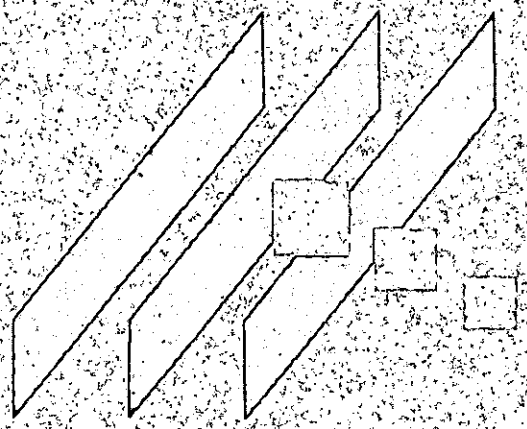
MKEC ENGINEERING CONSULTANTS, INC



DRAINAGE REPORT

FOR

Commercial

AUBURN HILLS FOURTH ADDITION

Wichita, Sedgwick County, Kansas

August 2005

411 NORTH WEBB ROAD WICHITA, KS 67206 T 316.684.9600 F 316.684.5100

Drainage Report
Auburn Hills 4TH Addition
Wichita, Sedgwick County, Kansas

Location

The subject property is in the city of Wichita, Sedgwick County, Kansas. The proposed development is located south of Maple Street and east of 135th Street West, in the NW ¼ of Section 25, Township 27 South, Range 2 West. The site is approximately 4.6 acres and was previously plated in Auburn Hills 3rd Addition. The entry for the site will be on located on Maple Street. The site is shown on the Sedgwick County, Kansas Quadrangle, located in Appendix A.

Soils

According to the NRCS (SCS) Sedgwick County Soil Survey (Appendix B) soils on the site are Vanoss silt loam, 1 to 3 percent slopes, (Vb – HSG "B"). The Hydrologic Soil Group used to select runoff coefficients for the site is "B".

Pre-Project Conditions

Pre-Project Development
The site is currently vacant but was previously plated for commercial use.

Pre-Project Landform and Slope
Slopes across the site range from 0.5-2.0%.

Pre-Project Drainage Conditions
The site is entirely in Zone C, areas of minimal flooding. The nearest Zone B, area 500-year flood, is located approximately 1000 feet east of the site. The nearest Zone A1, area within the 100-year flood plain, is located approximately 1080 feet east of the site (FIRM Panel 200, Sedgwick County, Kansas, June 3, 1986) (Appendix C).

Pre-Project Runoff Characteristics
The site drains from south to north into an existing detention pond on the north side of the property. The pond was designed to provided detention for the site as well as approximately 12.7 acres of commercial land west of the property, and approximately 1.4 acres of residential land east of the property. Two-15" CERTA LOK PVC pipes act as the pond's outlet structure. This system routes water from the pond to an existing concrete flume on the north side of Maple Street. Manning equation was used to estimate the flow though the existing 2-15" pipes. A Manning roughness coefficient of

0.011 and a slope of 0.25% were used for the calculations. Approximately 7.7 cfs may flow through the system. This flow was used as the existing condition.

Post-Project Conditions

Post-Project Development
The site will develop as a single commercial lot, with access to Maple Street and the existing commercial parking lot to the west.

Post-Project Landform and Slope
The existing pond will be filled and a new pond will be constructed in the southern portion of the site. The site will be graded so that the water flows from north to south. Post-Project slopes will range from 0.5% to 2.0%. The Lot Grading Plan is in Appendix D. Stormwater sewer (SWS) will route runoff from the site into the proposed detention pond. The Drainage and Utility Plan, Appendix E, shows proposed utilities and the detention pond location.

Post-Project Runoff Characteristics
The existing 2-15" pipes flowing under Maple Street control the flow offsite. This system has a capacity of approximately 7.7-cfs. An 18" SWS will route runoff from the proposed pond a proposed inlet that will connect the 18" SWS and the 2-15" pipes. Approximately 0.2 acres will be allowed to exit the site without detention via the proposed inlet. Post-project conditions were modeled using Hydraflow Hydrographs by Intelisolve, Appendix F. The site was divided into sub-watersheds to size the SWS. The sub-watersheds are shown in the Drainage and Utility Plan, Appendix E. The SWS was sized using the Rational Method, the time of concentration to each inlet was determined using the FAA Method, Appendix G. A summary of the post-project flows is located below in Table 1.

Table 1. Post-Project runoff.

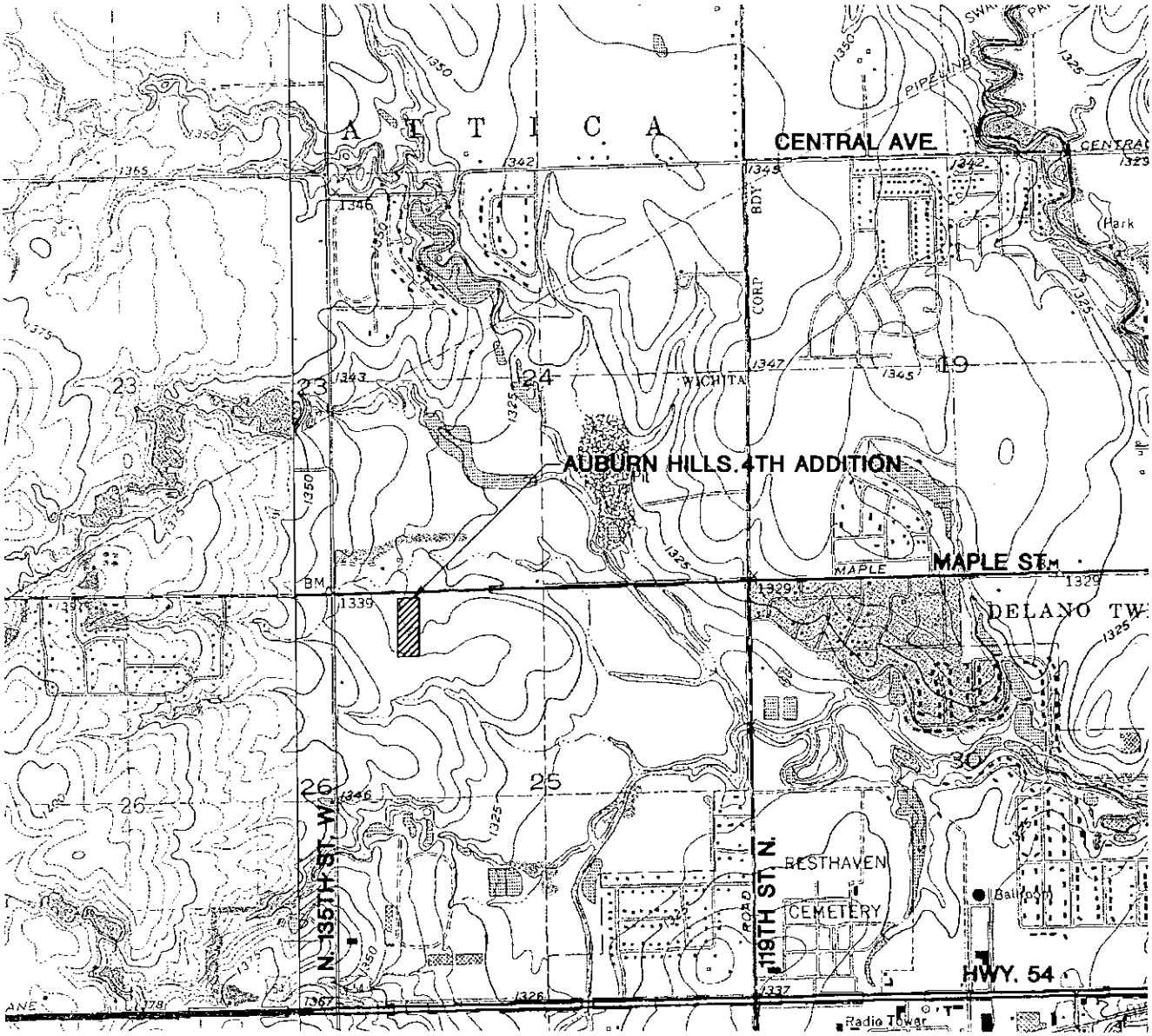
	2-Year	5-Year	10-Year	100-Year
Flow into Pond Existing Commercial	44.4	52.5	60.3	85.1
Flow into Pond Existing Residential	3.2	3.8	4.4	6.2
Flow into Pond Proposed Commercial	15.8	18.7	21.5	30.3
Flow Offsite from Pond	5.9	5.9	6.3	7.2
Flow Offsite Proposed Commercial	0.5	0.6	0.7	1.0
Total Flow Offsite	6.1	6.3	6.4	7.4

The total runoff offsite will be able to exit through the existing SWS during a 100-year event. The existing structure removing water from the site will remain unchanged; therefore the change of flow from pre-project to post-project is negligible.

Summary

The Auburn Hills Commercial 4th Addition is approximately 4.6 acres located east of 135th Street West and south of Maple Street. This site was previously plated as Auburn Hills Commercial 3rd Addition. An existing pond on-site provides detention for Auburn Hills Commercial addition and a portion of Auburn Hills Residential Addition. When the site develops the pond will be replaced with a new pond in reserve on the south side of the property. Stormwater runoff from the commercial site west of the property and the residential site will be routed into the pond. Flow leaving the site is controlled by an existing 2-15" pipes. Since the same structure controls the flow offsite from pre to post-project changes in flow-rates are negligible.

Appendix A
Quadrangle



SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

J:\CIVIL\05403\DWG\DRNG\05403.DWG

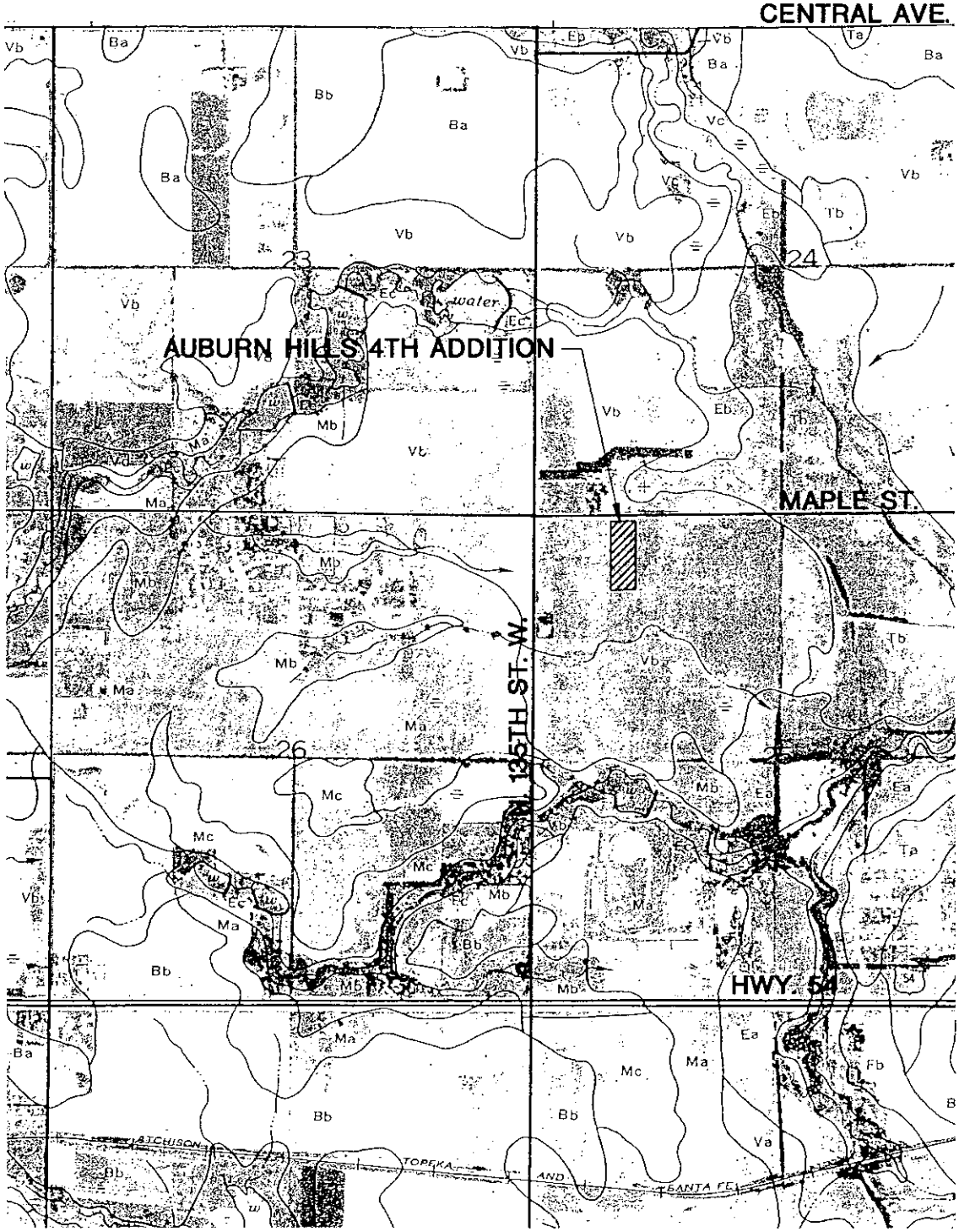
MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

AUBURN HILLS 4TH ADDITION
PROJECT NAME

USGS GEOLOGICAL SURVEY
WICHITA WEST, KANSAS QUANRANGLE
SHEET TITLE

AJK	KWS	CJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST 2005	05403	1 / 1
DATE	JOB NO.	SHEET/OF

Appendix B
Soil Survey



MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

AUBURN HILL 4TH ADDITION
PROJECT NAME

SOIL SURVEY
SEDGWICK COUNTY, KANSAS
SHEET TITLE

AJK	KWS	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST 2005	05403	1 / 1
DATE	JOB NO.	SHEET/OF

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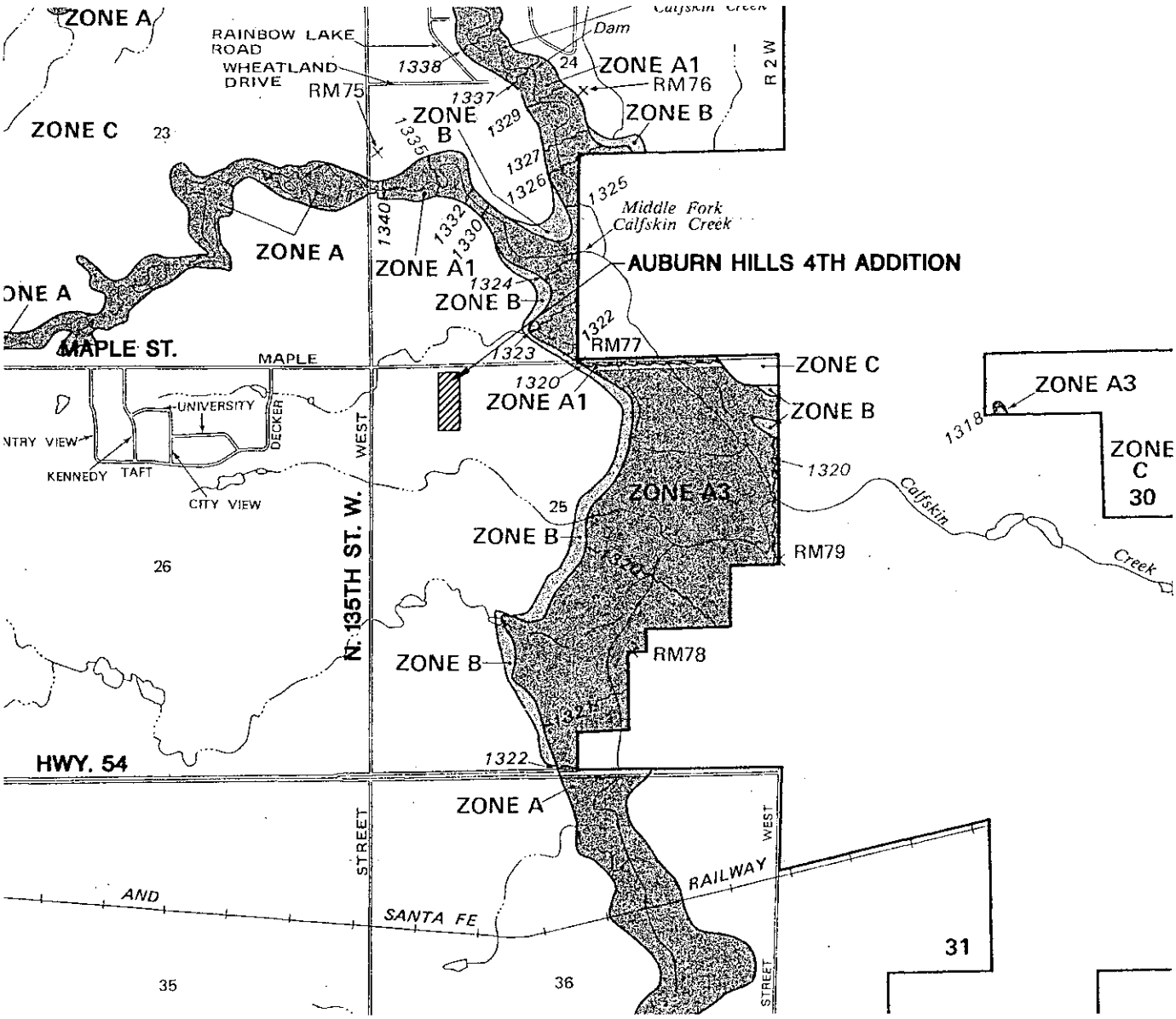
Appendix C
FIRM & FBFM



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SEDGWICK COUNTY, KANSAS
(UNINCORPORATED AREAS)

PANEL 200 OF 300

COMMUNITY-PANEL NUMBER
200321 0200 A

EFFECTIVE DATE:
JUNE 3, 1986

Federal Emergency Management Agency

APPROXIMATE SCALE
2000 0 2000 FEET

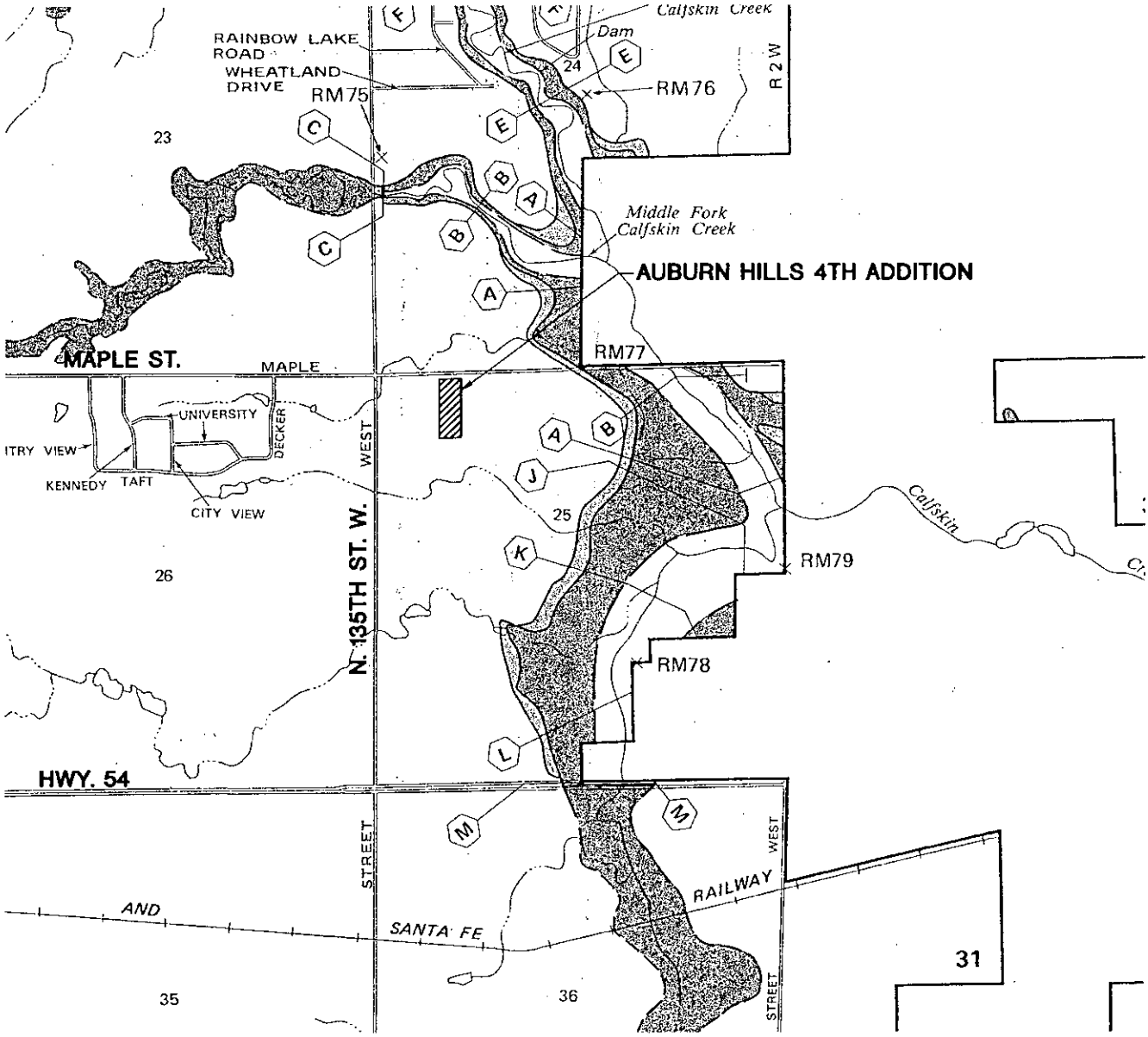
C:\CIVIL\04094\DWG\DRNG\FIRM.DWG

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

AUBURN HILL 4TH ADDITION
PROJECT NAME

FLOOD INSURANCE RATE MAP
SEDGWICK COUNTY, KANSAS
SHEET TITLE

AJK	KWS	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST 2005	04094	1 / 1
DATE	JOB NO.	SHEET/OF



NATIONAL FLOOD INSURANCE PROGRAM

FLOODWAY

FLOOD BOUNDARY AND FLOODWAY MAP

SEDGWICK COUNTY, KANSAS
(UNINCORPORATED AREAS)

PANEL 200 OF 300
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
200321 0200

EFFECTIVE DATE:
JUNE 3, 1986

Federal Emergency Management Agency

APPROXIMATE SCALE
2000 0 2000 FEET

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

AUBURN HILL 4TH ADDITION
PROJECT NAME

FLOOD BOUNDARY AND FLOODWAY MAP
SHEET TITLE

AJK	KWS	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:

AUGUST 2005	04503	1 / 1
DATE	JOB NO.	SHEET/OF

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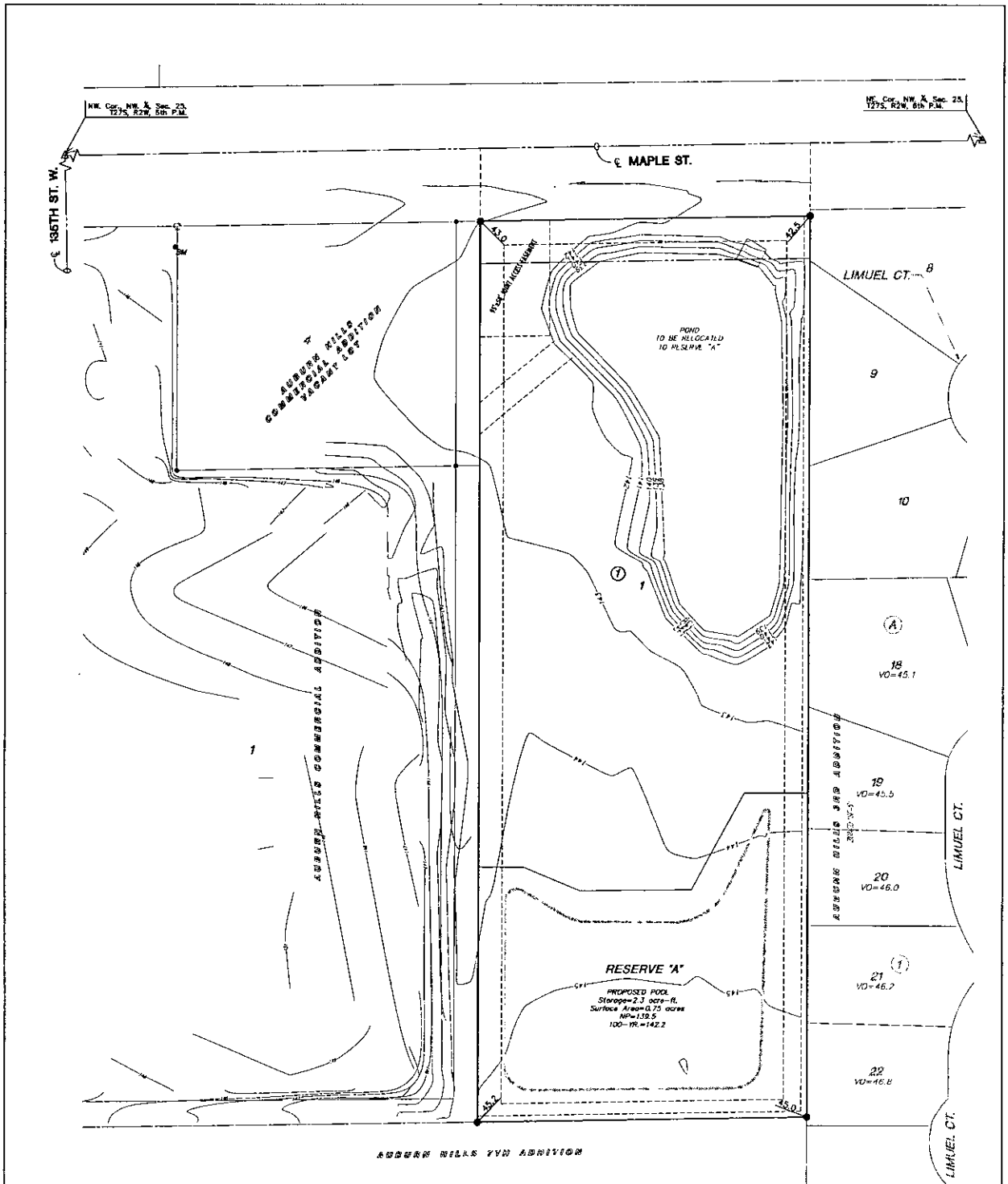
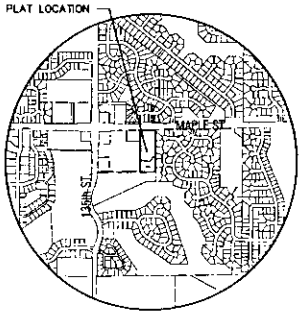
Appendix D
Lot Grading Plan



LEGEND

- CONIFEROUS TREE & DIAMETER
- DECIDUOUS TREE & DIAMETER
- SIGN
- BUSH
- EDGE OF TREES
- FENCE
- SANITARY SEWER MANHOLE
- GAS METER
- POLE
- HIGH LINE POLE
- GATE
- WALL
- LIGHT POLE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- POWER POLE AND GUY ANCHOR
- TELEPHONE RISER
- INLET
- STORM SEWER PIPE
- WATER LINE
- SANITARY SEWER LINE
- GAS LINE
- TELEPHONE LINE
- UNDERGROUND ELECTRIC LINE
- OVERHEAD TELEPHONE
- OVERHEAD ELECTRIC
- UNDERGROUND FIBER OPTIC CABLE
- SECTION CORNER
- PROPERTY CORNER FOUND
- BENCHMARK
- ELEVATIONS

PLAT LOCATION



VICINITY MAP

0 40 80

BENCH MARK

BM Cut on East Side of Light Pole Base
Elev. = 147.63 City Datum

MINIMUM PAD ELEVATIONS (LOWEST OPENINGS)			
LOTS	BLOCK	ELEVATION (CITY DATUM)	ELEVATION (NGVD)
1	1	145.2	1332.6

NOTES

1. ZONING: Existing - NR & SF-5 & P.O.-130
   Proposed - ALL NR & P.O.-130 as per the terms and provisions contained in the document entitled "Notice of Protective Overlay" recorded as Doc/Pm-Pg: 28591454 of official records.
2. EXISTING USE: Vacant Land
3. PLAT AREA: 4.64 AC
4. SURVEY DATE: May 10th, 2005 (Baughman, Co., P.A.)
5. MINIMUM PADS: As shown on the Final Drainage Plan
6. LOT TOTAL: 1
7. RESERVE "A": Drainage, open space, landscaping, irrigation.
8. Per FEMA FIRM 200321 0200 A, effective date of June 3rd, 1986, subject property lies w/in Zone C.

LOT GRADING PLAN

AUBURN HILLS COMMERCIAL 4th ADDITION

OWNER / DEVELOPER: Occidental Management, Inc. 300 N. Main St. Wichita, KS 67202

Date: August 8th, 2005

MKEC ENGINEERING CONSULTANTS

NW. Cor., NW. ¼, Sec. 25, T27S, R2W, 6th P.M.

NE. Cor., NW. ¼, Sec. 25, T27S, R2W, 6th P.M.

℄ 135TH ST. W.

℄ MAPLE ST.

SSMH TOP=144.52

15" SAN. SWR.

SSMH TOP=142.01
FL=135.09

SSMH TOP=143.20
FL OUT=136.29
FL IN=136.39

SSMH TOP=
FL OUT=
FL IN=136.0

SURFACE OFFSITE

LIMUEL CT.

8

9

10

AUBURN HILLS COMMERCIAL ADDITION VACANT LOT

4

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

24' ASS'D JOINT ACCESS EASEMENT

LINE TO BE PLUGGED

POND TO BE RELOCATED TO RESERVE "A"

CONCEPT PARKING

CONCEPT BUILDING LAYOUT

PROP. 36" SWS.

PROP. 42" SWS.

PROP. 24" SWS.

PROP. 18" SWS.

PROP. 48" SWS.

PROP. 15" SWS.

PROP. 12" SWS.

PROP. 45" SWS.

36"RCP

2-24"RCP

2-18"RCP

EXIST. COMMERCIAL

AUBURN HILLS COMMERCIAL ADDITION

ASPHALT

ICV

3.29 ac.

DILLONS STORE #81
13415 W. MAPLE ST.
WICHITA, KS 67235

Well w/ Switchboard

EXIST. CONC. WALL

RESERVE "A"
1.35 ac.

PROPOSED POOL
Storage=2.3 acre-ft.
Surface Area=0.75 acres
NP=139.5
100-YR.=142.2

NEW COMMERCIAL

EXIST. RESIDENTIAL

AUBURN HILLS 3RD ADDITION
ZONED SF-5

SSMH TOP=144.70
FL OUT=135.92
FL IN=136.02

18
VO=45.1

19
VO=45.5

20
VO=46.0

SSMH TOP=144.05
FL OUT=136.12
FL IN=137.22

21
VO=46.2

22
VO=46.8

23
VO=48.2

24

SSMH TOP=148.50
FL OUT=138.55
FL IN=138.65

0 40 80

PLAT LOCATION

MAPLE ST.

135th ST.

VICINITY MAP

LEGEND

- 6IN – CONIFEROUS TREE & DIAMETER
- 3IN – DECIDUOUS TREE & DIAMETER
- SN – SIGN
- BUSH
- EDGE OF TREES
- FENCE
- SSMH – SANITARY SEWER MANHOLE
- GM – GAS METER
- POLE – POLE
- HLP – HIGH LINE POLE
- GATE
- WALL
- LP – LIGHT POLE
- FH – FIRE HYDRANT
- WV – WATER VALVE
- WM – WATER METER
- (A) – SUB-WATER DRNG. LABELS
- FLOW ARROW
- PP–K – POWER POLE AND GUY ANCHOR
- TR – TELEPHONE RISER
- INLET
- STORM SEWER PIPE
- W – WATER LINE
- SS – SANITARY SEWER LINE
- G – GAS LINE
- UGT – TELEPHONE LINE
- UGE – UNDERGROUND ELECTRIC LINE
- OHT – OVERHEAD TELEPHONE
- OHE – OVERHEAD ELECTRIC
- FOC – UNDERGROUND FIBER OPTIC CABLE
- SECTION CORNER
- PROPERTY CORNER FOUND
- BM – BENCHMARK
- HYDRFLOW BOUNDARIES
- INLET DRNG. AREAS

BENCH MARK

BM "□" Cut on East Side of Light Pole Base
Elev. = 147.63 City Datum

DRAINAGE AND UTILITY PLAN
AUBURN HILLS COMMERCIAL 4th ADDITION

OWNER / DEVELOPER: Occidental Management, Inc. 300 N. Main St. Wichita, KS 67202

Date: August 8th, 2005

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

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NW. Cor., NW. ¼, Sec. 25, T27S, R2W, 6th P.M.

NE. Cor., NW. ¼, Sec. 25, T27S, R2W, 6th P.M.

℄ MAPLE ST.

℄ 135TH ST. W.

BM

43.0

42.5

35'-0" JOINT ACCESS EASEMENT

POND TO BE RELOCATED TO RESERVE "A"

LIMUEL CT.

8

9

10

4

AUBURN HILLS COMMERCIAL ADDITION VACANT LOT

AUBURN HILLS COMMERCIAL ADDITION

1

(1)

A

18
VO=45.1

19
VO=45.5

AUBURN HILLS 3RD ADDITION

POND SF-5

20
VO=46.0

LIMUEL CT.

1

21
VO=46.2

22
VO=46.8

LIMUEL CT.

23
VO=48.2

24

RESERVE "A"

PROPOSED POOL
Storage=2.3 acre-ft.
Surface Area=0.75 acres
NP=139.5
100-YR.=142.2

45.2

45.0

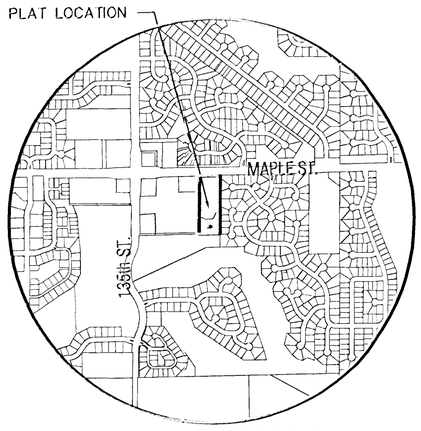
AUBURN HILLS 7TH ADDITION

LEGEND

- SIN – CONIFEROUS TREE & DIAMETER
- SIN – DECIDUOUS TREE & DIAMETER
- SN – SIGN
- BUSH
- EDGE OF TREES
- FENCE
- SSMH – SANITARY SEWER MANHOLE
- GM – GAS METER
- POLE – POLE
- HLP – HIGH LINE POLE
- GATE
- WALL
- LP – LIGHT POLE
- FH – FIRE HYDRANT
- WV – WATER VALVE
- WM – WATER METER
- PP – POWER POLE AND GUY ANCHOR
- TR – TELEPHONE RISER
- INLET
- STORM SEWER PIPE
- W – WATER LINE
- SS – SANITARY SEWER LINE
- G – GAS LINE
- UGT – TELEPHONE LINE
- UGE – UNDERGROUND ELECTRIC LINE
- OHT – OVERHEAD TELEPHONE
- OHE – OVERHEAD ELECTRIC
- FOC – UNDERGROUND FIBER OPTIC CABLE
- SECTION CORNER
- PROPERTY CORNER FOUND
- BM – BENCHMARK
- XXX – ELEVATIONS

0 40 80

PLAT LOCATION



VICINITY MAP

BENCH MARK

BM "□" Cut on East Side of Light Pole Base
Elev. = 147.63 City Datum

MINIMUM PAD ELEVATIONS (LOWEST OPENINGS)			
LOTS	BLOCK	ELEVATION (CITY DATUM)	ELEVATION (NGVD)
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NOTES

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5. MINIMUM PADS: As shown on the Final Drainage Plan
6. LOT TOTAL: 1
7. RESERVE "A": Drainage, opens pace, landscaping, irrigation.
8. Per FEMA FIRM 200321 0200 A, effective date of June 3rd, 1986, subject property lies w/in Zone C.

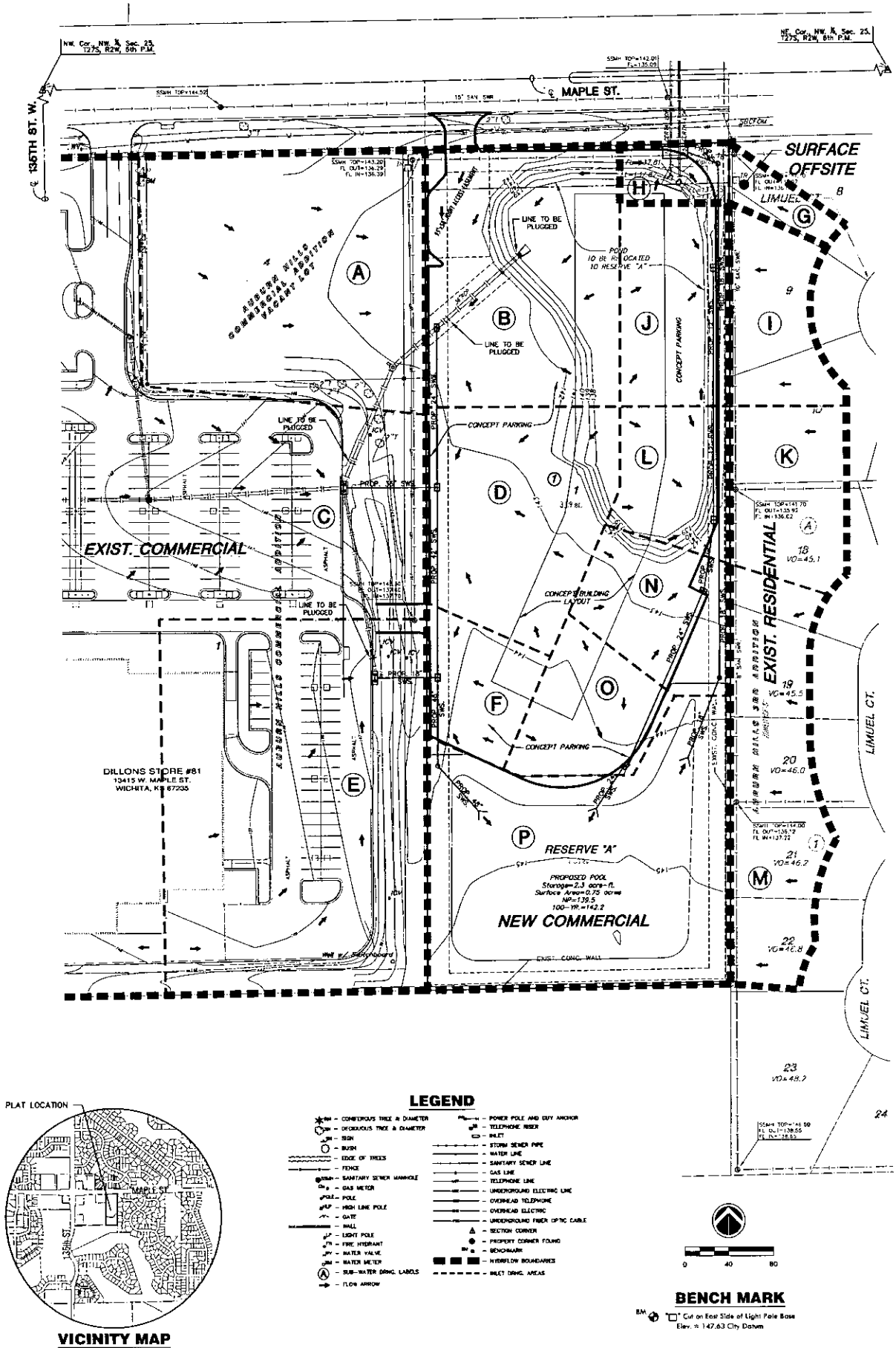
LOT GRADING PLAN
AUBURN HILLS COMMERCIAL 4th ADDITION

OWNER / DEVELOPER: Occidental Management, Inc. 300 N. Main St. Wichita, KS 67202

Date: August 8th, 2005

MKEC ENGINEERING CONSULTANTS
411 N. PEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

Appendix E
Drainage and Utility Plan



PLAT LOCATION

VICINITY MAP

LEGEND

- CONIFEROUS TREE & DIAMETER
- DECIDUOUS TREE & DIAMETER
- SIGN
- BUSH
- EDGE OF TREES
- FENCE
- SANITARY SEWER MANHOLE
- GAS METER
- POLE
- HIGH LINE POLE
- GATE
- WALL
- LIGHT POLE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SUB-WATER DRNG. LABELS
- FLOW ARROW
- POWER POLE AND GUY ANCHOR
- TELEPHONE RISER
- INLET
- STORM SEWER PIPE
- WATER LINE
- SANITARY SEWER LINE
- GAS LINE
- TELEPHONE LINE
- UNDERGROUND ELECTRIC LINE
- OVERHEAD TELEPHONE
- OVERHEAD ELECTRIC
- UNDERGROUND FIBER OPTIC CABLE
- SECTION CORNER
- PROPERTY CORNER FOUND
- BENCHMARK
- HYDRAFLOW BOUNDARIES
- INLET DRNG. AREAS

0 40 80

BENCH MARK

BM "□" Cut on East Side of Light Pole Base
Elev. = 147.63 City Datum

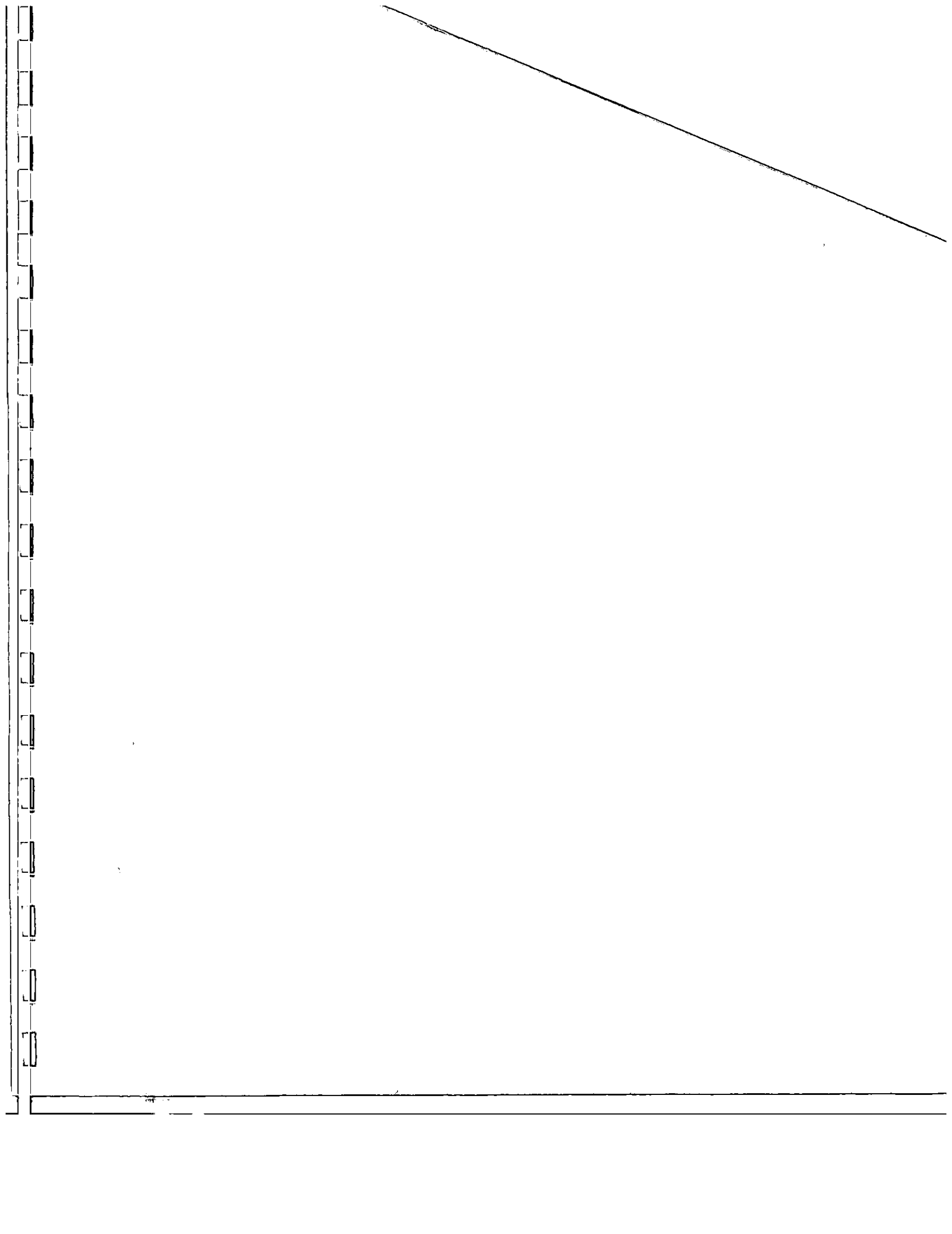
DRAINAGE AND UTILITY PLAN

AUBURN HILLS COMMERCIAL 4th ADDITION

OWNER / DEVELOPER: Occidental Management, Inc. 300 N. Main St. Wichita, KS 67202

Date: August 8th, 2005

MKEC ENGINEERING CONSULTANTS



Appendix F

Hydraflow Hydrographs

By Intelisolve

Output

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	Rational	-------	-------	15.83	-------	18.71	21.47	-------	-------	30.29	New Commercial
2	Rational	-------	-------	3.23	-------	3.81	4.38	-------	-------	6.18	Existing Res
3	Rational	-------	-------	44.44	-------	52.53	60.29	-------	-------	85.05	Existing Commercial
4	Combine	1, 2, 3	-------	63.50	-------	75.06	86.14	-------	-------	121.52	Flow Into Pond
5	Reservoir	4	-------	5.90	-------	5.91	6.27	-------	-------	7.22	Prop. Pond
6	Rational	-------	-------	0.51	-------	0.61	0.70	-------	-------	0.98	Surface offsite
7	Combine	5, 6	-------	6.10	-------	6.25	6.41	-------	-------	7.42	Total offsite

Proj. file: Post.gpw

Run date: 08-08-2005

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	Rational	15.83	1	15	0.327	----	------	------	New Commercial
2	Rational	3.23	1	15	0.067	----	------	------	Existing Res
3	Rational	44.44	1	15	0.918	----	------	------	Existing Commercial
4	Combine	63.50	1	15	1.312	1, 2, 3	------	------	Flow Into Pond
5	Reservoir	5.90	1	37	1.267	4	140.90	1.193	Prop. Pond
6	Rational	0.51	1	15	0.011	----	------	------	Surface offsite
7	Combine	6.10	1	24	1.278	5, 6	------	------	Total offsite

Proj. file: Post.gpw | Return Period: 2 yr | Run date: 08-08-2005

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	Rational	18.71	1	15	0.387	----	------	------	New Commercial
2	Rational	3.81	1	15	0.079	----	------	------	Existing Res
3	Rational	52.53	1	15	1.085	----	------	------	Existing Commercial
4	Combine	75.06	1	15	1.551	1, 2, 3	------	------	Flow Into Pond
5	Reservoir	5.91	1	29	1.504	4	141.23	1.420	Prop. Pond
6	Rational	0.61	1	15	0.013	----	------	------	Surface offsite
7	Combine	6.25	1	19	1.517	5, 6	------	------	Total offsite

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	Rational	21.47	1	15	0.444	----	------	------	New Commercial
2	Rational	4.38	1	15	0.090	----	------	------	Existing Res
3	Rational	60.29	1	15	1.246	----	------	------	Existing Commercial
4	Combine	86.14	1	15	1.780	1, 2, 3	------	------	Flow Into Pond
5	Reservoir	6.27	1	29	1.732	4	141.48	1.638	Prop. Pond
6	Rational	0.70	1	15	0.014	----	------	------	Surface offsite
7	Combine	6.41	1	25	1.746	5, 6	------	------	Total offsite

Proj. file: Post.gpw | Return Period: 10 yr | Run date: 08-08-2005

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	Rational	30.29	1	15	0.626	----	------	------	New Commercial
2	Rational	6.18	1	15	0.128	----	------	------	Existing Res
3	Rational	85.05	1	15	1.757	----	------	------	Existing Commercial
4	Combine	121.52	1	15	2.511	1, 2, 3	------	------	Flow Into Pond
5	Reservoir	7.22	1	29	2.459	4	142.22	2.338	Prop. Pond
6	Rational	0.98	1	15	0.020	----	------	------	Surface offsite
7	Combine	7.42	1	25	2.479	5, 6	------	------	Total offsite

Proj. file: Post.gpw | Return Period: 100 yr | Run date: 08-08-2005

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 1

New Commercial

Hydrograph type	= Rational	Peak discharge	= 30.29 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 4.5 ac	Runoff coeff.	= 0.91
Intensity	= 7.365 in/hr	Time of conc. (Tc)	= 15 min
IDF Curve	= SedgwickCoKS.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 0.626 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
0.13	16.16
0.15	18.18
0.17	20.20
0.18	22.22
0.20	24.24
0.22	26.25
0.23	28.27
0.25	30.29 <<
0.27	28.27
0.28	26.25
0.30	24.24
0.32	22.22
0.33	20.20
0.35	18.18
0.37	16.16

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 2

Existing Res

Hydrograph type	= Rational	Peak discharge	= 6.18 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.3 ac	Runoff coeff.	= 0.65
Intensity	= 7.365 in/hr	Time of conc. (Tc)	= 15 min
IDF Curve	= SedgwickCoKS.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 0.128 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
0.13	3.29
0.15	3.71
0.17	4.12
0.18	4.53
0.20	4.94
0.22	5.35
0.23	5.76
0.25	6.18 <<
0.27	5.76
0.28	5.35
0.30	4.94
0.32	4.53
0.33	4.12
0.35	3.71
0.37	3.29

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 3

Existing Commercial

Hydrograph type	= Rational	Peak discharge	= 85.05 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 12.7 ac	Runoff coeff.	= 0.91
Intensity	= 7.365 in/hr	Time of conc. (Tc)	= 15 min
IDF Curve	= SedgwickCoKS.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 1.757 acft

Hydrograph Discharge Table

Time (hrs)	Outflow cfs)
0.13	45.36
0.15	51.03
0.17	56.70
0.18	62.37
0.20	68.04
0.22	73.71
0.23	79.38
0.25	85.05 <<
0.27	79.38
0.28	73.71
0.30	68.04
0.32	62.37
0.33	56.70
0.35	51.03
0.37	45.36

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 4

Flow Into Pond

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 1, 2, 3

Peak discharge = 121.52 cfs
Time interval = 1 min

Hydrograph Volume = 2.511 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 + (cfs)	Hyd. 3 = (cfs)	Outflow (cfs)
0.13	16.16	3.29	45.36	64.81
0.15	18.18	3.71	51.03	72.91
0.17	20.20	4.12	56.70	81.01
0.18	22.22	4.53	62.37	89.12
0.20	24.24	4.94	68.04	97.22
0.22	26.25	5.35	73.71	105.32
0.23	28.27	5.76	79.38	113.42
0.25	30.29 <<	6.18 <<	85.05 <<	121.52 <<
0.27	28.27	5.76	79.38	113.42
0.28	26.25	5.35	73.71	105.32
0.30	24.24	4.94	68.04	97.22
0.32	22.22	4.53	62.37	89.12
0.33	20.20	4.12	56.70	81.01
0.35	18.18	3.71	51.03	72.91
0.37	16.16	3.29	45.36	64.81

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 5

Prop. Pond

Hydrograph type	= Reservoir	Peak discharge	= 7.22 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 4	Reservoir name	= Proposed Pond
Max. Elevation	= 142.22 ft	Max. Storage	= 2.338 acft

Storage Indication method used.

Outflow hydrograph volume = 2.459 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.20	97.22	140.50	4.31	-----	-----	-----	-----	-----	-----	-----	-----	4.31
0.22	105.32	140.65	5.19	-----	-----	-----	-----	-----	-----	-----	-----	5.19
0.23	113.42	140.82	5.75	-----	-----	-----	-----	-----	-----	-----	-----	5.75
0.25	121.52 <<	140.76	5.58	-----	-----	-----	-----	-----	-----	-----	-----	5.58
0.27	113.42	140.86	5.83	-----	-----	-----	-----	-----	-----	-----	-----	5.83
0.28	105.32	141.34	6.07	-----	-----	-----	-----	-----	-----	-----	-----	6.07
0.30	97.22	141.49	6.28	-----	-----	-----	-----	-----	-----	-----	-----	6.28
0.32	89.12	141.62	6.45	-----	-----	-----	-----	-----	-----	-----	-----	6.45
0.33	81.01	141.73	6.60	-----	-----	-----	-----	-----	-----	-----	-----	6.60
0.35	72.91	141.83	6.74	-----	-----	-----	-----	-----	-----	-----	-----	6.74
0.37	64.81	141.92	6.85	-----	-----	-----	-----	-----	-----	-----	-----	6.85
0.38	56.71	142.00	6.95	-----	-----	-----	-----	-----	-----	-----	-----	6.95
0.40	48.61	142.06	7.03	-----	-----	-----	-----	-----	-----	-----	-----	7.03
0.42	40.51	142.12	7.10	-----	-----	-----	-----	-----	-----	-----	-----	7.10
0.43	32.41	142.16	7.15	-----	-----	-----	-----	-----	-----	-----	-----	7.15
0.45	24.30	142.19	7.19	-----	-----	-----	-----	-----	-----	-----	-----	7.19
0.47	16.20	142.21	7.21	-----	-----	-----	-----	-----	-----	-----	-----	7.21
0.48	8.10	142.22 <<	7.22	-----	-----	-----	-----	-----	-----	-----	-----	7.22 <<
0.50	0.00	142.21	7.21	-----	-----	-----	-----	-----	-----	-----	-----	7.21
0.52	0.00	142.20	7.20	-----	-----	-----	-----	-----	-----	-----	-----	7.20
0.53	0.00	142.19	7.19	-----	-----	-----	-----	-----	-----	-----	-----	7.19
0.55	0.00	142.18	7.17	-----	-----	-----	-----	-----	-----	-----	-----	7.17
0.57	0.00	142.17	7.16	-----	-----	-----	-----	-----	-----	-----	-----	7.16
0.58	0.00	142.16	7.15	-----	-----	-----	-----	-----	-----	-----	-----	7.15
0.60	0.00	142.15	7.14	-----	-----	-----	-----	-----	-----	-----	-----	7.14
0.62	0.00	142.14	7.12	-----	-----	-----	-----	-----	-----	-----	-----	7.12
0.63	0.00	142.13	7.11	-----	-----	-----	-----	-----	-----	-----	-----	7.11
0.65	0.00	142.12	7.10	-----	-----	-----	-----	-----	-----	-----	-----	7.10
0.67	0.00	142.11	7.09	-----	-----	-----	-----	-----	-----	-----	-----	7.09
0.68	0.00	142.10	7.07	-----	-----	-----	-----	-----	-----	-----	-----	7.07
0.70	0.00	142.09	7.06	-----	-----	-----	-----	-----	-----	-----	-----	7.06
0.72	0.00	142.08	7.05	-----	-----	-----	-----	-----	-----	-----	-----	7.05
0.73	0.00	142.07	7.04	-----	-----	-----	-----	-----	-----	-----	-----	7.04
0.75	0.00	142.06	7.02	-----	-----	-----	-----	-----	-----	-----	-----	7.02
0.77	0.00	142.05	7.01	-----	-----	-----	-----	-----	-----	-----	-----	7.01
0.78	0.00	142.04	7.00	-----	-----	-----	-----	-----	-----	-----	-----	7.00
0.80	0.00	142.03	6.99	-----	-----	-----	-----	-----	-----	-----	-----	6.99
0.82	0.00	142.02	6.97	-----	-----	-----	-----	-----	-----	-----	-----	6.97

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.83	0.00	142.01	6.96	-----	-----	-----	-----	-----	-----	-----	-----	6.96
0.85	0.00	142.00	6.95	-----	-----	-----	-----	-----	-----	-----	-----	6.95
0.87	0.00	141.99	6.94	-----	-----	-----	-----	-----	-----	-----	-----	6.94
0.88	0.00	141.98	6.92	-----	-----	-----	-----	-----	-----	-----	-----	6.92
0.90	0.00	141.97	6.91	-----	-----	-----	-----	-----	-----	-----	-----	6.91
0.92	0.00	141.96	6.90	-----	-----	-----	-----	-----	-----	-----	-----	6.90
0.93	0.00	141.95	6.89	-----	-----	-----	-----	-----	-----	-----	-----	6.89
0.95	0.00	141.94	6.87	-----	-----	-----	-----	-----	-----	-----	-----	6.87
0.97	0.00	141.93	6.86	-----	-----	-----	-----	-----	-----	-----	-----	6.86
0.98	0.00	141.92	6.85	-----	-----	-----	-----	-----	-----	-----	-----	6.85
1.00	0.00	141.91	6.84	-----	-----	-----	-----	-----	-----	-----	-----	6.84
1.02	0.00	141.90	6.82	-----	-----	-----	-----	-----	-----	-----	-----	6.82
1.03	0.00	141.89	6.81	-----	-----	-----	-----	-----	-----	-----	-----	6.81
1.05	0.00	141.88	6.80	-----	-----	-----	-----	-----	-----	-----	-----	6.80
1.07	0.00	141.87	6.79	-----	-----	-----	-----	-----	-----	-----	-----	6.79
1.08	0.00	141.86	6.77	-----	-----	-----	-----	-----	-----	-----	-----	6.77
1.10	0.00	141.85	6.76	-----	-----	-----	-----	-----	-----	-----	-----	6.76
1.12	0.00	141.84	6.75	-----	-----	-----	-----	-----	-----	-----	-----	6.75
1.13	0.00	141.83	6.74	-----	-----	-----	-----	-----	-----	-----	-----	6.74
1.15	0.00	141.82	6.72	-----	-----	-----	-----	-----	-----	-----	-----	6.72
1.17	0.00	141.81	6.71	-----	-----	-----	-----	-----	-----	-----	-----	6.71
1.18	0.00	141.80	6.70	-----	-----	-----	-----	-----	-----	-----	-----	6.70
1.20	0.00	141.79	6.69	-----	-----	-----	-----	-----	-----	-----	-----	6.69
1.22	0.00	141.78	6.67	-----	-----	-----	-----	-----	-----	-----	-----	6.67
1.23	0.00	141.77	6.66	-----	-----	-----	-----	-----	-----	-----	-----	6.66
1.25	0.00	141.76	6.65	-----	-----	-----	-----	-----	-----	-----	-----	6.65
1.27	0.00	141.75	6.64	-----	-----	-----	-----	-----	-----	-----	-----	6.64
1.28	0.00	141.74	6.62	-----	-----	-----	-----	-----	-----	-----	-----	6.62
1.30	0.00	141.73	6.61	-----	-----	-----	-----	-----	-----	-----	-----	6.61
1.32	0.00	141.72	6.60	-----	-----	-----	-----	-----	-----	-----	-----	6.60
1.33	0.00	141.71	6.59	-----	-----	-----	-----	-----	-----	-----	-----	6.59
1.35	0.00	141.70	6.57	-----	-----	-----	-----	-----	-----	-----	-----	6.57
1.37	0.00	141.69	6.56	-----	-----	-----	-----	-----	-----	-----	-----	6.56
1.38	0.00	141.69	6.55	-----	-----	-----	-----	-----	-----	-----	-----	6.55
1.40	0.00	141.68	6.54	-----	-----	-----	-----	-----	-----	-----	-----	6.54
1.42	0.00	141.67	6.52	-----	-----	-----	-----	-----	-----	-----	-----	6.52
1.43	0.00	141.66	6.51	-----	-----	-----	-----	-----	-----	-----	-----	6.51
1.45	0.00	141.65	6.50	-----	-----	-----	-----	-----	-----	-----	-----	6.50
1.47	0.00	141.64	6.48	-----	-----	-----	-----	-----	-----	-----	-----	6.48
1.48	0.00	141.63	6.47	-----	-----	-----	-----	-----	-----	-----	-----	6.47
1.50	0.00	141.62	6.46	-----	-----	-----	-----	-----	-----	-----	-----	6.46
1.52	0.00	141.61	6.45	-----	-----	-----	-----	-----	-----	-----	-----	6.45
1.53	0.00	141.60	6.44	-----	-----	-----	-----	-----	-----	-----	-----	6.44
1.55	0.00	141.59	6.42	-----	-----	-----	-----	-----	-----	-----	-----	6.42
1.57	0.00	141.58	6.41	-----	-----	-----	-----	-----	-----	-----	-----	6.41
1.58	0.00	141.57	6.40	-----	-----	-----	-----	-----	-----	-----	-----	6.40
1.60	0.00	141.56	6.38	-----	-----	-----	-----	-----	-----	-----	-----	6.38
1.62	0.00	141.55	6.37	-----	-----	-----	-----	-----	-----	-----	-----	6.37
1.63	0.00	141.55	6.36	-----	-----	-----	-----	-----	-----	-----	-----	6.36
1.65	0.00	141.54	6.35	-----	-----	-----	-----	-----	-----	-----	-----	6.35
1.67	0.00	141.53	6.33	-----	-----	-----	-----	-----	-----	-----	-----	6.33

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
1.68	0.00	141.52	6.32	-----	-----	-----	-----	-----	-----	-----	-----	6.32
1.70	0.00	141.51	6.31	-----	-----	-----	-----	-----	-----	-----	-----	6.31
1.72	0.00	141.50	6.30	-----	-----	-----	-----	-----	-----	-----	-----	6.30
1.73	0.00	141.49	6.28	-----	-----	-----	-----	-----	-----	-----	-----	6.28
1.75	0.00	141.48	6.27	-----	-----	-----	-----	-----	-----	-----	-----	6.27
1.77	0.00	141.47	6.26	-----	-----	-----	-----	-----	-----	-----	-----	6.26
1.78	0.00	141.46	6.24	-----	-----	-----	-----	-----	-----	-----	-----	6.24
1.80	0.00	141.45	6.23	-----	-----	-----	-----	-----	-----	-----	-----	6.23
1.82	0.00	141.44	6.21	-----	-----	-----	-----	-----	-----	-----	-----	6.21
1.83	0.00	141.43	6.20	-----	-----	-----	-----	-----	-----	-----	-----	6.20
1.85	0.00	141.42	6.19	-----	-----	-----	-----	-----	-----	-----	-----	6.19
1.87	0.00	141.41	6.17	-----	-----	-----	-----	-----	-----	-----	-----	6.17
1.88	0.00	141.40	6.16	-----	-----	-----	-----	-----	-----	-----	-----	6.16
1.90	0.00	141.39	6.15	-----	-----	-----	-----	-----	-----	-----	-----	6.15
1.92	0.00	141.38	6.13	-----	-----	-----	-----	-----	-----	-----	-----	6.13
1.93	0.00	141.37	6.12	-----	-----	-----	-----	-----	-----	-----	-----	6.12
1.95	0.00	141.36	6.10	-----	-----	-----	-----	-----	-----	-----	-----	6.10
1.97	0.00	141.35	6.09	-----	-----	-----	-----	-----	-----	-----	-----	6.09
1.98	0.00	141.34	6.08	-----	-----	-----	-----	-----	-----	-----	-----	6.08
2.00	0.00	141.33	6.06	-----	-----	-----	-----	-----	-----	-----	-----	6.06
2.02	0.00	141.32	6.05	-----	-----	-----	-----	-----	-----	-----	-----	6.05
2.03	0.00	141.31	6.04	-----	-----	-----	-----	-----	-----	-----	-----	6.04
2.05	0.00	141.30	6.02	-----	-----	-----	-----	-----	-----	-----	-----	6.02
2.07	0.00	141.29	6.01	-----	-----	-----	-----	-----	-----	-----	-----	6.01
2.08	0.00	141.28	6.00	-----	-----	-----	-----	-----	-----	-----	-----	6.00
2.10	0.00	141.28	5.98	-----	-----	-----	-----	-----	-----	-----	-----	5.98
2.12	0.00	141.27	5.97	-----	-----	-----	-----	-----	-----	-----	-----	5.97
2.13	0.00	141.26	5.95	-----	-----	-----	-----	-----	-----	-----	-----	5.95
2.15	0.00	141.25	5.94	-----	-----	-----	-----	-----	-----	-----	-----	5.94
2.17	0.00	141.24	5.93	-----	-----	-----	-----	-----	-----	-----	-----	5.93
2.18	0.00	141.23	5.91	-----	-----	-----	-----	-----	-----	-----	-----	5.91
2.20	0.00	140.90	5.90	-----	-----	-----	-----	-----	-----	-----	-----	5.90
2.22	0.00	140.89	5.89	-----	-----	-----	-----	-----	-----	-----	-----	5.89
2.23	0.00	140.88	5.87	-----	-----	-----	-----	-----	-----	-----	-----	5.87
2.25	0.00	140.87	5.86	-----	-----	-----	-----	-----	-----	-----	-----	5.86
2.27	0.00	140.87	5.84	-----	-----	-----	-----	-----	-----	-----	-----	5.84
2.28	0.00	140.86	5.83	-----	-----	-----	-----	-----	-----	-----	-----	5.83
2.30	0.00	140.85	5.82	-----	-----	-----	-----	-----	-----	-----	-----	5.82
2.32	0.00	140.85	5.80	-----	-----	-----	-----	-----	-----	-----	-----	5.80
2.33	0.00	140.84	5.79	-----	-----	-----	-----	-----	-----	-----	-----	5.79
2.35	0.00	140.83	5.78	-----	-----	-----	-----	-----	-----	-----	-----	5.78
2.37	0.00	140.82	5.76	-----	-----	-----	-----	-----	-----	-----	-----	5.76
2.38	0.00	140.82	5.75	-----	-----	-----	-----	-----	-----	-----	-----	5.75
2.40	0.00	140.81	5.73	-----	-----	-----	-----	-----	-----	-----	-----	5.73
2.42	0.00	140.80	5.72	-----	-----	-----	-----	-----	-----	-----	-----	5.72
2.43	0.00	140.80	5.71	-----	-----	-----	-----	-----	-----	-----	-----	5.71
2.45	0.00	140.79	5.69	-----	-----	-----	-----	-----	-----	-----	-----	5.69
2.47	0.00	140.79	5.68	-----	-----	-----	-----	-----	-----	-----	-----	5.68
2.48	0.00	140.78	5.67	-----	-----	-----	-----	-----	-----	-----	-----	5.67
2.50	0.00	140.78	5.65	-----	-----	-----	-----	-----	-----	-----	-----	5.65
2.52	0.00	140.78	5.64	-----	-----	-----	-----	-----	-----	-----	-----	5.64

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
2.53	0.00	140.77	5.62	-----	-----	-----	-----	-----	-----	-----	-----	5.62
2.55	0.00	140.77	5.61	-----	-----	-----	-----	-----	-----	-----	-----	5.61
2.57	0.00	140.76	5.60	-----	-----	-----	-----	-----	-----	-----	-----	5.60
2.58	0.00	140.76	5.58	-----	-----	-----	-----	-----	-----	-----	-----	5.58
2.60	0.00	140.75	5.57	-----	-----	-----	-----	-----	-----	-----	-----	5.57
2.62	0.00	140.76	5.60	-----	-----	-----	-----	-----	-----	-----	-----	5.60
2.63	0.00	140.77	5.63	-----	-----	-----	-----	-----	-----	-----	-----	5.63
2.65	0.00	140.78	5.66	-----	-----	-----	-----	-----	-----	-----	-----	5.66
2.67	0.00	140.79	5.69	-----	-----	-----	-----	-----	-----	-----	-----	5.69
2.68	0.00	140.80	5.72	-----	-----	-----	-----	-----	-----	-----	-----	5.72
2.70	0.00	140.82	5.75	-----	-----	-----	-----	-----	-----	-----	-----	5.75
2.72	0.00	140.83	5.78	-----	-----	-----	-----	-----	-----	-----	-----	5.78
2.73	0.00	140.85	5.81	-----	-----	-----	-----	-----	-----	-----	-----	5.81
2.75	0.00	140.87	5.84	-----	-----	-----	-----	-----	-----	-----	-----	5.84
2.77	0.00	140.88	5.87	-----	-----	-----	-----	-----	-----	-----	-----	5.87
2.78	0.00	140.90	5.91	-----	-----	-----	-----	-----	-----	-----	-----	5.91
2.80	0.00	140.89	5.89	-----	-----	-----	-----	-----	-----	-----	-----	5.89
2.82	0.00	140.88	5.87	-----	-----	-----	-----	-----	-----	-----	-----	5.87
2.83	0.00	140.87	5.85	-----	-----	-----	-----	-----	-----	-----	-----	5.85
2.85	0.00	140.86	5.84	-----	-----	-----	-----	-----	-----	-----	-----	5.84
2.87	0.00	140.85	5.82	-----	-----	-----	-----	-----	-----	-----	-----	5.82
2.88	0.00	140.84	5.80	-----	-----	-----	-----	-----	-----	-----	-----	5.80
2.90	0.00	140.84	5.78	-----	-----	-----	-----	-----	-----	-----	-----	5.78
2.92	0.00	140.83	5.76	-----	-----	-----	-----	-----	-----	-----	-----	5.76
2.93	0.00	140.82	5.75	-----	-----	-----	-----	-----	-----	-----	-----	5.75
2.95	0.00	140.81	5.73	-----	-----	-----	-----	-----	-----	-----	-----	5.73
2.97	0.00	140.80	5.71	-----	-----	-----	-----	-----	-----	-----	-----	5.71
2.98	0.00	140.79	5.68	-----	-----	-----	-----	-----	-----	-----	-----	5.68
3.00	0.00	140.78	5.65	-----	-----	-----	-----	-----	-----	-----	-----	5.65
3.02	0.00	140.77	5.63	-----	-----	-----	-----	-----	-----	-----	-----	5.63
3.03	0.00	140.76	5.60	-----	-----	-----	-----	-----	-----	-----	-----	5.60
3.05	0.00	140.75	5.57	-----	-----	-----	-----	-----	-----	-----	-----	5.57
3.07	0.00	140.75	5.54	-----	-----	-----	-----	-----	-----	-----	-----	5.54
3.08	0.00	140.74	5.52	-----	-----	-----	-----	-----	-----	-----	-----	5.52
3.10	0.00	140.73	5.49	-----	-----	-----	-----	-----	-----	-----	-----	5.49
3.12	0.00	140.72	5.46	-----	-----	-----	-----	-----	-----	-----	-----	5.46
3.13	0.00	140.71	5.43	-----	-----	-----	-----	-----	-----	-----	-----	5.43
3.15	0.00	140.70	5.41	-----	-----	-----	-----	-----	-----	-----	-----	5.41
3.17	0.00	140.69	5.37	-----	-----	-----	-----	-----	-----	-----	-----	5.37
3.18	0.00	140.68	5.33	-----	-----	-----	-----	-----	-----	-----	-----	5.33
3.20	0.00	140.68	5.29	-----	-----	-----	-----	-----	-----	-----	-----	5.29
3.22	0.00	140.67	5.26	-----	-----	-----	-----	-----	-----	-----	-----	5.26
3.23	0.00	140.66	5.22	-----	-----	-----	-----	-----	-----	-----	-----	5.22
3.25	0.00	140.65	5.18	-----	-----	-----	-----	-----	-----	-----	-----	5.18
3.27	0.00	140.64	5.14	-----	-----	-----	-----	-----	-----	-----	-----	5.14
3.28	0.00	140.64	5.10	-----	-----	-----	-----	-----	-----	-----	-----	5.10
3.30	0.00	140.63	5.07	-----	-----	-----	-----	-----	-----	-----	-----	5.07
3.32	0.00	140.62	5.03	-----	-----	-----	-----	-----	-----	-----	-----	5.03
3.33	0.00	140.61	4.99	-----	-----	-----	-----	-----	-----	-----	-----	4.99
3.35	0.00	140.60	4.96	-----	-----	-----	-----	-----	-----	-----	-----	4.96
3.37	0.00	140.60	4.91	-----	-----	-----	-----	-----	-----	-----	-----	4.91

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
3.38	0.00	140.59	4.86	-----	-----	-----	-----	-----	-----	-----	-----	4.86
3.40	0.00	140.58	4.82	-----	-----	-----	-----	-----	-----	-----	-----	4.82
3.42	0.00	140.57	4.77	-----	-----	-----	-----	-----	-----	-----	-----	4.77
3.43	0.00	140.56	4.72	-----	-----	-----	-----	-----	-----	-----	-----	4.72
3.45	0.00	140.56	4.67	-----	-----	-----	-----	-----	-----	-----	-----	4.67
3.47	0.00	140.55	4.62	-----	-----	-----	-----	-----	-----	-----	-----	4.62
3.48	0.00	140.54	4.58	-----	-----	-----	-----	-----	-----	-----	-----	4.58
3.50	0.00	140.54	4.53	-----	-----	-----	-----	-----	-----	-----	-----	4.53
3.52	0.00	140.53	4.49	-----	-----	-----	-----	-----	-----	-----	-----	4.49
3.53	0.00	140.52	4.44	-----	-----	-----	-----	-----	-----	-----	-----	4.44
3.55	0.00	140.51	4.40	-----	-----	-----	-----	-----	-----	-----	-----	4.40
3.57	0.00	140.51	4.35	-----	-----	-----	-----	-----	-----	-----	-----	4.35
3.58	0.00	140.50	4.31	-----	-----	-----	-----	-----	-----	-----	-----	4.31
3.60	0.00	140.49	4.26	-----	-----	-----	-----	-----	-----	-----	-----	4.26
3.62	0.00	140.49	4.22	-----	-----	-----	-----	-----	-----	-----	-----	4.22
3.63	0.00	140.48	4.17	-----	-----	-----	-----	-----	-----	-----	-----	4.17
3.65	0.00	140.47	4.13	-----	-----	-----	-----	-----	-----	-----	-----	4.13
3.67	0.00	140.46	4.08	-----	-----	-----	-----	-----	-----	-----	-----	4.08
3.68	0.00	140.46	4.04	-----	-----	-----	-----	-----	-----	-----	-----	4.04
3.70	0.00	140.45	4.00	-----	-----	-----	-----	-----	-----	-----	-----	4.00
3.72	0.00	140.44	3.96	-----	-----	-----	-----	-----	-----	-----	-----	3.95
3.73	0.00	140.44	3.91	-----	-----	-----	-----	-----	-----	-----	-----	3.91
3.75	0.00	140.43	3.87	-----	-----	-----	-----	-----	-----	-----	-----	3.87
3.77	0.00	140.42	3.83	-----	-----	-----	-----	-----	-----	-----	-----	3.83
3.78	0.00	140.42	3.79	-----	-----	-----	-----	-----	-----	-----	-----	3.79
3.80	0.00	140.41	3.75	-----	-----	-----	-----	-----	-----	-----	-----	3.75
3.82	0.00	140.40	3.71	-----	-----	-----	-----	-----	-----	-----	-----	3.71
3.83	0.00	140.40	3.66	-----	-----	-----	-----	-----	-----	-----	-----	3.66
3.85	0.00	140.39	3.62	-----	-----	-----	-----	-----	-----	-----	-----	3.62

...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 2 - Proposed Pond

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	139.50	32,525	0.000	0.000
1.00	140.50	36,012	0.787	0.787
2.00	141.50	39,600	0.868	1.655
3.00	142.50	43,289	0.951	2.606
4.00	143.50	47,079	1.037	3.643

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 18.0	0.0	0.0	0.0
Span in	= 18.0	0.0	0.0	0.0
No. Barrels	= 1	0	0	0
Invert El. ft	= 139.50	0.00	0.00	0.00
Length ft	= 560.0	0.0	0.0	0.0
Slope %	= 0.32	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	139.50	0.00	---	---	---	---	---	---	---	---	0.00
0.10	0.079	139.60	0.06	---	---	---	---	---	---	---	---	0.06
0.20	0.157	139.70	0.24	---	---	---	---	---	---	---	---	0.24
0.30	0.236	139.80	0.49	---	---	---	---	---	---	---	---	0.49
0.40	0.315	139.90	0.84	---	---	---	---	---	---	---	---	0.84
0.50	0.393	140.00	1.30	---	---	---	---	---	---	---	---	1.30
0.60	0.472	140.10	1.76	---	---	---	---	---	---	---	---	1.76
0.70	0.551	140.20	2.39	---	---	---	---	---	---	---	---	2.39
0.80	0.629	140.30	2.96	---	---	---	---	---	---	---	---	2.96
0.90	0.708	140.40	3.69	---	---	---	---	---	---	---	---	3.69
1.00	0.787	140.50	4.31	---	---	---	---	---	---	---	---	4.31
1.10	0.873	140.60	4.94	---	---	---	---	---	---	---	---	4.94
1.20	0.960	140.70	5.40	---	---	---	---	---	---	---	---	5.40
1.30	1.047	140.80	5.71	---	---	---	---	---	---	---	---	5.71
1.40	1.134	140.90	5.91	---	---	---	---	---	---	---	---	5.91
1.50	1.221	141.00	5.57	---	---	---	---	---	---	---	---	5.57
1.60	1.307	141.10	5.72	---	---	---	---	---	---	---	---	5.72
1.70	1.394	141.20	5.87	---	---	---	---	---	---	---	---	5.87
1.80	1.481	141.30	6.02	---	---	---	---	---	---	---	---	6.02
1.90	1.568	141.40	6.16	---	---	---	---	---	---	---	---	6.16
2.00	1.655	141.50	6.30	---	---	---	---	---	---	---	---	6.30
2.10	1.750	141.60	6.43	---	---	---	---	---	---	---	---	6.43
2.20	1.845	141.70	6.57	---	---	---	---	---	---	---	---	6.57
2.30	1.940	141.80	6.70	---	---	---	---	---	---	---	---	6.70
2.40	2.035	141.90	6.83	---	---	---	---	---	---	---	---	6.83
2.50	2.130	142.00	6.95	---	---	---	---	---	---	---	---	6.95
2.60	2.225	142.10	7.07	---	---	---	---	---	---	---	---	7.07
2.70	2.321	142.20	7.20	---	---	---	---	---	---	---	---	7.20
2.80	2.416	142.30	7.32	---	---	---	---	---	---	---	---	7.32
2.90	2.511	142.40	7.43	---	---	---	---	---	---	---	---	7.43
3.00	2.606	142.50	7.55	---	---	---	---	---	---	---	---	7.55
3.10	2.710	142.60	7.66	---	---	---	---	---	---	---	---	7.66
3.20	2.813	142.70	7.77	---	---	---	---	---	---	---	---	7.77

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Proposed Pond

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
3.30	2.917	142.80	7.88	---	---	---	---	---	---	---	---	7.88
3.40	3.021	142.90	7.99	---	---	---	---	---	---	---	---	7.99
3.50	3.125	143.00	8.10	---	---	---	---	---	---	---	---	8.10
3.60	3.228	143.10	8.21	---	---	---	---	---	---	---	---	8.21
3.70	3.332	143.20	8.31	---	---	---	---	---	---	---	---	8.31
3.80	3.436	143.30	8.42	---	---	---	---	---	---	---	---	8.42
3.90	3.540	143.40	8.52	---	---	---	---	---	---	---	---	8.52
4.00	3.643	143.50	8.62	---	---	---	---	---	---	---	---	8.62

...End

Hydrograph Report

Hyd. No. 6

Surface offsite

Hydrograph type	= Rational	Peak discharge	= 0.98 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.2 ac	Runoff coeff.	= 0.74
Intensity	= 7.365 in/hr	Time of conc. (Tc)	= 15 min
IDF Curve	= SedgwickCoKS.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 0.020 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	
0.13	0.52	
0.15	0.59	
0.17	0.65	
0.18	0.72	
0.20	0.78	
0.22	0.85	
0.23	0.92	
0.25	0.98	<<
0.27	0.92	
0.28	0.85	
0.30	0.78	
0.32	0.72	
0.33	0.65	
0.35	0.59	
0.37	0.52	

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 7

Total offsite

Hydrograph type	= Combine	Peak discharge	= 7.42 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyds.	= 5, 6		

Hydrograph Volume = 2.479 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
0.18	3.28	0.72	4.00
0.20	4.31	0.78	5.09
0.22	5.19	0.85	6.04
0.23	5.75	0.92	6.66
0.25	5.58	0.98 <<	6.56
0.27	5.83	0.92	6.75
0.28	6.07	0.85	6.92
0.30	6.28	0.78	7.07
0.32	6.45	0.72	7.17
0.33	6.60	0.65	7.26
0.35	6.74	0.59	7.33
0.37	6.85	0.52	7.37
0.38	6.95	0.46	7.41
0.40	7.03	0.39	7.42
0.42	7.10	0.33	7.42 <<
0.43	7.15	0.26	7.41
0.45	7.19	0.20	7.38
0.47	7.21	0.13	7.34
0.48	7.22 <<	0.07	7.28
0.50	7.21	0.00	7.21
0.52	7.20	0.00	7.20
0.53	7.19	0.00	7.19
0.55	7.17	0.00	7.17
0.57	7.16	0.00	7.16
0.58	7.15	0.00	7.15
0.60	7.14	0.00	7.14
0.62	7.12	0.00	7.12
0.63	7.11	0.00	7.11
0.65	7.10	0.00	7.10
0.67	7.09	0.00	7.09
0.68	7.07	0.00	7.07
0.70	7.06	0.00	7.06
0.72	7.05	0.00	7.05
0.73	7.04	0.00	7.04
0.75	7.02	0.00	7.02
0.77	7.01	0.00	7.01
0.78	7.00	0.00	7.00
0.80	6.99	0.00	6.99

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Hydrograph Discharge Table

Time (hrs)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
0.82	6.97	0.00	6.97
0.83	6.96	0.00	6.96
0.85	6.95	0.00	6.95
0.87	6.94	0.00	6.94
0.88	6.92	0.00	6.92
0.90	6.91	0.00	6.91
0.92	6.90	0.00	6.90
0.93	6.89	0.00	6.89
0.95	6.87	0.00	6.87
0.97	6.86	0.00	6.86
0.98	6.85	0.00	6.85
1.00	6.84	0.00	6.84
1.02	6.82	0.00	6.82
1.03	6.81	0.00	6.81
1.05	6.80	0.00	6.80
1.07	6.79	0.00	6.79
1.08	6.77	0.00	6.77
1.10	6.76	0.00	6.76
1.12	6.75	0.00	6.75
1.13	6.74	0.00	6.74
1.15	6.72	0.00	6.72
1.17	6.71	0.00	6.71
1.18	6.70	0.00	6.70
1.20	6.69	0.00	6.69
1.22	6.67	0.00	6.67
1.23	6.66	0.00	6.66
1.25	6.65	0.00	6.65
1.27	6.64	0.00	6.64
1.28	6.62	0.00	6.62
1.30	6.61	0.00	6.61
1.32	6.60	0.00	6.60
1.33	6.59	0.00	6.59
1.35	6.57	0.00	6.57
1.37	6.56	0.00	6.56
1.38	6.55	0.00	6.55
1.40	6.54	0.00	6.54
1.42	6.52	0.00	6.52
1.43	6.51	0.00	6.51
1.45	6.50	0.00	6.50
1.47	6.48	0.00	6.48
1.48	6.47	0.00	6.47
1.50	6.46	0.00	6.46
1.52	6.45	0.00	6.45
1.53	6.44	0.00	6.44
1.55	6.42	0.00	6.42
1.57	6.41	0.00	6.41
1.58	6.40	0.00	6.40
1.60	6.38	0.00	6.38
1.62	6.37	0.00	6.37
1.63	6.36	0.00	6.36
1.65	6.35	0.00	6.35

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
1.67	6.33	0.00	6.33
1.68	6.32	0.00	6.32
1.70	6.31	0.00	6.31
1.72	6.30	0.00	6.30
1.73	6.28	0.00	6.28
1.75	6.27	0.00	6.27
1.77	6.26	0.00	6.26
1.78	6.24	0.00	6.24
1.80	6.23	0.00	6.23
1.82	6.21	0.00	6.21
1.83	6.20	0.00	6.20
1.85	6.19	0.00	6.19
1.87	6.17	0.00	6.17
1.88	6.16	0.00	6.16
1.90	6.15	0.00	6.15
1.92	6.13	0.00	6.13
1.93	6.12	0.00	6.12
1.95	6.10	0.00	6.10
1.97	6.09	0.00	6.09
1.98	6.08	0.00	6.08
2.00	6.06	0.00	6.06
2.02	6.05	0.00	6.05
2.03	6.04	0.00	6.04
2.05	6.02	0.00	6.02
2.07	6.01	0.00	6.01
2.08	6.00	0.00	6.00
2.10	5.98	0.00	5.98
2.12	5.97	0.00	5.97
2.13	5.95	0.00	5.95
2.15	5.94	0.00	5.94
2.17	5.93	0.00	5.93
2.18	5.91	0.00	5.91
2.20	5.90	0.00	5.90
2.22	5.89	0.00	5.89
2.23	5.87	0.00	5.87
2.25	5.86	0.00	5.86
2.27	5.84	0.00	5.84
2.28	5.83	0.00	5.83
2.30	5.82	0.00	5.82
2.32	5.80	0.00	5.80
2.33	5.79	0.00	5.79
2.35	5.78	0.00	5.78
2.37	5.76	0.00	5.76
2.38	5.75	0.00	5.75
2.40	5.73	0.00	5.73
2.42	5.72	0.00	5.72
2.43	5.71	0.00	5.71
2.45	5.69	0.00	5.69
2.47	5.68	0.00	5.68
2.48	5.67	0.00	5.67
2.50	5.65	0.00	5.65

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Hydrograph Discharge Table

Time (hrs)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
2.52	5.64	0.00	5.64
2.53	5.62	0.00	5.62
2.55	5.61	0.00	5.61
2.57	5.60	0.00	5.60
2.58	5.58	0.00	5.58
2.60	5.57	0.00	5.57
2.62	5.60	0.00	5.60
2.63	5.63	0.00	5.63
2.65	5.66	0.00	5.66
2.67	5.69	0.00	5.69
2.68	5.72	0.00	5.72
2.70	5.75	0.00	5.75
2.72	5.78	0.00	5.78
2.73	5.81	0.00	5.81
2.75	5.84	0.00	5.84
2.77	5.87	0.00	5.87
2.78	5.91	0.00	5.91
2.80	5.89	0.00	5.89
2.82	5.87	0.00	5.87
2.83	5.85	0.00	5.85
2.85	5.84	0.00	5.84
2.87	5.82	0.00	5.82
2.88	5.80	0.00	5.80
2.90	5.78	0.00	5.78
2.92	5.76	0.00	5.76
2.93	5.75	0.00	5.75
2.95	5.73	0.00	5.73
2.97	5.71	0.00	5.71
2.98	5.68	0.00	5.68
3.00	5.65	0.00	5.65
3.02	5.63	0.00	5.63
3.03	5.60	0.00	5.60
3.05	5.57	0.00	5.57
3.07	5.54	0.00	5.54
3.08	5.52	0.00	5.52
3.10	5.49	0.00	5.49
3.12	5.46	0.00	5.46
3.13	5.43	0.00	5.43
3.15	5.41	0.00	5.41
3.17	5.37	0.00	5.37
3.18	5.33	0.00	5.33
3.20	5.29	0.00	5.29
3.22	5.26	0.00	5.26
3.23	5.22	0.00	5.22
3.25	5.18	0.00	5.18
3.27	5.14	0.00	5.14
3.28	5.10	0.00	5.10
3.30	5.07	0.00	5.07
3.32	5.03	0.00	5.03
3.33	4.99	0.00	4.99
3.35	4.96	0.00	4.96

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
3.37	4.91	0.00	4.91
3.38	4.86	0.00	4.86
3.40	4.82	0.00	4.82
3.42	4.77	0.00	4.77
3.43	4.72	0.00	4.72
3.45	4.67	0.00	4.67
3.47	4.62	0.00	4.62
3.48	4.58	0.00	4.58
3.50	4.53	0.00	4.53
3.52	4.49	0.00	4.49
3.53	4.44	0.00	4.44
3.55	4.40	0.00	4.40
3.57	4.35	0.00	4.35
3.58	4.31	0.00	4.31
3.60	4.26	0.00	4.26
3.62	4.22	0.00	4.22
3.63	4.17	0.00	4.17
3.65	4.13	0.00	4.13
3.67	4.08	0.00	4.08
3.68	4.04	0.00	4.04
3.70	4.00	0.00	4.00
3.72	3.95	0.00	3.95
3.73	3.91	0.00	3.91
3.75	3.87	0.00	3.87
3.77	3.83	0.00	3.83
3.78	3.79	0.00	3.79
3.80	3.75	0.00	3.75

...End

Appendix G
Pipe Sizing Calculations

8/8/2005

AUBURN HILLS COMMERCIAL 4TH ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS
PRELIMINARY STORM SEWER DESIGN
BY THE RATIONAL METHOD

Project Number: 05403
Soil Group: B
Mannings "n": 0.013

Area ID	Area	Accum. Area	Land Use	% Impervious	Runoff Coefficients				Time of Concentration				Rainfall Intensity				Storm Flows				Pipe Sizing							
					C2	C5	C10	C100	Tc2	Tc5	Tc10	Tc100	I2	I5	I10	I100	Q2	Q5	Q10	Q100	Design Storm	Design Q (cfs)	Length of Pipe (ft)	Suggested Pipe at Minimum Slope (in)	Design Pipe Size (in)	Design Slope (%)	Minimum Slope (%)	Design Velocity (fps)	Capacity of Design Pipe (cfs)
	ac	ac							(min)	min	min	min	(in/hr)	(in/hr)	(in/hr)	(in/hr)	cfs	cfs	cfs	cfs									
A	1.27		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	3.31	4.00	4.84	7.49	None								
B	0.91		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	2.37	2.86	3.47	5.37	None								
A+B		2.18			0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	5.68	6.86	8.31	12.85	5	6.86		24	24	0.21	0.09	3.3	10.4
C	9.61		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	25.03	30.24	36.62	56.66	5	30.24		42	36	0.21	0.21	4.3	30.6
D	0.71		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	1.85	2.23	2.71	4.19	None								
A-D		12.50			0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	32.56	39.33	47.63	73.70	5	39.33		48	42	0.16	0.15	4.2	40.2
E	1.81		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	4.71	5.69	6.90	10.67	5	5.69		18	18	0.32	0.29	3.4	5.9
F	0.24		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	0.63	0.76	0.91	1.42	None								
A-F		14.55			0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	37.89	45.78	55.44	85.79	5	45.78		54	48	0.11	0.10	3.8	47.6
G	0.06		Residential - 1/4 Acre	38	0.44	0.46	0.52	0.61	15	15	15	15	3.83	4.56	5.22	7.37	0.10	0.13	0.16	0.27	None								
H	0.12		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	0.31	0.38	0.46	0.71	None								
G+H		0.18			0.60	0.61	0.66	0.74	15	15	15	15	3.83	4.56	5.22	7.37	0.41	0.50	0.62	0.98	None								
I	0.33		Residential - 1/4 Acre	38	0.44	0.46	0.52	0.61	15	15	15	15	3.83	4.56	5.22	7.37	0.56	0.69	0.90	1.48	None								
J	0.40		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	1.04	1.26	1.52	2.36	None								
I+J		0.73			0.57	0.59	0.64	0.71	15	15	15	15	3.83	4.56	5.22	7.37	1.60	1.95	2.42	3.84	5	1.95		12	12	0.40	0.30	2.9	2.3
K	0.36		Residential - 1/4 Acre	38	0.44	0.46	0.52	0.61	15	15	15	15	3.83	4.56	5.22	7.37	0.61	0.76	0.98	1.62	None								
L	0.28		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	0.73	0.88	1.07	1.65	None								
I-L		1.37			0.56	0.57	0.62	0.70	15	15	15	15	3.83	4.56	5.22	7.37	2.93	3.59	4.46	7.11	5	3.59		15	15	0.40	0.31	3.3	4.1
M	0.63		Residential - 1/4 Acre	38	0.44	0.46	0.52	0.61	15	15	15	15	3.83	4.56	5.22	7.37	1.06	1.32	1.71	2.83	None								
N	0.35		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	0.91	1.10	1.33	2.06	None								
I-N		2.35			0.55	0.56	0.61	0.69	15	15	15	15	3.83	4.56	5.22	7.37	4.91	6.01	7.51	12.01	5	6.01		24	24	0.20	0.07	3.2	10.1
O	0.30		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	0.78	0.94	1.14	1.77	None								
I-O		2.65			0.56	0.58	0.63	0.71	15	15	15	15	3.83	4.56	5.22	7.37	5.69	6.95	8.65	13.78	5	6.95		24	24	0.20	0.09	3.2	10.1
P	1.33		Business - Neighborhood	70	0.68	0.69	0.73	0.80	15	15	15	15	3.83	4.56	5.22	7.37	3.46	4.18	5.07	7.84	None								