

# Supplemental Site Investigation Work Plan

Bay Towel

501 S. Adams Street

Green Bay, WI 54301

BRRTS # 02-05-237064

Project 21-1121

October 29, 2024

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## 1.0 INTRODUCTION

On July 18, 2024, the Wisconsin Department of Natural Resources (DNR) provided a Response to a Technical Assistance Request for the most recent “Site Investigation Report” submittal on June 21, 2024. Based on the current state of the case, the site investigation is considered incomplete and additional site investigation is required, as recommended by the Wisconsin DNR. The *Response to Technical Assistance Request* letter from the Wisconsin DNR dated July 18, 2024, summarizes these recommendations.

This Supplemental Site Investigation Work Plan (SIWP) describes the proposed additional site investigation activities. Form 4400-237 and a Wisconsin DNR review fee of \$700 have been included with this Supplemental SIWP submittal.

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## 1.2 Site Description

The Site is located at 501 S. Adams Street in Green Bay, Wisconsin. The Site is approximately 1.33 acres and was formerly occupied by a large dry cleaning building and parking lot and is located on the south corner of S. Adams Street and Chicago Street. The Site is currently used as a gravel parking lot.

The Site is bounded on the southeast and southwest by vacant lots, to the northwest by S. Adams Street and a fire station, and to the northeast by Chicago Street, a commercial building, and residences.

The parcel is zoned as D1 (Downtown One) by the City of Green Bay.

The site is in Brown County in the City of Green Bay, Wisconsin at the NW  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 36, T24N, R20E. The Wisconsin Transverse Mercator coordinates for the release location from the Wisconsin DNR Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web are 677549 X and 450271 Y.

The site elevation is approximately 590 feet above mean sea level (amsl) and the ground surface slopes slightly to the north.

A Site Location Map is included as Figure 1. The Site layout is displayed on Figure 2.

## 2.0 SITE BACKGROUND

The former Site building was constructed in 1953, with initial dry cleaning operations utilizing Stoddard solvents, a mineral spirits-based solvent. Blueprints of the original building plans have been reviewed, and the solvent was originally stored in three (3) underground storage tanks (USTs) that were located immediately adjacent to the former building's south wall.

According to John Butz, the President of Bay Towel, the Stoddard solvent (specifically, "TruLeen") tanks were no longer used in the early 1960s. They were replaced with a "perc" (tetrachloroethene – PCE) product in one (1) aboveground storage tank (AST) located immediately adjacent to the building's southeast corner. Drycleaning solvent was piped into the building through the wall and used in machines located in the adjacent room. The three (3) Stoddard solvent USTs were removed in approximately 1988.

Drycleaning operations ceased at the Site in 1989, following a building fire. The building interior was gutted of offices and most interior walls, but the building remained functional until demolition occurred immediately before the soil remediation activities in November 2016. The Site building remained vacant for many years following the fire, other than the use for storage.

Prior to construction of the dry-cleaning structure in 1953, the Site was developed with residences, and was later occupied by a post office. Remnants of previous structures were encountered during the remedial excavations. Following the drycleaning building demolition and soil remediation in 2016 and 2017, the Site has no structures and serves as a small parking lot.

All previous site investigation and remedial activity documentation have been previously submitted to the Wisconsin DNR. The following provides a summary of the investigation and remedial activities completed at the Site.

Previous soil remediation activities were performed in June 2003 by Arcadis, Inc., and included partial excavation of soil from two (2) locations. The area of greatest contamination beneath the building was excavated to a depth of five (5) feet below ground surface (bgs) to install an array of pipes for the addition of biological additives. The indoor excavation removed 180 tons of soil beneath the building. In addition, 225 tons of soil were excavated outside in the east parking lot. The outdoor soil was directly excavated and discarded at a nearby Subtitle D landfill located in Hilbert, Wisconsin. The soil beneath the building was excavated and discarded as hazardous waste at a facility in Canada. Soil samples from the perimeter of both excavations were obtained for laboratory analysis after excavation in 2003.

Following the indoor excavation, four (4) horizontal piping arrays were installed in trenches dug to a depth of approximately 5 feet below grade. The trenches were backfilled with perforated piping designed to allow the addition of liquid treatments of carbon (typically molasses) at a depth of 5 feet to help enhance the degradation of PCE.

A solution of molasses was added on multiple occasions from June 2003 to January 2007, with demonstrated success in reducing the concentration of PCE in groundwater. However, increases were observed in degradation products cis-1,2-dichloroethene (cis-DCE) and vinyl chloride (VC) at well MW-1, located beneath the building within the greatest area of soil and groundwater contamination.

Case closure was denied by the Wisconsin DNR in 2009. Following closure denial, the addition of emulsified vegetable oil was completed in the existing four (4) piping arrays from June 2013 through November 2013, followed by more groundwater monitoring.

Beginning in 2016, work began to treat and remove contaminated soil from under the Site building. The building was demolished to allow for additional soil mass to be removed. Remediation activities conducted from November 2016 through March 2017 included the treatment of soil with Fenton's reagent, Bioavailable Absorbent Media (BAM), and a large soil excavation that removed 3,150 tons of soil. In addition, 292 tons of contaminated concrete were hauled to the landfill for disposal.

Following the completion of the excavation in January 2017, groundwater was sampled from all on-site monitoring wells and piezometer wells on three occasions, May 5, August 10, and November 15, 2017.

Additional soil sampling determined that additional excavation was required at the site in 2018. The additional excavation removed 2,790 tons of contaminated soil from the site and was hauled to the landfill for disposal. Following completion of the excavation, groundwater was sampled from all site monitoring wells in January 2019.

In preparation for an additional excavation in 2020, pre-remedial excavation borings were also completed in June and August 2019, to determine the horizontal and vertical extent of contamination at the site and determine the excavation limits before the 2020 excavation. Soil was retained using hydraulic push and split spoon methods of drilling, with continuous soil samples retained to the borehole base, at a maximum depth of 50 feet below grade. Pre-remedial excavation groundwater samples were collected from all site wells in June 2019.

The 2020 remedial excavation was completed up to 30 feet bgs and BAM was applied to the base of the excavation. Approximately 3,648.79 tons of direct haul soil and 1,602 tons of treated soil were hauled to the landfill for disposal.

Between 2003 and 2020, approximately 11,596 tons of contaminated soils and 292 tons of contaminated concrete have been removed from the Site. This corresponds to an estimated removal of approximately 5,089 pounds of PCE from the Site.

The backfill of the excavation consisted of clear stone followed by gravel with sand and ¾ inch stone at the surface.

Following the 2020 remedial excavation, eight (8) soil borings were installed at the Site and completed as NR 141-compliant groundwater monitoring wells, including six (6) new monitoring wells (SMW-1R, SMW-3R, MW-14, MW-15, MW-16, and MW-17) and two (2) new piezometers (PZ-3R and PZ-5) from 15 to 40 feet below grade. The new monitoring wells were developed, and sampled in February/March 2021, May 2021, and October 2021.

Previous soil and groundwater results are described in the Remedial Action Documentation Report, Groundwater Monitoring Status Report, and PFAS Sampling Report submitted in October 2021, and the SIWP submitted in April 2022. The most recent report submittal was the Site Investigation Report submitted in June 2024, and includes all the soil, groundwater, and vapor results for the Site at the time of this Supplemental SIWP.

## 2.1 Detected Contaminants

Contaminants detected at this site include PCE, trichloroethene (TCE), cis-1,2-Dichloroethene (cis-DCE), trans-1,2-Dichloroethene (trans-DCE), VC, methylene chloride, naphthalene, toluene, xylenes, and trimethylbenzenes. PCE is the dry cleaning solvent that was used at the site, and when it degrades, associated biodegradation daughter products are generated, including TCE, cis-DCE, trans-DCE, and VC.

Stoddard solvent was also used as a dry cleaning solvent at the site until approximately 1973. Stoddard is a petroleum-based dry-cleaning chemical and is responsible for the elevated detections of several typical petroleum constituents at some locations in the soil at the site.

## 2.2 Previous Findings

### 2.2.1 Geology

The Site is generally flat-lying, with an elevation of approximately 590 feet amsl (Figure 1). Most of the Site gently slopes to the northwest toward the intersection of Adams Street and Chicago Street.

Based on regional information, the bedrock consists of Ordovician-age dolomite and is present approximately within the top 50 feet of material, with clay typically present above the bedrock. However, bedrock was not encountered during the site investigation, with boreholes advanced to a maximum depth of 48 feet below grade.

Site investigation and soil excavation activities reveal that in most areas, 4 to 35 feet of fill is present, consisting of 1 foot of sandy gravel fill and 3 to 5 feet of sandy silt fill. Deeper fill from the previous soil excavation activities consists of clear stone up to 35 feet below grade. Native deposits consist of silty sand to sandy silt till and river floodplain deposits, extending to approximately 10 feet below grade. Deeper materials consist of dense clay till extending to approximately 35 feet below grade, and the deepest borings detected deeper clayey silt till extending to the total investigation depth of 48 feet below grade.

### 2.2.2 Hydrogeology

#### Hydraulic Head

The depth to water ranges from approximately 2 to 7 feet below grade, and the groundwater flow direction is generally toward the northwest, toward the Fox River, located approximately 600 feet downgradient from the Site. The groundwater flow direction mirrors the general surface topography. Measurements from the piezometers show that the depth to deeper groundwater at the Site ranges from approximately 4 to 14 feet below grade and flows to the northwest.

The groundwater level at the Site, as well as perched water levels and volumes, will likely fluctuate throughout the year based on variations in rainfall, snowmelt, evaporation, surface run-off, and other related hydrogeologic factors. The water level measurements presented in this report are the levels that were measured at the time of Fehr Graham's field activities. Groundwater level measurements and potentiometric surface maps are detailed in the "Site Investigation Report" submitted on June 21, 2024.

#### Hydraulic Gradient

The December 2023 groundwater flow direction is to the northwest, towards the Fox River. The hydraulic gradient was calculated to be 0.0111 feet/foot. Hydraulic gradient calculations are detailed in the "Site Investigation Report" submitted on June 21, 2024.

### Groundwater Velocity Calculations

An accurate estimate of groundwater velocity can be calculated using Darcy's Law. Darcy's law is an equation that describes groundwater movement in aquifers based on three variables: horizontal hydraulic conductivity, horizontal hydraulic gradient, and effective porosity. The calculated groundwater velocity at the site is 0.0015 feet/day. The estimated groundwater velocity at the site is considered low as it is  $\leq 1$  foot per day. Groundwater velocity calculations are detailed in the "Site Investigation Report" submitted on June 21, 2024.

### Vertical Hydraulic Gradient

Monitoring wells have been constructed at different depths within the unconsolidated sediments to assess the vertical component of flow and the vertical migration of groundwater contamination. Based on the vertical hydraulic gradient calculations, vertical flow gradients are generally downward at the Site. Vertical hydraulic gradient calculations are detailed in the "Site Investigation Report" submitted on June 21, 2024.

### 2.2.3 Additional Soil Investigation Results

Residual contaminant levels (RCLs) are established in Wisconsin Administrative Code (WAC) Chapter NR 720.10 and 720.12. For non-industrial sites, two (2) soil standards, the non-industrial direct contact (DC) and potential leach to groundwater, have been established for substances of public health and welfare concern. The non-industrial DC RCL represents the soil concentration that poses a human health hazard if in direct contact with the contaminated soil via ingestion or inhalation. The potential leach to groundwater RCL represents the soil concentration where contaminants have the potential to leach from soil to groundwater at concentrations above state groundwater standards. Summaries of the NR 720 Groundwater Pathway RCL exceedances are included below. There were no exceedances above the NR 720 Non-Industrial DC RCLs.

Historical soil chemistry results, the most recent soil chemistry results, and laboratory reports are included in the "Site Investigation Report" submitted on June 21, 2024. A brief summary of the current soil chemistry results is:

- » PCE: 21 borings from the 2022 and 2023 shallow soil investigation exhibited NR 720 groundwater pathway exceedances for PCE ranging between 33.9 micrograms/kilogram (ug/kg) and 8,650 milligrams/kilogram (mg/kg), above the groundwater pathway RCL of 4.50 ug/kg. In deeper soil at the southern and eastern limits of the 2020 remedial soil excavation, higher concentrations of PCE, up to 359,000 ug/kg, remain from 20 to 30 feet below grade.
- » TCE: 10 borings from the 2022 and 2023 shallow soil investigation exhibited groundwater pathway exceedances for TCE ranging between 31.6 ug/kg and 896 ug/kg, above the groundwater pathway RCL of 3.60 ug/kg. In deeper soil at the southern and eastern limits of the 2020 remedial soil excavation, higher concentrations of TCE, up to 4,850 ug/kg, remain from 20 to 30 feet below grade.
- » Cis-DCE: Only two (2) borings from the 2022 and 2023 shallow soil investigation, exhibited an exceedance for cis-DCE above the groundwater pathway RCL of 41.2 ug/kg. The exceedances were at 5 feet bgs for B-134 and B-135 at levels of 241 ug/kg and 102 ug/kg, respectively.

### 2.2.4 Additional CVOC Groundwater Investigation Results

Public health groundwater quality standards are established in WAC Chapter NR 140.10 while public welfare groundwater quality standards are established in WAC Chapter NR 140.12. Two (2) water quality



standards, the Enforcement Standard (ES) and the Preventive Action Limit (PAL) have been established for substances of public health and welfare concern. The ES represents the concentration that requires the implementation of response measures, which typically consist of remedial action or additional investigations. The PAL represents a lower concentration, which typically requires an assessment of the potential for concentrations to exceed the ES and the implementation of responses to prevent an exceedance of the ES.

The most recent groundwater chemistry results from December 2023 indicate that CVOC contamination remains present in groundwater from the following wells at levels above the NR 140 ES for the following dry-cleaning chemicals:

- » PCE: Four (4) wells exceeded NR 140 ES of 5.0 micrograms/liter (ug/L) with results ranging from 17.3 ug/L to 14,000 ug/L.
- » TCE: Three (3) wells exceeded NR 140 ES of 5.0 ug/L with results ranging from 8.4 ug/L to 5,040 ug/L.
- » Cis-DCE: Four (4) wells exceeded NR 140 ES of 70 ug/L with results ranging from 143 ug/L to 3,050 ug/L.
- » VC: (NR 140 ES of 0.2 ug/L): Seven (7) wells exceeded NR 140 ES of 0.2 ug/L with results ranging from 2.0 ug/L to 191 ug/L.

In addition, groundwater from the following wells exceeds the NR 140 PALs, but not the NR 140 ES, for the following chemicals:

- » PCE: Four (4) wells exceeded NR 140 PAL of 0.5 ug/L with results ranging from 0.98 ug/L to 3.2 ug/L.
- » TCE: Four (4) wells exceeded NR 140 PAL of 0.5 ug/L with results ranging from 0.73 ug/L to 4.7 ug/L.
- » Cis-DCE: Four (4) wells exceeded NR 140 PAL of 7 ug/L with results ranging from 15.4 ug/L to 59.9 ug/L.

Historical groundwater chemistry results, the most recent groundwater chemistry results, and laboratory reports are included in the "Site Investigation Report" submitted on June 21, 2024.

### 2.2.5 Additional PFAS Groundwater Investigation Results

Public health groundwater quality standards have been recommended by the State Department of Health Services for a PAL of 2 nanograms per liter (ng/L) and an ES of 20 ng/L for two compounds, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). There are no recommended standards for other PFAS compounds.

The groundwater chemistry results indicate that PFAS contamination is not present in groundwater at levels above the recommended ES.

The groundwater chemistry results indicate that PFAS contamination is present in groundwater from the following wells at levels above the recommended PALs for the following PFAS compounds:

- » PFOA: Three (3) wells exceeded NR 140 PAL of 2 ng/L with results ranging from 2.6 ng/L to 6.4 ng/L.

- » PFOS: One (1) well exceeded NR 140 PAL of 2.0 ng/L with a result of 2.2 ug/L.

PFAS concentrations in groundwater do not exceed the State Department of Health Service recommended ES standards for PFOA or PFOS suggesting a PFAS source is not present on site due to prior drycleaning operations; therefore, no further PFAS investigation/sampling is required. Historical PFAS groundwater chemistry results, the most recent PFAS groundwater chemistry results, and laboratory reports are included in the "Site Investigation Report" submitted on June 21, 2024.

### 2.2.6 Vapor Investigation Results

Vapor samples were collected from three (3) off-site properties near the Site over two (2) rounds, and three (3) sanitary sewer manholes near the Site in a one-time event. All vapor samples were submitted for laboratory analysis of CVOCs that are associated with drycleaning solvents: PCE, TCE, cis-DCE, trans-DCE, and VC. The results of the vapor investigation using short-term summa canister sampling and long-term passive sampling methods indicate that CVOC vapors exceeding the Commercial Sub-Slab Air standards exist at 445 South Adams Street. There were no exceedances in the indoor air samples at any buildings, or the sub-slab air samples at 317 Chicago Street or 501 S. Washington Street. There were no detections of CVOCs above their respective Sanitary Sewer Gas Screening Levels (SSGSL) or 10% of the SSGSL.

The vapor chemistry results and laboratory reports are included in the "Site Investigation Report" submitted on June 21, 2024.

### 2.2.7 Preferential Pathway Utility Evaluation Results

Underground utilities including storm sewers, sanitary sewers, an interceptor sewer, gas lines, communication lines, and a water main are located in the adjoining S. Adams and Chicago Street rights-of-way (ROWS). Additionally, one gas main is located on-site along the northeast corner of the site and extends along the eastern boundary and onto the southern portion of the Site. The City of Green Bay, Green Bay Water Utility, and WPS were contacted for information regarding their respective utility lines. Responses and additional utility information are included in Appendix A. Geologic and hydrological conditions near underground utilities are detailed in the "Site Investigation Report" submitted on June 21, 2024.

## 3.0 PROPOSED SITE INVESTIGATION ACTIVITIES

### 3.1 Proposed Objectives

Based on the input from the Wisconsin DNR in the most recent Response to Technical Assistance Request, additional site investigation is required for each media (soil, groundwater, and vapor) prior to submitting for case closure. The objectives of the project include the following:

- » Define the extent and degree of impacts in the soil, groundwater, and vapor.
- » Determine if further investigation or remediation is necessary. If additional remediation is required, options range from source removal and disposal. If vapor testing yields exceedances, installation of sub-slab systems may be needed.

### 3.2 Proposed Scope of Work

The proposed investigation consists of the following tasks:

- » Additional Soil Investigation
- » Sub-slab Mitigation System Installation
- » Additional CVOC Groundwater Investigation
- » Additional Vapor Investigation
- » Additional Preferential Pathway Evaluation
- » Site Investigation Report

Depending on the findings, additional phases of investigation may be needed to define the site conditions, more rounds of groundwater monitoring may prove necessary, or additional remedial actions may be required to reduce the contaminant mass.

#### 3.2.1 Additional Soil Investigation

Based on the results of the most recent soil sampling, the degree and extent of soil contamination at the Site are not yet defined. Additional delineation of soil surrounding both excavations is needed, including off-site delineation per WAC § NR 716.11(4), as residual soil contamination was identified from the post-excavation soil sampling.

It is proposed that an additional 28 soil borings be installed to collect additional soil samples on-site and on the adjoining off-site properties and/or ROW. Obtaining access permission for off-site soil sampling will be required. These additional soil borings will be completed to further define unsaturated soil delineation in all directions. The following describes the proposed locations of these additional soil borings to be advanced at the Site. The proposed boring locations are included in Figure 3.

Prior to intrusive activities, a public utility location will be requested to identify utilities in the public ROWs. In addition, a private utility clearance, utilizing electromagnetic (EM) and/or ground-penetrating radar (GPR) will be completed to identify subsurface utilities in the vicinity of each soil boring location.

Seven (7) borings (B-148 to B-150, and B-168 to B-171) will be advanced to the north of the Site (off-site), in the Chicago Street ROW in the grass median on the north side of the street and on the 445 S. Adams Street property. All soil borings will be advanced to 5 feet below grade, and two unsaturated soil samples will be collected from each boring at 2 and 5 feet below grade. Soil samples from B-148 to B-150 will be analyzed by the laboratory immediately upon receipt. Soil samples from B-168 to B-171 will be held pending laboratory analysis results of B-148 to B-150.

Five borings (B-154 to B-158) will be advanced to the east of the Site (off-site) in the S. Jefferson Street ROW in the grass median on the west side of the street. All soil borings will be advanced to 5 feet below grade, and two unsaturated soil samples will be collected from each boring at 2 and 5 feet below grade. Soil samples from B-154 to B-158 will be analyzed by the laboratory immediately upon receipt.

Two borings (B-142R and B-179) will be advanced to the west of the Site (off-site), in the S. Adams Street ROW in the grass median on the west side of the street. Soil boring B-142R is a resample of B-142, and will be advanced to 2 feet below grade, and one unsaturated soil sample will be collected from the boring at 2 feet below grade. Soil boring B-179 will be advanced to 2 feet below grade, and one unsaturated soil sample will be collected from the boring at 2 feet below grade. The soil samples from B-179 will be held pending laboratory analysis results of B-142R.

One boring (B-180) will be advanced on the south portion of the Site (on-site) south of boring B-164. The soil boring will be advanced to 5 feet below grade, and two unsaturated soil samples will be collected at 2 and 5 feet below grade. Soil samples from B-180 will be analyzed by the laboratory immediately upon receipt.

Seven (7) borings (B-172 to B-178) will be advanced to the north and west of the Site (off-site), in the Chicago Street and S. Adams Street ROWs, respectively, to assess the sanitary sewer backfill as a preferential pathway for contamination from the site. They will be advanced in the sidewalk to assess the backfill around the sanitary sewer laterals shown to be previously connected to the site based on utility plans provided by the City of Green Bay. All soil borings will be advanced to 9 feet below grade, and one soil sample will be collected from each boring within the sanitary sewer backfill (estimated to extend to 9 feet below grade) and below the water table (estimated to be 4 feet below grade). Soil samples from B-172 to B-178 will be analyzed by the laboratory immediately upon receipt.

Six borings (B-181 to B-186) will be advanced on the northeast portion of the Site (on-site) to the east of the “main excavation” area and north of the “eastern excavation” area where excavation side wall soil samples with elevated PCE and TCE concentrations remain from 20 to 30 feet bgs. All soil borings will be advanced to 30 feet below grade, and six (6) unsaturated soil samples will be collected from each boring at 5, 10, 15, 20, 25, and 30 feet below grade. Soil samples from B-181 to B-184 will be analyzed by the laboratory immediately upon receipt. Soil samples from B-185 and B-186 will be held pending laboratory analysis results of B-181 to B-184.

All soil samples will be collected for laboratory analysis of CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC) to define and delineate the contamination plume of the unsaturated soil.

### 3.2.2 Sub-slab Mitigation System Installation

Based on the findings of the vapor sampling in the property building at 445 South Adams Street, the current assessment suggests that there are no immediate health concerns in the property building regarding vapor intrusion from the Bay Towel site. However, it is important to address the potential risk of elevated concentrations in the sub-slab vapors that could pose future concerns. To ensure the ongoing safety and well-being of building occupants, Fehr Graham recommends the installation of a sub-slab vapor mitigation system (VMS) at the property building. This proactive measure will effectively safeguard occupants from any potential hazards in the future.

Under this task, a sub-slab VMS will be installed within the property building at 445 S. Adams Street, Green Bay, WI. To install the VMS, the following actions will be completed:

- » Get permission and describe the need for the VMS to the Property Owner.
- » Seal visible floor penetrations (cracks around the floor drains, etc.) to prevent short-circuiting of the sub-slab vapor extraction to the building air.
- » Installation of two sub-slab floor penetrations to remove sub-slab vapor.
- » Install electric low-horsepower fans outside with piping.
- » Wire to dedicated circuit on electric panel (assumes adequate space to accommodate).
- » During install, perform communication test to verify minimum of -0.004 inches induced vacuum present across building subfloor.
- » Install visible u-tube manometers on vertical piping for easy observation of system operation.
- » Install telemetry systems (Vapor Sentinel) incorporated into the VMS for continuous remote monitoring to ensure the system is operating properly for one year (12 months) following the installation.
- » Commissioning of the VMS, which will include a minimum of three rounds of pressure field extension readings (at least one in the summer and one in the winter to evaluate seasonal effects) and one round of indoor air sampling (including background ambient air sample). One (1) indoor passive air sample will be collected from the commercial building using a Beacon Environmental (Beacon) Air Sampler, with sampling conducted per Beacon's guidance methods, based on guidance methods for commercial buildings (i.e., design of sampling will conform to reporting limits for canisters). The sample location will be collocated to the first and second round indoor air samples and will require that the device be hung from a wall, furniture, etc., which Fehr Graham will install. The device will need to be in place and undisturbed for 10 days. The sample will be analyzed by Environmental Protection Agency (EPA) Method TO-17 (TD-GC/MS) for select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC), with results reported in micrograms per cubic meter (ug/m3).
- » A Construction Documentation Report and an Operation, Monitoring, and Maintenance plan will be prepared.

### 3.2.3 Additional CVOC Groundwater Investigation

The previous round of CVOC groundwater sampling at the Bay Towel site was completed in December 2023. In their letter dated July 18, 2024, the Wisconsin DNR agrees that groundwater contamination at the Site has been adequately delineated, but recommends completing an additional groundwater sampling to continue monitoring groundwater contaminant concentration trends. At this time, two (2) semi-annual rounds of groundwater sampling are proposed for Fall 2024 and Spring 2025.

Under this task, Fehr Graham will complete two additional rounds of groundwater sampling. Each round, the monitoring well network at the site, which includes 24 monitoring wells/piezometers (PZ-1, PZ-2, PZ-3R, PZ-4, PZ-5, SMW-1R, MW-2RR, SMW-3R, MW-4, MW-5R, MW-6, MW-7R, MW-8, MW-9, MW-10, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, PZ-18, PZ-19, PZ-20), will be sampled for laboratory analysis of select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC). Measurement of field parameters (water levels, YSI readings) will also be completed at all site monitoring wells/piezometers.

### 3.2.4 Additional Vapor Investigation

In their letter dated July 18, 2024, the Wisconsin DNR recommended completing an additional round of vapor sampling at the following off-site properties performing longer duration sampling (e.g. 14-28 days):

- » 501 South Washington Street (residentially occupied setting – fire station)
- » 317 Chicago Street (residentially occupied setting – single-family residence)

Access permission has been previously obtained from these off-site property owners. Prior to intrusive activities, a public utility location will be requested to identify utilities in the public ROW. In addition, a private utility clearance, utilizing EM and/or GPR will be completed to identify subsurface utilities in the vicinity of each sub-slab penetration. The third round of vapor sampling at each of the off-site properties will include the following scope of work:

#### 317 Chicago Street

For the third round of vapor sampling at the residential building located at 317 Chicago Street, identified as a single-family residential home, a total of one (1) sub-slab vapor sample and one (1) indoor air vapor sample will be collected. The sub-slab vapor samples and indoor air samples will be collected using Beacon Passive Soil Gas Samplers, installed per Beacon's guidance methods. The sample locations will be near the locations from the previous vapor samples. The sub-slab passive soil gas sampler will be installed and the area above them temporarily resurfaced to protect the devices and deter any confounding variables from interacting with the sampling media. The devices will remain in place and undisturbed for 14 to 28 days. The samples will be analyzed by EPA Method 8260C for select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC), with results reported in ug/m<sup>3</sup>.

#### 501 South Washington Street

For the third round of vapor sampling at the off-site building located at 501 South Washington Street, identified as Green Bay City Fire Station 1, which Wisconsin DNR indicated is screened as a residentially occupied building falling under the requirements for a residential setting, a total of two (2) sub-slab vapor samples and one (1) indoor air vapor sample will be collected. The sub-slab vapor samples and indoor air samples will be collected using Beacon Passive Soil Gas Samplers, which will be installed per Beacon's guidance methods. The sample locations will be near the locations from the previous vapor samples. The sub-slab passive soil gas samplers will be installed and the area above them temporarily resurfaced to protect the devices and deter any confounding variables from interacting with the sampling media. The devices will remain in place and undisturbed for 14 to 28 days. The samples will be analyzed by EPA Method 8260C for select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC), with results reported in ug/m<sup>3</sup>.

#### Upwind Outdoor Air Sample

The Wisconsin DNR recommends the collection of upwind outdoor air samples to assess background concentrations during each round of vapor sampling. One (1) upwind outdoor air vapor sample will be collected during the third round of vapor sampling. The upwind outdoor air vapor sample will be collected using Beacon Passive Soil Gas Samplers, which will be installed per Beacon's guidance methods. The device will remain in place and undisturbed for 14 to 28 days. The sample will be analyzed by EPA Method 8260C for select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC), with results reported in ug/m<sup>3</sup>.

### 3.2.5 Additional Preferential Pathway Evaluation

In a letter dated July 18, 2024, the Wisconsin DNR recommended investigating the sanitary sewer backfill and obtaining grab water samples from within the storm sewer.

For obtaining grab water samples from within the storm sewer, it is proposed that the sample be collected from a storm sewer manhole downgradient (northwest) of the site. It is also proposed that two (2) upgradient samples be collected to assess background concentrations of water in the storm sewer during the sampling. Based on utility plans provided by the City of Green Bay, a downgradient (northwest) storm sewer manhole is present in the S. Adams Street and Chicago Street intersection (storm sewer manhole 4833 - northwest of the site). In addition, upgradient manholes are present in the S. Adams Street ROW (storm sewer manhole 4845 - southwest of the site), and in the Chicago Street and S. Jefferson Street intersection (storm sewer manhole 4838 - northeast of the site). Each storm sewer water sample will be collected for laboratory analysis of select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC). The samples will not be obtained within two (2) days of a rain event.

### 3.2.6 Site Investigation Report

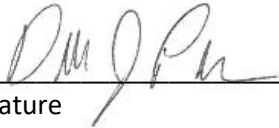
Upon completion of the sampling, the soil, groundwater, and vapor laboratory analytical results will be received. Tables and figures showing the findings will be prepared and provided to Bay Towel and the Wisconsin DNR. Fehr Graham will interpret the results and submit the findings to the Wisconsin DNR. In addition, the Wisconsin DNR discovered that the Site lies within the Well Head Protection Area for a City of Green Bay municipal well. As a result of this finding, all groundwater analytical results are required to be submitted to the City of Green Bay following each sampling event.

Upon agreement that the extent of impacts has been adequately defined, a Site Investigation Report compliant with NR 716 requirements will be prepared and submitted to the Wisconsin DNR. The Site Investigation Report will summarize the site conditions and the magnitude and extent of impacts.

Depending on the findings, Fehr Graham may recommend the completion of additional site investigation or remedial action. A discussion of remedial action options will be provided if warranted. If it appears the site may merely need to obtain further rounds of groundwater sampling to establish trends, and then pursue closure once trends are suitable, that approach will be described in the Site Investigation Report, but no involved discussion of remedial action options will be prepared.

## 4.0 CERTIFICATIONS

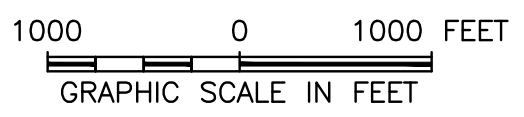
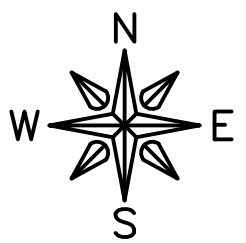
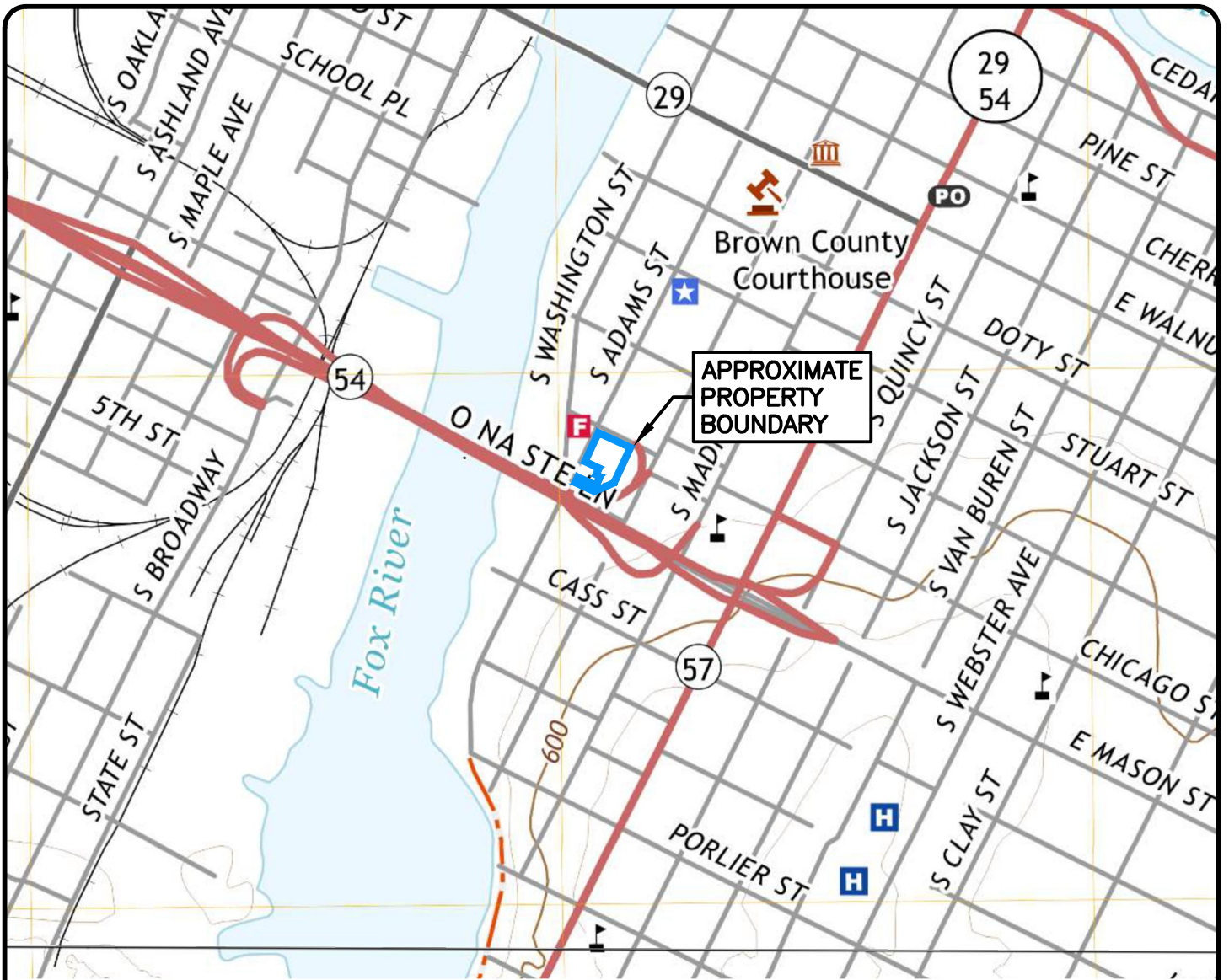
I, Dillon Plamann, PG, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

  
\_\_\_\_\_  
Signature

October 29, 2024  
\_\_\_\_\_  
Date



## Figures

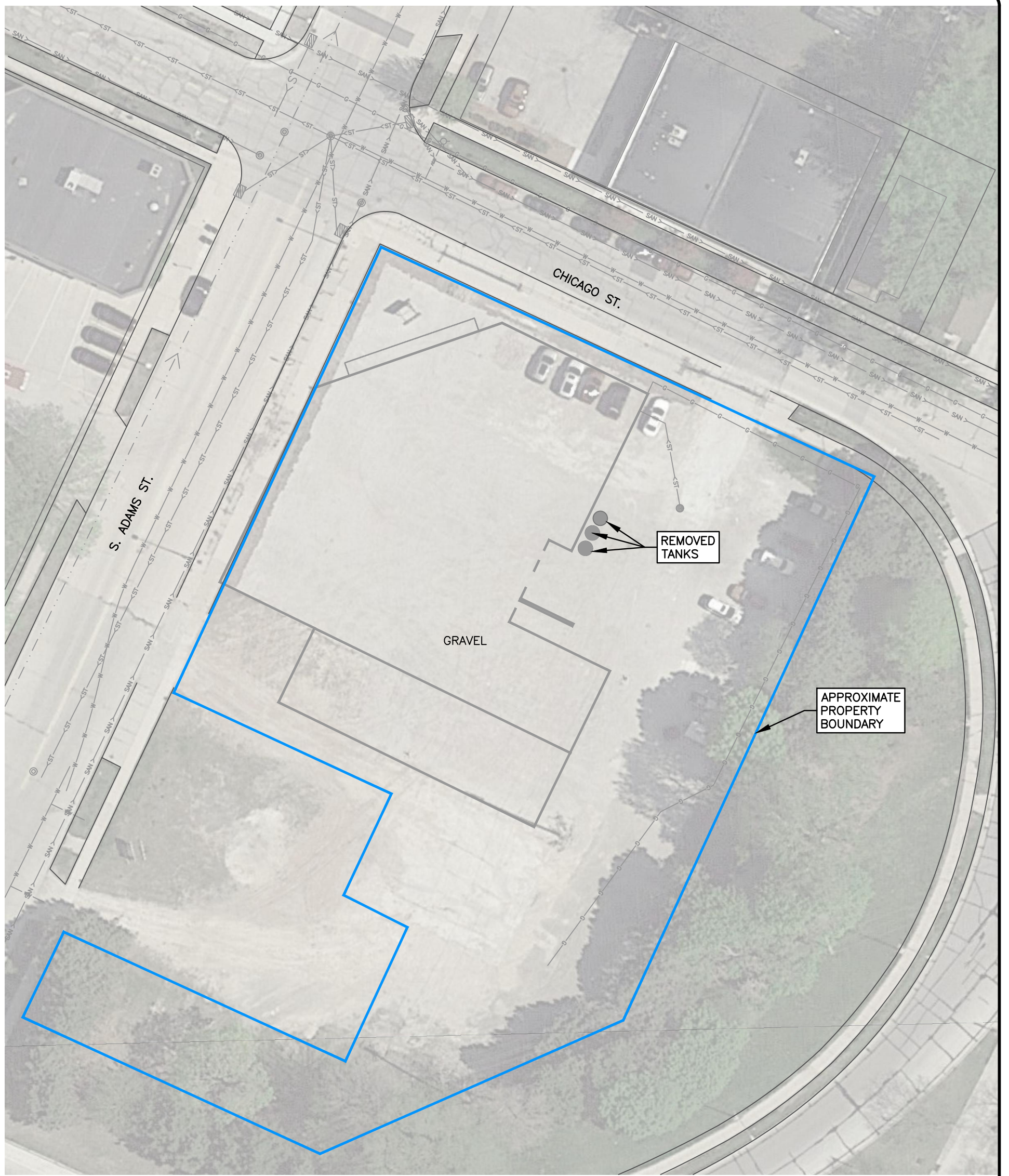


**FIGURE 1**  
**SITE LOCATION**  
 BAY TOWEL – SOLVENT INVESTIGATION  
 501 S. ADAMS ST.  
 GREEN BAY, WI 54301  
 BRRTS NO.: 02-05-237064

9/3/24

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL	ILLINOIS
	IOWA
	WISCONSIN

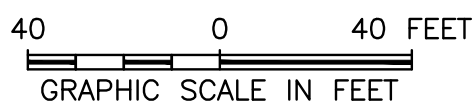
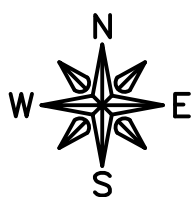




**LEGEND**

- G— GAS LINE
- SAN> SANITARY SEWER
- ST> STORM SEWER
- W— WATER LINE
- - -> GREEN BAY MUNICIPAL SANITARY DISTRICT MAIN
- ⊙ MANHOLE
- ⊕ FIRE HYDRANT
- ▒ CATCH BASIN

**FIGURE 2**  
**SITE LAYOUT MAP**  
**BAY TOWEL – SOLVENT INVESTIGATION**  
**501 S. ADAMS ST.**  
**GREEN BAY, WI 54301**  
**BRRTS NO.: 02-05-237064**

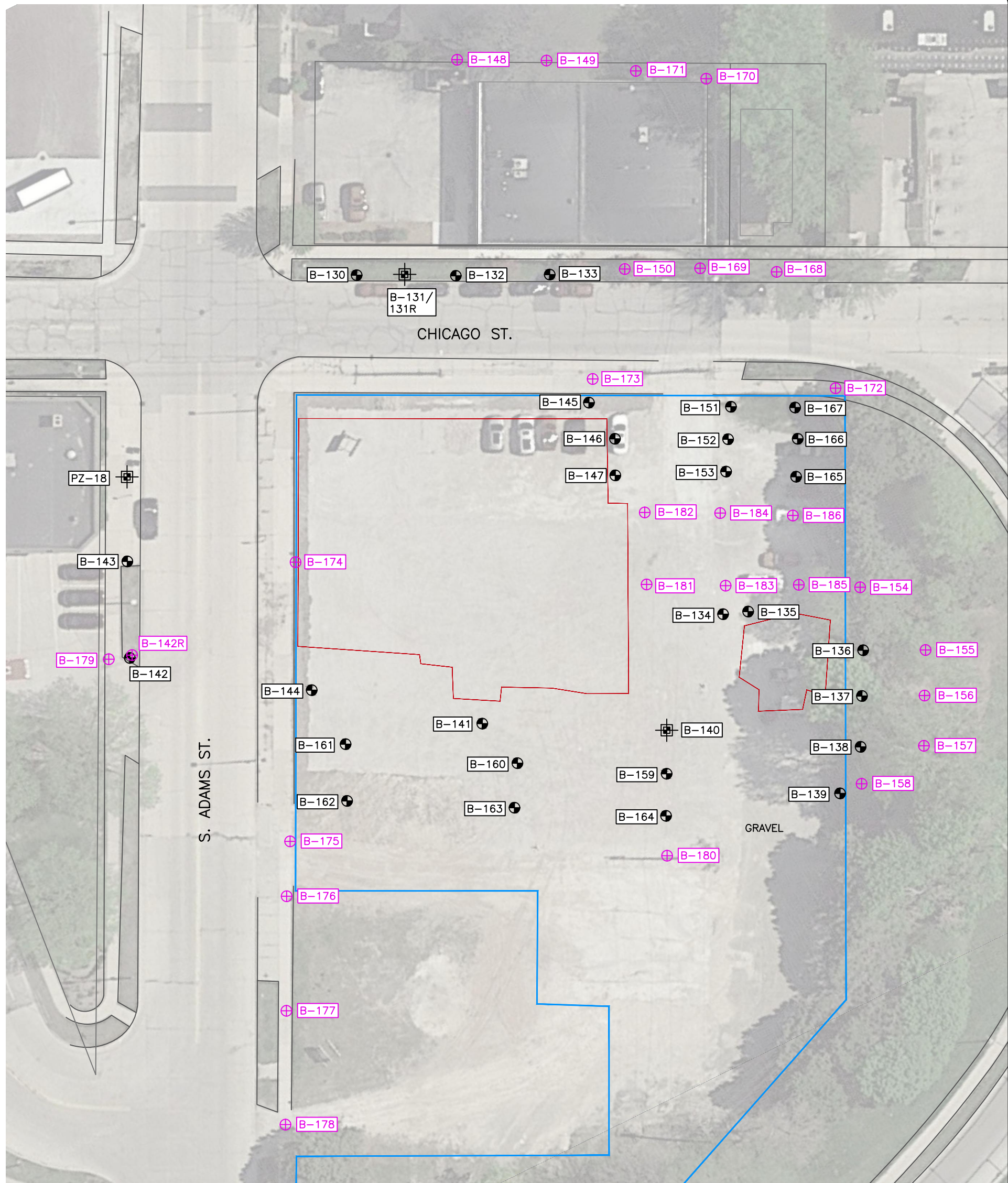


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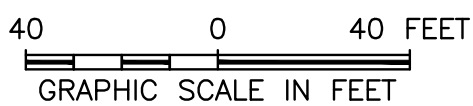
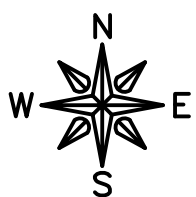




**LEGEND**

- SOIL BORING
- ⊕ PIEZOMETER
- ⊕ PROPOSED SOIL BORING
- FINAL EXCAVATION LIMITS COMPLETED ONSITE

**FIGURE 3**  
**PROPOSED SOIL BORINGS**  
**BAY TOWEL – SOLVENT INVESTIGATION**  
**501 S. ADAMS ST.**  
**GREEN BAY, WI 54301**  
**BRRTS NO.: 02-05-237064**



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9/3/24

**Appendix A**  
**Utility Information**

**From:** [Mark Aerts](#)  
**To:** [Kelsey Bird](#)  
**Subject:** 501 S. Adams St.  
**Date:** Tuesday, August 23, 2022 1:28:54 PM  
**Attachments:** [sharpescans@greenbaywi.gov\\_20220823\\_132800.pdf](#)

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You don't often get email from [mark.aerts@greenbaywi.gov](mailto:mark.aerts@greenbaywi.gov). [Learn why this is important](#)

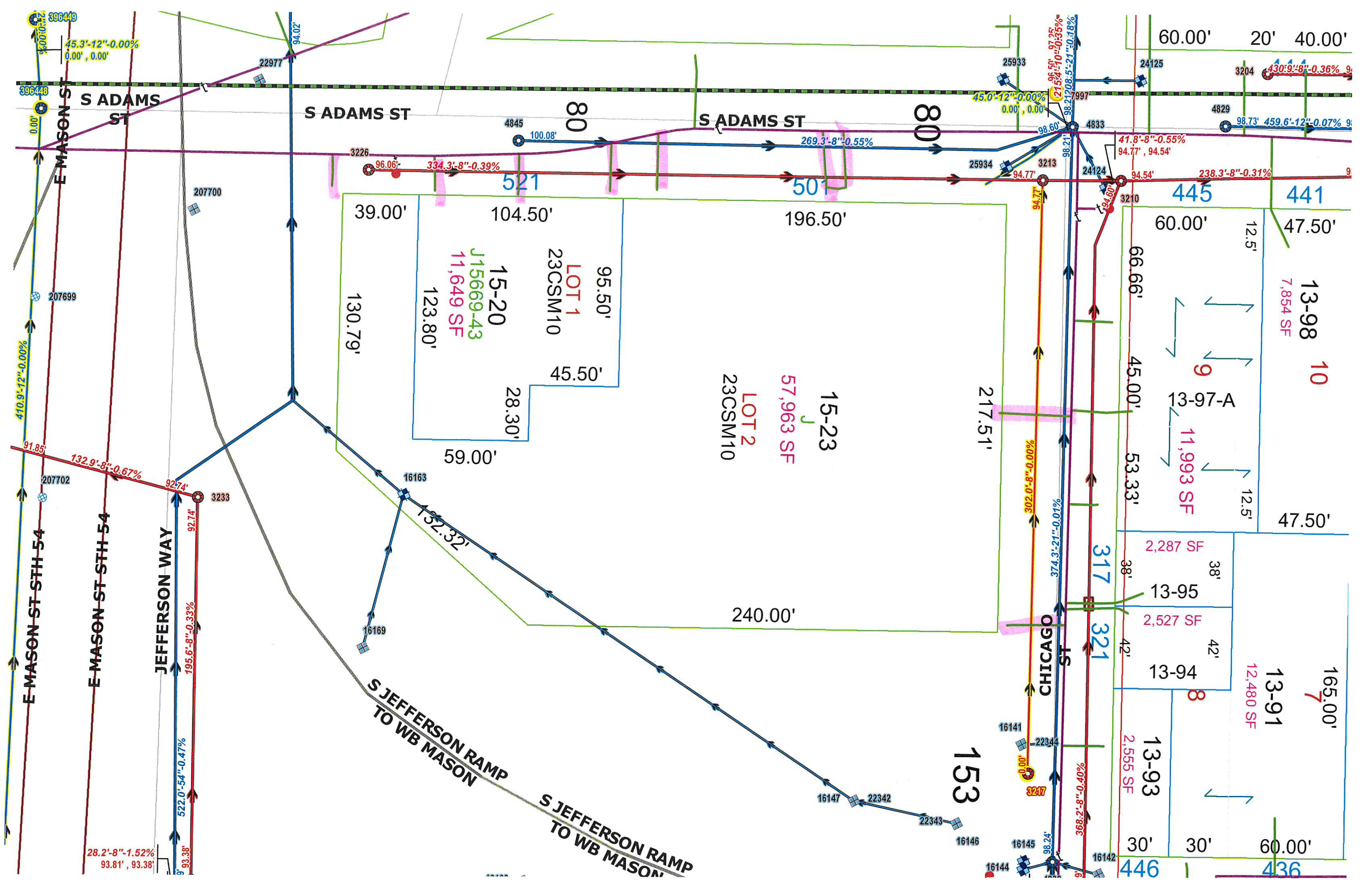
Kelsey,

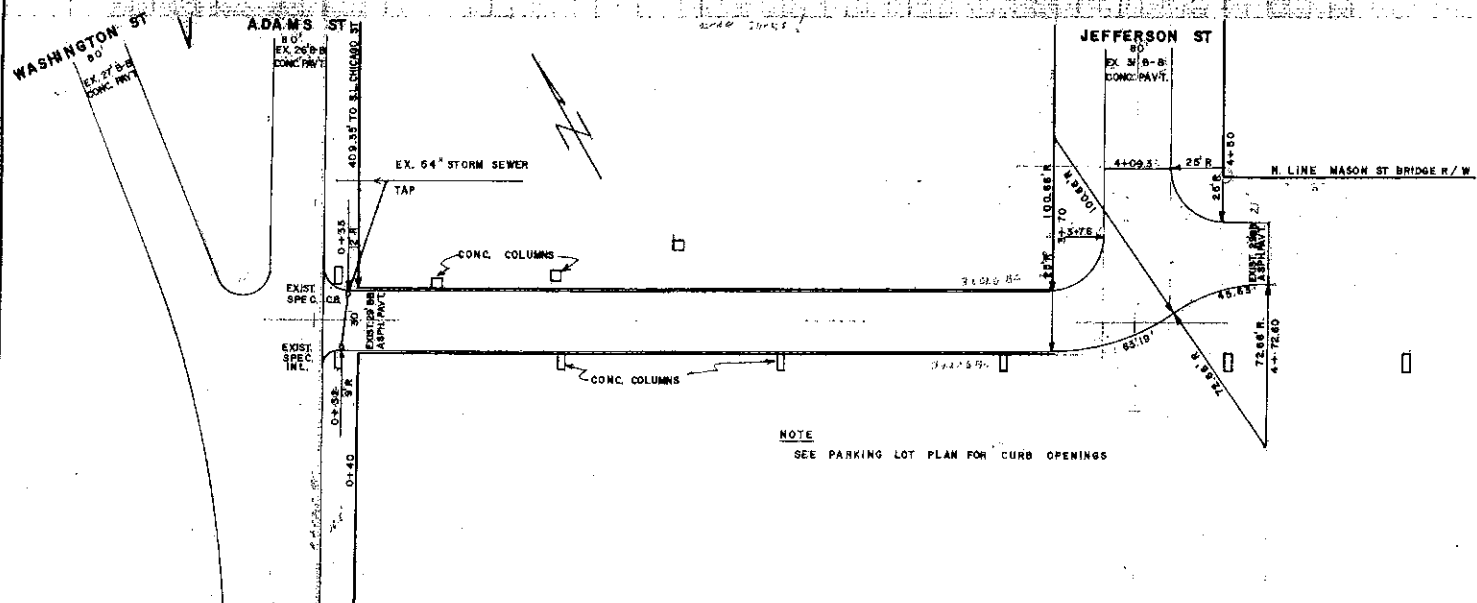
Here are our latest GIS and plan and profile sheets for this property. On the GIS sheet red is sanitary, blue is storm, pink is water main and green is water services. The green and black dashed is NEW Water. For the back fill for the water main and services you will need to contact the Water Utility for the depths and backfill. There number is (920) 448-3480 and you can ask for Brian Powell. As for our utilities the current storm sewer where there are two sanitary sewers, the storm was originally a combined sewer which after conversations with staff up here was probably backfilled with natural material considering the date it was installed. As for the sanitary sewer where it was separated from the combined sewer it was backfilled with sand. These sanitary lines were installed in the mid to late 1950's. Please let me know that you received these they opened up for and will work for you, Thanks.

*Mark Aerts*

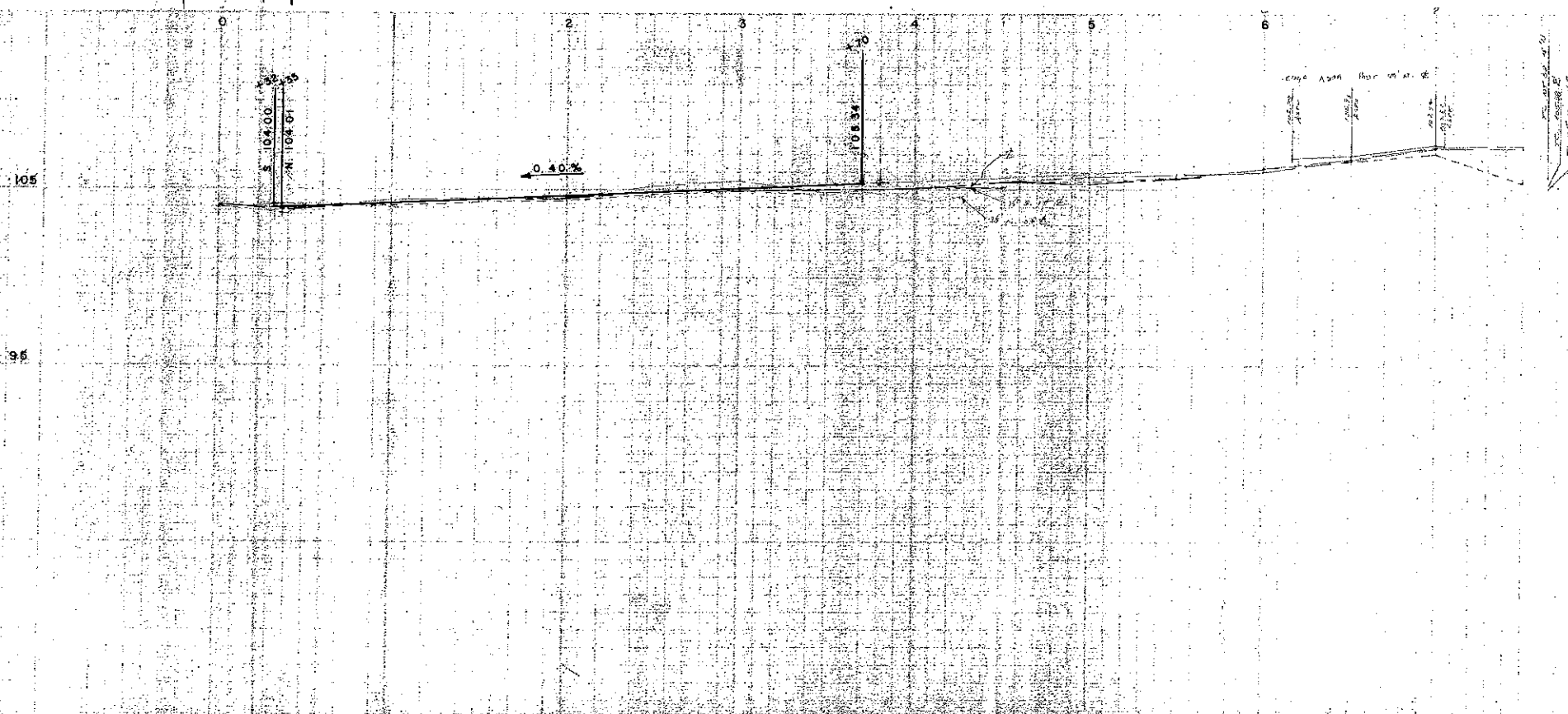
**CITY OF GREEN BAY  
ENGINEERING TECHNICIAN  
OFFICE (920) 448-3100  
DIRECT (920) 448-3107  
[Mark.Aerts@greenbaywi.gov](mailto:Mark.Aerts@greenbaywi.gov)**





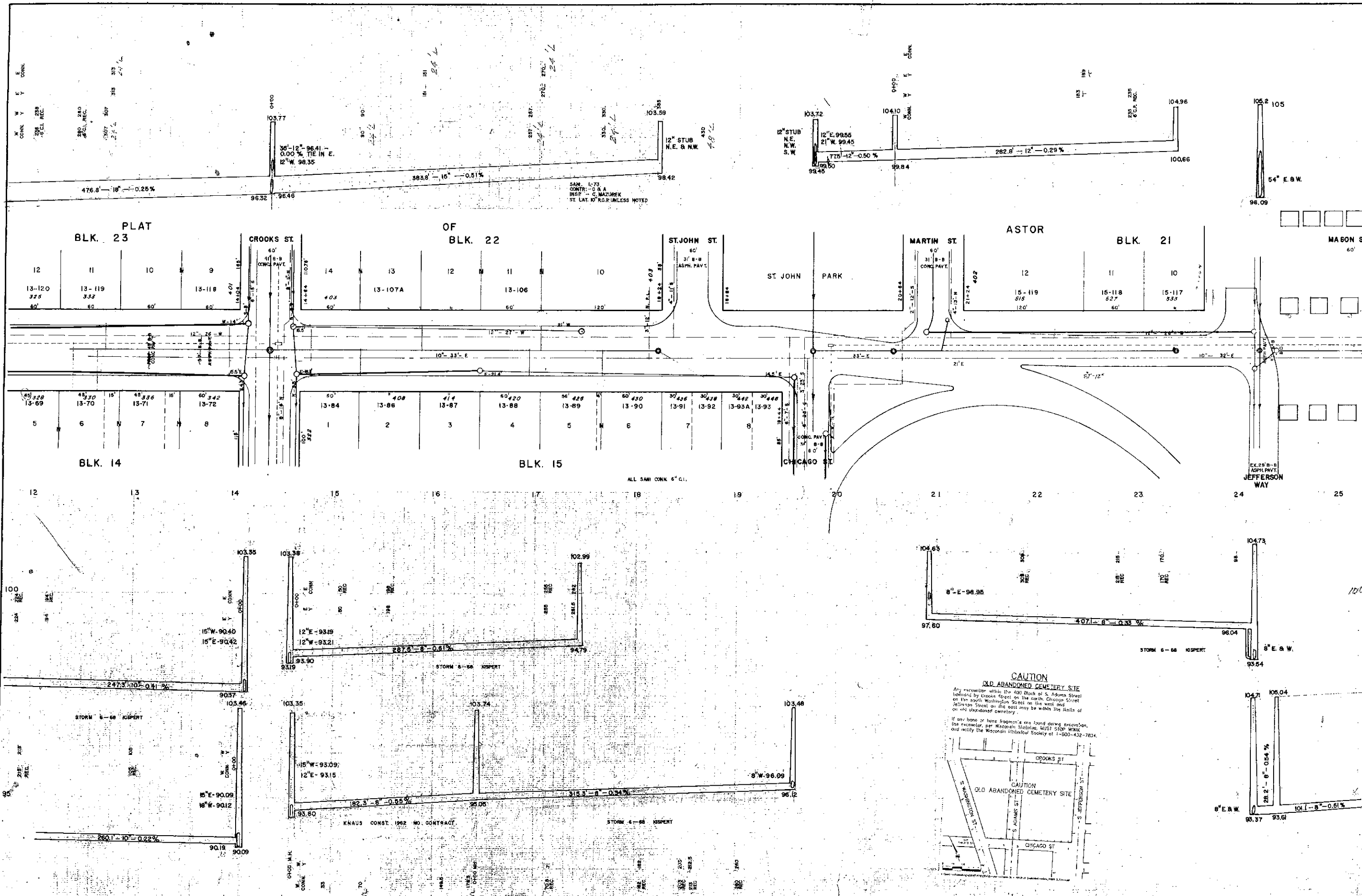


NOTE  
SEE PARKING LOT PLAN FOR CURB OPENINGS



<b>SCALE</b> VERT. - 1" = 4' HOR. - 1" = 40'	<b>LEGEND</b> PROPOSED SEWER ——— EXISTING SEWER ——— GAS MAIN ——— WATER MAIN ——— TELEPHONE CONDUIT ———	<b>NOTE BOOKS</b> SURVEY 486, 507 CONSTR. 235	<b>APPROVED</b> CITY ENGINEER MAYOR	<b>CITY OF GREEN BAY, WISCONSIN</b> <b>OFFICE OF THE CITY ENGINEER</b>		<b>ON JEFFERSON WAY</b> <b>FROM ADAMS ST TO JEFFERSON ST</b>		SHEET NO.
				DRAWER NO.	FILE NO.	DRAWN BY		





SCALE  
VERT. - 1" = 4'  
HOR. - 1" = 40'

LEGEND

NOTE BOOKS	SURVEY	CONST.
PAVEMENT		
SHOWWALK		
SAINT SEWER	18" A.G. S-1	
STORM SEW.	24" C-1	

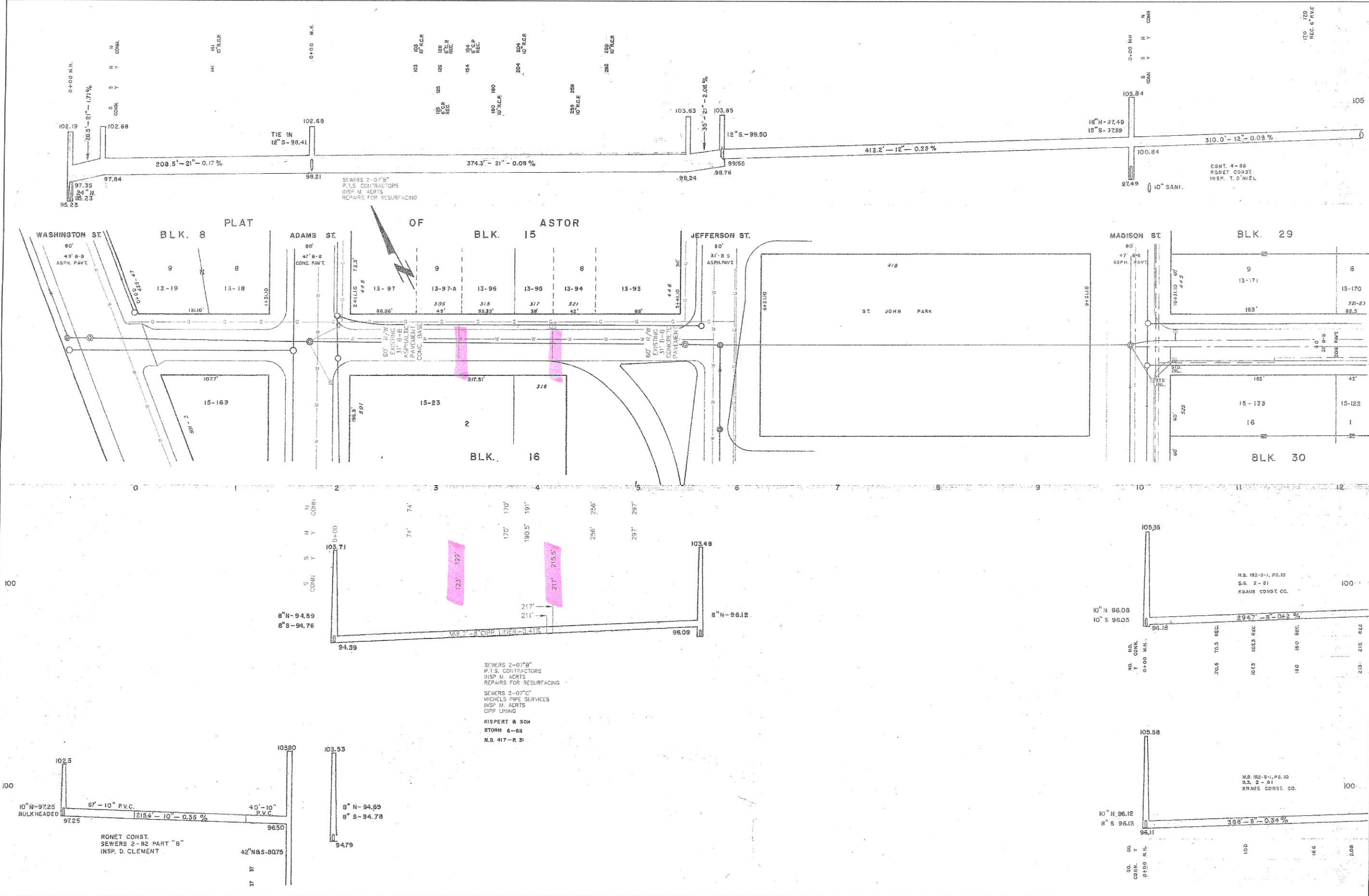
APPROVED

CITY ENGINEER
MAYOR

CITY OF GREEN BAY, WISCONSIN  
OFFICE OF THE CITY ENGINEER

ON JEFFERSON ST. STREET  
FROM S. OF STUART TO MASON

SHEET NO. 146  
DRAWER NO. 15  
FILE NO.  
DRAWN BY [Signature]



SCALE	NOTEBOOKS	SURVEY	AS BUILTS
VERT. 1"=4'	LIBRARY NO.		
HOR. 1"=40'	PAYMENT		
	SAN. SEWER	182A.GI	
	STORM SEWER	235C1	
	RIGHT OF WAY		

CITY OF GREEN BAY, WISCONSIN  
 DEPT. OF PUBLIC WORKS- ENGINEERING DIVISION

CHICAGO STREET  
 FROM WASHINGTON STREET TO MADISON STREET

		BY		DATE		REVISIONS		PAGE NO.
DRAWN	CMA	12/06	DATE	BY	REMARKS			
PAYMENT-DESIGN	CMA	12/06	12/19/07	CMA	ADDED CONNECTIONS			
CHECKED								
SEWER-DESIGN	MMA	12/06						
CHECKED	HRH	2/07						
AS-BUILTS	CMA	11/07						





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