

Cc: Chris Bohm; Davidson, Tim; Kallman, Julianne; Strahl, Neil; Batchman, Renee

Subject: Reeds Cove Medical Campus Addition

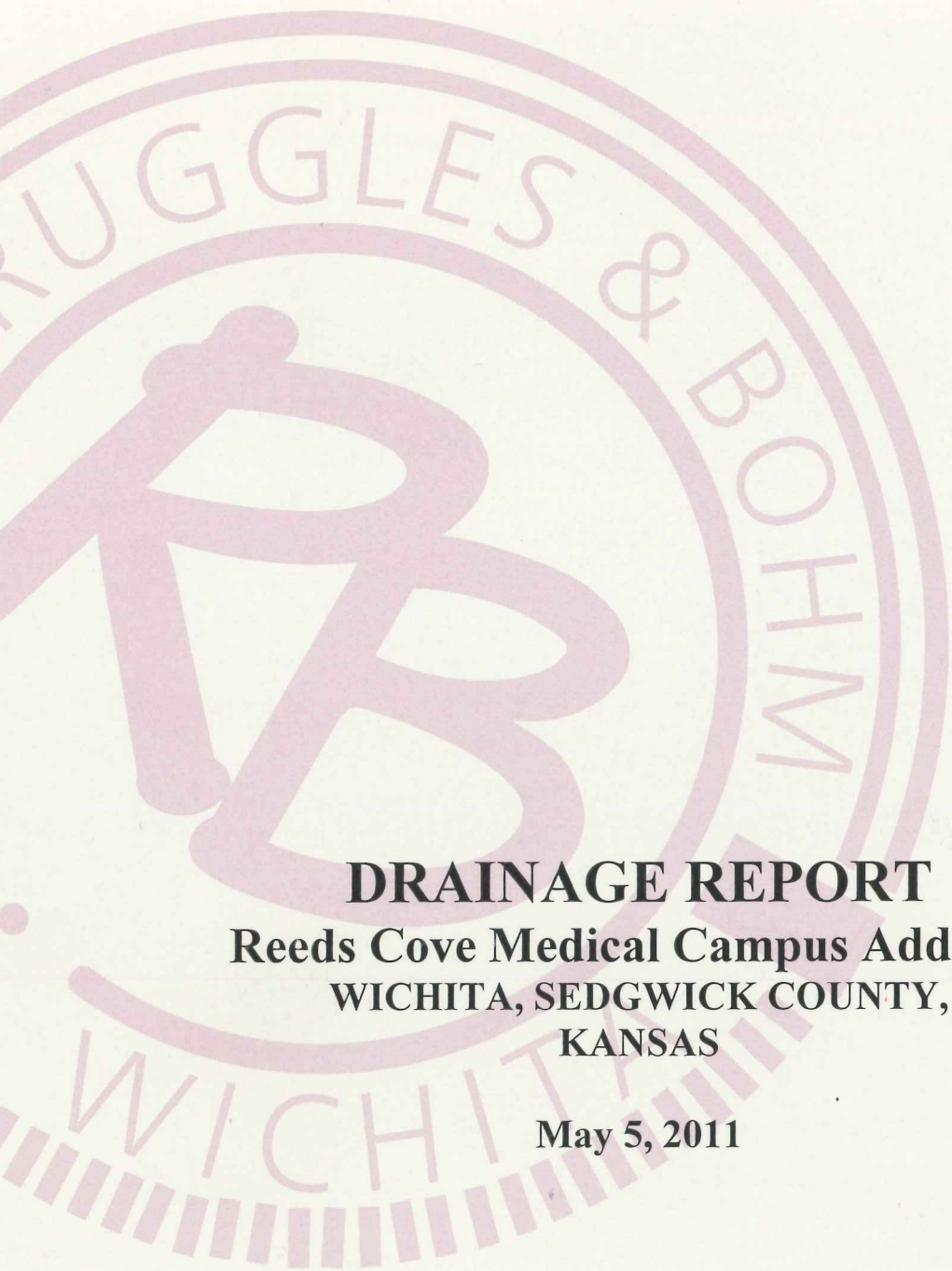
Alex,

I reviewed the Drainage Report for the above referenced subdivision and have the following comments and necessary revisions:

1. The report needs to be sealed, signed, and dated by the licensed professional engineer that developed the report. *Acknowledged - Provided on final Report*
2. A digital copy (pdf) needs to be provided for our permanent record. *w/ this submittal*
3. Reeds Cove 4th Addition sized a pipe to collect the stormwater runoff from the west basin located in the north of Lot 5, block 1 of Reeds Cove 4th Addition. The west basin needs to provide detention to not exceed the capacity of the extended stormwater sewer and provide channel protection and water quality treatment prior to discharging the developed runoff offsite. *Capacity, Cpu and WQv provided as described in Report.*
4. A 20' drainage easement needs to be extended from the existing stormwater sewer pipe located north of #12820 E Churchill St to serve the Lot 1 of Reeds Commercial Addition, and Lots 1 & 5, Blk 1 of Reeds Cove Medical Campus. *- Provided See Plat*
5. Either Reserve A needs to be widen or a 20' drainage easement placed around the top bank to provide adequate maintenance access for equipment. *- Explained in meeting w/ Chris & Brent.*
6. Proposed flow arrows are not specific in the easterly portion of lot 3. I want to make sure that all drainage will be routed through the proposed channel protection detention pond, rather than draining to the south into Reeds Cove 4th Addition or east to Reeds Cove Addition *- Revised, see Drainage Map*
7. Will the proposed development maintain the existing berms located in the SE corner of the lot 3? *A berm will remain as part of Detention Pond.*
8. Based on the methodology shown in the calculations, the medical park and the out lots will NOT have more than 80% pervious cover. Be sure that the developer does not want a more intense building foot print. *OK, easement along up nearly 20% of lots*
9. The street as shown on the plat attached in the drainage report appears to be private, but plat text says differently. *Public Street, west end has line through it to show ownership of plat (as explained by our surveyor).*

Thanks!

Scott C. Lindebak, P.E., CFM
Stormwater Engineer
Public Works & Utilities
City of Wichita, KS



DRAINAGE REPORT
Reeds Cove Medical Campus Addition
WICHITA, SEDGWICK COUNTY,
KANSAS

May 5, 2011



Ruggles & Bohm P.A.

Engineering, Surveying, Land Planning

**Reed's Cove Medical Campus Addition
DRAINAGE ANALYSIS
April 5, 2010**

INTRODUCTION

This report contains supporting documentation and calculations for the proposed Reed's Cove Medical Campus Addition development. The proposed site is an undeveloped 11.9 acre parcel of land located in the NW ¼ of Section 11 T27S R2E on 127th St. East just south of 21st Street North. The area also included in the drainage plan an additional 1.7 acres of Reed's Commercial Lot 1 that not be part of the proposed plat but will be included in calculations for stormwater treatment. The area is currently pasture land and the soil type located on site is Irwin and Rosehill silty clay loam, both in hydrologic group D. The site generally drains in two directions with approximately 2.4 acres draining west to a roadside ditch along 127th Street East while the remaining 11.2 acres drains east to an existing detention pond located in Reed's Cove residential subdivision. No offsite tributary drain onto the proposed project site. The information located on the attached FEMA FIRM 20173C0377E, effective date Feb. 7, 2007, indicates the site is located in unshaded Zone X, defined as areas outside of the 0.2% floodplain.

DETENTION

The detention necessary to reduce the post development runoff to pre development levels is provided in the pond just downstream in the Reed's Cove residential subdivision. The drainage plans for both the Reed Commercial and the Reed's Cove Addition indicate the eastern portion of what is now referred to as Reed's Cove Medical Campus Addition is to be detained in the large pond located in Reed's Cove Addition. The project site will reduce the area draining to the east to reduce the peak post development flows to predevelopment levels. The additional area will be directed to the existing Reed's Cove detention pond. The Reed's Cove drainage report indicates the pond reduces the 100-yr runoff of the development from 1979 cfs to 1915 cfs, while storing over 74 ac.-ft. Therefore the extra capacity of the pond will easily store the additional 0.9 acre directed to it.

	Area (ac.)	TC (min.)	C2	C5	C10	C100	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q100 (cfs)
Existing										
West	2.4	15	0.30	0.35	0.45	0.65	2.8	3.8	5.6	11.5
East	11.2	29	0.30	0.35	0.45	0.65	9.1	12.9	19.3	40.0

	Area (ac.)	TC (min.)	C2	C5	C10	C100	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q100 (cfs)
Proposed										
West	1.1	15	0.68	0.69	0.73	0.80	2.8	3.5	4.2	6.5
East	12.5	29	0.68	0.69	0.73	0.80	23.1	28.5	40.8	54.9

CHANNEL PROTECTION AND WATER QUALITY VOLUMES

Channel protection volume for the development will be provided in a pond at the eastern end of the site. An existing 36" RCP with a flowline of 1361.3 flows from just inside the east property line to Reserve C of Reed's Cove. A wet pond will be constructed such that the existing 36" can be modified for the outlet of the pond. This pond will also provide water quality volume and detain the channel protection volume. The calculations to determine the water quality and channel protection volumes are as follows;

Water Quality Volume

$$\text{Eq. 4-26 } R_v = R_{vu}U + R_{vd}D + R_{vi}I = 0.00*0.05 + 0.25*0.25 + 0.95*0.75 = 0.775$$

$$\text{Eq. 4-24 } WQ_v = PR_v A/12 = (1.2*0.775*13.6)/12 = 1.05 \text{ ac.-ft.}$$

$$\text{Eq. 4-25 } Q_{wv} = PR_v = 1.2*0.775 = 0.93 \text{ in.}$$

Channel Protection Volume

Calculate composite CN

$$CN = 0.75(98)+0.25(88) = 95.5$$

$$S = 1000/CN - 10 = 0.47 \text{ in.}; I_a = 0.2S = 0.2(0.47) = 0.094; I_a/P = 0.094/1.2 = 0.0783$$

$$Q = (P-I_a)^2/[(P-I_a)+S] = (2.8-0.094)^2/[(2.8-0.094)+0.47] = 2.30 \text{ in.}$$

Where P = 2.8 inches (1-year, 24-hr rainfall)

From Figure 4-6 using I_a/P and $t_c = 0.25$ hrs, $q_u = 800 \text{ cfs/mi}^2/\text{in}$

$$\text{Eq. 4-18 } Q_p = q_u A Q_{wv} F_p = 800*(12.5/640)*0.93*1.00 = 14.53 \text{ cfs}$$

Figure 4-17 $q_o/q_i = 0.25$

$$\text{Eq. 4-30 } V_s/V_r = 0.682-1.43(q_o/q_i)+1.64(q_o/q_i)^2-0.804(q_o/q_i)^3 = 0.647$$

$$V_s = ((V_s/V_r)QA)/12 = (0.647)(2.3)(12.5)/12 = 1.55 \text{ ac.-ft.}$$

$$Q \text{ outlet} = (q_o/q_i)* q_i = 0.025*14.53 = 0.36 \text{ cfs}$$

The wet pond shall have a static water surface of 1361.0 and a peak water surface of 1365.0. The outlet shall be controlled by an orifice in a stand pipe or structure. The orifice shall be 2.5" in diameter and shall serve as the outlet control for both the water quality and channel

protection volume. The larger storms shall be passed by a weir structure dropping into the existing 36" RCP. The water quality volume of 0.92 ac.-ft. is provided completely in the wet pond and will share the outlet structure. The pond stage and area is shown in the table below;

Stage	Area (ac.)
1361	0.30
1362	0.34
1363	0.39
1364	0.43
1365	0.47

The west basin was analyzed to determine if the reduction in volume might also serve to provide channel protection as well. A HEC-HMS model was created to compare the peak runoff and runoff volumes in the existing and proposed condition. The existing condition has a CN of 84 and a tributary area of 2.4 ac. The proposed condition was determined to have a CN of 93 and a tributary area of 1.1 ac. Both conditions have a time of concentration of 15 min. The results of the calculations are shown in the table below;

	Peak Runoff (cfs)		Total Volume (ac.-ft.)	
	Existing	Proposed	Existing	Proposed
1-yr	37	2.6	0.3	0.2
2-yr	5.3	3.3	0.4	0.3
5-yr	7.7	4.5	0.6	0.3
10-yr	9.2	5.1	0.7	0.4
25-yr	11.6	6.3	0.9	0.5
100-yr	15.8	8.1	1.2	0.6

The results demonstrate that the proposed condition will result no increase in peak runoff and total volume in the 1-yr storm and a reduction in all the greater storms. Therefore the downstream stabilization criteria are satisfied by allowing no increase in runoff volume in the 1-yr 24-hr storm and in fact providing a decrease in both volume and peak runoff. Additionally, the existing 30" RCP draining from the inlet located at the southwest corner of Lot 1, Reed Commercial Addition has a capacity of 55 cfs. This greatly exceeds the proposed 100-yr flow of 6.5 cfs

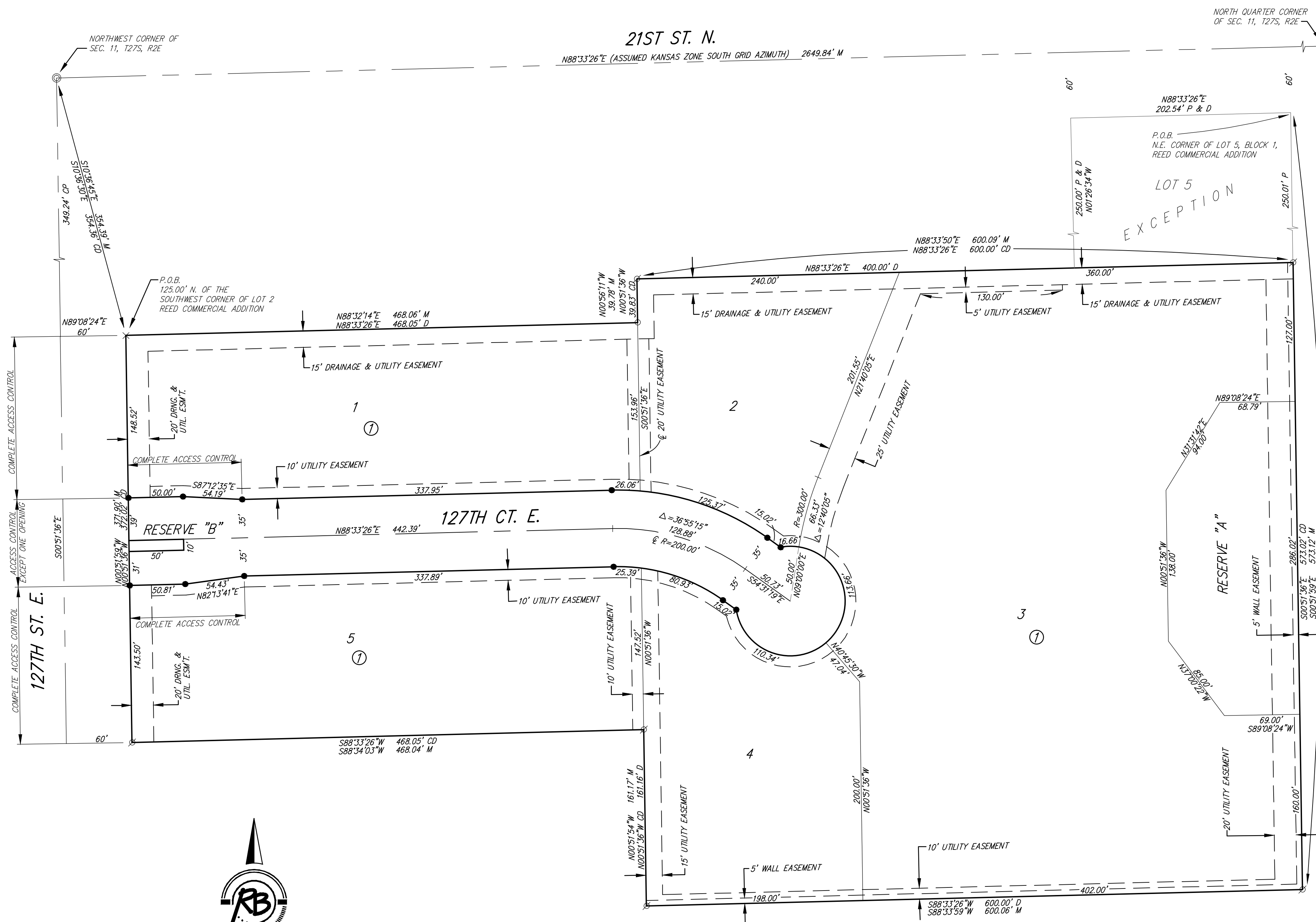
INTERNAL DRAINAGE

The internal drainage system shall utilize grassed swales and storm sewer to direct the runoff to the proposed wet pond. The particular details of the internal drainage system will have to be determined as the site is developed and a final layout is available.

PLAT

REEDS COVE MEDICAL CAMPUS

a Replat of part of Reed Commercial Addition
an Addition to Wichita, Sedgwick County, Kansas



ALL DIMENSIONS ARE PLATTED UNLESS OTHERWISE NOTED

P = Plotted
M = Measured
D = Described
CP = Calculated from Plotted
CD = Calculated from Described

- SURVEY MARKER LEGEND**
- ⊙ 1/2" IRON PIPE IN THIMBLE (FOUND - ORIGIN UNKNOWN)
 - ⊗ CHISELED CROSS (FOUND - ORIGIN UNKNOWN)
 - 1/2" REBAR W/CLASS9 CAP (FOUND)
 - ⊗ 5/8" REBAR W/ANKEC CAP (FOUND)
 - ⊗ 1/2" IRON PIPE IN THIMBLE (FOUND - ORIGIN UNKNOWN)
 - ⊗ 5/8" REBAR W/RUGGLES & BOHM CAP (SET)

BLOCK	LOT NO.	ELEVATION (NAVD88)
1	3	1368.0

"REEDS COVE MEDICAL CAMPUS" is subject to the conditions of Community Unit Plan (DP-222)

BENCH MARK: CHISELED SQUARE ON THE NORTHEAST CORNER OF INLET ON SOUTH SIDE OF WILLIAMSGATE OVER BRIDGE IN HAWTHORNE ADDITION. ELEVATION = 1355.74 (NAVD88)

ON-SITE BENCH MARK: CHISELED SQUARE ON THE TOP OF CURB AT THE SOUTH CURB RETURN OF THE SOUTH QUICKTRIP DRIVE ENTRANCE ON THE EAST SIDE OF 127TH ST. E., 26' EAST OF THE CENTERLINE OF 127TH ST. E. AND 377' SOUTH OF THE CENTERLINE OF 21ST ST. N. ELEVATION = 1381.07 (NAVD88)

ON-SITE BENCH MARK: CHISELED SQUARE ON THE TOP OF CURB AT THE WEST CURB RETURN AT THE NORTHWEST CORNER OF 127TH ST. E. AND SHADYBROOK, 51' WEST OF THE CENTERLINE OF 21ST ST. N. ELEVATION = 1377.33 (NAVD88)

State of Kansas)
SS
Sedgwick County)

We, Ruggles & Bohm, P.A., Land Surveyors in aforesaid county and state, do hereby certify that, under the supervision of the undersigned, we have surveyed and platted "REEDS COVE MEDICAL CAMPUS", an Addition to Wichita, Sedgwick County, Kansas, and that the accompanying plat is a true and correct exhibit of the property surveyed, described as follows:

A tract of land lying in portions of Lots 1 and 2, Block 1, Reed Commercial Addition, an Addition to Wichita, Sedgwick County, Kansas, being located in the Northwest Quarter of Section 11, Township 27 South, Range 2 East of the 6th Principal Meridian, and being more particularly described as follows:

BEGINNING at a westerly corner of said Lot 2 being 125.00 feet north of the southwest corner of said Lot 2; thence on a platted bearing of N88°33'26"E, parallel with the south line of said Lot 1, a distance of 468.05 feet; thence S00°51'36"E, parallel with the west line of said Lot 1, a distance of 533.18 feet to the south line of said Lot 1; thence S88°33'26"W, along the south line of said Lot 1, a distance of 468.05 feet to the southwest most corner of said Lot 1; thence N00°51'36"W along the west lines of said Lots 1 and 2, a distance of 533.18 feet to the POINT OF BEGINNING, EXCEPT, the south 161.16 feet thereof, TOGETHER WITH

A tract of land lying in a portion of Reed Commercial Addition, an Addition to Wichita, Sedgwick County, Kansas, being located in the Northwest Quarter of Section 11, Township 27 South, Range 2 East of the 6th Principal Meridian, and being more particularly described as follows: BEGINNING at the northeast corner of Lot 5, Block 1, Reed Commercial Addition; thence on a platted bearing of S00°51'36"E, along the east line of said Lots 1 and 5, a distance of 823.03 feet to the southeast corner of said Lot 1; thence S88°33'26"W, along the south line of said Lot 1, a distance of 600.00 feet; thence parallel with the east line of said Lot 1, N00°51'36"W, a distance of 573.02 feet; thence parallel with the south line of said Lot 1, N88°33'26"E, a distance of 400.00 feet to the southwest corner of said Lot 5, Block 1; thence along the west line of said Lot 5, N01°26'34"W, a distance of 250.00 feet to the northwest corner of said Lot 5; thence N88°33'26"E, along the north line of said Lot 5, a distance of 202.54 feet to the POINT OF BEGINNING, EXCEPT, Lot 5, Block 1, said addition.

All public easements and dedications are hereby vacated by virtue of K.S.A. 12-512(b).

Ruggles & Bohm, P.A.
Land Surveyor
William K. Clevenger

Know all men by these presents that we, the undersigned, have caused the land described in the surveyor's certificate to be platted into Lots, a Block, Reserves and a Street, to be known as "REEDS COVE MEDICAL CAMPUS", an Addition to Wichita, Sedgwick County, Kansas. The utility easements are hereby granted for the construction and maintenance of all public utilities. The drainage easements are hereby granted to the public as indicated for drainage purposes. Access Controls as indicated are hereby granted to the appropriate governing body. The street is hereby dedicated to and for the use of the public. Reserve "A" is hereby reserved for irrigation, walls, walks, landscaping, berms, lakes, drainage, drainage structures, and utilities confined to easements. Reserve "B" is hereby reserved for irrigation, landscaping, signage and entry features. The Reserves are to be owned and maintained by the lot owners association for the addition. A drainage plan has been developed for this plat and all drainage easements shall remain at established grades, or as modified with the approval of the City Engineer, and unobstructed to allow for the conveyance of storm water.

Physicians Development Group, LLC,
a Kansas limited liability company

Member
Matthew Lillie

State of Kansas)
SS
Sedgwick County)

The foregoing instrument acknowledged before me, this _____ day of _____, 2011, by Matthew Lillie, Member, on behalf of Physicians Development Group, LLC, a Kansas limited liability company.

Notary Public

My appointment expires _____.

We the undersigned, holders of a mortgage on a portion of the above described property, do hereby consent to this plat of "REEDS COVE MEDICAL CAMPUS" an Addition to Wichita, Sedgwick County, Kansas.

Legacy Bank, N.A.
Executive VP Commercial Lending
Brad Yaeger

State of Kansas)
SS
Sedgwick County)

The foregoing instrument acknowledged before me this _____ day of _____, 2011, by Brad Yaeger, Executive VP Commercial Lending, on behalf of Legacy Bank, N.A., on behalf of the Bank.

Notary Public

My appointment expires _____.

This plat of "REEDS COVE MEDICAL CAMPUS", an Addition to Wichita, Sedgwick County, Kansas, has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this _____ day of _____, 2011.
Wichita-Sedgwick County Metropolitan Area Planning Commission

Chair
David Unruh
Secretary
John L. Schlegel

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this _____ day of _____, 2011.

At the Direction of the City Council

Mayor
Carl Brewer
City Clerk
Karen Sublett

Reviewed in accordance with K.S.A. 58-2005 on this _____ day of _____, 2011.

Deputy County Surveyor
Sedgwick County Kansas
Tricia L. Robello, LS #1246

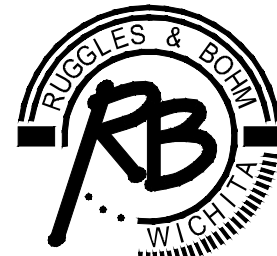
Entered on transfer record this _____ day of _____, 2011.

County Clerk
Kelly B. Arnold

State of Kansas)
SS
Sedgwick County)

This is to certify that this plat has been filed for record in the office of the Register of Deeds, this _____ day of _____, 2011, at _____ o'clock _____ M., and is duly recorded.

Register of Deeds
Bill Meek
Deputy
Tonya Buckingham

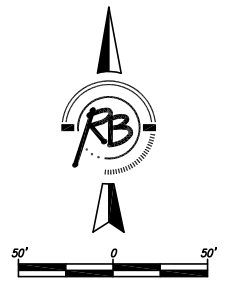


Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning

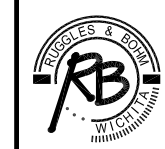
924 North Main (316) 264-8008
Wichita, Kansas 67203 (316) 264-4621 fax
www.rbkansas.com E-mail: info@rbkansas.com

DWG FILE: SURVEY BASE
PROJECT NO. 3788P
APRIL 26, 2011

AERIAL



**AERIAL
REEDS COVE MEDICAL CAMPUS
WICHITA, KANSAS**



Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main (316) 264-8008
Wichita, Kansas 67203 (316) 264-4621 fax
www.rbkansas.com E-mail: info@rbkansas.com

DRAWING FILE: Drainage Plan {Layout1}

PROJECT NUMBER: .

DESIGN	AML	REV. NO. 3768B
DRAWN	AML	
REVIEW		
UTILITY		
DATE	Apr. 8, 2011	
SHEET		1
OF		1

EXISTING CONDITIONS

Project: 3788 Simulation Run: 001 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Exist
End of Run: 02Jan2011, 12:05 Meteorologic Model: 001-yr
Compute Time: 29Apr2011, 15:48:26 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00375	3.7	02Jan2011, 00:05	1.35

Project: 3788 Simulation Run: 002 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Exist
End of Run: 02Jan2011, 12:05 Meteorologic Model: 002-yr
Compute Time: 29Apr2011, 12:34:16 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00375	5.3	02Jan2011, 00:00	1.93

Project: 3788 Simulation Run: 005 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Exist
End of Run: 02Jan2011, 12:05 Meteorologic Model: 005-yr
Compute Time: 29Apr2011, 12:34:27 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00375	7.7	02Jan2011, 00:00	2.81

Project: 3788 Simulation Run: 010 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Exist
End of Run: 02Jan2011, 12:05 Meteorologic Model: 010-yr
Compute Time: 29Apr2011, 12:34:31 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00375	9.2	02Jan2011, 00:00	3.36

Project: 3788 Simulation Run: 025 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Exist
End of Run: 02Jan2011, 12:05 Meteorologic Model: 025-yr
Compute Time: 29Apr2011, 12:34:34 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00375	11.6	02Jan2011, 00:00	4.28

Project: 3788 Simulation Run: 100 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Exist
End of Run: 02Jan2011, 12:05 Meteorologic Model: 100-yr
Compute Time: 29Apr2011, 12:34:37 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00375	15.8	02Jan2011, 00:00	5.89

PROPOSED CONDITIONS

Project: 3788 Simulation Run: Prop 001

Start of Run: 01Jan2011, 12:00 Basin Model: Prop
End of Run: 02Jan2011, 12:05 Meteorologic Model: 001-yr
Compute Time: 29Apr2011, 15:48:30 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00172	2.6	02Jan2011, 00:00	2.06

Project: 3788 Simulation Run: Prop 002

Start of Run: 01Jan2011, 12:00 Basin Model: Prop
End of Run: 02Jan2011, 12:05 Meteorologic Model: 002-yr
Compute Time: 29Apr2011, 13:01:19 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00172	3.3	02Jan2011, 00:00	2.73

Project: 3788 Simulation Run: Prop 005

Start of Run: 01Jan2011, 12:00 Basin Model: Prop
End of Run: 02Jan2011, 12:05 Meteorologic Model: 005-yr
Compute Time: 29Apr2011, 13:01:22 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00172	4.5	02Jan2011, 00:00	3.70

Project: 3788 Simulation Run: Prop 010

Start of Run: 01Jan2011, 12:00 Basin Model: Prop
End of Run: 02Jan2011, 12:05 Meteorologic Model: 010-yr
Compute Time: 29Apr2011, 13:01:25 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00172	5.1	02Jan2011, 00:00	4.29

Project: 3788 Simulation Run: Prop 025

Start of Run: 01Jan2011, 12:00 Basin Model: Prop
End of Run: 02Jan2011, 12:05 Meteorologic Model: 025-yr
Compute Time: 29Apr2011, 13:01:29 Control Specifications: Control 1

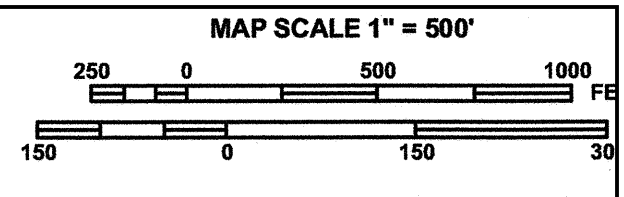
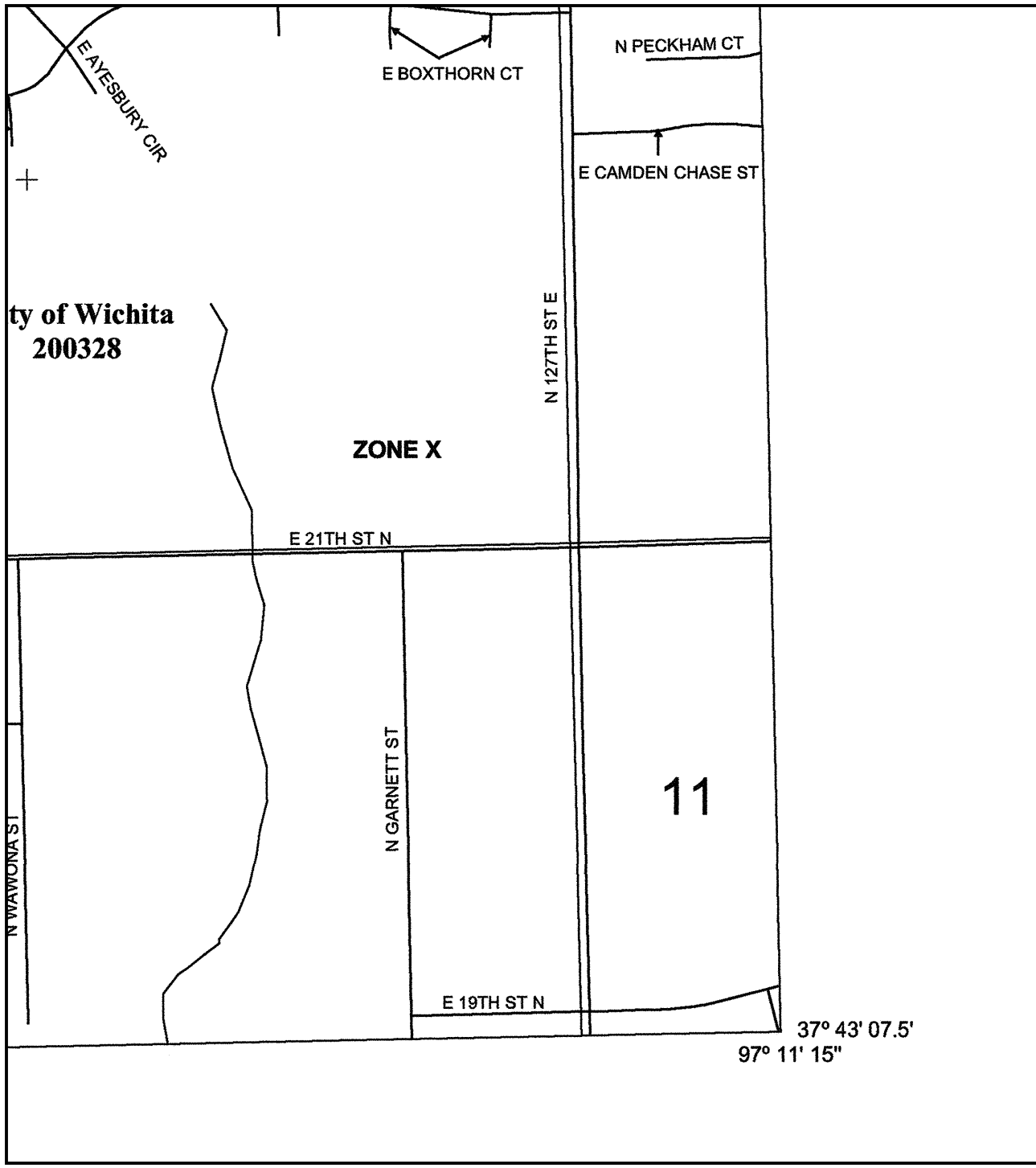
Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00172	6.3	02Jan2011, 00:00	5.27

Project: 3788 Simulation Run: Prop 100

Start of Run: 01Jan2011, 12:00 Basin Model: Prop
End of Run: 02Jan2011, 12:05 Meteorologic Model: 100-yr
Compute Time: 29Apr2011, 13:01:32 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
West	0.00172	8.1	02Jan2011, 00:00	6.95

FEMA FIRM



PANEL 0377E

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

PANEL 377 OF 700

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SEDGWICK COUNTY	200321	0377	E
MICHITA, CITY OF	200328	0377	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
20173C0377E

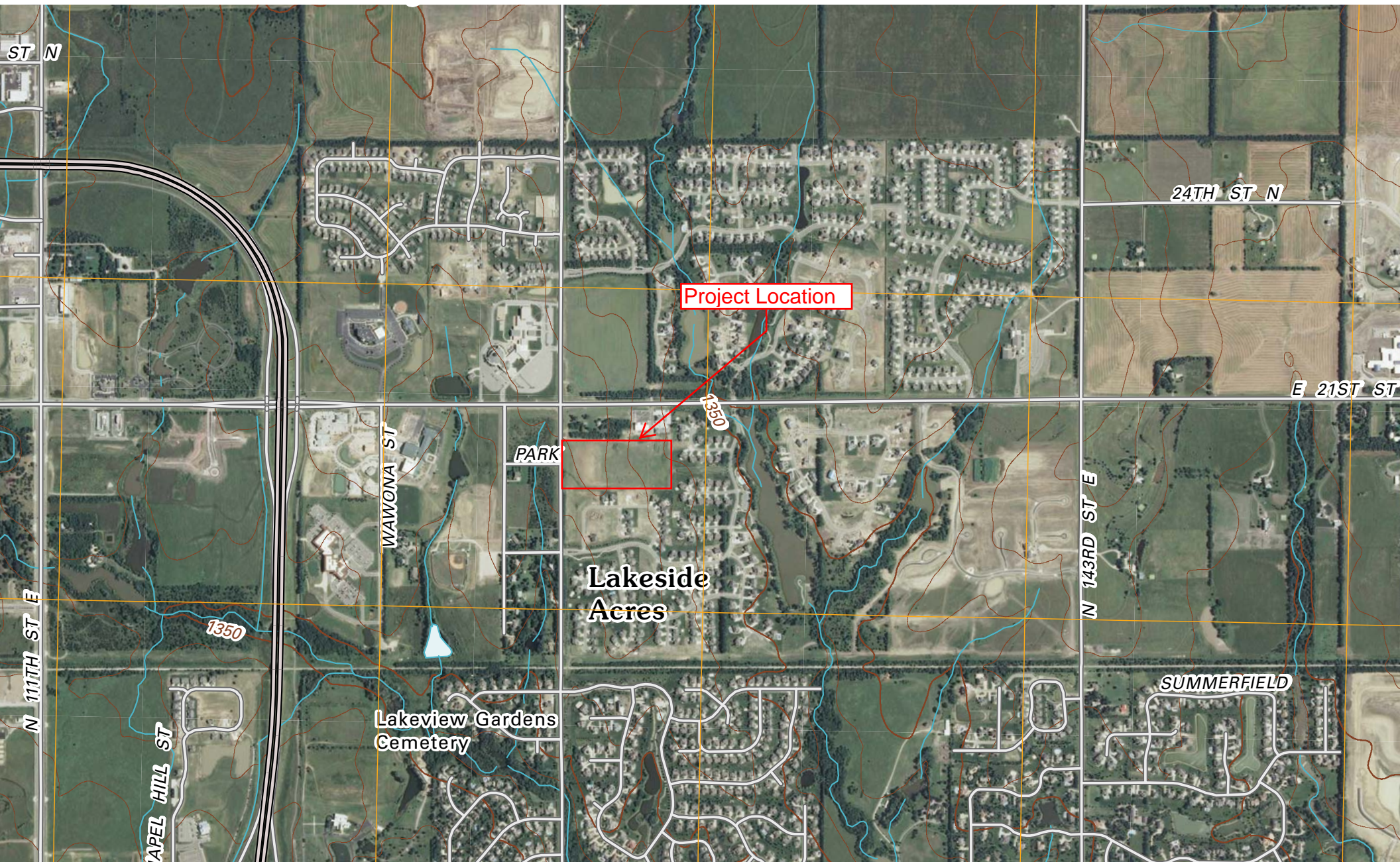
EFFECTIVE DATE
FEBRUARY 2, 2007



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

USGS MAP



Project Location

Lakeside Acres

Lakeview Gardens Cemetery

PARK

SUMMERFIELD

24TH ST N

E 21ST ST

N 143RD ST E

N 111TH ST E

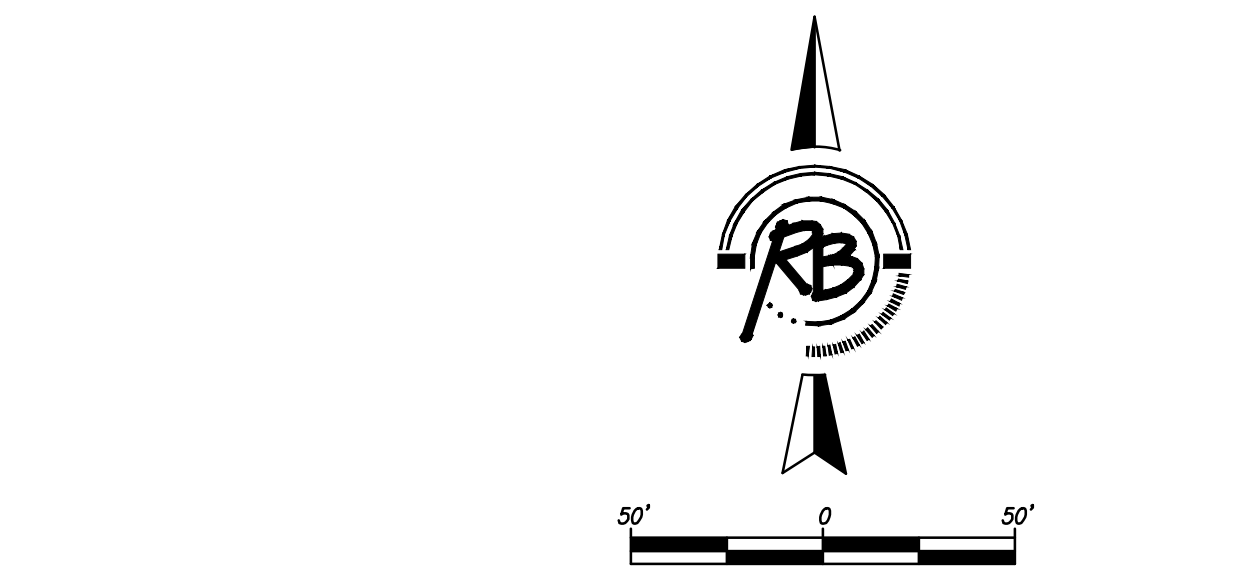
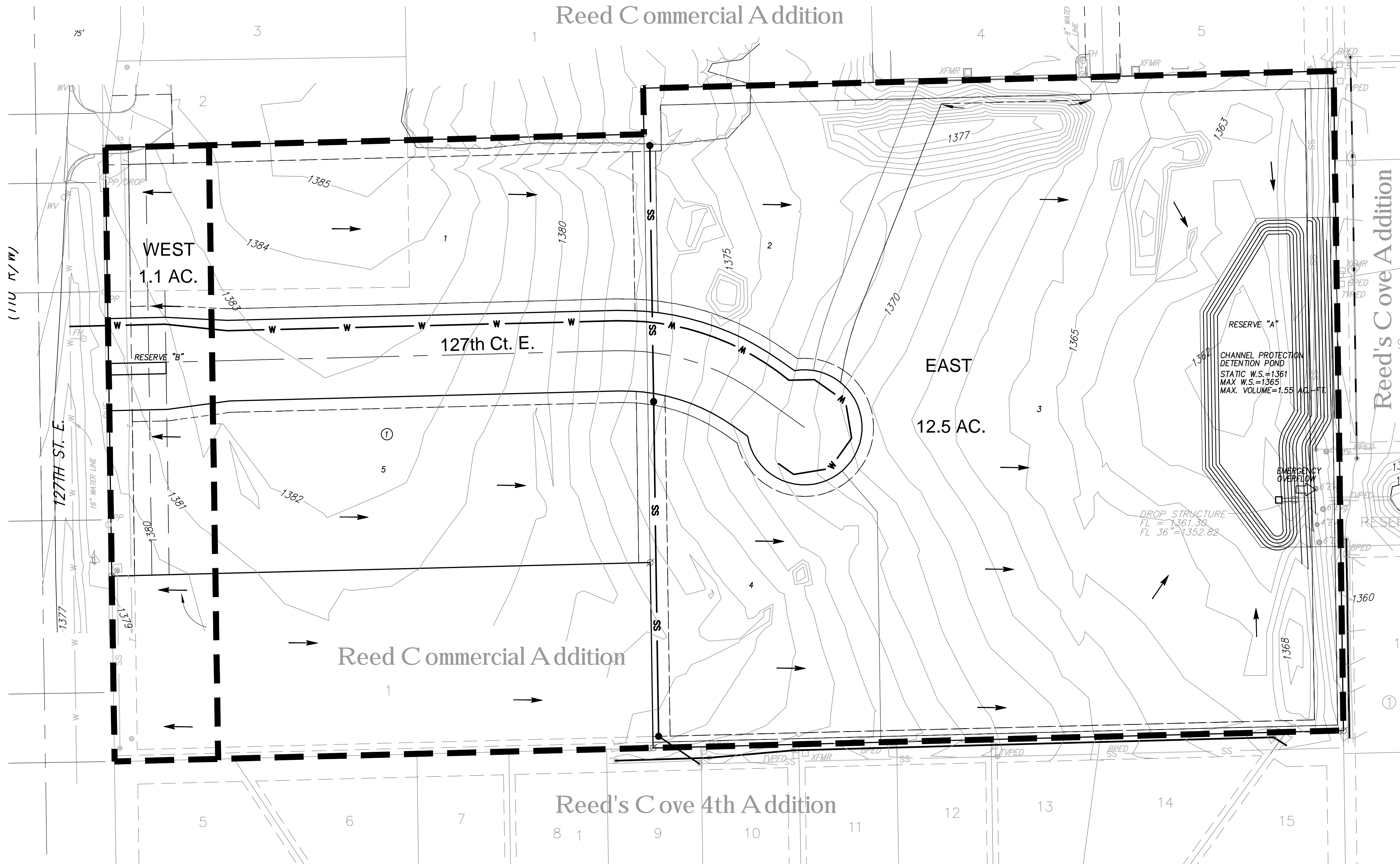
CAPEL HILL ST

WAWONA ST

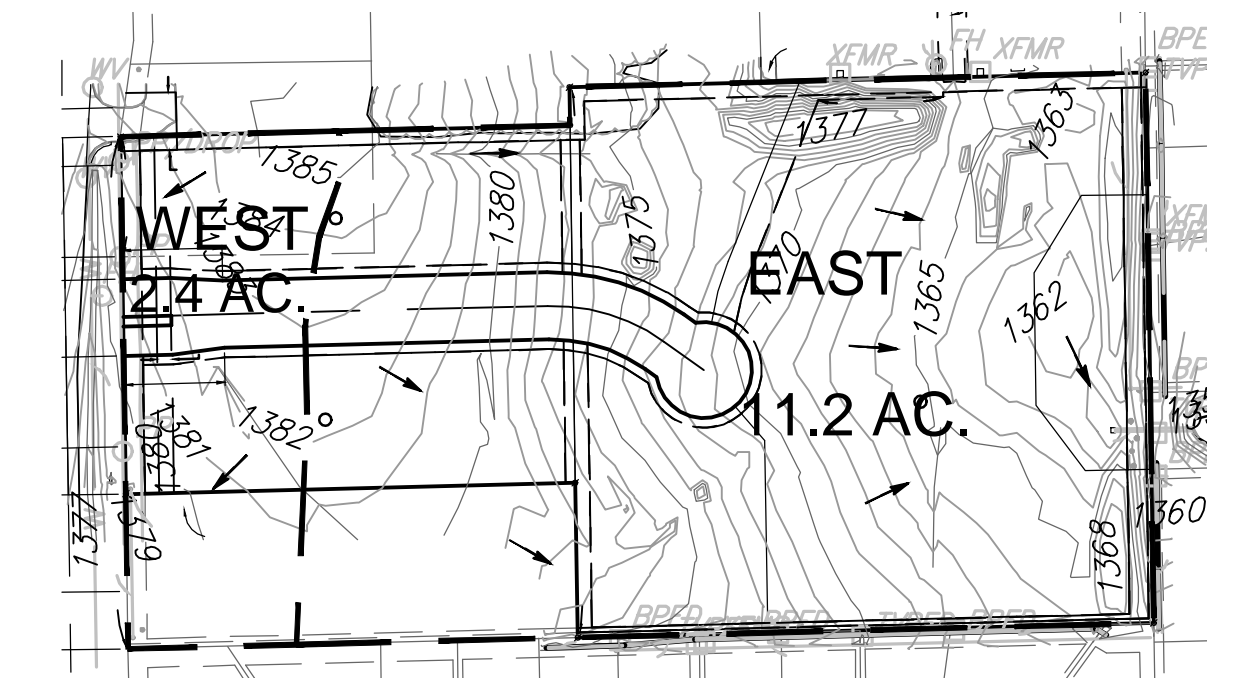
1350

1350

DRAINAGE MAP



BLOCK	LOT NO.	ELEVATION (NAVD88)
1	3	1368.0

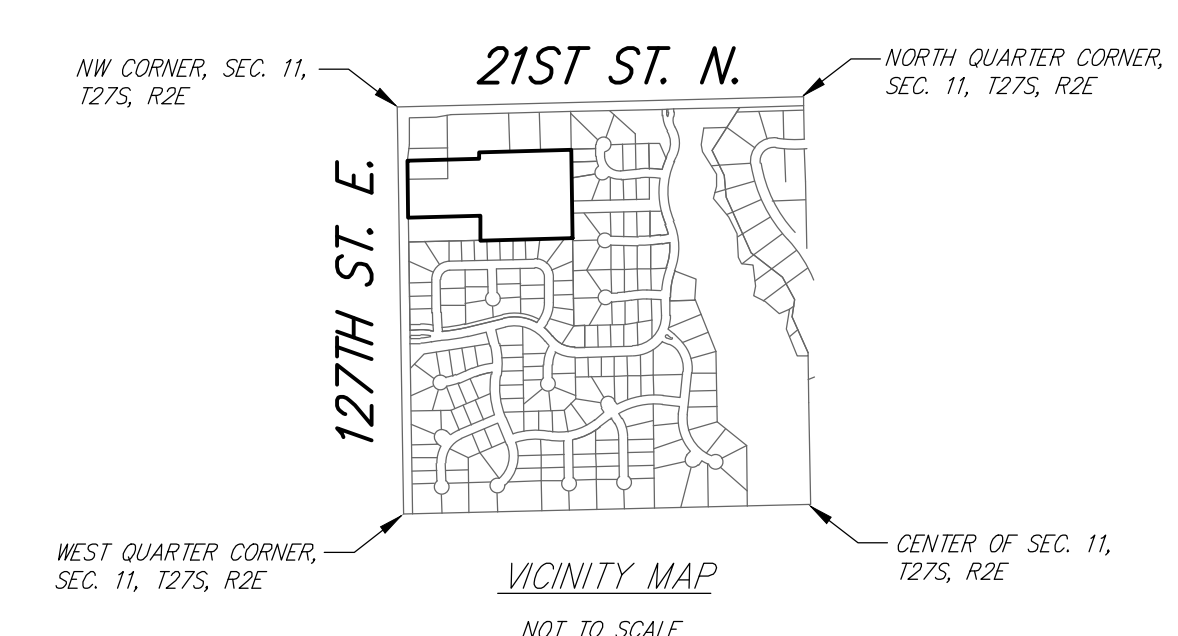


EXISTING DRAINAGE PATTERNS

BENCH MARK: CHISELED SQUARE ON THE NORTHEAST CORNER OF INLET ON SOUTH SIDE OF WILLIAMSGATE OVER BRIDGE IN HAWTHORNE ADDITION.
ELEVATION = 1356.23 (NAVD88)

ON-SITE BENCH MARK: CHISELED SQUARE ON THE TOP OF CURB AT THE SOUTH CURB RETURN OF THE SOUTH QUICKTRIP DRIVE ENTRANCE ON THE EAST SIDE OF 127TH ST. E., 26' EAST OF THE CENTERLINE OF 127TH ST. E. AND 377' SOUTH OF THE CENTERLINE OF 21ST ST. N.
ELEVATION = 1381.07 (NAVD88)

ON-SITE BENCH MARK: CHISELED SQUARE ON THE TOP OF CURB AT THE WEST CURB RETURN AT THE NORTHWEST CORNER OF 127TH ST. E. AND SHADYBROOK, 51' WEST OF THE CENTERLINE OF 127TH ST. E. AND 824' SOUTH OF THE CENTERLINE OF 21ST ST. N.
ELEVATION = 1377.33 (NAVD88)



EXISTING	AREA (AC.)	TC (MIN.)	I ₂	I ₃	I ₁₀	I ₁₀₀	C ₂	C ₃	C ₁₀	C ₁₀₀	O ₂	O ₃	O ₁₀	O ₁₀₀
WEST	2.4	15	3.83	4.56	5.22	7.37	0.30	0.35	0.45	0.65	2.8	3.8	5.6	11.5
EAST	11.2	29	2.72	3.30	3.83	5.49	0.30	0.35	0.45	0.65	9.1	12.9	19.3	40.0

PROPOSED	AREA (AC.)	TC (MIN.)	I ₂	I ₃	I ₁₀	I ₁₀₀	C ₂	C ₃	C ₁₀	C ₁₀₀	O ₂	O ₃	O ₁₀	O ₁₀₀
WEST	1.1	15	3.83	4.56	5.22	7.37	0.68	0.69	0.73	0.80	2.8	3.5	4.2	6.5
EAST	12.5	29	2.72	3.30	3.83	5.49	0.68	0.69	0.73	0.80	23.1	28.5	40.8	54.9

NOTE: PROJECT DETENTION IS PROVIDED IN EXISTING POND TO THE EAST. THE DRAINAGE FLOWS FIRST INTO RESERVE "C" OF REED'S COVE ADDITION AND THEN CONTINUES EAST TO THE LARGE DETENTION POND IN RESERVE "A".

AERIAL REEDS COVE MEDICAL CAMPUS WICHITA, KANSAS

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	DESIGN	AML	RB JOB # 3788P SHEET 1 OF 1
	DRAWN	AML	
	REVIEW		
	UTILITY		
DRAWING FILE	PROJECT NUMBER	DATE	
Drainage Plan {Layout1}		Apr. 8, 2011	