



MAR 11 2009

**Public Works, Engineering Division
Final Drainage Plan Submittal Checklist**

Reviewer: _____ Date: _____
 Subdivision Name: ANN WALENTA COMMERCIAL ADDITION Location: _____
 Total Land Area Of Ownership: _____ Acres
 Type: _____ Residential X Commercial _____ Industrial _____ Recreation _____ Municipal _____ Other _____
 Applicant: _____ Contact: _____ Phone #: _____
 Engineer: Ruggles & Bohm, P.A. Contact: Alex Lane Phone #: 264-8008

Please check the appropriate box:

I = Included; NA = Non-Applicable; R= Required prior to development
 (If "NA" is checked, an explanation must be entered)

Tab 1. Project Narrative	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Site Location Map, using USGS Map		X	USGS not useful for this site		
B. Discussion of development, existing conditions, and proposed impacts on stormwater, wetland, riparian, and flood plain	X		Stormwater impacts discussed other factors do not apply		
C. Discussion of offsite conditions					
D. Summary of runoff calculations (pre/post development) No increase in peak discharge for all storm series	X		Pre. conditions only		
E. Narrative description of the type and function of the permanent best management practices that are incorporated into the site design		X	Site plan will be submitted for development at a later date		
F. Copy of the plat					
G. Preliminary grading plan (The final grading plan shall be sealed, signed and dated prior to Engineering receiving the final sanitary sewer plans. One plan sheet and PDF shall be submitted to the Subdivision Engineer.)		X	Configuration & nature of proposed development not known at this time		
H. Professional Engineer seal, signature and date on cover of report					
I. CD of drainage plan in PDF format (one file) and one paper copy bound with this checklist included behind the cover					

Tab 2. Existing Conditions Runoff Calculations	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Copy of applicable orthophoto showing proposed project boundaries (preferable in color)					
B. Runoff Method (Rational, Hydrograph Method, or other approved methods by Engineering)	X		Rational Method Calculations provided on Drainage Plan		
C. Existing topography (no greater than 2-foot contours, 1-foot recommend)	X		Drainage Plan		
D. Total Site Area and Total Impervious Area (acres)	X		Drainage Plan		
E. Benchmarks used for site control	X		Drainage Plan		
F. Streams, creeks, and waterway labeled		X	None present		
G. Predominant soils from USDA soil surveys, and/or on site soil borings	X		Drainage Plan		
H. Location and boundaries of natural features such as wetlands, lakes, and ponds with the normal water elevation noted		X	None present		
I. Location of existing roads, buildings, parking lots and other impervious areas.	X		Drainage Plan		



J. Location of existing utilities (e.g., water, sewer, gas, electric) and easements	X		Drainage Plan		
K. Location of existing conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow	X		Drainage Plan		
L. Flow paths	X		Drainage Plan		
M. Location and dimensions of existing channels, bridges or culvert crossings		X	None present		
N. Existing conditions hydrologic analysis for runoff rates, volumes and velocities showing methodologies used and supporting calculations (2, 5, 10, 25 & 100 year, 24-hour storm events) or Critical Duration	X		Drainage Report		
O. Assumed pre-developed runoff curve numbers	X		Drainage Report		
P. Existing time of concentrations used in calculations	X		Drainage Plan		
Q. Evaluate immediate downstream drainage capacity, not to exceed more than 0.25 miles downstream of site					
R. Existing structural elevations (e.g., invert of pipes, manholes, etc.)	X		Drainage Plan		
S. Cross-section data for open channels		X	None present		
T. Ground water elevations, if applicable		X			

Tab 3. Post-Development Hydrologic Analysis	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Proposed (post-development) conditions hydrologic and hydraulic analysis for runoff rates, volumes, HGL, and velocities showing the methodologies used and supporting calculations for all applicable design storms (2, 5, 10, 25 & 100 year, 24-hour storm events)		X	Configuration & Nature of proposed development is not known at this time. Unable to perform calculations		
B. Proposed time of concentrations used in calculations		X	"		
C. Assumed post-developed runoff curve numbers		X	"		
D. Proposed contours for detention facilities (to equal area used in outlet rating curves)		X	"		
E. Preliminary sizing calculations for stormwater controls including contributing drainage area, storage, and outlet configuration		X	"		
F. Stage-storage-discharge or outlet rating curves and inflow and outflow hydrographs for storage facilities		X	"		
G. Final analysis of potential upstream/downstream impact/effects of project, where necessary		X	"		
H. Existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.)					
I. Design water surface elevations and normal pool elevation for ponds.		X	"		
J. Typical detail for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc. To include height, width, elevation, and/or diameter.		X	"		
K. Proposed limits of clearing and grading		X	"		
L. Location of existing and proposed roads, buildings, parking lots and other impervious areas.	X		EXISTING IMPERVIOUS AREAS SHOWN ON DRAINAGE PLAN, PROPOSED UNKNOWN		
M. Location of existing and proposed utilities (e.g., water, sewer) and easements	X		EXISTING SHOWED PROPOSED UNKNOWN		
N. Location of existing and proposed conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow	X		EXISTING SHOWED PROPOSED UNKNOWN		
O. Preliminary location and dimensions of proposed channel modifications, such as bridge or culvert crossings		X	NONE REQUIRED ON THIS SITE		



UNABLE TO PERFORM CALCULATIONS

P. Preliminary selection and location of stormwater controls	X	CONFIGURATION & Nature of Proposed development not known at this time		
Q. Emergency overflow structure's flow path	X	"		
R. Detention facility provides one-foot of freeboard above the HWL and emergency outfall shown (top of berm elevation shown)	X	"		
S. The 100-year 24-hour HWL delineated on the plan for detention pond	X	"		
T. Lowest opening elevations table on the plat for structures located adjacent to channels or ponds	X	"		
U. Stormwater Management Facilities located within a Reserve	X	"		
V. Maintenance responsibility of stormwater management facility shall be specified in the plat's text. (e.g. HOA, Lot Owners Association, or lot)	X	"		
W. Off-site drainage easements or agreements required, where necessary	X	"		

Tab 4. Floodplain Submittal	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Provide source of flood profile		X	NO FLOOD PLAIN ON SITE		
B. Nearest base flood elevations		X	"		
C. Delineation of pre-developed regulatory floodplain/floodway limits		X	"		
D. Delineation of post-developed regulatory floodplain and floodway limits		X	"		
E. Floodplain boundary determination per elevation (project limits shown)		X	"		
F. Provide source of floodway data table and discharges		X	"		
G. Provide all hydrologic and hydraulic study information for site-specific floodplain studies, unnumbered Zone A area elevation determinations and flood plain map revisions or required permits		X	"		
H. Provide regulatory floodway and four natural profile models (10,50,100, and 500-yr) for existing and future watershed conditions		X	"		
I. Location of floodplain/floodway limits and relationship of site to upstream/downstream properties (floodplain limits to be per elevation and scaled location)		X	"		
J. Flood plains and floodways located within a Reserve, where necessary		X	"		

Tab 5. Federal, State and Local Permits (to be provided prior to construction unless otherwise specified)	Applicant			Engr	
	I/R	NA	Explanation / Location in Plan	I/R	NA
A. US Army Corps of Engineers - Regulatory program permits (404 water quality certification)		X	NO PERMITS REQUIRED		
B. Kansas Department of Agriculture - Division of Water Resources Permits (Stream Obstruction, Channel Change, Flood Plain Fill, Levee, Water Appropriations, Dam safety permit, etc.)		X	NO PERMITS REQUIRED		
C. Federal Emergency Management Agency (FEMA) Letter of Map Changes (LOMA, LOMR, LOMR-f, CLOMR, etc.) Shall be included and approved when project modifies the limits of the floodway.		X	NO PERMITS REQUIRED		
D. Kansas Department of Transportation		X	NO PERMITS REQUIRED		
E. Sedgwick County Right-of-way Permit		X	NO PERMITS REQUIRED		

DRAINAGE REPORT
Ann Walenta Commercial Addition
WICHITA, SEDGWICK COUNTY,
KANSAS

March 5, 2009

**Ann Walenta Commercial Addition
DRAINAGE ANALYSIS
March 5, 2009**

INTRODUCTION

This report contains supporting documentation and calculations for the proposed Ann Walenta Commercial Addition development. The site is located on the east and west side of Oliver at Kellogg. The proposed site currently exists in a developed condition. The site is comprised of 3.75 acres of single family residences with the remaining 4.68 acres in use as commercial property. Portions of the commercial property were destroyed in a tornado in the late 1990's. A 1996 aerial was used to establish the impervious area of the damaged portion. The soil type of the site is designated as urban Farnum, which is in hydrologic group B. The site is located on FEMA FIRM 20173C0367E in unshaded Zone X, defined as areas outside of the 0.2% chance floodplain.

PROPOSED CONDITION

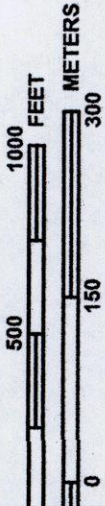
The site shall be developed such that the usage shall be entirely commercial. The nature and layout of the development is not known at this time. The detention requirements shall be based on the Technical Advisory Committee's policy number D-1. The policy states for "redevelopment projects with land disturbance over one acre (cumulative) are subject to" required detention "if there is and increase in impervious surface from the site draining to a specific drainage basin". Therefore the existing impervious area has been quantified and included on the drainage map.

Existing	Area (ac.)	CN	TC (min.)	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
A	2.02	87	15	5.6	7.3	8.4	10.2	13.2
B	2.85	83	15	7.2	9.7	11.2	13.7	18.0
C	2.92	83	15	7.4	9.9	11.5	14.0	18.4
D	0.64	83	15	1.6	2.2	2.5	3.1	4.0

The results of the analysis above shall be used as targets for the developed condition. The developed condition is unknown at this time and will be determined when the site design is completed. The proposed condition shall include site detention or retention if the impervious area exceeds the impervious area as calculated on the drainage map. Acceptable methods of detention shall include but not be limited to dry bottom ponds, wet bottom ponds, underground storage and parking lot storage.

FEMA FIRM

MAP SCALE 1" = 500'



PANEL 0367E

FIRM
FLOOD INSURANCE RATE MAP
SEDGWICK COUNTY,
KANSAS
AND INCORPORATED AREAS

PANEL 367 OF 700

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EASTBOROUGH, CITY OF	200481	0367	E
SEDGWICK COUNTY	200321	0367	E
WICHITA, CITY OF	200328	0367	E

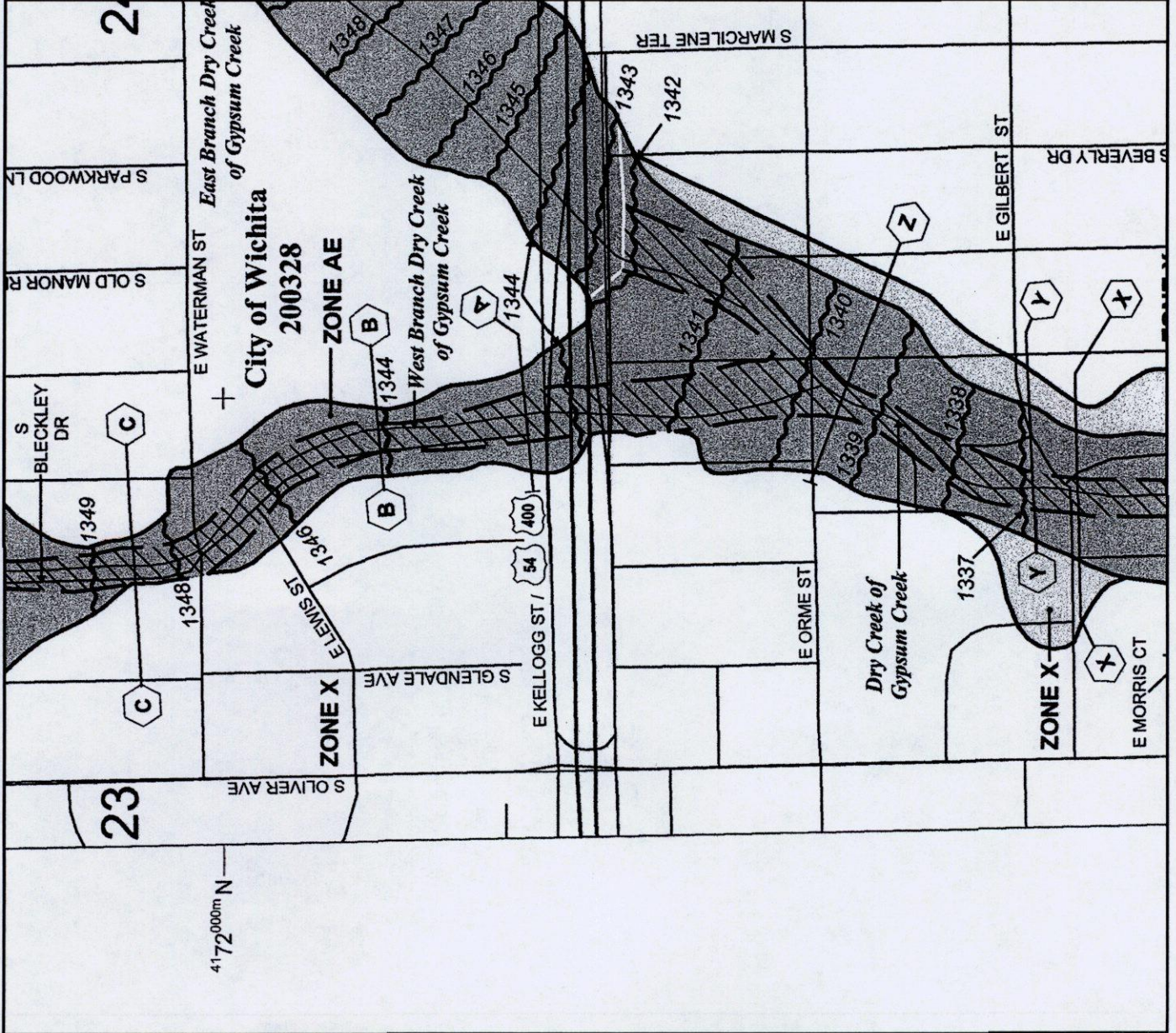
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
20173C0367E

EFFECTIVE DATE
FEBRUARY 2, 2007
Federal Emergency Management Agency

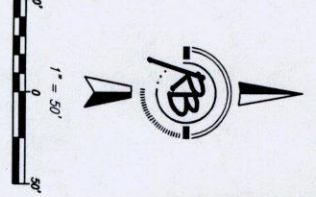
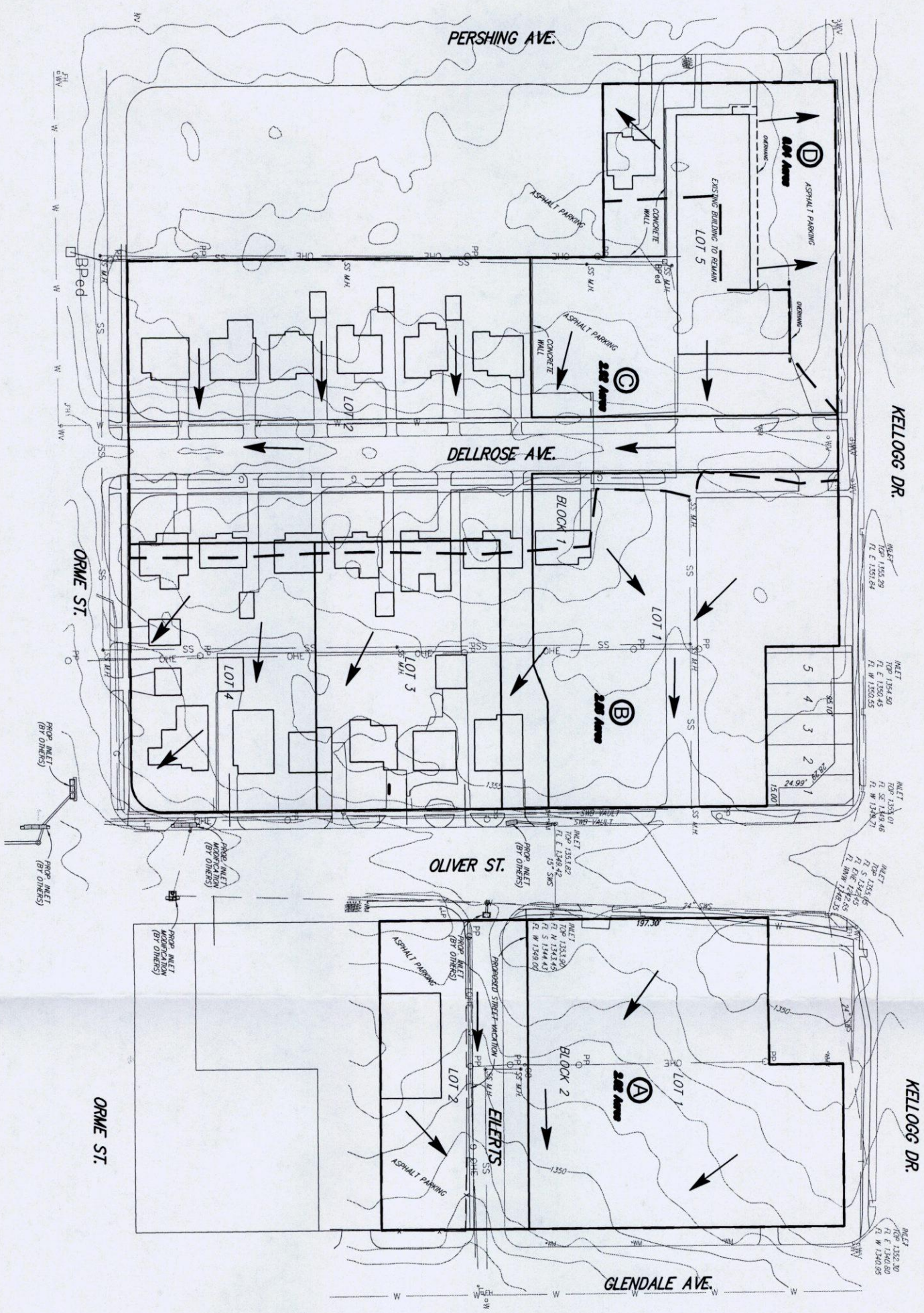
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



DRAINAGE MAP

ANN WALENTA COMMERCIAL ADDITION

Wichita, Sedgwick County, Kansas



NOTE: SEE SHEET 101 FOR THE LOCATION OF THE EXISTING SEWER MAIN AND THE LOCATION OF THE EXISTING MANHOLE.

NOTE: SEE SHEET 102 FOR THE LOCATION OF THE EXISTING SEWER MAIN AND THE LOCATION OF THE EXISTING MANHOLE.

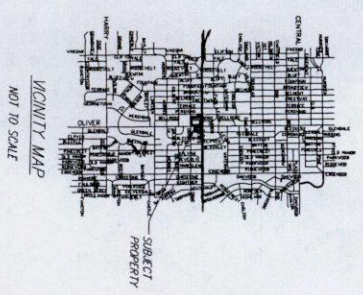
NOTE: SEE SHEET 103 FOR THE LOCATION OF THE EXISTING SEWER MAIN AND THE LOCATION OF THE EXISTING MANHOLE.

- NOTES:**
1. EXCESS RAINFALL FROM THE 100-YEAR DESIGN STORM SHALL BE EXCLUDED AND NOT RETAINED ON SITE.
 2. EXCESS RAINFALL FROM THE 100-YEAR DESIGN STORM SHALL BE EXCLUDED AND NOT RETAINED ON SITE.
 3. EXCESS RAINFALL FROM THE 100-YEAR DESIGN STORM SHALL BE EXCLUDED AND NOT RETAINED ON SITE.
 4. FINAL DRAINAGE SYSTEM DESIGN INCLUDING MANHOLE AND DETENTION CALCULATIONS SHALL BE DESIGNED AT THE TIME OF DEVELOPMENT.

NO.	AREA (SQ. FT.)	PERCENT IMPERVIOUS	DRAINAGE AREA (SQ. FT.)	COEFFICIENT OF RUNOFF	PEAK FLOW (GPM)	PEAK FLOW (MGD)
1	10,000	80%	8,000	0.5	1,000	0.013
2	10,000	80%	8,000	0.5	1,000	0.013
3	10,000	80%	8,000	0.5	1,000	0.013
4	10,000	80%	8,000	0.5	1,000	0.013
5	10,000	80%	8,000	0.5	1,000	0.013
6	10,000	80%	8,000	0.5	1,000	0.013
7	10,000	80%	8,000	0.5	1,000	0.013
8	10,000	80%	8,000	0.5	1,000	0.013
9	10,000	80%	8,000	0.5	1,000	0.013
10	10,000	80%	8,000	0.5	1,000	0.013
TOTAL	100,000	80%	80,000	0.5	10,000	0.13

PROVIDE A 10% BUFFER ZONE ON THE TOP OF CURB AT THE CORNER OF INTERSECTION OF THE MAIN AND ELLEN ST. (SEE SHEET 101 FOR DETAILS).

PROVIDE A 10% BUFFER ZONE ON THE TOP OF CURB AT THE CORNER OF INTERSECTION OF THE MAIN AND ELLEN ST. (SEE SHEET 101 FOR DETAILS).



INDICITY MAP
NO. 10 SHEET

Ruediger & Bohm, P.A.
Engineering, Surveying, Land Planning
524 North Main Street
Wichita, Kansas 67203
(316) 261-8000
www.ruedigerbohm.com
E-mail: info@ruebohm.com

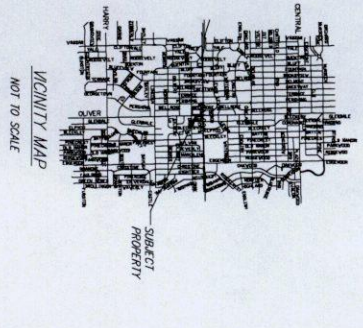
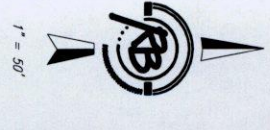
SITE AERIAL

ANN VALENTA COMMERCIAL ADDITION

Wichita, Sedgwick County, Kansas



BEFORE THESE PLANS ARE SUBMITTED TO THE BOARD OF PLANNING AND ZONING, THE APPLICANT SHALL OBTAIN APPROVAL OF THE BOARD OF PLANNING AND ZONING FOR THE PROPOSED CHANGES TO THE ZONING MAP OF THE CITY OF WICHITA, KANSAS. THE APPLICANT SHALL ALSO OBTAIN APPROVAL OF THE BOARD OF PLANNING AND ZONING FOR THE PROPOSED CHANGES TO THE ZONING MAP OF THE CITY OF WICHITA, KANSAS. THE APPLICANT SHALL ALSO OBTAIN APPROVAL OF THE BOARD OF PLANNING AND ZONING FOR THE PROPOSED CHANGES TO THE ZONING MAP OF THE CITY OF WICHITA, KANSAS.

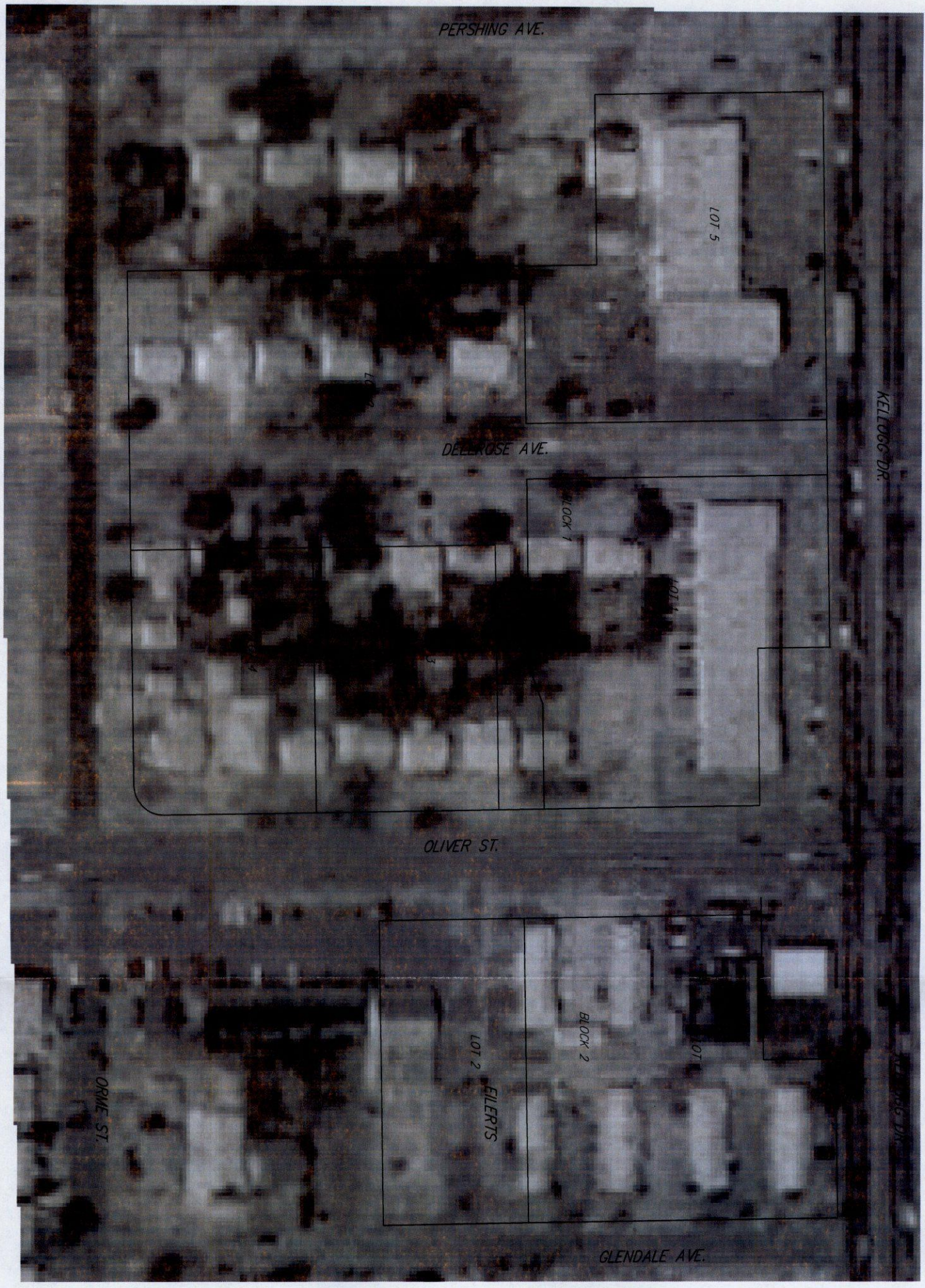


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 301 West Main
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1996 SITE AERIAL

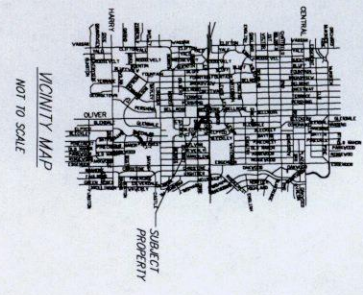
ANN VALENTA COMMERCIAL ADDITION

Wichita, Sedgwick County, Kansas



RECORD MAPS CHANGED TO SHOW ON THE 100' OF CORNER OF PERSHING ON THE SOUTH SIDE OF F. WILKINS DR. S. 1/4 SECTION 16, T23N R12E S11W. (RECORDED)

RECORD MAPS CHANGED TO SHOW ON THE 100' OF CORNER OF PERSHING ON THE SOUTH SIDE OF F. WILKINS DR. S. 1/4 SECTION 16, T23N R12E S11W. (RECORDED)



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PLAT

HEC-HMS OUTPUT

Project: 3391E Simulation Run: 2-yr

Start of Run: 01Jan2009, 12:00 Basin Model: Existing
End of Run: 02Jan2009, 12:15 Meteorologic Model: 2-yr
Compute Time: 09Mar2009, 08:19:31 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.00315	5.6	02Jan2009, 00:00	3.09
B	0.00445	7.2	02Jan2009, 00:00	2.81
C	0.00456	7.4	02Jan2009, 00:00	2.81
D	0.00100	1.6	02Jan2009, 00:00	2.81

Project: 3391E Simulation Run: 5-yr

Start of Run: 01Jan2009, 12:00 Basin Model: Existing
End of Run: 02Jan2009, 12:15 Meteorologic Model: 5-yr
Compute Time: 09Mar2009, 08:19:34 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.00315	7.3	02Jan2009, 00:00	4.06
B	0.00445	9.7	02Jan2009, 00:00	3.75
C	0.00456	9.9	02Jan2009, 00:00	3.75
D	0.00100	2.2	02Jan2009, 00:00	3.75

Project: 3391E Simulation Run: 10-yr

Start of Run: 01Jan2009, 12:00 Basin Model: Existing
End of Run: 02Jan2009, 12:15 Meteorologic Model: 10-yr
Compute Time: 09Mar2009, 08:19:24 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.00315	8.4	02Jan2009, 00:00	4.65
B	0.00445	11.2	02Jan2009, 00:00	4.33
C	0.00456	11.5	02Jan2009, 00:00	4.33
D	0.00100	2.5	02Jan2009, 00:00	4.33

Project: 3391E Simulation Run: 25-yr

Start of Run: 01Jan2009, 12:00 Basin Model: Existing
End of Run: 02Jan2009, 12:15 Meteorologic Model: 25-yr
Compute Time: 09Mar2009, 08:19:27 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.00315	10.2	02Jan2009, 00:00	5.63
B	0.00445	13.7	02Jan2009, 00:00	5.29
C	0.00456	14.0	02Jan2009, 00:00	5.29
D	0.00100	3.1	02Jan2009, 00:00	5.29

Project: 3391E Simulation Run: 100-yr

Start of Run: 01Jan2009, 12:00 Basin Model: Existing
End of Run: 02Jan2009, 12:15 Meteorologic Model: 100-yr
Compute Time: 09Mar2009, 08:19:21 Control Specifications: Control 1

Volume Units: IN

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.00315	13.2	02Jan2009, 00:00	7.32
B	0.00445	18.0	02Jan2009, 00:00	6.95
C	0.00456	18.4	02Jan2009, 00:00	6.95
D	0.00100	4.0	02Jan2009, 00:00	6.95