SEWER SYSTEM EVALUATION

FOR CONSENT ADMINISTRATIVE ORDER (CAO) LIS 11-066

WILMOT SEWER COLLECTION SYSTEM & WASTEWATER TREATMENT FACILITY
CITY OF WILMOT, ARKANSAS

NPDES PERMIT NO.: AR0050989
AFIN: 02-00031

DATE: August 31, 2016

PREPARED BY:

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INTRODUCTION

The City of Wilmot in Ashley County, Arkansas owns and operates a municipal sewer system under permit from the Arkansas Department of Environmental Quality (ADEQ) which provides sewer service to approximately 300 customers which represents a population of approximately 505 people. The collection system and treatment lagoons were originally constructed in 1964 and the treatment system received a major renovation in 1992. The collection system is a combination of gravity lines connected by two (2) pump stations and force mains that transport the wastewater to a treatment plant. The treatment plant consists of two lagoons with chlorination on the discharge piping that is pumped by force main to a discharge point in Bayou Bartholomew. A third lagoon is located adjacent to the two primary treatment lagoons for the purpose of storage during periods of high flow.

The Wastewater Treatment Facility (WWTF) is located east of Arkansas State Highway 165 on the north side of town. The discharge point is on the south side of Arkansas State Highway 173 at a bridge crossing of Bayou Bartholomew located northwest of the town center. See the attached Site Location Map, Attachment 1, for these locations.

In April of 2011, Wilmot became subject to Consent Administrative Order (CAO) LIS-0466 for effluent limit violations that occurred between January, 2009 and March of 2010. Per the requirements of the CAO, Wilmot engaged a consultant to prepare a Corrective Action Plan (CAP) on its behalf. The CAP was submitted to ADEQ in May of 2011. In May of 2014 a meeting was held with ADEQ Enforcement and Wilmot. A discussion was had on the status of the CAO and a possible revision to the CAP. In October of 2015 ADEQ sent a letter informing Wilmot of thirty-three (33) permitted effluent violations between January, 2012, and October, 2015. This letter requested an update to the existing CAP and a date that Wilmot expected to receive compliance.

On January 27, 2016, a meeting with Wilmot and ADEQ enforcement was held to discuss the situation with the CAO. At that meeting, ADEQ indicated that Wilmot has continued to have effluent violations and requested that they have an updated CAP prepared and submitted to ADEQ within forth-five (45) days. The deadline for that submittal was March 12, 2016. Landmark Engineering was in attendance at that meeting and was engaged to prepare said CAP and perform a subsequent evaluation of the existing Wilmot WWTF and collection system.

Landmark Engineering submitted the revised CAP on March 9, 2016. This document represents the findings of the system evaluation in accordance with the revised CAP.

PERMIT DISCHARGE LIMIT NON-COMPLIANCE

Wilmot has reported a total of fifty-one (51) permit effluent violations from January, 2009 to January 2016. The following is a breakdown of the violations. A copy of the DMR data is included as Attachment 2.

Parameter	# of Violations
BOD, 5-Day (MO. Avg. lb/day)	20
BOD, 5-Day (MO. Avg. mg/l)	1
BOD, 5-Day (7 Day Avg. mg/l)	1
TSS (MO Avg. lb/day)	26
Fecal Coliform (30DA GEO, #/100ml)	1
Fecal Coliform (7DA GEO, #/100ml)	1
pH (MINIMUM, SU)	1

Additional Data

The existing WWTF has a permitted design capacity of 0.165 MGD. The Discharge Monitoring Reports (DMR's) for December, 2015 and January, 2016, report a discharge of 0.294 MGD and 0.505 MGD respectively. A plot of the effluent reporting violations versus time shows that majority of the violations come in the wet months.

TREATMENT FACILITY EVALUATION

The treatment facility consists of three earth berm ponds. The original pond was built in 1964 and has been converted to a wet-weather holding pond. The other two ponds were constructed in 1992 as a replacement for the original pond. The construction in 1992 also included a discharge pump station and force main to an offsite discharge point on Bayou Bartholomew and a chlorine disinfection system. Bayou Bartholomew is the current permitted discharge point for the treatment facility. Attachment 3 contains a layout of the existing treatment facility.

Figure 1 - Original Treatment Pond (Abandoned)

Figure 2 -Ponds 1 and 2 looking north from outlet

Pond 1 and 2 combined have the ability to hold approximately 7.5 million gallons of water (Pond 1 – 4.2 MG, Pond 2 – 2.3 MG). Inspection of the pond levees showed a fair level of deterioration with the most notable problem being the burrowing of rodents into the earth levees. The interior slopes of the ponds lack any riprap protection to prevent wave erosion and burrowing. Burrows did not appear to extend below the water surface, but several burrows were observed on the tops of the existing levees. The outlet structure is still functioning but a temporary flow measuring device was being used as the original appeared to be missing. No data logging of flows is present.

Figure 3 -Existing Effluent Pump Station

Figure 4 -Interior if existing chlorine building

The existing effluent pump station appeared to be in good working order and did not show signs of any previous malfunctions. The associated control panel was also in good working order. The existing chlorine treatment building and equipment is dated and uses chlorine gas as the chemical delivery method.

Figure 5 -Interior view of existing pump station

Figure 6 -Existing pump station info tag

Figure 7 -Interior pump station control panel

Collection System Evaluation

System Inventory Mapping

The Wilmot collection system was constructed in 1964, the same time as the original sewer treatment pond. The system is comprised of a mixture of concrete and clay mains with manholes that are cast-in-place concrete and clay brick. Main sizes are primarily 6 inch in diameter and have an average depth of 6 to 8 feet. The system is comprised of two basins with one using a lift station to transport the wastewater from one basin to the other. A second lift station moves the wastewater to the treatment facility.

Prior to the CSE (Collection System Evaluation) Wilmot relied on the memory of long term employees and old plans for locating system facilities. Using information provided by the City and additional research from the Arkansas Department of Health, the Engineer used current aerial photography with GPS surveying to locate and map the existing manholes in the system. The Engineer then created a digital inventory map of the existing sewer system. This map identifies all of the system manholes, lift stations, gravity mains and force mains. Any future revisions to the system will be added to the mapping.

During the field survey portion of the CSE it was discovered that a significant portion of the manholes on the system have been paved over during street rehabilitation projects. This made the manholes inaccessible for inspection. Using the records available and a metal detector, the Engineer was able to locate the majority of the covered manholes and mark them in the field.

Figure 8 – Example of covered manhole

Figure 9 -Example of low manhole lid

A copy of the Wilmot system map is enclosed in Attachment 4. The Wilmot system has a total of 118 manholes. Of the total, 73 of the manholes were covered and not accessible, leaving only 45 that were accessible for inspection. The majority of the manholes inspected were clay brick that had been grouted over with concrete. All of the inspected manholes were in fair condition and no noticeable infiltration through the walls. Several of the inspected manholes are located in grassy areas. The majority of the manhole lids were at grade and not subject to intrusion around the lid. There is a total of 6, such as the one shown in Figure 9, that are located in low areas that they have become buried with soil and grass and or so low that are subject to intrusion.

Smoke Testing

As previously stated, only 45 of the system manholes were accessible or not paved over. Smoke testing of the system was conducted utilizing these 45 manholes. Using these manholes over 50 percent of the system was able to be smoke tested. The smoke testing of 16,401 linear feet of main produced a total of 11 sources of infiltration detected. The majority of the problems found were open services that had not been capped but one large open main intrusion was also located. A copy of the smoke test findings map with locations of problems found has been included as Attachment 5.

Lift Station Evaluation

An inspection and evaluation of the existing lift stations was conducted as part of the overall system evaluation. Both of the stations utilize self-priming type pumps mounted over a wet well which were operating nosily, indicating excessive wear. Several safety issues were noted at each lift station including open hatches either without covers of not properly secured. The controls and power supply panels are old and in poor working order. Fuse boxes did not have covers and working conditions inside of the stations are not safe. Access to electrical panels does not meet code and the hazard serious injury is high.

Figure 10 - Interior of Lift Sta. 2

Figure 11 – Control panel at Lift Sta. 1

RECOMMENDATIONS FOR SYSTEM REHABILIATION

Following are recommendations for the rehabilitation of the Wilmot Sewer System. These recommendations are based on the findings listed herein this report. The goal of the rehabilitation is to bring the system into compliance with its discharge permit and create a safer and more reliable overall system. This report will be used as the basis for an Engineering Report to secure funding for the needed rehabilitation.

Treatment Facility Rehabilitation

The flow into the treatment facility is higher than what is expected, which does lend to the reported BOD and TSS permit violations. While efforts will be spent to reduce infiltration of storm water into the sewer collection system, a complete elimination of infiltration is not going to be achievable in the system due to its age alone. The current treatment process relies on settling, natural aeration and evaporation.

We are recommending the installation of four (4) 7.5 HP floating aerators be installed in Pond 1. These aerators will provide the aeration needed to reduce the BOD to below permit limits. A new pond connection structure will be installed between ponds 1 and 2 to control the transfer rate between ponds. Pond 2 will be used as a settling basin. The type aerators proposed should not cause upheaval of sediment on the pond bottom and thereby not cause an increase in TSS. Baffling can also be installed in Pond 2 to increase the travel distance inside Pond 2 to allow for additional settling.

We also recommend a new package chlorine disinfection system to replace the existing chlorine system building. A new package system will replace the feed controls and feed line to make the disinfection system reliable.

Access to the treatment plant during wet conditions can be challenging. An all-weather access road surface should be placed on the road leading into the facility as well as around the tops of the levees of all three ponds.

The original sewer pond should be rehabilitated for its use as a high flow storage facility. A new pond connection structure should be installed to allow for high flows to be diverted into the holding pond. Once flows have reduced, the stored volume can then be pumped back into Pond 1 for treatment. A floating pond decant pump should be installed to provide the return of the storage volume to Pond 1 for treatment. The interior levees of the original pond need to be denuded of brush and trees and any issues with rodent burrows should be repaired prior to placement of the road surface material. The levees around Ponds 1 and 2 should also be cleared of rodent burrows and repairs made prior to placement of road surface materials and riprap. A drawing showing the proposed treatment facility improvements has been included as Attachment 6.

Collection System Rehabilitation

Both of the collection lift stations are dated and in disrepair. The structures are old and while the controls are still functioning, they contain several safety issues for workers performing maintenance or repairs to the stations. We therefore recommend the installation of two new duplex submersible lift stations and wet wells. The existing station can stay in operation until the new units are installed and operational. At that point the influent can be rerouted into the new stations and the old pumps, building and wet well be demolished. A drawing of the proposed pump station rehabilitations is included in Attachment 7.

As previously stated, there are 73 manholes that have either been paved over or inaccessible. The lids of these manholes need to be uncovered and the ring and lid raised to grade. The 6 existing manholes that have lids below grade in wet areas also need to be raised to prevent intrusion of storm water into the system. Once the inaccessible manholes are raised to grade, another round of smoke testing should be conducted to locate problems in the untested areas. Approximately one leak was found for every 1500 linear feet of main in the portion of the system that was tested. This suggests that an equal number of problems will be found in the remaining 50 percent of the system that was not tested. A list of the problems found in the smoke testing was provided to the City and they were to begin correcting the issues immediately.

<u>Project Cost Estimate and Funding</u>

With the relatively low customer base, Wilmot will obviously have a limit on the amount of the work they will be able to do in-house and any bid work will be contingent on securing financing in the form of either grants or loans. The Engineering Report that will be generated will be sent to the Water and Wastewater Advisory Committee (WWAC) of the Arkansas Natural Resource Commission (ANRC). The securing of financing will be dependent on how the committee grades the project and the availability of funds. Following is a breakdown of the estimated cost associated with the recommended rehabilitation of the system.

Treatment Facility Improvements (Site work, aerators, chlorine station, etc.)	$ 443,500.00
Collection System Improvements (Lift station replacements and manhole repairs)	$ 385,000.00
Total Estimate Improvement Cost (Including Engineering and Cont.)	$ 1,019,417.50

Detailed estimates for the rehabilitation is included as Attachment 8.

Updated Schedule

Following is an update to the milestone schedule that was submitted with the CAP. Some of these dates are still subject to change due to the ability to secure the funding for the project. Wilmot has a small customer base so taking on a large loan debt repayment will not be possible. A combination of grants and loans will be required to make the project affordable.

Action	Date	
Submit Revised CAP	COMPLETED	
Receive ADEQ Approval of CAP	COMPLETED	
City of Wilmot Adoption of CAP	COMPLETED	
Begin SSES Components (Mapping and Visual Inspection, etc.)	COMPLETED	
Begin Smoke Testing	COMPLETED	
Submit SSES to ADEQ and City	August 31, 2016	
Submit Funding Application to WWAC	September 3, 2016	
Secure Funding	January 31, 2017	(1)
Begin Construction	June 1, 2017	(2)
Complete Construction	December 31, 2017	(3)
Achieve Effluent Compliance	March 1, 2018	(4)

Notes:

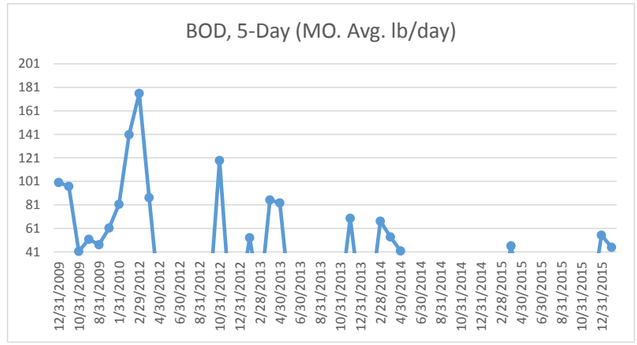
1) Subject to change due to availability of funding at source
2) City forces will start on some repairs as soon as the date of discovery during the inspection phase. A log of these repairs will be maintained and included in the quarterly update. Matches original CAP date.
3) Subject to change, see (1). Matches original CAP date.
4) Subject to change, see (1). Matches original CAP date.

Attachment 1

DMR Reporting Tabulation

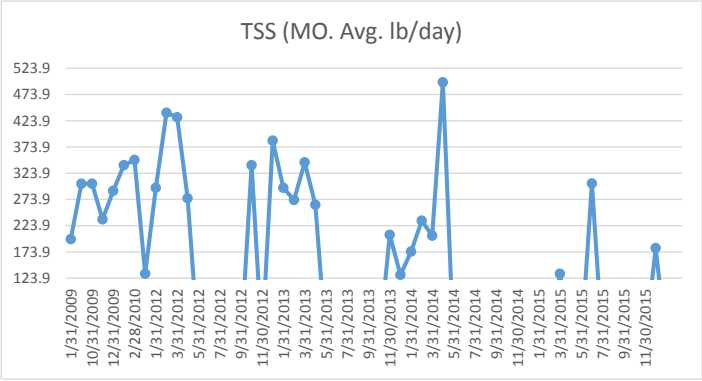
Monitoring Date	BOD, 5-Day (MO. Avg. lb/day)			BOD, 5-Day (MO. Avg. mg/l)			BOD, 5-Day (7-Day Avg. mg/l)		
	Permit Limit	Reported DMR Value	Violation %	Permit Limit	Reported DMR Value	Violation %	Permit Limit	Reported DMR Value	Violation %
12/31/2009	41	100	144%						
11/30/2009	41	96.8	136%						
10/31/2009	41	41.5	1%						
9/30/2009	41	51.7	26%						
8/31/2009	41	47.2	15%						
2/28/2010	41	61.3	50%						
1/31/2010	41	81.6	99%						
1/31/2012	41	140.8	243%	30	39	30%	45	100	122%
2/29/2012	41	175.8	329%	30	<30	0%	45	<45	0%
3/31/2012	41	87.2	113%	30	<30	0%	45	<45	0%
4/30/2012	41	<41	0%	30	<30	0%	45	<45	0%
5/31/2012	41	<41	0%	30	<30	0%	45	<45	0%
6/30/2012	41	<41	0%	30	<30	0%	45	<45	0%
7/31/2012	41	<41	0%	30	<30	0%	45	<45	0%
8/31/2012	41	<41	0%	30	<30	0%	45	<45	0%
9/31/2012	41	<41	0%	30	<30	0%	45	<45	0%
10/31/2012	41	118.7	190%	30	<30	0%	45	<45	0%
11/30/2012	41	<41	0%	30	<30	0%	45	<45	0%
12/31/2012	41	<41	0%	30	<30	0%	45	<45	0%
1/31/2013	41	53	29%	30	<30	0%	45	<45	0%
2/28/2013	41	<41	0%	30	<30	0%	45	<45	0%
3/31/2013	41	85.2	108%	30	<30	0%	45	<45	0%
4/30/2013	41	82.7	102%	30	<30	0%	45	<45	0%
5/31/2013	41	<41	0%	30	<30	0%	45	<45	0%
6/30/2013	41	<41	0%	30	<30	0%	45	<45	0%
7/31/2013	41	<41	0%	30	<30	0%	45	<45	0%
8/31/2013	41	<41	0%	30	<30	0%	45	<45	0%
9/31/2013	41	<41	0%	30	<30	0%	45	<45	0%
10/31/2013	41	<41	0%	30	<30	0%	45	<45	0%
11/30/2013	41	69.6	70%	30	<30	0%	45	<45	0%
12/31/2013	41	<41	0%	30	<30	0%	45	<45	0%
1/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
2/28/2014	41	67.2	64%	30	<30	0%	45	<45	0%
3/31/2014	41	53.8	31%	30	<30	0%	45	<45	0%
4/30/2014	41	41.9	2%	30	<30	0%	45	<45	0%
5/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
6/30/2014	41	<41	0%	30	<30	0%	45	<45	0%
7/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
8/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
9/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
10/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
11/30/2014	41	<41	0%	30	<30	0%	45	<45	0%
12/31/2014	41	<41	0%	30	<30	0%	45	<45	0%
1/31/2015	41	<41	0%	30	<30	0%	45	<45	0%
2/28/2015	41	<41	0%	30	<30	0%	45	<45	0%
3/31/2015	41	46.2	13%	30	<30	0%	45	<45	0%
4/30/2015	41	<41	0%	30	<30	0%	45	<45	0%
5/31/2015	41	<41	0%	30	<30	0%	45	<45	0%
6/30/2015	41	<41	0%	30	<30	0%	45	<45	0%
7/31/2015	41	<41	0%	30	<30	0%	45	<45	0%
8/31/2015	41	<41	0%	30	<30	0%	45	<45	0%
9/31/2015	41	<41	0%	30	<30	0%	45	<45	0%
10/31/2015	41	<41	0%	30	<30	0%	45	<45	0%
11/30/2015	41	<41	0%	30	<30	0%	45	<45	0%
12/31/2015	41	55.3	35%	30	<30	0%	45	<45	0%
1/31/2016	41	44.9	10%	30	<30	0%	45	<45	0%

Violations	22



Monitoring Date	Permit Limit	TSS (MO. Avg. lb/day) Reported DMR Value	Violation %
1/31/2009	123.9	198.29	60%
5/31/2009	123.9	304.13	145%
10/31/2009	123.9	304.13	145%
11/30/2009	123.9	235.98	90%
12/31/2009	123.9	290.3	134%
1/31/2010	123.9	339.12	174%
2/28/2010	123.9	349.16	182%
3/31/2010	123.9	132.19	7%
1/31/2012	123.9	296.21	139%
2/29/2012	123.9	439.32	255%
3/31/2012	123.9	430.56	248%
4/30/2012	123.9	276.14	123%
5/31/2012	123.9	<123.9	0%
6/30/2012	123.9	<123.9	0%
7/31/2012	123.9	<123.9	0%
8/31/2012	123.9	<123.9	0%
9/31/2012	123.9	<123.9	0%
10/31/2012	123.9	339.21	174%
11/30/2012	123.9	<123.9	0%
12/31/2012	123.9	385.97	212%
1/31/2013	123.9	296.21	139%
2/28/2013	123.9	273.02	120%
3/31/2013	123.9	344.77	178%
4/30/2013	123.9	263.59	113%
5/31/2013	123.9	<123.9	0%
6/30/2013	123.9	<123.9	0%
7/31/2013	123.9	<123.9	0%
8/31/2013	123.9	<123.9	0%
9/31/2013	123.9	<123.9	0%
10/31/2013	123.9	<123.9	0%
11/30/2013	123.9	206.45	67%
12/31/2013	123.9	129.96	5%
1/31/2014	123.9	174.42	41%
2/28/2014	123.9	233.37	88%
3/31/2014	123.9	204.67	65%
4/30/2014	123.9	497.02	301%
5/31/2014	123.9	<123.9	0%
6/30/2014	123.9	<123.9	0%
7/31/2014	123.9	<123.9	0%
8/31/2014	123.9	<123.9	0%
9/31/2014	123.9	<123.9	0%
10/31/2014	123.9	<123.9	0%
11/30/2014	123.9	<123.9	0%
12/31/2014	123.9	<123.9	0%
1/31/2015	123.9	<123.9	0%
2/28/2015	123.9	<123.9	0%
3/31/2015	123.9	132.19	7%
4/30/2015	123.9	<123.9	0%
5/31/2015	123.9	<123.9	0%
6/30/2015	123.9	304.38	146%
7/31/2015	123.9	<123.9	0%
8/31/2015	123.9	<123.9	0%
9/31/2015	123.9	<123.9	0%
10/31/2015	123.9	<123.9	0%
11/30/2015	123.9	<123.9	0%
12/31/2015	123.9	181.15	46%

Violations	26

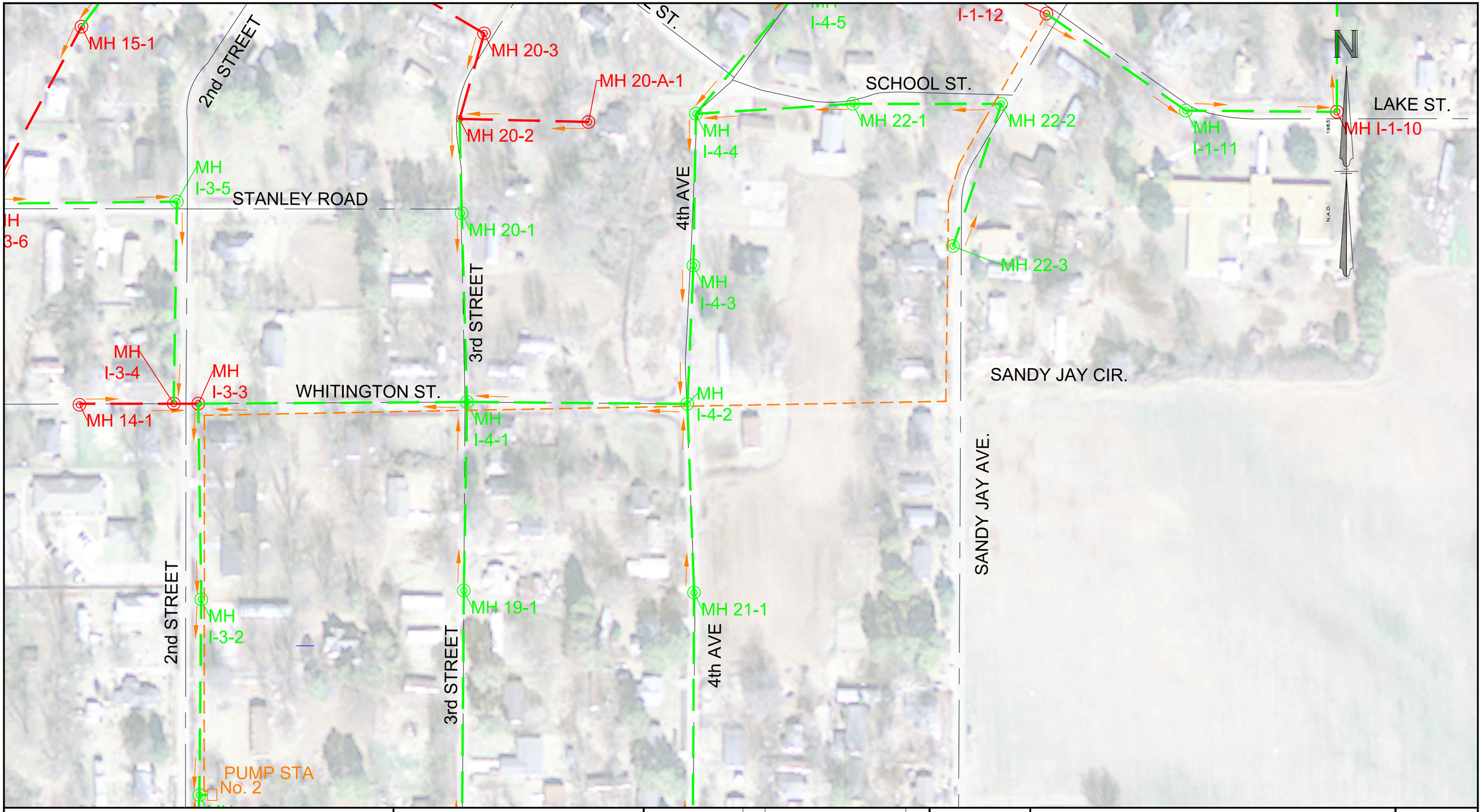


	Fecal Coliform (30DA GEO, #/100ml)			Fecal Coliform (7DA GEO, #/100ml)		
Monitoring Date	**Permit Limit**	**Reported DMR Value**	**Violation %**	**Permit Limit**	**Reported DMR Value**	**Violation %**
1/31/2012	200	<200	0%	400	<200	0%
2/29/2012	200	<200	0%	400	<200	0%
3/31/2012	200	<200	0%	400	<200	0%
4/30/2012	200	<200	0%	400	<200	0%
5/31/2012	200	<200	0%	400	<200	0%
6/30/2012	200	<200	0%	400	<200	0%
7/31/2012	200	<200	0%	400	<200	0%
8/31/2012	200	<200	0%	400	<200	0%
9/31/2012	200	<200	0%	400	<200	0%
10/31/2012	200	<200	0%	400	<200	0%
11/30/2012	200	<200	0%	400	<200	0%
12/31/2012	200	<200	0%	400	<200	0%
1/31/2013	200	<200	0%	400	<200	0%
2/28/2013	200	<200	0%	400	<200	0%
3/31/2013	200	<200	0%	400	<200	0%
4/30/2013	200	<200	0%	400	<200	0%
5/31/2013	200	<200	0%	400	<200	0%
6/30/2013	200	<200	0%	400	<200	0%
7/31/2013	200	<200	0%	400	<200	0%
8/31/2013	200	<200	0%	400	<200	0%
9/31/2013	200	<200	0%	400	<200	0%
10/31/2013	200	<200	0%	400	<200	0%
11/30/2013	200	<200	0%	400	<200	0%
12/31/2013	200	<200	0%	400	<200	0%
1/31/2014	200	<200	0%	400	<200	0%
2/28/2014	200	<200	0%	400	<200	0%
3/31/2014	200	<200	0%	400	<200	0%
4/30/2014	200	<200	0%	400	<200	0%
5/31/2014	200	<200	0%	400	<200	0%
6/30/2014	200	<200	0%	400	<200	0%
7/31/2014	200	<200	0%	400	<200	0%
8/31/2014	200	<200	0%	400	<200	0%
9/31/2014	200	<200	0%	400	<200	0%
10/31/2014	200	<200	0%	400	<200	0%
11/30/2014	200	<200	0%	400	<200	0%
12/31/2014	200	<200	0%	400	<200	0%
1/31/2015	200	<200	0%	400	<200	0%
2/28/2015	200	<200	0%	400	<200	0%
3/31/2015	200	<200	0%	400	<200	0%
4/30/2015	200	<200	0%	400	<200	0%
5/31/2015	200	459	130%	400	459	15%
6/30/2015	200	<200	0%	400	<200	0%
7/31/2015	200	<200	0%	400	<200	0%
8/31/2015	200	<200	0%	400	<200	0%
9/31/2015	200	<200	0%	400	<200	0%
10/31/2015	200	<200	0%	400	<200	0%
11/30/2015	200	<200	0%	400	<200	0%
12/31/2015	200	<200	0%	400	<200	0%

Violations	2

Attachment 2

Site Location Map



LANDMARK
ENGINEERING & SURVEYING

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LANDMARK

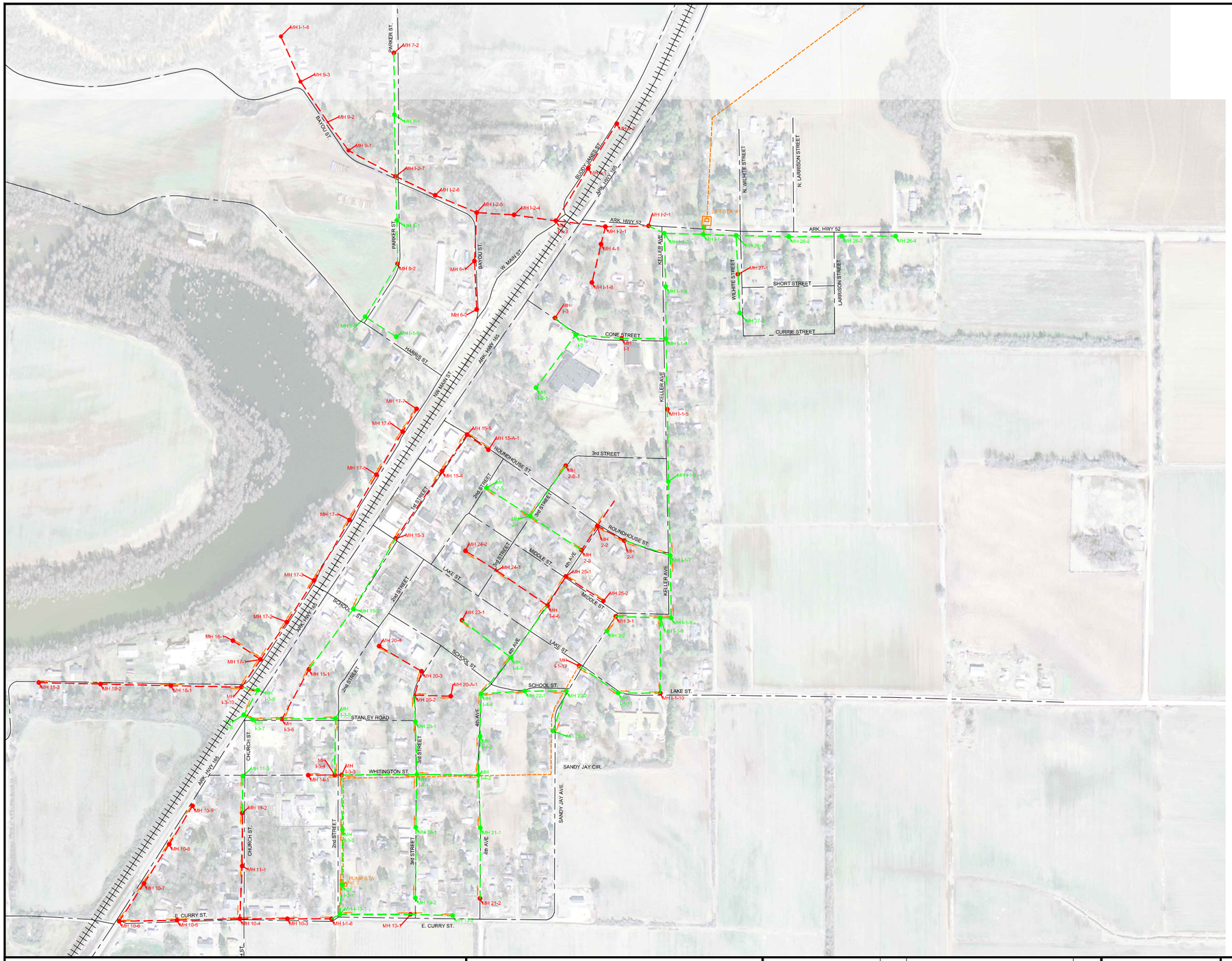
PROJECT NO. PROJ_NO.		BY	REVISIONS	DATE
DESIGNED BY				
DRAWN BY	JHD			
CHECKED BY	DEH			
REVIEWED BY	DEH			
DATE	08/17/2016			
SCALE	1"=200'			

PROPOSED IMPROVEMENTS
LIFT STATION 1

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER:
DWG_NO

SHEET NUMBER:
1



LEGEND

BURIED / NOT FOUND MANHOLE (73)

FOUND MANHOLE (45)

LANDMARK
ENGINEERING & SURVEYING

300 South Rodney Parham, Suite #10
Little Rock, Arkansas 72205
PH: (501) 224-1000
FX: (501) 227-7200

LANDMARK

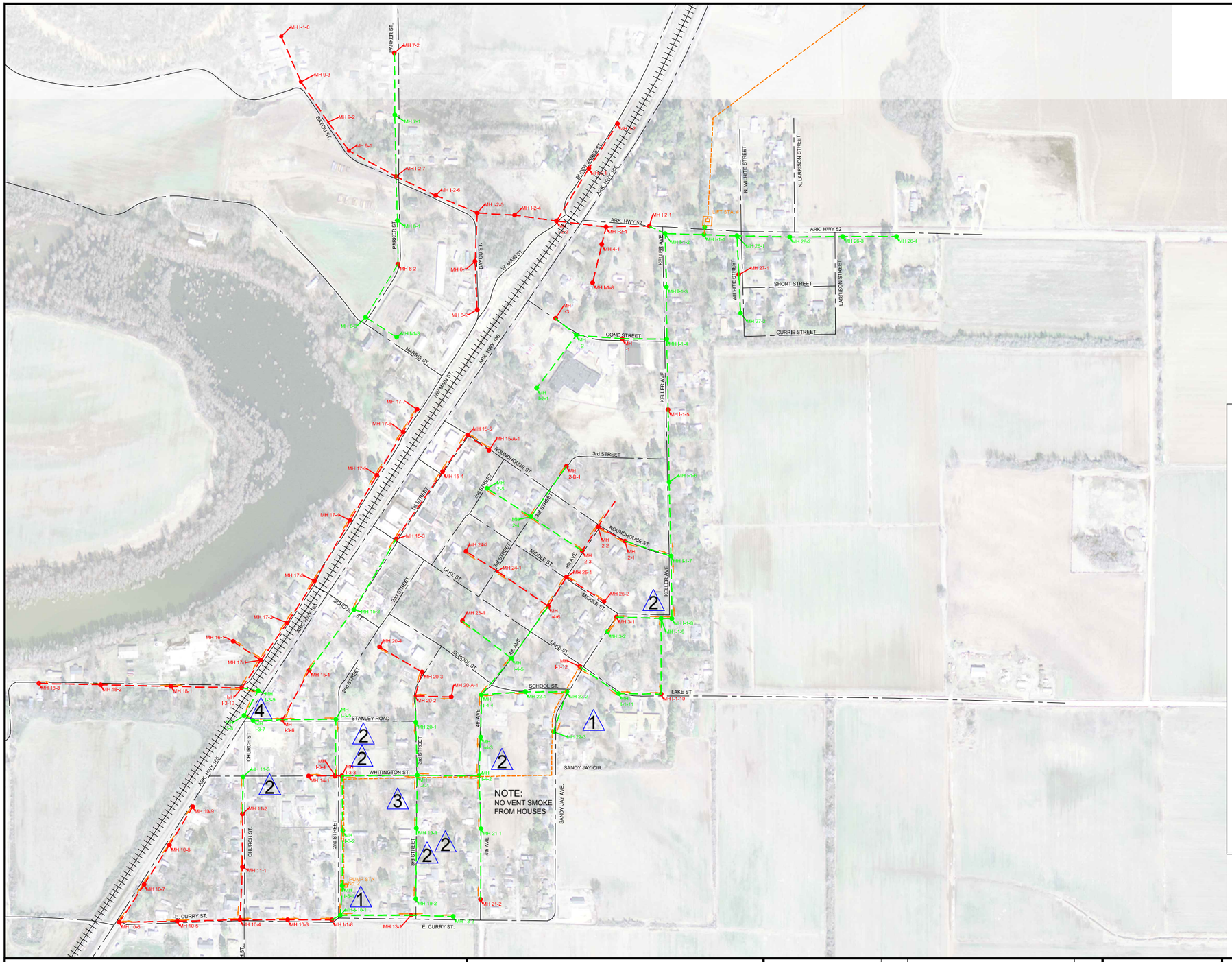
PROJECT NO. PROJ_NO.		BY	REVISIONS	DATE
DESIGNED BY				
DRAWN BY	JHD			
CHECKED BY	DEH			
REVIEWED BY	DEH			
DATE	04/11/2016			
SCALE	1"=300'			

OVERALL SEWER SYSTEM

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER: DWG_NO

SHEET NUMBER: 1



N

1983

N.A.D.

LEGEND

- BURIED / NOT FOUND MANHOLE (73)
- FOUND MANHOLE (45)
- MAIN SMOKE TESTED (16,401 LF)
- MAIN NOT SMOKE TESTED (13,018 LF)
- 1 SMOKE UNDER STRUCTURE
- 2 OPEN SERVICE
- 3 OPEN MAIN
- 4 MANHOLE LID CRACKED

LANDMARK
ENGINEERING & SURVEYING

13311 Lawson Road, Suite C
Little Rock, Arkansas 72210
PH: (501) 224-1000
FX: (501) 227-7200

LANDMARK

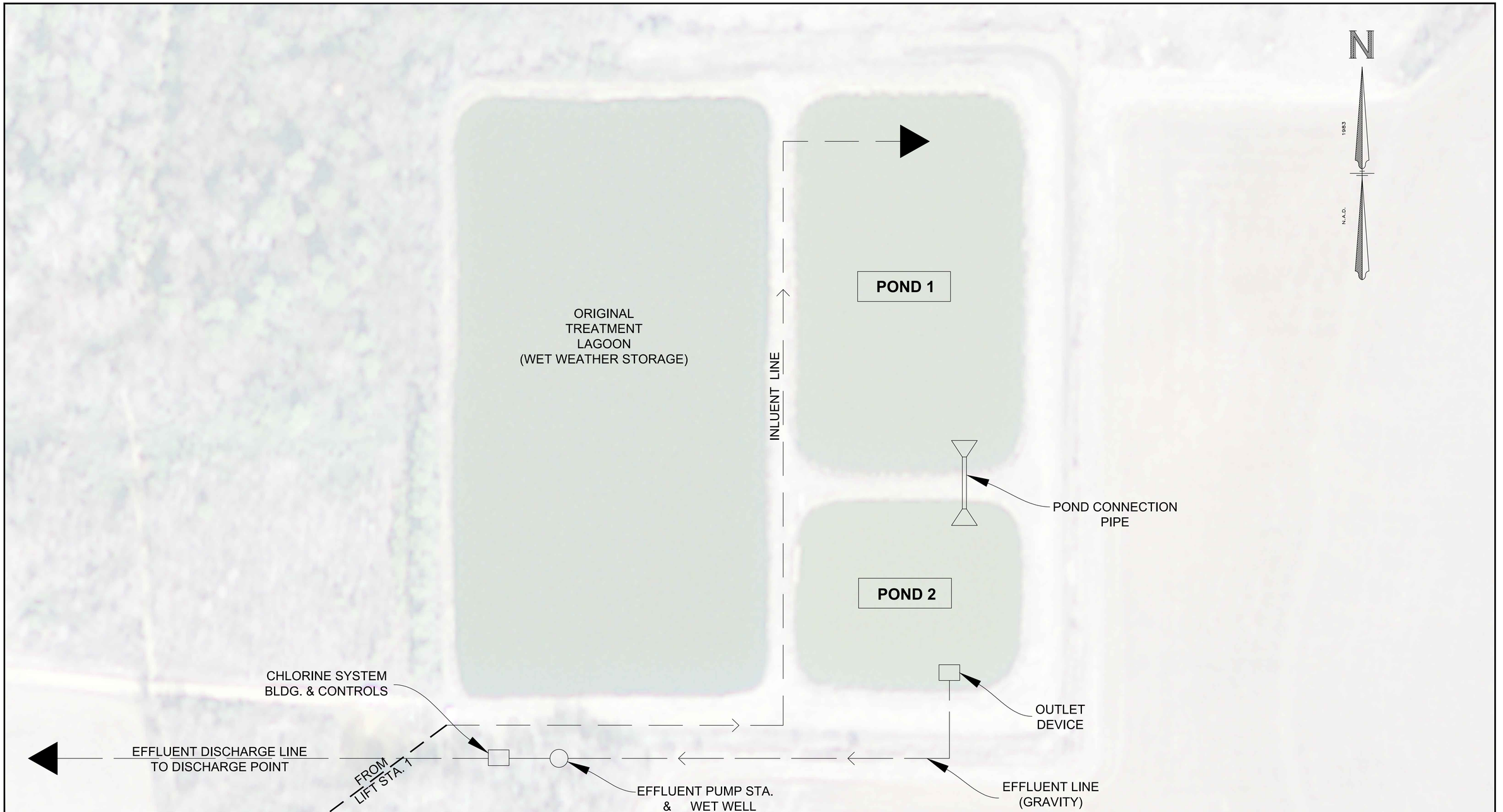
PROJECT NO. PROJ_NO.		BY	REVISIONS	DATE
DESIGNED BY				
DRAWN BY	JHD			
CHECKED BY	DEH			
REVIEWED BY	DEH			
DATE	08/16/2016			
SCALE	1"=200'			

MANHOLE INVENTORY MAP
SMOKE TEST FINDINGS

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER: DWG_NO

SHEET NUMBER: 1



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DRAWN BY	JHD			
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REVIEWED BY	DEH			
DATE	08/23/2016			
SCALE	1"=200'			

EXISTING TREATMENT FACILITY LAYOUT

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER: DWG_NO

SHEET NUMBER: 1

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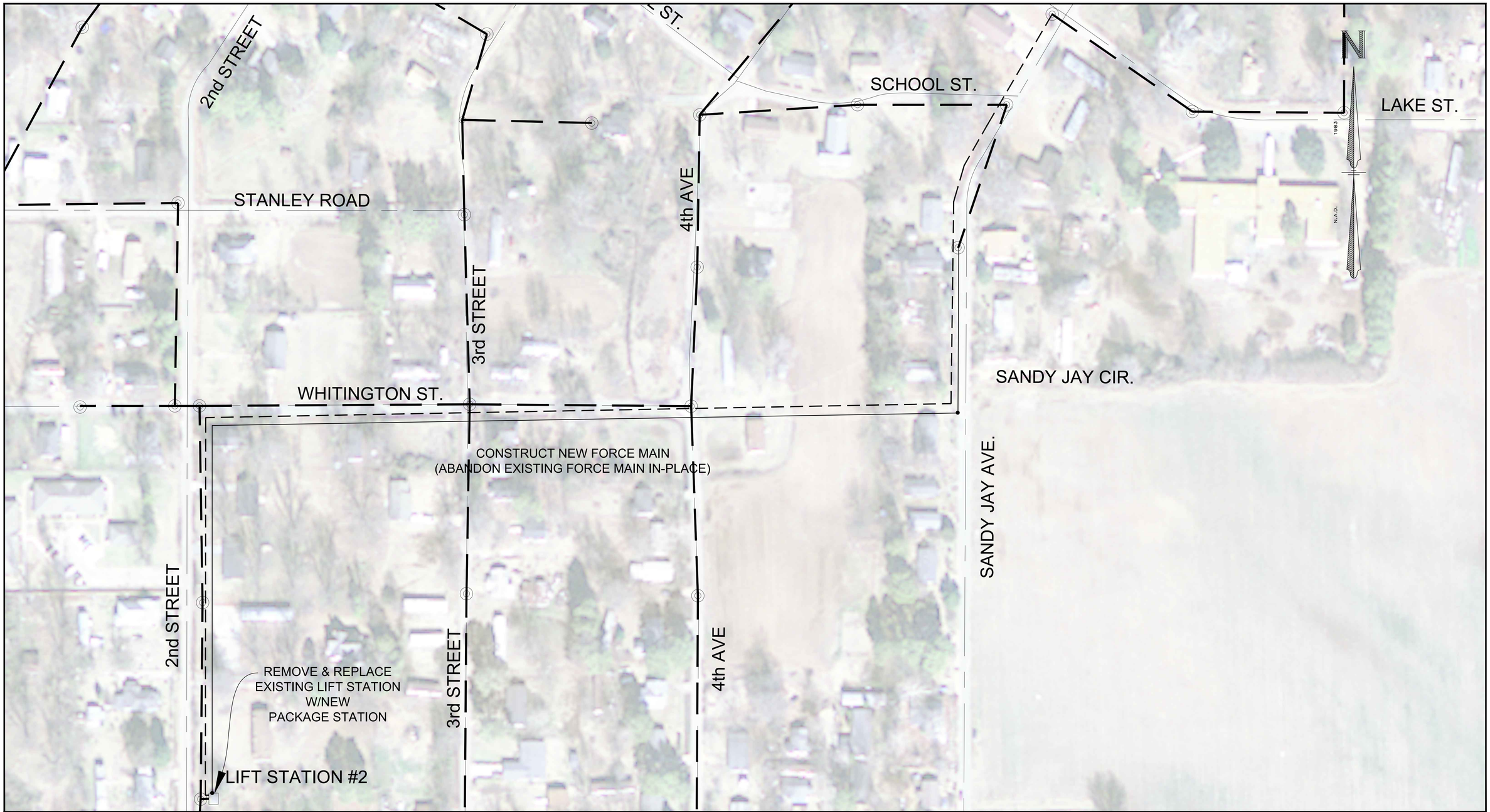
DATE	08/23/2016			
SCALE	1"=200'			

PROPOSED IMPROVEMENTS
LIFT STATION 1

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER: DWG_NO

SHEET NUMBER: 1



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REVIEWED BY	DEH			
DATE	08/23/2016			
SCALE	1"=200'			

PROPOSED IMPROVEMENTS
LIFT STATION 2

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER: DWG_NO

SHEET NUMBER: 1

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CHECKED BY	DEH			
REVIEWED BY	DEH			
DATE	08/23/2016			
SCALE	1"=200'			

PROPOSED IMPROVEMENTS
WASTEWATER TREATMENT PLANT

CITY OF WILMOT, ARKANSAS

DRAWING NUMBER:
DWG_NO

SHEET NUMBER:
1

Attachment 3

Current Sewer Rates