



Professional Engineering Consultants, P.A.

December 11, 2007

City of Wichita
Storm Water Management
7th Floor, City Hall
455 N. Main
Wichita, KS 67202

Attention: Mr. Scott Lindebak, P.E.
Civil Engineer

Reference: Drainage Plan for New Market V
PEC Project No. 35-05023

Dear Mr. Lindebak:

With this letter is the transmittal of preliminary construction plans for the proposed detention for NewMarket V and a drainage plan revised to incorporate the changes necessitated by the 404 permit application review. It is our intent with this submittal to resolve all drainage issues outstanding relative to the plat proposed for NewMarket V.

This plan is consistent with the most recent modeling performed to support the 404 permit application. The modeling is based upon a fully developed basin upstream of 29th Street North and includes those improvements south of 29th Street proposed in the permit on both Eastside and NewMarket. It assumes the existing condition on the Spencer Cove tract. A summary table of storage volume verse elevation for the West side pond system is attached for your review.

The plan accommodates the interconnection of future Spencer Cove storage with that provided on NewMarket both at existing grade and at the elevation of the proposed pumped storage. It also allows for the existing condition to function without obstruction.

Since the West side ponds will be interconnected and both will require pumping to restore full detention capacity, we have assumed that the pump will be publically owned and operated.

In the construction estimate furnished to define the scope of the improvement, we did not include costs associated with a standby generator, but did include the costs associated with the transfer switch necessary to connect the pump to a portable generator. This reflects the discussions we have had relative to the subject and our recommendation to you in this regard. If standby generation is required the construction estimate should be increased by \$180,000 for the Eastside Lift Station and \$25,000 for the West side. A revised estimate is attached.

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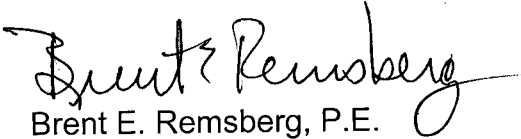
Mr. Scott Lindebak, P.E.
December 11, 2007
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You had asked about the quantity of excavation required to complete the West side pond. Our plans show that approximately 88,000 C.Y. of excavation will complete the pond with an additional 33,000 to 35,000 C.Y. required from the East side of Maize Road to complete the proposed embankment.

If you have any questions or need any additional information, please contact us.

Very truly yours,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

A handwritten signature in cursive script that reads "Brent E. Remsberg". The signature is written in black ink and is positioned to the left of the typed name.

Brent E. Remsberg, P.E.
Vice President

BER:ama

Encl: As noted

Construction Cost Estimate

East Side Duplex Storm Water Pump Station

Item No.	Description	Quantity	Units	Unit Price	Total Price
1	75 hp Mixed Flow Pumps	2	ea	\$67,000	\$134,000
2	48" Inlet Pipe w/ supports	100	lf	\$350	\$35,000
3	Inlet structure	1	ea	\$15,000	\$15,000
4	Wetwell, cast in place	65	cy	\$500	\$32,500
5	24" Discharge pipe	250	lf	\$150	\$37,500
6	24" Check Valve	1	ea	\$15,000	\$15,000
7	24" Gate Valve	1	ea	\$15,000	\$15,000
8	Valve Vault, cast in place	25	cy	\$500	\$12,500
9	CMU Bldg, complete	200	sf	\$650	\$130,000
10	Controls/Telemetry	1	ea	\$25,000	\$25,000
11	Transfer Switch	1	ls	\$4,000	\$4,000
12	Standby Generator	1	ls	\$150,000	\$150,000
					\$451,500

West Side Simplex Storm Water Pump Station

Item No.	Description	Quantity	Units	Unit Price	Total Price
1	10 hp Mixed Flow Pump	1	ea	\$37,500	\$37,500
2	24" Inlet Pipe w/ supports	100	lf	\$250	\$25,000
3	24" Plug Valve, complete	1	ea	\$20,000	\$20,000
4	Wetwell, cast in place	55	cy	\$500	\$27,500
5	16" Discharge pipe	650	lf	\$80	\$52,000
6	16" by Directional Drill	160	lf	\$150	\$24,000
7	16" Check Valve	1	ea	\$5,000	\$5,000
8	16" Gate Valve	1	ea	\$5,000	\$5,000
9	Valve Vault, cast in place	25	cy	\$500	\$12,500
10	Transfer Switch	1	ls	\$4,000	\$4,000
11	Controls/Telemetry	1	ea	\$25,000	\$25,000
12	Pump Enclosure	1	ls	\$7,500	\$7,500
12	Standby Generator	1	ls	\$25,000	\$25,000
					\$270,000

Estimate of Construction, Total

\$721,500

WSG-0234



Professional Engineering Consultants, P.A.

July 24, 2002

Mr. David Pope
Kansas State Board of Agriculture
Division of Water Resources
901 S. Kansas Ave., 2nd Floor
Topeka, KS 66612-1283

Attention: Matt Scherer, P.E.
Water Structures Engineer

Reference: Drainage Improvements – Westlink Tributary]
NE ½, NE ¼, S6, T27S, R1W
PEC File No. 32-02000-5054

Dear Mr. Pope:

We are submitting this proposed development plan for your review and evaluation of permitting requirements. The proposed development lies within a mapped floodplain that has been designated based upon historic data, and does not necessarily reflect the current conditions. The mapped boundary reflects no outlet for this basin, although one has been constructed that connects to the Westlink Tributary and may have been documented with map revisions subsequent to the 1976 maps.

The configuration of proposed drainage improvements has been developed on the basis of replacing existing detention storage with ponds dug below the existing outfall flowline elevation. A means of pumping down the ponds to an elevation approximately 4 feet below the outfall elevation will be incorporated into the improvements. The exact size of the pump has not been determined, but may be in the 4000 to 5000 gpm range, depending upon the selection of a reasonable time frame for the restoration of the detention storage capacity.

The existing conditions provide approximately 92 Ac-Ft of storage between the existing ground line and the contour elevation (1350 MSL) of the flood plain boundary. Of this total, approximately 22 Ac-Ft exist within property not part of this development plan. Twelve Ac-Ft of storage exists on land platted to the south, and 58 Ac-Ft of storage lies within the proposed development site. The existing storage is connected via a 36" crossroad pipe (flowline = 1346.2+/-) to a drainage detention area east of Maize Road that outlets into Westlink Tributary. The proposed concept plan provides detention storage of 52 Ac-Ft above the flowline of the crossroad pipe and an additional 27 Ac-Ft below the flowline. The latter will require a pump system to restore full capacity of the detention pond.

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WATER RESOURCES
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JUL 25 2002

KS DEPT OF AGRICULTURE

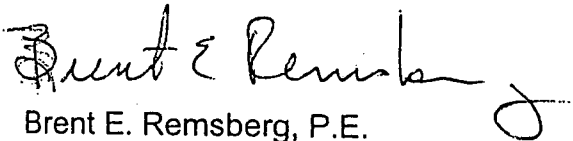
Mr. David Pope
July 24, 2002
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A possible addition to the plan is the interconnection of the proposed pond to an existing detention pond to the south. This pond functions in the manner proposed for the subject property, in that, detention storage is provided by pumping down the pond after a storm to a level that restores the required detention storage capacity of the system. This pond has approximately 15 acre-feet of capacity above the design storm event that could be used to supplement the proposed pond. The enclosed concept plan illustrates the size of both the existing detention capacity and the proposed system.

We would like to review this concept plan with you and discuss the steps necessary to secure all necessary permitting. To this end we will contact you to schedule a meeting at your office and at your convenience. Thank you for your assistance with this project.

Very truly yours,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.



Brent E. Remsberg, P.E.
Vice President

BER:amha

Encl: As noted

cc w/encl: George Sherman, Slawson Inc.

WATER RESOURCES
RECEIVED

JUL 25 2002

KS DEPT OF AGRICULTURE

Stormwater Pond Stage/Area/Storage Relationships

Project : Cadillac Lake
Wichita, KS

P.N. : 6208

By : PEC

Date : 12/11/07

North of 29th Street

existing Conditions		New Market V Property				
Stage (feet)	Depth (feet)	Surface Area (square feet)	Surface Area (acres)	Average Area (acres)	Incremental Volume (ac-Ft)	Total Volume (ac-Ft)
1342.00	0.00	0	0.00	0.00	0.00	0.00
1343.00	1.00	0	0.00	0.00	0.00	0.00
1346.00	4.00	0	0.00	0.00	0.00	0.00
1347.50	5.50	447,823	10.28	5.14	7.71	7.71
1348.00	6.00	520,046	11.94	11.11	5.55	13.27
1349.00	7.00	597,878	13.73	12.83	12.83	26.10
1350.00	8.00	624,725	14.34	14.03	14.03	40.13
1350.00	8.00	0	0.00	7.17	0.00	40.13

Stormwater Pond Stage/Area/Storage Relationships

Project : Cadillac Lake
Wichita, KS

P.N. : 6208

By : PEC

Date : 12/11/07

North of 29th Street

existing Conditions						
New Market V Property						
Stage (feet)	Depth (feet)	Surface Area (square feet)	Surface Area (acres)	Average Area (acres)	Incremental Volume (ac-Ft)	Total Volume (ac-Ft)
1342.00	0.00	0	0.00	0.00	0.00	0.00
1343.00	1.00	0	0.00	0.00	0.00	0.00
1344.00	2.00	233,046	5.35	2.68	2.68	2.68
1345.00	3.00	255,262	5.86	5.61	5.61	8.28
1346.00	4.00	277,042	6.36	6.11	6.11	14.39
1347.00	5.00	364,162	8.36	7.36	7.36	21.75
1348.00	6.00	451,282	10.36	9.36	9.36	31.11
1349.00	7.00	1,024,531	23.52	16.94	16.94	48.05
1350.00	8.00	1,597,345	36.67	30.10	30.10	78.15

*includes all property south of 29th Street and West of Maize Rd.

Future Conditions		New Market V Property				
Stage (feet)	Depth (feet)	Surface Area (square feet)	Surface Area (acres)	Average Area (acres)	Incremental Volume (ac-Ft)	Total Volume (ac-Ft)
1341.00	0.00	188,399	4.33	0.00	0.00	0.00
1342.00	1.00	191,994	4.41	4.37	4.37	4.37
1343.00	2.00	195,618	4.49	4.45	4.45	8.82
1344.00	3.00	199,704	4.58	4.54	4.54	13.35
1345.00	4.00	215,702	4.95	4.77	4.77	18.12
1346.00	5.00	223,311	5.13	5.04	5.04	23.16
1347.00	6.00	231,021	5.30	5.22	5.22	28.38
1348.00	7.00	328,902	7.55	6.43	6.43	34.80
1349.00	8.00	328,902	7.55	7.55	7.55	42.35
1350.00	9.00	328,902	7.55	7.55	7.55	49.90
1350.00	9.00	0	0.00	3.78	0.00	49.90
1350.00	9.00	0	0.00	0.00	0.00	49.90

Difference = 9.77 or 24.352548 %

Stormwater Pond Stage/Area/Storage Relationships

Project : Cadillac Lake
 : Wichita, KS
P.N. : 6208
By : PEC
Date : 12/18/07

existing Conditions						
New Market V Property						
Stage (feet)	Depth (feet)	Surface Area (square feet)	Surface Area (acres)	Average Area (acres)	Incremental Volume (ac-Ft)	Total Volume (ac-Ft)
1342.00	0.00	0	0.00	0.00	0.00	0.00
1343.00	1.00	0	0.00	0.00	0.00	0.00
1344.00	2.00	0	0.00	0.00	0.00	0.00
1345.00	3.00	0	0.00	0.00	0.00	0.00
1346.00	4.00	108,727	0.00	0.00	0.00	0.00
1347.50	5.50	333,158	2.50	0.00	0.00	0.00
1348.00	6.00	389,273	7.65	1.25	1.25	1.25
1349.00	7.00	753,780	8.94	5.07	7.61	8.86
1350.00	8.00	1,117,852	17.30	8.29	4.15	13.00
1351.00	9.00	1,117,852	25.66	13.12	13.12	26.12
1351.98	9.98	1,117,852	25.66	21.48	21.48	47.61
			25.66	25.66	25.66	73.27
				25.66	25.66	98.42

Future Conditions

New Market V Property

Stage (feet)	Depth (feet)	Surface Area (square feet)	Surface Area (acres)	Average Area (acres)	Incremental Volume (ac-Ft)	Total Volume (ac-Ft)
1341.00	0.00	307,098	7.05	0.00	0.00	0.00
1342.00	1.00	316,246	7.26	7.16	7.16	7.16
1343.00	2.00	325,829	7.48	7.37	7.37	14.53
1344.00	3.00	350,222	8.04	7.76	7.76	22.29
1345.00	4.00	374,616	8.60	8.32	8.32	30.61
1346.00	5.00	399,010	9.16	8.88	8.88	39.49
1347.00	6.00	458,724	10.53	9.85	9.85	49.33
1348.00	7.00	581,138	13.34	11.94	11.94	61.27
1349.00	8.00	581,138	13.34	13.34	13.34	74.61
1350.00	9.00	581,138	13.34	13.34	13.34	87.95
1351.00	10.00	581,138	13.34	13.34	13.34	101.29
1352.00	11.00	581,138	13.34	13.34	13.34	114.63
1352.60	11.60	581,138	13.34	13.34	8.00	122.64

Difference = 24.22 or 24.607107 %