

STAFF REPORT
(ONE-STEP FINAL PLAT)

CASE NUMBER: SUB 2002-72 --SOUTH LAKES COMMERCIAL ADDITION

OWNER/APPLICANT: Jeff Bannon, 201 N. Wood, Wichita, KS 67212

SURVEYOR/ENGINEER: PEC, Attn: Rob Hartman, 303 S. Topeka, Wichita, KS 67202

LOCATION: Southwest corner of 47th St. South and Meridian

SITE SIZE: 4.1 Acres

NUMBER OF LOTS

Residential:	
Office:	
Commercial:	4
Industrial:	—
Total:	4

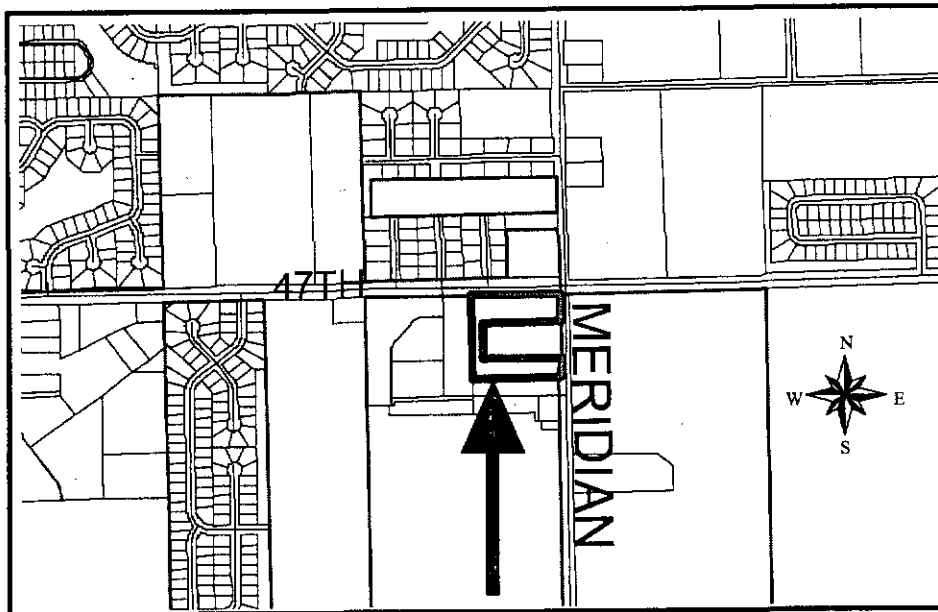
MINIMUM LOT AREA: 28,000 Sq. Ft.

CURRENT ZONING: LC, Limited Commercial

PROPOSED ZONING: Same

*Drainage plan needs
to be revised
need to ext. sewer*

VICINITY MAP



NOTE: This is an unplatted site located within the City of Wichita.

PLANNING STAFF RECOMMENDS APPROVAL OF THE PLAT.

STAFF COMMENTS:

- A. Municipal services appear to be available to serve the site. **City Engineering** needs to comment on the need for guarantees or easements.
- B. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
- C.** **City/County Engineering** needs to comment on the status of the applicant's drainage plan. **County Engineering requests a drainage plan.**
- D. **Traffic/County Engineering** needs to comment on the access controls. The plat proposes two access openings along both arterials, including a joint opening along 47th St. South. 150 feet of complete access control is required from the intersection of the arterial streets. Distances should be shown for all segments of access control. **County Engineering has requested complete access control on Lot 1 along Meridian. The opening for Lot 3 needs to be aligned with Richmond across 47th St. City Traffic Engineering has requested that the first opening from the intersection along 47th St. South be a contingent rights-in/out, with a petition provided for future reconstruction.**
- E. The joint access opening shall be established by separate instrument. Initial construction responsibilities and future maintenance of the driveway within the easement should also be addressed by the text of the instrument.
- F. This property is within a zone identified by the City Engineers' office as likely to have groundwater at some or all times within 10 feet of the ground surface elevation. Building with specially engineered foundations or with the lowest floor opening above groundwater is recommended, and owners seeking building permits on this property will be similarly advised. More detailed information on recorded groundwater elevations in the vicinity of this property is available in the City Engineers' office.
- G. Approval of this plat will require a waiver of the lot depth to width ratio of the Subdivision Regulations for Lot 4. The Subdivision Regulations state that the maximum depth of all commercial lots shall not exceed 3 times the width.
- H. The Applicant is reminded that a platting binder is required with the final plat. Approval of this plat will be subject to submittal of this binder and any relevant conditions found by such a review.
- I. The platting text shall include language that a drainage plan has been developed for the plat and that all drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the applicable City or County Engineer, and unobstructed to allow for the conveyance of stormwater.
- 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.)

SUB 2002-72 -- One-Step Final Plat of SOUTH LAKES COMMERCIAL ADDITION
July 18, 2002 - Page 3

- K. 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.
- L. To receive mail delivery without delay, and to avoid unnecessary expense, the applicant is advised of the necessity to meet with the U.S. Postal Service Growth Management Coordinator (Phone 316-946-4556) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.
- M. The applicant is advised that various State and Federal requirements (specifically but not limited to the Army Corps of Engineers, Kanopolis Project Office, Rt. 1, 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.
- N. The owner of the subdivision should be aware of the fact that the development of any subdivision greater than five (5) acres in size may require an NPDES Storm Water Discharge Permit from the Kansas Department of Health and Environment in Topeka. Further, on all construction sites, the City of Wichita requires that best management practices be used to reduce pollutant loadings in storm water runoffs.
- O. Perimeter closure computations shall be submitted with the final plat tracing.
- P. Recording of the plat within thirty (30) days after approval by the City Council and/or County Commission.
- Q. The representatives from the utility companies should be prepared to comment on the need for any additional utility easements to be platted on this property.
- R. The applicant is reminded that a disk shall be submitted with the final plat tracing to the Planning Department detailing this plat in digital format in AutoCAD. This will be used by the City and County GIS Department.

810 W. Douglas, Suite C.
Wichita, KS 67203
(316)262-8808 Office
(316)262-1669 Fax

RECEIVED

OCT 23 2002

CITY - ENGINEERING

October 19, 2002

Ms. Vicki Huang, P.E.
Engineering Division
City of Wichita
7th Floor, City Hall
455 North Main
Wichita, KS 67202

Re: Drainage Plan
South Lakes Commercial Addition

Dear Ms. Huang:

As a result of our recent conversation concerning the above referenced drainage plan I am providing a summary of the findings which were presented to you.

As depicted on the drainage plan the development of South Lakes Commercial Addition results in a total developed peak runoff of 31.4 cfs for the 100 year rain event. The existing 36" entrance pipe at the entrance into Southborough Estates off of 47th Street South has a conveyance capacity of 40 cfs in inlet control conditions with a Headwater elevation of 4.88 feet. In addition, the channel located along the west side of Southborough Estates has been designed to convey 120 cfs and has adequate capacity to convey the additional runoff from the South Lakes Commercial Development.

The volume of runoff from the South Lakes Commercial Addition site in an undeveloped state is 1.98 acre-feet. The volume of runoff from the South Lakes Commercial Addition in a developed state is 2.75 acre-feet which is an increase in the volume of runoff of 0.77 acre-feet as a result of development. The drainage from the proposed South Lakes Commercial Addition and the Southborough Estates Addition is conveyed into a Corps of Engineers ponding area which is 137 acres in area and is located on the north side of the Wichita and Valley Center Flood Control Project. At the time that the Southborough Estates Addition was developed two ponding areas were created at the southwest corner of the development to collect the additional runoff from this development. According to the drainage plan, which includes the South Lakes Commercial Addition area, on file with Sedgwick County Public Works an additional 31.2 acre-feet or 4.23 acres of ponding area was created at the southwest corner of the Southborough Estates development. The additional volume of runoff of 0.77 acre-feet from the South Lakes Commercial Addition would result in 2.18 inches of stormwater accumulating within the total 4.23 acres of ponding area created for Southborough Estates. The two ponding areas created for the Southborough Estates Addition are identified on the drainage plan as Ponding Area 'A' which has a depth of 7.8 feet and Ponding Area 'B' which has a depth of 3.8 feet.

The highest water elevation which could occur in the Corps of Engineers ponding area would be when the inlet structure into the Big Ditch were closed due to highwater. As previously mentioned the Corps has calculated that a 137 acre ponding area could result in this situation. If the additional volume of runoff of 0.77 acre-feet from the development of Southlakes Commercial Addition were permitted to

Ms. Vicki Huang, P.E.(Con't.)

October 19, 2002

Page 2

drain into the Corps of Engineer ponding area under the "worst case" conditions the resulting water surface would be raised 0.0056 feet or the equivalent of 1/16 of an inch.

Because the area now being platted as South Lakes Commercial Addition was part of the drainage plan for Southborough Estates Addition(originally known as South Towne Mobile Home Park) it is believed that the ponding area created for the proposed Southborough Estates Addition accounted for the additional runoff from the area now being platted as the South Lakes Commercial Addition. As a result of this information it was concluded during our meeting that there has been adequate provision for the additional peak discharge and runoff volume from the development of Southlakes Commercial Addition and that detention storage within this development is not required. Also please be advised that the drainage plan has been approved by Mr. Paul Ryn, Stormwater Management Engineer with Sedgwick County Public Works.

If you have questions, please call me at 262-8808.

Sincerely,



Harlan D. Foraker, P.E.

Kansas P.E. No. 10891

CERTIFIED ENGINEERING DESIGN, P.A.

attachments

cc: Mr. Rob Hartman, PEC. 303 S. Topeka, Wichita, KS, 67202

Mr. Jeff Bannon, 200 East 1st Street, #405, Wichita, KS, 67202

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

April 11, 1987
SINGLE 36" RCP AT 47 TH STREET AND MERIDIAN MHP
FLOW RATE VALUES MUST BE MULTIPLIED BY TWO FOR DOUBLE CULVERTS

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PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet)	3.00
FWHA Chart Number (1, 2 or 3)	1
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.015
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	36.0
Culvert Slope (feet per foot)	0.014

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PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
10.0	1.00	1.38	1.55	0.78	1.00	1.00	4.08
20.0	1.00	1.74	1.74	0.90	1.00	0.95	7.48
30.0	1.40	1.94	1.94	1.11	1.40	1.40	4.88
40.0	1.70	2.16	2.16	1.11	1.70	1.70	4.88
50.0	1.80	2.40	2.40	1.11	1.80	1.80	4.88
60.0	1.90	2.64	2.64	1.11	1.90	1.90	4.88
70.0	2.00	2.70	2.70	1.11	2.00	2.00	4.88
80.0	2.10	2.70	2.70	1.11	2.10	2.10	4.88
90.0	2.10	2.70	2.70	1.11	2.10	2.10	4.88
100.0	2.10	2.70	2.70	1.11	2.10	2.10	4.88

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PIPE CULVERT ANALYSIS COMPUTER PROGRAM Version 1.7 Copyright (c) 1986
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(713) 895-8322. All Rights Reserved.

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

April 11, 1987
DESIGN WEST CHANNEL FOR MERIDIAN MOBILE HOME PARK
WEST CHANNEL FROM 47TH STREET TO OLD COWSKIN CREEK

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PROGRAM INPUT DATA:
DESCRIPTION                                                    VALUE
-----
Channel Bottom Slope (feet per foot).....                   0.0013
Manning's Roughness Coefficient (n-value).....               0.0300
Channel Side Slope - Left Side (horizontal/vertical)....     4.00
Channel Side Slope - Right Side (horizontal/vertical)...     4.00
Channel Bottom Width (feet).....                              4.0
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PROGRAM RESULTS:
Depth Flow Rate Velocity Froude Velocity Energy Flow Area Top Width
(ft) (cfs) (fps) Number Head(ft) Head(ft) (sq ft) (ft)
-----
2.0 43.8 1.83 0.294 0.052 2.052 24.0 20.0
2.1 48.9 1.88 0.296 0.055 2.155 26.0 20.8
2.2 54.3 1.93 0.298 0.058 2.258 28.2 21.6
2.3 60.1 1.98 0.300 0.061 2.361 30.4 22.4
2.4 66.2 2.03 0.301 0.064 2.464 32.6 23.2
2.5 72.7 2.08 0.303 0.067 2.567 35.0 24.0
2.6 79.6 2.13 0.305 0.070 2.670 37.4 24.6
2.7 86.8 2.17 0.307 0.073 2.773 40.0 25.6
2.8 94.5 2.22 0.308 0.077 2.877 42.6 26.4
2.9 102.5 2.27 0.310 0.080 2.980 45.2 27.2
3.0 111.0 2.31 0.311 0.083 3.083 48.0 28.0
3.1 119.9 2.36 0.313 0.086 3.186 50.8 28.8
3.2 129.2 2.40 0.314 0.090 3.290 53.8 29.6
3.3 138.9 2.45 0.316 0.093 3.393 56.8 30.4
3.4 149.1 2.49 0.317 0.096 3.496 59.8 31.2
3.5 159.7 2.54 0.318 0.100 3.600 63.0 32.0
3.6 170.8 2.58 0.320 0.103 3.703 66.2 32.8
3.7 182.3 2.62 0.321 0.107 3.807 69.6 33.6
3.8 194.4 2.66 0.322 0.110 3.910 73.0 34.4
3.9 206.8 2.71 0.324 0.114 4.014 76.4 35.2
4.0 219.8 2.75 0.325 0.117 4.117 80.0 36.0
4.1 233.3 2.79 0.326 0.121 4.221 83.6 36.8
4.2 247.2 2.83 0.327 0.124 4.324 87.4 37.6
4.3 261.7 2.87 0.328 0.128 4.428 91.2 38.4
4.4 276.7 2.91 0.330 0.132 4.532 95.0 39.2
4.5 292.2 2.95 0.331 0.135 4.635 99.0 40.0
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PROJECT: Southside Commercial District
 LOCATION: 47th St. So. + Mill. Ave
 CLIENT: _____

DATE 3.22.02
 BY HOF CKD _____
 JOB NO. _____ SHEET NO. _____ OF _____

UNDEVELOPED VOLUME RUNOFF

TABLESILT LOAM
 SCS SOIL TYPE D CN = 80

$$S = \frac{1000}{CN} - 10 = \frac{1000}{80} - 10 = 2.5$$

$$Q = \frac{(P - .25)^2}{P + .8S} = \frac{(7.8 - .2(2.5))^2}{7.8 + .8(2.5)} = \frac{5329}{9.8} = 5.43''$$

TOTAL RUNOFF = $\frac{5.43''}{12} \times \text{TOTAL AREA (1.365 ACRES)} = 1.98 \text{ AC-FEET}$

DEVELOPED VOLUME RUNOFF

CN (COMMERCIAL) = 98

$$S = \frac{1000}{98} - 10 = 0.20$$

$$Q = \frac{(7.8 - .2(0.2))^2}{7.8 + .8(0.2)} = \frac{59.2}{7.96} = 7.56''$$

TOTAL RUNOFF = $\frac{7.56''}{12} \times 0.365 \text{ ACRES} = 2.75 \text{ AC-FEET}$

TOTAL ADDITIONAL RUNOFF VOLUME = $2.75 \text{ AC-FEET} - 1.98 \text{ AC-FEET} = 0.77 \text{ AC-FEET}$

TOTAL PONDING VOLUME = 31.2 AC-FEET

TOTAL SURFACE AREA = $\frac{148,050 \text{ S.F.} + 36,950 \text{ S.F.}}{43500} = 4.23 \text{ ACRES}$

INCREASED DEPTH = $\frac{0.77 \text{ AC-FEET}}{4.23 \text{ ACRES}} = 0.18 \text{ FT} = \underline{2.18''}$

CORPS PONDING AREA F AT FLOOD STAGE OF 1273.8 = 137 ACRES

INCREASED DEPTH OVER CORPS PONDING AREA = $\frac{0.77 \text{ AC-FEET}}{137 \text{ ACRES}} = .0056' = \underline{\underline{1/16''}}$

TABLE 9-1

DRAINAGE STRUCTURE DATA AND INTERIOR PONDING REQUIREMENTS

Structure	Type of	25-Year:			
Gate	Drainage:	Pondage:	Area		
Man-:Auto-:	Area	Eleva-:	Covered		
ee : Station : Size	ual :atic:	(Acres):	No. :	tion : (Acres) :	
				Remarks	
C	64+90 :1-24"	x	114 : A	1244.5 : 20	
	430+50 :1-36"	x	66 : K	78.3 : 13	
	528+00 :4-36"	x : x	527 : M	90.0 : 18	6
	602+45 :4-60"	x : x	2,955 : N	95.1 : 105	
	691+50 :1-48"	x : x	280 : O	1302.0 : 11	
	976+40 :3-48"	x	2,220 : U	18.0 : 31	
	1085+40 :2-36"	x	525 : V	Minor : -	:Areas V,
	1116+17 :3-36"	x	755 : X	Minor : -	:X and J
	1237+00 :1-36"	x	140 : J	Minor : -	:Overflows
					:40
					:976+40
	1374+50 :1-36"	x	226 : I	Minor : -	
D	82+00 :1-72"x44"	x : x	564 : B	1248.5 : 32	
	152+60 :1-60"	x : x	584 : C	54.7 : 41	
	208+50 :1-36"	x : x	65 : D ₁	63.0 : 6	
	225+00 :3-60"	x : x	930 : D	63.8 : 125	
	278+20 :2-60"	x : x	2,850 : E	63.8 : 90	
	359+85 :1-72"x44"	x : x	2,004 : F	73.8 : 137	
	624+50 :3-36"	x : x	271 : Q	95.5 : 9	10
	690+40 :2-36"	x : x	180 : R	1301.3 : 10	
	727+50 :2-48"	x : x	442 : S	04.5 : 21	
	1082+70 :1-18"	x	Minor : -	- : -	
	1135+89 :1-30"	x	30 : 12	20.4 : 5	
E	381+30 :1-43"x27"	x	80		:E-Minor,
					:Levee
					:outside
					:Floodway
					:Levee
F	1091+50 :2-36"	x	142 : W	28.6 : 6	
	1162+00 :3-48"	x : x	757 : Y	34.2 : 31	
	1223+50 :2-48"	x : x	888 : Z	41.7 : 26	1
J	1295+80 :3-48"	x	1,536 : 1	51.8 : 218	
	1355+00 :2-48"	x	598 : 2	Minor	:Areas 2,
	1391+60 :2-48"	x	748 : 3	Minor	:3 and 4
	1442+00 :3-48"	x	901 : 4	Minor	:Overflows
					:to
					:1295+80

Harlan Foraker

From: Ryn, Paul [pryn@sedgwick.gov]
Sent: Wednesday, July 24, 2002 10:14 AM
To: 'hforaker@cedpa.com'
Cc: Weber, Jim; George, Robert; Dietrich, Phillip; Robello, Patricia; Taylor, Paul
Subject: South Lakes Commercial Addition Drainage

July 24, 2002

Harlan

This drainage plan is approved.

Paul Ryn
Stormwater Management Engineer
Sedgwick County Public Works
1144 S. Seneca
Wichita, KS 67213-4443
Email: pryn@sedgwick.gov
Phone 316-660-3065
Fax 316-660-3191



LETTER OF TRANSMITTAL

TO: Dept. of Public Works
7th Floor City Hall
455 N. Main
Wichita, Ks. 67202

PROJECT NO.: 36-01541-4204
PROJECT: South Lakes Commercial Addition

ATTENTION: Vicky Huang

DATE: 7/1/02

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

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 _____ corrected prints
- For review and comment _____
- FOR BIDS DUE _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

COPY TO: file

SIGNED Rob Hartman