SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION

AGENDA ITEM NO. 7
MAY 29, 2003

STAFF REPORT
(One-Step Final Plat)

CASE NUMBER: SUB 2003-54 -- LILLIE ADDITION

OWNER/APPLICANT: Catholic Diocese of Wichita, 424 N. Broadway, Wichita, KS 67202; Matt Lillie, 734 N. Maize Road, Wichita, KS 67212

SURVEYOR/ENGINEER: Baughman Company, P.A., 315 Ellis, Wichita, KS 67211

LOCATION: South of Maple, West side of Maize Road

SITE SIZE: 17.14 acres

NUMBER OF LOTS

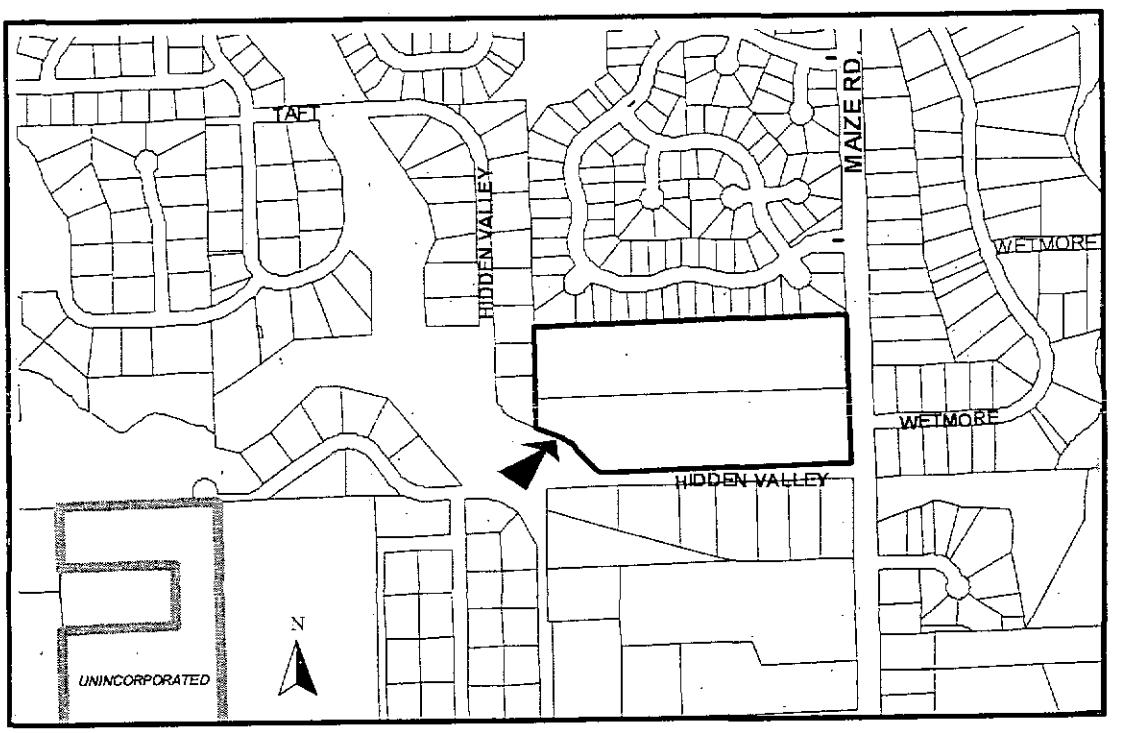
Residential:	
Office:	
Commercial:	1
Industrial:	
Total:	1

MINIMUM LOT AREA: 17.1 acres

CURRENT ZONING: SF-5, Single-Family Residential

PROPOSED ZONING: PUD, Planned Unit Development

VICINITY MAP



NOTE: This is an unplatted site located within the City. The applicant has proposed a zone change (PUD 2003-03) from SF-5, Single-Family Residential to PUD, Planned Unit Development. The site is located within the 100-year floodplain.

Planning Staff recommends approval of the plat.

STAFF COMMENTS:

A. This plat will be subject to approval of the associated zone change and any related conditions of such a change. Prior to this plat being considered by MAPC, the zone change will need to be approved.

B. Municipal services appear to be available to serve the site. City Engineering needs to comment on the need for guarantees or easements.

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

D. City Engineering needs to comment on the status of the applicant's drainage plan and the need for any floodway reserves.

E. Traffic Engineering needs to comment on the access controls, particularly the need for minimum separation between openings. The plat proposes two access openings along Maize Road. Distances should be shown for all segments of access control. The final plat shall reference the dedication of access controls in the plattor's text. ***Traffic Engineering has approved the existing opening along Maize Road. A second opening limited to rights-in/out shall be located in alignment with Swetmore Street across Maize Road.***

F. Traffic Engineering has requested the dedication of additional right-of-way along Maize Road to conform with the 60-ft half-street right-of-way required by the Access Management Regulations.

G. Traffic Engineering has requested a petition for contingent turn lanes.

H. The location of the plat needs to be revised on the vicinity map.

I. The range "1E" needs to be revised to "1W" as shown on the vicinity map.

J. A PUD Certificate shall be submitted to MAPD prior to City Council consideration, identifying the approved PUD (referenced as PUD #17) and its special conditions for development on this property.

K. The 20-foot building setback denoted on the plat does not correspond with the setbacks specified on the PUD.

L. On the final plat tracing, a note shall be placed on the face of the plat indicating that this Addition is subject to the conditions of the Planned Unit Development.

M. Based upon the platting binder, property taxes are still outstanding. Before the plat is scheduled for City Council consideration, proof shall be provided indicating that all applicable property taxes have been paid.

N. The plattor's 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.

O. The applicant shall install or guarantee the installation of all utilities and facilities that 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.)

P. 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.

Q. 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.

R. 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.

S. The owner of the subdivision should note that any construction that results in earthwork activities that will disturb one (1) acre or more of ground cover requires a Federal/State NPDES Storm Water Discharge Permit from the Kansas Department of Health and Environment in Topeka. Also, for projects located within the City of Wichita, erosion and sediment control devices must be used on ALL projects. For projects outside of the City of Wichita, but within the Wichita Metropolitan area, the owner should contact the appropriate governmental jurisdiction concerning erosion and sediment control device requirements.

T. Perimeter closure computations shall be submitted with the final plat tracing.

U. Recording of the plat within thirty (30) days after approval by the City Council and/or County Commission.

V. 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.

W. 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.

SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION

AGENDA ITEM NO. 11
JUNE 2, 2005

STAFF REPORT
(One-Step Final Plat)

CASE NUMBER: SUB 2005-57 -- LILLIE ADDITION

OWNER/APPLICANT: Matt Lillie, 619 Maize Rd., Wichita, KS 67209-1308

SURVEYOR/ENGINEER: Baughman Company, P.A., 315 Ellis, Wichita, KS 67211

LOCATION: South of Maple, West side of Maize Road

SITE SIZE: 15.98 acres

NUMBER OF LOTS

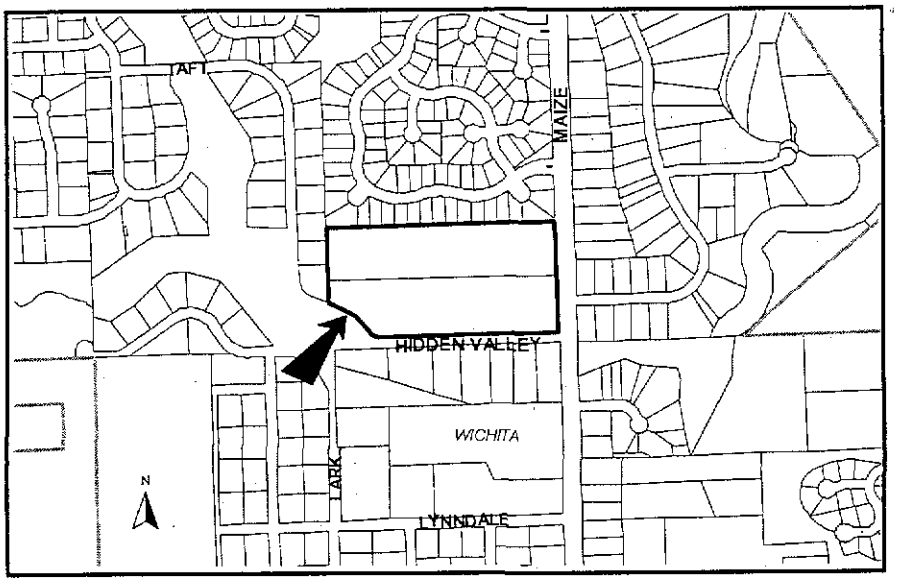
Residential:	
Office:	3
Commercial:	
Industrial:	
Total:	3

MINIMUM LOT AREA: 3.62 acres

CURRENT ZONING: SF-5, Single-Family *Residential*

PROPOSED ZONING: GO, General Office

VICINITY MAP



M. 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.

N. The right-of-way width of Maize Ct needs to be increased to conform with the 70-ft commercial street standard.

O. The plattor's 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.

P. The applicant shall install or guarantee the installation of all utilities and facilities that 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.)

Q. 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.

R. 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.

S. 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.

T. The owner of the subdivision should note that any construction that results in earthwork activities that will disturb one (1) acre or more of ground cover requires a Federal/State NPDES Storm Water Discharge Permit from the Kansas Department of Health and Environment in Topeka. Also, for projects located within the City of Wichita, erosion and sediment control devices must be used on ALL projects. For projects outside of the City of Wichita, but within the Wichita Metropolitan area, the owner should contact the appropriate governmental jurisdiction concerning erosion and sediment control device requirements.

U. Perimeter closure computations shall be submitted with the final plat tracing.

V. Recording of the plat within 30 days after approval by the City Council and/or County Commission.

W. 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.

X. The applicant is reminded that a compact disc (CD) shall be submitted with the final plat tracing to the Planning Department detailing this plat in digital format in AutoCAD, or sent via e-mail to MAPD (cholloway@wichita.gov). This will be used by the City and County GIS Department.

NOTE: This is an unplatted site located within the City. A zone change request (ZON 2005-23) from SF-5, Single-Family Residential to GO, General Office has been requested. The Lillie Office Park CUP (DP-286) has also been requested. The site is located within the 100-year floodplain.

STAFF COMMENTS:

A. This plat will be subject to approval of the associated zone change and any related conditions of such a change. Prior to this plat being considered by MAPC, the zone change will need to be approved.

B. **City Water and Sewer Department** advises that the applicant shall guarantee the extension of City water to serve the lots being platted. Sewer is available to serve Lots 1 and 2, however in lieu of assessment fees are needed for connection. The existing sewer on the south side of lot 3 is 27" and therefore can not tapped into for individual services. The applicant shall guarantee the extension of sanitary sewer for Lot 3.

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

D. **City Engineering** needs to comment on the status of the applicant's drainage plan.

E. **Traffic Engineering** needs to comment on the access controls. The plat proposes one street opening along Maize Road and complete access control along the remaining plat frontage.

F. In accordance with the CUP proposal, a cross-lot circulation agreement is needed to assure internal vehicular movement between the lots.

G. The applicant shall guarantee the closure of any driveway openings located in areas of complete access control or that exceed the number of allowed openings. A Driveway Closure Certificate in lieu of a guarantee may be provided.

H. The Applicant shall guarantee the paving of the proposed street.

I. 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.

J. For those reserves being platted for drainage purposes, the required covenant which provides for ownership and maintenance of the reserves shall grant, to the appropriate governing body, 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 the governing body.

K. The 25-ft setback along Maize does not coincide with the 35-ft setback lines that are required by the CUP.

L. A CUP Certificate shall be submitted to MAPD prior to City Council consideration, identifying the approved CUP and its special conditions for development on this property.

CLOSURE - LILLIE ADDITION

PT 01 North: 9418.5183 East : 13877.3250
Line Course: S 89-55-55 E Length: 1268.9500
PT 02 North: 9417.0111 East : 15146.2741
Line Course: S 00-00-15 E Length: 616.9500
PT 03 North: 8800.0611 East : 15146.3189
Line Course: N 89-52-56 W Length: 974.4000
PT 04 North: 8802.0641 East : 14171.9210
Curve Length: 93.3059 Radius: 104.7900
Delta: 51-01-00 Tangent: 50.0010
Chord: 90.2540 Course: N 64-22-26 W
Course In: N 00-07-04 E Course Out: S 51-08-04 W
RP North: 8906.8538 East : 14172.1364
PT 05 End North: 8841.0986 East : 14090.5448
Line Course: N 38-51-56 W Length: 95.7400
PT 06 North: 8915.6438 East : 14030.4684
Curve Length: 58.9134 Radius: 126.6600
Delta: 26-39-00 Tangent: 29.9995
Chord: 58.3838 Course: N 52-11-26 W
Course In: S 51-08-04 W Course Out: N 24-29-04 E
RP North: 8836.1652 East : 13931.8483
PT 07 End North: 8951.4352 East : 13984.3421
Line Course: N 65-25-33 W Length: 117.3800
PT 08 North: 9000.2501 East : 13877.5939
Line Course: N 00-02-16 W Length: 418.2700
PT 01 North: 9418.5200 East : 13877.3181

Supplemental Drainage Response

1. Project narrative has been provided
2. The "Drainage Plan" has been sealed and dated by a Registered Professional Engineer, as required. [NOT STAMPED]
3. Copies of FEMA FIRM and flood profile has been provided showing the location of the project NO PROFILE
4. HEC-2 cross-section locations have been shown, per scaled location from the PEC's topographic workmap that was developed for the June 26, 1997 Letter of Map Revision. TO BE SHOWN BY ELEVATION! I HAVE REQUESTED.
5. The regulatory floodway along with the 100-yr and 500-yr floodplain limits have been shown on the plan sheet, based on scaled locations from the FEMA FIRM PER ELEVATION
6. The proposed project consists of excavation of two detention ponds within the 100-yr floodplain, as identified on the FEMA FIRM. Explicit compensatory storage volume has not been calculated. Hydrologic modeling shows that the peak discharge from the project does not exceed the pre-developed peak discharge. This is consistent with the City of Wichita's Storm Water Design Criteria as specified in section II-1. This part states "The City desires that detention storage be sized to reduce and/or limit peak runoff for the 5-year and 100-yr frequency storms from urbanized areas to the peak runoff for such storms as if the area was not urbanized". THE BASIN IS SHOWN AS URBANIZED.
7. This project was initiated prior to the City of Wichita's adoption of the use of NGVD for all topographic exhibits and thus the topographic survey was performed using the City of Wichita Datum. To avoid confusion when comparing newer plans to those previously produced, we opted to maintain consistency and retain the topography in City of Wichita Datum. IT'S EASY TO CONVERT AND WON'T CONFUSE CITY STAFF
8. A copy of the Sedgwick County Soil Survey map has been provided
9. A vicinity map was provided on the "Drainage Plan" sheet. This map represented the location of the project within the square mile bounded by Maize Road on the east, Maple Ave. on the north, 119th St. West on the west, and Harry Street on the south.

17. As outlined in the City of Wichita's design criteria, Section II-1, "The City desires that detention storage be sized to reduce and/or limit peak runoff for the 5-year and 100-yr frequency storms from urbanized areas..." The original submittal of the drainage plan addressed these two return periods as well as the 2-year event. The City's design criterion does not currently require the analysis of the 10-yr, 25-yr, or 50-yr events. Additionally, as per the "Detention and Design Standards" developed by the Detention Subcommittee dated June 22, 1981, Section II-B explicitly states that the 100-yr, 6-hour storm be used in the analysis of a detention facility. We are providing a summary table of the three return periods that have been analyzed.

WHEN WE HAVE SENSITIVE AREAS WE HAVE ABILITY TO REQUEST ADDITIONAL DATA

18. Contour mapping of the proposed finished grade has not been provided. Final site design will dictate the final grading of the property, and thus any contouring performed at this time would only be conceptual in nature and subject to change.

THAT'S WHAT WE ARE REQUESTING

19. Detailed calculations of the outfall structures have not been provided. As with most computer modeling programs, the stage-discharge relationship is an internal calculation that is performed by the program itself.

COMP. SHEET

20. Emergency spillways have been provided and the flow path has been depicted on the plan sheet.
21. A typical weir detail has been provided on the plan sheet.

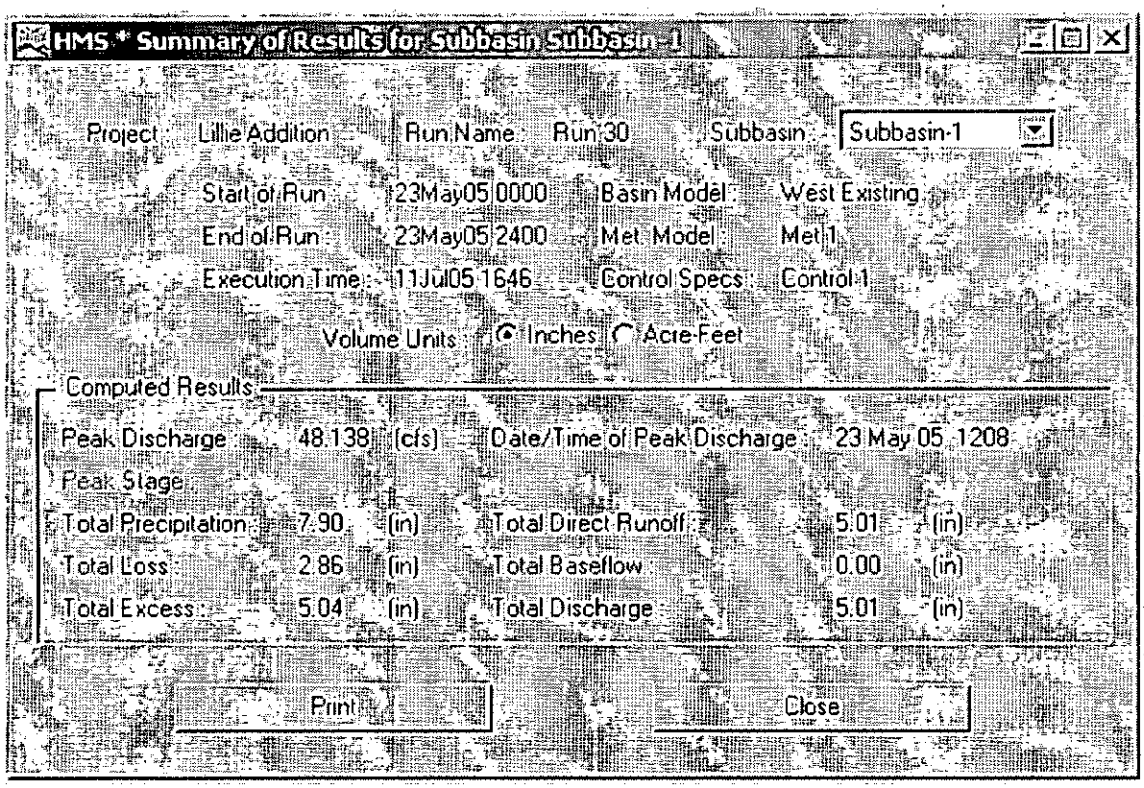
ELEVATIONS

22. The proposed detention facilities incorporate the City of Wichita's freeboard requirement.

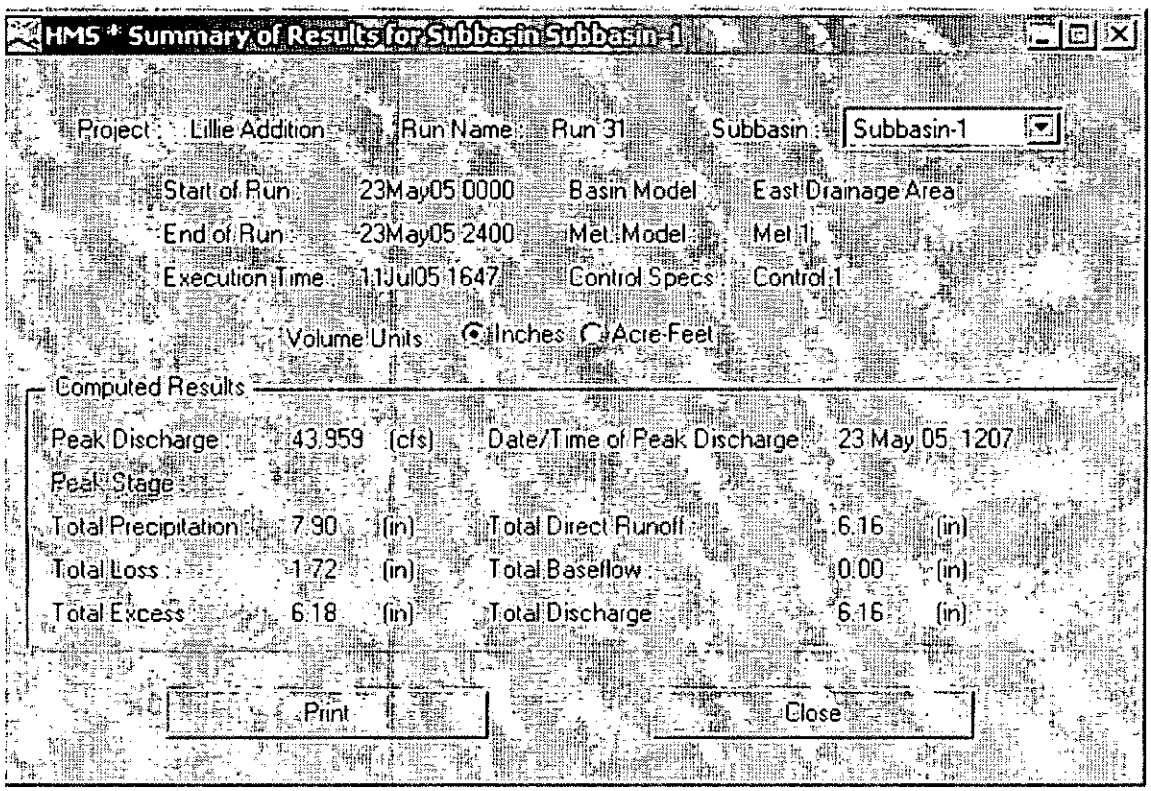
SHOW CONCEPT

23. The Drainage Plan has been revised to accommodate the south line of the project to redirect runoff to the detention facility.
24. A Quadrangle map showing the off-site drainage patterns has been provided
25. Necessary easements and/or drainage agreements will be provided at the time of recording the plat. Easements will overlay any storm water sewer systems that convey public right-of-way runoff through private property. Internal drainage design will dictate whether an easement is necessary or if a drainage agreement between private parties is more operative to the development.

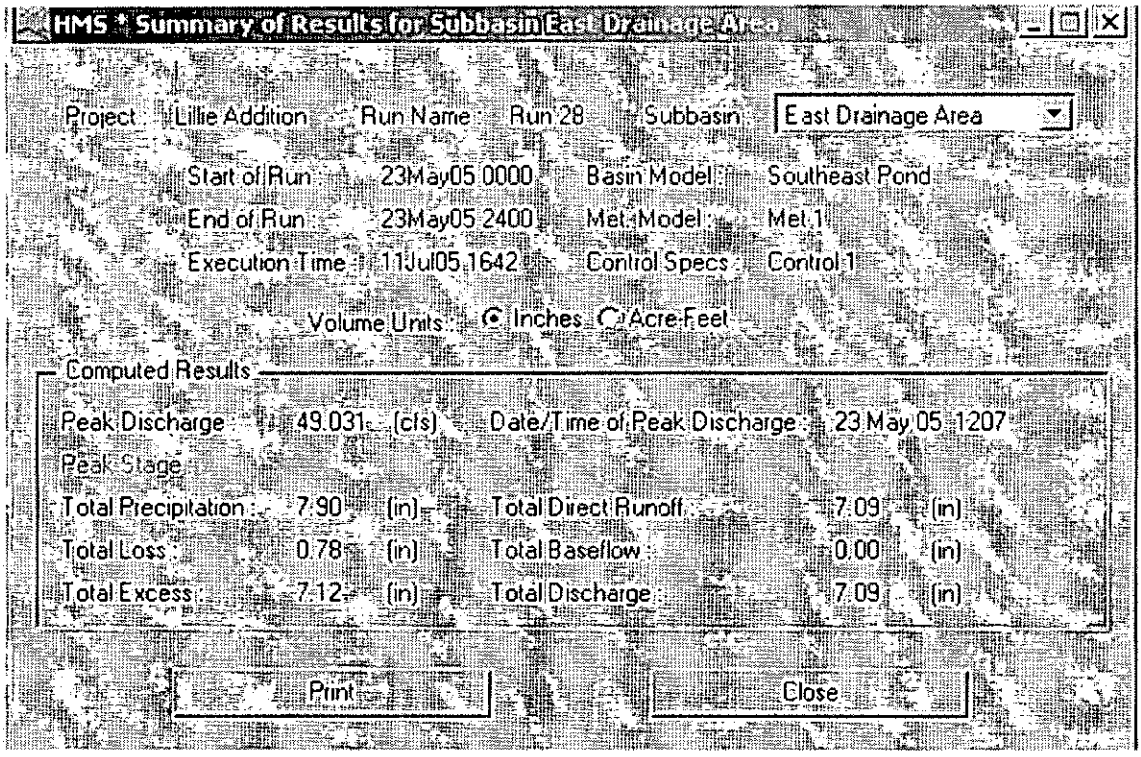
EXISTING - WEST

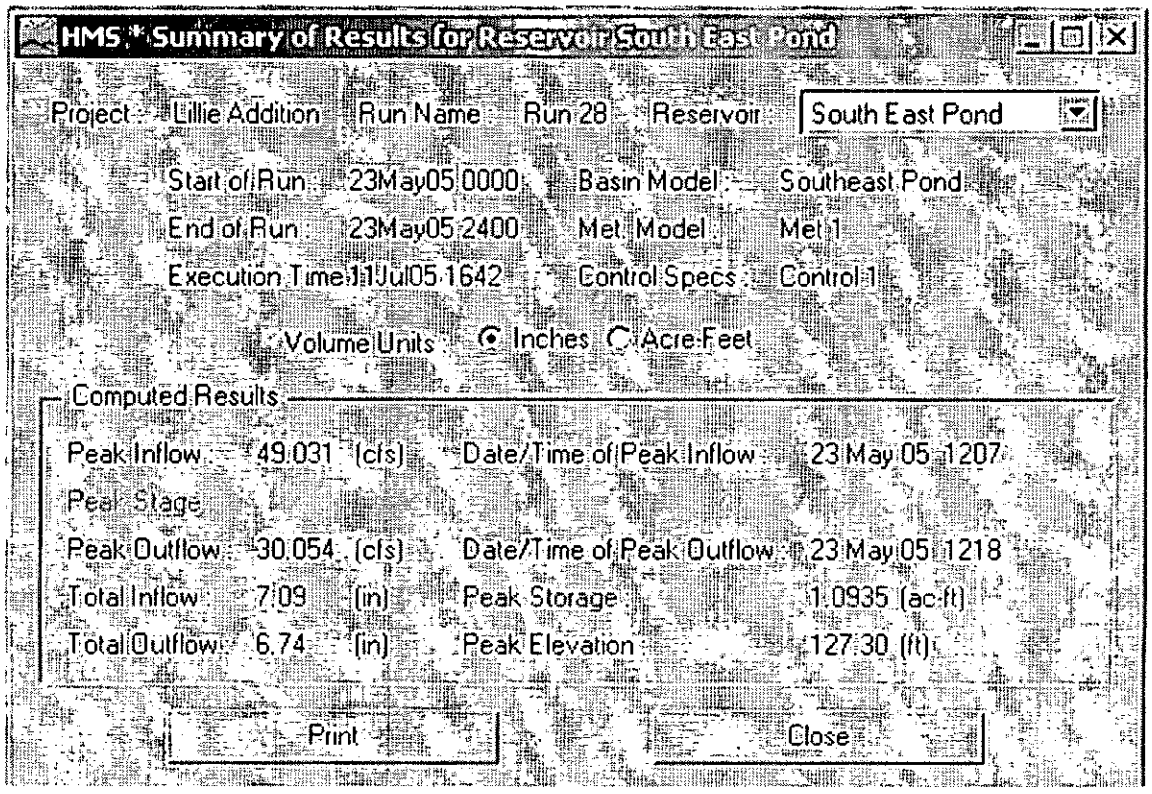


EXISTING - EAST

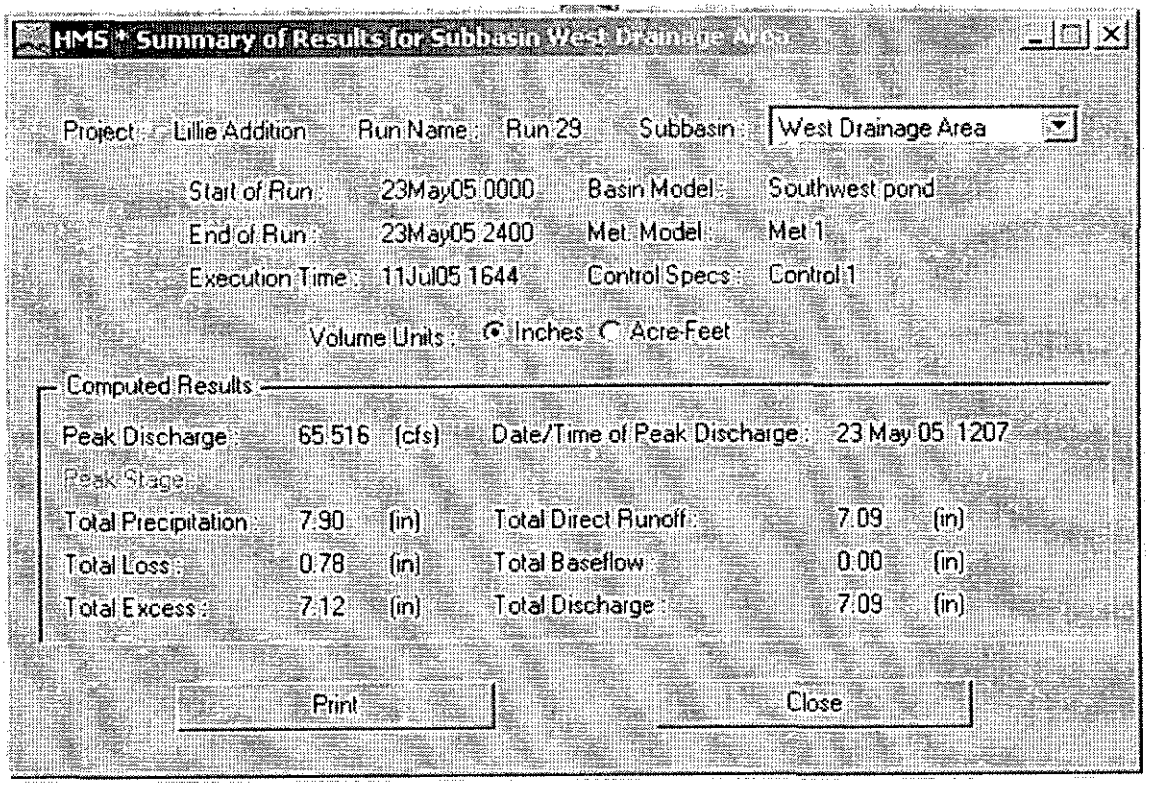


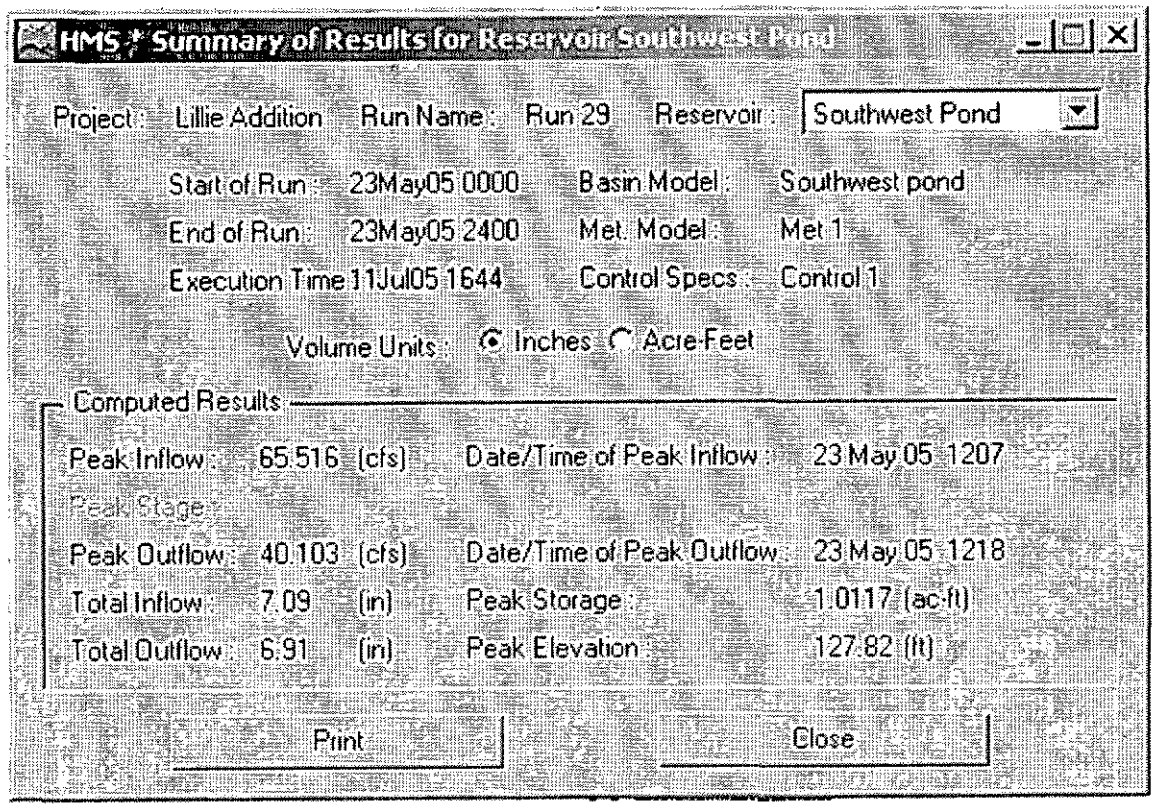
DEVELOPED - EAST





DEVELOPED - WEST





Baughman

July 11, 2005

Mr. Scott Lindebak, P.E., Stormwater Engineer
City Hall – 7th Floor
455 N. Main
Wichita, KS 67202

RE: Lillie Addition Drainage

Dear Mr. Lindebak

We have addressed your comments outlined in your July 7, 2005 letter addressed to Mr. Phil Meyer. The twenty-five items that you have outlined have been addressed on the attachment entitled "Supplemental Drainage Response".

I hope that this information answers the concerns that you may have regarding this project.

If you have any questions, or need clarification on any of the comments, do not hesitate to contact me at (316) 262-7271.

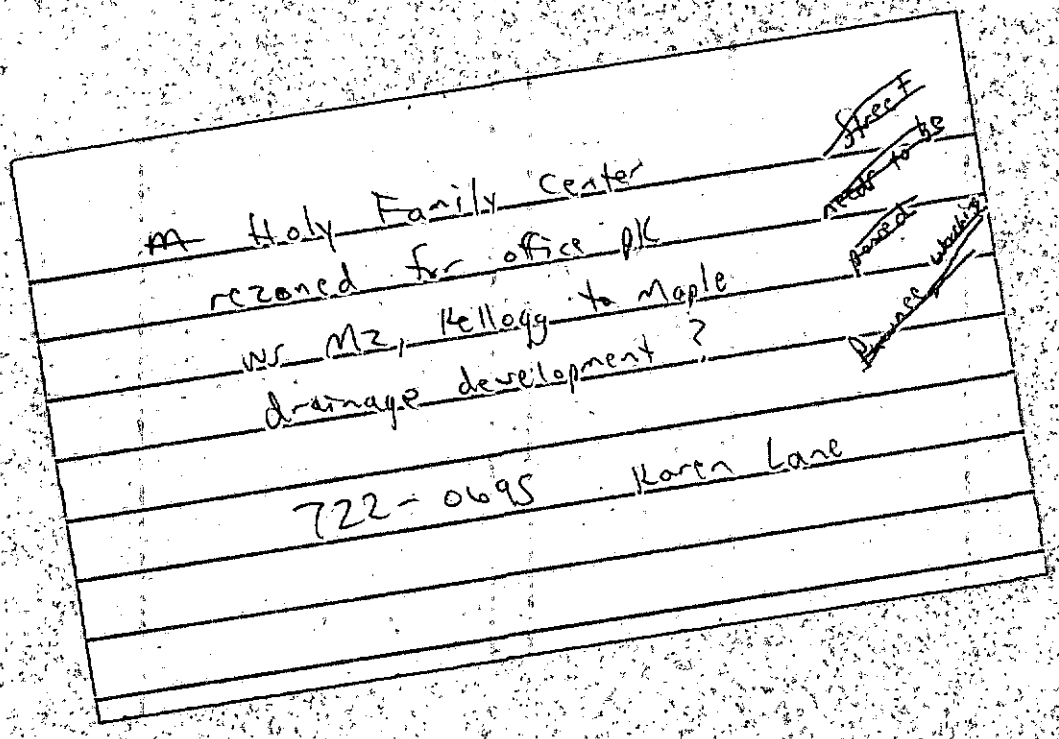
Thank you
Baughman Co., P.A.

Brian L. Glenn, P.E.
Drainage Engineer

cc: File

ENGINEERING
SURVEYING
PLANNING
LANDSCAPE ARCHITECTURE

Baughman Company, P.A.
315 Ellis
Wichita, Kansas 67211
P 316-262-7271 F 316-262-0149


Holy Family Center
rezoned for office pk
NS M2, Kellogg to Maple
drainage development ?
722-0695 Karen Lane

CITY OF
WICHITA

July 7, 2005

Department of Public Works

Mr. Phil Meyer, LA
Baughman Company, P.A.
315 Ellis
Wichita, KS 67211

SUBJECT: Drainage Plan
Lillie Addition
Wichita, Kansas

Dear Phil:

We have re-evaluated the original approved drainage plan for the Lillie Addition to insure the proposed development as it relates to stormwater will not make conditions worse for the adjacent property owners. We recognize that this area floods and know that this development will not prevent future flooding. However, we need the below comments addressed prior to Monday evening's district advisory board meeting to have the level of assurance necessary to represent the development. We understand the time frame may not allow for these items to be addressed in detail, but need assurance that a new plan will be submitted that can satisfy these requirements.

The items submitted for our review were as follows:

1. Plan sheet entitled "Drainage Plan, Lillie Addition, Wichita, Sedgwick County, Kansas" prepared by Baughman Company dated May 24, 2005.

2. HEC-HMS detention pond calculations for the east and west drainage areas dated May 23, 2005.

Based upon the above items, we offer the following comments:

1. A project narrative should be supplied which details the proposed work. This narrative should include, but not limited to: information on the existing site condition, total site area, proposed conditions, and total area to be disturbed. In addition to the above items, a detention summary should be included in the narrative which details the following: off-site flows, on-site flows, detention requirements, release rates for the storm events modeled under both existing conditions and proposed conditions, and storm sewer calculations for the entire storm sewer system to be constructed on the project site. These items should be submitted in a bound package with all supporting documentation and calculations as necessary for review.

Engineering Division

City Hall • 7th Floor • 455 North Main • Wichita, Kansas 67202-1620

T 316.268.4501 **F** 316.268.4114

www.wichitagov.org

2. The plan and calculations should be stamped and signed by a Kansas Licensed Professional Engineer, including the P.E. expiration date.

3. A copy of the Flood Insurance Rate Map and FIS profile with the site location marked should be included for review.

4. The drainage plan should locate the existing FEMA cross-section and elevations as it relates to the site.

5. The floodway, 10- , 100-, and 500- year existing and proposed floodplain limits should be shown on the drainage plan. The floodway limits should be based on scaled location and the floodplain limits should be shown per elevation.

6. Any fill in the 100-year floodplain will be require to provide compensatory storage equal to at least the volume of fill displaced.

7. The City of Wichita requires that all projects show site-specific topography using NGVD datum.

8. A copy of the Sedgwick County soils mapping with the project location marked should be included in the submittal.

9. A project location map should be included in the submittal.

10. Please provide design calculations for the storm sewer, including, but not limited to, catchment area for each inlet, rainfall intensity, pipe sizing calculations, hydraulic grade line calculations, and design flow velocities. All storm sewers should be designed to convey a minimum 5-year design storm event under gravity conditions.

11. Hydraulic grade line calculations for the storm sewer system should be submitted for the 5-year and 100-year storm events. The calculations should use the 5-year and 100-year HWL at the ponds. The rim elevations of all structures should be checked to insure that if any rim elevation is located below the 100-year HGL at that rim, overflow does not leave the site from that inlet undetained.

12. Inlet capacity calculations should be submitted for east street inlets to show that all flow in the 100-year storm enters the stormwater system and does not bypass to the Maize Road right-of-way.

13. An analysis should be submitted for the receiving downstream system. It should be shown that the system could accommodate the inflow with no effect to downstream structures.

14. It appears that the east detention pond's stage-storage provided in the submittal do not match the stage-storage input in the HEC-HMS model and do not match the relationship shown on the plan set. The modeling, calculations and plan set should match.

15. The input variables for the HEC-HMS pond routing are not provided, including curve numbers, time of concentration, stage/storage/discharge table for the outlet structure and drainage area. A digital copy of runs should be included for review.

16. The time of concentration for existing and proposed should be based on actual conditions and not use the assumed standard fifteen minutes.

17. It appears that the existing conditions are based on the Rational Method and the proposed conditions were modeled using HEC-HMS. These two methodologies are different and should not be used to compare between existing and proposed conditions. The following method should be followed to demonstrate effective detention for this development:

    i. Develop existing condition *outflow* hydrographs for the 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour events.

    ii. Develop proposed condition outflow hydrographs for the 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour events. Separate hydrographs must be developed for the full range of downstream conditions.

    iii. Demonstrate that the outflow from the proposed detention facility does not exceed the existing condition outflow for all storm events (2-, 5-, 10-, 25-, 50-, 100-year, 24-hour storm events.) This analysis must also consider the full range of downstream conditions. This means that the pond has sufficient storage volume necessary to detain the site's runoff under maximum tailwater conditions.

    iv. A narrative description, summary table(s) and calculations clearly demonstrating conformance with all of the requirements listed above must be provided.

18. The proposed contours should be clearly labeled and coincide with the areas used in the stage-storage-discharge relationship. This relationship should be included on the plan sheet.

19. Detailed calculations should be provided for the stage-storage-discharge relationship used for the 15-inch pond outfalls. It appears that the pond routings are only for the 100-year storm event and not sized for all ranges of events.

20. The detention facilities shall provide an overflow structure and overflow path that can safely pass excess flows through the development site. The location of the proposed overflow from the detention facility should be shown on the plan set.

21. A detail of the overflow weir should be included on the plan set including all relevant dimensions and elevations.

22. The City of Wichita requires a minimum of one-foot *free* board to be provided on all detention facilities.

23. It appears that runoff in each basin may be draining south undetained. A drainage swale or other means may be necessary along the south property boundary to redirect drainage to the detention basins.

24. A drainage basin map delineating the on- and off-site flow areas should be included for review. It is unclear what the existing drainage patterns north and west of the site.

25. Drainage Easements need to be provided over/about the on-site storm sewer system, and over land drainage swales, which are necessary to convey the 100 year storm runoff to either detention facility, unless otherwise located in a dedicated reserve for said purpose.

If you have any questions or concerns regarding this review, please contact me by phone at 268-4624 or email at slindebak@wichita.gov.

Sincerely,

Scott C. Lindebak, P.E.
Civil Engineer

cc: file

K:\New Developments\Lillie Addition 070705.doc

Drainage Information
LILLIE ADDITION
Wichita, Sedgwick County, Kansas

The following variables are those of which are used as the input variables in HEC-HMS in order to calculate existing runoff, developed runoff, as well as pond peak discharges and peak elevations.
All HMS runs were performed with an SCS Hypothetical Storm Type II Meteorological Method with a 100-yr storm depth of 7.9 inches. Where needed, a 5-yr storm depth of 4.5 inches and a 2-yr storm depth of 3.5 inches was used.
All HMS runs were also performed with control specifications of 1 minute intervals over a 24 hour period.

West Drainage Area

EXISTING

Area	=	9.9 acres	=	0.0155 sq.mi.
Soil Type	=	Vb, Vd	=	Type B
CN	=	Open Space (Fair Condition)	=	69
Lag Time	=	15 minutes		

DEVELOPED

Area	=	9.9 acres	=	0.0155 sq.mi.
Soil Type	=	Vb, Vd	=	Type B
CN	=	Urban Commercial/Business	=	92
Lag Time	=	15 minutes		

Detention Pond Facility

Static WS	=	125.0 City Datum
Outlet	=	15 in RCP
	=	4.9 sq.ft. cross sectional area
	=	center elevation 125.5 City Datum
	=	discharge coefficient 0.67

East Drainage Area

EXISTING

Area	=	7.4 acres	=	0.0116 sq.mi.
Soil Type	=	Vb, Vd	=	Type B
CN	=	45% Paved Parking/Roof	=	98
	=	55% Open Space (Fair Condition)	=	69
	=	Adjusted Curve Number	=	82
Lag Time	=	15 minutes		

DEVELOPED

Area	=	7.4 acres	=	0.0116 sq.mi.
Soil Type	=	Vb, Vd	=	Type B
CN	=	Urban Commercial/Business	=	92
Lag Time	=	15 minutes		

Detention Pond Facility

Static WS	=	125.5 City Datum
Outlet	=	15 in RCP
	=	4.9 sq.ft. cross sectional area
	=	center elevation 126.0 City Datum
	=	discharge coefficient 0.67