



City of Bonner Springs

P.O. Box 38, 205 East Second Street, Bonner Springs, KS 66012

December 12, 2016

Mr. Brian Donahue
Regulatory Project Manager
U.S. Army Corps of Engineers
Kansas City District Office
601 E. 12th St. Suite 402
Kansas City, MO 64106

RE: Comments to Kansas River Dredging Draft Environmental Impact Study.

The City of Bonner Springs would like to respond to the U.S. Army Corps of Engineers (USACE) Environmental Impact Study draft report regarding new dredging permits within the Kansas River. The City of Bonner Springs currently has five (5) alluvial aquifer wells operating on the north bank of the Kansas River. Our current outtake is 250 – 300 million gallons per year; however of current water rights are one (1) billion gallons per year, therefore our long term sustainability for the City water supply is maintaining excellent water availability from the Kansas River. The City is also a member of the Kansas Water Assurance Water District which maintains upstream water storage reservoirs for sustainable water supply in the future.

The City's Groundwater and Environmental Hydrogeologist reviewed the USACE draft report for the City and the attached memorandum pertaining to the health of the aquifer and associated water levels are considered vital interests for the City, both currently and in the even more so in the future. Any impact on the City wells due to the over-dredging could have a very negative impact on the City's ability to provide self-sustaining water as we current have planned. Our water rights will allow the City to grow in the future with the ability to provide safe drinking water to our citizens and businesses for the next hundred years and into the future. We agree with the recommendation to limit the amount of dredging based on the "Reduced Limit Alternative" as it is referred to in the USACE draft report. The City would also recommend that an annual dredging assessment be completed for our review purpose to determine the overall impact of the River channels and streambed degradation.

We believe our concerns are warranted and appreciate the opportunity to respond to the USACE draft report. The City understands the needs for dredging operations and Holiday Sand is a viable business within our City. The City must ensure however, that our future growth and sustainability is not diminished by the dredging operations on the Kansas River.

Sincerely,

Rick Sailler,
Public Works Director
City of Bonner Springs
rsailler@bonnersprings.org

913-667-3514 – direct 913-207-1530- cell

LEGGETTE, BRASHEARS & GRAHAM, INC.

**PROFESSIONAL GROUNDWATER AND
ENVIRONMENTAL ENGINEERING SERVICES**

405 E. 19TH AVENUE, SUITE A2
NORTH KANSAS CITY, MO 64116
816-421-7766
FAX 816-421-8444

December 12, 2016

Rick Sailer
Public Works Director
City of Bonner Springs, Kansas
PO Box 38
Bonner Springs, Kansas 66012

RE: Dredging Authorizations Renewal Comments

Dear Mr. Sailer:

We herein submit our concerns regarding reauthorizations of the commercial dredging between river miles 18.65 to 21.15. Our concerns are related to the fact that the river dredging has and will continue to impact the city's water supply.

The Bonner Springs public water supply is from five wells located approximately 2,000 feet downstream from the Bonner Springs bridge (RM 20.2). This puts the well field within the Reach #11, between the Desoto bridge (in Reach #10 and at RM 15) and the confluence of the Kansas and Missouri Rivers (USCOE, 1984). The Bonner Springs wells have been severely impacted by a documented drop of the Kansas River bed. A drop in static water elevations, in the City wells, have been documented from 770 feet mean sea level (msl) in 1951 to a current 742 msl. This approximate 30 foot drop in static water level has resulted in significant drop in available production capacity. The Bonner Springs wells once produced twice what they are now capable of producing, mostly due to a reduction in saturated thickness. The Bonner Springs well field area is bounded by the Bonner Springs wastewater treatment plant to the east, a commercial property and building to the west, the river to the south, and Kansas Highway 32 and the Sunflower rock quarry to the north. Therefore, the wellfield is limited to the five well sites it currently maintains.

It was noted in the 1984 USACOE modeling study that "Dredging activities between Turner Bridge and Bonner Springs have historically removed more material than the system can supply." "The net impacts of dredging on the Kansas River have been degradation, channel widening, and the occurrence of a headcut at RM 22 to 23." "Between 1952 and 1976, for example, approximately 49.3 million tons of material were dredged between Turner Bridge and Desoto, which corresponds to an average thickness of approximately 15 feet within the main channel. Sediment continuity indicates a direct relationship between dredging activity and channel degradation and 150 feet of channel widening between Turner Bridge and Bonner Springs, available data show areas within the lower Kansas River which have undergone the most severe degradation are the same locations where extensive dredging has taken place.

Holliday Sand and Gravel Company (Holliday) has been dredging sand from the vicinity of the Bonner Springs well field for many years. They currently have two pending applications to renew their Department of the Army (DA) authorizations to dredge sand and gravel for commercial purposes for another 5 years. Holliday is requesting another 300,000

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tons per year from each authorizations, both located in the vicinity of the Bonner Springs well field. The first authorization is between RM 21.15 and 20.55 and the second authorization is between RM 20.15 and 18.65.

On behalf of the City of Bonner Springs, We have reviewed the Draft Environmental Impact Statement for the Kansas River Commercial Dredging provided by the USCOE (October, 2016). We believe it is in the City's interest to endorse the proposed alternate described in Chapter 2 titled "The Reduced Limit Alternative". This alternative limits the authorized dredging to no more than 1,670,000 tons of material between RM 310 at DeSoto to the confluence of the Kansas and Missouri Rivers. This alternative has the benefit of providing more time to the dredging companies so that they can find and develop another source of sand and gravel and limiting the amount of material removed to what was determined in the USCOE 1984 study to be the estimated rate of sediment inflow.

We believe that by limiting the dredging to the approximate rate of sediment inflow can minimize further degradation of the City's water supply production capacity. This alternative also has the benefit of allowing for continued commercial production of sand and gravel without an interruption.

Sincerely,
LEGGETTE, BRASHEARS & GRAHAM, INC.



Martha Silks
Associate / Hydrogeologist

Reviewed by:



J. Kevin Powers.
Principal



December 9, 2016

Brian Donahue
Regulatory Project Manager
U.S. Army Corps of Engineers
Kansas City District Office
601 E. 12th St, Suite 402
Kansas City, MO 64106

RE: Comments to US Army Corps of Engineers Kansas River Dredging Draft Environmental Impact Study

Mr. Brian Donahue:

The City of Olathe (Olathe) understands that the US Army Corps of Engineers (USACE) has presented a draft Environmental Impact Study (EIS) to assess the impact of approving new Kansas River instream dredging permits. We are submitting comments on this Draft EIS related to Master's Dredging request for an instream dredging permit from River Mile 26.1 to 27.6. Olathe operates a well field for public water supply adjacent to the area on the river where Master's proposed dredging permit would allow them to operate.

While we recognize the importance of commercial sand and gravel dredging on the Kansas River, we are concerned that the production of sand and gravel could compromise the production capability and water quality of Olathe's well field. Should dredging compromise the production capacity or water quality, it would require substantial investment to compensate for the lost capacity; a cost we do not believe should fall to the rate payers of Olathe. We ask that these factors are taken into consideration if the Master's Dredging permit is approved.

If as a result of the EIS, the USACE decides to allow the proposed in-stream dredging permits, Olathe requests that regulation and monitoring measures are implemented to ensure the integrity and long-term viability of Olathe's public water supply is not compromised by the dredging activities. We also hope that the USACE continues to work with dredging operators to accommodate their sand and gravel needs in other areas without risk to public infrastructure or through the development of off-stream pits.

In addition to regulations listed in the proposed Revised Regulatory Plan for Commercial Dredging Activities on the Kansas River included as Appendix A of the draft EIS, the City requests that the USACE consider implementing the following permit conditions specific to the River Mile 26.1 to 27.6 dredging application:

- A streambed degradation monitoring station be located adjacent to the City's well field, and monitoring of streambed degradation be conducted annually.
- Dredge return water discharged back into the river, upstream from the City's wells, be discharged in such a way as to not to churn up silt from the riverbed and create a silt plume.
- A 500-foot buffer zone be applied to the intake laterals of Collector Well #2 (as indicated in Figure 1).

Enclosed is a technical memorandum that further details the areas of concern Olathe has with dredging operations on the Kansas River. Olathe has reviewed the memorandum and agrees with its assessments and recommendations and believes that these concerns should be addressed as part of approving the Master's Dredging permit application.

In conclusion, Olathe is not opposed to dredging the Kansas River as long as the activities are appropriately regulated and monitored to ensure that critical public water supply infrastructure is protected from capacity

reduction and negative water quality impacts. We understand that dredging is not the sole source of river channel degradation. However, allowing dredging this close to Olathe's wells has the potential to compromise Olathe's sole source of public water supply.

Thank you for your time and consideration of our comments. Please contact me at (913) 971-9029 if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mary Jaeger", with a long, sweeping horizontal line extending to the right.

Mary Jaeger, P.E.
Public Works Director
City of Olathe, KS



Memo

Date: Wednesday, December 07, 2016

Project: Off Stream Proposed Dredging near City Well Field

To: Joe Foster, John Gilroy, PE – City of Olathe, Kansas

From: Doug Haney, PE, PG

Subject: USACE Response to Draft Kansas River Dredging EIS

HDR has reviewed the October 2016 Draft Environmental Impact Statement (EIS) on Kansas River Commercial Sand and Gravel Dredging proposed to the US Army Corps of Engineer (USACE) by aggregate companies requesting new dredging permits.

Of concern to the City of Olathe's (City) raw water supply is the request by Master's Dredging for a permit to dredge 300,000 tons annually from the stretch of river between River Miles 26.1 and 27.6. This stretch of river is adjacent to the City's vertical well field and Collector Well #2 (Figure 1). Of particular concern is Collector Well #2, as the well's intake laterals extend underneath the riverbed (Figure 2).

A portion of the requested dredging stretch is within an area currently closed to dredging due to a greater than two foot riverbed degradation from 1992 baseline levels. If the permit is granted, Master's Dredging would be allowed to dredge in the portion of the River Miles 26.1 and 27.6 stretch not closed, and could be allowed to later dredge in the closed stretch once riverbed levels have aggraded enough above 1992 baseline levels to support additional commercial dredging.

Overall, the Draft EIS presents a Proposed Action for the USACE to issue Department of Army (DA) permits under authority of Section 10 to authorized the hydraulic dredging of sand and gravel from the bed of the Kansas River. We recommend that the City respond during the Draft EIS comment period, and request that the USACE include specific protections in the Master's Dredging permit, if granted. Several of these protections are outlined in the proposed Revised Regulatory Plan for Commercial Dredging Activities on the Kansas River (Revised Regulatory Plan) included as Appendix A to the draft EIS.





Potential to Impact City Water Supply Operations

Previously, HDR has considered the impact that the dredging operations might have on the City water supply. For the River Miles 26.1 and 27.6 requested permit, the major concerns include:

- Reduction in river surface water levels adjacent to the vertical well field and Collector Well #2, resulting in reduced well capacity.
- Accelerated clogging of the infiltration zone by silt impingement, resulting in reduced well field capacity.
- Potential damage to physical structures, as the collector wells have intake screens extending beneath the proposed dredging area.

Reduction in river surface levels adjacent to the vertical well field and Collector Well #2.

With riverbed infiltration wells (such as the City's vertical and collector wells), during continued operation static groundwater level at the wells is essentially equal to the adjacent river surface level. As riverbed level drops, there is a corresponding drop in river surface for a given amount of flow in the river.

The current Olathe Water Master Plan study being conducted by HDR indicates that the eight verticals wells adjacent to the requested dredged area have a specific capacity (gallons per minute of production per foot of saturated thickness above the well intake) of 54 gpm/ft to 190 gpm/ft, for a total of 615 gpm of capacity for each foot of drawdown above the screen. Specific capacity at Collector Well #2 is 175 gpm/ft. This means that the City is expected to lose 790 gpm of production capacity from the vertical wells and Collector Well #2 for each foot the riverbed is lower adjacent to the well field.

The Revised Regulatory Plan closes a 5-mile segment of river to dredging once the riverbed has lowered two feet below 1992 baseline levels. The Plan calls for monitoring of riverbed degradation to be conducted on 2-year intervals. Given the critical nature of riverbed degradation having a direct impact on well production capacity at the vertical wells and Collector Well #2, the City should request that a monitoring station be located adjacent to the City's well field, and that monitoring of streambed degradation be conducted annually.

Accelerated clogging of the infiltration zone by silt impingement.

Riverbank infiltration wells operate by inducing flow through the adjacent river bed and into the aquifer. When the wells are put online, well drawdown underneath the river





increases flow velocity into the river bed, and silt particles will impinge into the pore spaces on the river bed surface, partially clogging the river bed.

There is a concern that an increased silt load in the river from the instream dredging action and from return flows at the sand and gravel processing facility upstream of the well field could accelerate this clogging, particularly during low river flow when optimal riverbed infiltration capacity is critical to meeting City water demand.

The Revised Regulatory Plan contains specific language pertaining to dredged return Water, silt collected in siltation basins, and miscellaneous debris dredged from the river.

- *“All dredged return water and process water must be passed through an appropriately sized and maintained siltation basin prior to being discharged into any waters of the U.S. Design of sediment basins and management of discharges must comply with the requirements of Section 402 of the Clean Water Act as administered by KDHE and EPA.”*
- *Dredged return water must be conveyed from the processing facility to the river by sluiceway or by piping*
- *Silt collected in siltation basins and miscellaneous debris dredged from the river, such as wood, metal, paper and plastic cannot be returned to the water body.*

The City should request that the discharge back into the river, upstream from the City's wells, be discharged in such a way as to not to churn up silt from the riverbed and create a silt plume.

Potential damage to physical structures.

The intake laterals at Collector Well #2 extend into the sand and gravel beneath the riverbed at the proposed dredging zone. Well laterals are set at a level below the river bed that can be reached by the dredge cutting heads. The well lateral intakes are composed of wire-wrapped continuous slot well screen and would be damaged by a dredge cutting head, should one operate near the screen.

The Revised Regulatory Plan states that no dredging will be allowed within 500 feet of any water intake structure. The City should request that this 500-foot buffer zone be applied to the intake laterals of Collector Well #2 (as indicated in Figure 1)





Recommended Dredging Permit Restrictions

Given the potential for impact to the City's raw water supply, and proposed Revised Regulatory Plan for Commercial Dredging Activities on the Kansas River, HDR recommends that the City request the following conditions be placed on the River Miles 26.1 and 27.6 requested permit, if granted:

- A streambed degradation monitoring station be located adjacent to the City's well field, and monitoring of streambed degradation be conducted annually.
- Dredge return water discharged back into the river, upstream from the City's wells, be discharged in such a way as to not to churn up silt from the riverbed and create a silt plume.
- A 500-foot buffer zone be applied to the intake laterals of Collector Well #2 (as indicated in Figure 1).



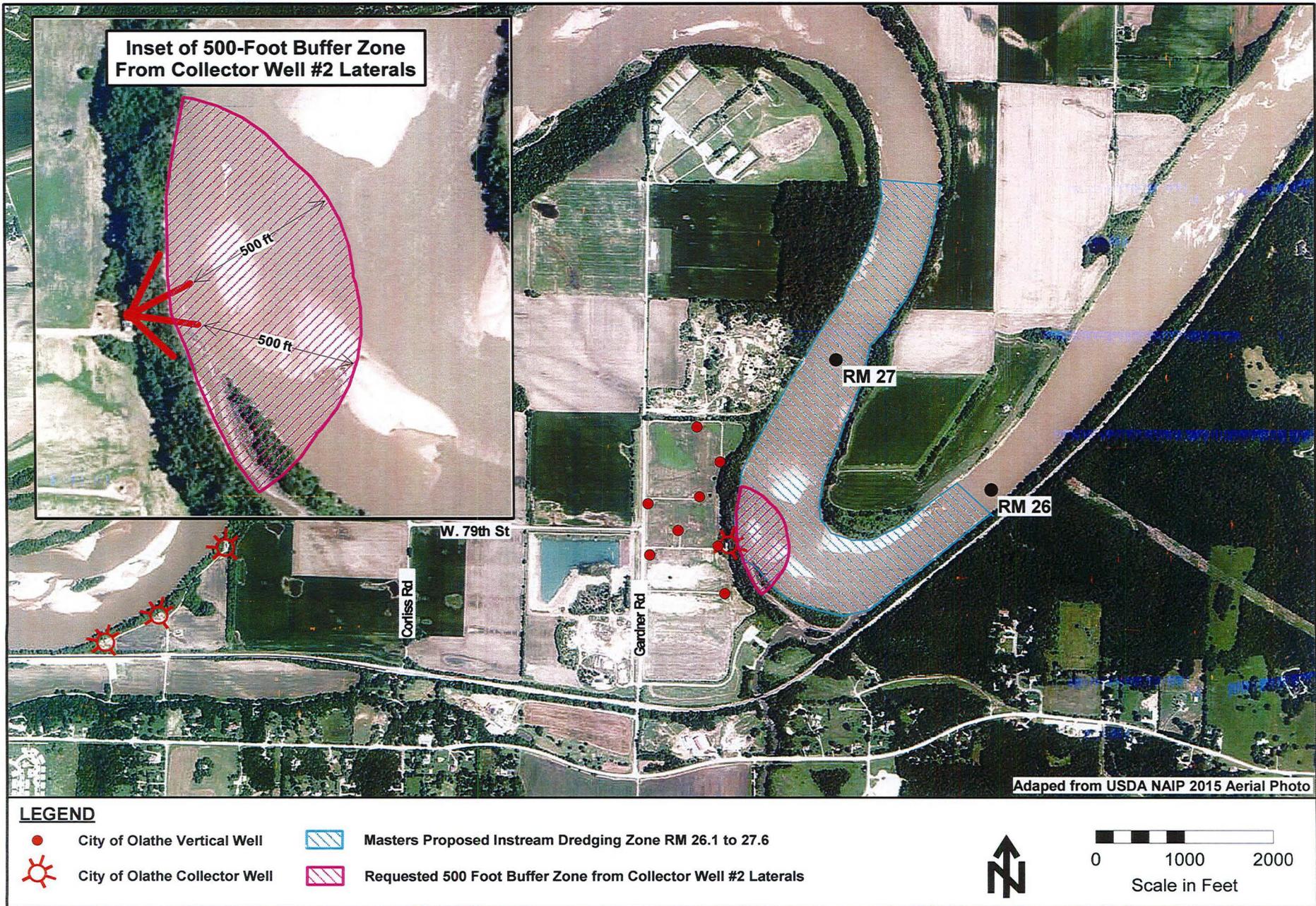
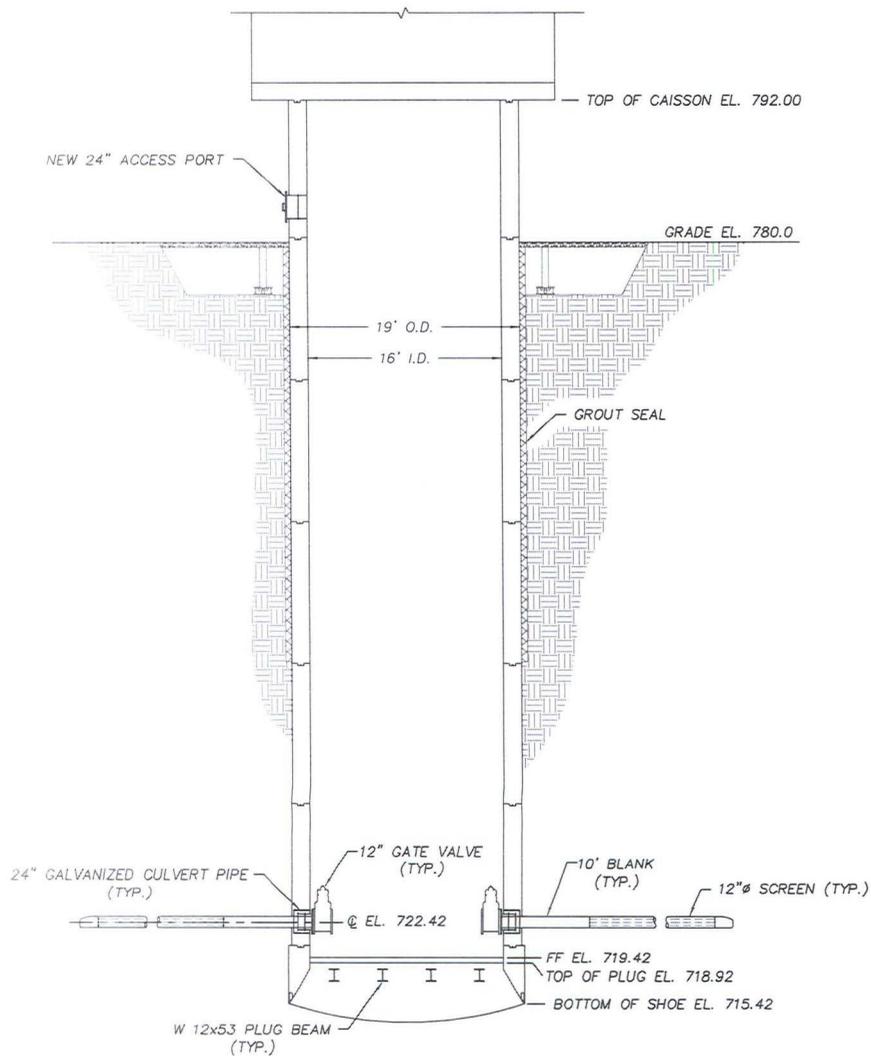
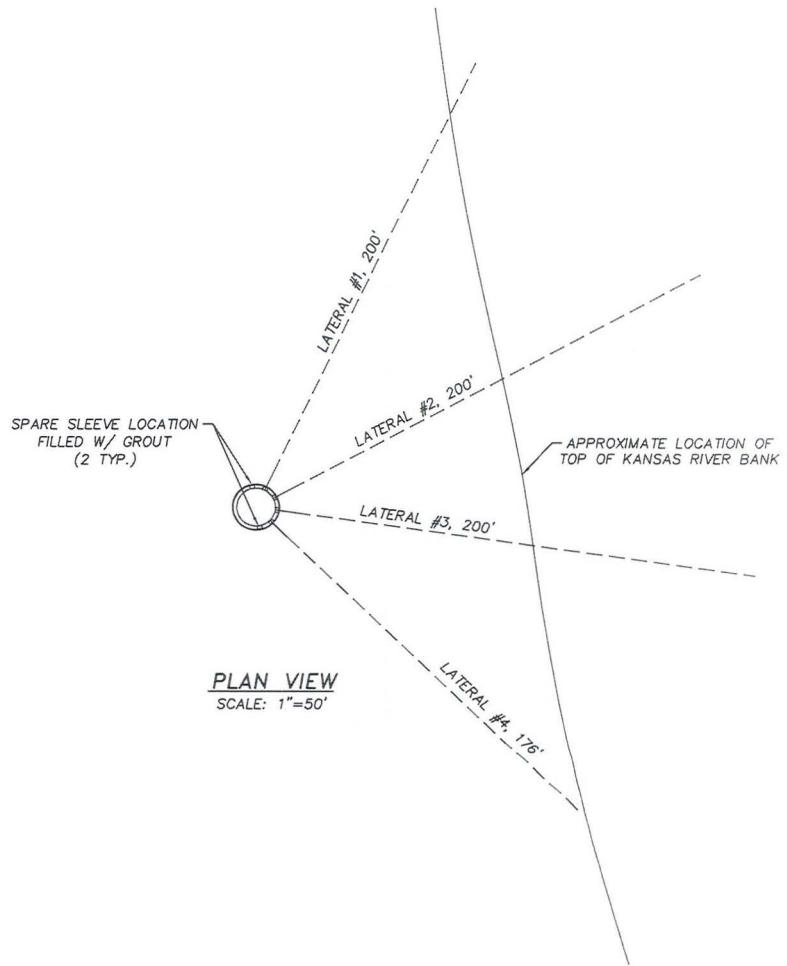


FIGURE 1 - LOCATION MAP



VERTICAL SECTION THRU CAISSON
 SCALE: 1"=10'

NOTE: ELEVATIONS BASED ON PIN NEXT TO CAISSON WITH ELEVATION OF 779.44.



 6360 HUNTLEY ROAD COLUMBUS, OHIO 43229 (614) 888-6263 / FAX (614) 888-9208	AS-BUILT PLAN AND SECTION COLLECTOR WELL #2 OLAATHE, KANSAS		FIGURE 2
	FILE NAME: 13565-05	DATE: 1/28/13	PROJECT #: 13565
SCALE: AS NOTED			