RACER Trust

Interim Corrective Action Plan (ICAP)

Buick City, Flint, Michigan

February 27, 2026

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Acronyms and Abbreviations

Arcadis	Arcadis of Michigan, LLC
ACO	Administrative Consent Order
bgs	below ground surface
CSM	conceptual site model
DPs	Discharge Points
DP Priority List	Discharge Point Priority List
DPP Report	Discharge Point Prioritization Report
EGLE-WRD	The Michigan Department of Environment, Great Lakes, and Energy – Water Resources Division
GAC	granular activated carbon
ICAP	Interim Corrective Action Plan
IMs	interim measures
IX	ion-exchange
LNAPL	light non-aqueous phase liquid
MH	manhole
NLCD	National Land Cover Database
NRCS	National Resources Conservation Service
OMM Plan	operations, maintenance, and monitoring plan
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PFOS	perfluorooctanesulfonic acid
RACER Trust	Revitalizing Auto Communities Environmental Response Trust
Remedy	Hamilton Ave groundwater remedy
RSSCT	rapid small scale column test
SCS	Soil Conservation Service
the Site	the Buick City Site located in Flint, Michigan
STWCS	short-term water characterization study
USDA	United States Department of Agriculture

1 Introduction

On behalf of Revitalizing Auto Communities Environmental Response Trust (RACER Trust), Arcadis of Michigan, LLC (Arcadis) has prepared this Interim Corrective Action Plan (ICAP) to meet the April 27, 2025 EGLE Administrative Consent Order (ACO) paragraph 3.7 requirement. In addition, this ICAP also helps to address Part 111 corrective action requirements. This ICAP summarizes the plan to meet the perfluorooctanesulfonic acid (PFOS) mass loading reductions from the Buick City Site in Flint, Michigan (the Site). The *PFOS Discharge Point Prioritization Report* (DPP Report, Arcadis, 2026) submitted to EGLE on January 27, 2026 outlined the PFOS mass loading calculations for the current conditions as the basis for development of the discharge point priority list (DP Priority List).

The interim corrective actions discussed in this ICAP are focused on meeting one or both of the loading reduction goals required by Paragraph 3.9 of the ACO which states that RACER Trust shall reduce cumulative PFOS loadings in discharges from the Site at a minimum of approximately ninety-five percent (95%) from High Priority DPs or approximately fifty percent (50%) from the entire Site by April 30, 2029. The purpose of this ICAP is to:

- Establish baseline PFOS loading from the DPs to be used to calculate PFOS mass loading reduction achievements.
- Provide the corrective action plans and implementation schedules for interim corrective actions to achieve one or both of the loading reduction goals.

In order to achieve one or both of PFOS mass loading reduction goals, interim corrective action will focus on the below high priority discharge points identified in the DPP Report (Arcadis, 2026) based on current annual PFOS mass loading rates to the Flint River:

1. Outfall 011: 1,061 grams PFOS
2. Outfall 013: 152 grams PFOS
3. Outfall 010: 54 grams PFOS
4. Outfall 002: 22 grams PFOS

2 Baseline PFOS Mass Loading

As presented in a meeting between RACER Trust and EGLE on November 17, 2025, the approach for calculating baseline mass loading utilizes PFOS concentrations and flow rates from 2019 to 2021, prior to the implementation of interim measures that have changed the loading to the associated DPs. In general, baseline years vary and are outfall-specific and depend on the amount of data available and the date and nature of the modifications. As part of ongoing Site remediation and development activities, numerous modifications to Site storm sewers have been completed in recent years. These activities include installing plugs and/or bulkheads in sewers, physically disconnecting sewers, as well as rerouting storm sewers. At outfall drainage areas where modifications were made to the storm sewer, PFOS samples and flow rates collected prior to the modifications are used for baseline loading calculations. At DPs where no interim measures have been completed, baseline loading and current loading will be the same. In two instances, at Outfall 011 and 013, plugs and bulkheads installed with the intent of reducing PFOS loading resulted in increases in PFOS loading to these DPs due to a rise in groundwater elevation and increased groundwater infiltration. In these two cases, baseline loading is established using the most recent concentration and flow data even though modifications have been completed.

Twelve of the 15 Site storm sewers have groundwater infiltration which results in a continuous dry weather flow during baseline conditions (also known as baseflow). Dry weather flow at the Site storm sewers was historically determined via volumetric capture at the discharge point, flow measurements/studies, or estimating flow based on visual observations. As summarized in the DPP Report (Arcadis, 2026), dry weather flow measurements will be standardized at each DP moving forward. The baseline annual dry weather flow volume for each drainage area is determined by calculating the dry weather flow that occurs during annual average dry weather duration. The average dry weather duration was estimated to be 8,143 hours in 2020 and 8,040 hours in 2025 during the TR-55 analysis (discussed below) based on precipitation data from the Applewood Estate weather station approximately 1.5 miles from the Site.

As discussed in the DPP Report (Arcadis, 2026), the TR-55 Urban Hydrology for Small Watersheds Soil Conservation Service (SCS) Runoff Curve Number Method published by the USDA and NRCS was used to approximate the annual stormwater runoff volumes and determine the average annual wet and dry weather durations. The TR-55 analysis was completed for the 2020 conditions using available precipitation data from 2014 through 2019. The analysis was then re-run to reflect changes in the drainage areas due to interim measures (bulkheads, plugs, re-route) that had been completed between 2020 and 2025. The updated analysis incorporated precipitation data from 2014 through 2024. The annual wet weather flow volume is calculated by adding the annual stormwater runoff volume for the drainage area to the baseflow during the average wet weather duration (617 hours in 2020, 720 hours in 2025). **Appendix A** presents a summary of the TR-55 Analysis for 2020 conditions and **Appendix B** presents a summary of the TR-55 Analysis for 2025 conditions.

Table 1 includes the basis for the PFOS concentrations and flow inputs used to calculate baseline mass loading as well as a summary of dates when modifications were completed at each outfall for the period since PFOS characterization began at the Site. Based on the approach described, the total baseline PFOS mass loading is estimated at 1,749 grams per year (**Table 1**).

As noted, the interim corrective actions discussed in this ICAP are focused on meeting one or both of the loading reduction goals required by Paragraph 3.9 of the ACO which states that RACER Trust shall reduce cumulative PFOS loadings in discharges from the Site at a minimum of approximately ninety-five percent (95%) from High Priority DPs or approximately fifty percent (50%) from the entire Site. Put in terms of mass loading:

- Ninety-five percent (95%) from High Priority DPs: The four high priority Outfalls 011, 013, 010, and 002 have a baseline mass loading of 1,540 grams per year, therefore a reduction of 95% requires achieving a mass loading of 77 grams per year or less from these four outfalls; and/or,
- Fifty percent (50%) from the entire Site: The baseline mass loading for the entire Site is 1,749 grams per year, therefore a reduction on 50% would require achieving a Site wide mass loading of 875 grams per year or less Site wide.

The DPP Report summarized current PFOS mass discharge. The current PFOS mass discharge was calculated using flow and concentration data following the most recent modification to the associated storm sewer, for DPs where modifications have been completed. The total current PFOS mass loading for the four high priority Outfalls 011, 013, 010, and 002 is 1,289 grams per year indicating that the modifications completed to date at these four outfalls have reduced mass loading by approximately 16%.

Additionally, the estimated current mass loading for Site wide outfalls in the DPP Report was 1,317 grams per year, indicating that recent modifications completed have reduced Site wide mass loading by 25% from baseline.

3 Outfalls 011, 013, and 010

PFOS impacted groundwater associated with a source area located north of Hamilton Ave and east of Industrial Ave is infiltrating to stormwater infrastructure associated with Outfalls 011, 013, and 010 (**Figure 1**). The objective of the proposed corrective action for Outfalls 011, 010, and 013 is to eliminate, to extent practical, infiltration of Site related PFOS impacted groundwater into nearby storm sewers (specifically stormwater infrastructure that lead to Outfalls 011, 010, and 013), nearby sanitary sewers, and stop further migration from the Hamilton Ave source area toward the Flint River. Note that corrective action for Outfall 002 is discussed in Section 5. The Outfall areas consist of the following (**Figures 2 and 3**):

- Outfall 011 drainage area services areas upgradient and downgradient of the Site with a discharge point that is located approximately 600 feet downgradient of the Site. Currently the total drainage area for Outfall 011 is 26.0 acres, consisting of 12.3 acres upgradient of the Site, 3.7 acres on Site, and 10.0 acres downgradient of the Site.
- The Outfall 013 drainage area originates upgradient of the Site and services the Site and an area downgradient of the Site. The Outfall 013 discharge point is approximately 1,500 feet downgradient of the Site. Currently the total drainage area for Outfall 013 is 183.5 acres, consisting of 112.1 acres upgradient of the Site, 59.5 acres on Site, and 11.9 acres downgradient of the Site.
- The Outfall 010 drainage area originally began on-Site and serviced the Site and an area downgradient of the Site. However, the contribution from stormwater infrastructure at the Site to the Outfall 010 storm sewer has been eliminated by bulkheading. The Outfall 010 discharge point to the Flint River is approximately 200 feet downgradient of the Site. Currently the total drainage area for Outfall 010 is 6.27 acres, consisting of 0.03 acres on Site, and 6.24 acres downgradient of the Site.

As discussed in the DPP Report (Arcadis, 2026), because the drainage areas extend both upgradient and downgradient from the Site, there is the potential for non-Site related sources to contribute PFOS to these Outfalls. At this time, potential non-Site related sources have not been considered. As the corrective actions are completed and more data is collected, non-Site related contributions may be evaluated, if appropriate. If non-Site related contributions exist and can be identified and quantified, the mass loading calculations would be corrected for these contributions.

3.1 Interim Measures (IMs) Completed to Date

This section summarizes the interim measures completed at Outfalls 011, 013, and 010 that generally consist of physical disconnections and/or bulkheads and plugs in laterals to stop PFOS impacted groundwater from infiltrating to storm sewer network. **Figure 4** and **Appendix C** include the locations of the bulkhead, plugs, and physical disconnections.

Bulkheads and plugs will be inspected in accordance with the Bulkhead Inspection Plan included in **Appendix C** following approval by EGLE. If issues are noted during the bulkhead and plug inspections, steps will be taken to address each issue in a timely manner. These issues and resolutions will be discussed with EGLE during regularly scheduled monthly calls.

3.1.1 Outfall 011

In 2020 and 2021 five plugs were installed in laterals to address PFAS impacts and infiltration into the Outfall 011 storm sewer. Additionally, in 2022 a bulkhead was installed to address PFOS impacted groundwater infiltrating into the Outfall 009 lateral which connected to the Outfall 011 storm sewer.

3.1.2 Outfall 013

In June 2020 a lateral was bulkheaded to address PFOS impacted groundwater infiltrating into the Outfall 013 storm sewer. The bulkhead leaked after construction and repairs were attempted; however, a physical disconnection was subsequently completed upgradient of the bulkhead in September 2021.

3.1.3 Outfall 010

In 2014, a bulkhead was installed and a manhole was filled with concrete along the Outfall 010 storm sewer main to address metals impacts. In addition, two laterals were physically disconnected or plugged. In 2020, additional plugs were completed in laterals along the storm sewer to reduce infiltration of PFOS-impacted groundwater.

During Site PFAS investigation activities, groundwater infiltration was identified in the joints of the manhole structure where the 2014 bulkhead was installed and the manhole was subsequently filled with bentonite/concrete in May 2021. In September 2021, another bulkhead was installed in the storm sewer lateral from the northeast in a downgradient manhole along the property boundary.

3.2 Proposed Corrective Action

The proposed corrective action for Outfalls 011, 013, and 010 is the installation of the Hamilton Ave groundwater remedy (Remedy) which is a hydraulic control system that will meet the objective of eliminating, to extent practical, infiltration of Site related PFOS impacted groundwater into nearby storm sewers (specifically stormwater infrastructure that leads to Outfalls 011, 010, and 013), nearby sanitary sewers, and stop further migration from the Hamilton Ave Source Area toward the Flint River. The Remedy will include a groundwater collection extraction system, as well as a treatment system to be located near the extraction system. The groundwater extraction system will be capable of influencing groundwater flow direction and reducing the groundwater elevation to mitigate infiltration of Site related PFOS impacted groundwater into storm sewer infrastructure connected to Outfalls 011, 010, and 013. The groundwater that is extracted will be treated in a treatment system to meet the City of Flint POTW discharge prohibitions and limits prior to discharge to the sanitary sewer. The Remedy is in the preliminary design phase; therefore, the details provided in this report are considered preliminary and subject to change as additional information is gathered and the design is advanced. An Interim Measures Work Plan that includes the basis of design and system design information for the Remedy will be summitted to EGLE for review, comment and approval.

3.2.1 Groundwater Collection and Extraction

The groundwater collection and extraction system will be installed on Site north of Hamilton Ave, generally bounded by Industrial Ave to the west and the Site property line adjacent to the railroad right of way to the east (approximately 650 linear feet). Additionally, the groundwater collection and extraction system will extend north north-west along the railroad right of way for an additional 400 linear feet (**Figures 5 and 6**).

To adequately capture groundwater and meet the objectives, a high permeability collection trench with extraction sumps is proposed for groundwater collection and extraction for the Remedy. The collection trench would generally consist of a linear excavation backfilled with stone. The trench will contain a slotted HDPE pipe at the bottom to convey water to extraction sumps that would pump groundwater to the treatment system.

Vertical wells and horizontal wells were evaluated as alternate options for collecting groundwater. For vertical wells, the highly heterogeneous nature of the site soils would likely result in varying capture zones that would be difficult to predict in localized areas. Use of vertical wells for groundwater capture would also require significantly more pumping equipment and therefore significantly more maintenance. With horizontal wells, it is difficult to control drawdown and capture across the length of a horizontal well screen in heterogenous soils. In addition, the inability to design and install a filter pack around the screen of a horizontal well would likely result in fine sediment entering the wells and the associated conveyance and groundwater treatment system. The presence of solids would lead to management and operation and maintenance (O&M) issues. Vertical wells may be utilized to supplement a high permeability collection trench, as needed, and/or in cases where trenches cannot be installed due to subsurface obstructions. Additional options to collect and extract groundwater where subsurface obstructions are present are being identified and evaluated in an effort to identify the most cost-effective system.

A pre-design geophysics study was completed in 2025 along the potential alignments of the collection trench to better understand potential subsurface obstructions and to inform constructability evaluations. Boring logs, test pit information, historical drawings, and historical aerial imagery was used to calibrate and ground truth the geophysical information obtained from the pre-design study. Results generally showed shallow abandoned utilities are present across the entire potential alignment of the trenches. Additionally, an approximately 250-foot-long former building foundation present along Hamilton Ave shows potential concrete obstructions as deep as 18 feet below ground surface.

To support the design of the Remedy, a numerical groundwater flow model of the generalized local groundwater flow system at the Site was generated. The model includes Site specific water level data, boundary conditions, hydraulic conductivity distribution, and applied recharge. The groundwater flow model will be used to simulate localized groundwater flow dynamics at the Site to objectively support the design of the Remedy.

Preliminary groundwater model simulations were run to confirm that a high permeability collection trench with extraction sumps can hydraulically capture groundwater and meet the objectives of the Remedy. Two initial scenarios were simulated with the groundwater model. The first scenario (**Figures 5 and 6**) represents a best case scenario assuming a continuous trench can be installed running approximately 650 feet east-west along E Hamilton Ave 400 feet north along the property boundary adjacent to the railroad right of way. The second scenario represents a reasonable worst case scenario in which it is assumed that no trench (or any other supplemental pumping infrastructure) can be installed in the 250-foot long area where the former building foundation is present in the subsurface along Hamilton Ave. Both scenarios assume the trench is installed into the low permeability basal clay generally present between 20 and 25 feet below ground surface. The groundwater modeling simulations show by holding a groundwater level approximately 17 feet below grade (approximately 713 feet (ft) above mean sea level (amsl)), the objectives can be met in either scenario. Specifically, if the groundwater elevations are lowered to 713 ft amsl, groundwater will be below the invert elevations of nearby storm and sanitary sewers and infiltration into leaking sewer lines and associated structures connected to Outfalls 011, 013, and 010 will be mitigated. In addition, the Remedy influences groundwater flow direction in the vicinity of sewer lines that flow to Outfall 013 thereby stopping impacted groundwater from migrating from the Hamilton Avenue source area toward those sewer lines. **Figure 4** shows the storm and sanitary sewer layout within the area of the proposed corrective action.

Appendix D includes a slide presentation from a meeting between RACER Trust and EGLE on February 11, 2026 providing additional details and summarizing results of the geophysical pre-design investigation, an overview of the groundwater model, and predicted drawdown and capture zones for the two preliminary scenarios modeled.

The design will be advanced by further evaluation of various trench alignments and/or supplements, using the groundwater model to simulate performance of various alternatives to establish a constructable and cost-effective trench/collection and extraction system and alignment that will meet the Remedy objectives. The basis of design and system design information for the Remedy will be submitted to EGLE for review, comment and approval in an Interim Measures Work Plan.

As required by the ACO, RACER Trust will submit an operations, maintenance, and monitoring plan (OMM Plan) to EGLE within thirty days of construction of the groundwater collection, extraction, and treatment system.

3.2.2 Groundwater Treatment System

The groundwater that is extracted will be treated in a treatment system to meet the City of Flint POTW discharge prohibitions and limits prior to discharge to the sanitary sewer. The preliminary design concept for the treatment system includes an equalization tank, filtration, granular activated carbon (GAC) and ion exchange (IX) resin. The preliminary groundwater simulations indicate that an expected steady state flow rate to meet the objectives of the Remedy is approximately 15 gallons per minute. The treatment system will be designed to operate at the expected steady-state flow rate with the capacity to treat higher flow rates needed during start up to remove groundwater from storage and reduce the water level to the target elevation. Additional capacity will also be needed to manage storm events that temporarily increase recharge to groundwater.

A rapid small scale column test (RSSCT) is currently in progress. The RSSCT is testing PFOS treatment using GAC and IX resin and Site groundwater blended from monitoring wells along the potential trench alignment. It is anticipated that a field pilot test will also be conducted to further vet media consumption and breakthrough to inform system design and OMM cost estimation.

The design will be advanced using the data collected in the RSSCT and potential field pilot test. The basis of design and system design information for the Remedy will be submitted to EGLE for review, comment and approval in the same Interim Measures Work Plan as for the Groundwater Collection and Extraction System. Prior to and following system start-up, twice-yearly sampling will occur at each DP per the ACO requirements. This sampling will monitor and confirm reductions of PFOS in the storm sewers from the corrective action.

As required by the ACO, RACER Trust will submit an OMM Plan to EGLE within thirty days after construction of the groundwater treatment system is complete.

3.2.3 Schedule

The following is a working schedule for the design, construction, start up and operation of the Remedy. The schedule is subject to change based on actual duration of RSSCT and field pilot, contractor availability, agency review and approval, etc. The schedule will be regularly updated and communicated with EGLE throughout the process to ensure alignment between EGLE and RACER Trust.

Table 4-1 Hamilton Ave Remedy Implementation Schedule

Task	Begin	End
RSSCT Lab Work	January 19, 2026	February 20, 2026
RSSCT Data Review and Report	February 25, 2026	March 27, 2026
Preliminary Interim Measures Work Plan (IM WP)/GW Collection and Treatment System Basis of Design (BOD)	March 1, 2026	June 15, 2026
EGLE Review/Comment on Preliminary IM WP/ GW Collection and Treatment System BOD	June 15, 2026	August 1, 2026
Field Pilot Study Design and Work Plan	March 2, 2026	March 30, 2026
Field Pilot Study Coordination	March 16, 2026	April 17, 2026
Field Pilot Study Operation	April 20, 2026	June 19, 2026
EGLE Sponsored Public Notice, Meeting, and/or Information Session	August 2026	
Final IM WP/ GW Collection and Treatment System BOD following EGLE Sponsored Public Involvement Period	July 1, 2026	August 31, 2026
EGLE Review/Approve Final IM WP/ GW Collection and Treatment System BOD	September 1, 2026	September 30, 2026
Design/ Request for Proposals	August 1, 2026	October 31, 2026
Contractor Bidding	November 1, 2026	November 30, 2026
Long Lead Procurement (e.g., Treatment System Fabrication)	December 1, 2026	March 31, 2027
Permit Applications (if needed)/Project Submittals (e.g., Safety Plan)	October 1, 2026	January 31, 2027
Mobilization/Site Prep	January 4, 2027	January 31, 2027
Trench Installation	February 1, 2027	June 30, 2027
Treatment System Transport/Installation	March 1, 2027	July 31, 2027
System OMM Plan Submittal	August 1, 2027	August 30, 2027
System Commissioning and Start-up	August 1, 2027	November 30, 2027

4 Outfall 002

PFOS impacted groundwater associated with a source area located south of East Stewart Avenue and west of James P Cole Boulevard is infiltrating into lines and/or structures that are connected to Outfall 002 (**Figure 7**).

The Outfall 002 drainage area currently begins upgradient of the Site (27.6 acres) and services a portion of the Site (7.5 acres) and an area downgradient of the Site (169.8 acres). The Outfall 002 discharge point to the Flint River is located more than 3,000 feet downgradient of the Site (**Figures 2 and 3**).

4.1 IMs Completed to Date

In February/March 2013, initial IM activities at Outfall 002 were completed to address light non-aqueous phase liquid (LNAPL) infiltration into the into lines and/or structures are connected to Outfall 002. Bulkheads/plugs were installed in the Outfall 002 storm sewer main and laterals at three manholes with the objective of eliminating LNAPL infiltration into the storm sewer.

In 2020, a portion of the Outfall 003 drainage area was rerouted into the Outfall 002 storm sewer. In November 2020, as part of Site storm sewer reroute activities, the manhole structure and bulkhead previously installed at MH 2-18 were removed and a new manhole structure was installed at MH 2-18. A new sealed storm sewer was installed from Stewart Avenue to MH 2-18 to convey the upgradient flow through the Site. Between January 2021 and April 2022, grout was injected at MH 2-18 due to infiltration at a connection joint. An inspection inside MH 2-18 on November 11, 2022 showed a leak in the joint below the outlet pipe and a leak at the joint downgradient of MH 2-18. Locations of IMs are included on **Figure 8**.

4.2 Proposed Corrective Action

Proposed corrective action for Outfall 002 includes sealing MH 2-18 to stop the leak found on the joint below the outlet pipe. The 2-18 structure was replaced in 2020 with a new concrete manhole with a polypropylene lining, the main infiltration point of the structure in the lined manhole is from failed seals at the pipe penetrations entering or exiting the structure and where the polypropylene liner and RCP pipe join inside the structure. Sealing of the 54-inch diameter pipe penetrations will be done by probe injection grouting from the exterior of MH 2-18 to preserve the polypropylene lining. A highly expansive hydrophobic grout that provides compressive strength characteristics (i.e. Avanti's AV-275 Soilgrout or similar) will be used to stabilize the soils in the location and fill the voids that likely have formed from the infiltration. The purpose of the hydrophobic grout is to reduce the rate of infiltration, but small leaks may still be present. If small leaks are present following the hydrophobic grouting, they will be addressed with a low-viscosity hydrophilic grout (I.e. Avanti's AV-202LV Multigrout LV or similar) that adheres well to surfaces and will penetrate the remaining water pathways around the manhole structure. Any voids in the manhole liner, pipe penetrations, pipe joints, etc. that are large enough to be packed with oakum, shall be filled ahead of grouting and during the grouting. This is recommended to keep "free grout" from escaping before curing.

Prior to completing the repair, MH 2-18 will be pumped down to inspect the leakage and confirm the conditions and that the proposed approach is appropriate. While the MH 2-18 structure is pumped down and accessible, the on-Site lined section of the Outfall 002 storm sewer and the first downgradient pipe joint will also be inspected. The inspection of the lined portion will be done through CCTV and/or with staff crawling the line. The inspection of the first downgradient pipe joint will be done by a person following confined space safety protocols from inside the MH 2-18 structure. If the inspection identifies a change in condition that impacts the repair approach and/or identifies additional leaks that could be contributing to PFOS infiltration, RACER Trust will communicate the findings and path forward with EGLE. In addition, groundwater sampling of select wells in the vicinity of MH 2-18 will be completed prior to completing the repair in order to obtain a pre-repair snap shot of PFAS concentrations in

groundwater. **Figure 8** shows the storm and sanitary sewer layout within the area of the proposed interim measure.

Based on the November 11, 2022 inspection, previous inspections of MH 2-18, and inspections of the downgradient storm sewer lines from MH 2-18 approximately 175 feet to MH 2-17, the unsealed downgradient and off-Site storm sewer pipe shows evidence of limited (i.e., no gushers) groundwater infiltration. At this time, off-Site storm sewer infiltration is not being addressed by this interim measure as the Site conceptual site model (CSM) includes that high concentration PFOS-impacted groundwater is located on-Site to the northwest of MH 2-18 and there is not adequate characterization of PFAS concentrations in groundwater downgradient from MH 2-18 to assess impacts from any infiltration into the downgradient sewer. Additional groundwater characterization work is planned for this area in 2026 and a sampling plan will be provided to EGLE prior to implementing the work. Findings from this groundwater characterization work will be provided to EGLE. The findings of the groundwater characterization and confirmation sampling of Outfall 002 will also be taken into consideration regarding possible next steps. Prior to and following MH 2-18 sealing, twice-yearly sampling will occur at DP 002 per the ACO requirements as well as from MH 2-18. This sampling will monitor and confirm reductions of PFOS in the storm sewers from the corrective action.

4.2.1 Schedule

The following schedule is subject to change based on contractor availability, agency review/ approval, etc.

Table 5-1 Outfall 002 Remedy Implementation Schedule

Task	Begin	End
Pre-repair Groundwater Sampling	March 1, 2026	April 15, 2026
MH 2-18 Inspection (during a dry period to allow for less pumping and a more efficient inspection)	April 1, 2026	July 31, 2026
Request for Proposals	August 1, 2026	August 31, 2026
Contracting, Scheduling	September 1, 2026	September 30, 2026
Seal MH 2-18	October 1, 2026	October 5, 2026
MH 2-18 Confirmation Sampling, monitor for one year	October 8, 2026	October 8, 2027

5 Corrective Actions: Rule 50 Physical Characteristics

EGLE's water quality standards Rule 50 states, "The surface waters of the state shall not have any of the following physical properties in unnatural quantities which are or may become injurious to any designed use:

a. Turbidity
b. Color
c. Oil films

d. Floating solids
e. Foams
f. Settleable solids
g. Suspended solids
h. Deposits."

ACO requires, by April 30, 2029, eliminating, to the maximum extent practical, DP 003 and 005 from having these physical properties in unnatural quantities. Outfalls 003 and 005 are currently inspected following wet weather events for these physical properties. During inspections from June 2024 to present, turbidity, color, oil films, foams, and settleable solids were occasionally noted at Outfall 003; and oil films and foam were sporadically noted at Outfall 005.

Many modifications have been made in the storm sewers on Site to mitigate a variety of issues. Over the last approximately six years, the characterization and modifications efforts have focused on addressing PFOS. RACER Trust is committed to evaluating the current onsite conditions with respect to these physical properties to understand if there are Site related contributions to Outfall 003 and 005. RACER Trust will develop an investigation plan to continue evaluating the Outfall 003 and 005 storm sewers to determine the source of the films, foams, etc.

This plan will be submitted to EGLE in second quarter of 2026 and will be implemented upon EGLE approval. If the findings of the investigation suggest that Site related impacts are contributing to unnatural physical properties at Outfalls 003 and 005, a corrective action plan will be developed to address the issue based on the findings.

6 References

Arcadis. 2026. PFOS Discharge Prioritization Report. January 27.

Table

Table 1
Baseline Discharge Point Data
RACER Trust
Buick City
Flint, Michigan

Outfall	Dry/Wet	Flowrate (gpm)	PFOS Conc. Range (ng/L)	Selected PFOS	Conc. PFOS (ng/L)	Flow Rate (gal/yr)	Annual PFOS Loading (g/yr)	Total PFOS Mass Loading (g/yr)	Modification Notes
001	Dry	81	30-30.6	average	30	39,074,400	4.4	6.8	No modifications (baseline loading matches current loading)
	Wet	--	7.9-30	average	20	31,475,529	2.4		
002	Dry	20	620-1480	recent, increasing	1,480	9,771,600	54.7	273	Modification 5/2020 to 4/20/2022
	Wet	--	400-2490	average	1,450	39,815,733	219		
003	Dry	110	90.3-190	average	133	53,743,800	27.1	187	Modifications 5/2020 to 10/2024
	Wet	--	36-1200	average	430	98,085,994	160		
004	Dry	Dry, 0	--	--	0	0	0	0.034	Modification 4/5/2022 to 4/28/2022
	Wet	--	1.8 J-2.8	average	2.3	3,893,347	0.034		
004A	Dry	5	--	one sample	19	2,412,000	0.17	0.24	No modifications (baseline loading matches current loading)
	Wet	--	9.76-46 I	average	23	735,037	0.0640		
005	Dry	14	22-57	average	37	6,753,600	0.9	2.63	No modifications (baseline loading matches current loading)
	Wet	--	19.9-111	average	55	8,066,893	1.7		
005A	Dry	11	5.58-14	average	9.8	5,306,400	0.20	0.27	No modifications (baseline loading matches current loading)
	Wet	--	< 1.9-9.36	average	5.2	3,708,378	0.073		
006	Dry	20.5	96-200	recent, increasing	200	10,015,890	8	8.65	Modification 12/21/2022
	Wet	--	11-106	average	59	4,798,417	1.07		
007	Dry	3.2	--	one sample	160	1,563,456	1	1.04	Modification 12/2022
	Wet	--	45-120	average	83	282,082	0.09		
007A	Dry	Dry, 0	--	--	0	0	0	0.0082	No modifications (baseline loading matches current loading)
	Wet	--	< 2.1-3.3	average	2.2	986,462	0.0082		
008	Dry	Dry, 0	--	--	0	0	0	0.47	Modification 12/21/2022
	Wet	--	16-300	average	160	773,417	0.47		

Table 1
Baseline Discharge Point Data
RACER Trust
Buick City
Flint, Michigan

Outfall	Dry/Wet	Flowrate (gpm)	PFOS Conc. Range (ng/L)	Selected PFOS	Conc. PFOS (ng/L)	Flow Rate (gal/yr)	Annual PFOS Loading (g/yr)	Total PFOS Mass Loading (g/yr)	Modification Notes
010	Dry	10	1,100-5,000	average	2,600	4,885,800	48	54	Modifications 6/18/2020 to 9/14/2021
	Wet	--	1,500-1,500	average	1,500	1,103,487	6.3		
011	Dry	20	4,000-79,000	average	28,000	9,648,000	1,023	1061	Modifications 6/2020 to 1/18/2022; Post modification data used to calculate baseline loading
	Wet	--	--	one sample	1,660	6,034,296	37.9		
012	Dry	25	12-23.6	recent, increasing	23.6	12,060,000	1.08	1.3	No modifications (baseline loading matches current loading)
	Wet	--	6.5-15	average	11	5,140,234	0.21		
013	Dry	67	740-1,150	recent, increasing	1,150	32,320,800	141	152	Modification 6/26/2020 to 9/26/2021; Post modification data used to calculate baseline loading
	Wet	--	--	one sample	96.4	31,463,774	11.5		
							TOTAL	**1749**	

Figures

LEGEND

- Current RACER-owned Properties
- Former RACER-owned Properties
- Sanitary Sewer
- Sanitary Sewer - Abandoned
- Storm Sewer

Storm Sewer Main

- 010, below water table
- 011, below water table
- 011, insufficient elevation data
- 013, below water table

Maximum PFOS in Groundwater

- Greater than 100000x SL
- Between 10000x SL and 100000x SL
- Between 1000x SL and 10000x SL
- Between 100x SL and 1000x SL
- Between 10x SL and 100x SL
- Between SL and 10x SL
- Detection less than SL
- Non-detect (RL > SL)
- Non-detect (RL ≤ SL)

Maximum PFOS in Sewers

- Between 1000x SL and 10000x SL
- Between 100x SL and 1000x SL
- Between 10x SL and 100x SL
- Between SL and 10x SL
- Detection less than SL
- Non-detect (RL ≤ SL)

Notes:

1. Symbol color represents the maximum SL exceedance for PFOS from samples at the location (as represented by the centroid of the symbol).
2. SL of PFOS in groundwater and sewers is 0.012 µg/L, based on Michigan Part 201 Groundwater-Surface Water Interface Criteria.

Acronyms:

GSI = groundwater-surface water interface
MI = Michigan
PFOS = perfluorooctane sulfonic acid
RL = reporting limit
SL = screening level
µg/L = micrograms per liter
x = times
> = greater than
≤ = less than or equal to

0 125 250

GRAPHIC SCALE IN FEET

N

RACER TRUST BUICK CITY
FLINT, MI

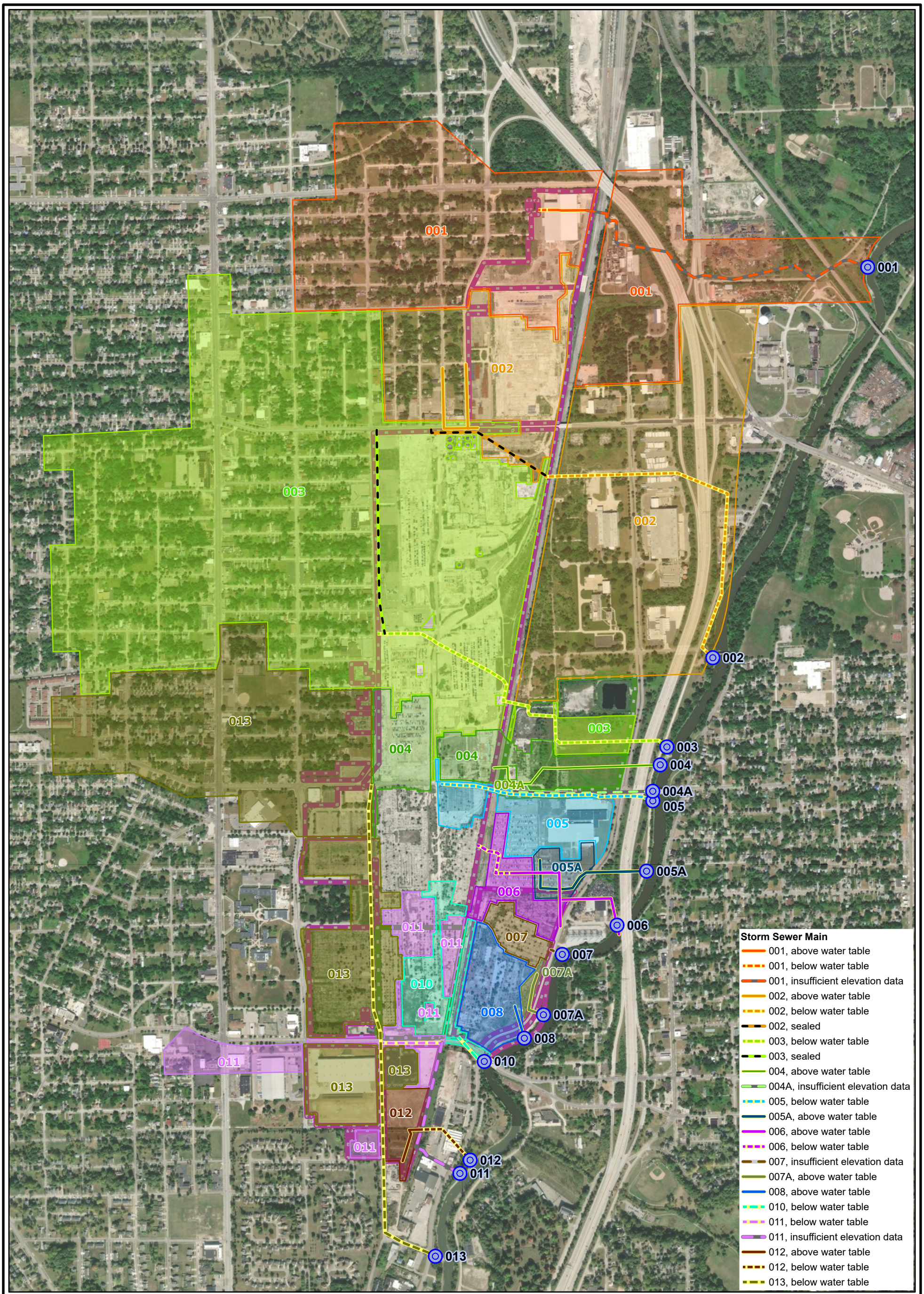
PFOS IN GROUNDWATER AND SEWERS OUTFALLS 010, 011, 013

ARCADIS

FIGURE
1

Path: T:_ENVRACER_BuickCity_Pro\4Figures\ICAP.aprx\Fig1_PFOS in GW and Sewers - Outfalls 010, 011, 013 Last Saved By: jchen 2/26/2026

Path: T:_ENV\RACER_BuickCity_Pro4Figures\ICAP.aprx\Fig2_2020 Baseline Outfall Drainage Areas Last Saved By: jchen 2/27/2026



LEGEND

- Current RACER-owned Properties
- Former RACER-owned Properties
- Storm Outfall

Outfall Drainage Areas (2020)

- 001
- 002
- 003
- 004
- 004A
- 005
- 005A
- 005B
- 006
- 007
- 007A
- 008
- 010
- 011
- 012
- 013

N

0 1,000 2,000

GRAPHIC SCALE IN FEET

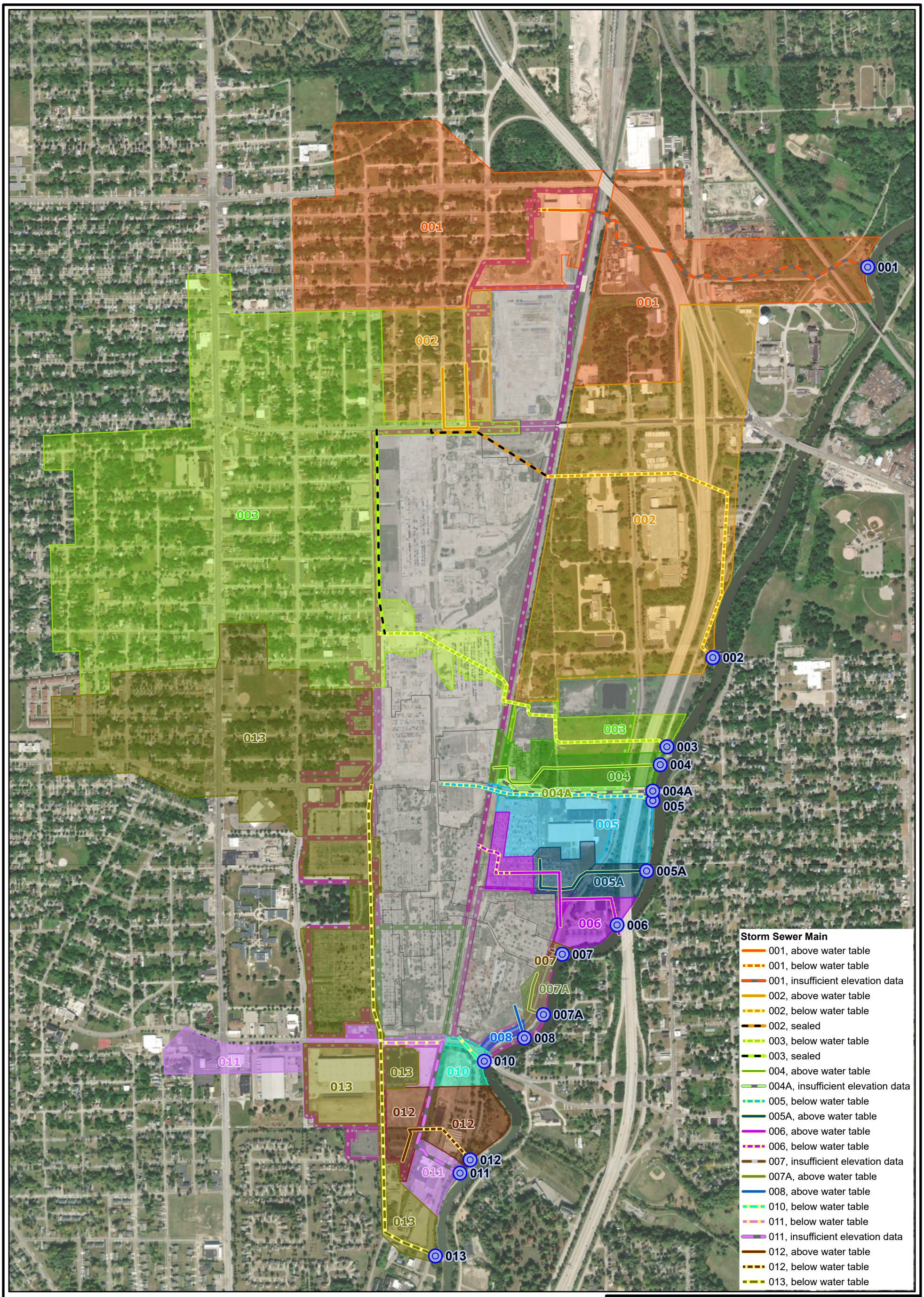
RACER TRUST
BUICK CITY, FLINT, MI

2020 BASELINE OUTFALL DRAINAGE AREAS

ARCADIS

FIGURE 2

Path: T:_ENV\RACER_BuickCity_Pro4Figures\ICAP.aprx\Fig3_2025 Current Outfall Drainage Areas Last Saved By: jchen 2/27/2026



LEGEND

- Current RACER-owned Properties
- Former RACER-owned Properties
- Storm Outfall

Outfall Drainage Areas (2025)

- No Direct Connection
- Outfall Area 001
- Outfall Area 002
- Outfall Area 003
- Outfall Area 004
- Outfall Area 004A
- Outfall Area 005
- Outfall Area 005A
- Outfall Area 006
- Offsite Outfall Area 007
- Outfall Area 007A
- Outfall Area 008
- Outfall Area 010
- Outfall Area 011
- Outfall Area 012
- Outfall Area 013

N

0 1,000 2,000

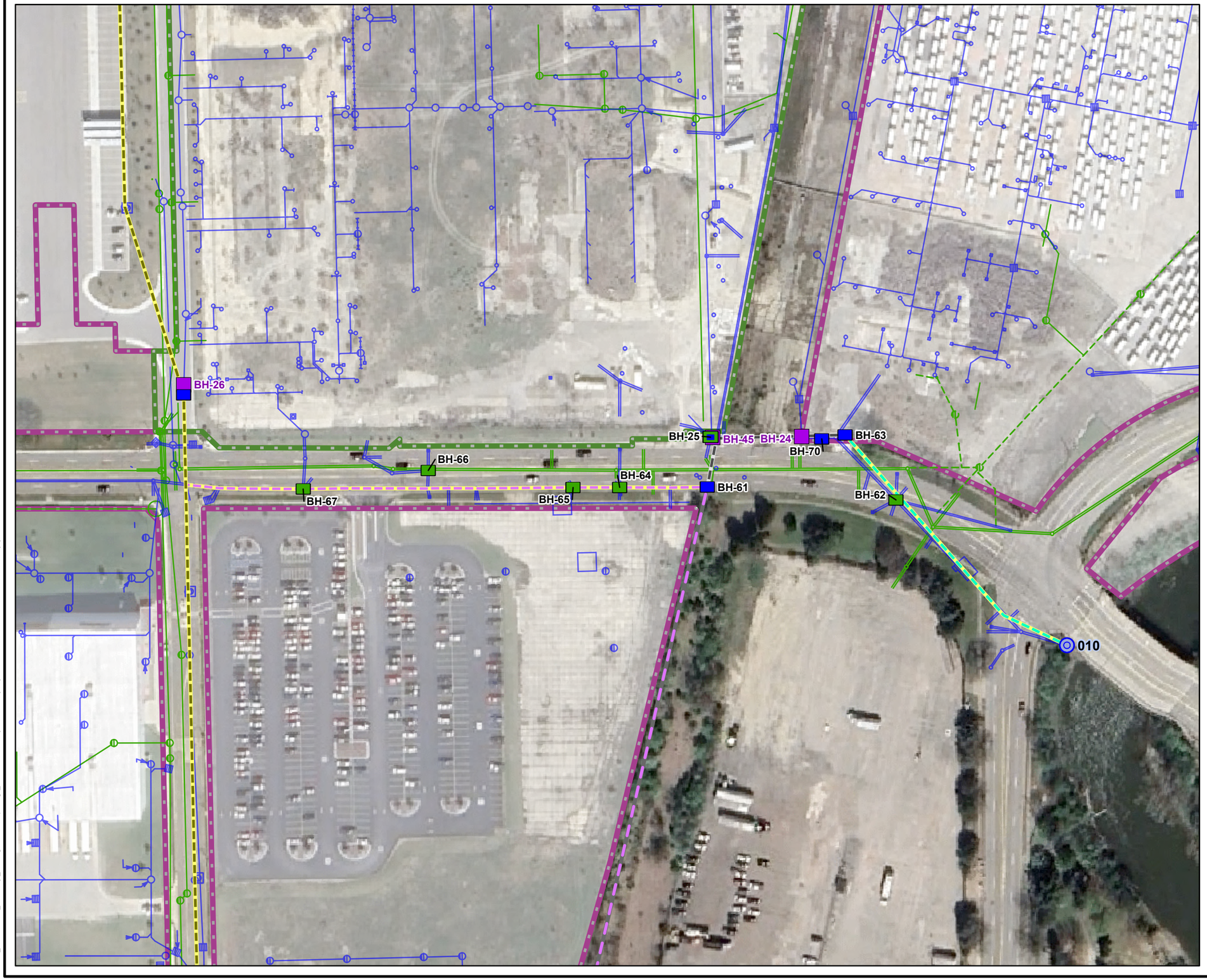
GRAPHIC SCALE IN FEET

RACER TRUST
BUICK CITY, FLINT, MI

2025 CURRENT OUTFALL DRAINAGE AREAS

ARCADIS

FIGURE 3



LEGEND

- Current RACER-owned Properties
- Former RACER-owned Properties
- Storm Outfall
- Bulkhead Location
- Bulkhead and Plug Location
- Physical Disconnection Location
- Plug Location
- Sanitary Sewer
- Sanitary Sewer - Abandoned
- Storm Sewer

Storm Sewer Main

- 010, below water table
- 011, below water table
- 011, insufficient elevation data
- 013, below water table
- Abandoned

0 125 250
GRAPHIC SCALE IN FEET

N

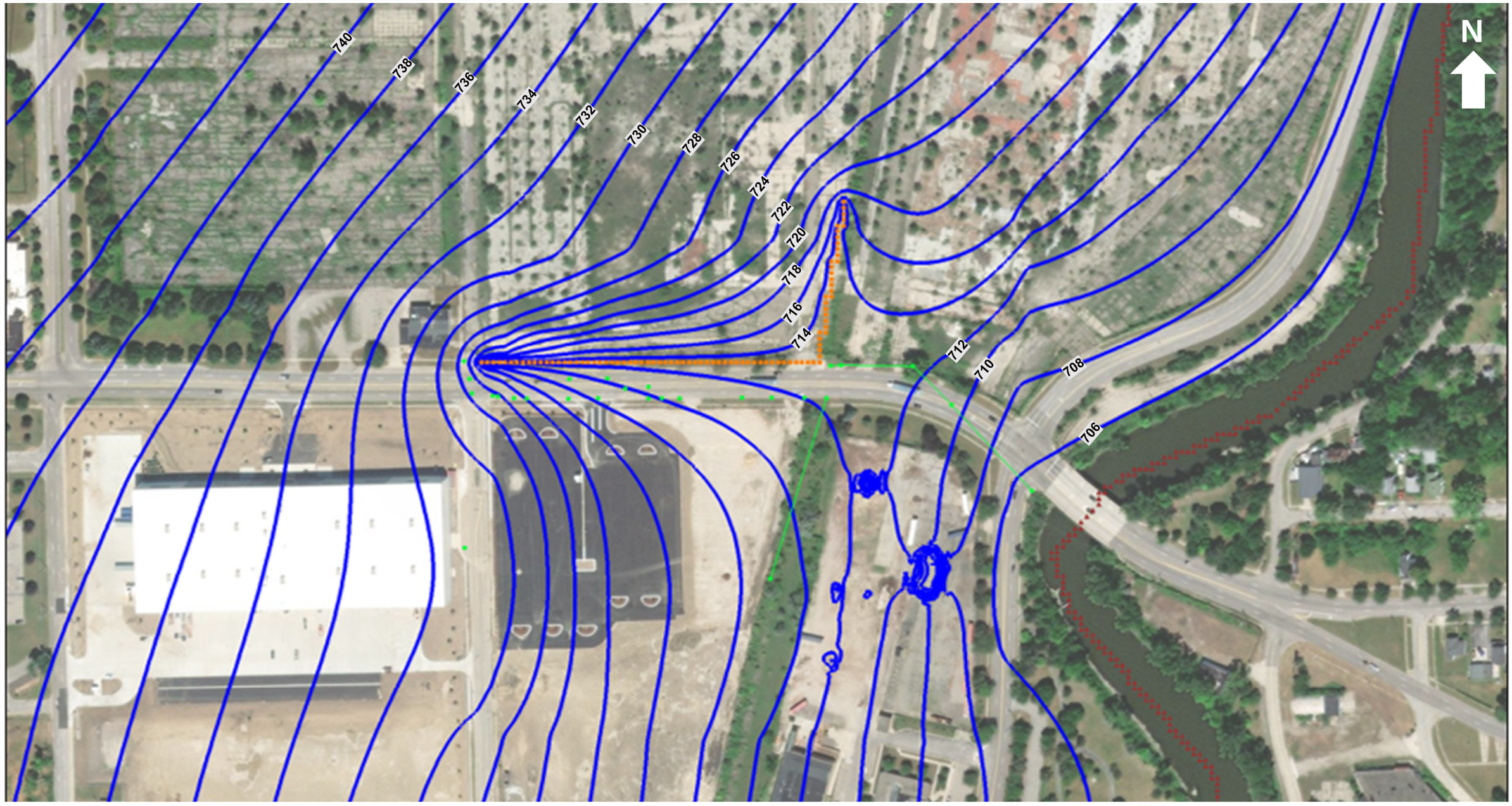
RACER TRUST BUICK CITY
FLINT, MI

STORM AND SANITARY SEWER UTILITY FOR OUTFALLS 010, 011, 013

ARCADIS

FIGURE
4

Path: T:_ENV\RACER_BuickCity_Pro4\Figures\ICAP\aprx\Fig4_Storm and Sanitary Sewer Utility Layout for Outfalls 010, 011, 013 Last Saved By: jchen 2/26/2026



Key

Groundwater Interception Trench Alignment

Groundwater Contour

Scale

100 ft

RACER TRUST BUICK CITY

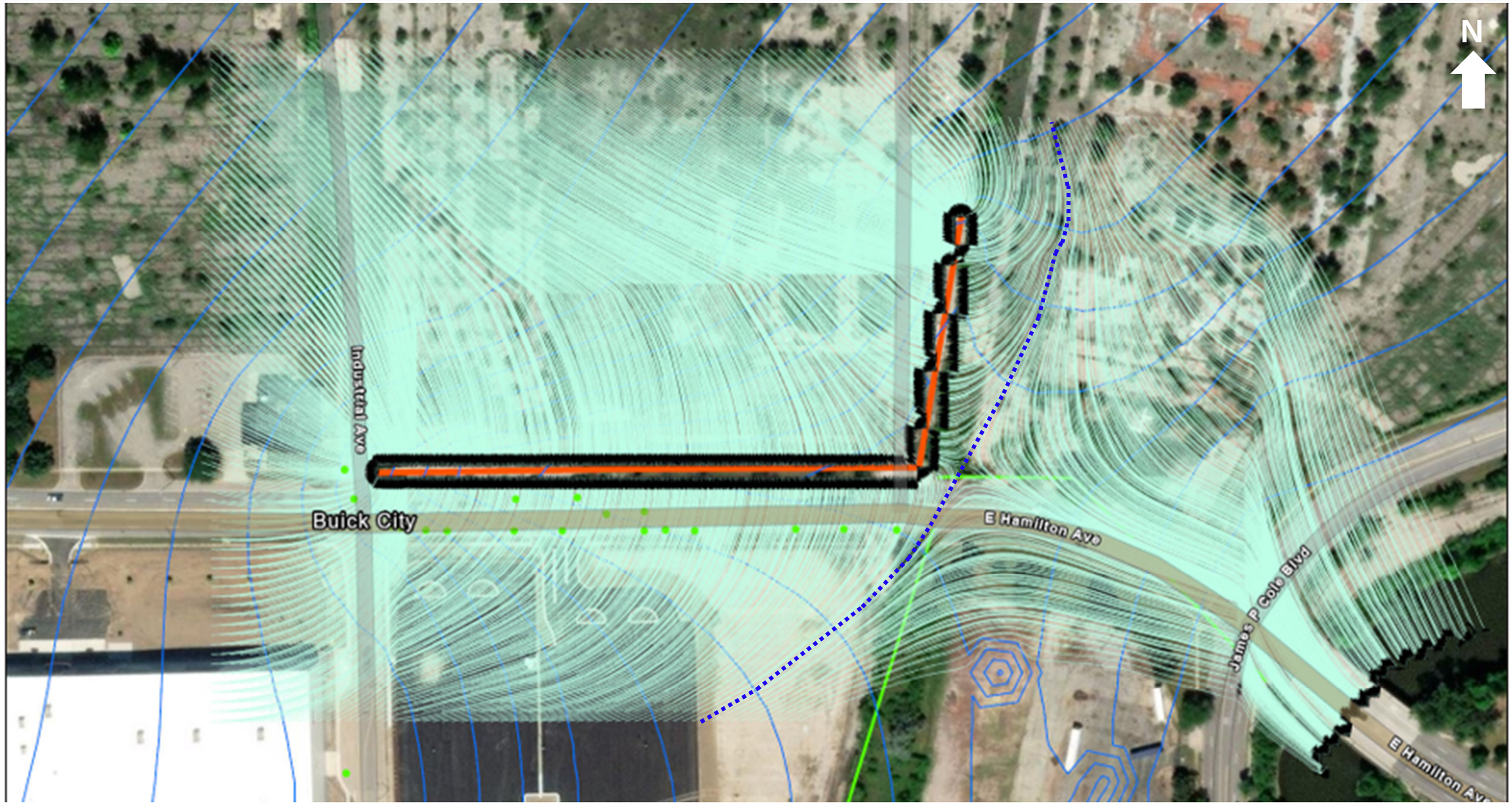
POTENTIAL GROUNDWATER INTERCEPTION TRENCH ALIGNMENT WITH GROUNDWATER CONTOURS

ARCADIS

FIGURE 5

PM: Tiffany Linder TM: Kasey Matteson Project Number: 30275629.03804

2/26/2026 4:05:50 PM



Key

- Groundwater Interception Trench Alignment
- Groundwater Contour
- Groundwater Particle Flow Path
- Groundwater Capture Extent

Scale

100 ft

RACER TRUST BUICK CITY

POTENTIAL GROUNDWATER INTERCEPTION TRENCH ALIGNMENT WITH GROUNDWATER CAPTURE MODEL

ARCADIS

FIGURE 6

PM: Tiffany Linder TM: Kasey Matteson Project Number: 30275629.03804

2/26/2026 4:05:50 PM

LEGEND

- Former RACER-owned Properties
- Sanitary Sewer
- Storm Sewer

Storm Sewer Main

- 002, above water table
- 002, below water table
- 002, sealed

Maximum PFOS in Groundwater

- Between 10000x SL and 100000x SL
- Between 1000x SL and 10000x SL
- Between 100x SL and 1000x SL
- Between 10x SL and 100x SL
- Between SL and 10x SL
- Detection less than SL
- Non-detect (RL > SL)
- Non-detect (RL ≤ SL)

Maximum PFOS in Sewers

- Between 1000x SL and 10000x SL
- Between 100x SL and 1000x SL
- Between 10x SL and 100x SL
- Between SL and 10x SL
- Detection less than SL
- Non-detect (RL ≤ SL)

Notes:

1. Symbol color represents the maximum SL exceedance for PFOS from samples at the location (as represented by the centroid of the symbol).
2. SL of PFOS in groundwater and sewers is 0.012 µg/L, based on Michigan Part 201 Groundwater-Surface Water Interface Criteria.

Acronyms:
GSI = groundwater-surface water interface
MI = Michigan
PFOS = perfluorooctane sulfonic acid
RL = reporting limit
SL = screening level
µg/L = micrograms per liter
x = times
> = greater than
≤ = less than or equal to

0 200 400
GRAPHIC SCALE IN FEET

N

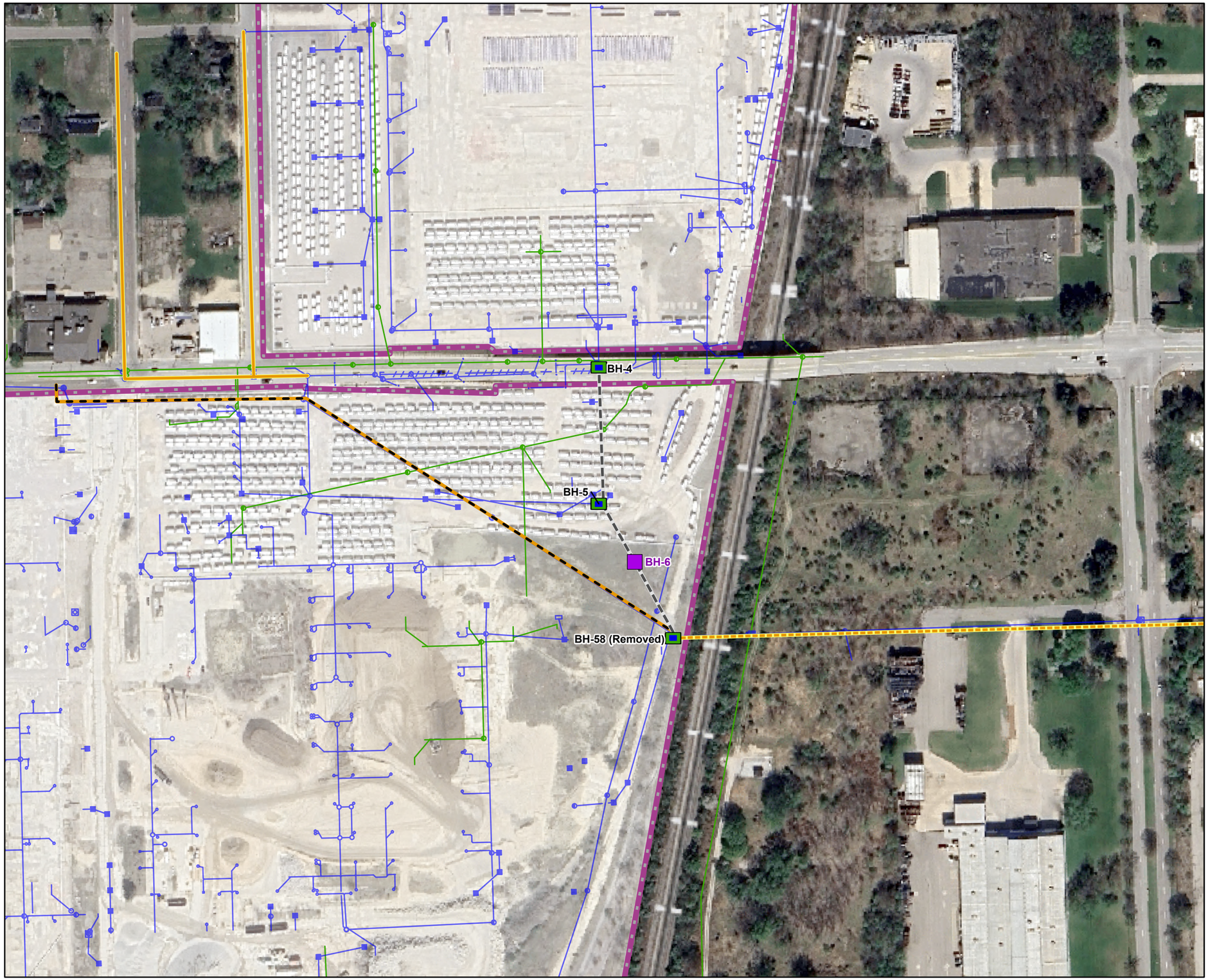
RACER TRUST BUICK CITY
FLINT, MI

PFOS IN GROUNDWATER AND SEWERS OUTFALL 002

ARCADIS

FIGURE 7

Path: T:_ENV\RACER_BuickCity_Prod\Figures\ICAP.aprx\Fig7_PFOS in GW and Sewers - Outfall 002 Last Saved By: jchen 2/26/2026



LEGEND

- Former RACER-owned Properties
- Bulkhead and Plug Location
- Physical Disconnection Location
- Sanitary Sewer
- Storm Sewer

Storm Sewer Main

- 002, above water table
- 002, below water table
- 002, sealed
- Abandoned

0 200 400

GRAPHIC SCALE IN FEET

N

RACER TRUST BUICK CITY
FLINT, MI

STORM AND SANITARY SEWER UTILITY FOR OUTFALL 002

ARCADIS

FIGURE
8

Path: T:_ENV\RACER_BuickCity_Prod\Figures\ICAP.aprx\Fig8_Storm and Sanitary Sewer Utility Layout for Outfall 002 Last Saved By: jdhen 2/26/2026

Appendix A

2020 TR-55 Analysis

RACER TRUST - BUICK CITY
Flint, MI
TR-55 Analysis

Wet Weather Data

		2013	2014	2015	2016	2017	2018	2019	Average
Annual Rainfall Depth, P	in	31.5	30.5	26.9	27.1	34.8	30.1	33.7	30.7
Annual Wet-Weather Duration	hr	648	514	490	576	722	664	704	616.9
Annual Dry-Weather Duration	hr	8112	8246	8270	8184	8038	8096	8056	8143.1

TR-55 Analysis

		Outfall 001	Outfall 002	Outfall 003	Outfall 004	Outfall 004A	Outfall 005	Outfall 005A	Outfall 006	Offsite Outfall 006	Offsite Outfall 007	Outfall 007A	Offsite Outfall 007A	Outfall 008	Outfall 010	Outfall 011	Outfall 012	Outfall 013
Composite Curve Number, CN		83.2	84.3	83.8	86.8	90.6	89.3	87.3	93.6	91.4	89.2	92.5	86.1	92.8	89.6	87.5	87.8	84.4
Potential Maximum Retention after Runoff Begins S = (1000/CN)-10	in	2.0	1.9	1.9	1.5	1.0	1.2	1.4	0.7	0.9	1.2	0.8	1.6	0.8	1.2	1.4	1.4	1.9
Tributary Area, A	ac	207.1	170.1	404.0	17.4	2.2	26.1	13.0	1.5	14.1	0.7	1.4	1.8	2.8	3.1	34.6	22.0	182.6
Runoff Volume, V = A * (P-0.2*S)^2 / (P+0.8*S)	cf																	
2013		6,367,369	5,099,478	12,241,228	514,117	73,589	810,238	386,000	60,439	487,473	21,904	51,508	52,579	105,544	98,393	1,027,863	659,158	5,470,370
2014		6,775,333	5,421,713	13,021,791	543,288	76,021	845,000	406,931	60,859	500,528	22,853	52,388	55,682	107,031	102,379	1,083,035	693,351	5,815,754
2015		5,113,637	4,023,531	9,739,075	392,343	54,844	605,443	292,707	45,840	363,818	16,372	38,670	40,432	79,444	73,428	778,522	497,552	4,313,631
2016		5,326,923	4,155,134	10,100,553	396,437	53,491	597,086	294,115	44,107	353,006	16,155	37,312	41,095	76,567	72,194	781,386	497,641	4,453,321
2017		7,999,018	6,450,548	15,435,824	657,075	93,747	1,036,786	493,960	75,127	618,331	28,031	64,772	67,070	132,305	125,805	1,315,595	844,052	6,921,198
2018		6,587,389	5,232,819	12,611,639	516,818	71,258	794,800	385,941	57,043	468,677	21,499	49,041	53,152	100,215	96,193	1,026,578	656,074	5,611,752
2019		7,702,556	6,184,600	14,830,712	623,431	87,472	972,565	467,442	69,593	575,444	26,302	60,100	63,813	122,684	117,842	1,244,312	797,017	6,634,817
Average		6,553,175	5,223,975	12,568,689	520,501	72,917	808,846	389,585	59,001	481,040	21,874	50,542	53,403	103,398	98,033	1,036,756	663,549	5,602,978

Notes:

Rainfall Data from the Flint, MI Station at the Applewood Estate collected through Enviro-weather formerly Michagan Automated Weather Network (MAWN). Station located approximately 2 miles SE of the Site.
Composite Curve Numbers based on TR-55 Runoff Curve Numbers for Urban Areas; Cover Type based on the 2016 National Land Cover Database cover type and the NRCS Soil Survey hydrologic soil group.
Runoff Volme calculated for each wet-weather event assuming an inter-event period of 6hours

Appendix B

2025 TR-55 Analysis

RACER TRUST - BUICK CITY
Flint, MI
TR-55 Analysis

Wet Weather Data

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
Annual Rainfall Depth, P	in	31.5	30.5	26.9	27.1	34.8	30.1	33.7	28.4	31.9	22.1	35.3	33.3	30.5
Annual Wet-Weather Duration	hr	764	629	599	691	852	784	830	590	630	655	866	755	720
Annual Dry-Weather Duration	hr	7996	8131	8161	8069	7908	7976	7930	8170	8130	8105	7894	8005	8040

TR-55 Analysis

		Outfall 001	Outfall 002	Outfall 003	Outfall 004	Outfall 004A	Outfall 005	Outfall 005A	Outfall 006	Offsite Outfall 007	Outfall 007A	Outfall 008	Outfall 010	Outfall 011	Outfall 012	Outfall 013
Composite Curve Number, CN		87.6	89.4	87.2	91.2	92.4	93.9	93.1	94.6	94.2	94.6	94.2	91.8	91.0	90.2	88.9
Potential Maximum Retention after Runoff Begins S = (1000/CN)-10	in	1.4	1.2	1.5	1.0	0.8	0.6	0.7	0.6	0.6	0.6	0.6	0.9	1.0	1.1	1.2
Initial Abstraction Ia = 0.2 * S	in	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Tributary Area, A	ac	206.9	205.0	314.9	16.8	2.2	26.5	12.7	14.5	0.7	3.2	1.1	6.3	26.0	22.4	183.5
Runoff Volume, V = A * (P-0.2*S)^2 / (P+0.8*S)	cf															
2013		3,771,998	4,579,773	5,449,583	464,083	70,906	1,024,924	442,847	617,036	26,718	135,814	44,332	185,901	703,233	550,832	3,862,063
2014		4,023,972	4,798,970	5,841,059	477,388	72,139	1,028,346	447,389	615,238	26,735	135,497	44,373	190,106	724,766	572,483	4,068,130
2015		2,341,787	3,022,450	3,324,092	323,008	50,836	763,170	323,698	467,020	20,036	102,641	33,222	131,443	486,974	372,668	2,506,212
2016		2,262,930	2,867,693	3,232,456	303,593	47,749	720,694	304,615	442,957	18,953	97,308	31,421	123,435	457,937	351,687	2,388,285
2017		4,783,195	5,804,380	6,904,207	584,178	88,603	1,262,174	549,780	753,246	32,784	165,937	54,417	233,179	886,085	696,535	4,898,638
2018		3,575,299	4,342,877	5,162,569	439,085	66,921	962,840	417,093	578,176	25,072	127,291	41,605	175,668	665,590	522,002	3,662,815
2019		4,724,277	5,608,134	6,864,863	554,827	83,480	1,180,534	515,772	703,429	30,638	154,977	50,859	220,482	842,837	667,393	4,760,959
2020		3,830,840	4,646,996	5,530,855	468,120	71,100	1,016,805	441,888	608,424	26,439	133,998	43,881	186,971	709,933	557,770	3,921,905
2021		4,642,807	5,422,058	6,776,344	528,568	78,883	1,105,621	485,004	656,812	28,655	144,744	47,574	209,129	804,096	640,859	4,624,331
2022		1,754,332	2,195,469	2,514,808	230,117	35,985	538,641	228,600	330,138	14,147	72,540	23,455	93,286	347,427	267,943	1,834,834
2023		4,560,316	5,537,078	6,584,830	558,919	85,045	1,219,244	529,237	730,255	31,716	160,817	52,638	223,439	847,421	665,152	4,670,987
2024		4,610,065	5,453,954	6,706,257	538,602	81,029	1,148,277	500,997	685,466	29,823	150,991	49,502	213,984	818,297	648,423	4,634,059
Average		3,740,151	4,523,319	5,407,660	455,874	69,390	997,606	432,243	599,016	25,976	131,880	43,107	182,252	691,216	542,812	3,819,435

Notes:

Rainfall Data from the Flint, MI Station at the Applewood Estate collected through Enviro-weather formerly Michagan Automated Weather Network (MAWN). Station located approximately 2 miles SE of the Site.
Composite Curve Numbers based on TR-55 Runoff Curve Numbers for Urban Areas; Cover Type based on the 2024 National Land Cover Database cover type and the NRCS Soil Survey hydrologic soil group.
Runoff Volme calculated for each wet-weather event assuming an inter-event period of 6hours, no runoff generated for storm events with a total depth less than the calculated initial abstraction.

Appendix C

Bulkhead Inspection Plan

Memo

SUBJECT
Bulkhead Inspection Plan
RACER Buick City Site, Flint, Michigan

TO
Brian Zuber, EGLE

DATE
February 27, 2026

PROJECT NUMBER
30324893

COPIES TO:
Jackie Saling, Arcadis
Tiffany Linder, Arcadis
Brendan Mullen, RACER Trust
Jeremy Pepin, EGLE
Evin Maguire, EGLE
Shaun Shields, EGLE

NAME
Micki Maki, Arcadis
Madison Olender, Arcadis

On behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, Arcadis of Michigan, LLC (Arcadis) has prepared this plan to conduct inspections of essential structures installed in storm and sanitary sewers the Buick City Site (Site) located in Flint, Michigan (**Figure 1**) to address environmental impacts.

1. Background

As part of Site remediation and redevelopment activities, interim measures (IM) were completed to eliminate flow in sections of the storm and sanitary sewers servicing the Site. The IMs included installation of bulkheads or plugs, physically disconnecting the sewer pipe, and/or filling the manhole with concrete (collectively referred to as IMs in this memo). The IMs were completed to eliminate the direct discharge of impacted groundwater to the sewers either to facilitate redevelopment or due to the presence of light non-aqueous phase liquid (LNAPL), per- and polyfluoroalkyl substances (PFAS), and/or select metals. **Table 1** presents a summary of the IMs, assigns each IM a BH-# identifier, which are used in Site Declarations of Restrictive Covenants, and notes the corresponding manhole location.

In general, concrete plugs were installed in sewer pipes with diameters up to 24 inches and reinforced concrete bulkheads were installed in sewer pipes with diameters over 24 inches. Physical disconnection was used at locations where there was no manhole present or where plugs or bulkheads would provide an inadequate seal. A manhole was filled with concrete when groundwater infiltrated through joints in the structure. **Attachment A** presents the design details for the bulkheads and plugs, and includes photographs showing bulkhead, plug, physical disconnection, and manhole filling activities.

Also, prior to RACER's involvement in the Site starting on March 31, 2011, General Motors (GM) in the early 2000's completed IMs at manholes MH 5-19 (BH-9), MH 6-8 (BH-16), and MH 8-1 (BH-23) to address specific Site issues as discussed below (**Figure 2**). There is little file information available regarding the construction/installation of IMs at these three manhole locations.

2. Bulkhead Summary and Proposed Inspections

Figure 1 presents outfall drainage areas associated with the Site. Since 2011, a total of 64 IMs were completed at 51 manhole locations along 13 storm sewers and one sanitary sewer servicing the Site (**Figures 2 through 15** – note north is to the left on the figures). Multiple IMs were completed at some of the manhole locations. **Table 1** presents a summary of the IMs completed and their corresponding manhole location. **Table 1** also presents the proposed inspection activities to be undertaken for each IM.

Inspections will either be completed by observing (either visually or by video) the downgradient side of the IM and will include taking a photograph of the structure, noting any signs of deterioration or leaking, and estimating volume of flow of the leak, if present/possible. All inspections will be recorded in Fulcrum (digital field notes database Arcadis utilizes), an example form used for outfall inspections is provided in **Attachment B**. This form will be modified for use in inspections to be completed pursuant to this plan.

2.1 Outfall 001 Summary

IM activities were completed at Outfall 001 in June 2014. Plugs (BH-1, BH-2, and BH-3) were installed in the Outfall 001 storm sewer laterals at three manholes along the property boundary prior to selling the north parcel to American SpiralWeld (ASW) for redevelopment. There were no known Site-related environmental impacts associated with Outfall 001 prior to plugging activities. As summarized in **Table 1**, plugs BH-1, BH-2, and BH-3 are preventing discharge from laterals servicing the Ashley Capital property located to the south of the American SpiralWeld property (**Figure 3**).

Proposed Inspections

Plugs BH-1, BH-2, and BH-3, located at MH 1-13, MH 1-13-1, and MH 1-2, respectively (**Figure 3**) will be visually inspected once every three years, since no Site impacts are known to be contributing to this outfall.

2.2 Outfall 002 Summary

In February/March 2013 initial IM activities at Outfall 002 were completed to address LNAPL infiltration into the Outfall 002 storm sewer. Bulkheads/plugs (BH-4, BH-5, and BH-58) were installed in the Outfall 002 storm sewer main at three manholes with the objective of eliminating LNAPL infiltration to the storm sewer. The BH-4 bulkhead was installed to reduce pressure on downgradient bulkhead BH-58; the BH-5 plug was installed to eliminate a cross connection to the Outfall 003 storm sewer. A bulkhead and plug were also installed at BH-58 to eliminate the Site's discharge at the property boundary.

In November 2020, as part of Site storm sewer reroute activities, the manhole structure and bulkhead previously installed at MH 2-18 (BH-58) were removed and a new manhole structure was installed at MH 2-18 to connect to the new upgradient sealed storm sewer. In addition, the historic storm sewer alignment was physically disconnected at BH-6 and the manhole structure and piping between BH-6 and BH-58 was removed.

Table 1 provides a summary of these IMs completed at manholes along the Outfall 002 storm sewer to minimize the Site's contribution (**Figure 4**).

Proposed Inspections

There are no proposed inspections of bulkheads or plugs for the Outfall 002 storm sewer. BH-4 and BH-5 are installed upgradient of the physical disconnection at BH-6 and, therefore, do not require inspection. BH-6 is a physical disconnection and BH-58 was removed during the reroute activities; therefore, there are no structures to inspect.

2.3 Outfall 003 Summary

In 2013/2014 initial IM activities at Outfall 003 were completed to address LNAPL infiltration. Bulkheads/plugs (BH-7, BH-8, BH-10, and BH-56) were installed in laterals at three manholes along the Outfall 003 storm sewer to eliminate the LNAPL infiltration into the storm sewer. In 2020/2021, as part of Site storm sewer reroute activities completed to address LNAPL infiltration and PFAS impacts, additional bulkheads/plugs (BH-27, BH-28, BH-29, BH-30, and BH-57) were installed at five manholes along the Outfall 003 storm sewer. In 2025, a section of the on Site Outfall 003 storm sewer from Industrial Avenue to the railroad tracks was replaced, thus removing BH-56 and BH-57. Please note the slides presented to EGLE on September 23, 2025 included these two bulkheads before they were removed.

The bulkheads/plugs installed at BH-7, BH-27, BH-28, BH-29 and BH-30 are upgradient of the former BH-57 bulkhead. These bulkheads/plugs were installed to eliminate LNAPL infiltration into the sewer, to eliminate cross connections to other Site sewers and/or to reduce hydraulic pressure in the abandoned portions of the system (**Figure 5**).

Table 1 includes a summary of these IMs completed at manholes along the Outfall 003 storm sewer (**Figure 5**).

Proposed Inspections

The BH-10 bulkhead and plug, located at MH 3-10, is critical to the performance of the IM and therefore requires inspection (**Figure 5**). An annual video inspection is proposed. All other plugs and bulkheads in this area were installed upstream of these locations for the purpose of reducing hydraulic pressure in the abandoned portions of the system, and therefore, do not require inspection.

2.4 Outfall 004 Summary

In 2012, the Outfall 004 dry weather flow was diverted to the Outfall 003/004 treatment system at MH 4-6 (BH-60). In April 2022, the treatment system was decommissioned, and the diversion line was plugged. In 2017/2018, as part of Site storm sewer reroute activities completed to address LNAPL infiltration, bulkheads, plugs, and physical disconnections (BH-11, BH-13, BH-15, BH-60, BH-PROP-1, and BH-PROP-3) were completed at seven manholes along the Outfall 004 storm sewer as summarized in **Table 1**. The portion of the Outfall 004 storm sewer upgradient of the Site was rerouted into Outfall 013 and the section of the sewer between manhole MH 4-21 (BH-15) and MH 4-6 (BH-60) was then bulkheaded to address the LNAPL infiltration.

The bulkheads, plugs, and/or physical disconnections completed at BH-11, BH-13, BH-PROP-1 and BH-PROP-3 are upgradient of the BH-60 bulkhead. These bulkheads/plugs/disconnections were installed to eliminate LNAPL infiltration into the sewer and/or to reduce hydraulic pressure in the abandoned portions of the system (**Figure 6**). Bulkhead BH-60 is located on the upgradient side of the sewer main vault and eliminates the upgradient contribution.

The BH-15 bulkhead was installed to disconnect the western portion of Outfall 004 and reroute the flow into the Outfall 013 storm sewer.

Proposed Inspections

The BH-15 and BH-60 bulkheads, located at MH 4-21 and MH 4-6, respectively (**Figure 6**), are critical to the performance of the IM and therefore, require visual inspections annually. All other bulkheads, plugs and physical disconnections, BH-11, BH-13, BH-PROP-1 and BH-PROP-3, are installed between the bulkheads at BH-15 and BH-60 and therefore, do not require inspection (**Figure 6**).

2.5 Outfall 005 Summary

Bulkhead (BH-9) was installed at MH 5-19 by GM in 2006 to prevent LNAPL infiltration into the Outfall 005 storm sewer (**Figure 7**). In addition, bulkheads BH-12 and BH-14 were also installed at two manholes along the Outfall 005 storm sewer in February/March 2013 to address LNAPL infiltration as summarized in **Table 1**. The BH-12 bulkhead is located downgradient of the BH-9 bulkhead and was installed to prevent contribution from the Outfall 005 main, while the BH-14 bulkhead prevents infiltration into Outfall 005 from the southern lateral.

Proposed Inspections

Bulkheads BH-12 and BH-14, located at MH 5-13A and MH 5-12-1, respectively (**Figure 7**), are critical to the IM and therefore will be inspected annually. BH-9 is installed upgradient of the bulkhead at BH-12 and therefore, does not require inspection.

2.6 Outfall 005A Summary

In 2014 and 2023, physical disconnections (BH-19, BH-52 and BH-59) were completed at three manholes along the Outfall 005A storm sewer (**Figure 8**) as summarized in **Table 1**. These activities were completed to eliminate flow from laterals that serviced the Site, in order to minimize the Site's contribution to the Outfall 005A storm sewer, which primarily services adjacent properties. There are no known environmental issues associated with Outfall 005A. Please note the slides presented to EGLE on September 23, 2025 incorrectly named BH-59 as BH-61.

Proposed Inspections

There are no proposed inspections for Outfall 005A. BH-19, BH-52, and BH-59 are physical disconnections; therefore, there are no structures to inspect.

2.7 Outfall 006 Summary

An historic bulkhead (BH-16) was installed at MH 6-8 (**Figure 9**) by GM to eliminate LNAPL infiltration to the Outfall 006 storm sewer. In addition, plugs and physical disconnections (BH-17, BH-18, BH-20, BH-21, BH-50, BH-51, and BH-53) were completed at five locations along the Outfall 006 storm sewer in 2014 and 2022 as summarized in **Table 1**. These activities were completed to address the Site's contribution of metals and PFAS impacts identified in the storm sewer.

The BH-17 plug and BH-20, BH-21 and BH-53 physical disconnections were completed to disconnect small laterals servicing the Site. The physical disconnections BH-18, BH-50 and BH-51 eliminated laterals servicing the western portion of the Outfall 005 drainage area (**Figure 9**).

Proposed Inspections

There are no inspections required for Outfall 006. BH-16, BH-18, BH-20, BH-21, BH-50, BH-51 and BH-53 are physical disconnections and do not require inspections because there are no structures to inspect. BH-51 physically disconnected the lateral plugged by BH-17, so no inspection is required.

2.8 Outfall 007 Summary

In 2014, the BH-22 plug was installed in the Outfall 007 storm sewer main at the property boundary to eliminate the Site's contribution to the Outfall 007 storm sewer and to address metals impacts. In 2022, during Site PFAS investigation activities, BH-22 was found to be leaking, and a physical disconnection (BH-54) was completed immediately west of the BH-22 plug (**Figure 10 and Table 1**). Although the Outfall 007 storm sewer was physically disconnected, leaking is still being observed during inspections at BH-22.

Proposed Inspections

As the sewer main has been physically disconnected, no inspections are planned at Outfall 007 until an interim measure/remedy is implemented. Further evaluation of options to address PFAS infiltrations will be completed.

2.9 Outfall 008 Summary

In the early 2000's, a portion of the Outfall 008 storm sewer collapsed between manhole MH 8-1 and MH 8A-1and was subsequently physically disconnected (BH-23) by GM. In 2023, as part of Site PFAS investigation activities, the southwest lateral at MH 8A-1 was physically disconnected at the property boundary (BH-55) to minimize the Site's contribution to the Outfall 008 storm sewer (**Figure 11**).

Proposed Inspections

There are no proposed inspections for Outfall 008. BH-23 and BH-55 are physical disconnections; therefore, there are no structures to inspect.

2.10 Outfall 010 Summary

In 2014, a physical disconnection BH-24, a bulkhead at MH 10-5 BH-25, and a plug (BH-70) were completed at three manholes along the Outfall 010 storm sewer to address metals impacts (**Figure 12**). In 2020/2021, a plug (BH-62) and a bulkhead (BH-63) were completed along the storm sewer to address PFAS impacts. In addition, a mass pour of concrete was completed at MH 10-5, as summarized in **Table 1**.

BH-24 is a physical disconnection completed at the northern lateral, near the property boundary. The BH-25 bulkhead was installed in 2014; however, during Site PFAS investigation activities groundwater infiltration was identified in the joints of the manhole structure and the manhole structure was subsequently filled with bentonite and concrete in 2021. The BH-62 and BH-70 plugs were installed in the northeastern laterals to eliminate their contribution to the Outfall 010 storm sewer. Subsequently, the BH-63 bulkhead was installed downgradient of BH-24, BH-25 and BH-70 to eliminate the Site's contribution to the Outfall 010 storm sewer.

Proposed Inspections

The BH-62 plug and BH-63 bulkhead, located at MH 10-1A and MH 10-2, respectively (**Figure 12**), will be inspected annually. BH-24 is a physical disconnection; therefore, there is not a structure to inspect. BH-25 and BH-70 are upgradient of BH-63 and, therefore, do not require inspection.

2.11 Outfall 011/Outfall 009 Summary

The Outfall 009 drainage area is located on the Buick City Site and connects to the Outfall 011 storm sewer at a manhole in Hamilton Avenue and then discharges to the Flint River through Outfall 011. In 2014, Outfall 009 was physically disconnected (BH-45) on RACER property to address metals impacts (**Figure 13**).

In 2020/2021, bulkhead BH-61 and plugs BH-64, BH-65, BH-66, and BH-67 were installed at five locations along the Outfall 011 storm sewer to address PFAS impacts. The BH-61 bulkhead was installed in the Outfall 009 main downgradient of the BH-45 physical disconnection to address continued infiltration. The BH-64, BH-65, BH-66 and BH-67 plugs were installed in laterals to eliminate contributions from the Site as summarized in **Table 1**.

Proposed Inspections

The bulkheads and plugs BH-61, BH-64, BH-65, BH-66, and BH-67, located at MH 11-6, MH 11-6-A-2, MH 11-6-A-3, MH 11-6-A-6-1, and MH 11-6-A-8, respectively (**Figure 13**), are critical to the performance of the IM and therefore, will be inspected annually. BH-45 is a physical disconnection; therefore, there is not a structure to inspect.

2.12 Outfall 013 Summary

In 2020 and 2021 a bulkhead and a physical disconnection (BH-26) were completed in the Outfall 013 storm sewer to address PFAS infiltration (**Figure 14**). In 2020 the bulkhead was installed in the northern lateral at manhole MH 13-11 to eliminate its' contribution to the storm sewer as summarized in **Table 1**. Due to the condition of the lateral, the bulkhead leaked after construction; therefore, after attempting repairs a physical disconnection was then completed upgradient of the bulkhead in 2021.

Proposed Inspections

After the physical disconnection was completed, visual inspections identified that water continues to infiltrate the storm sewer from around the lateral pipe to the north. As the lateral has been physically disconnected and leaking is occurring from around the pipe, no inspections are planned at Outfall 013 until after a remedy is in place. Further evaluation of options to address PFAS infiltrations will be completed.

2.13 Hamilton Avenue Sanitary Sewer Summary

In December 2021, two bulkheads (BH-68 and BH-69) were completed at manholes MH H-1 and H-1A and the sewer pipe between the bulkheads was flow filled with concrete (**Figure 15**). These activities were completed to address PFAS impacts in the sanitary sewer as summarized in **Table 1**. As part of ongoing Site IMs to reduce PFAS impacted groundwater infiltration into the sanitary sewer, temporary plugs were installed in three laterals within manhole MH H in May 2025 (**Figure 15**).

Proposed Inspections

Bulkhead BH-69, located at MH H-1A, will be inspected annually, when accessible. If the temporary plugs are in place at downgradient manhole MH H during the annual inspection, then the plugs will be inspected instead. Bulkhead BH-69 is located downgradient of bulkhead BH-68 and the section of pipe between BH-68 and BH-69 was flow-filled with concrete; therefore, BH-68 does not require inspection.

3. Summary and Conclusions

The plugs and bulkheads installed in manholes along storm and sanitary sewers servicing the Site were evaluated to determine which were critical to the performance of the IMs and required annual inspections. The structures requiring annual inspection are summarized in the table below. In addition, inspections will be completed every three years at Outfall 001 plugs (BH-1, BH-2, and BH-3) which were installed to facilitate the sale and redevelopment of the American Spiral Weld parcel. There were no known Site-related environmental impacts associated with Outfall 001 prior to plugging activities. At Outfalls 002, 005A, 006, 007, 008 and 013, either all IMs were physical disconnections, or physical disconnections were completed immediately upgradient or downgradient of plugs/bulkheads; therefore, there are no structures to inspect.

Storm/Sanitary Sewer IMs Requiring Inspections		**Sewer IMs No Required Inspections**
Sewer	**Structures Requiring Annual Inspection**	
Outfall 003	BH-10	Outfall 002
Outfall 004	BH-15 and BH-60	Outfall 005A
Outfall 005	BH-12 and BH-14	Outfall 006
Outfall 010	BH-62 and BH-63	Outfall 007
Outfall 011	BH-61, BH-64, BH-65, BH-66, and BH-67	Outfall 008
Sanitary Sewer	BH-69	Outfall 013
Sewer	**Structures Requiring Inspection Every 3 Years**	
Outfall 001	BH-1, BH-2, and BH-3	

Following the completion of the inspections, a summary of observations, recommendations, and inspection forms will be submitted to EGLE in a summary report.

Enclosures:

Tables:

Table 1 – Outfall and Bulkhead/Plug Information

Figures:

Figure 1 – 2025 Current Drainage Areas

Figure 2 – Outfall Interim Measure Locations

Figure 3 – Outfall 001

Figure 4 – Outfall 002

Figure 5 – Outfall 003

Figure 6 – Outfall 004

Figure 7 – Outfall 005

Figure 8 – Outfall 005A

Figure 9 – Outfall 006

Figure 10 – Outfall 007

Figure 11 – Outfall 008

Figure 12 – Outfall 010

Figure 13 – Outfall 011/Outfall 009

Figure 14 – Outfall 013

Figure 15 – Hamilton Avenue Sanitary Sewer

Attachments:

Attachment A – Bulkhead Specifications and Interim Measure Photos

Attachment B – Example Fulcrum Field Form

Table

Table 1
Outfall and Bulkhead/Plug Information
RACER Buick City
Flint, MI

Outfall Line Notes	DRC BH ID	Manhole	Bulkhead, Plug, or Other	Line in Manhole Bulkheaded or Plugged	Size (inch)	Date of Bulkhead/Plug Installation	Inspection Location and Methods/Equip needs	Proposed Inspection Frequency	Notes
Outfall 001									
--	BH-1	MH 1-13	Plug	S lateral	24	2014	Visually Inspect MH 1-13	3 years	There were no known Site-related environmental impacts associated with Outfall 001 prior to bulkheading/plugging activities. Plugs installed to eliminate RACERs contribution to the storm sewer prior to sale. Need to coordinate access with ASW.
	BH-2	MH 1-13-1	Plug	SW lateral	24	2014	Visually Inspect MH 1-13-1	3 years	
	BH-3	MH 1-12	Plug	S lateral	18	2014	Visually Inspect MH 1-12	3 years	
Outfall 002									
The Site's discharge to Outfall 002 was bulkheaded in ~2012 to eliminate LNAPL infiltration. In 2020-2021 a portion of the Outfall 003 drainage area was rerouted into the Outfall 002 storm sewer through a new line installed onsite and connected to the existing Outfall 002 at a new manhole structure installed at MH 2-18.	BH-58	MH 2-18	Former bulkhead Plug	S lateral	54 12	2013	--	--	Section of line crossing site rerouted into new Outfall 003, site surface and ground water no longer contributes to Outfall 002. Bulkheads removed during reroute when new structure installed.
	BH-6	MH 2-19	Physical Disconnection	Main	54	2020	--	--	No structure to inspect. Line and manhole no longer exist.
	BH-5	MH 2-20	Bulkhead Plug	W lateral NE lateral	42 6	2013	--	--	South lateral plug at 2-18. Manhole located upgradient of the physical disconnection. Bulkheaded to eliminate LNAPL infiltration to the storm sewer.
	BH-4	MH 2-21	Bulkhead Plug Plug	S Main E lateral W lateral	42 18 12	2013	--	--	Bulkhead at 2-18 east main. Manhole is located upgradient of the physical disconnection. Bulkheaded to eliminate LNAPL infiltration to the storm sewer.
Outfall 003									
In 2020-2021 a portion of the Outfall 003 storm sewer was rerouted to eliminate risk of LNAPL infiltration from the Site. In 2025 a section of the on Site Outfall 003 storm sewer from Industrial Avenue to the railroad tracks was replaced.	BH-7	MH 3-22	Plug Plug Plug Plug	E lateral to 3-22-1 E lateral N lateral N lateral	24 9 18 12	2013	--	--	Manhole located upgradient of BH-57. Plugs installed in laterals to eliminate LNAPL infiltration to the storm sewer.
	BH-8	MH 3-48-1	Plug Plug	W lateral E lateral	10 10	2013	--	--	Manhole located upgradient of BH-56. Plugs installed in laterals to eliminate LNAPL infiltration to the storm sewer.
	BH-10	MH 3-10	Bulkhead Plug	W lateral SW lateral	42 24	2013	Video Inspection	Annual	Need to coordinate access with Ashley Capital. Plugs and bulkheads installed in laterals to eliminate LNAPL infiltration to the storm sewer.
	BH-27	MH 3-31	Bulkhead Bulkhead	N main NW lateral	42 27	2020	--	--	Manhole located upgradient of BH-57. Bulkheads and Plugs installed as part of Site storm sewer reroute activities to eliminate LNAPL migration. Bulkheads also utilized to reduce hydraulic pressure in the abandoned portions and eliminate cross connections.
	BH-28	MH 3-28	Bulkhead	S main	48	2020	--	--	
	BH-29	MH 3-20-27	Plug	E lateral	8	2020	--	--	
	BH-30	MH 3-18	Bulkhead	NW main	66	2020	--	--	
	BH-56	MH 3-48-1	Plug	SW lateral	8	2013	--	--	No structures to inspect. Manholes no longer exist.
	BH-57	MH 3-12	Bulkhead	N main	66	2020	--	--	

Table 1
Outfall and Bulkhead/Plug Information
RACER Buick City
Flint, MI

Outfall Line Notes	DRC BH ID	Manhole	Bulkhead, Plug, or Other	Line in Manhole Bulkheaded or Plugged	Size (inch)	Date of Bulkhead/Plug Installation	Inspection Location and Methods/Equip needs	Proposed Inspection Frequency	Notes
Outfall 004									
In 2017/2018 the portion of the Outfall 004 storm sewer upgradient of the Site was rerouted into Outfall 013 and the section of the sewer between manhole MH 4-21 and MH 4-6 was bulkheaded to address LNAPL infiltration. Dry weather flow at MH 4-6 was diverted to the Outfall 003/004 treatment system until 04/2022 when the system was decommissioned and the diversion line was plugged. There are grates on site between MH 4-6 and MH 4-2 that provide surface drainage to Outfall 004.	BH-11	MH 4-12	Bulkhead	W main	54	2017/2018	--	--	Installed between BH-15 and BH-60. Were installed in Outfall 004 to eliminate LNAPL infiltration to the storm sewer. Also utilized to reduce hydraulic pressure in the abandoned portions of the system.
	BH-13	MH 4-16	Bulkhead	E main	54	2017/2018	--	--	
	BH-15	MH 4-21	Bulkhead	E main	54	2017/2018	Visually Inspect MH 4-21	Annual	Need to coordinate access with Ashley Capital. 003/004 system was put in for LNAPL. Bulkhead disconnects the western portion of Outfall 004 and reroutes the flow into the Outfall 013 storm sewer.
	BH-60	MH 4-6	Bulkhead	main at vault	60	2017/2018	Visually Inspect MH 4-6	Annual	Outfall 004 rerouted into Outfall 003 during construction of Bay Saver/Separator System. Eliminates the upgradient contribution to the sewer main.
	BH-PROP-1	MH 4-11	Bulkhead	S main	60	2017/2018	--	--	Installed between BH-15 and BH-60. Were installed in Outfall 004 to eliminate LNAPL infiltration to the storm sewer. Also utilized to reduce hydraulic pressure in the abandoned portions of the system.
	BH-PROP-3	MH 4-19-1	Plug	S lateral	15	2017/2018	--	--	
Outfall 005									
In 2013 bulkheads were installed at manholes MH 5-13A and MH 5-12-1 to eliminate pathways for LNAPL discharge to the outfall.	BH-9	MH 5-19	Historic GM Bulkhead	E lateral	30	2006	--	--	Manhole located upgradient of BH-12. Was installed by General Motors (GM) in 2006 to prevent LNAPL infiltration into the storm sewer.
	BH-12	MH 5-13A	Bulkhead	SE lateral	36" x 60" oval	2013	Video Inspection from MH 5-12	Annual	Need to coordinate access with Ashley Capital. Were installed in the main and a lateral to prevent LNAPL infiltration.
	BH-14	MH 5-12-1	Bulkhead	N lateral	30"	2013	Video Inspection from MH 5-12	Annual	
Outfall 005A									
--	BH-19	MH 5A-6-2	Physical Disconnection	N lateral	12	2014	--	--	Disconnections were completed in laterals to eliminate flow and minimize the Site's contributions to the Outfall 005A storm sewer, which primarily serves adjacent properties.
	BH-52	MH 5A-5	Physical Disconnection	S lateral	12	2023	--	--	
	BH-59	MH 5A-6-1	Physical Disconnection	S lateral	12	2023	--	--	
Outfall 006									
--	BH-16	MH 6-8	Historic GM Disconnection	E lateral	30	--	--	--	Historical disconnection completed by GM to prevent LNAPL infiltration into the storm sewer.
	BH-17	MH 6-2	Plug	SW lateral	15	2014	--	--	The line plugged by BH-17 was subsequently physically disconnected by BH-51 so there is no need for inspections.
	BH-18	MH 6-2-6	Physical Disconnection	NW lateral	15	12/16/2022	--	--	Disconnection was completed to address the Site's contribution of metals and PFAS impacts identified in the storm sewer.
	BH-20	MH 6-5	Physical Disconnection	S line	12	2014	--	--	Disconnections were completed in laterals to address the Site's contribution of metal impacts identified in the storm sewer.
	BH-21	MH 6-5	Physical Disconnection	SW line	12	2014	--	--	
	BH-50	MH 6-2	Physical Disconnection	W lateral	12	12/14/2022	--	--	Disconnections were completed to address the Site's contribution of metals and PFAS impacts identified in the storm sewer.
	BH-51	MH 6-2	Physical Disconnection	SW lateral	18	12/15/2022	--	--	
	BH-53	MH 6-2-3	Physical Disconnection	SW lateral	12	2022	--	--	
Outfall 007									
--	BH-22	MH 7-1	Plug	SE main	24	12/12/2022	--	--	In 2014, the BH-22 plug was installed to eliminate the Site's contribution to the Outfall 007 storm sewer and to address metals impacts. In 2022 the main was found leaking and was physically disconnected behind BH-22.
	BH-54	MH 7-1	Physical Disconnection	SE main	24	12/13/2022	--	--	

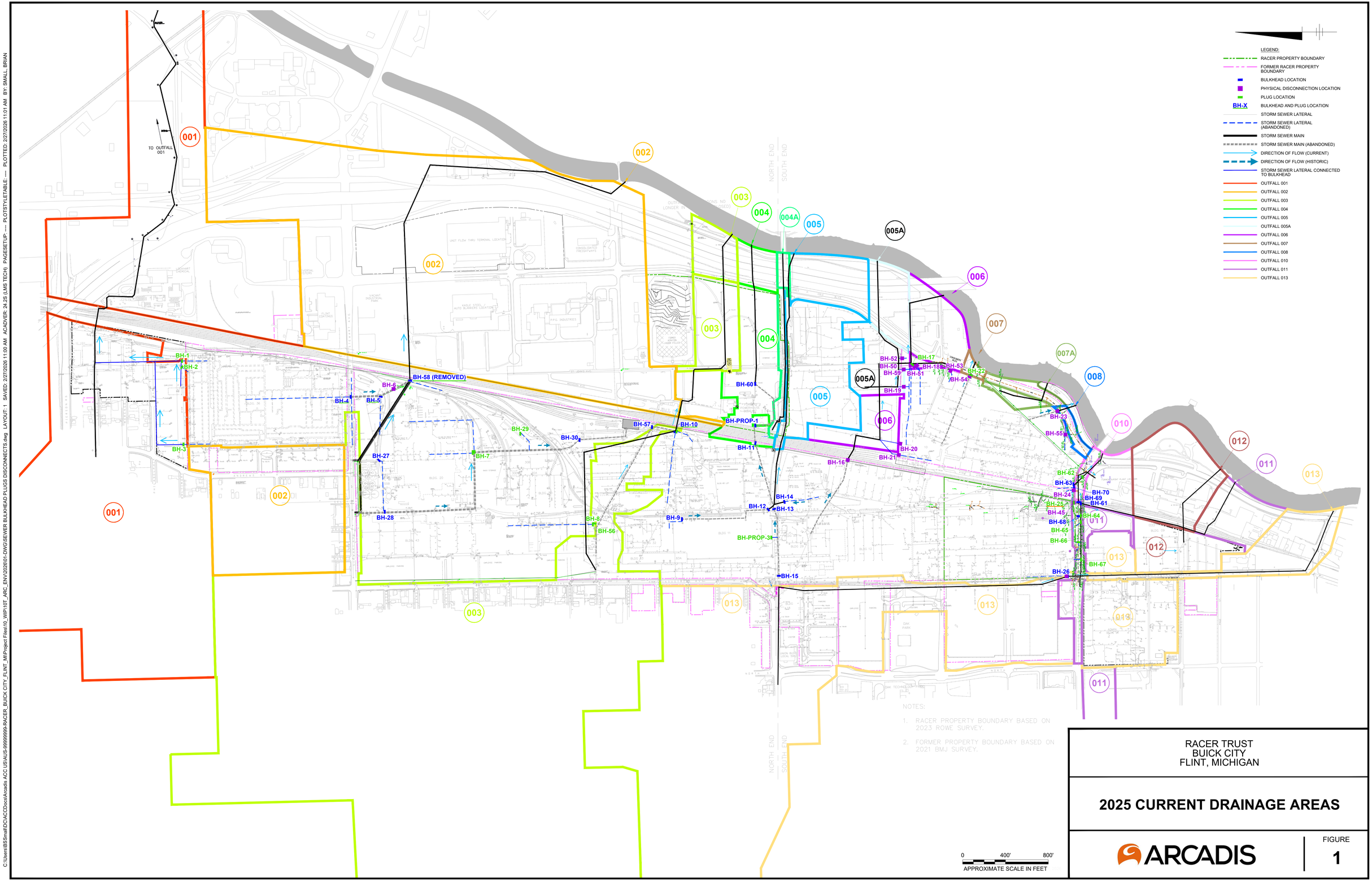
Table 1
Outfall and Bulkhead/Plug Information
RACER Buick City
Flint, MI

Outfall Line Notes	DRC BH ID	Manhole	Bulkhead, Plug, or Other	Line in Manhole Bulkheaded or Plugged	Size (inch)	Date of Bulkhead/Plug Installation	Inspection Location and Methods/Equip needs	Proposed Inspection Frequency	Notes
Outfall 008									
--	BH-23	MH 8-1	Historic GM Disconnection	E main	18	--	--	--	Due to a collapse in the vicinity of manhole MH 8-1 the sewer was subsequently physical disconnected in this area.
	BH-55	MH 8A-1	Physical Disconnection	E main	8	12/12/2022	--	--	Disconnection was completed in a lateral as part of Site PFAS investigation activities to minimize the Site's contribution to the storm sewer.
Outfall 010									
--	BH-24	MH 10-4	Physical Disconnection	N main	18	2014	--	--	Manhole located upgradient of BH-63. Disconnection completed to address metals impacts.
	BH-25	MH 10-5	Mass pour of concrete filling manhole structure	Entire structure	30	2021	--	--	Manhole located upgradient of BH-63. Initially a bulkhead in 2014, to address metals impacts. In 2021, the manhole structure was filled due to infiltration into the structure and a cross connection to the sanitary sewer.
	BH-62	MH 10-1A	Plug	NE lateral	12	June 2020	Video inspection from MH 10-1A	Annual	Plug completed to address metals impacts
	BH-63	MH 10-2	Bulkhead	N main	30	September 2021	Video inspection from MH 10-1A	Annual	Bulkhead completed to address PFAS impacts
	BH-70	MH 10-3	Plug	NE lateral	15	2014	--	--	Manhole located upgradient of BH-63. Plug completed to address metals impacts.
Outfall 011/Outfall 009									
The Outfall 009 storm sewer connects to the Outfall 011 storm sewer in Hamilton Avenue. In 2014, Outfall 009 was physically disconnected (BH-45) to address metals impacts.	BH-45	Prop Boundary	Physical Disconnection	S lateral from 11-7	30	2014	--	--	The need for inspections will be re-evaluated following completion of remedy proposed along Hamilton Avenue. Bulkheads and plugs were completed in laterals to address PFAS impacts and infiltration into the Outfall 011 storm sewer.
	BH-61	MH 11-6	Bulkhead	N lateral	30	2020/2021	Video inspection from MH 11-6	Annual	
	BH-64	MH 11-6-A-2	Plug	NW lateral	6	12/6/2021	Visually inspect MH 11-6-A-2	Annual	
	BH-65	MH 11-6-A-3	Plug	NW lateral	6	12/7/2021	Visually inspect MH 11-6-A-3	Annual	
	BH-66	MH 11-6-A-6-1	Plug	S lateral	12	8/12/2020	Visually inspect MH 11-6-A-6-1	Annual	
	BH-67	MH 11-6-A-8	Plug Plug	N lateral NE lateral	12 6	8/11/2020	Visually inspect MH 11-6-A-8	Annual	
Outfall 013									
	BH-26	MH 13-11	Physical Disconnection	Main	72	2020/2021	--	--	This location was physically disconnected after multiple attempts to seal BH. BH-26 leaked after construction and a physical disconnection was then completed just north of bulkhead BH-26. Disconnection completed in a lateral to address PFAS impacts in the storm sewer.
Hamilton Avenue Sanitary Sewer									
--	BH-68	MH H-1	Bulkhead	Main	15	12/10/2021	--	--	The Hamilton Avenue sanitary sewer line is flow filled between BH-68 and BH-69. Bulkheads were installed in the sanitary sewer to address PFAS impacts and infiltration.
	BH-69	MH H-1A	Bulkhead	Main	15	12/10/2021	Inspect MH H-1A - Lane Closure	Annually	

Notes:

Acronyms and Abbreviations:
N = North
S = South
E = East
W = West
BH = Bulkhead
MH = Manhole
DRC = Declaration of Restrictive Covenant

Figures

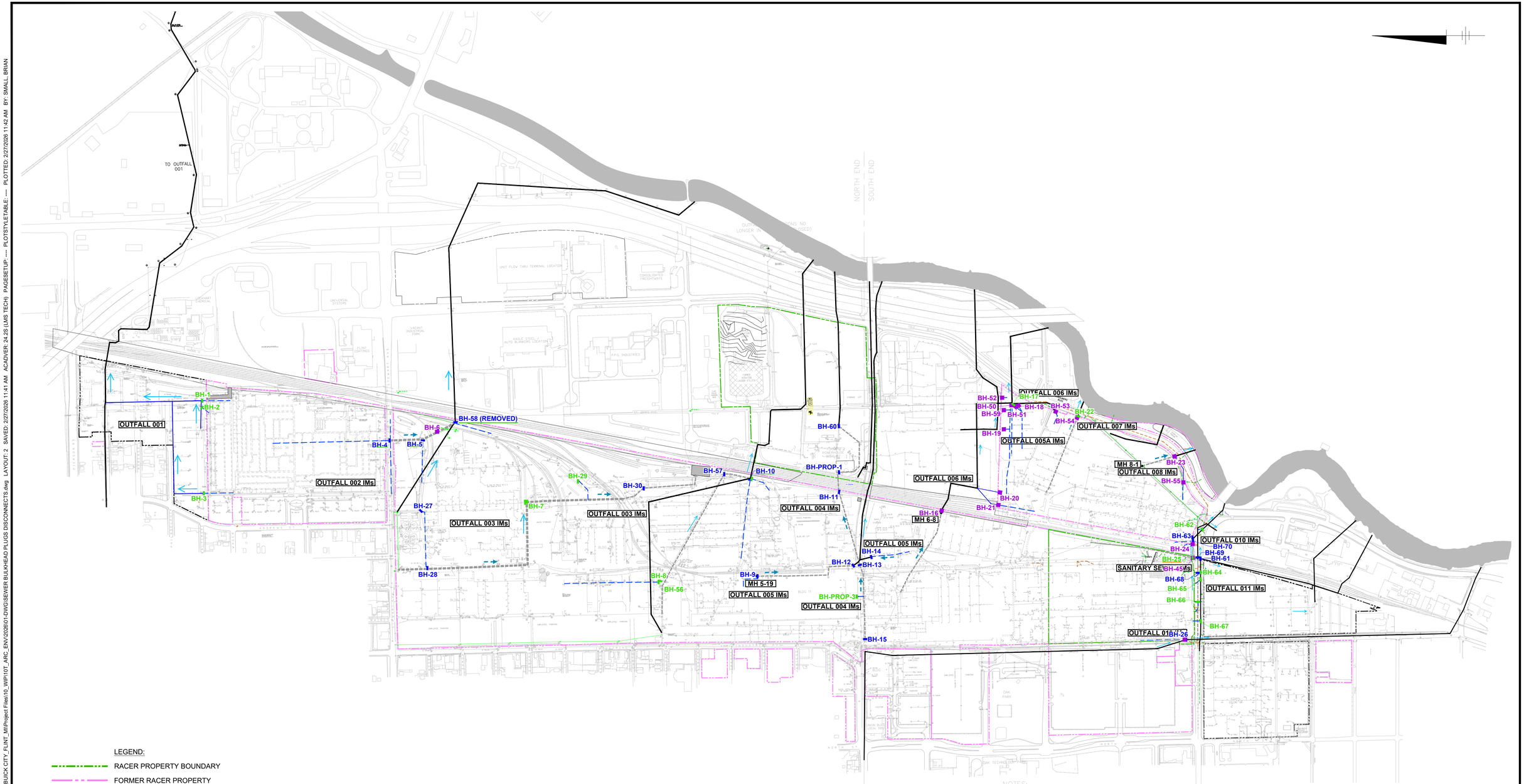


RACER TRUST
BUICK CITY
FLINT, MICHIGAN

2025 CURRENT DRAINAGE AREAS

ARCADIS

FIGURE
1



LEGEND:

- RACER PROPERTY BOUNDARY
- FORMER RACER PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PHYSICAL DISCONNECTION LOCATION
- PLUG LOCATION
- **BH-X** BULKHEAD AND PLUG LOCATION
- STORM SEWER LATERAL
- STORM SEWER LATERAL (ABANDONED)
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- DIRECTION OF FLOW (CURRENT)
- DIRECTION OF FLOW (HISTORIC)
- STORM SEWER LATERAL CONNECTED TO BULKHEAD

NOTES:

1. RACER PROPERTY BOUNDARY BASED ON 2023 ROWE SURVEY.
2. FORMER PROPERTY BOUNDARY BASED ON 2021 BMJ SURVEY.

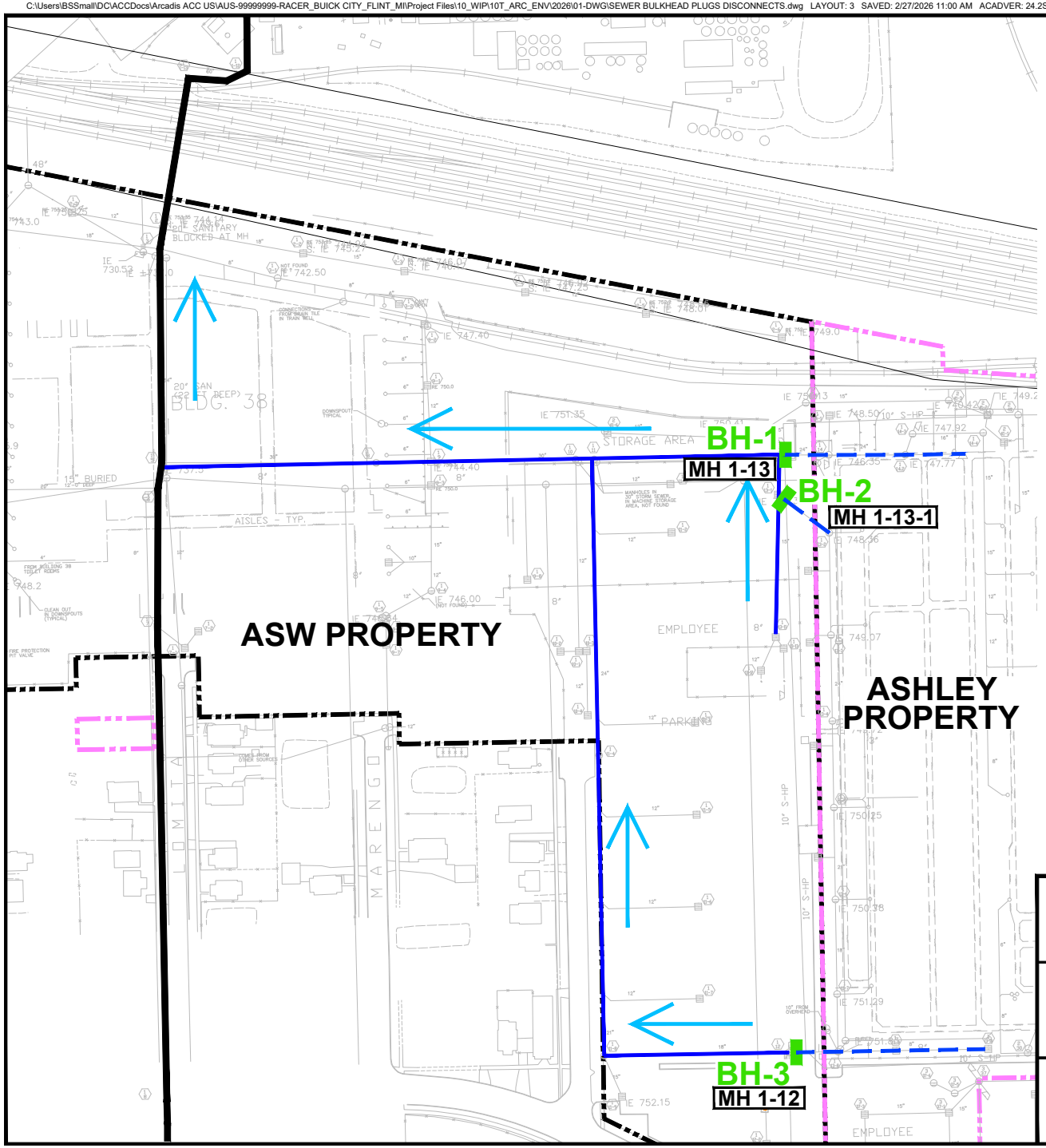
0 400' 800'
APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL INTERIM MEASURE LOCATIONS

ARCADIS

FIGURE
2



LEGEND:

- ASHLEY PROPERTY BOUNDARY
- ASW PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PLUG LOCATION
- STORM SEWER MAIN
- STORM SEWER LATERAL
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (CURRENT)

0 200' 400'

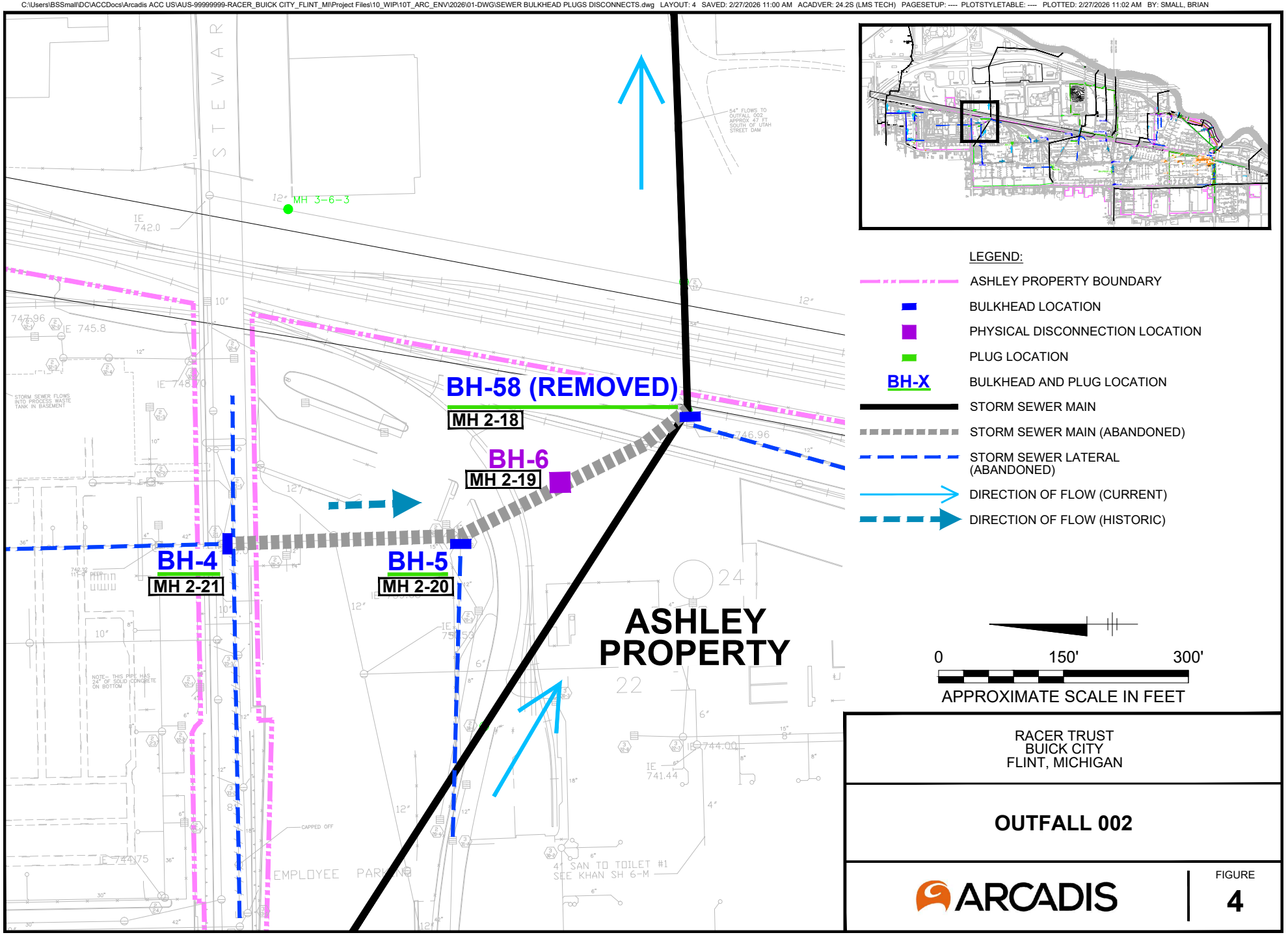
APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 001

ARCADIS

FIGURE
3



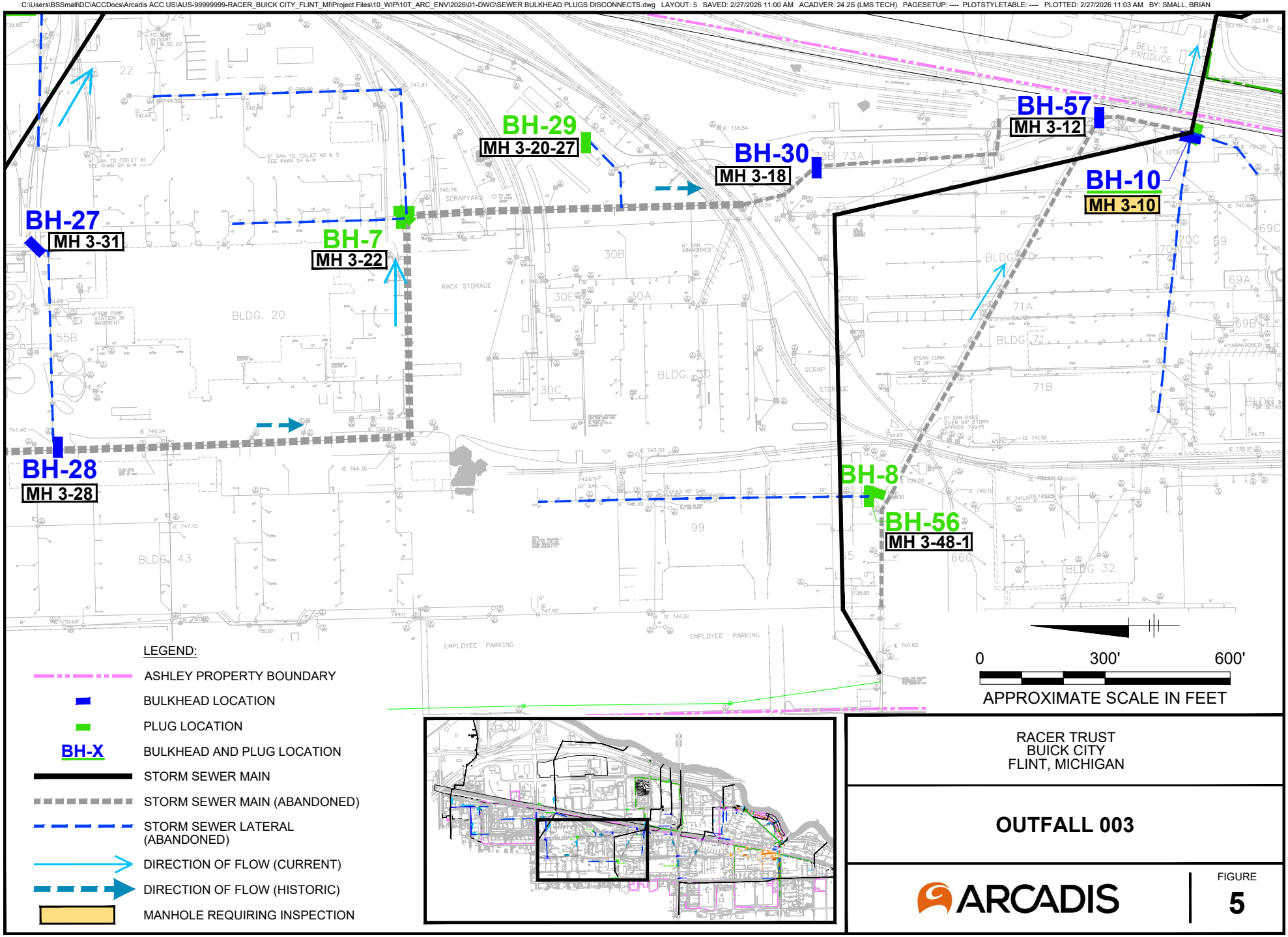
RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 002

ARCADIS

FIGURE
4

C:\Users\BSSmall\DC\ACCDocs\Arcadis ACC US\AUS-99999999-RACER_BUICK CITY_FLINT_MI\Project Files\10_WIP\10T_ARC_ENV\2026\01-DWG\SEWER BULKHEAD PLUGS DISCONNECTS.dwg LAYOUT: 5 SAVED: 2/27/2026 11:00 AM ACADVER: 24.2S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 2/27/2026 11:03 AM BY: SMALL, BRIAN



LEGEND:

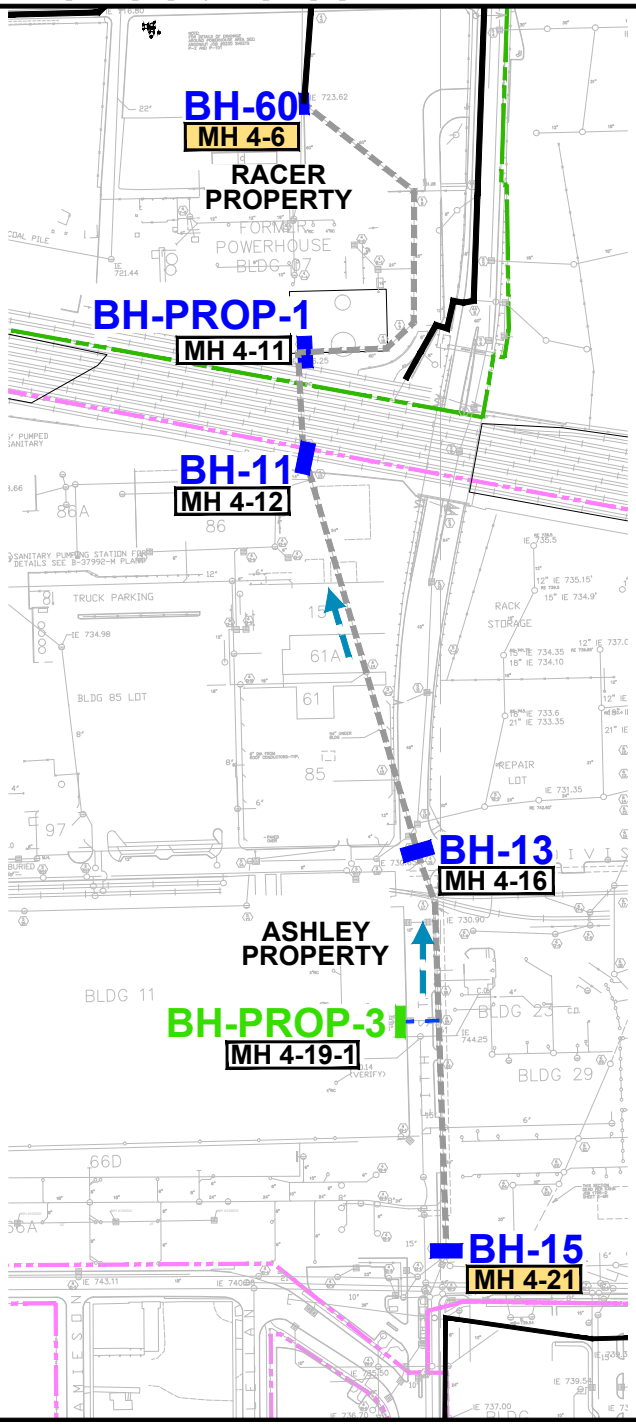
- ASHLEY PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PLUG LOCATION
- BH-X — BULKHEAD AND PLUG LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (CURRENT)
- DIRECTION OF FLOW (HISTORIC)
- MANHOLE REQUIRING INSPECTION

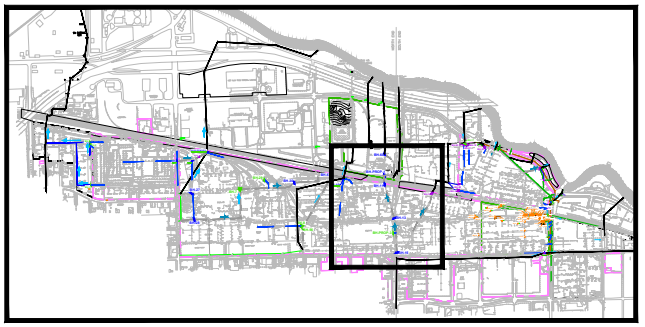
RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 003

ARCADIS

FIGURE
5





LEGEND:

- ASHLEY PROPERTY BOUNDARY
- RACER PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PLUG LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (HISTORIC)
- MANHOLE REQUIRING INSPECTION

0 300' 600'

APPROXIMATE SCALE IN FEET

RACER TRUST
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FLINT, MICHIGAN

OUTFALL 004

ARCADIS

FIGURE
6

BH-9
MH 5-19

BH-12
MH 5-13A

BH-14
MH 5-12-1

0 150' 300'

APPROXIMATE SCALE IN FEET

LEGEND:

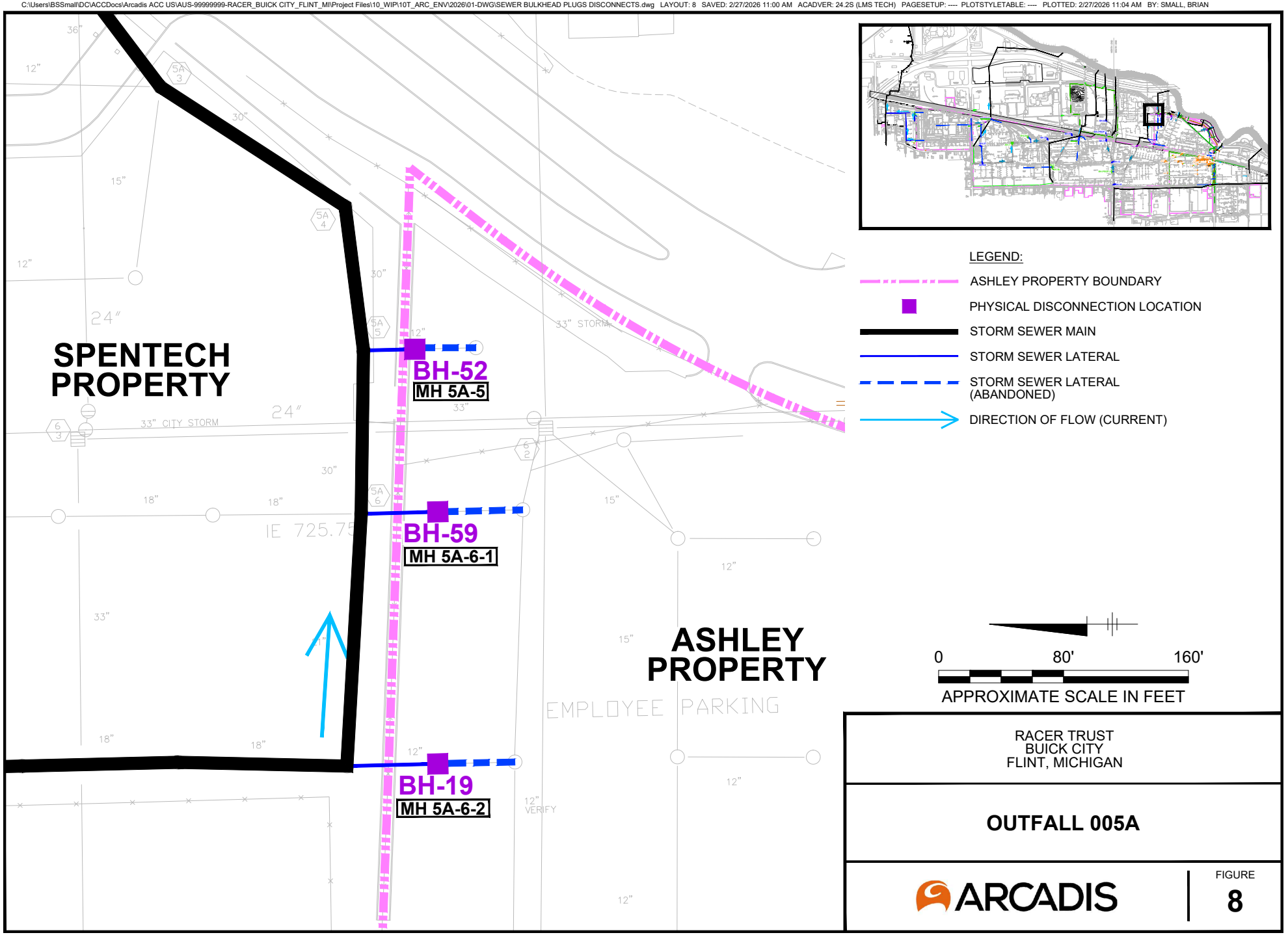
- BULKHEAD LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (CURRENT)
- DIRECTION OF FLOW (HISTORIC)
- MANHOLE REQUIRING INSPECTION

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 005

ARCADIS

FIGURE
7

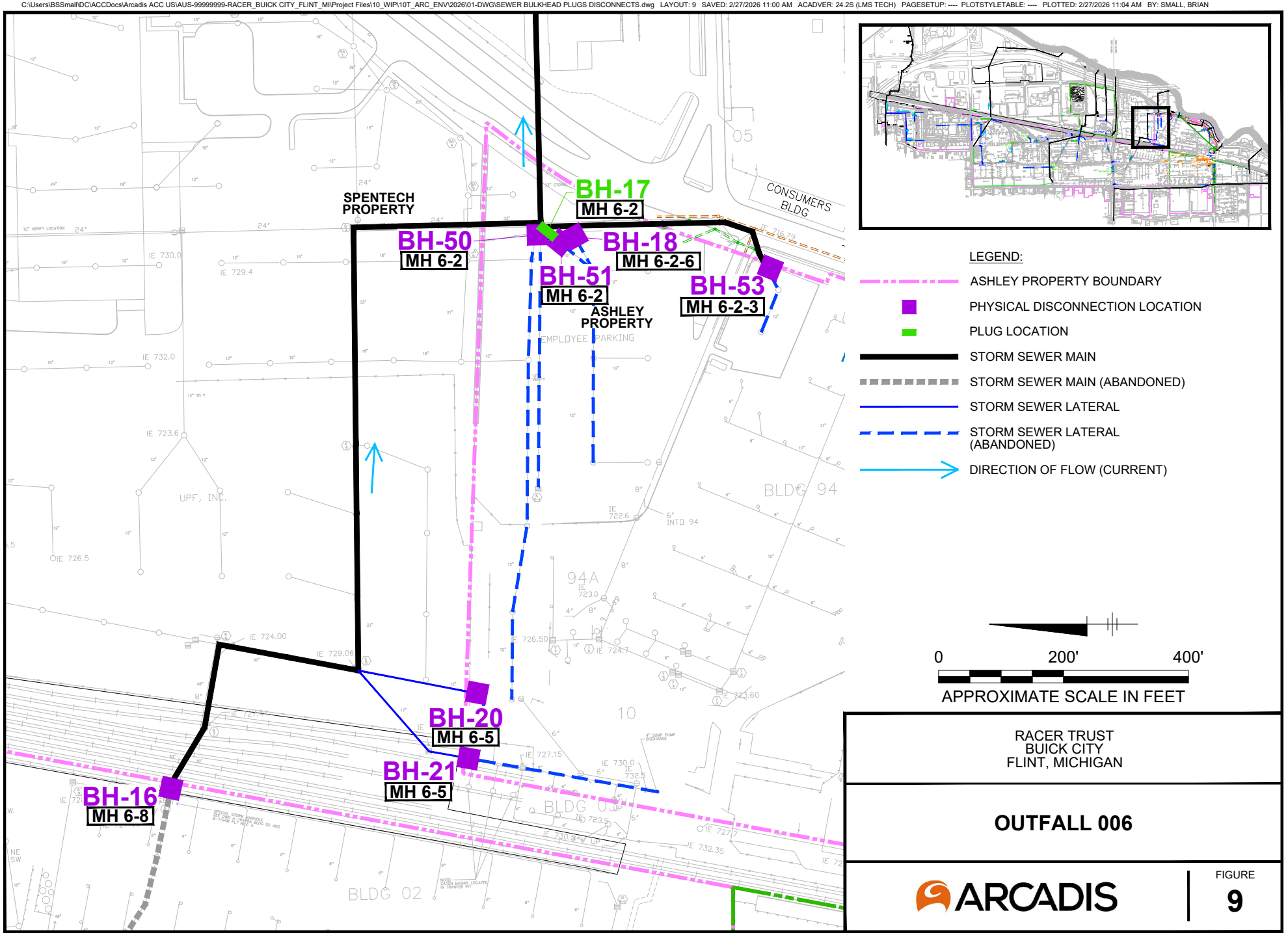


RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 005A

ARCADIS

FIGURE
8



RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 006

ARCADIS

FIGURE
9

LEGEND:

- ASHLEY PROPERTY BOUNDARY
- PHYSICAL DISCONNECTION LOCATION
- PLUG LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- DIRECTION OF FLOW (CURRENT)
- DIRECTION OF FLOW (HISTORIC)

BH-22
MH 7-1

BH-54
MH 7-1

ASHLEY PROPERTY

0 50' 100'

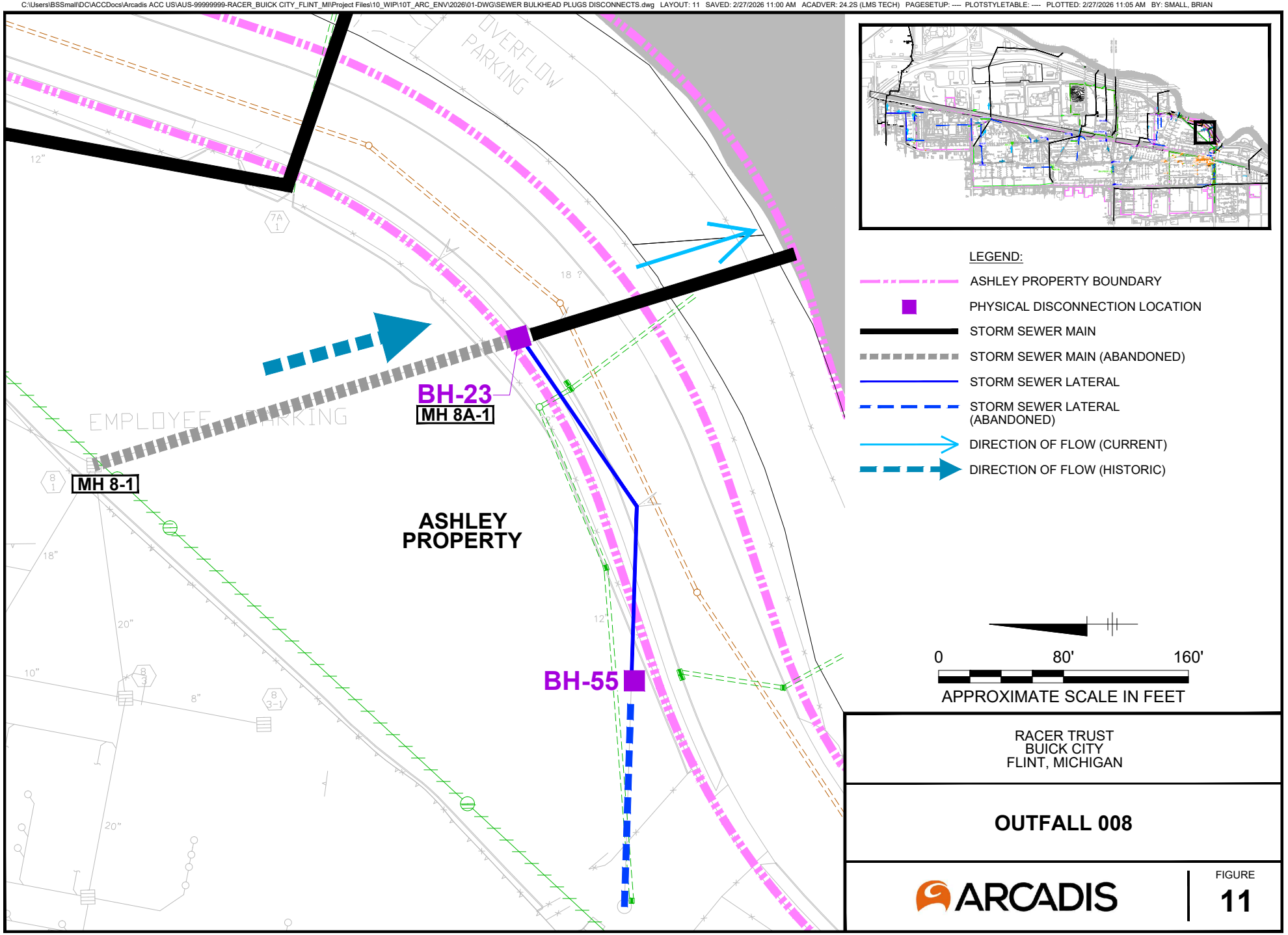
APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 007

ARCADIS

FIGURE
10

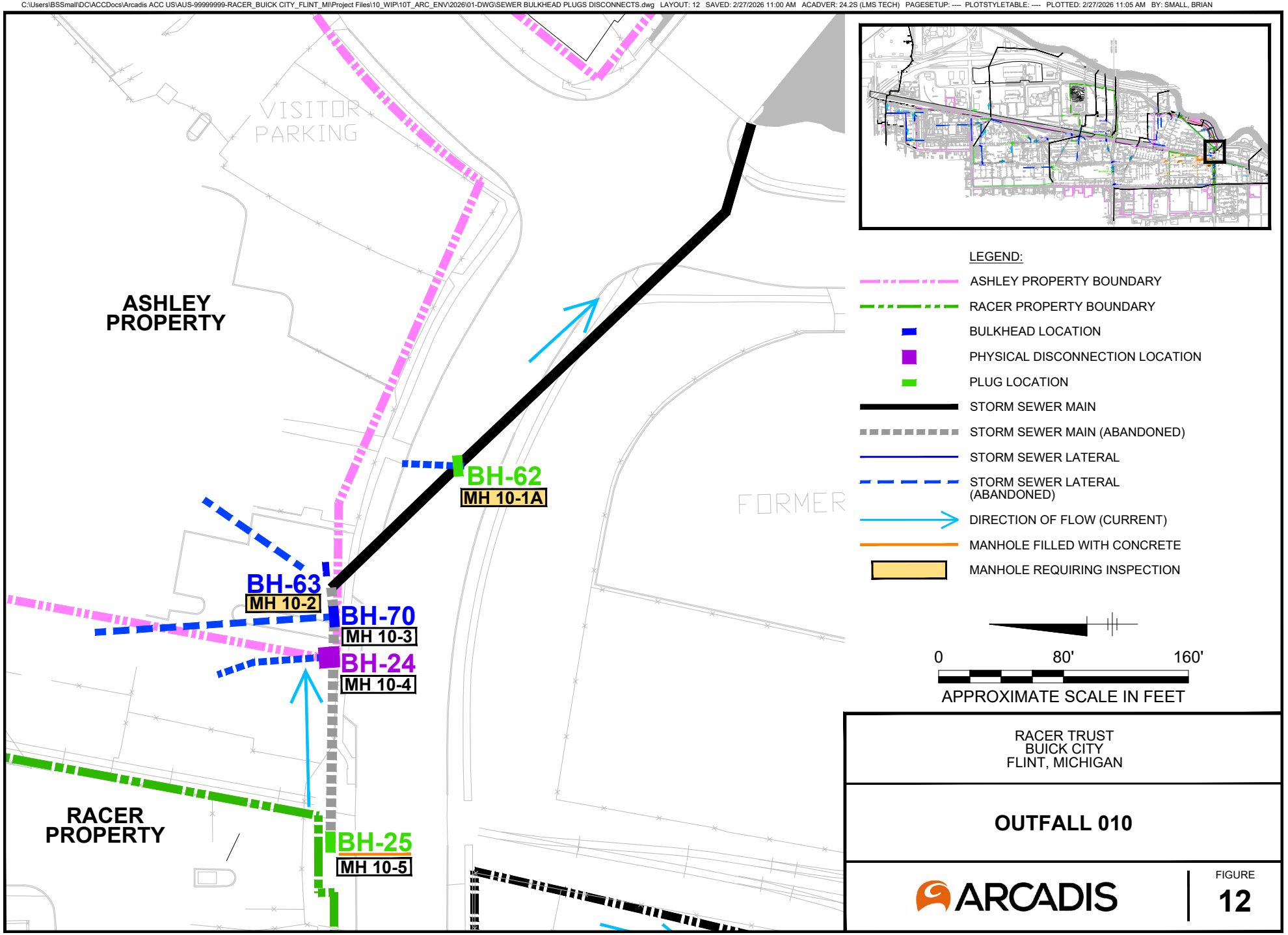


RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 008

ARCADIS

FIGURE
11



LEGEND:

- ASHLEY PROPERTY BOUNDARY
- RACER PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PHYSICAL DISCONNECTION LOCATION
- PLUG LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- STORM SEWER LATERAL
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (CURRENT)
- MANHOLE FILLED WITH CONCRETE
- MANHOLE REQUIRING INSPECTION

0 80' 160'

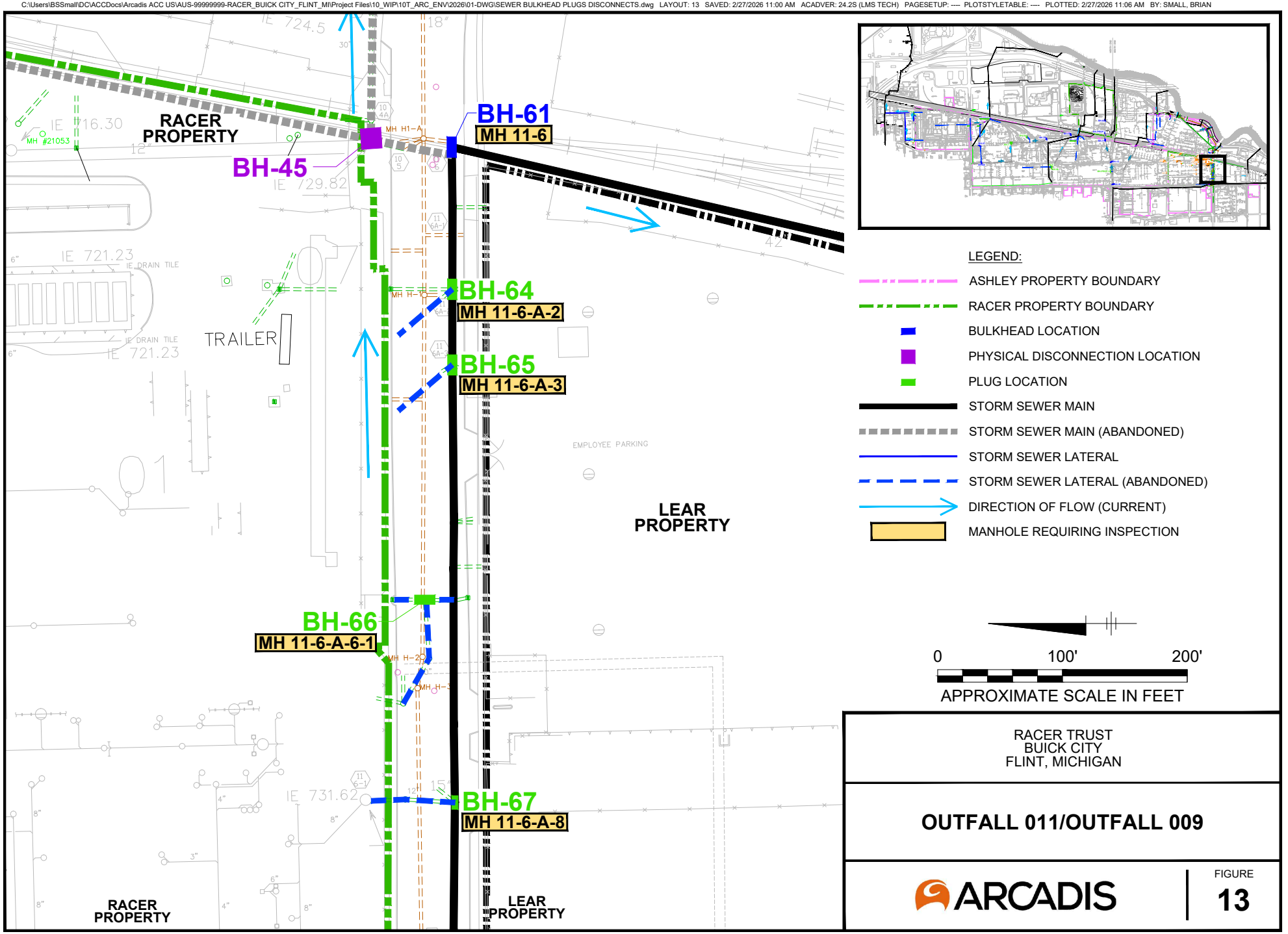
APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 010

ARCADIS

FIGURE
12



LEGEND:

- ASHLEY PROPERTY BOUNDARY
- RACER PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PHYSICAL DISCONNECTION LOCATION
- PLUG LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- STORM SEWER LATERAL
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (CURRENT)
- MANHOLE REQUIRING INSPECTION

0 100' 200'

APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

OUTFALL 011/OUTFALL 009

ARCADIS

FIGURE
13

RACER PROPERTY

LEAR PROPERTY

ASHLEY PROPERTY

LEAR PROPERTY

BH-26
MH 13-11

MH 11-6-9

45" CONNECTS TO 72"

PARKING

0 50' 100'

APPROXIMATE SCALE IN FEET

LEGEND:

- RACER PROPERTY BOUNDARY
- LEAR PROPERTY BOUNDARY
- ASHLEY PROPERTY BOUNDARY
- BULKHEAD LOCATION
- PHYSICAL DISCONNECTION LOCATION
- STORM SEWER MAIN
- STORM SEWER MAIN (ABANDONED)
- STORM SEWER LATERAL
- STORM SEWER LATERAL (ABANDONED)
- DIRECTION OF FLOW (CURRENT)

RACER TRUST
BUICK CITY
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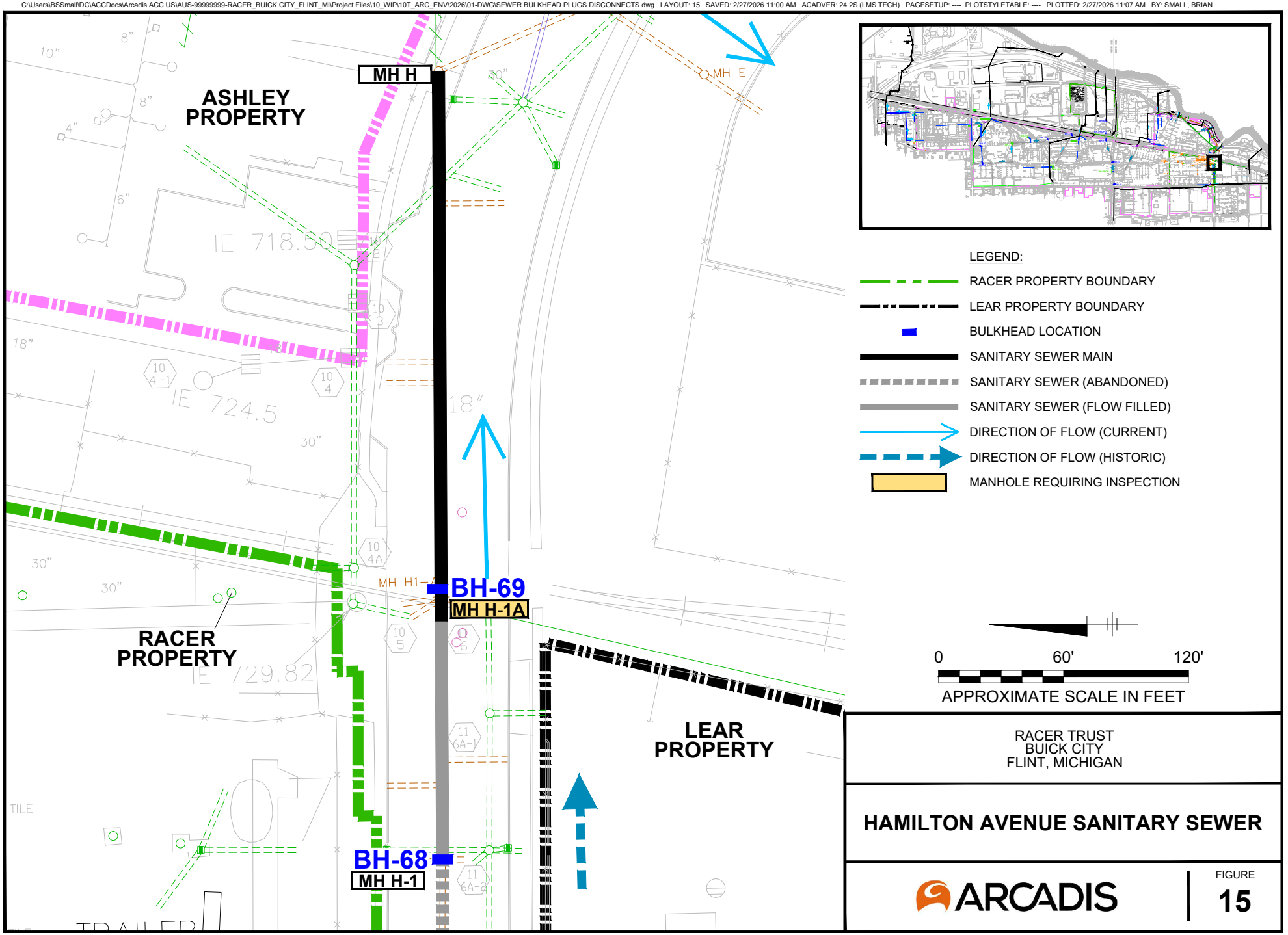
OUTFALL 013

ARCADIS

FIGURE
14



LEGEND:

- RACER PROPERTY BOUNDARY
- LEAR PROPERTY BOUNDARY
- BULKHEAD LOCATION
- SANITARY SEWER MAIN
- SANITARY SEWER (ABANDONED)
- SANITARY SEWER (FLOW FILLED)
- DIRECTION OF FLOW (CURRENT)
- DIRECTION OF FLOW (HISTORIC)
- MANHOLE REQUIRING INSPECTION

0 60' 120'

APPROXIMATE SCALE IN FEET

RACER TRUST
BUICK CITY
FLINT, MICHIGAN

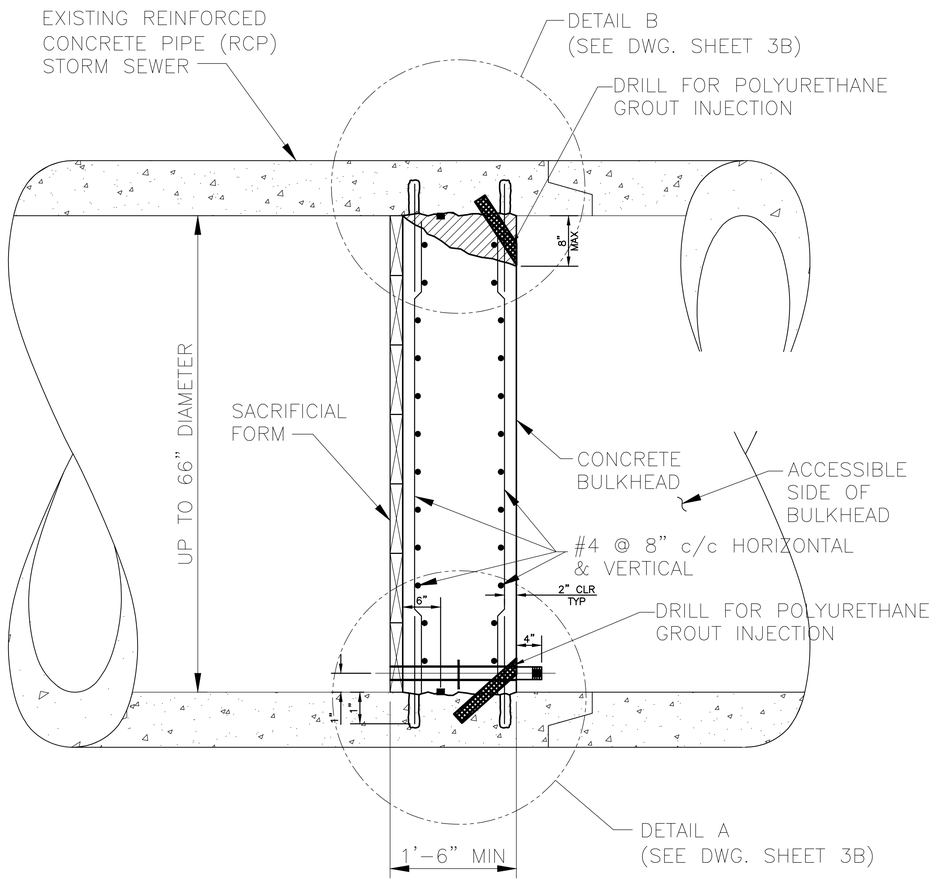
HAMILTON AVENUE SANITARY SEWER

ARCADIS

FIGURE
15

Attachment A

Bulkhead Specifications and Interim Measure Photos



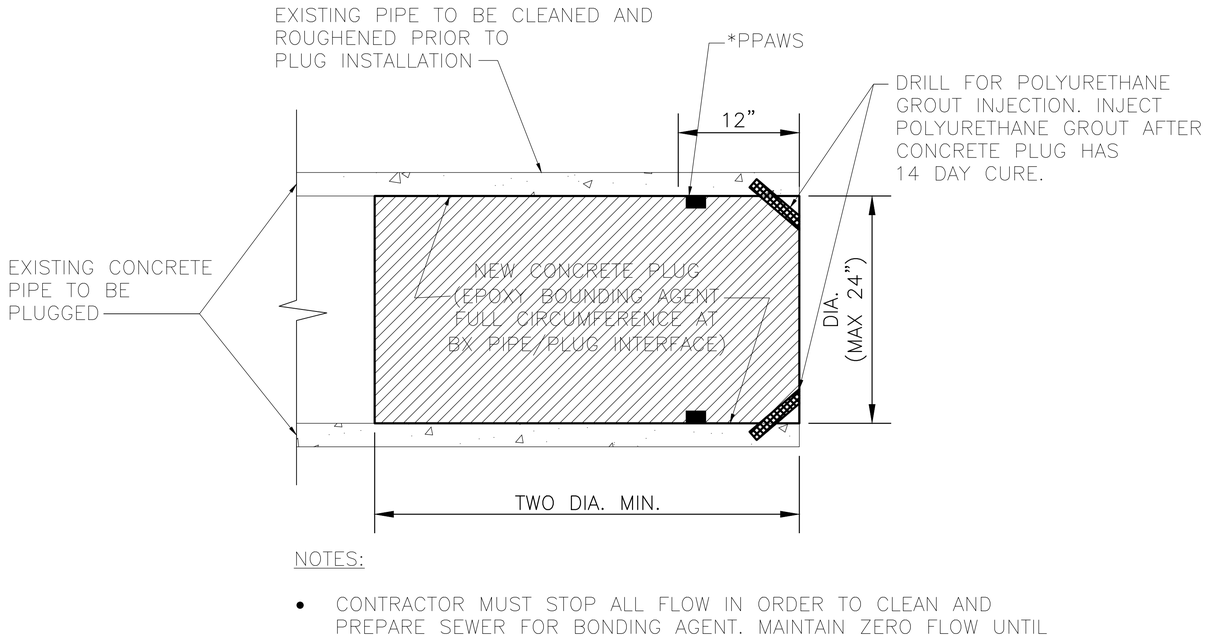
NOTES:

1. PROVIDE 2" RESILIENT SEAT PLUG VALVE EQUAL TO USABLUEBOOK.COM ME-26421. PROVIDE LEVEL OPERATOR EXTENSION TO 6" BELOW MANHOLE COVER.
2. CONTRACTOR MUST STOP ALL PIPE FLOW IN ORDER TO CLEAN AND PREPARE SEWER FOR BONDING AGENT. MAINTAIN ZERO FLOW UNTIL CONCRETE HAS 28 DAY CURE..
3. ASSUMES PIPE IS CONCRETE. IF PIPE MATERIAL IS DIFFERENT OR IN UNACCEPTABLE CONDITION, CONTACT ENGINEER.
4. POLYURETHANE GROUT PER NOTES PAGE.

*FULL CIRCUMFERENCE OF BULKHEAD.

TYPICAL BULKHEAD SECTION FOR UP TO 66" PIPE

1/2" = 1'-0"



NOTES:

- CONTRACTOR MUST STOP ALL FLOW IN ORDER TO CLEAN AND PREPARE SEWER FOR BONDING AGENT. MAINTAIN ZERO FLOW UNTIL CONCRETE HAS 28 DAY CURE.
- ASSUMES CONCRETE PIPE. IF PIPE MATERIAL IS DIFFERNT OR IN UNACCEPTABLE CONDITION CONTACT ENGINEER.
- POLY URETHANE GROUT INJECTED AROUND FULL CIRCUMFERENCE OF PIPE. MATERIAL PER NOTES PAGE.

CONCRETE PLUG DETAIL FOR UP TO 24" PIPE

1" = 1'-0"

CITY: DIV/GROUP: DB: LD: PIC: PM: TM: LYR:ON=*;OFF=*REF*
Z:\ENVCAD\SYRACUSE\ACTIVE\B0064410\2016\01901D□□\B6441101901.dwg LAYOUT: 3A SAVED: 1/27/2017 1:01 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 1/27/2017 1:09 PM BY: SANCHEZ, ADRIAN
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THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

N□	D□□□	R□□□□□□□	B□	C□d

Pr□□□□□□□□E□g□□□r□N□□ □

Pr□□□□□□□E□g□□□r□N□

S□□□	D□□ S g□□d	Pr□□□□Mgr.
MI		M. MAKI
D□□g□□d □□	Dr□w□ □□	C□□□□d □□
ELC	A.SANCHEZ	ELC

ARCADIS Design & Consultancy for natural and built assets

ARCADIS OF MICHIGAN, LLC.

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RCP BULKHEAD SECTION AND DETAILS

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B0064410.2016.01901

D□□□
JANUARY 2017

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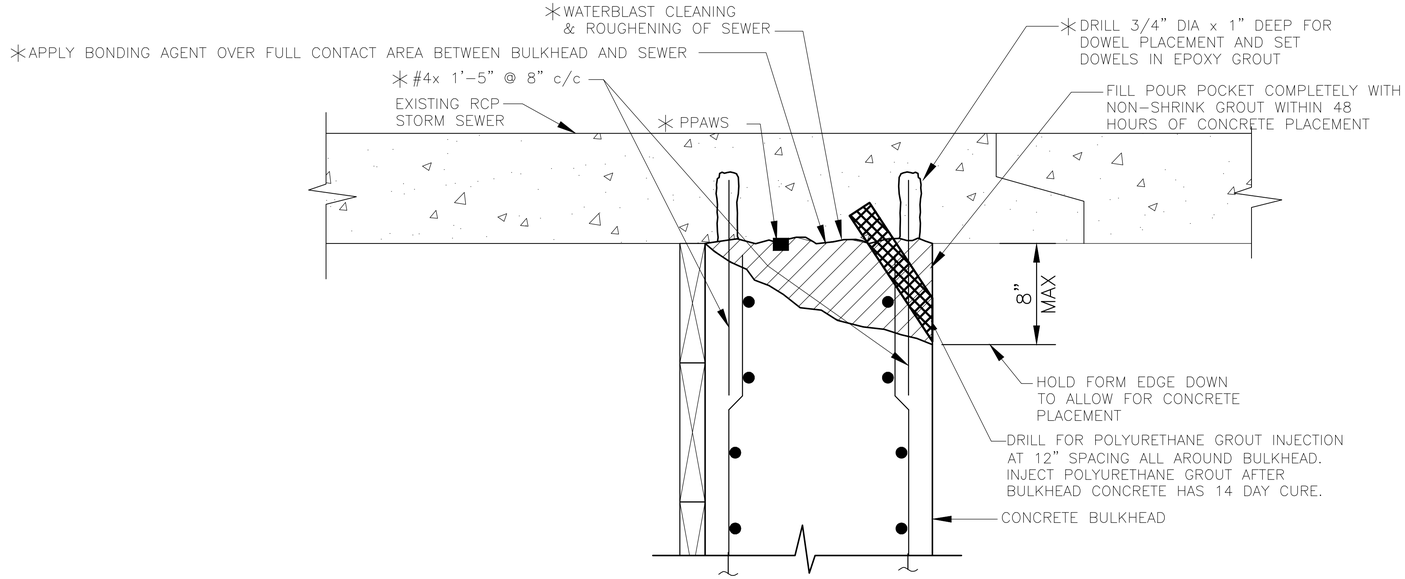
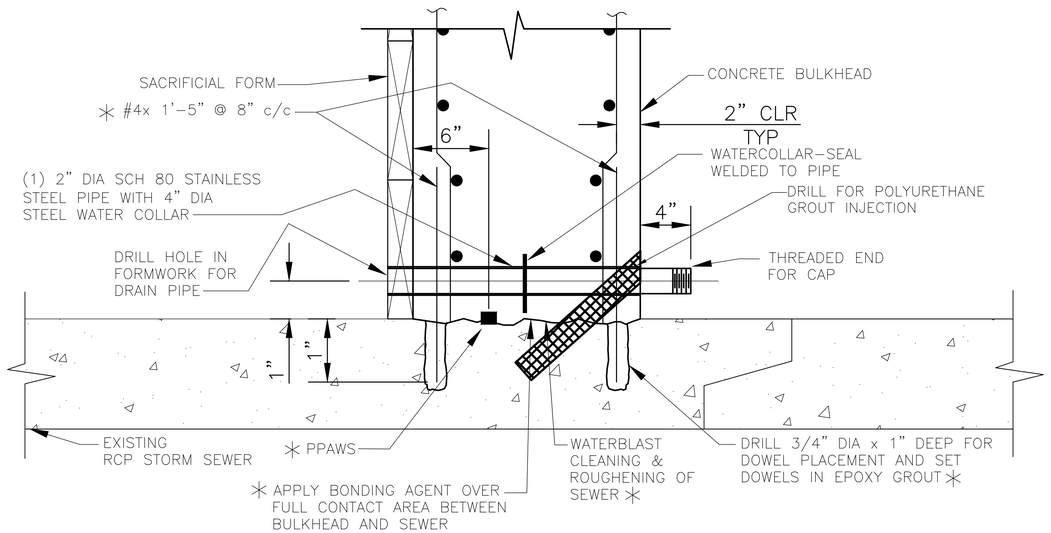
28550 CABOT DRIVE
SUITE 500
NOVI, MICHIGAN 48377
TEL. 248.994.2240

3A



DETAIL B

1" = 1'-0"



DETAIL A

1" = 1'-0"

✳FULL CIRCUMFERENCE OF BULKHEAD.

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RCP BULKHEAD SECTION AND DETAILS

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JANUARY 2017
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3B

DESIGN AND CODE INFORMATION

1. ALL CONSTRUCTION SHALL CONFORM TO 2009 INTERNATIONAL BUILDING CODE, MICHIGAN EDITION.

2. VERIFY EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY ENGINEER OF ANY CONDITIONS WHICH DO NOT COMPLY WITH PLANS AND SPECIFICATIONS.

3. SHOP DRAWINGS WILL NOT BE REVIEWED BY THE DESIGNER UNTIL AFTER THE GENERAL CONTRACTOR HAS THOROUGHLY REVIEWED THE SHOP DRAWINGS, VERIFIED EXISTING CONDITIONS, AND COORDINATED THE SHOP DRAWINGS WITH OTHER AFFECTED TRADES. SUBMIT FOUR COPIES OF REVIEWED SHOP DRAWINGS FOR ENGINEER'S REVIEW. ONLY THREE SETS OF MARKED UP SHOP DRAWINGS SHALL BE RETURNED BY THE DESIGNER. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.

4. DO NOT SCALE STRUCTURAL DRAWINGS.

5. LIVE LOADS:
   BULKHEAD DESIGN IS BASED ON 15ft HEAD.

6. SPECIAL INSPECTIONS:
   THIS WORK IS EXEMPT FROM SPECIAL INSPECTIONS BECAUSE "WORK IS OF MINOR NATURE" PER IBC 2009 SECTION 1704.1 EXCEPTION 1.

GENERAL NOTES:

1. EPOXY ADHESIVE FOR DOWELS:

   MANUFACTURERS:
   HILTI CORPORATION, HIT–RE 500 SD.
   OR AS APPROVED.

   A. INJECTABLE TWO–COMPONENT EPOXY ADHESIVE.

   B. DEFORMED REINFORCING BAR.

   C. ADHESIVE ANCHORAGE SYSTEM SHALL BE SEISMIC QUALIFIED PER IBC 2009.

   D. ADHESIVE ANCHORAGE SYSTEM SHALL MEET REQUIREMENTS OF ASTM C881–90, TYPE N, GRADE 2 AND 3, CLASS A, B, C
   EXCEPT GEL TIMES.

2. BONDING AGENT: 3 COMPONENT, SOLVENT FREE WATER–BASED EPOXY RESIN WITH PORTLAND CEMENT, SIKA CORP., SIKA ARMATEC 110 EPOCEM, OR AS APPROVED.

3. NON_SHRINK GROUT: PRE–MIXED COMPOUND CONSISTING OF NON_METALLIC AGGREGATE, CEMENT, WATER–REDUCING AND PLASTICIZING AGENTS; CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI IN 28 DAYS; BASF MASTERFLOW 713 PLUS, OR AS APPROVED.

4. PREFORMED PLASTIC ADHESIVE WATERSTOP (PPAWS): FEDERAL SPECIFICATION SS–SS–210A; SINGLE– COMPONENT, SELF–SEALING PLASTIC ADHESIVE TYPE, EXTRUDED ROPE FORM BETWEEN TWO PROTECTIVE SILICONE TREATED PAPERS, 1 INCH SQUARE CROSS SECTION, 1 INCH LAP SPLICE, FURNISH WITH PRIMER; SYNKO–FLEX PRODUCTS SYNKO–FLEX, OR AS APPROVED.

5. FORM MATERIALS

   FORMS FOR FINISH CONCRETE: PLYWOOD, METAL, METAL–FRAMED PLYWOOD FACED, OR OTHER ACCEPTABLE PANEL–TYPE MATERIALS, TO PROVIDE CONTINUOUS, STRAIGHT, SMOOTH, SURFACES. FURNISH IN LARGEST PRACTICABLE SIZES TO MINIMIZE NUMBER OF FORM MARKS. SEAL FORM TIE HOLES TO WATERTIGHT CONDITION.

6. FIELD QUALITY CONTROL

   TESTS OF CONCRETE SLUMP, AIR CONTENT AND STRENGTH WILL BE MADE AT THE DIRECTION OF ENGINEER. SAMPLES FOR STRENGTH SHOULD BE TAKEN AS NEAR AS PRACTICAL TO THE POINT OF PLACEMENT INTO THE FORMWORK OR AT A LOCATION WHICH CLOSELY MATCHES THE HANDLING CONDITIONS WHEN THE CONCRETE IS PLACED IN THE FORMS. PRIOR TO THE ADDITION OF A MID OR HIGH RANGE WATER REDUCER, A SLUMP TEST MAY BE MADE FROM A SAMPLE TAKEN FROM THE VERY FIRST CONCRETE OUT OF THE LOAD.

REINFORCED CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318–05).

2. REINFORCING STEEL SHALL BE DEFORMED BARS ASTM A–615 (GRADE 60).

3. THE COMPRESSIVE STRENGTH AT 28 DAYS OF ALL CAST IN PLACE CONCRETE SHALL BE 5000 PSI. MINIMUM

4. LAP SPLICES FOR REINFORCING BARS SHALL BE CLASS B IN ACCORDANCE WITH ACI 318–05, UNLESS NOTED OTHERWISE.

5. CLEAR CONCRETE COVER FOR REINFORCING STEEL:
   WALLS 2"

6. CONCRETE MATERIALS AND ADMIXTURES
   CEMENT: ASTM C150, TYPE I NORMAL PORTLAND TYPE.

   FINE AND COARSE AGGREGATES: ASTM C33 (NORMAL WEIGHT AGGREGATE); MATERIALS CONTAINING DELETERIOUS SUBSTANCES (SPALLING CAUSING)
   ARE NOT ACCEPTABLE.

   WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE.

   AIR ENTRAINMENT: ASTM C260; MASTER BUILDERS (BASF CONSTRUCTION CHEMICALS) MICRO–AIR, OR AS APPROVED.

   CHEMICAL: ASTM C494 TYPE A – WATER–REDUCING, TYPE B RETARDING, TYPE D – WATER–REDUCING AND RETARDING, TYPE F – WATER–REDUCING, HIGH RANGE, TYPE G – WATER–REDUCING, HIGH RANGE AND RETARDING; CONTAINING NO CHLORIDES; MASTER BUILDERS (BASF CONSTRUCTION CHEMICALS), W.R. GRACE, OR AS APPROVED.

   MEMBRANE CURING COMPOUND: ASTM C309, TYPE I–D, CLASS B, CLEAR WITH FUGITIVE DYE WHICH DISAPPEARS APPROXIMATELY 24 HOURS AFTER EXPOSURE TO SUNLIGHT; SPRAY–CURE SAFE CURE CLEAR, EUCLID CHEMICAL COMPANY KUREZ DR, OR AS APPROVED. WET CURING CONCRETE MAY BE SUBSTITUTED FOR CURING COMPOUND.

7. CONCRETE MIX
   CONCRETE PROPORTIONS: COMPLY WITH ACI 301, 4.2.

   PROVIDE CONCRETE TO THE FOLLOWING CRITERIA:
   COMPRESSIVE STRENGTH (7 DAY): 4,000 PSI.
   COMPRESSIVE STRENGTH (28 DAY): 5,000 PSI.
   WATER/CEMENT RATIO (MAXIMUM): 0.40 BY WEIGHT.
   AIR ENTRAINED: NOT APPLICABLE.

   SLUMP (MAXIMUM): 3 INCHES (DUE TO WATER).
   MID OR HIGH RANGE WATER REDUCER:
   ADD AT SITE TO INCREASE SLUMP
   TO 7 INCHES ±1 INCHES.

8. POLYURETHANE GROUT

   INSERT POLYURETHANE GROUT AT PERIMETER SURFACES OF BULKHEADS AND PLUGS.
   SIKA FIX HH HYDROPHILIC, OR EQUAL AS APPROVED BY ENGINEER. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INJECTION PORTS, MIXING, INJECTION, AND CURING.

ABBREVIATIONS

ABANDONED	ABAND
ASPHALT	ASPH
BACK OF CURB	BC
BASE LINE	BL
BASEMENT	BSMT
BEARING	BRG
BENCH MARK	BM
BOTTOM	BOT
CAST IRON	CI
CATCH BASIN	CB
CENTER LINE	CL
CENTER TO CENTER	C/C
CLEANOUT	CO
CLEAR	CLR
CONCRETE	CONC
CONTROL DENSITY FILL	CDF
CORRUGATED METAL PIPE	CMP
CROSS SECTION	X SECT
CURB INLET	CI
DEMOLITION	DEMO
DETAIL DET	DET
DIAMETER	DIA
DRAIN	DR
DROP MANHOLE	DMH
DUCTILE IRON	DI
EASEMENT	ESMT
EDGE OF PAVEMENT	EP
ELECTRIC (AL)	ELEC
ELEVATION	EL
ENGINEER	ENGR
EXISTING	EX, EXIST
FORCE MAIN	FM
GRAD (E) (ING)	GR
GROUND	GND
HEADWALL	HDWL
HORIZONTAL	HORIZ
INSIDE DIAMETER	ID
INVERT	INV
IRON PIPE	IP
LINEAR	LIN
LINEAR FOOT	LF
MANHOLE	MH
MAXIMUM	MAX
MECHANICAL JOINT	MJ
MINIMUM	MIN
MONUMENT	MON
NUMBER	#, NO
PK NAIL	PK
POUNDS PER SQUARE INCH	PPSI
PREFORMED PLASTIC ADHERED WATER STOP	PPAWS
PRESTRESSED CONCRETE	PS CONC
PROPERTY LINE	PL
QUANTITY	QTY
REINFORCE (D) (ING) (MENT)	REINF
REINFORCED CONCRETE	RCONC
REINFORCED CONCRETE PIPE	RCP
RIGHT OF WAY	ROW
SANITARY	SAN
SEWER	SWR
SQUARE FOOT	SQ FT
SQUARE YARD	SQ YD
STATION	STA
STONE	STN
STORM	STM
TELEPHONE	TELE
TEST BOING–XX (E.G. TB–1)	TB–XX
TO BE REMOVED	TBR
THICKNESS	THK
TYPICAL	TYP
UNDERGROUND	UND
UNLESS OTHERWISE NOTED	UON
VALVE BOX	VB
VERTICAL	VERT
WATER MAIN	WM

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GENERAL NOTES

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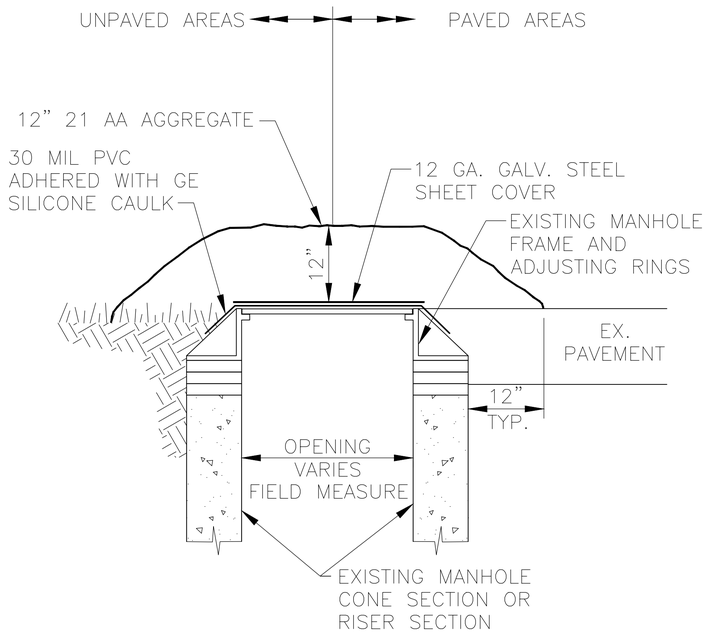
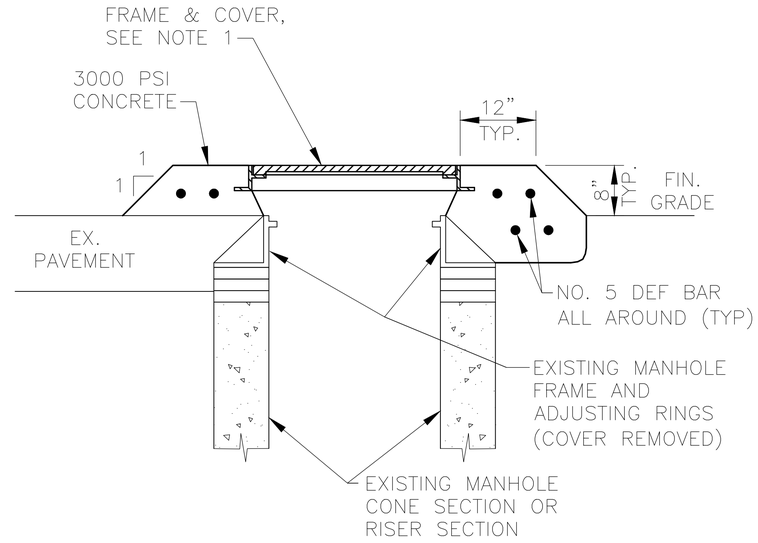


PROPOSED

1/2" = 1'-0"

MANHOLE CAP DETAIL "A"

NOTE 1:
EAST JORDAN IRON WORKS CAST IRON
FRAME W/ COMPOSITE COVER, 32" OPENING,
COM 1480 ASY



PROPOSED

1/2" = 1'-0"

MANHOLE CAP DETAIL "B"

REV.	ISSUED DATE	DESCRIPTION

KEYPLAN

ARCADIS

ARCADIS G&M OF MICHIGAN, LLC
28550 CABOT DRIVE SUITE 500
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Tel: 248-994-2240 Fax: 248-994-2241
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RACER TRUST
BUICK CITY SITE
FLINT, MICHIGAN

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED
MICKI MAKI	–	ELC	ELC
SHEET TITLE: MANHOLE CAP DETAILS		TASK/PHASE NUMBER: 01301	DRAWN BY: JAM
		PROJECT NUMBER: B0064410.2013	DRAWING NUMBER: 4

Bulkhead Installation Photos

Example of rebar support preparation with bulkhead back form frame to left.

Example of sealed back form and rebar supports installed.

Viewing form, rebar with water stop and flow through pipe from the front. Front side of form to be installed.

Bulkhead Installation Photos

Example of grouted, sealed concrete with form removed. Flow through pipe still in place while additional curing occurs.

Example of sealed front form exterior with supports.

Plug Installation Photos

Example of plug on 24” line with flow through pipe still in place

Two sealed plugs in laterals.

Physical Disconnection Photos

Example of disconnected line. Sewer line excavated, disconnected and temporary plugged prior to sealing

Sandbags installed inside pipe to block flow while bonding agent cures.

Water stop and adhesive added to back side of plug.

Physical Disconnection Photos

Plug with additional bonding agent applied after adding grout and water stop

Filled remaining section of pipe and disconnect void with concrete prior to backfilling.

Filled Manhole

Bentonite placed in manhole prior to filling with concrete.

Manhole partially filled with concrete. Small pours completed to eliminate voids.

Filled manhole (on left) to grade, prior to finishing. Former cover on right.

Attachment B

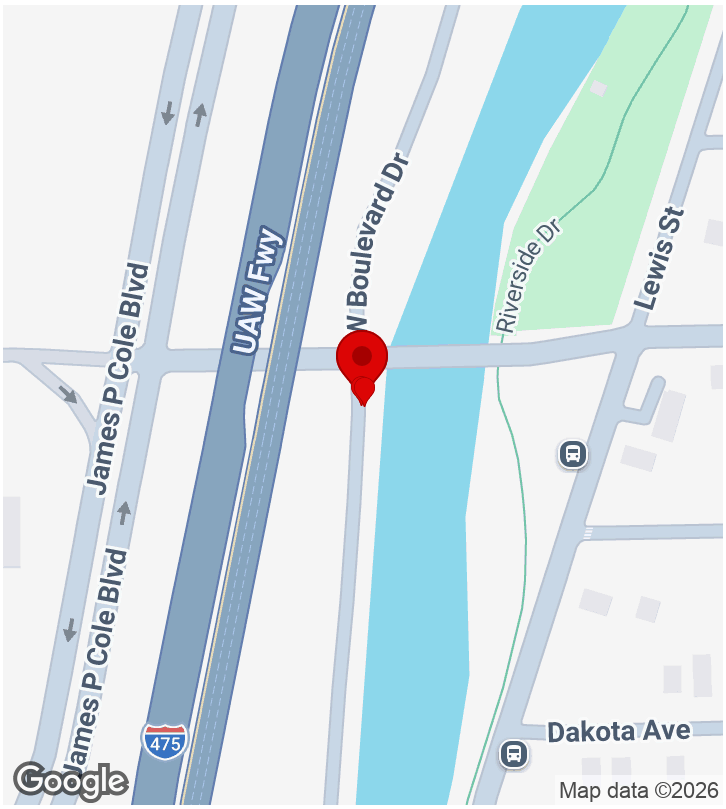
Example Fulcrum Field Form

RACER Buick City ACO Boom Inspections

Contact: Madison Olender, Tiffany Linder

RACER Buick City

2/10/2026, 4:51:07 PM UTC



CREATED

2/10/2026, 4:46:11 PM UTC
by Donald Richmond

UPDATED

2/10/2026, 4:51:07 PM UTC
by Donald Richmond

LOCATION

43.042688, -83.675945

General Information

Project	RACER Buick City
Date	February 10, 2026
Time	11:46
Inspection Personnel	Donald Richmond
Reason for Inspection	Precipitation – ACO Requirement

Outfall Inspections (2 Items)

Outfall Inspections - 1. Outfall 5

Boom Location	Outfall 5
Percent Coverage	0
Condition	CL = Clear: Water at outfall looks like the rest of the river water, FR = Frozen: Outfall area is frozen
Maintenance	None
Additional Notes	

Photo

Outfall Inspections - 2. Outfall 3

Boom Location	Outfall 3
Percent Coverage	8
Condition	EO = Emulsified Oil: Oil is white or cream colored either floating on surface or soluble in water, FO = Foam: Collection of minute bubbles forming a frothy mass, FR = Frozen: Outfall area is frozen, TR = Trash: Trash either coming out of discharge point or within booms at river
Maintenance	Absorbent booms need to be replaced when outfall area thaws

Additional Notes

Photo

Appendix D

February 11, 2026 EGLE and RACER Trust Meeting Slides

ARCADIS

Monthly Meeting

RACER Trust – Buick City Site

February 11, 2026

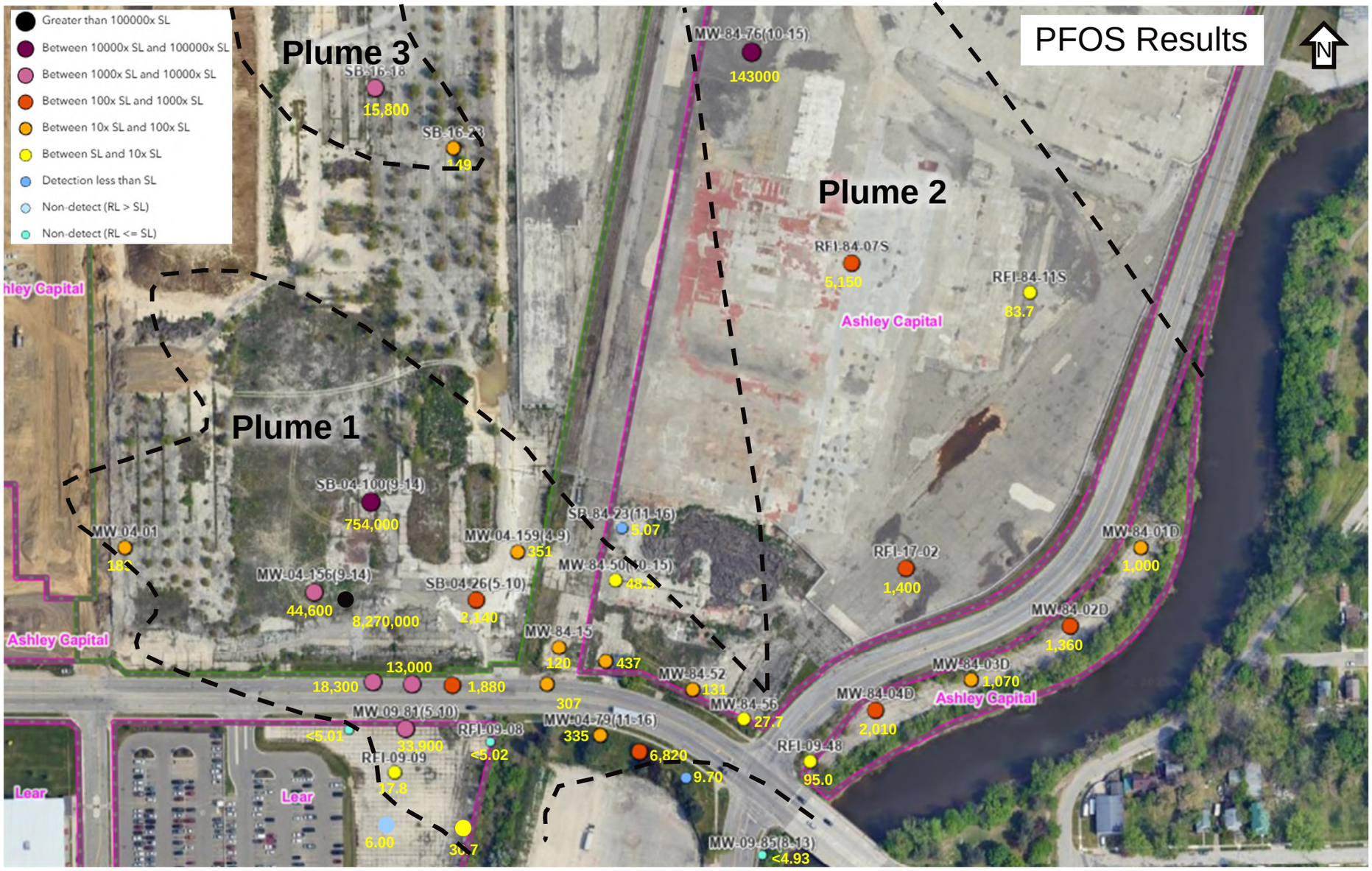
Agenda

1. PFAS Groundwater Sampling Update
2. Building 44 Trench Design Update
3. Hamilton Ave Remedy 2026 Schedule
4. ICAP Update
5. Open Discussion
6. Action Item/EGLE Call Schedule
7. Path Forward

PFAS Groundwater Sampling Update

PFAS Groundwater Sampling – Shallow Well Data

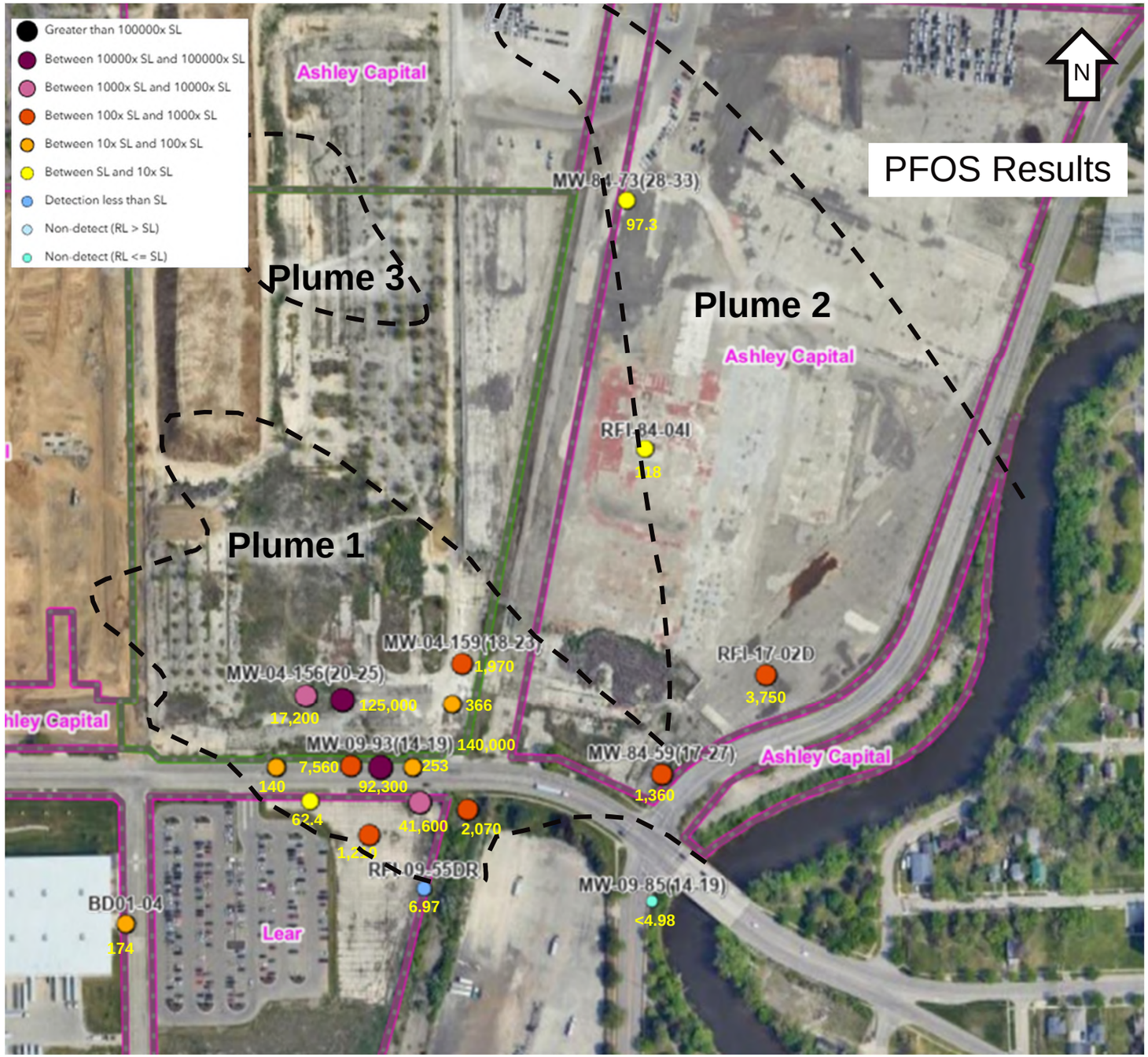
- 37 shallow monitoring wells (total depth < 20 feet) in three PFAS plume areas were sampled November 17–24, 2025
- The three apparent plumes north of Hamilton Ave are the Building 44 area (Plume 1), at the north end of Building 40 (Plume 2), and at Building 16 (Plume 3).



Preliminary Draft – For Discussion Purposes Only

PFAS Groundwater Sampling – Deep Well Data

- 20 deep monitoring wells (total depth > 20 feet)



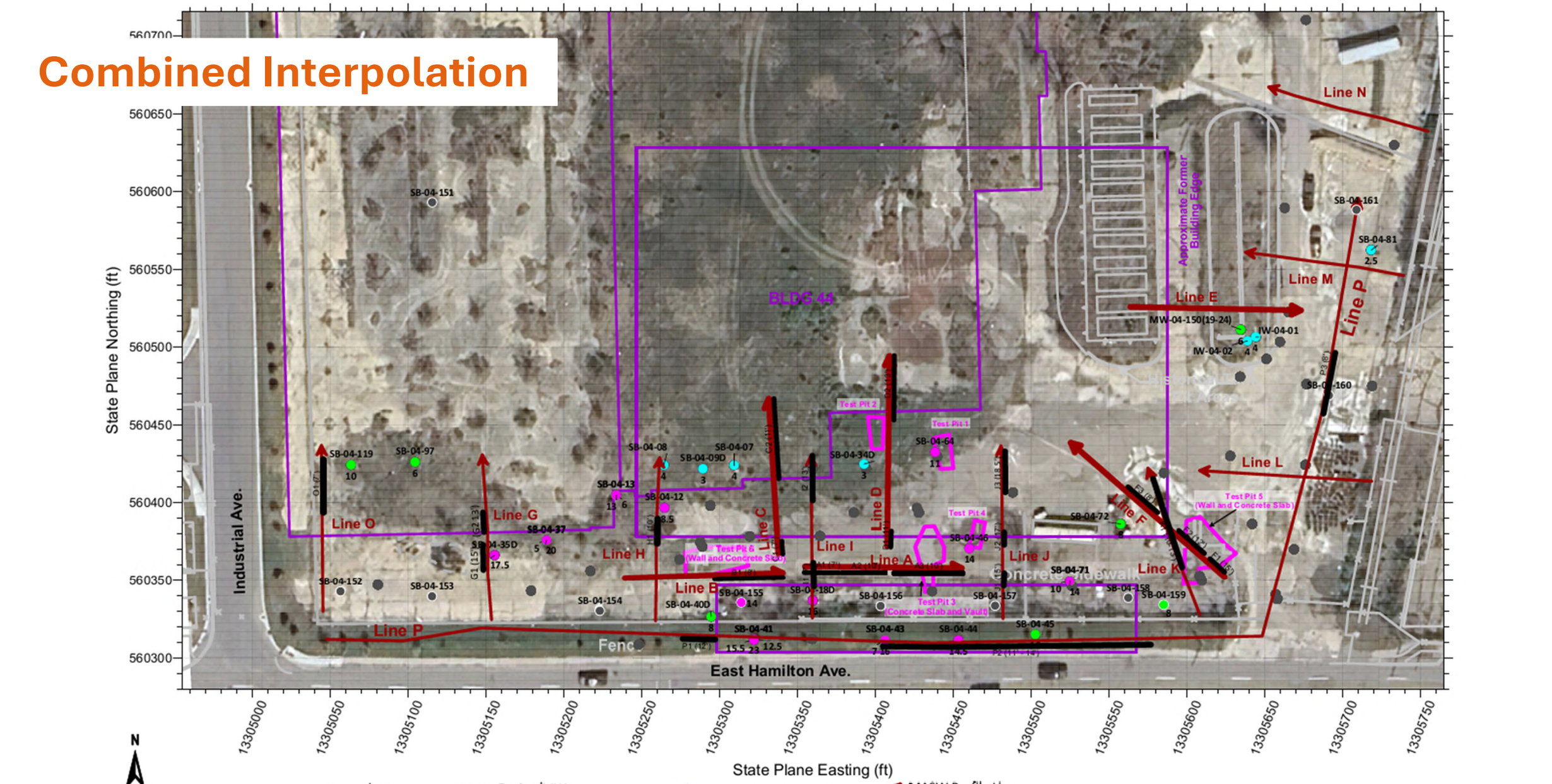
Preliminary Draft – For Discussion Purposes Only

Preliminary Draft – For Discussion Purposes Only

Building 44 Trench Design Update

Geophysics Update

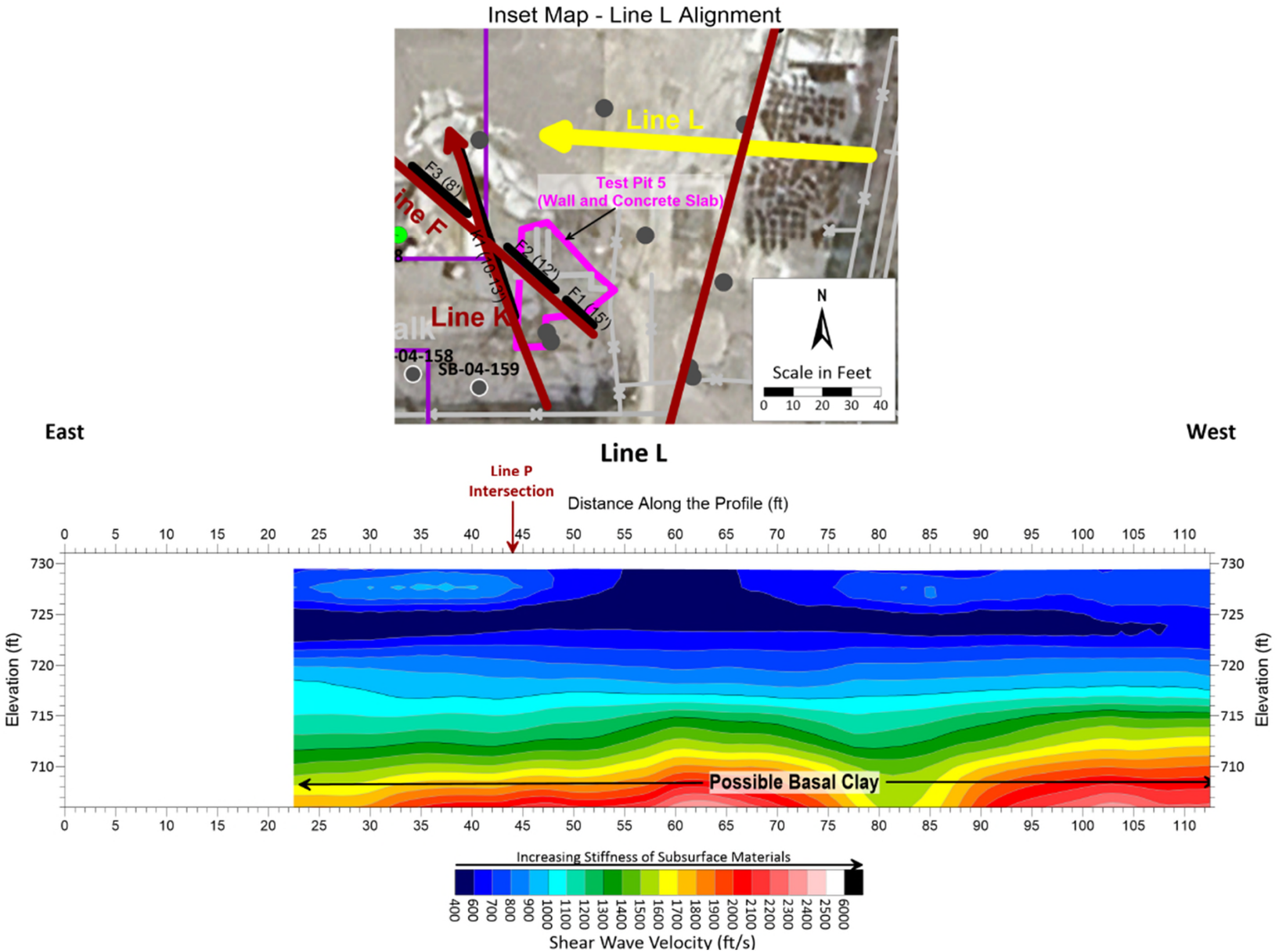
Combined Interpolation



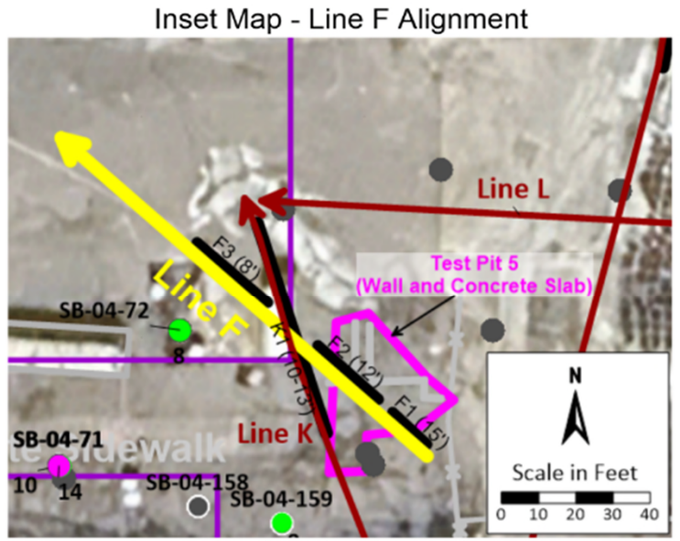
Michigan South State Plane Coordinates, NAD83 Datum, International Feet

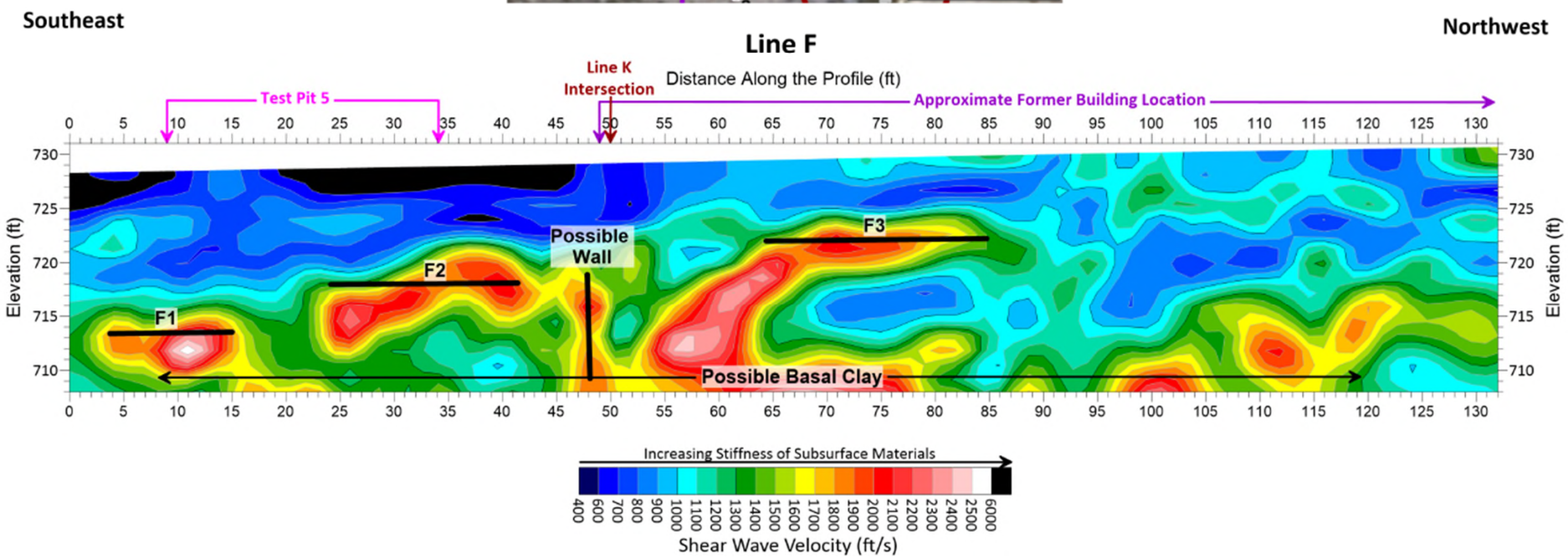
**Note - 2025 confirmation borings are outlined in white

Example Clean Transect

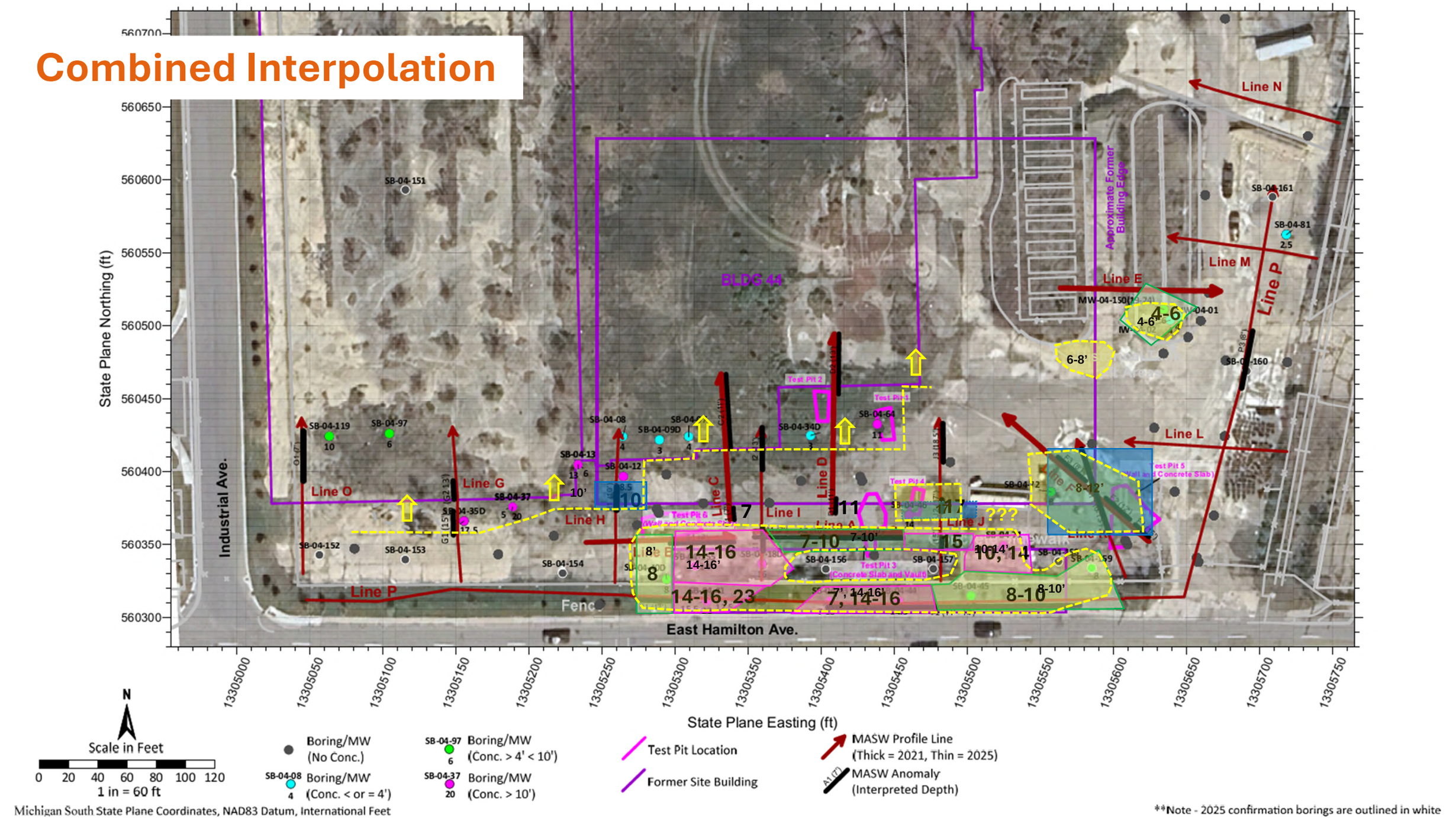


Example Response from Various Fill





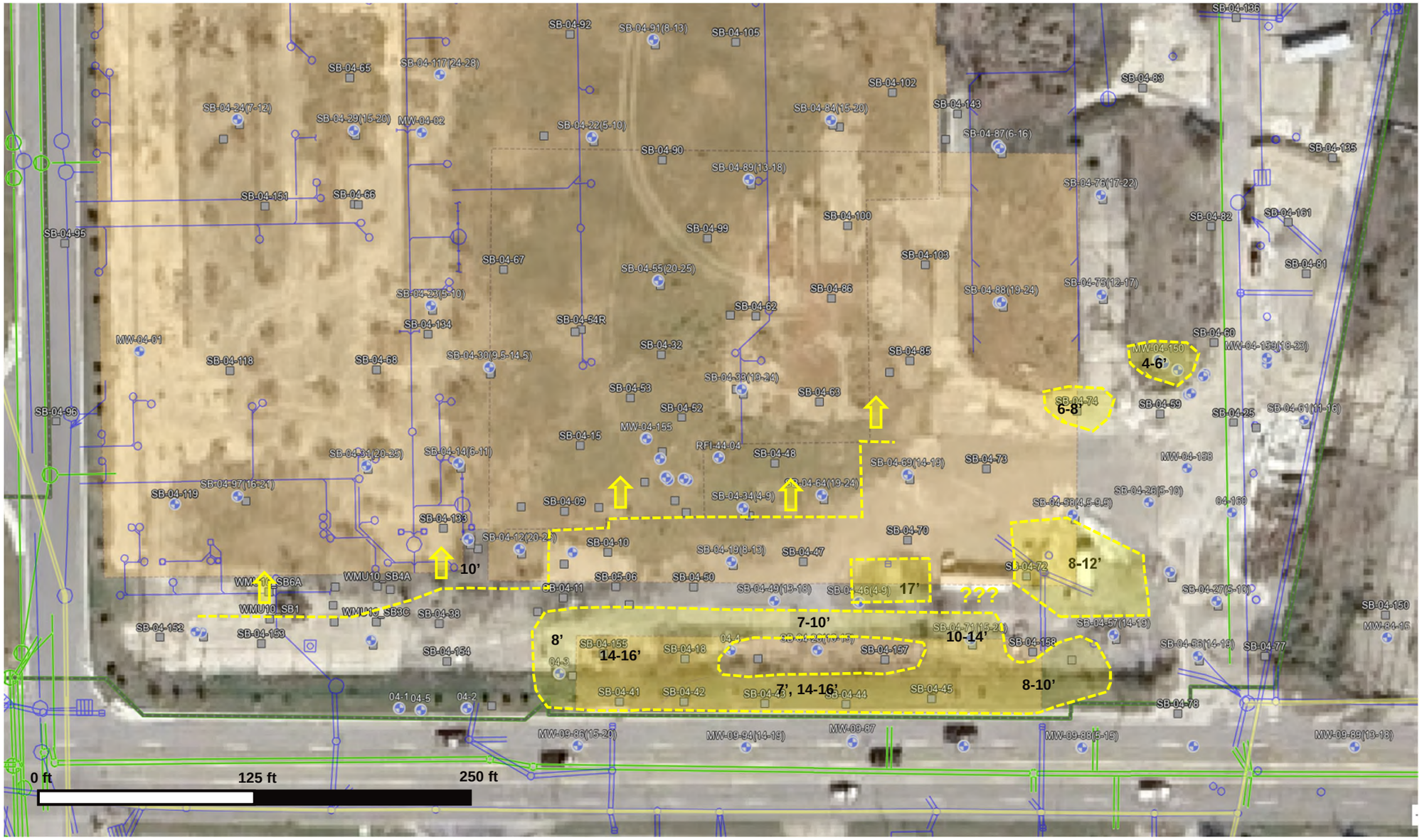
Combined Interpolation



Michigan South State Plane Coordinates, NAD83 Datum, International Feet

**Note - 2025 confirmation borings are outlined in white

Extent of Subsurface Concrete



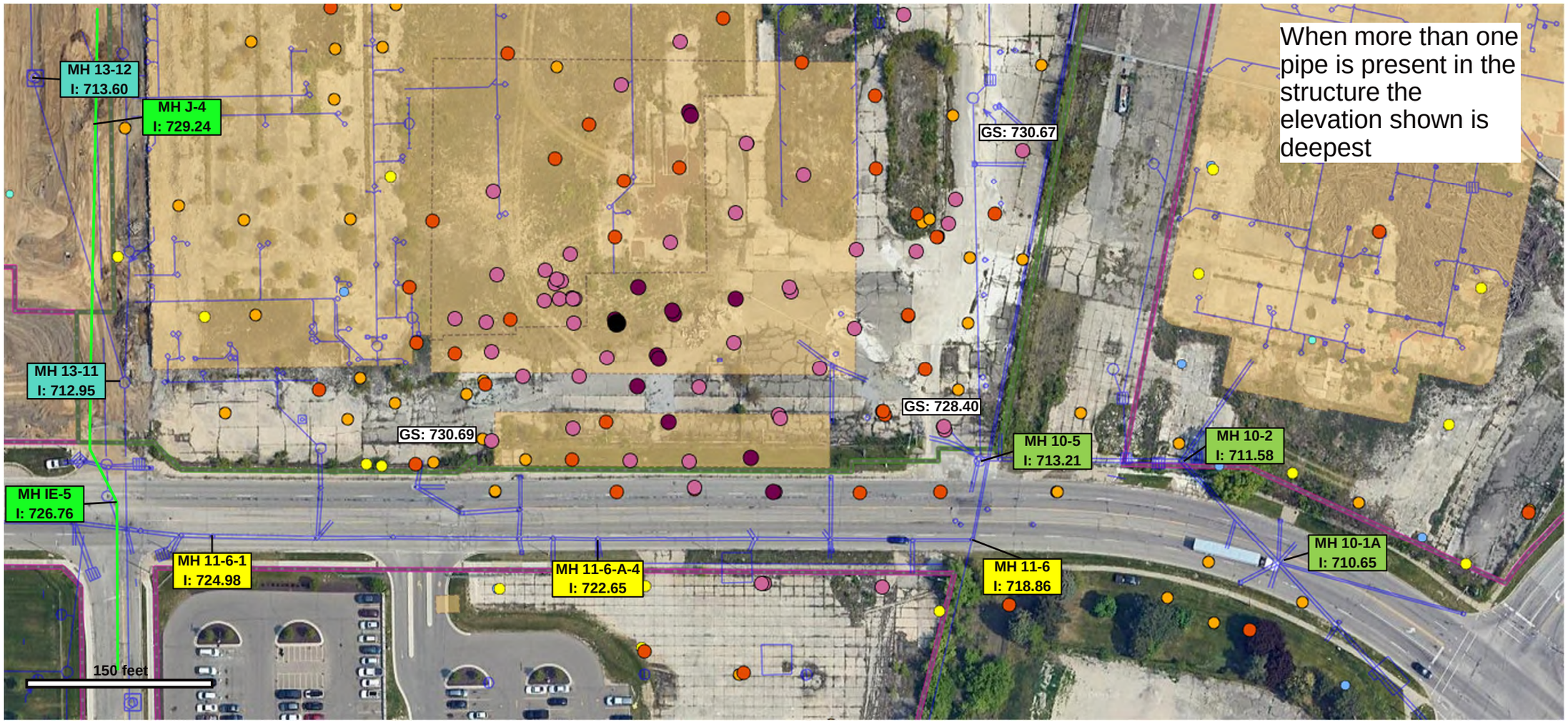
Groundwater Modeling

Groundwater Model

Objective for the Hamilton Ave remedy is to eliminate, to extent practical, Site related PFAS impacted groundwater from discharging to storm sewers (specifically Outfalls 011, 010, and 013), sanitary sewers, and stop further migration to the Flint River.

- Developed a groundwater model calibrated to Site specific conditions to be used as a tool to support the design and optimization of the Hamilton Ave remedy with respect to the objectives.
- Initial modeled scenarios were to ensure the remedy was capable of achieving the stated objective.
- Next steps are to evaluate different alternatives for trench alignments, groundwater elevations, sump spacings, etc. to optimize the design

Area Overview and Storm Sewer Elevations



Groundwater Model – Grid and Boundary Conditions

Boundary Conditions

- Drains – Hamilton area storm sewers
- General Head boundary – Flint River
- No Flow boundaries
- Flow in storm sewer on Hamilton Ave = 3.6 gpm (Outfall 11)

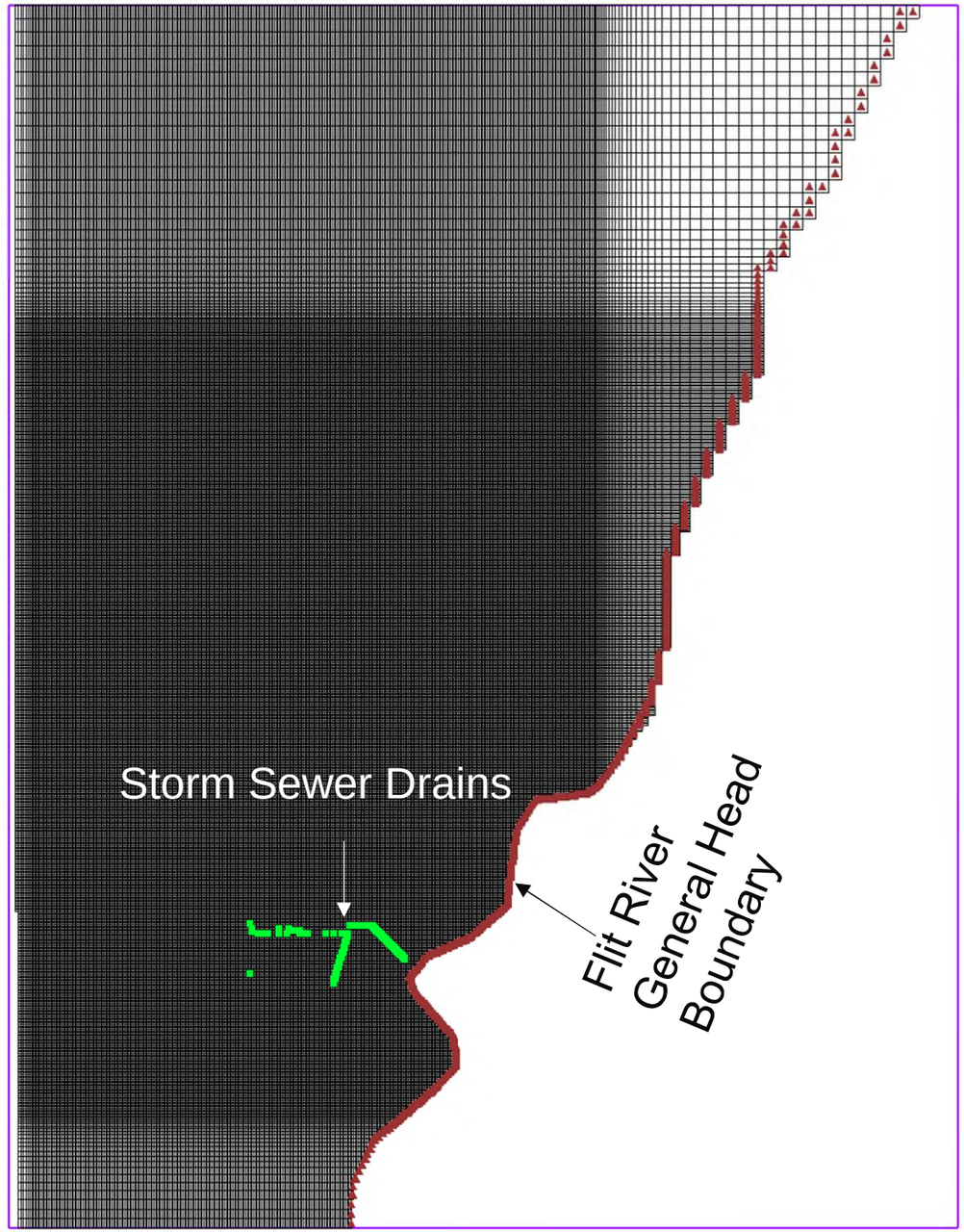
Collection Trench

- Conductance: 336 ft^2/day

Model

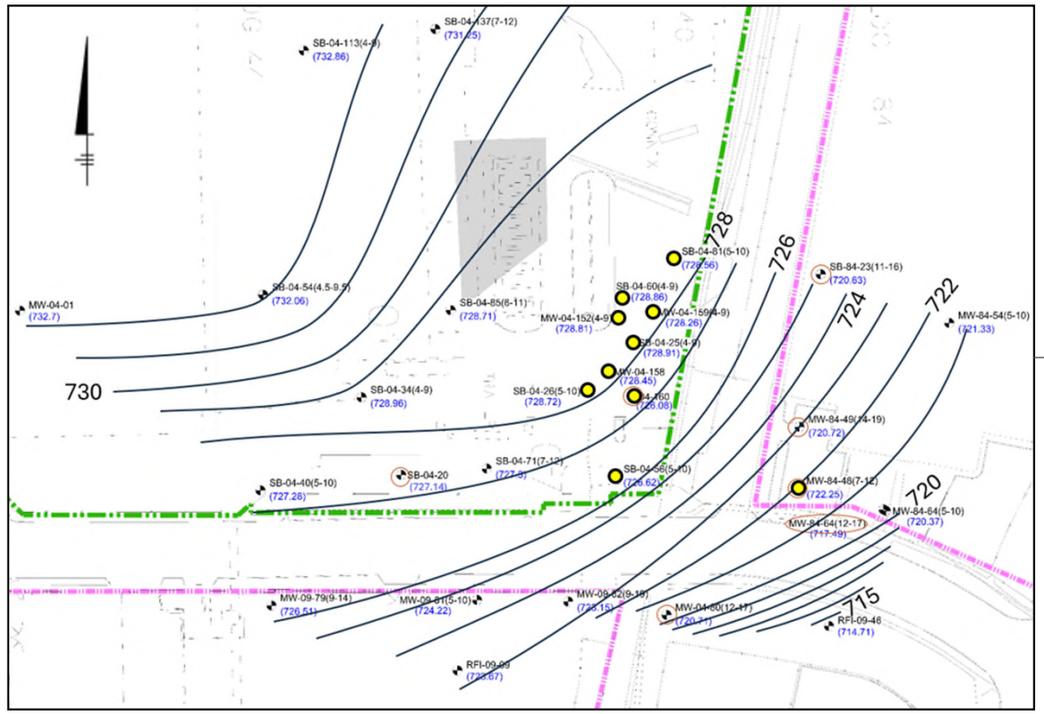
- Grid refine cells = 10 X 10 ft, Max grid cells = 100 X 100 ft
- Three Layers:

Layer	Depth	Conductivity (K, ft/d)
Shallow Fill/Sands	0 - 10 ft bgs	4.8
Till/Clay/Silt/Intermittent Sands	10 - 20 ft/bgs	1.5
Glacial Till	20 - 30 ft bgs	0.0005

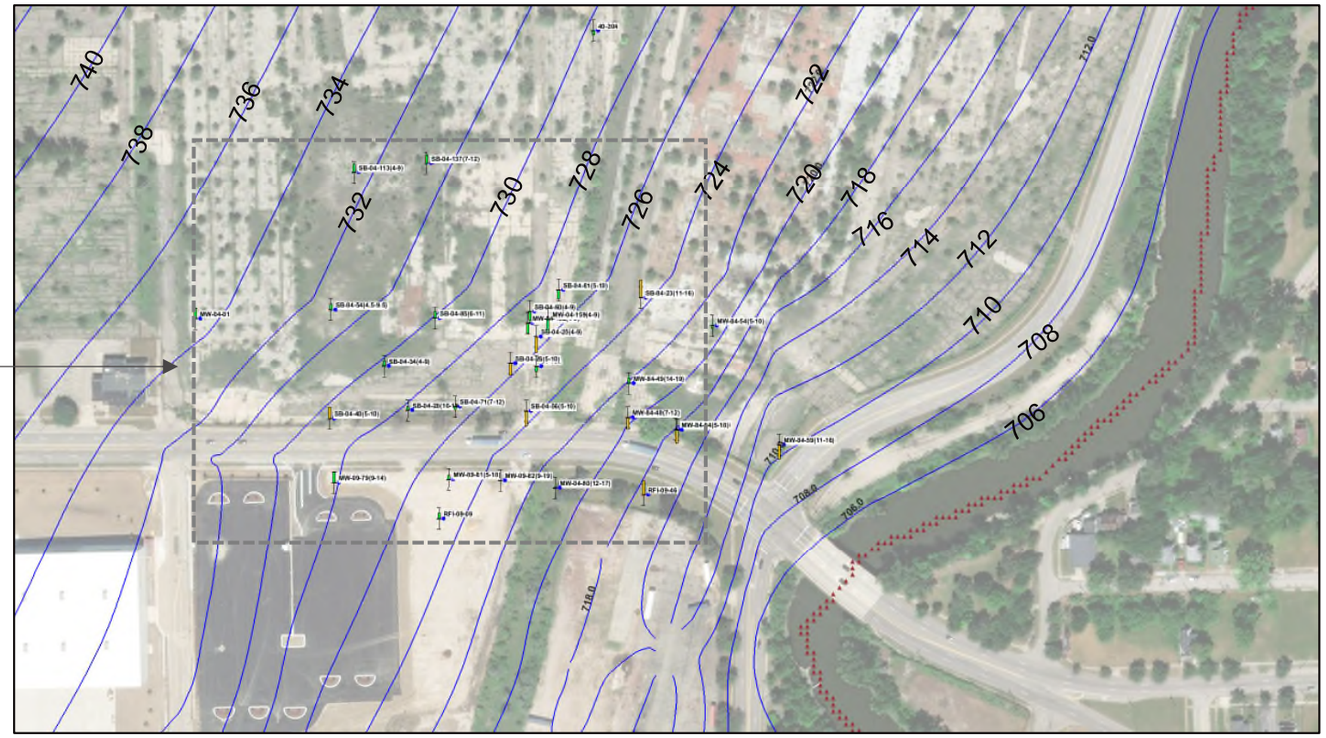


Groundwater Model Calibration / Steady State (Current) Condition

Measured Groundwater Contours



Model Calibrated Groundwater Contours



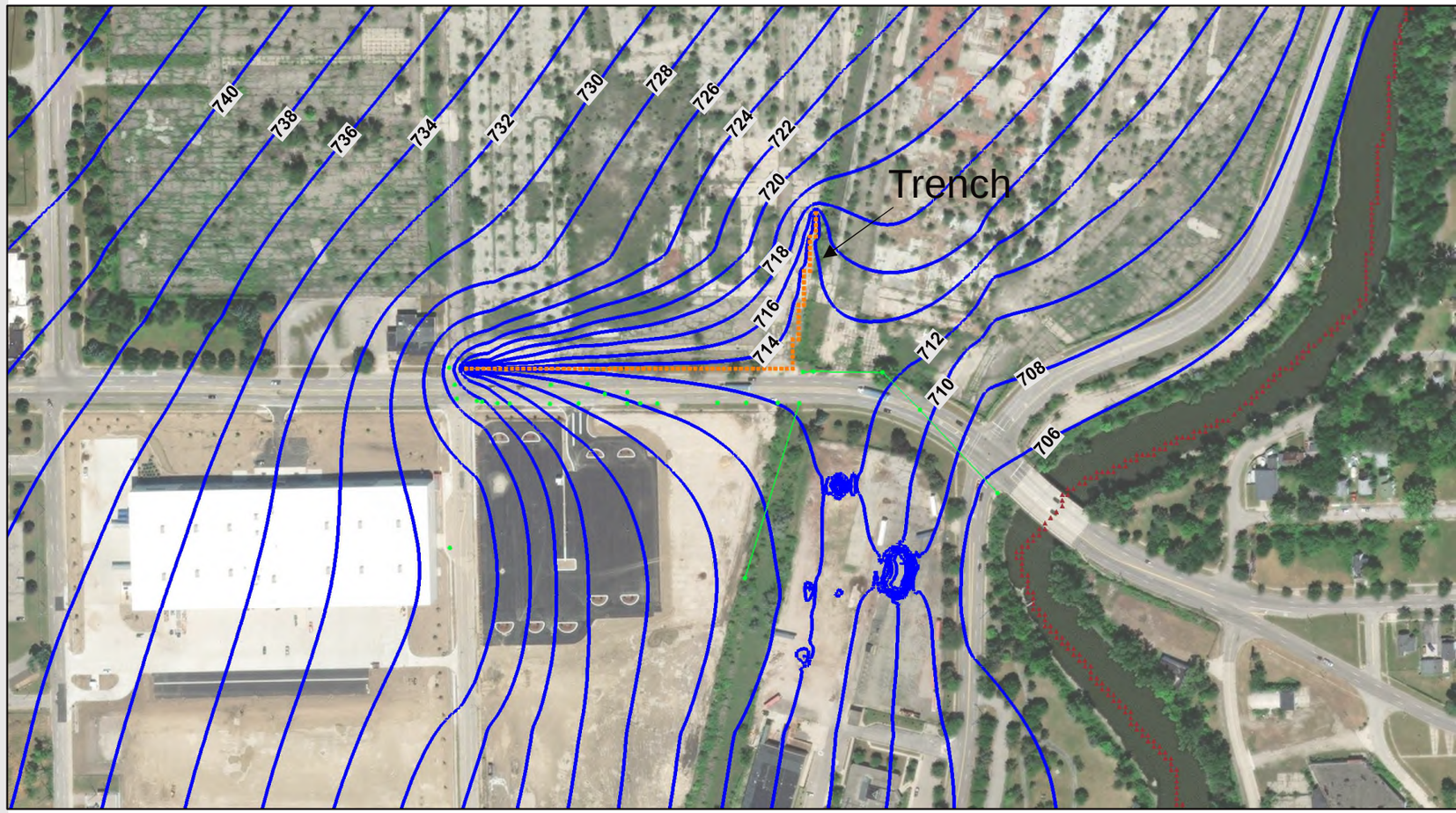
For Calibrated Model

- Recharge rate based on land cover: 0.6 in/yr – 3.8 in/yr

Extended Continuous Trench

Groundwater elevation at Steady State

- Steady State Pumping Rate: 15.4 GPM
- Trench bottom elevation = 714 ft msl (southwest end) and 713 ft msl

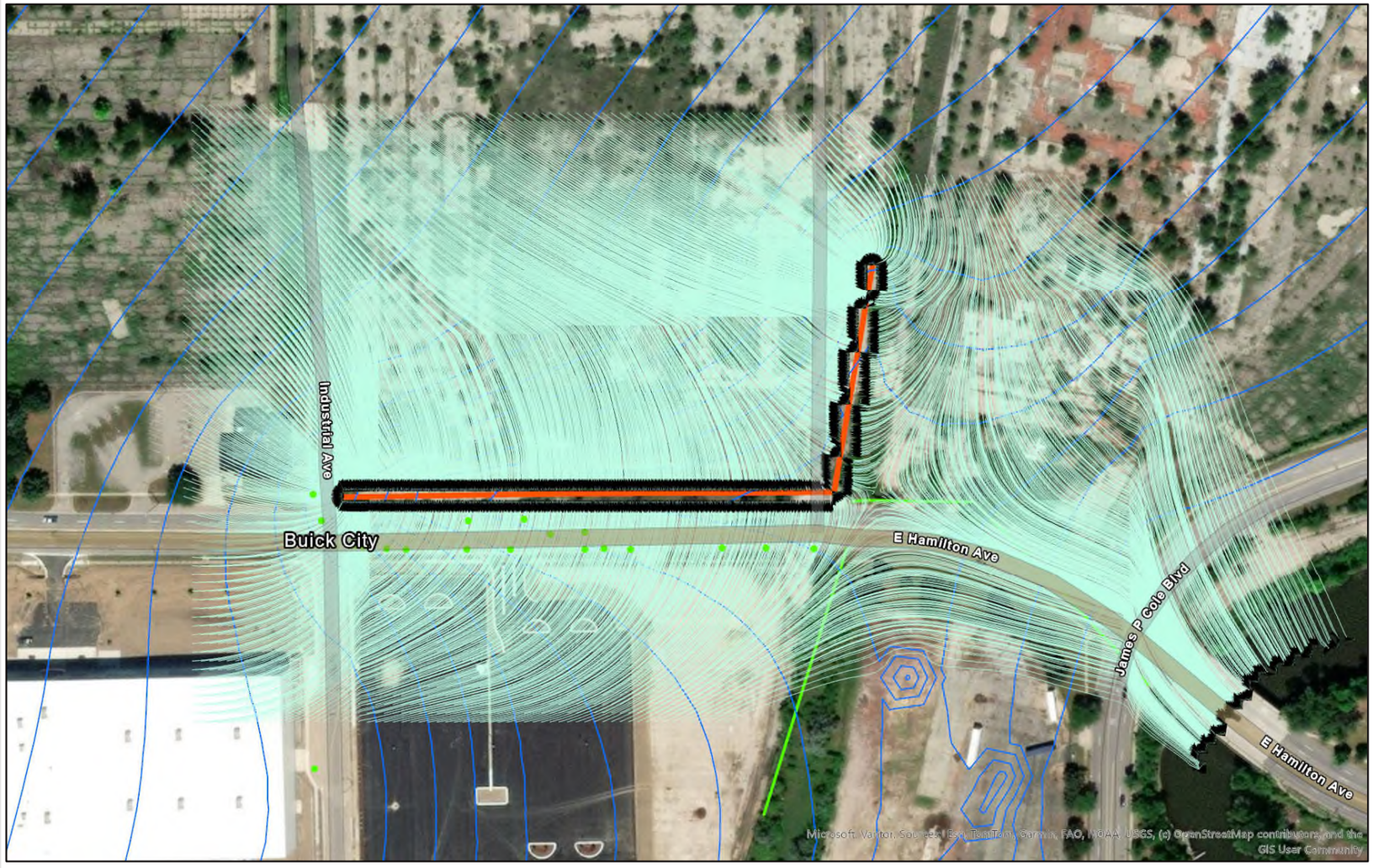


Extended Continuous Trench cont.

Projected aquifer drawdown at Steady State

Extended Continuous Trench cont.

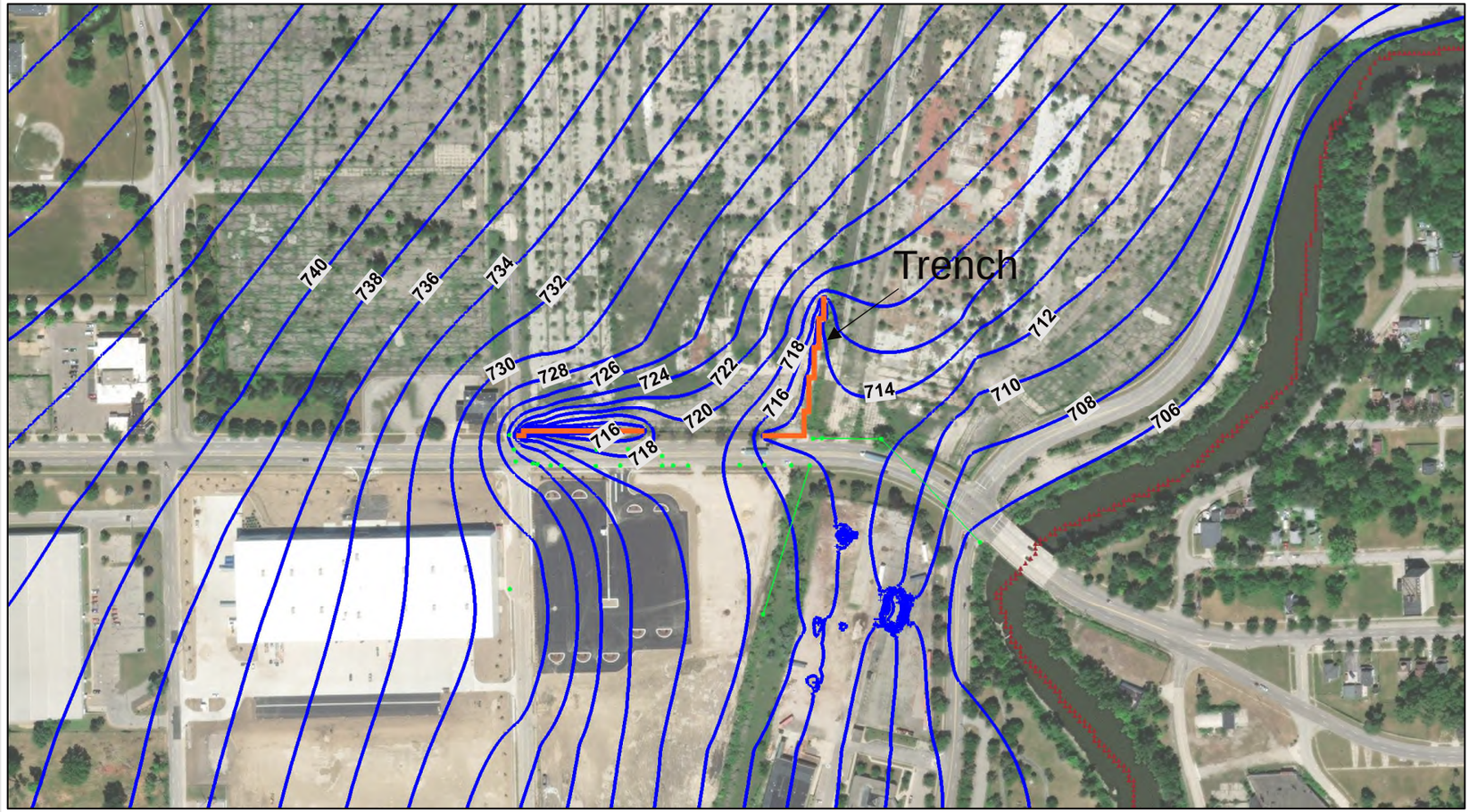
Groundwater Capture



Extended Continuous Trench with Break

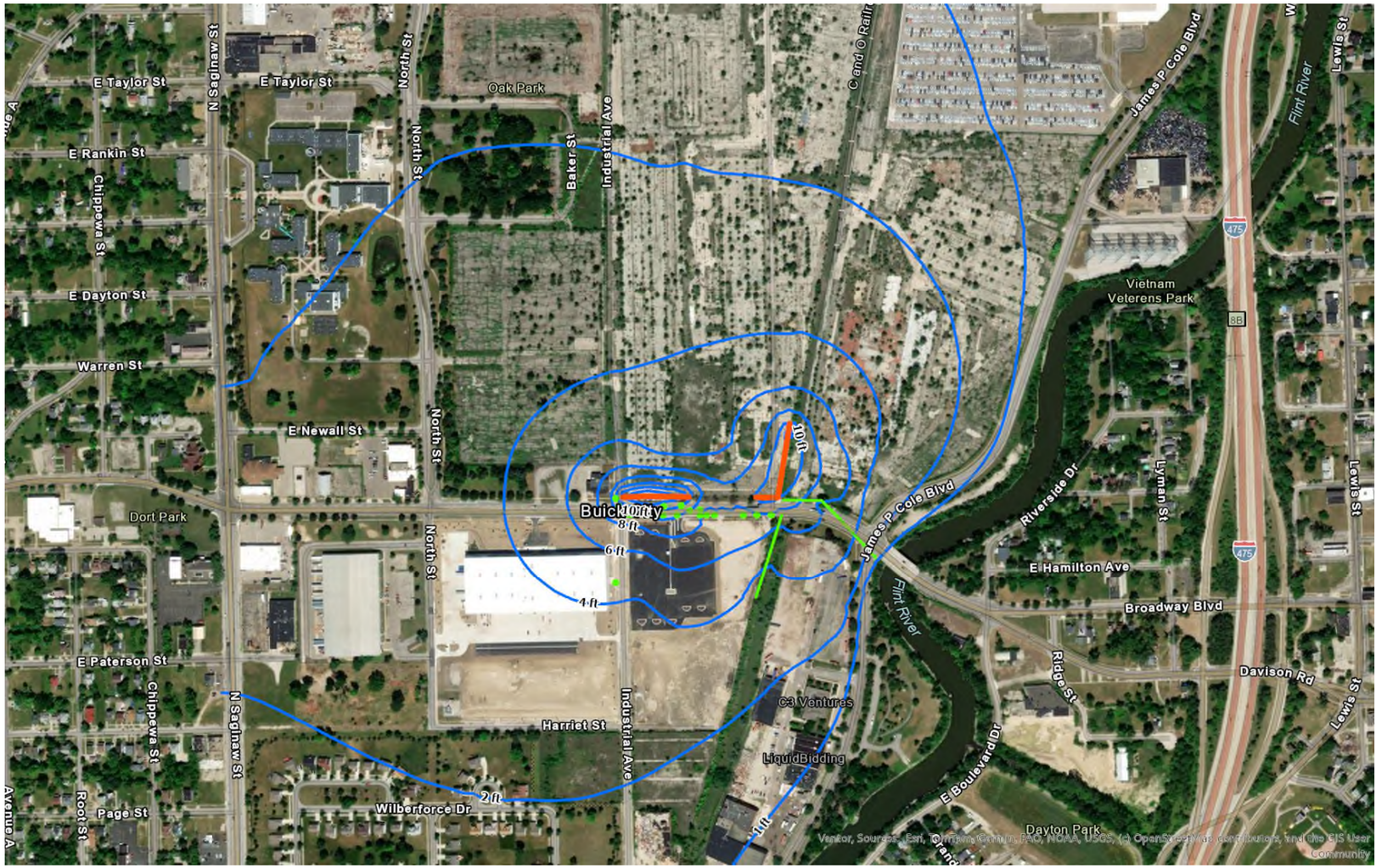
Groundwater Elevation at Steady State

- Steady State Pumping Rate: 15.6 GPM
- Trench bot elevation = 714 ft amsl (southwest end) and 713 ft amsl



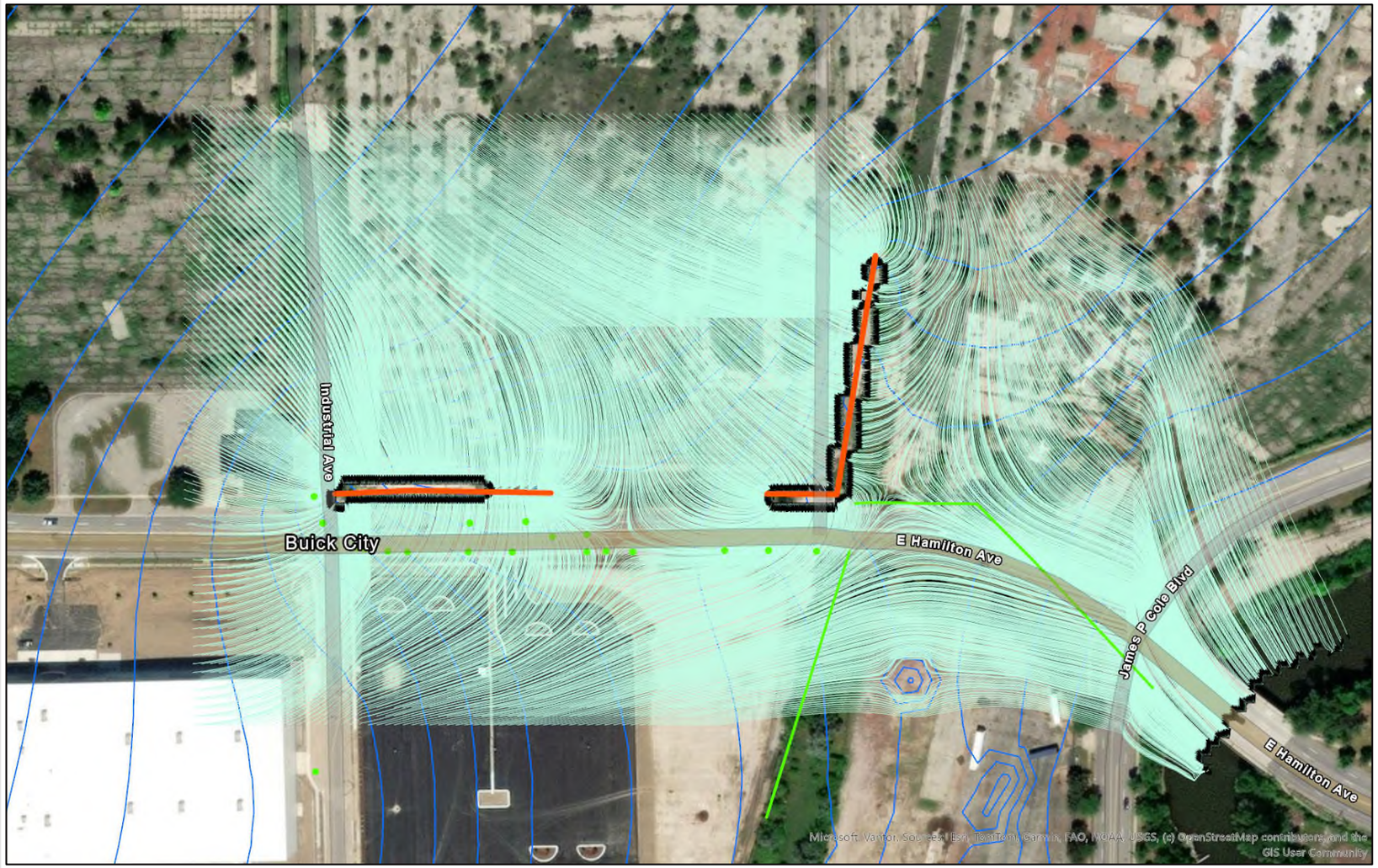
Extended Continuous Trench with Break cont.

Projected aquifer drawdown at Steady State



Extended Continuous Trench with Break cont.

Groundwater Capture



Trench Design Update

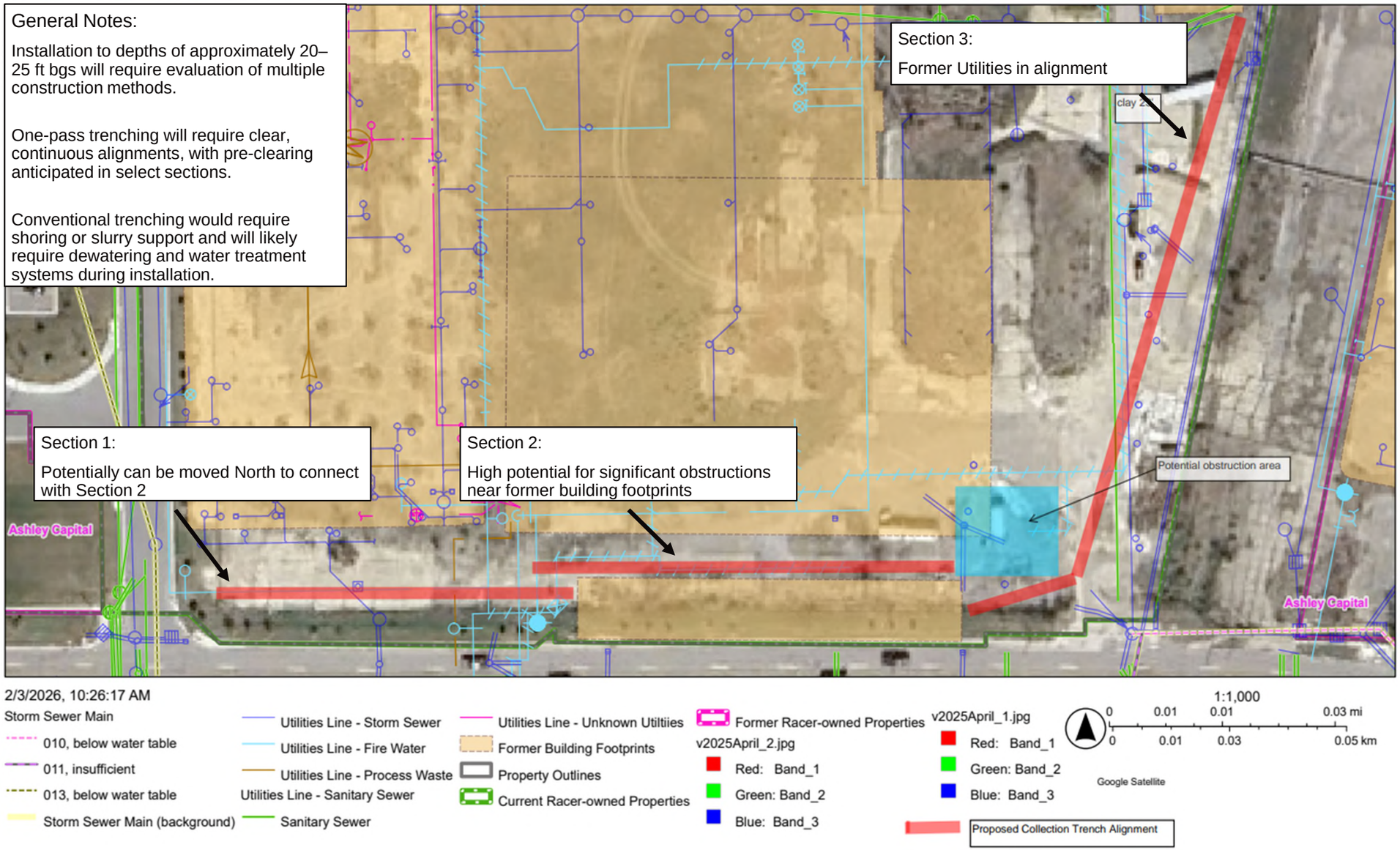
Potential Trench Alignment

General Notes:

Installation to depths of approximately 20–25 ft bgs will require evaluation of multiple construction methods.

One-pass trenching will require clear, continuous alignments, with pre-clearing anticipated in select sections.

Conventional trenching would require shoring or slurry support and will likely require dewatering and water treatment systems during installation.



Trenching Options

"Draft" Remedial Alternatives Evaluation					
Collection Trench Alternatives	**Alternative Descriptions**	**Implementability**	**GW Extraction System Compatability**	**Installation Schedule**	**Cost Effectiveness**
One Pass Trencher		Pros - Maintains width of trench - Reduced groundwater treatment required - Work completed from surface – reduce infiltration - Less intrusive Cons - Can only handle up to 1 ft diameter rock - Concrete at that size with rebar will not work - Obstructions need to be removed before hand	Collection/extraction piping can be installed with one pass, but extraction/cleanout locations are installed at trench start/finish, potentially requiring multiple offset trenches on longer stretches	In appropriate site settings, has faster installation than conventional install. Pre-clearing requirements may significantly increase schedule	Typically least cost with clear alignment. Higher mobilization fees Higher cost risk due to obstructions at the site
Conventional Excavator / bio-slurry		Pros - Maintain width of trench - Reduced groundwater treatment required - Work completed from surface – reduce infiltration - Less intrusive - Can remove obstructions from surface – but blind Cons - Pathways to lose or dilute slurry – former utilities/ pathways - Slurry can be difficult to manage – breakdown in solution / spills - Requires solidification of material removed prior to disposal	Collection/extraction piping can be installed with bio-slurry, systems are sunk/set and backfilled around	Multiple stage trench install (slurry during excavation, then backfilling) opposed to one-pass reduces production rate	Lower mobilization, however requires batch plant for slurry. Excavator based approach controls cost risk compared to one-pass
Conventional Excavator / shoring		Pros - Obstructions removed real time - Trench boxes can be utilized to limit excavation width Cons - Increased dewatering needs - Due to depth trench boxes would need to be utilized which leads to accessibility / safety concerns.	Collection/extraction piping can be installed with shored trench install, systems are sunk/set and backfilled around in wet, or can be set manually in the dry	Installation and extraction of shoring increases schedule compared to other systems, depending on the depth of trench. May have lower schedules in shallower trenches where modular systems or trench boxes can be used progressively along trench	Lower mobilization, however requires shoring installation to complete. Excavator based approach controls cost risk compared to one-pass, modular systems may be used in shallower trench areas to reduce costs. Obstructions may impede shoring installation without pre-clearing.

Trench Design Path Forward

Constructability

- Complete engineering cost estimate and evaluate schedule for each construction method
- Identify confidence levels and risks
- Select construction approach and alignment that manages risk and optimizes cost

GW Model

- Use model to confirm constructable alignment meets the objective
- Optimize water level requirement to meet the objective

ICAP Update

ICAP Update

- Establish baseline PFOS loading from the DPs to be used to calculate mass reduction goals
  - At DPs where no modifications have been completed, baseline and current mass loading are the same
  - At DPs where modifications have been completed since PFOS characterization began, baseline mass loading is calculated with PFOS concentrations and flow rates prior to modifications
  - At Outfalls 011 and 013, modifications completed with the intent of reducing PFOS loading resulted in increases due to a rise in groundwater elevation and increased groundwater infiltration. Therefore, baseline loading is established using the most recent concentration and flow data even though modifications have been completed
- Provide corrective action plan and implementation schedule for the top four DPs identified in the DPP Report, Outfall 011, 013, 010, and 002
  - Proposed corrective action for Outfall 011, 013, and 010 is the Hamilton Ave Remedy.
  - Proposed corrective action for Outfall 002 is to repair/line broken sewer main where groundwater leakage has been observed following sewer re-route and lining activities

ICAP Update

- Implementation of proposed interim corrective actions are anticipated to meet the loading reduction goals required by the ACO:
  - By April 30, 2029, reduce cumulative PFOS loadings in discharges from the Site at a minimum of approximately ninety-five percent (95%) from High Priority DPs or approximately fifty percent (50%) from the entire Site
- The plug and bulkhead inspection work plan (reviewed with EGLE September 2025) will be included as an Appendix to the ICAP for EGLE review and approval.
- A separate O&M plan will be submitted to EGLE within 30 days of construction of the Hamilton Ave Remedy

ICAP Update

- ACO requires, by April 30, 2029, eliminating, to the extent practical, DP 003 and 005 from having the following physical properties: turbidity, color, oil films, floating solids, foams, settleable solids, or deposits
  - Inspections at DP 003 and 005 completed in the accordance with the ACO following precipitation events have included observations of some of these physical properties.
  - While this may have been investigated historically – the recent focus has been PFOS characterization and associated modifications
  - ICAP will include a commitment to evaluate current conditions with respect to these physical properties to understand if there are Site related contributions.
  - If Site contributions are identified, corrective actions will be proposed / implemented to meet the ACO schedule

Hamilton Ave Remedy 2026 Schedule

High Level Schedule for Hamilton Ave Remedy

Task	Begin	End
Collection Trench Basis of Design	Jan 5	Mar 31
RSSCT Lab Work	Jan 19	Feb 20
RSSCT Data Review and Report	Feb 2	Mar 6
Interim Measures Work Plan / Preliminary Basis of Design	Mar 1	Jun 15
Field Pilot Study Design and WP	Mar 2	Mar 30
Field Pilot Study Coordination	Mar 16	Apr 17
Field Pilot Study Operation	Apr 20	Jun 19
Public Meeting	July or August?	
Interim Measures Work Plan / Basis of Design Refinement	July 1	Aug 31
Design / RFPs	Aug 1	Oct 31
Contractor Bidding	Nov 1	Nov 30
Long Lead Procurement	Dec 1	Dec 31

Schedule subject to change based on actual duration of RSSCT and field pilot, contractor availability, agency review/approval, etc.

Open Discussion

Action Item/EGLE Call Schedule

- Tracer Study – Presented to EGLE on June 11, 2025 call – Submitted Final Report to EGLE on February 3, 2026
- DRC Discussion – RACER continuing to revise DRCs
- Bulkheading/Plugging Summary – working on updating the work plan to reflect the slides presented to EGLE
- Vapor Intrusion Work Plan – Submitted to EGLE for review on December 12, 2025 – comments/questions?
- Update on Trench Design/Pilot Study Schedule
- Discussion to Review ICAP?
- Any other discussions that need to be scheduled separately from our monthly calls?

Path Forward

February 2026

- Revised Building 44 Well Abandonment Work Plan Submittal
- Revised 2025 Groundwater PFAS Sampling Plan Submittal
- Revised Building 44 Pre-Design Investigation Work Plan Submittal
- Continue Hamilton Ave PFAS remedy RSSCT Activities and Reporting
- Submittal of Semi-Annual Report to EGLE including summary of STCM sampling events and results from June-November 2025
- Submittal of TSCA 761.61 Risk Based Plan to USEPA
- Continue preparation of Interim Corrective Action Plan (ICAP) to be submitted in February to EGLE per ACO
- Submittal of Interim Corrective Action Plan (ICAP) per ACO to EGLE – Due February 28, 2026
- Hamilton Ave pre-design scope/planning
- Continue revising DRCs

March 2026

- Begin implementation of Vapor Intrusion Work Plan once approved by EGLE
- 2025 PFAS Groundwater Sampling Summary Report Submittal
- Monitoring Well Abandonment Summary Report Submittal
- PDI Summary Report Submittal
- James P. Cole Sampling Summary Report Submittal
- Bulkhead Inspection Work Plan Submittal
- Sampling of Manhole E along Hamilton and STCM 1Q Sampling Event
- Hamilton Ave pre-design scope/planning
- Continue revising the DRC

Thank you

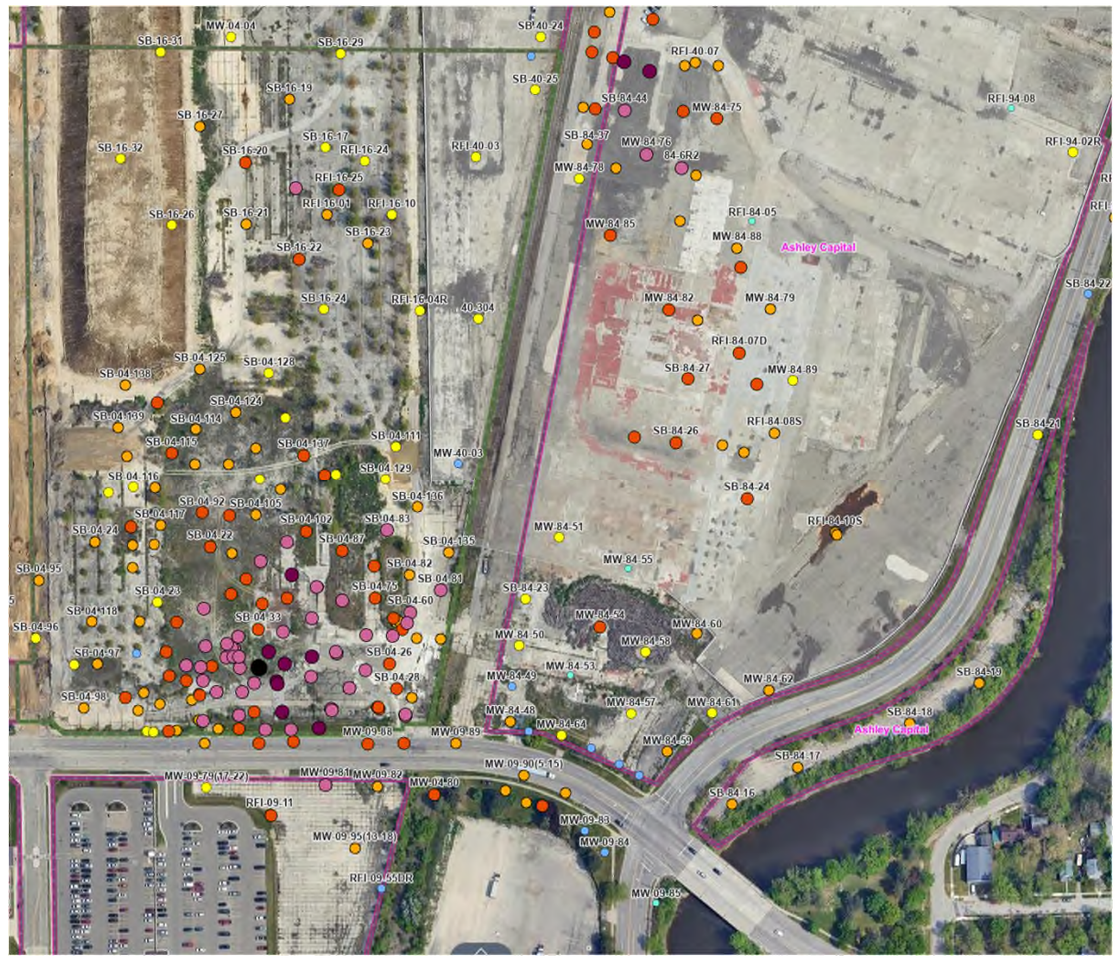
Arcadis. Improving quality of life.

Other

Monitoring Result Historical Comparison – PFOS

November 2025

Pre-2025



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