

December 1, 2009

Mr. Charles Soules, P.E.
Director of Public Works – City of Lawrence
PO Box 708
Lawrence, KS 66044

RE: Engineering Report
Lawrence Municipal Airport – Gravity Sewer
Lawrence, Kansas

Dear Charles:

This engineering report summarizes the findings of the gravity sewer portion of the Lawrence Municipal Airport Sanitary Sewer study.

Background

The City of Lawrence contracted with BG Consultants to provide an engineering study which evaluated the sanitary sewer collection and treatment options for the Lawrence Municipal Airport. A separate study accompanies this letter report which details the wastewater treatment facility options. This report will present the collection system options.

Findings

BG Consultants met with City Staff to determine the goals of the project. After that meeting, a concept design was developed that would serve the airport with gravity collection sewer. The gravity sewer would convey flow to a point where treatment or transfer of the sewage would take place. Figure 1 shows the concept design along with approximate flowlines and top of manhole elevations. A phasing plan was also developed based upon City Staff input. Figure 1 shows Phase 1, 2 and 3. Phase 1 serves the terminal area and the proposed development near the terminal. Phase 2 serves the buildings west of the runway 1/19 and Phase 3 serves a small area east of Airport Road.

Opinions of Project Costs were developed for each phase and have been attached to this report. The Phase 1 opinion of probable project cost is \$420,953. The Phase 2 opinion of probable project cost is \$442,095. The Phase 3 opinion of probable project cost is \$192,930.



Also

Manhattan, KS. • Hutchinson, KS • Emporia, KS

Thank you again for the opportunity to work with you on this project. Please feel free to contact me with any questions.

Sincerely,

BG CONSULTANTS, INC.

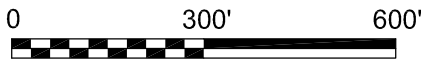
A handwritten signature in black ink, appearing to read "D. J. Hamby". The signature is fluid and cursive, with the first name "D." and last name "Hamby" clearly distinguishable.

David J. Hamby, P.E.
Principal

attachments



■ - SEPTIC TANK



Scale: 1"= 300'

LAWRENCE MUNICIPAL AIRPORT

LAWRENCE, KANSAS

COLLECTION SEWER



Project No. 09-1154L
Date: Nov. 30, 2009

FIGURE
1

Lawrence Airport Sanitary Sewer
Phase 1 - Engineer's Opinion of Probable Cost
City of Lawrence, Kansas
09-1154L

<u>Item #</u>	<u>Description</u>	<u>Total</u>		<u>Unit Price</u>	<u>Total Price</u>
		<u>Quantity</u>	<u>Unit</u>		
1.	Mobilization	1	L.S.	\$ 25,000.00	\$ 25,000.00
2.	8" Sanitary Sewer (PVC)(SDR 26)(In Place)	1,874	L.F.	\$ 110.00	\$ 206,140.00
3.	Std. Manhole (0'-6")(4' Dia.)	7	Each	\$ 2,500.00	\$ 17,500.00
4.	Extra Vertical Depth to Std. Manhole (4' Dia.)	63.3	V.F.	\$ 150.00	\$ 9,495.00
5.	Road Crossing	30	L.F.	\$ 250.00	\$ 7,500.00
6.	Erosion and Sediment Control	1	L.S.	\$ 2,500.00	\$ 2,500.00
7.	Traffic Control	1	L.S.	\$ 1,500.00	\$ 1,500.00
8.	Construction Staking	1	L.S.	\$ 3,000.00	\$ 3,000.00
9.	Seeding, Fertilizing, Mulching	1	L.S.	\$ 8,000.00	\$ 8,000.00
Construction Subtotal =					\$ 280,635.00
+20% Construction Contingency =					\$ 56,127.00
Construction Total =					\$ 336,762.00
+25% Engineering, Inspection =					\$ 84,191.00
Project Total =					\$ 420,953.00

Notes:

- Easement acquisition has not been included in this estimate.

Lawrence Airport Sanitary Sewer
Phase 2 - Engineer's Opinion of Probable Cost
City of Lawrence, Kansas
09-1154L

<u>Item #</u>	<u>Description</u>	<u>Total</u>			<u>Total Price</u>
		<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	
1.	Mobilization	1	L.S.	\$ 25,000.00	\$ 25,000.00
2.	8" Sanitary Sewer (PVC)(SDR 26)(In Place)	2,095	L.F.	\$ 110.00	\$ 230,450.00
3.	Std. Manhole (0'-6')(4' Dia.)	7	Each	\$ 2,500.00	\$ 17,500.00
4.	Extra Vertical Depth to Std. Manhole (4' Dia.)	55.2	V.F.	\$ 150.00	\$ 8,280.00
5.	Erosion and Sediment Control	1	L.S.	\$ 2,500.00	\$ 2,500.00
6.	Construction Staking	1	L.S.	\$ 3,000.00	\$ 3,000.00
7.	Seeding, Fertilizing, Mulching	1	L.S.	\$ 8,000.00	\$ 8,000.00
Construction Subtotal =					\$ 294,730.00
+20% Construction Contingency =					\$ 58,946.00
Construction Total =					\$ 353,676.00
+25% Engineering, Inspection =					\$ 88,419.00
Project Total =					\$ 442,095.00

Notes:

- Easement acquisition has not been included in this estimate.

Lawrence Airport Sanitary Sewer
Phase 3 - Engineer's Opinion of Probable Cost
City of Lawrence, Kansas
09-1154L

<u>Item #</u>	<u>Description</u>	<u>Total</u>		<u>Unit Price</u>	<u>Total Price</u>
		<u>Quantity</u>	<u>Unit</u>		
1.	Mobilization	1	L.S.	\$ 12,000.00	\$ 12,000.00
2.	8" Sanitary Sewer (PVC)(SDR 26)(In Place)	1,075	L.F.	\$ 90.00	\$ 96,750.00
3.	Std. Manhole (0'-6')(4' Dia.)	4	Each	\$ 2,500.00	\$ 10,000.00
4.	Extra Vertical Depth to Std. Manhole (4' Dia.)	10.8	V.F.	\$ 150.00	\$ 1,620.00
5.	Erosion and Sediment Control	1	L.S.	\$ 1,500.00	\$ 1,500.00
6.	Construction Staking	1	L.S.	\$ 1,750.00	\$ 1,750.00
7.	Seeding, Fertilizing, Mulching	1	L.S.	\$ 5,000.00	\$ 5,000.00
Construction Subtotal =					\$ 128,620.00
+20% Construction Contingency =					\$ 25,724.00
Construction Total =					\$ 154,344.00
+25% Engineering, Inspection =					\$ 38,586.00
Project Total =					\$ 192,930.00

Notes:

- Easement acquisition has not been included in this estimate.