,468/11,952
Lot 12, Block 2, shall pay 3,052/11,952
Lots 13 and 14, Block 2, shall each pay 746/11,952
Lots 1 thru 21, Block 3, and Lots 1 thru 18, Block 4, shall each pay 100/11,952

The proportionate share of the assessment for water, Project No. 448-88843, shall be pro-rated on a fractional basis as follows:

Lots 1 thru 8, Block 1, and Lots 1 thru 9, Block 2, shall each pay 30/3,492
Lot 11, Block 2, shall pay 390/3,492
Lot 12, Block 2, shall pay 850/3,492
Lots 13 and 14, Block 2, shall each pay 286/3,492
Lots 1 thru 21, Block 3, and Lots 1 thru 18, Block 4, shall each pay 30/3,492

3. The Parties of the Second Part are the owners of the property described in section one above and said Parties of the Second Part hereby waive their notice and hearing requirements of K.S.A. 12-6a12(b) with respect to the reassessment herein described.

4. The Parties of the Second Part further waive their right to appeal the special assessments for the above mentioned projects (including this described reassessment) and agree that no suit to set aside said assessment shall be brought by them nor shall they in any other way bring an action to question the validity of the proceedings taken by the Party of the First Part in constructing this project and levying the special assessments therefor.

5. The Parties of the Second Part further agree that they will indemnify the Party of the First Part against any and all costs, expenses, claims and judgments for which the Party of the First Part is held responsible or which are entered against the Party of the First Part arising out of or as a result of the reassessment herein described.

6. Where the ownership of a single lot is or may be divided into two or more parceis, the assessment to the lot so divided shall be assessed to each ownership or parcel on a square foot basis.

IN WITNESS WHEREOF, the Parties hereto have executed this agreement the _____ of _____, 1996.

THE CITY OF WICHITA, KANSAS

BY _____
Bob Knight, Mayor
Party of the First Part

Approved as to form:

Gary Rebenstorf, Director of Law

Attest:

Pat Burnett, Deputy City Clerk

RITCHIE ASSOCIATES, INC.

BY: _____
Jack D. Ritchie, Vice President

BAREFOOT BAY DEVELOPMENT, INC.

BY: _____
Jack D. Ritchie, Vice President

~~TELEPHONE~~ EMPLOYEES CREDIT UNION

~~BY~~ _____
~~Roger Dorpinghaus, President~~

_____
~~Jack D.~~ Ritchie

_____
Kevin M. Mullen
Parties of the Second Part

STATE OF KANSAS)
) SS:
SEDGWICK COUNTY)

BE IT REMEMBERED, That on this 15th day of February, 1996, before me, that undersigned, a Notary Public in and for the County and State aforesaid, came Jack D. Ritchie, Vice President of Ritchie Associates, Inc. and Barefoot Bay Development, Inc., personally known to me to be the same person who executed the within instrument of writing and such person duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Gary L. Wiley
Notary Public GARY L. WILEY

My Appointment Expires: Jan. 15th, 1997

GARY L. WILEY
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. 1-15-97

STATE OF KANSAS)
) SS:
SEDGWICK COUNTY)

BE IT REMEMBERED, That on this 1st day of April, 1996, before me, that undersigned, a Notary Public in and for the County and State aforesaid, came Roger Dorphinghaus, President of Telephone Employees Credit Union, personally known to me to be the same person who executed the within instrument of writing and such person duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Gary L. Wiley
Notary Public GARY L. WILEY

My Appointment Expires: JAN. 15, 1997

GARY L. WILEY
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. 1-15-97

STATE OF KANSAS)
) SS:
SEDGWICK COUNTY)

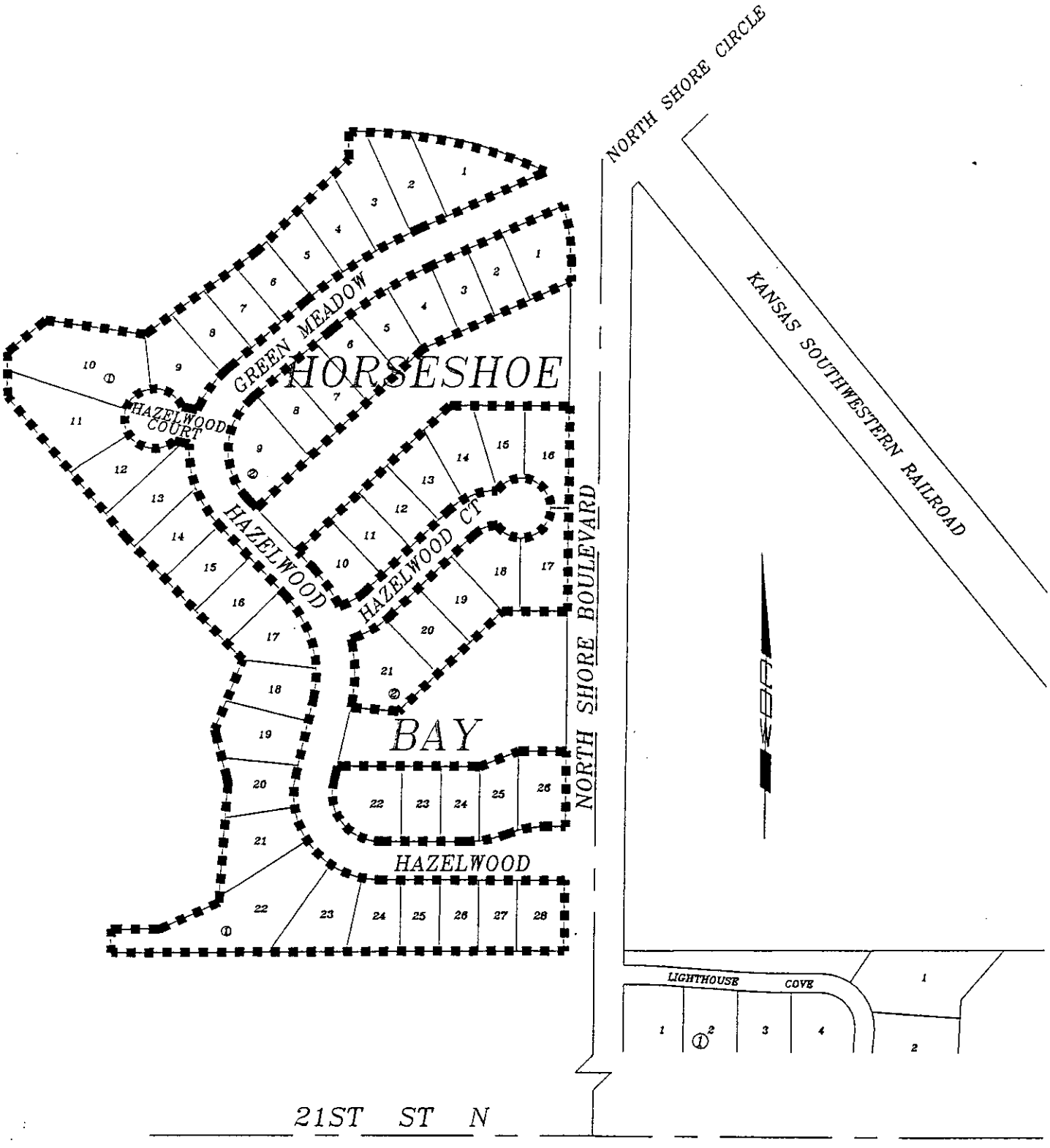
BE IT REMEMBERED, That on this 15th day of February, 1996, before me, that undersigned, a Notary Public in and for the County and State aforesaid, came Jack D. Ritchie and Kevin M. Mullen, personally known to me to be the same persons who executed the within instrument of writing and such persons duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Gary L. Wiley
Notary Public GARY L. WILEY

My Appointment Expires: Jan. 15, 1997

GARY L. WILEY
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. 1-15-97



AREA OF REASSESSMENT