



## State Revolving Fund Loan Programs Drinking Water, Wastewater, Nonpoint Source

### PRELIMINARY DECISION OF CATEGORICAL EXCLUSION

TO ALL INTERESTED CITIZENS, ORGANIZATIONS AND GOVERNMENT AGENCIES:

#### CITY OF CROWN POINT LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT SRF Project WW 16 08 45 05

**Date: October 19, 2016**

Pursuant to IC 4-4-11, the State Revolving Fund (SRF) Loan Program has determined that the project described here and in the City of Crown Point's Preliminary Engineering Report will have no substantial negative environmental impact. Therefore, the SRF is issuing a preliminary decision of Categorical Exclusion from the requirements of substantive environmental review.

*How were environmental issues considered?*

The National Environmental Policy Act requires agencies disbursing Federal funds to include environmental factors in the decision making process. A summary of the project is attached for your review. The SRF's preliminary review has found that the proposed project does not require the preparation of either an Environmental Assessment or an Environmental Impact Statement.

*Why is additional environmental review not required?*

Our environmental review has concluded that significant environmental impacts will not result from the proposed action.

*How do I submit comments?*

Comments can be submitted to:

April Douglas,  
Senior Environmental Manager  
SRF Programs  
317-234-7294  
adouglas@ifa.in.gov

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## CATEGORICAL EXCLUSION

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### I. PROJECT IDENTIFICATION

Project Name and Address:                   **Long Term Control Plan Improvements Project**  
City of Crown Point  
101 N. East Street  
Crown Point, IN 46307

SRF Project Number:                       **WW 16 08 45 05**

Authorized Representative:                The Honorable David Uran, Mayor

### II. PROJECT LOCATION

The proposed projects will address necessary improvements to Crown Point's wastewater treatment plant (WWTP) and collection system according to their Combined Sewer Overflow - Long Term Control Plan (CSO- LTCP). The projects will address the following needs located in Lake County, Center Township on the Crown Point USGS quad map:

- Improvements at the WWTP – 34 N, 8 W, Section 5 (see Figures 1 through 3);
- Infiltration and Inflow (I/I) Improvements – 34 N, 8 W, Sections 3, 4, 5, 7, 8, 9, 16 and 17, and 35 N, 8W Section 32 (see Figures 4 through 7);
- Madison Street Lift Station Improvements – 35 N, 8 W, Section 33 (see Figure 8);
- Fashion Terrace Lift Station Improvements – 34 N, 8 W, Section 7 (see Figure 9);
- White Hawk Lift Station Improvements are located on the St. John USGS quad map 34 N, 8 W, Section 6 (see Figure 10); and
- Broadway Lift Station Improvements – 34 N, 8 W, Section 9 (see Figure 11).

### III. PROJECT NEED AND PURPOSE

Crown Point has been under a State Judicial Agreement (SJA) to implement their CSO-LTCP. The city completed an Infiltration & Inflow (I&I) Reduction Project in 2013 to reduce I&I from entering their collection system in high priority areas. An XPSWMM hydraulic model was generated, which verified that the High Priority I&I Improvements Project was successful in reducing I&I. The hydraulic model was then recalibrated to simulate both the 1-year, 1- hour storm event and the 10 -year, 1-hour storm event. The model demonstrated that both the collection system and the WWTP facilities could manage the 1-year, 1-hour storm event with no CSOs, but not manage the 10-year, 1-hour storm event.

Based on the results of this analysis, the following alternatives were evaluated:

- A. No Action Alternative: The city will continue to be in violation of the Indiana Department of Environmental Management approved CSO-LTCP and the SJA. CSOs will continue to discharge when storm events reach a 10-year, 1-hour storm event. This alternative was rejected.

B. Management of Additional Flow at the WWTP:

1. Alternative 1: Optimizing Flow from the Anderson Pond Lift Station to the Anderson Pond.

This alternative consists of modifications to the Anderson Pond Lift Station to optimize its pumping capacity thus increasing flows to the lift station to the Anderson Pond. This alternative was rejected due to cost.

2. Alternative 2: Providing Additional Wet Weather Pumping Facilities at the WWTP Site – Pumping Separately to both the WWTP Pond and the Anderson Pond while Maintaining the Hydraulic Separation of the Ponds

This alternative consists of providing additional wet weather pumping facilities at the WWTP site to the extent necessary to pump all flows produced by the 10-year, 1-hour XPSWMM simulated storm model. This alternative also incorporates Alternative 1 along with two new lift stations and associated appurtenances. This alternative was rejected due to cost.

3. Alternative 3: Providing Additional Wet Weather Pumping Facilities at the WWTP Site – Hydraulically Interconnecting the Anderson and WWTP Ponds and Pumping Directly to the Anderson Pond

This alternative consists of providing additional wet weather pumping facilities at the WWTP site to the extent necessary to pump flows produced by the 10-year, 1-hour XPSWMM simulated storm model. This alternative provides only one new lift station with a capacity of 40 MGD that will pump wet weather flows to the Anderson Pond. In addition, the Anderson and WWTP ponds will be hydraulically connected via a 36-inch sewer, which will allow flows from the Anderson Pond (when full) to overflow to the WWTP Pond. This alternative was rejected due to cost.

4. Alternative 4: Constructing a 30 MGD Storm Flow Lift Station to Pump Flows from Influent Sewers to Anderson Pond.

This alternative includes: plugging the overflow to CSO 003 to only allow backup from existing 30-inch line to Anderson Pond; constructing a new diversion box to withdraw surcharge flow from existing 21 and 30-inch trunk sewers; constructing a new 30 MGD Storm Flow Lift Station with an ultimate capacity of 40 MGD and connecting to the existing gravity sewer downstream of Regulator 003-1 in between the two ponds; constructing a 40 MGD screening structure; installing a 30-inch force main from the Storm Flow Lift Station to the Anderson Pond; modifying the WWTP-1 structure by converting actuator on downstream gate from manual to fast acting hydraulic gate and install new fast acting hydraulic gate on upstream side; modifying Main Pond Control Structure by installing motor gate actuator on existing gate for overflow to Beaver Dam Ditch for remote operation and installing motor gate on existing gate controlling flow to Main Pond; and installing a 36-inch line from the Main Pond Control Structure for increase capacity to fill the Main Pond (see Figures 1 through 3). **This was the selected alternative.**

C. Energy Savings Alternatives for the WWTP:

Several energy savings alternatives were evaluated to assist the city in reducing energy cost when additional infrastructure is needed to manage wet weather events and their associated operation and maintenance costs.

1. Alternative 1: No Action

This alternative was rejected since the city would still continue to use a significant amount of electricity including paying a high demand charge for equipment in constant operation.

2. Alternative 2: Cogeneration

Cogeneration is a common feature of many wastewater treatment plants and has proven to be a dependable, efficient, and cost effective method of power generation. Anaerobic digester gas, a wastewater treatment byproduct, is used in cogeneration engines and generators to produce electricity for plant use, as well as thermal energy for heating work space. This alternative was rejected due to cost.

3. Alternative 3: Solar Power

Solar power option consists of installing solar panels that will convert sunlight into electrical energy used in providing electricity to the wastewater treatment plant. This alternative was rejected due to cost.

4. Alternative 4: Aeration Control with New Turbo Blower

This alternative consists of installing a dissolved oxygen (DO) control system and two new turbo blowers. A new 8-inch airline will be installed to sludge and post aeration tanks. The DO control system for the aeration tanks will modulate the speed of the blower(s) to maintain the proper DO levels in the tanks and as a result reduce energy costs (see Figure 2). **This was the selected alternative.**

D. Focused I&I Improvements:

1. Alternative 1: No Action

This city's sewer system will continue to experience excessive I&I that will cause sanitary sewer overflows and CSOs as well as not being compliant with their LTCP.

2. Sewer System Rehabilitation

This alternative proposes several rehabilitation methods (e.g., cured-in-place-pipe lining, pipe replacement and manhole rehabilitation) in three of the 16 sewer sheds (i.e., 8, 11 and 13) that demonstrated the highest peak flow during the 10-year, 1-hour design storm simulation (see Figures 4 through 7). **This was the selected alternative.**

E. Madison Street Lift Station Improvements:

1. Alternative 1: No Action Alternative

This alternative was rejected since the 10 year, 1-hour model simulation demonstrated that the lift station had insufficient firm capacity to convey the necessary flows.

2. Alternative 2: Increasing Impeller Size

This alternative proposes increasing the impeller size from 13.25-inches to 14-inches and replacing the existing 40 horsepower (HP) motor with a 75 HP motor required for the lift station to meet the simulated 10-year, 1-hour design flow of 5.4 MGD. This alternative was rejected due to cost.

3. Alternative 3: Increasing Pump Speed

This alternative proposes increasing the motor speed from 1,240 revolutions per minute (rpm) to 1,550 rpm, which is needed for the lift station to convey a flow of 5.4 MGD based on the 10-year, 1-hour design storm model. This alternative was rejected due to cost.

4. Alternative 4: Installation of a Diesel Engine Driven Pump

This alternative proposes adding a new 1,400 gpm diesel engine driven pump that will operate simultaneously with the two existing pumps. The firm capacity with the two existing pumps and the diesel pump will be 5,650 gpm (see Figure 8). **This was the selected alternative.**

5. Alternative 4 (Alternate Bid Item) - Increasing Size of Suction Lines and Impellers:

If bids are favorable, this alternative proposes the replacement of the existing 8-inch suction lines with 12-inch suction lines; and replacing the existing impellers on each of the three pumps with 11.25 inch impellers increasing the lift station's firm capacity to 4,400 gpm (see Figure 8). **This could be the selected alternative based on bids.**

F. Fashion Terrace Lift Station Improvements:

1. Alternative 1: No Action Alternative

This alternative was rejected since the 10 year, 1-hour model simulation demonstrated that the lift station had insufficient firm capacity to convey the necessary flows.

2. Alternative 2: Increasing Pump Speed

This alternative evaluated the current speed of the motors, which are operating at the maximum speed of 1,800 rpm. The pump manufacturer indicated that this is the highest speed recommended for the existing pumps. Therefore, this alternative was rejected due to cost.

3. Alternative 3: Increasing Impeller Size

This alternative proposes increasing the impeller size from 11.25-inches to 12-inches, which is the largest impeller size recommended by the pump manufacturer for the existing pumps. Based on the city's sanitary system hydraulic model, the larger impeller will allow a firm capacity of 1,600 gpm (see Figure 9). **This was the selected alternative.**

G. White Hawk Lift Station Improvements:

1. Alternative 1: No Action Alternative

This alternative was rejected since the 10 year, 1-hour model simulation demonstrated that the lift station had insufficient firm capacity to convey the necessary flows.

2. Alternative 2: Increasing Pump Speed

This alternative evaluated the current speed of the motors, which are operating at the maximum speed of 1,800 rpm. The pump manufacturer indicated that this is the highest speed recommended for the existing pumps. Therefore, this alternative was rejected.

3. Alternative 3: Increasing Impeller Speed

- a. 12-inch Impeller- this alternative proposes a maximum size of 12-inches for the existing pumps, which will require the replacement of the 40 HP motors with 60 HP motors. Based on cost this alternative was rejected.
- b. 11-inch Impeller- this alternative proposes an 11-inch impeller, which will require the replacement of the 40 HP motors with 50 HP motors. Based on the city's sanitary system hydraulic model, this alternative will allow a firm capacity of 3.5 MGD and an ultimate capacity of 3.7 MGD.

4. Alternative 4: Increasing the Size of Discharge Main and Force Main

This alternative proposes increasing the size of the 8-inch discharge main for the three pumps to 12-inches in the lift station; the 12-inch discharge main will then connect to a new 16-inch force main in the yard replacing an existing 8-inch force main; the 16-inch force main will then connect to the existing 8-inch and 14-inch force mains in the yard. This upsizing of the discharge main and force main will increase the lift station's firm capacity to 3,650 gpm (see Figure 10). **This was the selected alternative.**

H. Broadway Lift Station Improvements:

1. Alternative 1: No Action

The Briarwood Subdivision would continue to experience sewer backups if the Broadway Lift Station's capacity is not increased.

2. Alternative 2: Increasing the Capacity of the Broadway Lift Station

Replacing the three existing pumps with new cutter pumps that will have 25 HP motors and 10-inch impellers increasing the lift station's firm capacity to 3,450 gpm (see Figure 11). **This was the selected alternative.**

**IV. ESTIMATED PROJECT COSTS, AFFORDABILITY AND FUNDING**

<u>Construction</u>	<u>Estimated Cost</u>
Flow Management Improvements at the WWTP and New High Efficiency Blowers with DO Control	\$ 3,326,000
Madison Street L.S. Improvements	315,000
Fashion Terrace L.S. Improvements	22,000
White Hawk L.S. Improvements	180,000
Broadway L.S. Improvements	70,000
Mobilization, Bonding & Demobilization	26,000
Focused I&I Improvements	<u>1,072,000</u>
<b>Sub Total Estimated Construction Cost</b>	<b>\$ 5,011,000</b>
Contingency (10%)	501,000
Non- Construction Costs	<u>\$1,387,900</u>
<b>Total Estimated Project Cost</b>	<b>\$6,899,900</b>

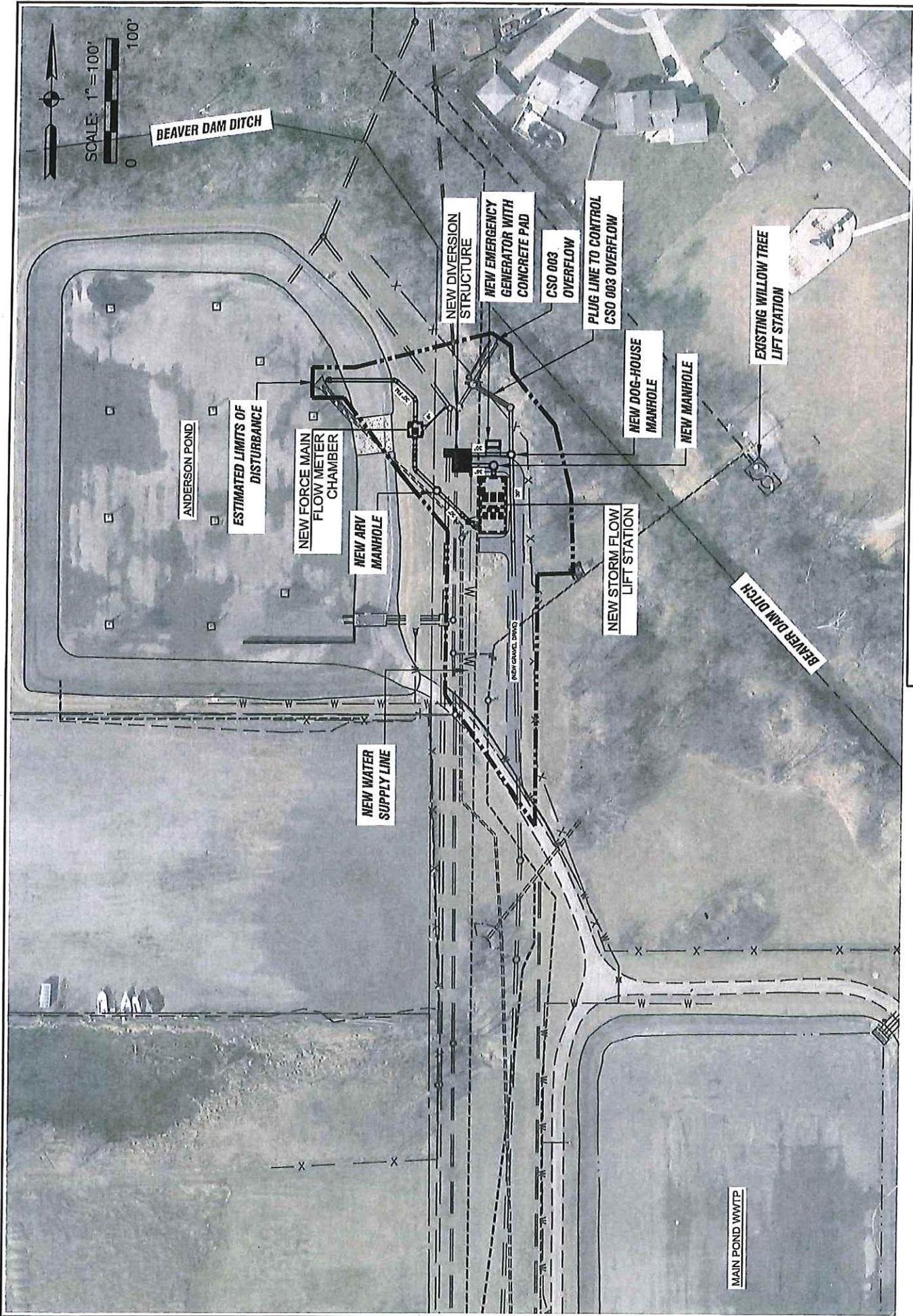
Total cost of this project is estimated to be approximately \$6,899,900. Crown Point will finance the project with a loan from the SRF Loan Program for a 20-year term at an annual fixed interest rate to be determined at loan closing. Monthly user rates and charges may need to be analyzed to determine if adjustments are required for loan repayment.

**V. ENVIRONMENTAL IMPACTS OF THE FEASIBLE ALTERNATIVES**

Construction and operation of the project will not alter, demolish or remove historic properties, see Figure 12. If any visual or audible impacts to historic properties occur, they will be temporary and will not alter the characteristics that qualify such properties for inclusion in or eligibility for the National Register of Historic Places. The SRF's finding pursuant to Section 106 of the National Preservation Act is: "no historic properties affected."

**VI. PUBLIC PARTICIPATION**

A properly noticed public hearing was held on December 9, 2015 at 2 pm at City Hall, 101 North East Street, Crown Point, IN 46307. There were no questions on this project during the hearing. No written comments were received in the 5-day period following the hearing for this project.

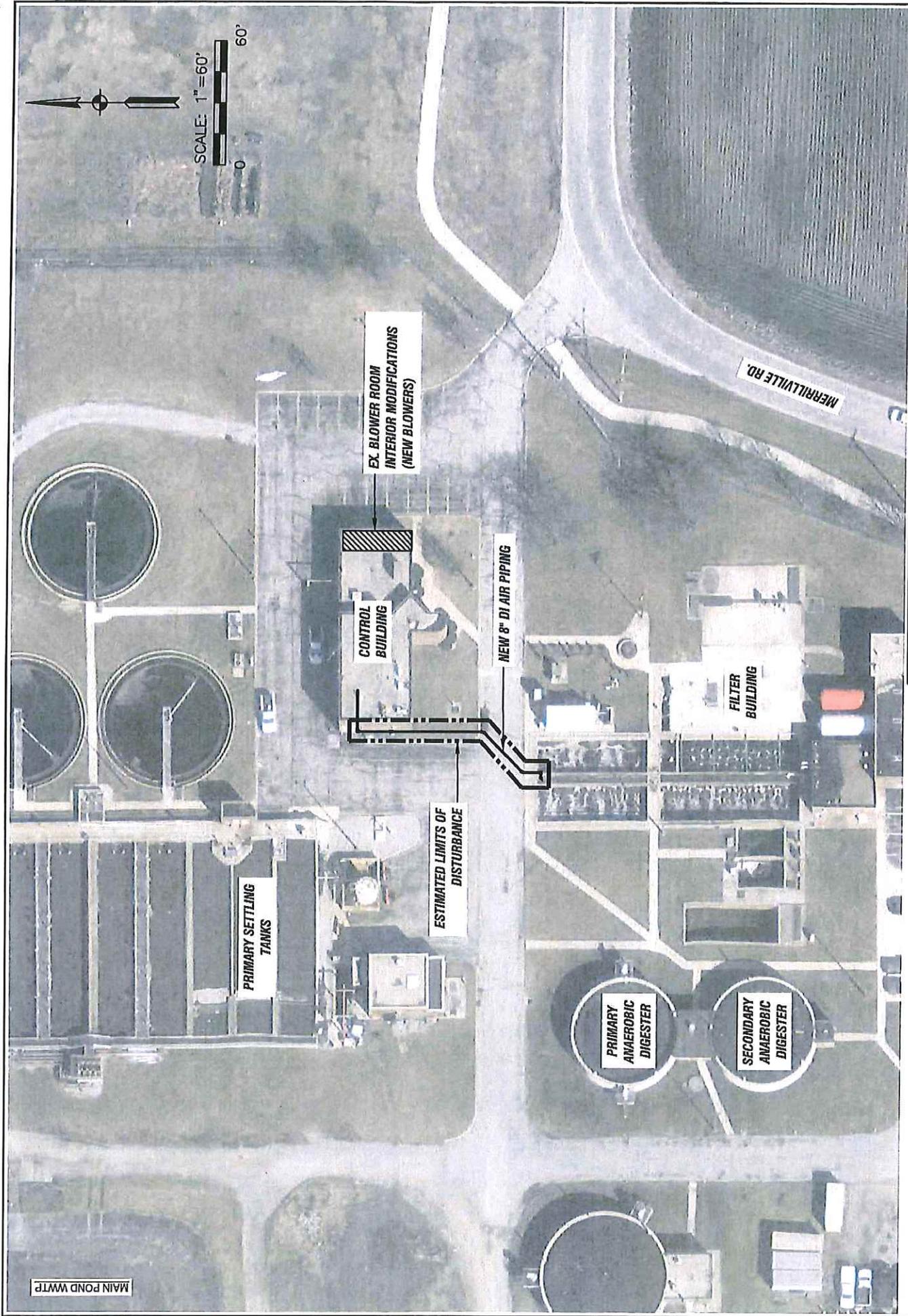


CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS



**COMMONWEALTH  
 ENGINEERS, INC.**

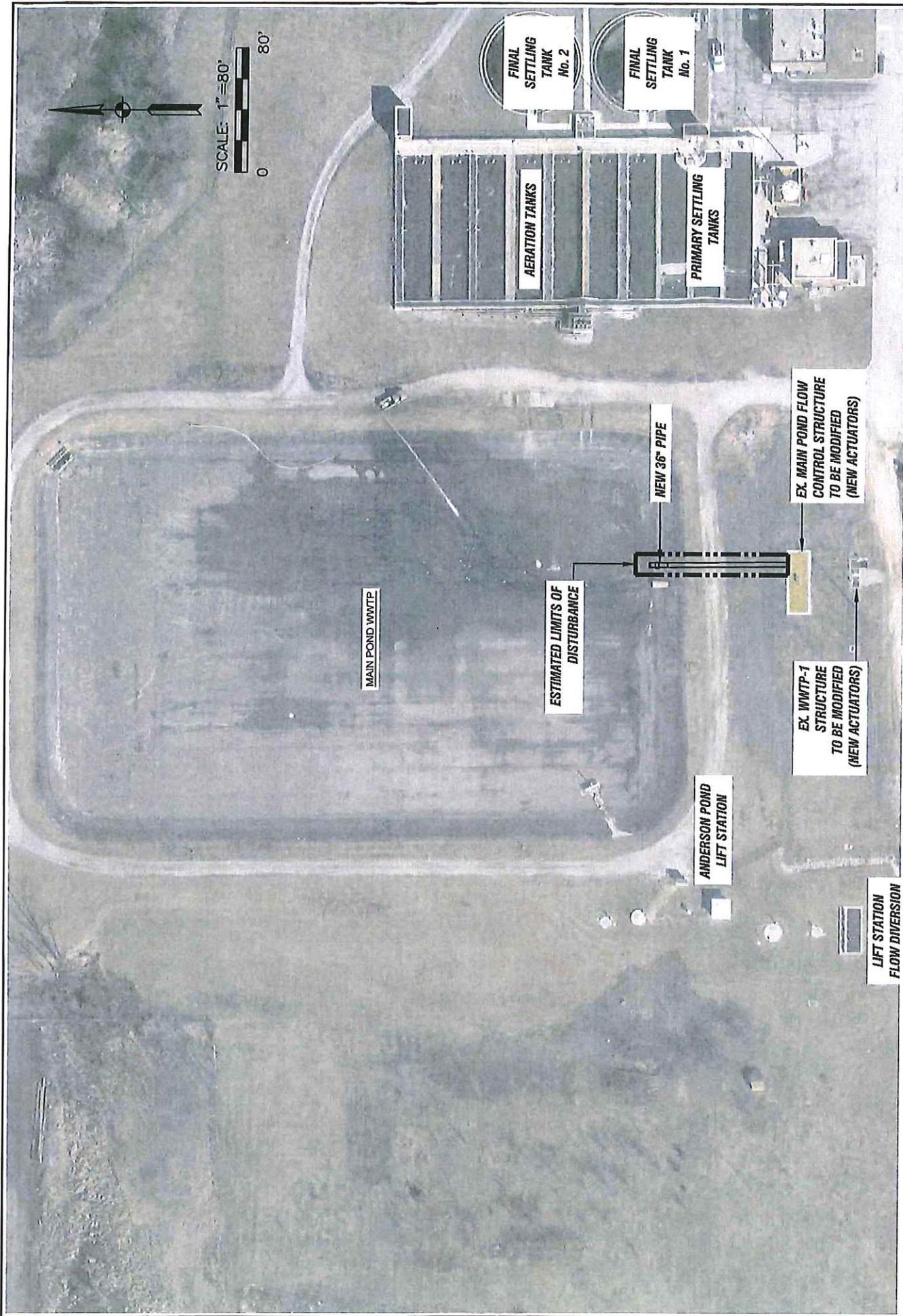
Figure 1



CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LTCP IMPROVEMENTS PROJECT AREA OF POTENTIAL EFFECTS  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS



Figure 2



SCALE: 1" = 80'  
 0 80'

CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LTCP IMPROVEMENTS PROJECT AREA OF POTENTIAL EFFECTS  
 WASTEWATER TREATMENT PLANT IMPROVEMENTS



Figure 3

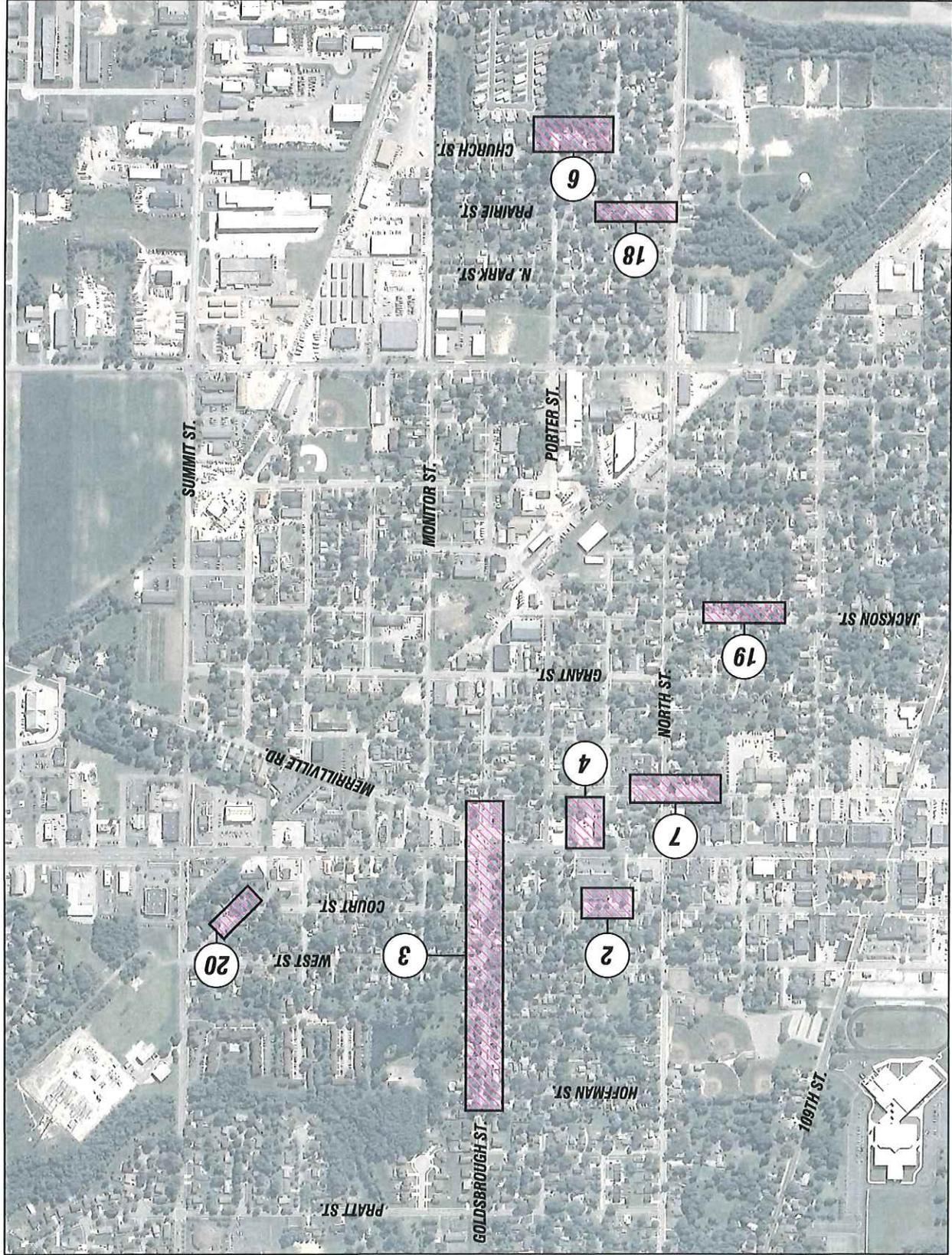
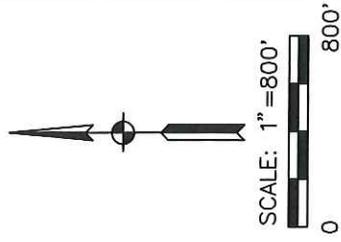


Figure 4



CITY OF CROWN POINT  
LAKE COUNTY, INDIANA  
LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
COLLECTION SYSTEM I/1 IMPROVEMENTS



CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 COLLECTION SYSTEM I/I IMPROVEMENTS



Figure 5

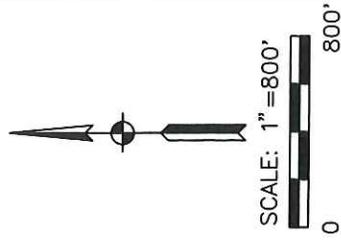
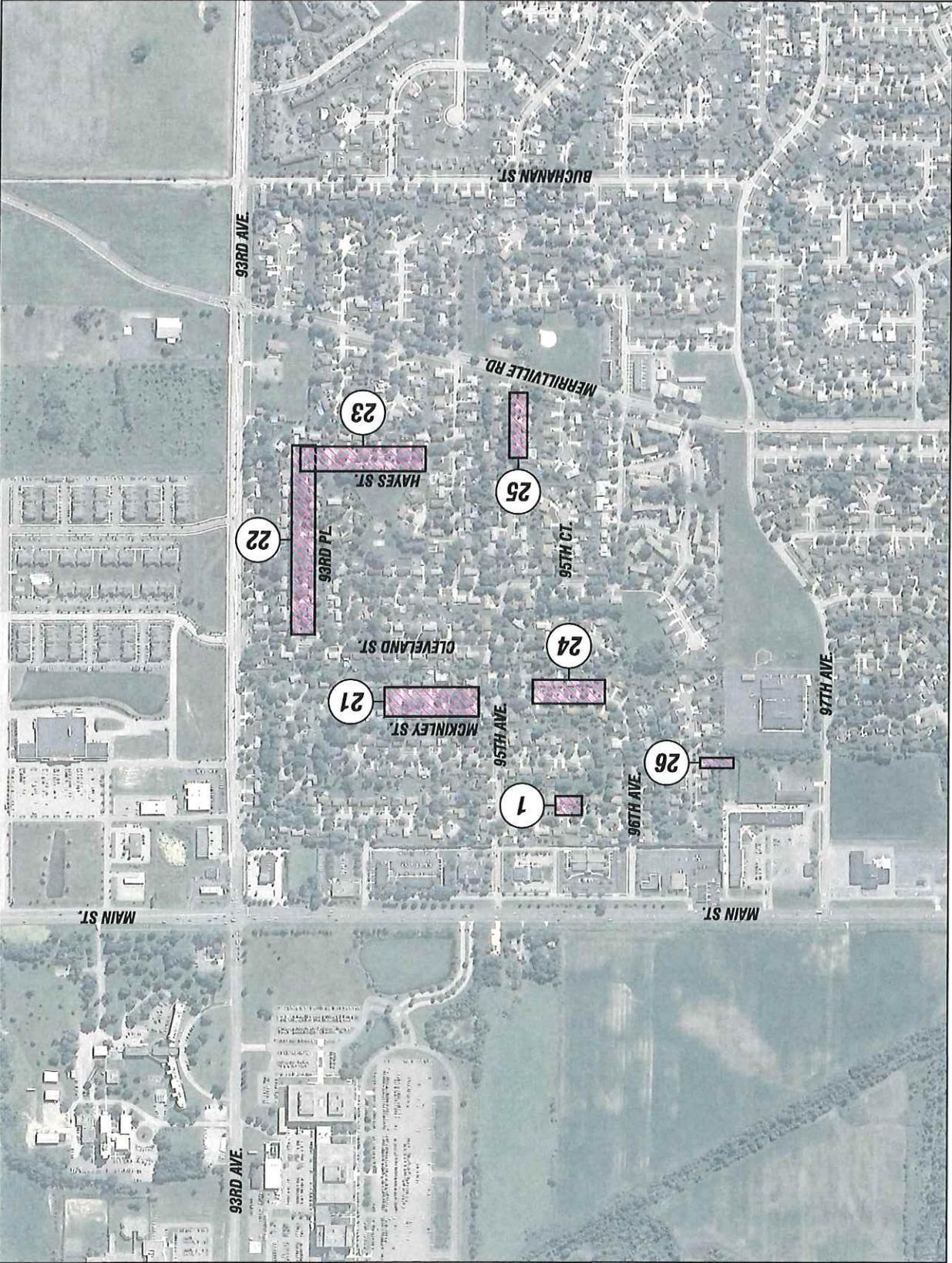
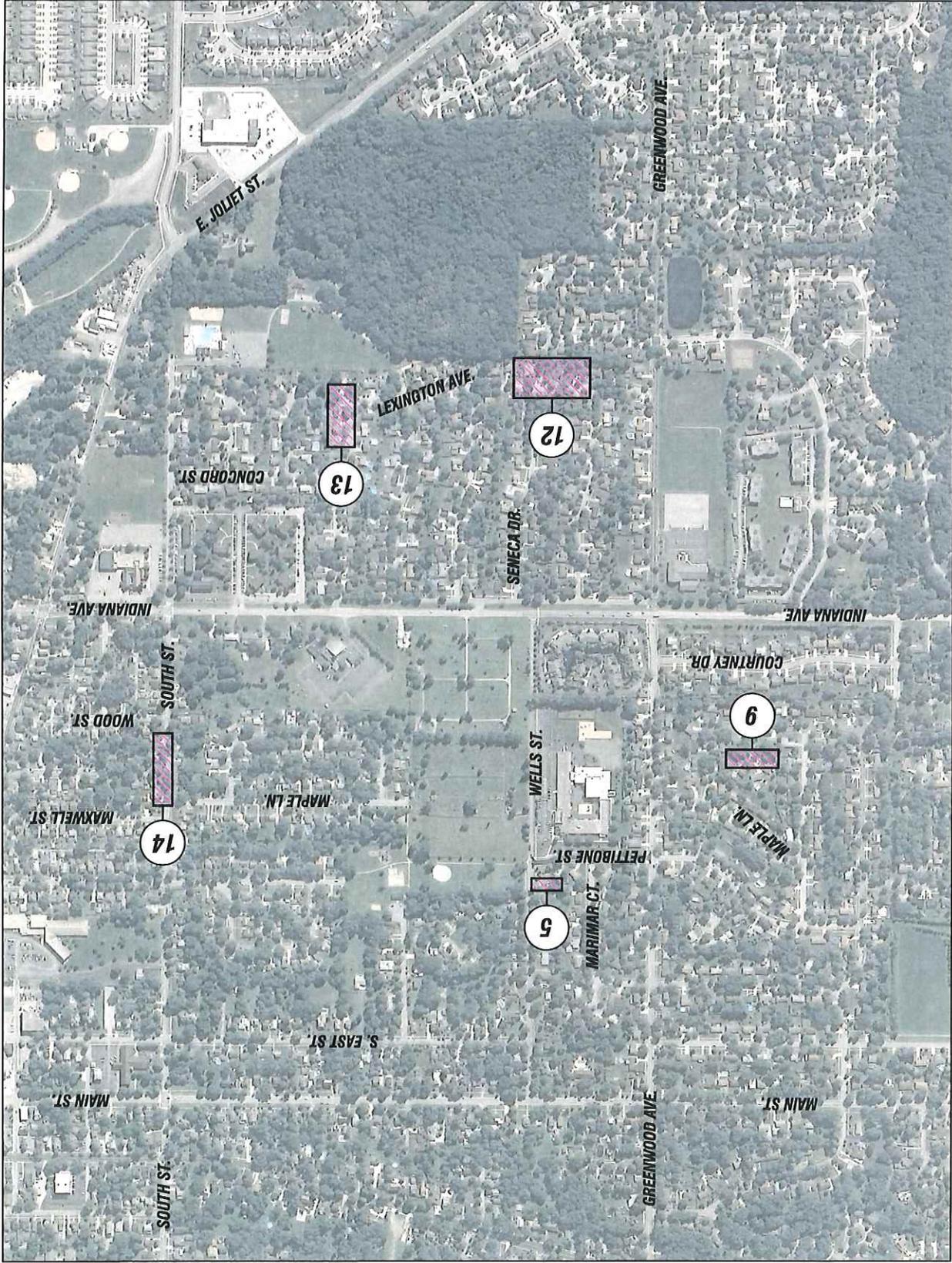
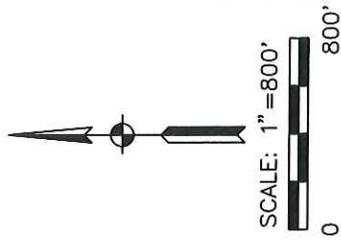


Figure 6

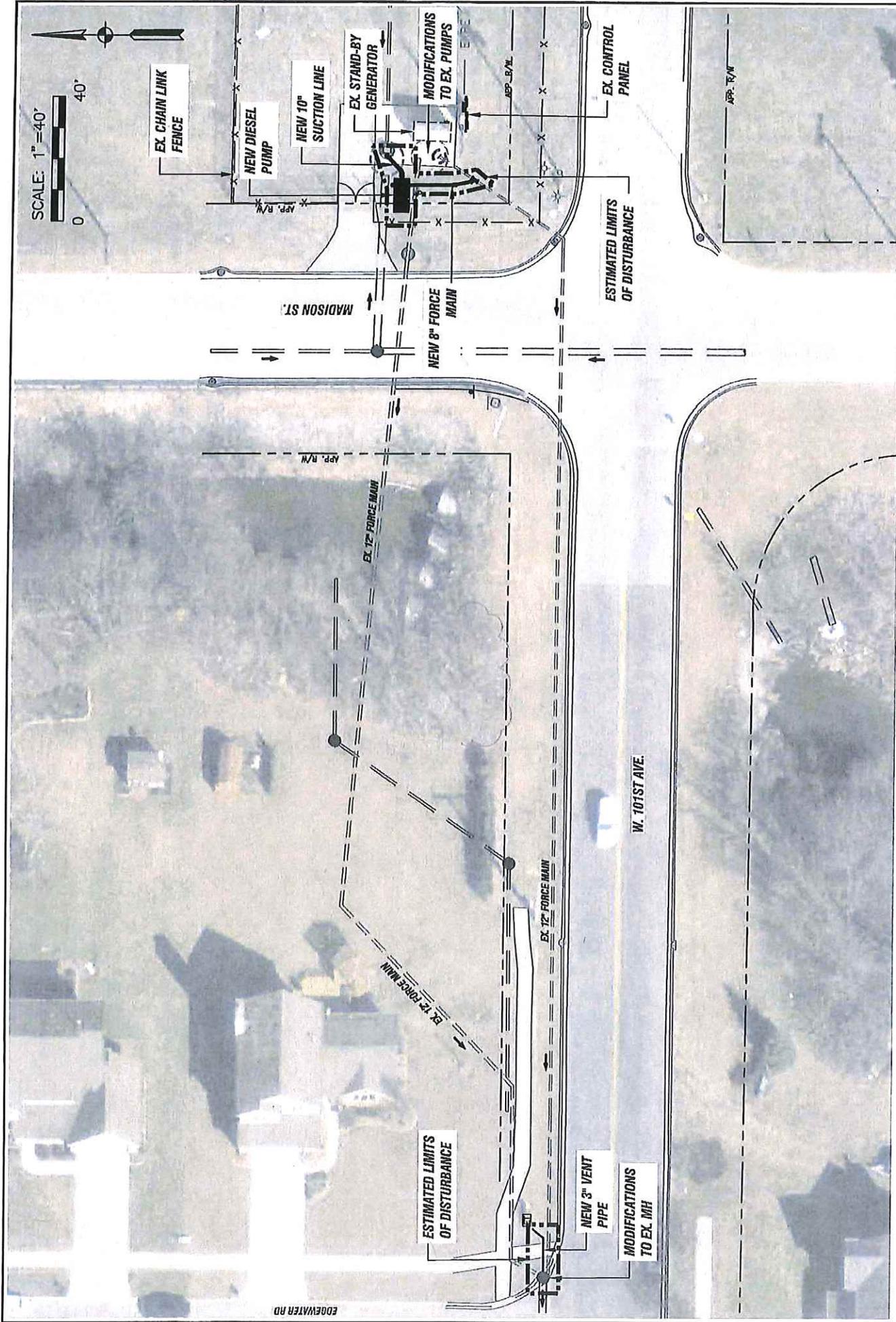




CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 COLLECTION SYSTEM I/I IMPROVEMENTS



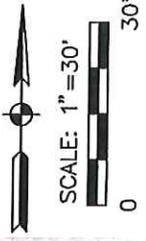
Figure 7



CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 MADISON ST. LIFT STATION IMPROVEMENTS



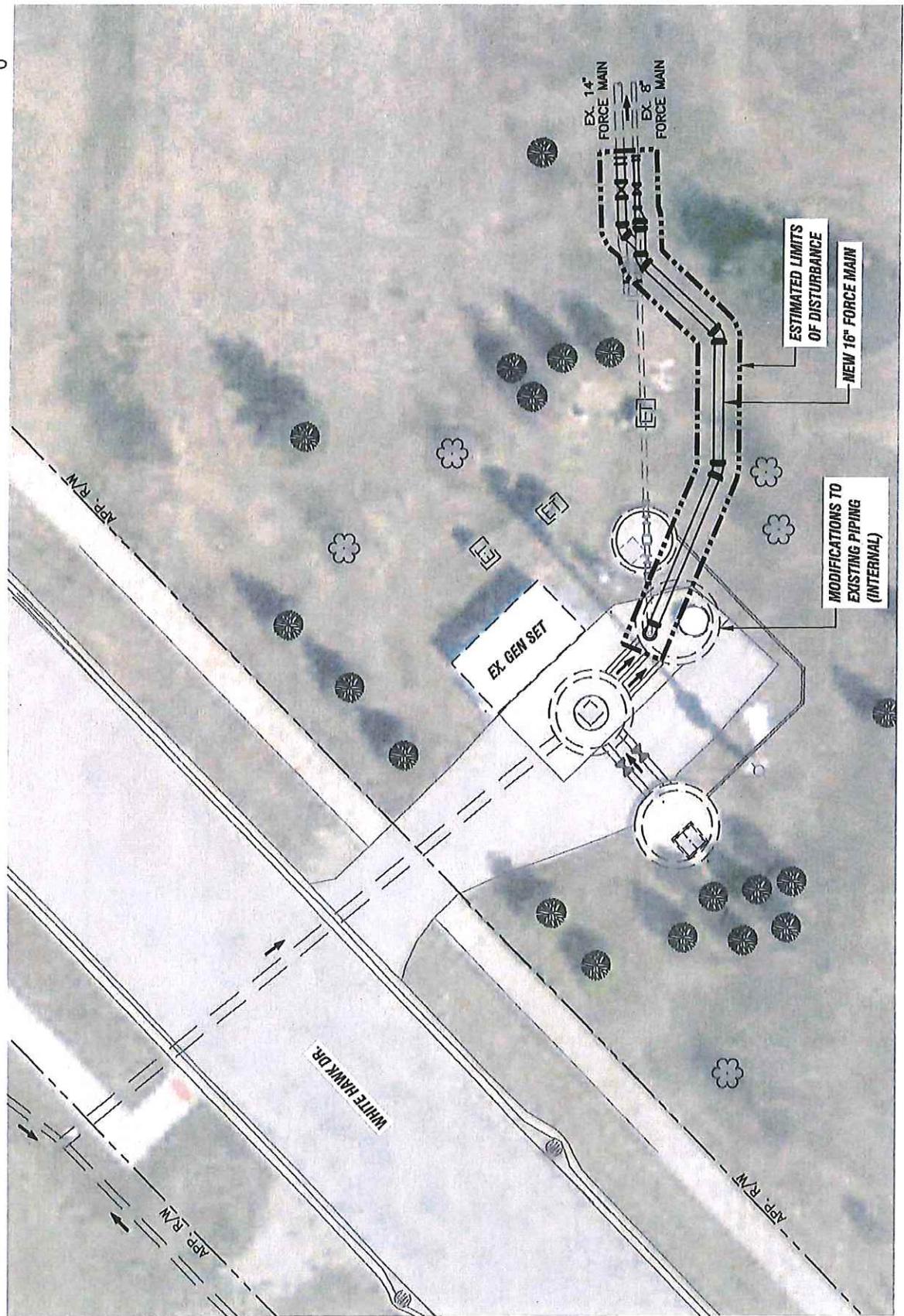
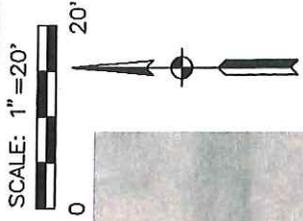
Figure 8



CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 FASHION TERRACE LIFT STATION IMPROVEMENTS



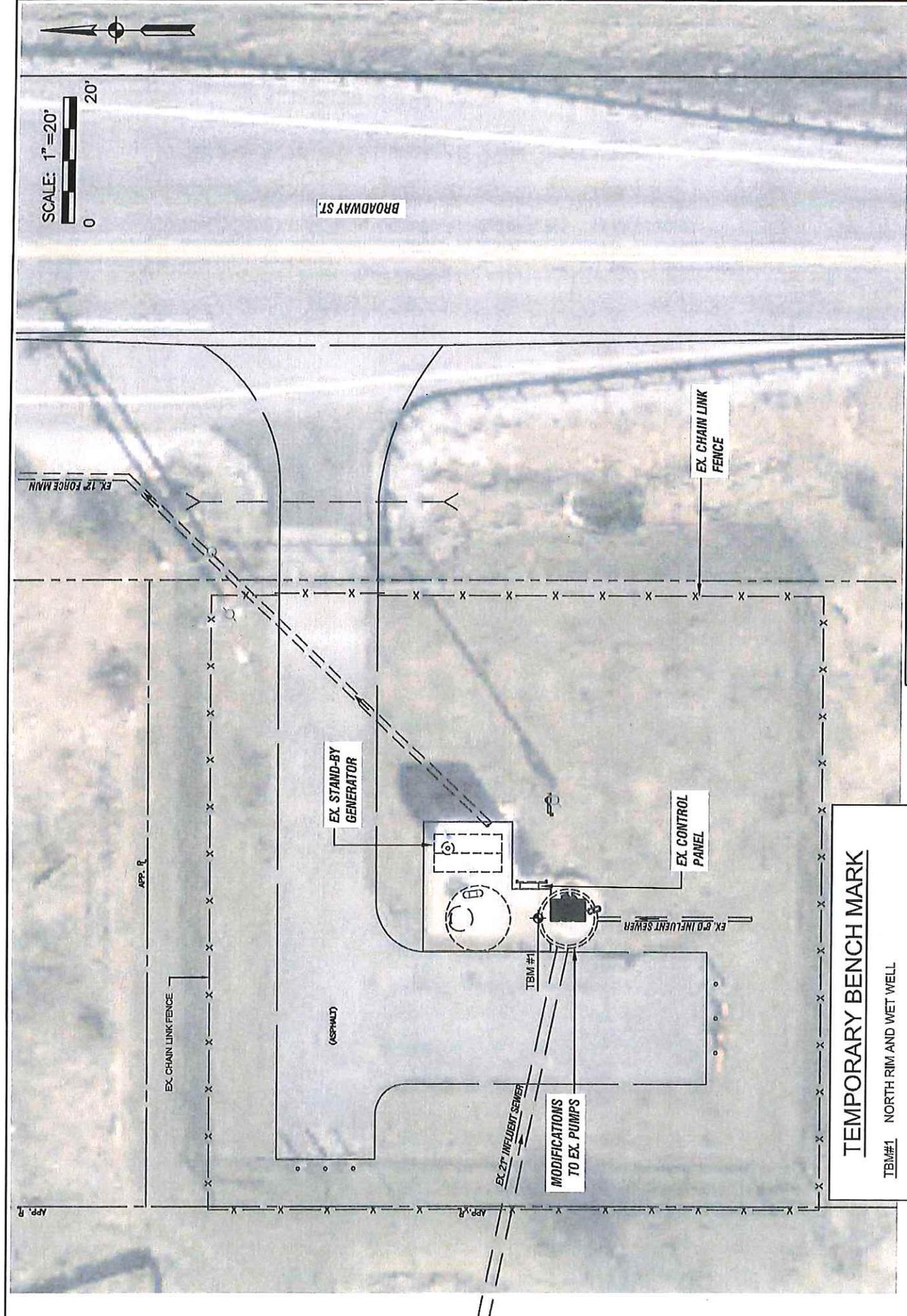
Figure 9



CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 WHITE HAWK LIFT STATION IMPROVEMENTS



Figure 10



CITY OF CROWN POINT  
 LAKE COUNTY, INDIANA  
 LONG TERM CONTROL PLAN IMPROVEMENTS PROJECT  
 BROADWAY LIFT STATION IMPROVEMENTS



**TEMPORARY BENCHMARK**  
 TBM#1 NORTH RIM AND WET WELL  
 ELEV. 100.00\*  
 \* - ELEVATION ESTABLISHED ARBITRARILY AT 100.00 FOR RELATIVE REFERENCE PURPOSES

Figure 11

