

# TRANSMITTAL LETTER



To:  
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Copies:

Date:  
May 31, 2022

Subject:  
Utility Corridor Response  
Activity Plan for Interim  
Response Activities (ResAP  
IRA) – Livonia Transmission  
Plant

Arcadis Project No.:  
30080642

## We are sending you copies:

Attached       Under Separate Cover Via \_\_\_\_\_ the Following Items:

- Shop Drawings       Plans       Specifications       Change Order  
 Prints       Samples       Copy of Letter       Reports  
 Other:

Copies	Delivery Date	Drawing No.	Rev.	Description	Action*
1	6/1/2022			Utility Corridor ResAP – hard copy	
1	6/1/2022			Utility Corridor ResAP – electronic copy CD	

## Action\*

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 AN Approved As Noted       F File       Return \_\_\_\_ Copies  
 AS As Requested       FA For Approval       Review and Comment

Other: As Requested per the April 13, 2022 letter provided by EGLE.

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Ford Motor Company

# UTILITY CORRIDOR RESPONSE ACTIVITY PLAN FOR INTERIM RESPONSE ACTIVITIES

**Livonia Transmission Plant**

May 31, 2022

# UTILITY CORRIDOR RESPONSE ACTIVITY PLAN FOR INTERIM RESPONSE ACTIVITIES

Livonia Transmission Plant

Area of Concern

Court Case: No. 2:1712372-GAD-RSW

May 31, 2022

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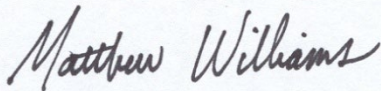
**Our Ref:**

30080642



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# 1 Introduction

Arcadis of Michigan, LLC (Arcadis) has prepared the following Utility Corridor Response Activity Plan for Interim Response Activities (ResAP IRA) on behalf of Ford Motor Company (Ford) for the Livonia Transmission Plant (LTP) site (the site). This document describes the interim response activities that will be conducted to capture and treat vapors within one of the primary the sanitary sewer main lines, to minimize the potential for constituent of concern (COC) vapors migrating off site. The IRA is in accordance with the Consent Decree (CD) effective July 27, 2017 (entered into by the Michigan Department of Environmental Quality [MDEQ] and Ford; No: 2:1712372-GAD-RSW) and Michigan Department of Environment, Great Lakes, and Energy (EGLE; formerly MDEQ) letter and acknowledged by Ford on April 19, 2022.

Below describes the actions that Ford will undertake to mitigate the exposure pathway, including capturing and treating vapors within select sections of the on-site sanitary sewer slightly upgradient of a discharge point to the municipal main sanitary sewer line, as well as cleaning and lining additional accessible sections of sanitary sewers below the LTP.

# 2 Utility Corridor Response Activities

## On-site Response Activities

### Sanitary Sewer Vapor Extraction System.

In response to the presence of site-specific COCs in vapor that have the potential to migrate within the sanitary sewer, Ford is proposing a sanitary sewer vapor extraction system (SSVE). The purpose of the SSVE system is to capture and treat vapors within one of the primary sanitary sewer main lines, to minimize the potential for COC vapors migrating off site along Plymouth Road. The SSVE system is not designed to treat the liquid within the sanitary sewer and mitigates and treats vapor only. Below is a picture of the current staging area and setup of the SSVE system, **Exhibit 1**.



*Exhibit 1 - Sanitary Sewer Vapor Extraction System*

## UTILITY CORRIDOR RESPONSE ACTIVITY PLAN FOR INTERIM RESPONSE ACTIVITIES

The SSVE system is composed of a blower capable of reaching an airflow of 900 cubic feet per minute (cfm) and maximum vacuum of approximately 30 inches of water column (iwc). Vapor treatment consists of one 2,000-pound (lb) vessel containing vapor granulated activated carbon and one 2,000 lb vessel containing zeolite impregnated with potassium permanganate, arranged in series. The piping and instrumentation diagram is provided in **Figure 1** for reference. The SSVE system is equipped with process safety devices and interlocks that will cause it to shut down if equipment is operating outside of design/safe ranges. The SSVE system is also equipped with a telemetry system that will send out notifications to operation and maintenance (O&M) staff in the event of an alarm or system shutdown.

### Initial Startup Location

The SSVE was delivered to the Site on May 25, 2022. The SSVE system has been installed to temporarily extract vapor from an on-site manhole located at SAMH-1244 which is shown on **Figure 2**. Manhole SAMH-1244 was selected based on previous investigations that were conducted with a portable gas chromatograph FROG 5000™ used for screening and vapor grab sampling results. The vapor results at Manhole SAMH-1244 and upstream Manhole SAMH-1255 have consistently been above the applicable Site-Specific Volatilization to Indoor Air Criteria (SSVIAC). Manhole SAMH-1244 was also selected because of the accessibility for immediate implementation of the SSVE system. The SSVE system extracts vapor from the one of the two main line sewers that are currently discharging to the sanitary sewer located within Plymouth Road while the primary extraction point is being installed. Refer to **Figure 2** for the sanitary sewer mainline locations. Upon startup of the SSVE system, Arcadis began compliance sampling which is outlined below.

### Primary Extraction Location

The primary extraction point will be located approximately 20 to 30 feet north of manhole SAMH-1231 as shown on **Figure 2**. This location was selected as the primary location since both sanitary mainlines from the plant converge at this location prior to discharging to the Plymouth Road sanitary sewer system. The SSVE cannot be connected to Manhole SAMH-1231 because access to the manhole is located off Ford property in the middle of the sidewalk along Plymouth Road, which would force a permanent shutdown of the pedestrians walkway. Therefore, a sanitary sewer access point will need to be installed north of Manhole SAMH-1231 on Ford property. Refer to **Figure 3** for the location of the proposed access point and cross section of the proposed connection to the primary sanitary sewer mainline.

The access point for the primary location is currently being coordinated and tentatively scheduled to be installed in July 2022. In order to connect the SSVE to the primary mainline location, a new lateral pipe will be connected to the 15 inch-diameter sewer main, which discharges into Manhole SAMH-1231. In order to connect the new lateral pipe, the 15-inch main will be plugged upstream and the plant's sewage will be temporarily bypassed into frack tanks while the connection is made. The 15-inch sanitary mainline will be excavated to a depth of approximately 12-14 feet and a vertical Tee-style connection will be installed with a vertical riser up to ground surface and the excavation will be backfilled. The SSVE system will be connected to this Tee connection at ground surface. Refer to **Figure 3** for approximate location and specifications for the access connection

Once the SSVE system has been moved and connected to the primary location, baseline samples (SAMH-1231 and SL-2) will be collected followed by the compliance sampling which is outlined below.

## UTILITY CORRIDOR RESPONSE ACTIVITY PLAN FOR INTERIM RESPONSE ACTIVITIES

The table below details the implementation schedule for the SSVE system.

SSVE System Schedule	Date
SSVE system to arrive onsite	May 25, 2022
Connection of manhole location SAMH-1244 to begin temporarily pulling vapor	May 25, 2022
Excavation for sanitary connection near manhole location SAMH-1231 at the primary location	July 2022
Connection of SSVE to primary location SAMH-1231	July 2022
Start-up of SSVE at primary location	July 2022

### System Operation and Compliance Sampling

Compliance sampling and vapor screening using the FROG 5000™ will be completed to confirm that the SSVE system is reducing site-related COCs in vapor from the sanitary sewer system to levels below SSVIAC before migrating to the Plymouth Road sanitary sewer system.

Following installation of the system at the initial location (SAMH-1244), a baseline screening of the on-site and off-site sanitary sewer manholes downgradient of SAMH-1244 (SAMH-1231 and SL-2) will be completed using the FROG 5000™. In addition, one round of grab vapor samples will also be collected to confirm the FROG 5000™ screening results. These data will be used to establish baseline vapor concentrations before system startup.

Following the baseline sampling, the SSVE system will be activated and set to extract from manhole location SAMH-1244 at an airflow rate of approximately 300 to 400 cfm. After approximately 24 hours of extraction, another round of FROG 5000™ screening and vapor grab sampling will be completed on manholes (SAMH-1231 and SL-2). System operations will be adjusted as necessary to optimize the extraction flow rate based on the vapor monitoring results.

- If screening indicates a potential exceedance, and/or grab vapor sample results are above SSVIAC, the extraction airflow rate will be increased to enhance removal of vapors from the sanitary sewer system. After the extraction flow rate is increased, another round of screening/grab sampling will be performed approximately 24 hours after the extraction flow rate is increased. This process will be repeated until vapor concentrations are below SSVIAC and startup vapor monitoring can be transitioned to compliance sampling or the system reaches its maximum airflow capacity.
- If the grab vapor sample results are below SSVIAC, then the SSVE system will continue operating without adjustment, and startup vapor monitoring will be transitioned to compliance sampling.

Once system startup and extraction flow optimization is complete, compliance sampling will continue weekly with vapor grab sampling at the manhole (SAMH-1231 and SL-2) locations to confirm that vapor sample results remain below SSVIAC. In addition, the FROG 5000™ will be used as a screening tool only and to verify the presence of COCs within the sanitary sewers. The data obtained from FROG 5000™ will not be used for compliance reporting. If results remain below SSVIAC for 3 weeks, the sampling frequency will be reduced to monthly.

When the SSVE system is relocated to the primary location, the same startup and compliance sampling procedure will be conducted as detailed above.

## UTILITY CORRIDOR RESPONSE ACTIVITY PLAN FOR INTERIM RESPONSE ACTIVITIES

During system operation, weekly inspections will be completed inside the LTP on structures connected to the sanitary sewer lines (e.g., sinks, toilets, drains) to confirm that the extraction system is not pulling water from P-traps or otherwise affecting the plumbing system.

Routine operational monitoring of system equipment and manufacturer-recommended maintenance will be performed during the weekly vapor monitoring events while the system is operating.

### Sanitary Sewer Cleaning and Rehabilitation

Additional sanitary sewer lines within the plant will be scheduled for cleaning and potential rehabilitation (refer to **Figure 4**). Arcadis will also complete dye testing to confirm lateral and floor drain connections at multiple tap-in locations to the main lines. The dye test will provide an understanding of which laterals are currently active vs non-active within the plant. Active lines will need to be inoperable and potential bypass pumping will be implemented during the proposed rehabilitation. During the lining rehabilitation inactive laterals will be sealed to prevent infiltration of groundwater following the dye testing and line cleaning consistent with previous events will be completed to prepare the sanitary lines and laterals for rehabilitation. Based on the camera inspection results, the structural integrity of the specific sections of piping underplant are severely degraded, and potential collapse is possible; therefore, heavy cleaning will not be implemented. In the event the pipe or pipes cannot be rehabilitated then an alternative approach will be provided to EGLE for review and approval. If the pipe segments can be cleaned enough to allow for rehabilitation, then rehabilitation will consist of cured-in-place pipe lining (CIPPL). The rehabilitation of select pipe segments is a continuing effort to prevent the infiltration of groundwater into the sewer, which is likely the source of vapors identified in the on-site sanitary sewer. A schedule is provided below for each activity.

Pipe Rehabilitation	Date
Dye Testing and Lateral Confirmation	Week of May 23, 2022
Cleaning and CCTV	June 2022
Design of Liner for CIPPL	June 2022
Installation of CIPPL	June 2022

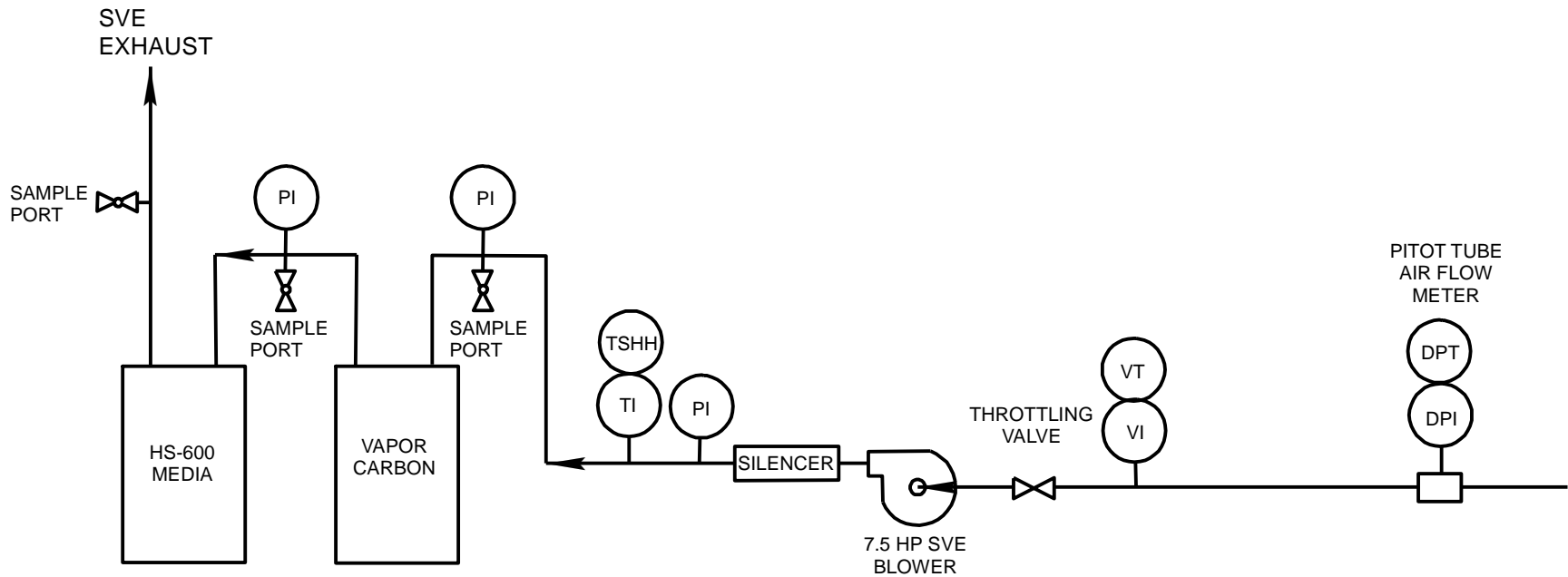
## 3 Closing

The purpose of this ResAP IRA is to propose on-site response activities to mitigate off-site migration of vapors within the utility corridor. This ResAP IRA supplements the Utility Corridor ResAPs submitted on February 11, 2020, December 4, 2020, and January 27, 2021 and approved by EGLE on March 9, 2020, December 11, 2020, and February 18, 2021. Utility Corridor ResAP progress updates including analytical results will be provided to EGLE monthly starting with a July 1, 2022 report .



# Figures

DIV/GROUP: ENV/IMDV DB: mai00749 LD: PIC: R. Ellis PM: K. Hinskey PROJECT NUMBER: 30080642  
 PROJECT: PATH: T:\ENV\Novi\Brighton\_MNFord\Livonia\GIS\docs\GEC\2022\Utility Corridor\Figure 1 - Piping And Instrumentation Diagram.mxd PLOTTED: 5/27/2022 8:01:28 PM BY: mai00749



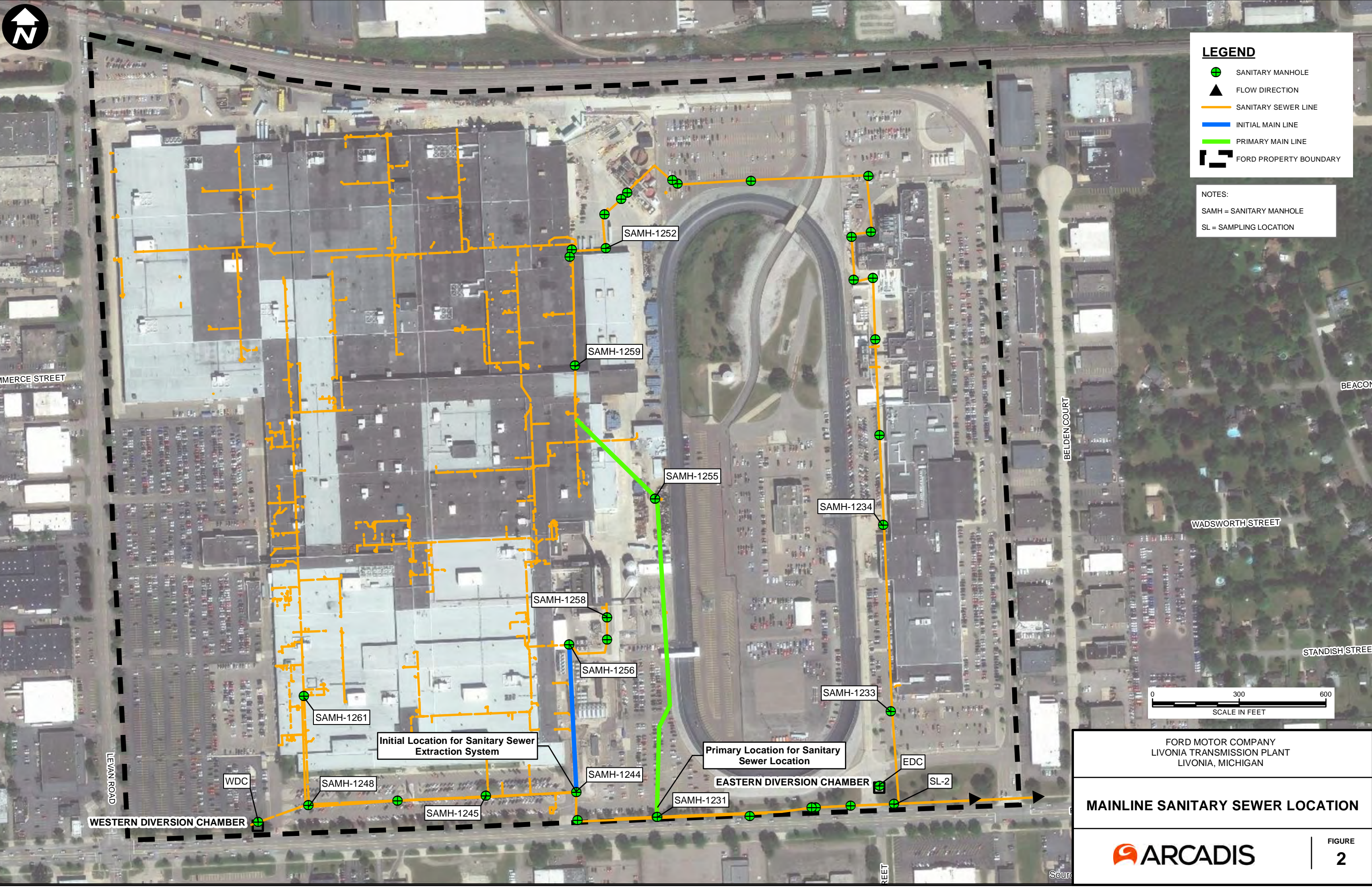
V	VACUUM
P	PRESSURE
S	SWITCH
L	LIQUID LEVEL OR LOW
I	INDICATOR
FQI	FLOW QTY IND. (TOTALIZER)
FRI	FLOW RATE INDICATOR
T	TEMPERATURE

FORD MOTOR COMPANY  
LIVONIA TRANSMISSION PLANT  
LIVONIA, MICHIGAN

## PIPING AND INSTRUMENTATION DIAGRAM



FIGURE  
1



**LEGEND**

- SANITARY MANHOLE
- ▲ FLOW DIRECTION
- SANITARY SEWER LINE
- INITIAL MAIN LINE
- PRIMARY MAIN LINE
- FORD PROPERTY BOUNDARY

**NOTES:**  
 SAMH = SANITARY MANHOLE  
 SL = SAMPLING LOCATION



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 LIVONIA, MICHIGAN

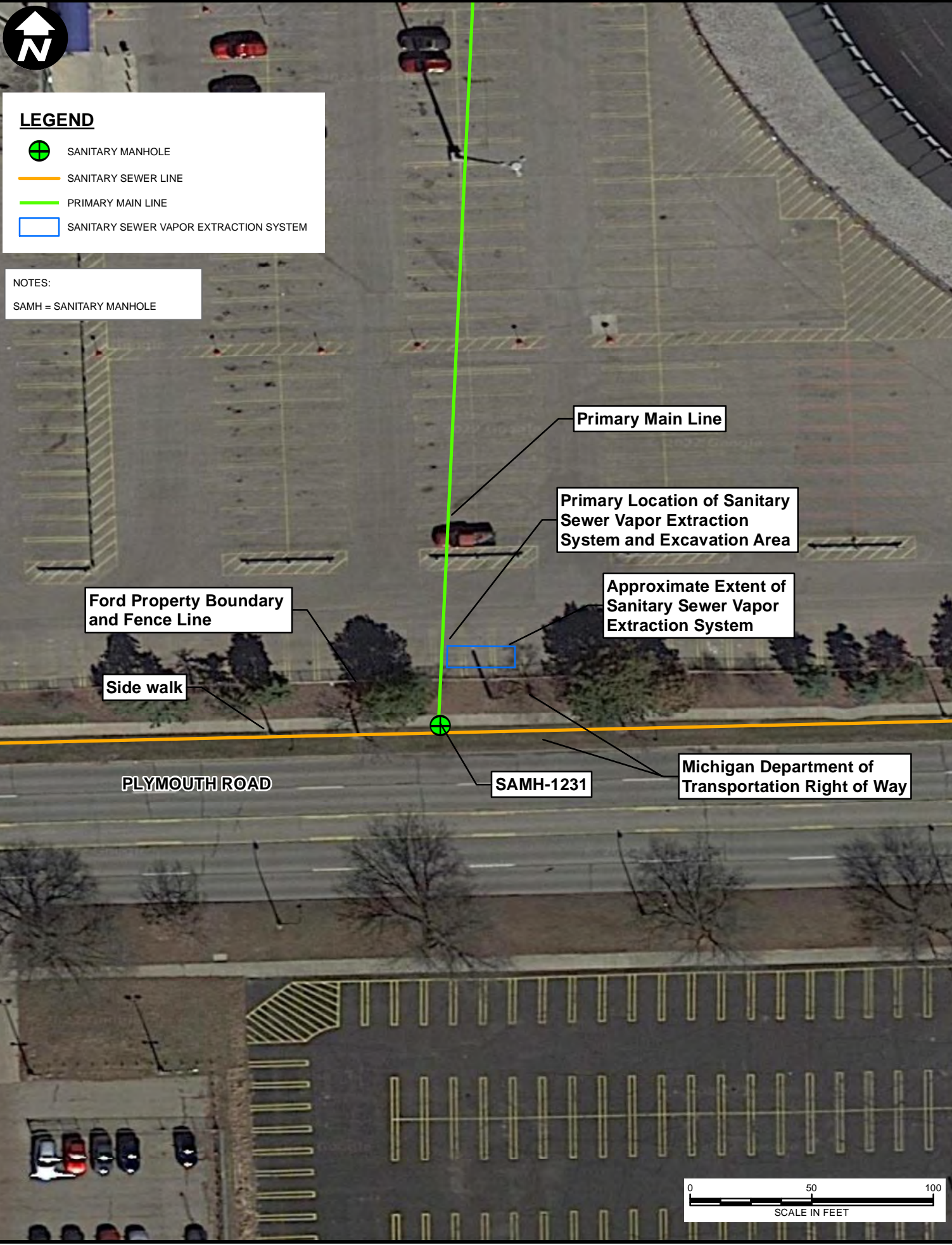
**MAINLINE SANITARY SEWER LOCATION**

**ARCADIS**

FIGURE  
**2**

CITY: Novi DIV: ENV DB: MG PIC: R. ELLIS PM: K. HINSKEY PROJECT NUMBER: 30080642 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl  
 TITLE: ENVI\Novi\Brighton MI\Ford\Livonia\GIS\2022\Utility Corridor\Figure 2 - Mainline Sanitary Sewer Location.mxd PLOTTED: 5/27/2022 7:24:43 PM BY: mal00749

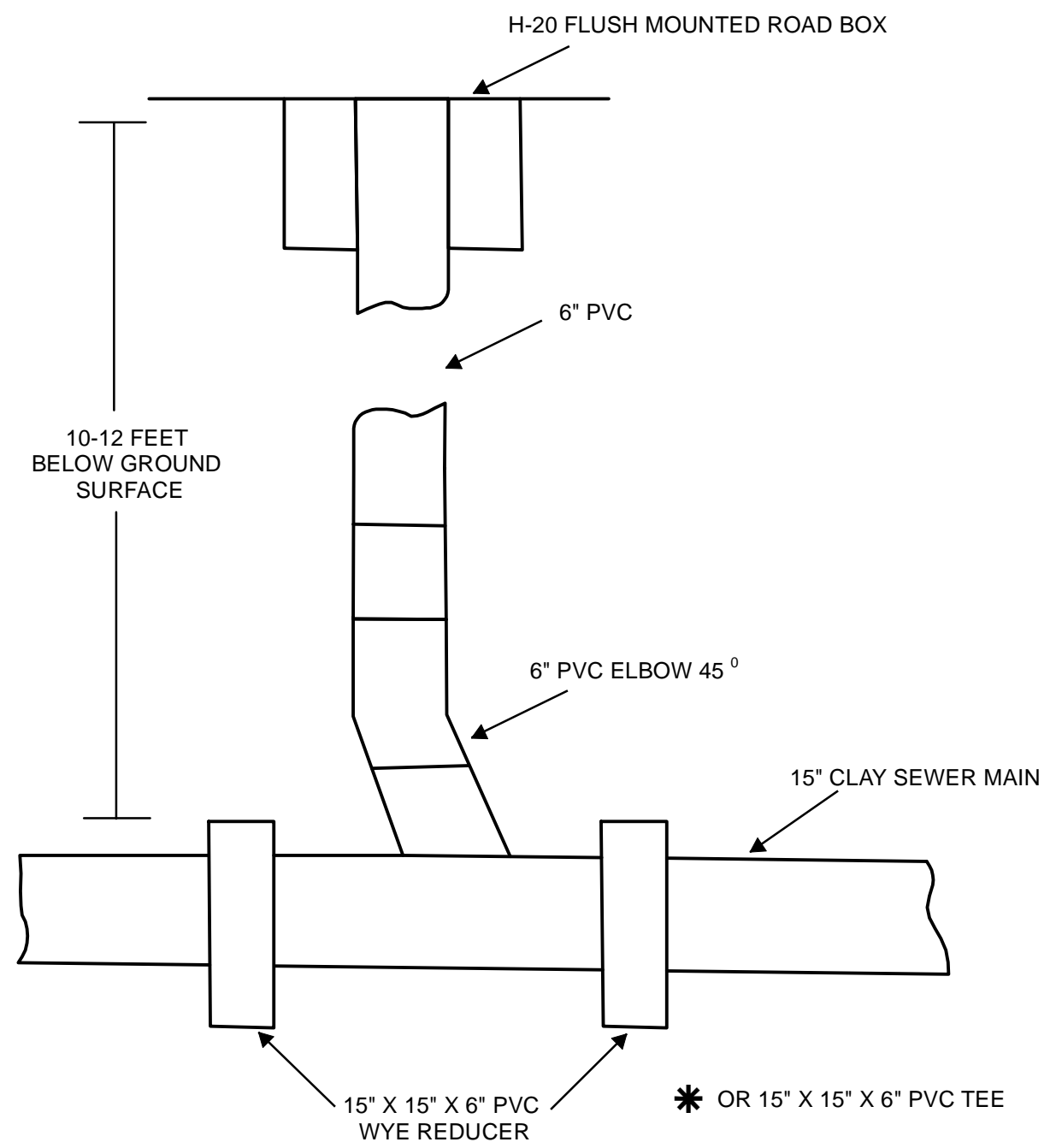
CITY: Novi, DIV: ENV, DB: MG, PIC: R. ELLIS, PM: K. HINSKEY, PROJECT NUMBER: 30080642, COORDINATE SYSTEM: GCS North American 1983, T: ENV\Novi\Brighton\_MilFordLivonia\GIS\Docs\GECY2022\Utility Corridor\Figure 3 PRIMARY SANITARY SEWER LOCATION.mxd, PLOTTED: 5/31/2022 4:06:00 PM, BY: ma00749



**LEGEND**

- SANITARY MANHOLE
- SANITARY SEWER LINE
- PRIMARY MAIN LINE
- SANITARY SEWER VAPOR EXTRACTION SYSTEM

NOTES:  
SAMH = SANITARY MANHOLE



**SANITARY SEWER CONNECTION CROSS SECTION**

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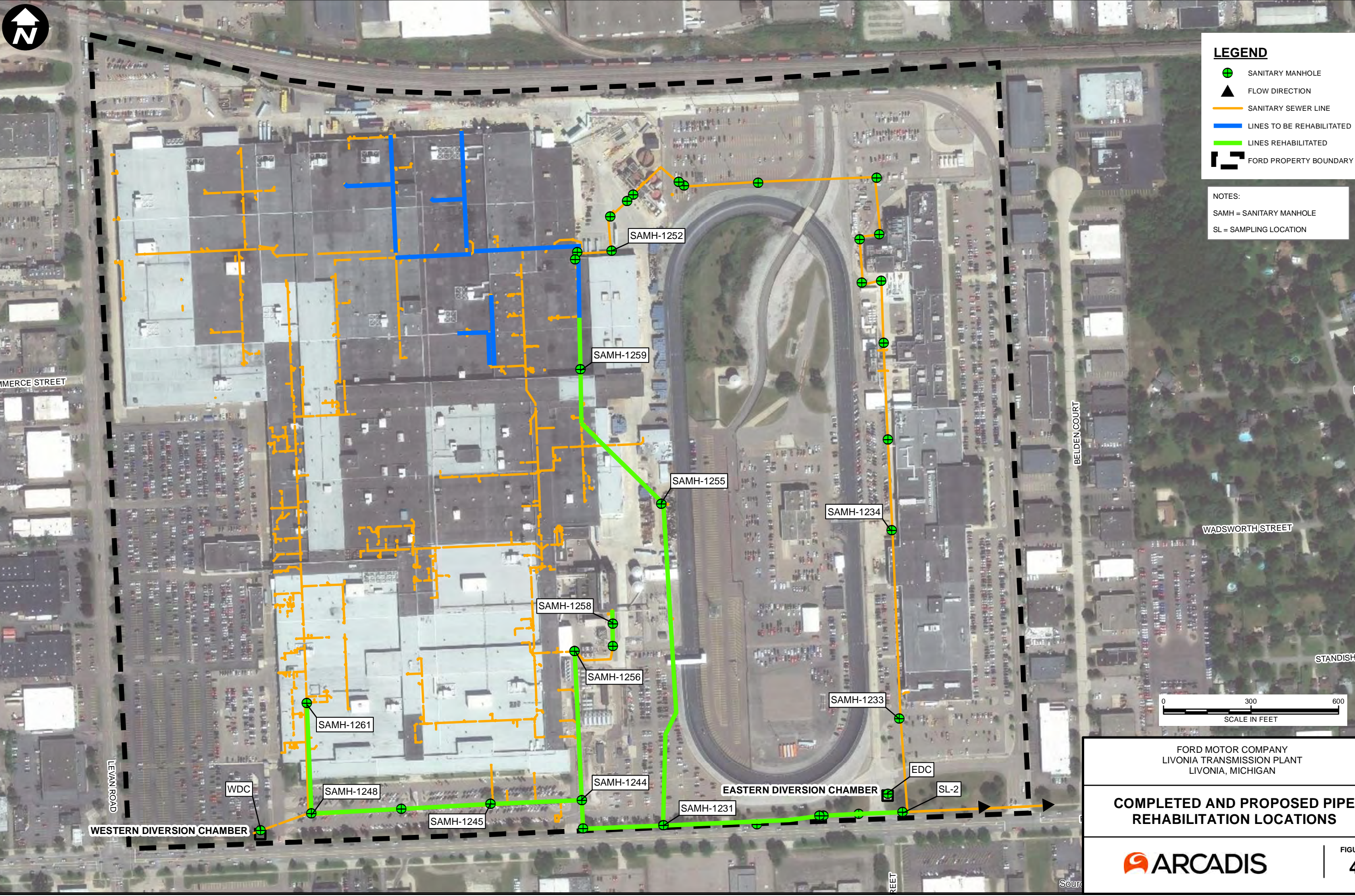
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**PRIMARY SANITARY SEWER LOCATION**

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**ARCADIS**

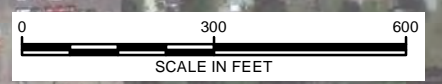
FIGURE  
**3**



**LEGEND**

- SANITARY MANHOLE
- ▲ FLOW DIRECTION
- SANITARY SEWER LINE
- LINES TO BE REHABILITATED
- LINES REHABILITATED
- FORD PROPERTY BOUNDARY

**NOTES:**  
 SAMH = SANITARY MANHOLE  
 SL = SAMPLING LOCATION



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 LIVONIA, MICHIGAN

**COMPLETED AND PROPOSED PIPE REHABILITATION LOCATIONS**

**ARCADIS**

FIGURE  
**4**

CITY: Novi DIV: ENV DB: MG PIC: R. ELLIS PM: K. HINSKEY PROJECT NUMBER: 30080642 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl  
 T: ENV\Novi\Brighton MI\FordLivonia\GIS\GEO\2022\Utility Corridor\Figure 4 - Completed And Proposed Pipe Rehabilitation Locations.mxd PLOTTED: 5/27/2022 7:40:23 PM BY: m.al00749

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