December 8, 2022

Andrew Zwack
Assistant Engineer
Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203

Re: Pre-Construction Sampling and Excavation Work Plan Notification
Tecumseh Phase I & II Business Park – Water & Sewer Extension
Lackawanna, New York

Dear Mr. Zwack:

This Pre-Construction Work Plan provides a description of the procedures that will be implemented to characterize fill material, native soil and groundwater prior to starting construction activities to extend water and sewer services at the Tecumseh Phase I & II Business Park (the Site). This Work Plan has been prepared in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation "Technical Guidance for Site Investigation and Remediation" (DER-10) and the approved January 2014 Site Management Plans prepared by TurnKey Environmental Restoration, LLC.

It is understood that potions of this investigation are within properties that have been remediated under the Brownfield Cleanup Program. As such, intrusive activities on these properties requires compliance with the Excavation Work Plan (EWP) prepared by TurnKey Environmental Restoration, LLC. The sections below describe the scope of work. This work will be performed in compliance with the EWP and 29 CFR 1910.120.

The following BCP sites will be impacted by this investigation:

- C915198L
- C915198K
- C915197
- C915197B
- C915197D
- C915197F

- C915197I
- C915197H

PROJECT BACKGROUND

Phase I Business Park

The remedial work conducted on the Site has removed all known "source area" soil/fill, which included petroleum-, metal-, and tar-impacted soil/fill. USTs and associated impacted soil/fill were also removed. The remaining soil/fill is generally characterized by widespread exceedance of the NYSDEC Part 375 unrestricted-use soil cleanup objectives (SCOs) for several ubiquitous constituents. Specifically, nearly all samples collected during the Remedial Investigation exhibited exceedance of the commercial SCOs for carcinogenic polycyclic aromatic hydrocarbons (PAHs), as well as arsenic, cadmium, lead, and mercury. Other constituents remaining above unrestricted-use SCOs in select areas of the Site include PCBs (Aroclors 1248, 1254, and 1260) and 4-4' DDT. It is assumed that the entire 102-acre Site is impacted above the unrestricted-use SCOs to the approximate native soil depth of 8 feet below grade.

Phase II Business Park

The remedial work conducted on the Site has or will: remove all known "source area" soil/fill (i.e., petroleum- and metal-impacted soil/fill); treat weathered petroleum-impacted saturated soil/fill in-situ; and remediate isolated groundwater impacts. The remaining soil/fill is generally characterized by widespread exceedance of the NYSDEC Part 375 unrestricted-use SCOs for several ubiquitous constituents. Specifically, nearly all samples collected during the Remedial Investigation exhibited exceedance of the commercial SCOs for PAHs, as well as arsenic, lead, and mercury. Other constituents remaining above unrestricted-use SCOs in select areas of the Site include PCBs (Aroclors 1248, 1254, and 1260) and inorganic compounds (i.e., cadmium, chromium, manganese, nickel, and zinc). It is assumed that the entire 142-acre Site is impacted above the unrestricted-use SCOs to the approximate native soil depth of 12 fbgs.

Site Geography, Geology, and Hydrogeology

Based on previous reports and the July 2021 Subsurface Exportation conducted by CME Associates, Inc., fill material was generally observed across the Site and comprised of non-cohesive coal and coke fines, slag, cinders, brick, concrete, metal,

railroad ballast. The fill material was observed from ground surface (or underneath a one-foot cover is some areas) to approximately 10 feet below ground surface (bgs). In some cases, fill material extended to 15 – 20 feet bgs.

The fill is underlain by lacustrine clays and silts (i.e., a reworked native sandy clay unit) that are, in turn, underlain by shale or limestone bedrock. Bedrock is about 60 feet below grade.

Historically, due to the proximity of Lake Erie and municipal supplied water, groundwater in the area has not been developed for industrial, agricultural, or public supply purposes. There is a deed restriction that prohibits the use of groundwater on the 1,100-acre Tecumseh property; consequently, no groundwater supply wells are present on the Controlled Property.

Groundwater elevation measurements taken on May 6, 2006 from existing and newly installed monitoring wells and piezometers on the Controlled Property indicate that the first water bearing zone (i.e., water table) ranges from approximately 4 to 6 feet bgs within the soil/slag-fill unit. Groundwater elevations indicates that shallow groundwater generally flows west/southwest toward the Gateway Metroport Ship Canal and Lake Erie as well as northwest toward the Union Ship Canal and Buffalo Outer Harbor.

OBJECTIVES, SCOPE AND RATIONALE

The objectives of the scope of work described in this Work Plan are to evaluate contaminant impacts to soil and identify and evaluate appropriate management options necessary to improve sewer and water utilities.

The Investigation is based on information previously gathered regarding historical operations conducted at the Site, the results of the limited site characterization, and the project objectives. The Investigation will include the following:

- Soil Evaluation – This task will consist of two primary elements: evaluation of fill material and underlying native soils.
    - The fill material will be characterized to identify the extent and magnitude of contamination. The intent of the fill sampling program is to determine if material can be reused as backfill above the new utility lines. This material will also be the subject of waste characterization sampling.

    - The underlying native soils will be characterized to determine the depth of impacts from the overlying contaminant sources.
- Groundwater Evaluation – Subsequent to completing the above tasks, groundwater will be pumped from the test pits to evaluate if groundwater collected during construction activities could be discharged back onto the ground surface and be allowed to infiltrate back into the subsurface.

The RI and IRM activities will be completed in general accordance with NYSDEC Division of Environmental Remediation: Technical Guidance for Site Investigation and Remediation dated May 2010 (DER-10).

Field Investigation

A test pit study will be implemented at the Site. The construction project will excavate material within an approximately six-foot-wide trench down to design grades in order to install sanitary sewer and water utilities. Based on the extent of excavation, a total of 14 test pits spaced approximately 300-feet apart are proposed to characterize subsurface conditions. Each test pit should be advanced into the fill material and native soil, up to 20 feet bgs, or at the discretion of the environmental engineer/scientist. Exploration locations will be mapped with a global positioning system or tape measured from existing site features.

Soils from the test pits will be continuously assessed for visible or olfactory indications of impairment, and/or indication of detectable volatile organic compounds (VOCs) with a photoionization detector (PID). Positive indications from any of these screening methods are collectively referred to as "evidence of impairment." Test pit logs will be completed and include soil description, PID readings, etc.

The proposed test pits locations are shown in the attached drawings.

Fill Sampling

Fill samples will be collected from the test pits based on evidence of impairment and to provide characterization across the Site. In 14 locations, one composite urban fill sample will be collected and analyzed for the following:

- Total Compound List (TCL) VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs

- Total Analyte List (TAL) metals
- Total mercury
- Total cyanide
- Hexavalent chromium
- Silvex
- Per- and polyfluoroalkyl substances (PFAS)

Additionally, up to 14 samples will be collected from the urban fill for waste disposal characteristics. The waste characterization analysis will include:

- Toxicity Characteristic Leaching Procedure (TCLP) Volatile Organic Compounds
- TCLP Semi-Volatile Organic Compounds
- TCLP Metals
- Total Petroleum Hydrocarbons
- Total Solids
- Total Sulfur
- Sulfate
- TCL Herbicides
- TCL Pesticides
- TCL PCB
- pH
- Reactivity (Cyanide & Sulfide)
- Ignitability

Native Soil Sampling

If encountered, native soil will be visually assessed and sampled in each of the 14 test pits. The 14 native soil samples will be collected and analyzed for:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs
- TAL metals
- Total mercury
- Total cyanide
- Hexavalent chromium
- Silvex
- PFAS

Groundwater Monitoring

To characterize groundwater conditions that will be encountered during construction activities, one groundwater sample will be collected from each test pit. A total of 14 groundwater samples will be analyzed for the following analyte list:

- TCL VOCs
- TCL SVOCs
- Total PCBs
- TAL metals
- Total mercury
- Total cyanide
- PFAS

Groundwater sampling will be conducted in a manner that will be similar to conditions during construction. Groundwater will be collected using a battery-operated pump; groundwater will be placed into a 5-gallon bucket for sampling. It is anticipated that groundwater will be turbid. Water will be filtered using a sediment filter with similar capability to the large-scale construction filter. VOCs will be collected prior to filtration.

Sampling Plan and Laboratory Analysis

Additionally, Quality Assurance/Quality Control (QA/QC) samples will be collected, and the following describes the minimum number of samples per media type.

- Soil samples (excluding waste characteristic samples)
    - Blind duplicate – 5%
    - Matrix Spike/Matrix Spike Duplicate (MS/MSD) – 5%
- Groundwater samples
    - Trip blank – 1 per shipment
    - Blind Duplicate – 5%
    - Matrix Spike/Matrix Spike Duplicate (MS/MSD) – 5%

C&S will utilize the services of an NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory for analytical testing. The laboratory results for the samples will be reported in a Category B deliverables package to facilitate validation of the data, and a third-party validator will review the laboratory data and prepare a Data Usability Summary Report (DUSR). The validator will evaluate the analytical results for the field samples and quality assurance/quality control samples and compare the findings to USEPA guidance to determine the accuracy and validity of the results.

Summaries of the RI activities will be submitted to the NYSDEC as monthly progress reports and will be included in the RI Report. All data submitted to the NYSDEC will be in approved electronic data deliverable (EDD) format.

QUALITY ASSURANCE AND QUALITY CONTROL PROTOCOLS

To ensure that suitable and verifiable data results are obtained from the information collected at the Site, quality assurance procedures are detailed in this section.

Sampling Methods, Analytical Procedures and Documentation

Sampling Methods

Sampling procedures will be conducted in accordance with the NYSDEC *Sampling Guidelines and Protocols Manual*. Collection of representative samples will include the following procedures:

- Ensuring that the sample taken is representative of the material being sampled;
- Using proper sampling, handling and preservation techniques;
- Properly identifying the collected samples and documenting their collection in field records;
- Maintaining chain-of-custody; and
- Properly preserving samples after collection.

Soil Sampling

Soil sampling will be performed using two methods: (1) field screening using a PID; and (2) grab samples. Whether soil samples are collected from the excavator bucket, direct-push rig sleeves, or split-spoons, they will be collected as grab samples that are split and placed into jars supplied by the laboratory as well as into individual zip-lock bags for screening. Screening soil samples will be allowed to sit in sealed zip-lock bag for a short period of time (minimum of five minutes). Head space measurements will then be taken from each zip-lock bag. To prevent cross contamination, zip-lock bags will not be reused and will be properly disposed. Calibration of all electronic field screening equipment will be completed daily and will be done to manufacturer's specifications.

As detailed in the Sampling Guidelines and Protocols Manual, grab samples will be placed in 4-ounce and 8-ounce, wide-mouth, glass jars. Sample jars will immediately be placed on ice in a cooler.

Water Sampling

Water samples will be collected in 40 ml and 1-liter glass jars and immediately placed on ice. The water will be analyzed for VOC, SVOC, PCBs, and metals on a standard turnaround time.

QA/QC Sampling

Duplicate samples will be collected from a minimum of 5% of the locations, and will be selected randomly.

Quality Assurance/Quality Control samples will not be collected and analyzed for the waste characterization sampling.

Analytical Procedures

Laboratory Analysis

Laboratory analysis will be conducted by a third-party laboratory that is accredited by the NYSDOH Environmental Laboratory Accreditation Program (ELAP). Laboratory analytical methods will include the most current NYSDEC Analytical Services Protocol (ASP).

Soil and groundwater samples sent to a certified laboratory will be analyzed in accordance with EPA SW-846 methodology for the following contaminants:

- VOCs (EPA Method 8260);
- SVOCs (EPA Method 8270C);
- Pesticides (USEPA 8081A);
- PCBs (USEPA 8082);
- Cyanide (USEPA Method 9010B);
- Mercury (USEPA Method 7471A);
- Hexavalent Chromium (USEPA Method 7196A); and
- Metals (EPA Method 6010B).
- 1,4 dioxane (EPA Method 8270SIM); and
- Per- and Poly-fluoroalkyl substances (EPA Method 1633).

Category B deliverable will be requested to be used in a third-party data validation.

Data Usability

Data Usability Summary Report (DUSR) will be performed by a third-party data consultant using the most recent methods and criteria from the U.S. EPA. The DUSR will assess all sample analytical data, blanks, duplicates and laboratory control samples and evaluate the completeness of the data package. The waste characterization samples will not be validated.

Documentation

Custody Procedures

As outlined in *NYSDEC Sampling Guidelines and Protocols*, a sample is in custody under the following conditions:

- It is in your actual possession;
- It is in your view after being in your physical possession;
- It was in your possession and then you locked or sealed it up to prevent tampering; or
- It is in a secure area.

The environmental professional will maintain all chain-of-custody documents that will be completed for all samples that will leave the Site to be tested in the laboratory.

Air Monitoring

Air monitoring will be conducted to verify no impacts to ambient air. Air monitoring will be conducted during the test pit program. The monitoring will include screening for particulates and VOCs. All records will be kept on-site during the investigation and will be made available for regulatory inspection. A daily air monitoring log will be maintained through the end of field activities and documented in the construction completion report. The specifics of the air monitoring procedures and criteria are detailed in the CAMP.

EXCAVATION WORK PLAN

Soil Screening Methods

- Visual, olfactory and/or instrument-based (e.g., PID) soil screening will be performed by a C&S scientist during all test pit activities into known or potentially contaminated material.

Soil Staging Methods

- Clean soil cover material will be removed in an area a few feet surrounding the test pit and placed on top of existing clean soil cover.
- Spoils from material underneath the cover system will be placed on 6 mil poly sheets. If run off from water saturated soils becomes a concern the staging area will be bermed with dry soils, silt socks or hay bales to create a depression for water to accumulate.

Materials Excavation and Load-Out

- No materials will be loaded out from the Site.

Fluids Management

- Liquids such as excavation dewatering and decontamination waters will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.
- After test pits are excavated, Pinto will install a vertical 20-foot section of 24-inch diameter perforated HDPE pipe wrapped in a non-woven geotextile. After the pipes are installed approximately five feet around the outside of the pipe will be backfilled with clean 2-inch stone. Pipes will stick up above the ground and be capped. These pipes will be used as dewatering points during construction.

Materials Transport Off-Site

- No materials are anticipated to be transported offsite.

Materials Disposal Off-Site

- No materials are anticipated to be disposed offsite.
- Any grossly impacted material will containerized and disposal off-site in accordance with local, state, and federal regulations. The NYSDEC will be notified immediately after the material has been discovered.
- EWP Section 3.3 will be followed if excess spoils need to be disposed offsite.

Materials Reuse On-Site

- For the purposes of this sampling plan, no materials are planned to be reused on-site.

Backfilling

- Spoils from underneath the cover system will be replaced into the test pit.
- Stockpiled cover material will be replaced and regraded.
- Crushed 2-inch stone will be brought onsite to backfill the bottom five feet of the test pit.
- If all soils can not be placed back into the excavation, then excess spoils will be stockpiled placed and covered with 6 mil poly sheets for later disposal or reuse. Excess spoils will stay on the BCP site and will not be transported across BCP sites.

Community Air Monitoring

- The criteria presented in Community Air Monitoring Plan will be adhered to during all intrusive activities.
- Upwind and downwind VOC and particulate monitors will be placed around the active test pit.

Health and Safety

- Pinto and C&S will comply with the Site-wide Health and Safety Plan.

Schedule

- C&S anticipates starting test pit activities in January 2023 and completing the field program in five days.

Should you have any questions or require additional information, please feel free to contact either of the undersigned.

Sincerely,

C&S ENGINEERS, INC.

Cody A. Martin
Project Environmental Scientist

Daniel E. Riker
Department Manager

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FUTURE PUBLIC ROADWAY EXTENSION

30' UTILITY EASEMENT

ABANDON EXISTING SANITARY SEWER SYSTEM

APPROX. LIMITS OF FUTURE R.O.W. (TYP.)

TEST PITS

FUTURE RIDGE ROAD EXTENSION

30' UTILITY EASEMENT

APPROX. LIMITS OF FUTURE R.O.W. (TYP.)

CX101 CX102 CX103 CX104 CX105 CX106

I-1 BCP SITE NO. C915197 (± 5.57 ACRES)

I-2 BCP SITE NO. C915197B (± 6.23 ACRES)

I-3 BCP SITE NO. C915197C (± 7.63 ACRES)

I-4 BCP SITE NO. C915197D (± 10.37 ACRES)

I-5 BCP SITE NO. C915197E (± 10.65 ACRES)

I-6 BCP SITE NO. C915197F (± 10.02 ACRES)

I-7 BCP SITE NO. C915197G (± 10.03 ACRES)

I-8 BCP SITE NO. C915197H (± 10.34 ACRES)

I-9 BCP SITE NO. C9151971 (± 10.01 ACRES)

I-10 BCP SITE NO. C9151971 (± 9.58 ACRES)

I-A BCP SITE NO. C915197A (± 15.3 ACRES)

II-11 BCP SITE NO. C915198 (± 11.94 ACRES)

II-12 BCP SITE NO. C915198 (± 12.02 ACRES)

2.552'-6"

ODELL STREET

RIDGE ROAD

NOTES:
1. THE FOLLOWING BROWNFIELD CLEANUP (BCP) SITES HAVE RECEIVED A CAP: I-1, I-3, I-5, I-7, I-9, I-10, II-12, & THE BIKE PATH ALONG NYS ROUTE 5.
2. IN AREAS WHERE SELECT BACKFILL IS NOT INDICATED ON THE PLANS, ANY EXCAVATED MATERIALS THAT ARE NOT USED TO BACKFILL TRENCHES SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT A DEC APROVED LANDFILL.

0 100' 200'

C&S COMPANIES
C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS

LACKAWANNA, NY

MARK	DATE	DESCRIPTION
1	08/29/2022	ADDENDUM #1

REVISIONS

EDA PROJECT NO:	01-79-15063
C&S PROJECT NO:	135F.001.001
DATE:	JULY 27, 2022
DRAWN BY:	MRO
DESIGNED BY:	MRO
CHECKED BY:	VJO

OVERALL PLAN

CI001

Sep 13, 2022 – 8:35am
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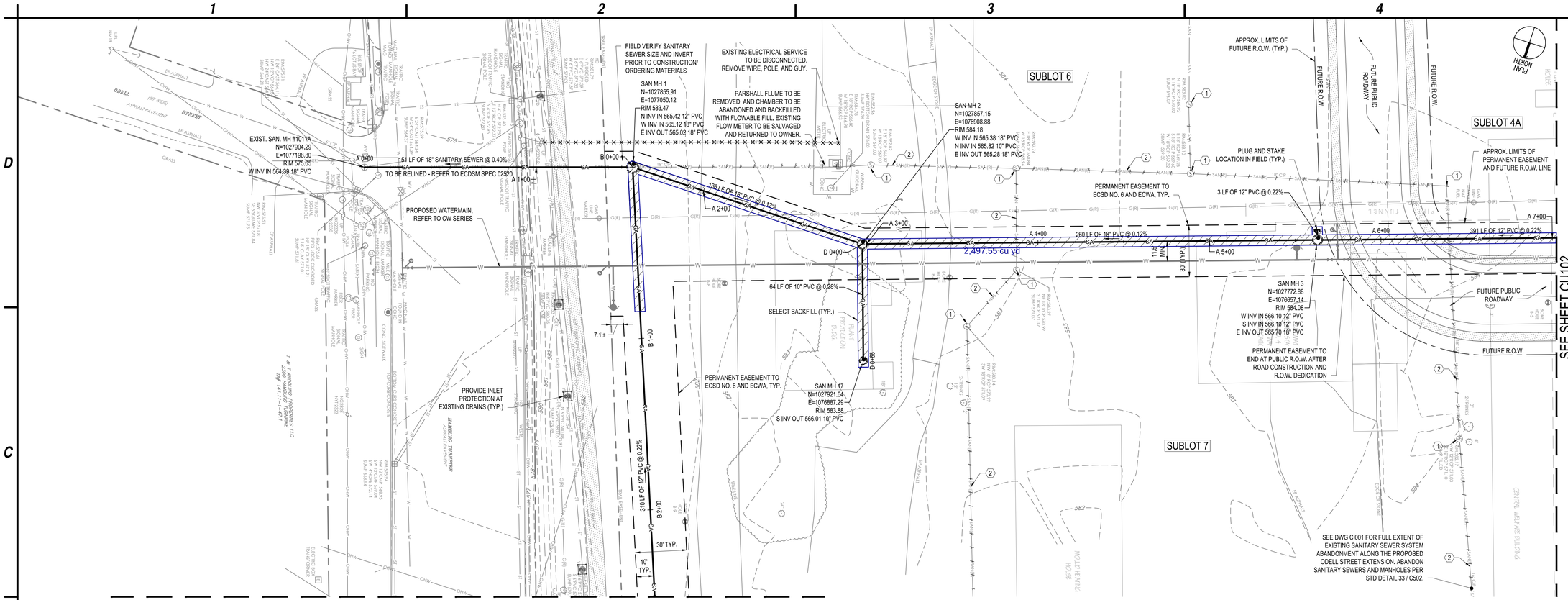

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Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

STATE OF NEW YORK VICTOR J. O'BRIEN 075819 LICENSED PROFESSIONAL ENGINEER

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS

LACKAWANNA, NY

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DESIGNED BY:	MRO
CHECKED BY:	VO

SANITARY SEWER PLAN & PROFILE

CU101

Jul 27, 2022 – 2:53pm
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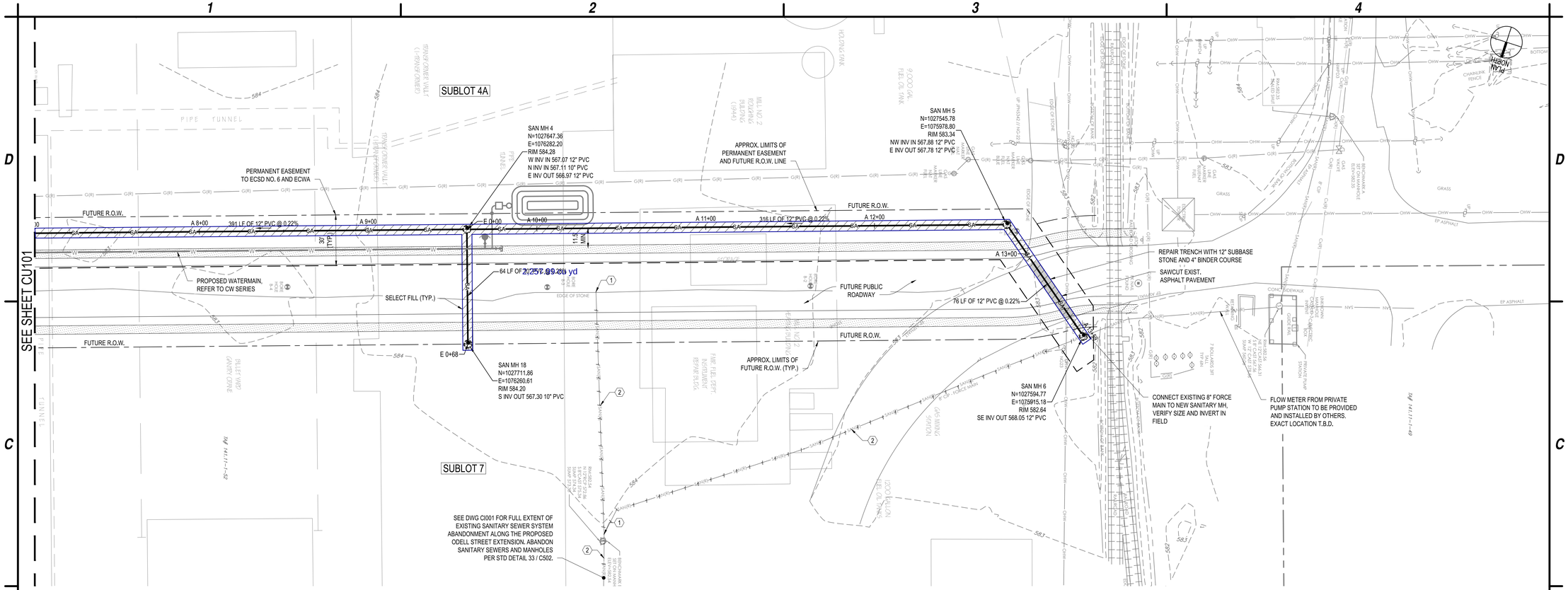

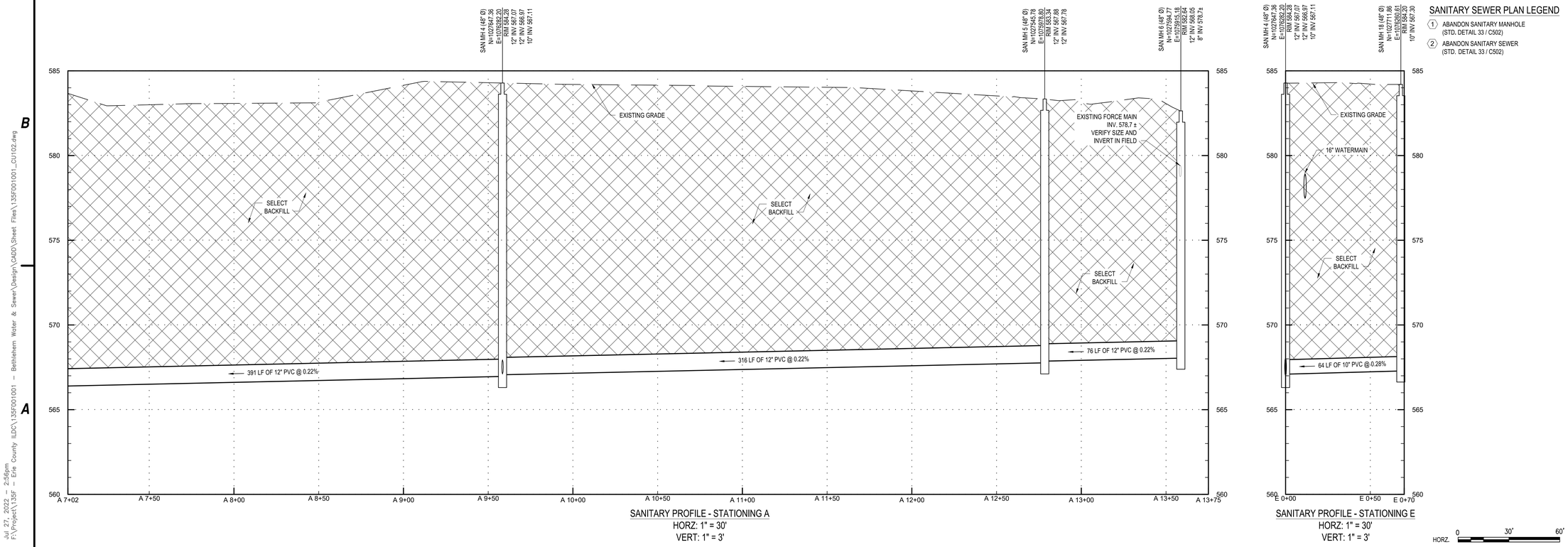

SANITARY PROFILE - STATIONING A
HORZ: 1" = 30'
VERT: 1" = 3'

SANITARY PROFILE - STATIONING E
HORZ: 1" = 30'
VERT: 1" = 3'

HORZ. 0 30' 60'

SANITARY SEWER PLAN LEGEND

1. ABANDON SANITARY MANHOLE (STD. DETAIL 33 / C502)
2. ABANDON SANITARY SEWER (STD. DETAIL 33 / C502)

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141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

STATE OF NEW YORK VICTOR J. O'BRIEN LICENSED PROFESSIONAL ENGINEER 075818

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS

LACKAWANNA, NY

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DRAWN BY:	MRO
DESIGNED BY:	MRO
CHECKED BY:	VO

SANITARY SEWER PLAN & PROFILE

CU102

Jul 27, 2022 – 2:56pm
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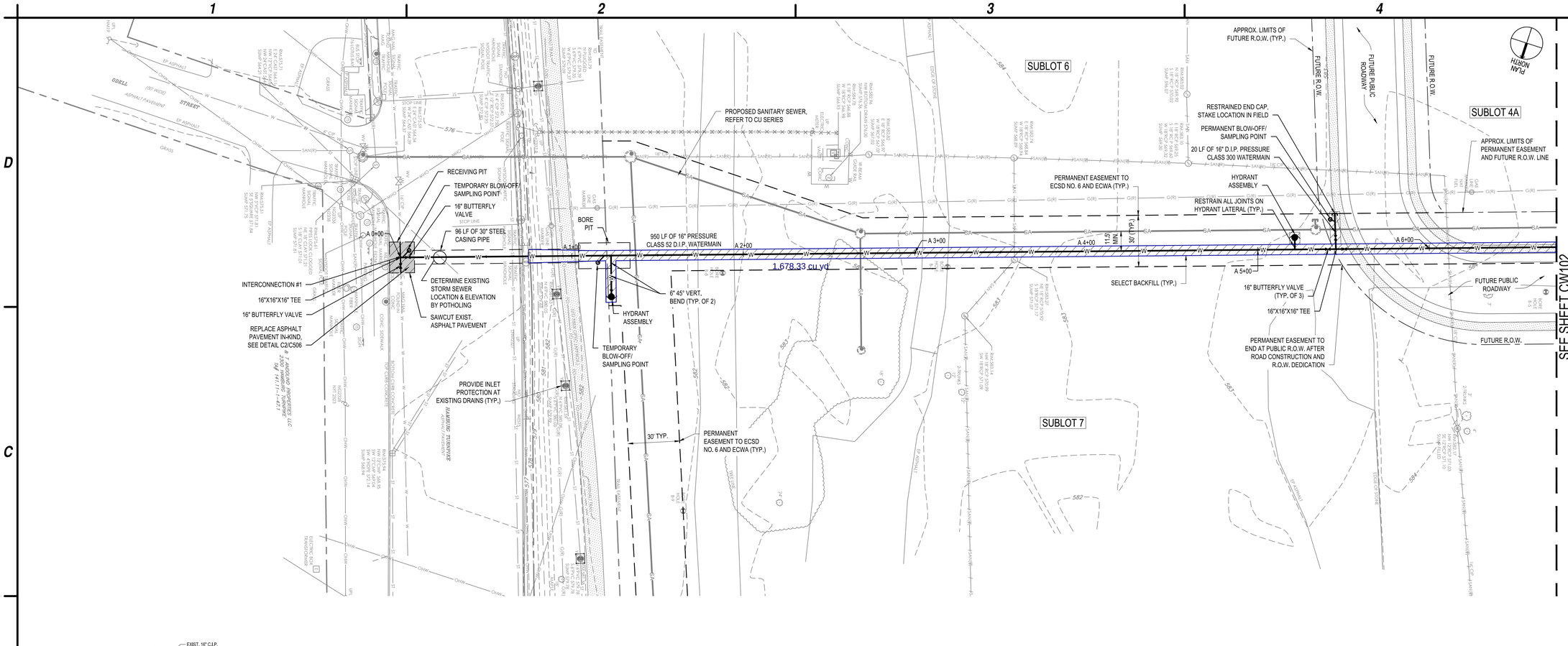
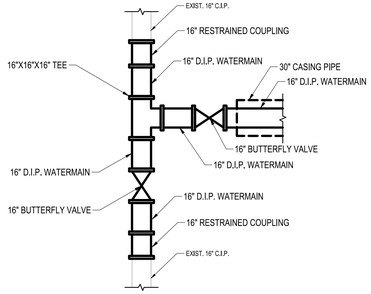
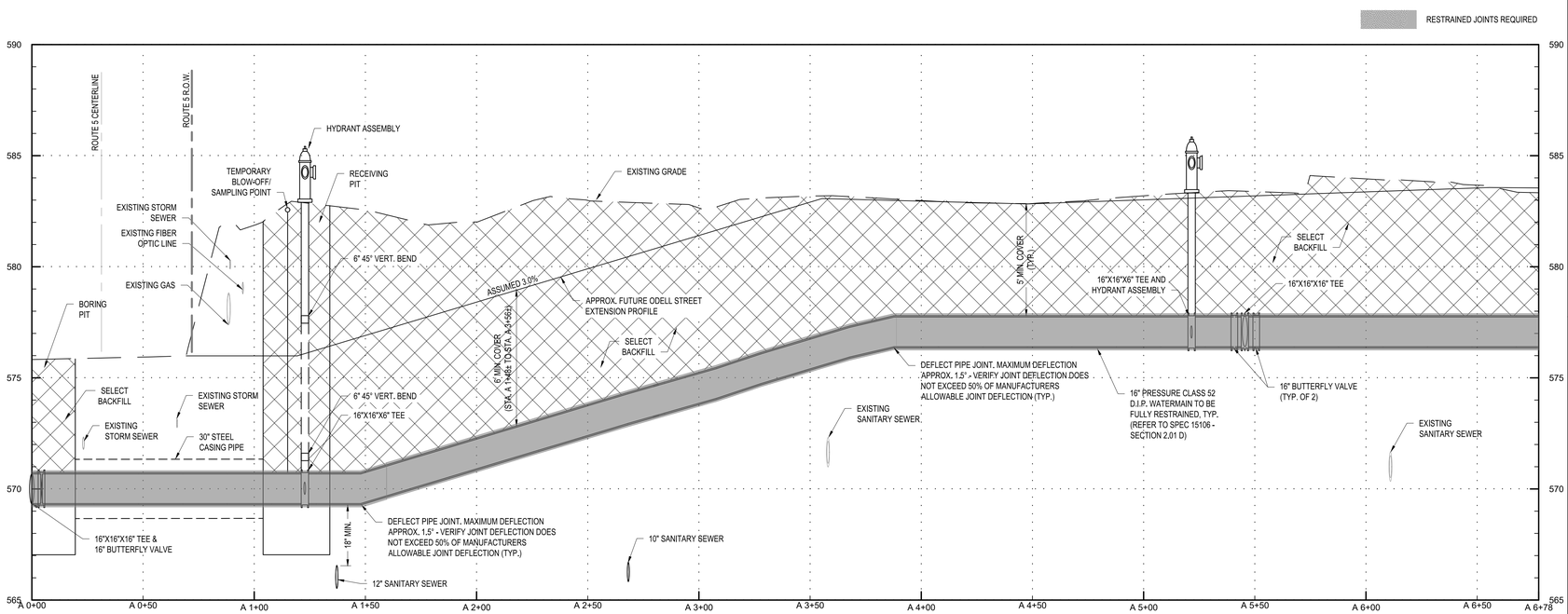




INTERCONNECTION DETAIL #1
SCALE: N.T.S.



WATER PROFILE - STATIONING A
HORZ: 1" = 30'
VERT: 1" = 3'

HORZ. 0 30' 60'

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FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS
LACKAWANNA, NY

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DESIGNED BY:	MRO
CHECKED BY:	VO

WATER MAIN PLAN & PROFILE

CW101

Jul 27, 2022 – 3:10pm
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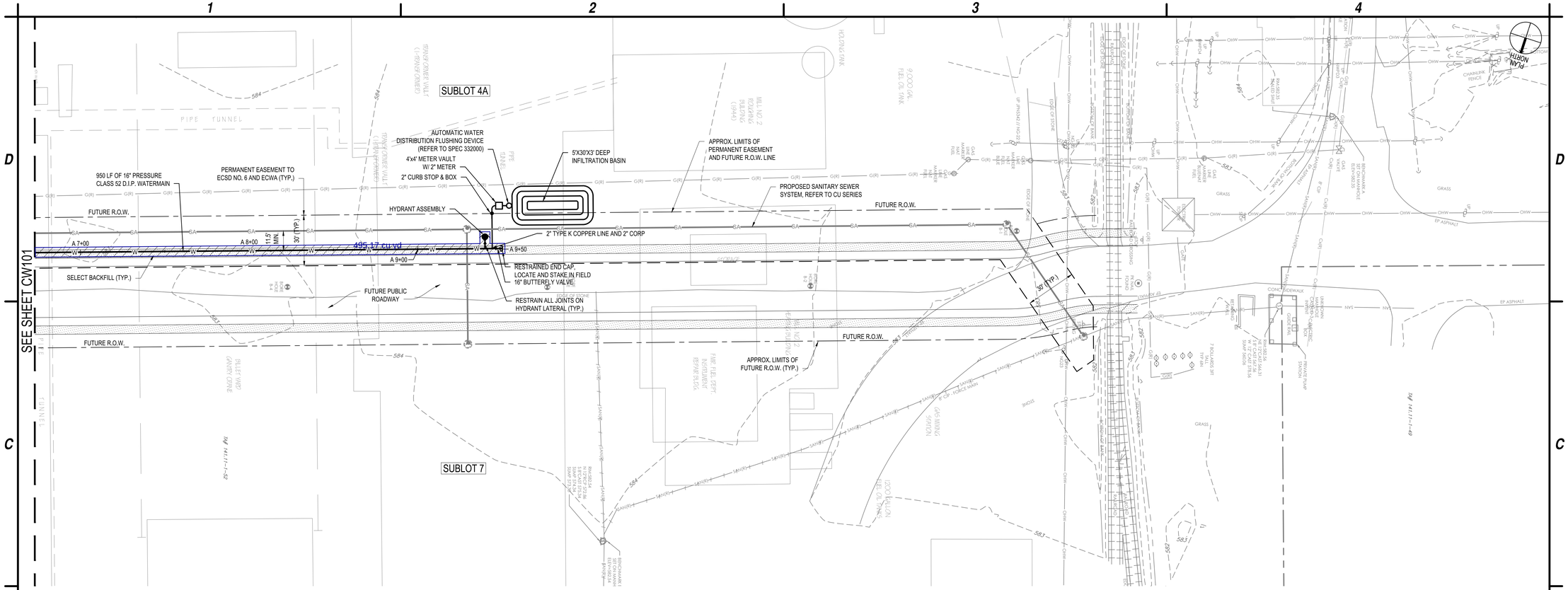
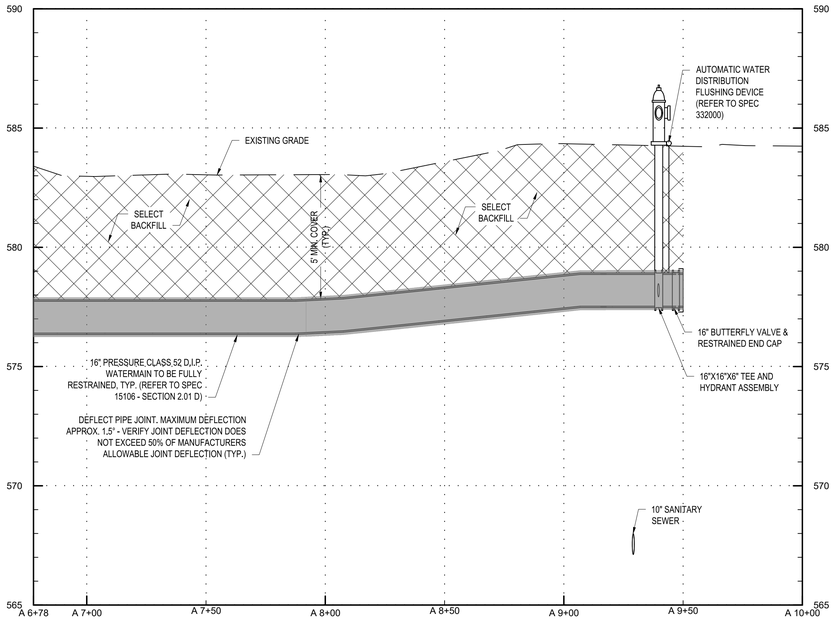


RESTRAINED JOINTS REQUIRED



WATER PROFILE - STATIONING A
HORZ: 1" = 30'
VERT: 1" = 3'

NOTE: AUTOMATIC WATER DISTRIBUTION FLUSHING DEVICE SHALL BE PRIVATELY OWNED AND MAINTAINED BY BUFFALO & ERIE COUNTY ILDC.

HORZ. 0 30' 60'

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STATE OF NEW YORK
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075818
LICENSED PROFESSIONAL ENGINEER

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS
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WATER MAIN PLAN & PROFILE

CW102

Jul 27, 2022 – 3:12pm
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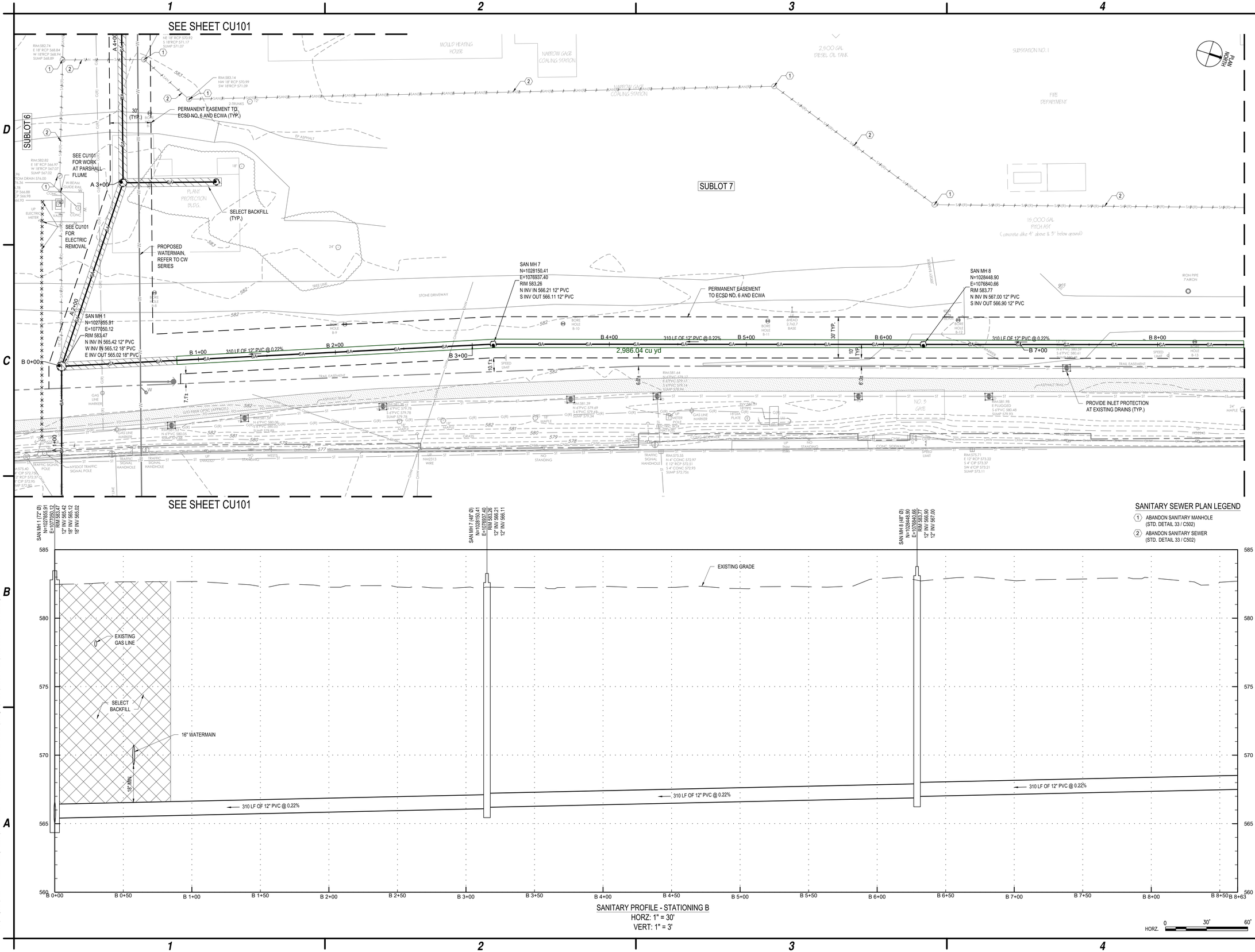

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Fax: 716-847-1454
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SANITARY SEWER PLAN & PROFILE

CU103

Jul 27, 2022 - 2:57pm
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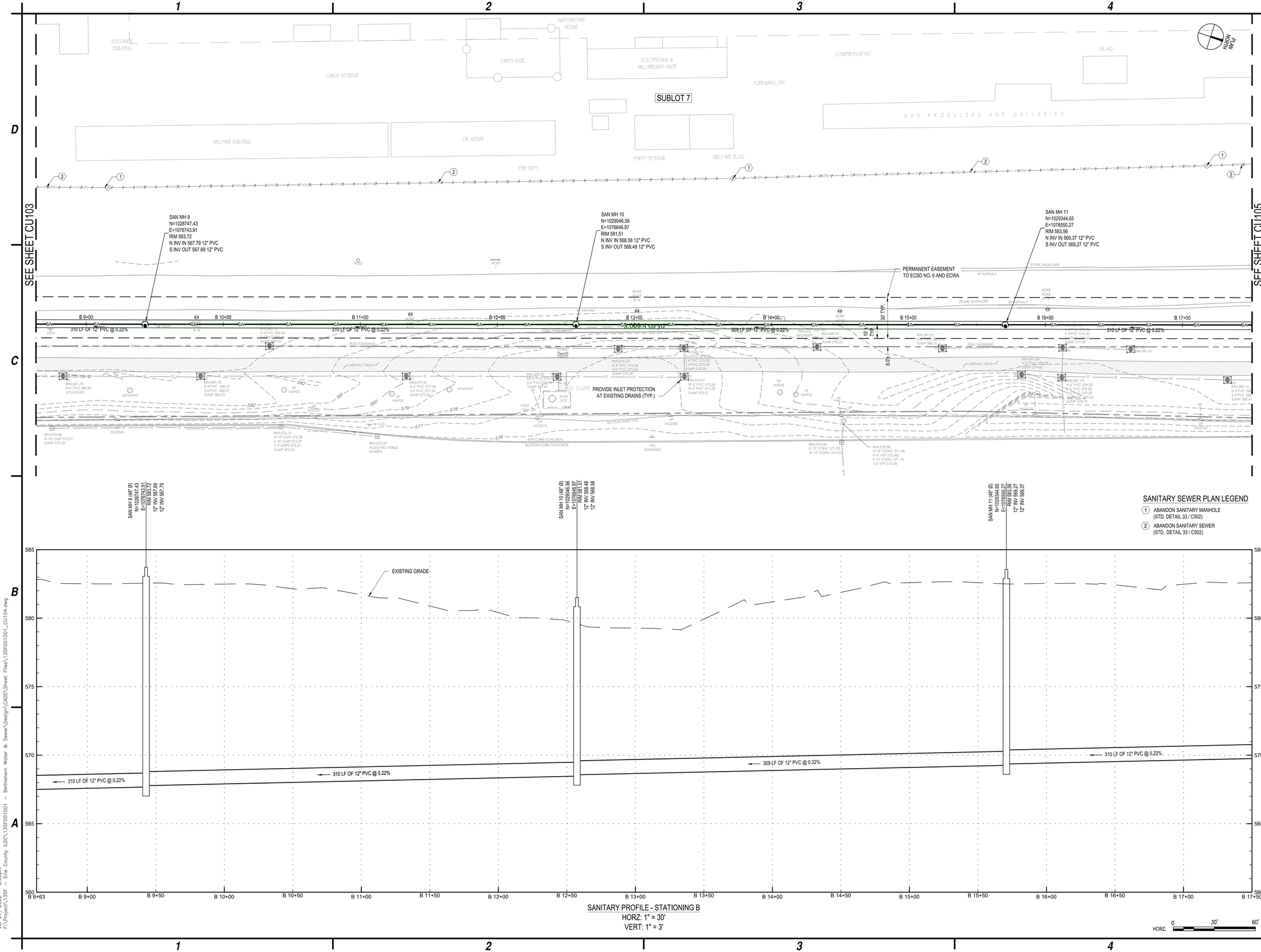

C&S COMPANIES
C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

STATE OF NEW YORK VICTOR J. O'BRIEN 076818 LICENSED PROFESSIONAL ENGINEER

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS

LACKAWANNA, NY

MARK	DATE	DESCRIPTION

REVISIONS

EDA PROJECT NO: 01-79-15063
C&S PROJECT NO: 135F.001.001
DATE: JULY 27, 2022
DRAWN BY: MRO
DESIGNED BY: MRO
CHECKED BY: VO

SANITARY SEWER PLAN & PROFILE

CU104

Jul 27, 2022 – 2:58pm
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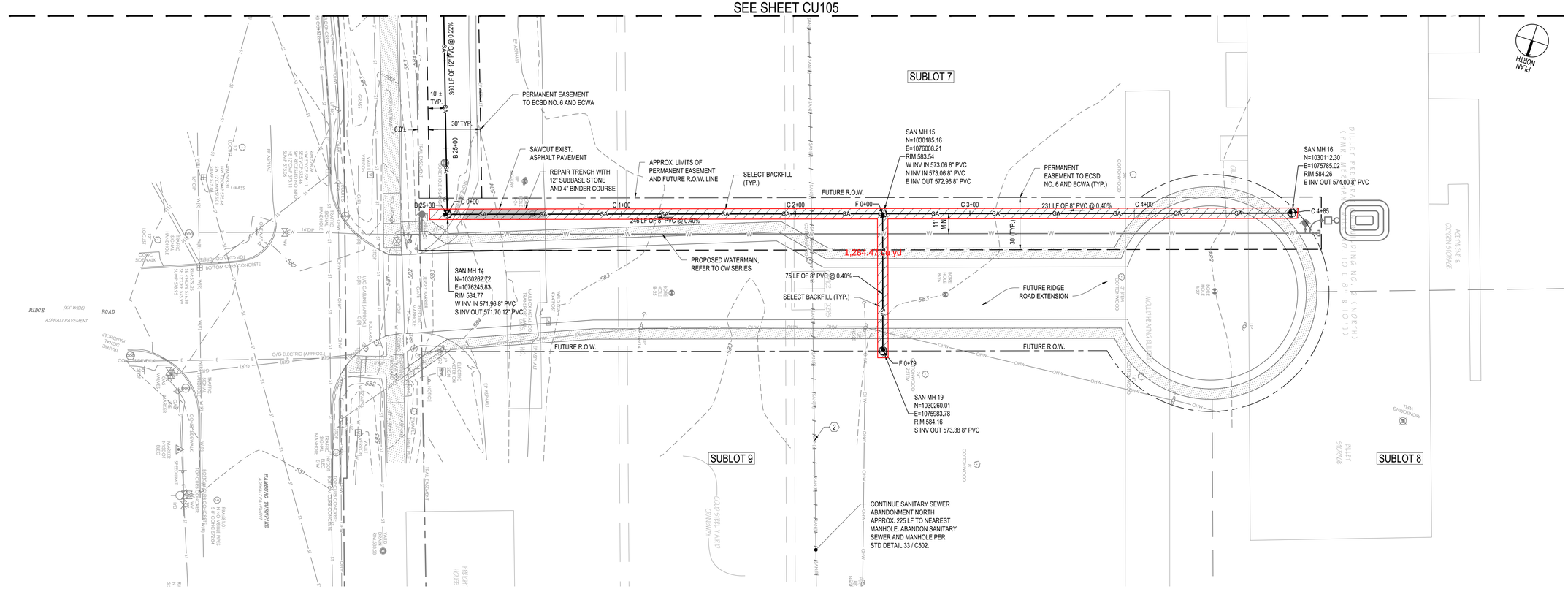
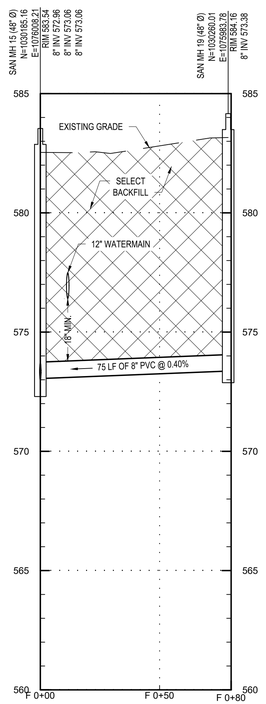
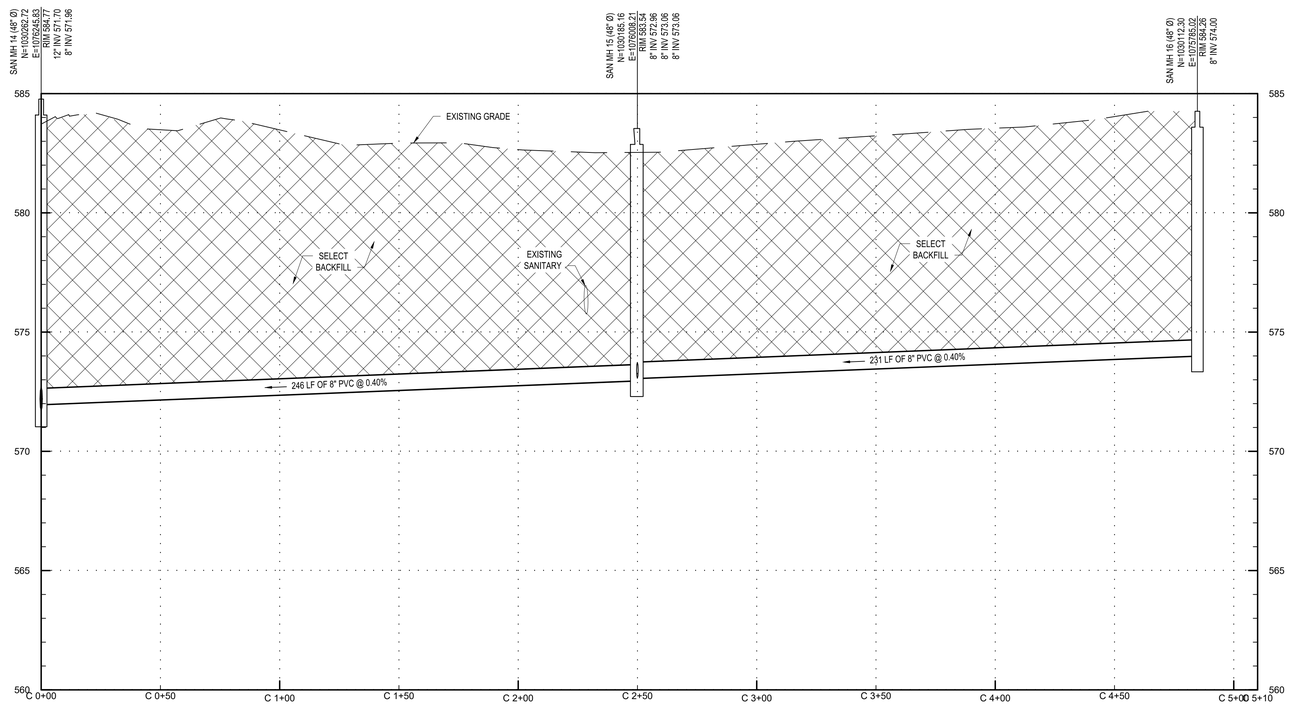
SEE SHEET CU105





SANITARY PROFILE - STATIONING F
HORZ: 1" = 30'
VERT: 1" = 3'



SANITARY PROFILE - STATIONING C
HORZ: 1" = 30'
VERT: 1" = 3'

SANITARY SEWER PLAN LEGEND

1. ABANDON SANITARY MANHOLE (STD. DETAIL 33 / C502)
2. ABANDON SANITARY SEWER (STD. DETAIL 33 / C502)

HORZ. 0 30' 60'

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STATE OF NEW YORK — VICTOR J. O'BRIEN — 075818 — LICENSED PROFESSIONAL ENGINEER

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS
LACKAWANNA, NY

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		REVISIONS

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CHECKED BY:	VO

SANITARY SEWER PLAN & PROFILE

CU106

Jul 27, 2022 – 3:01pm
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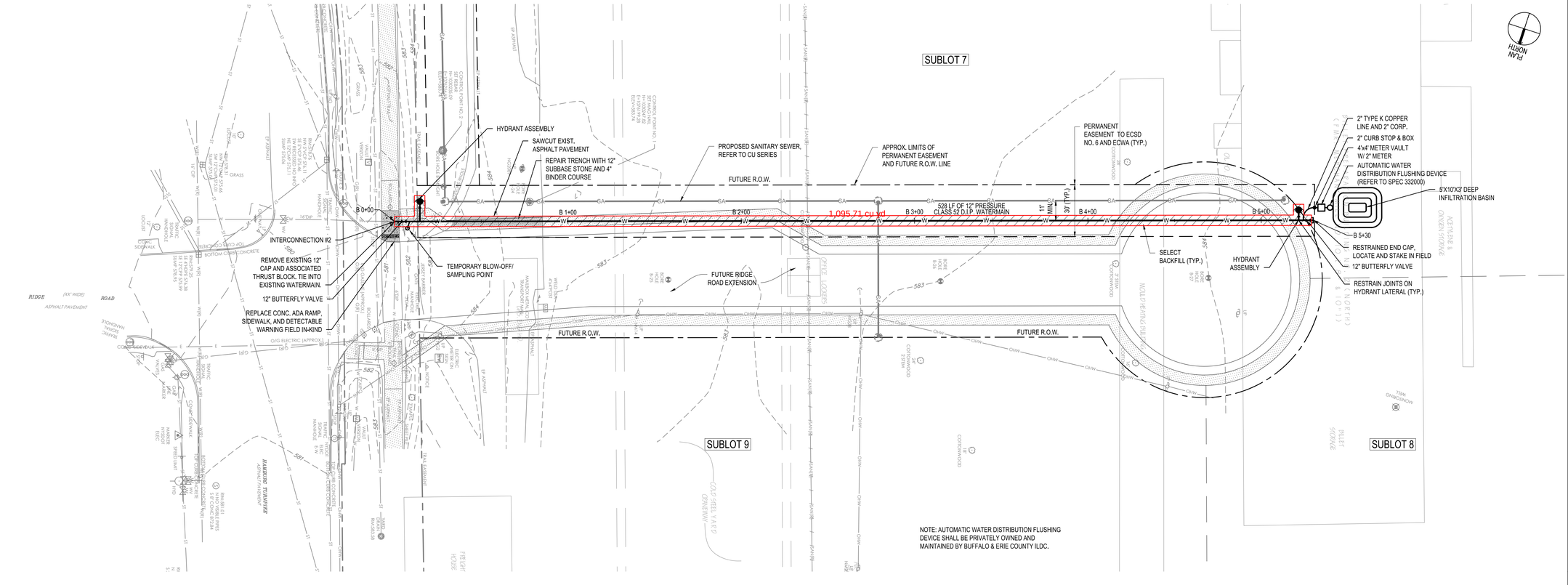
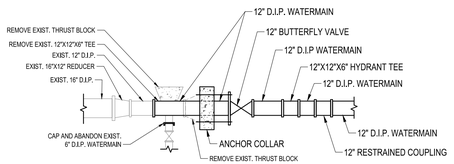
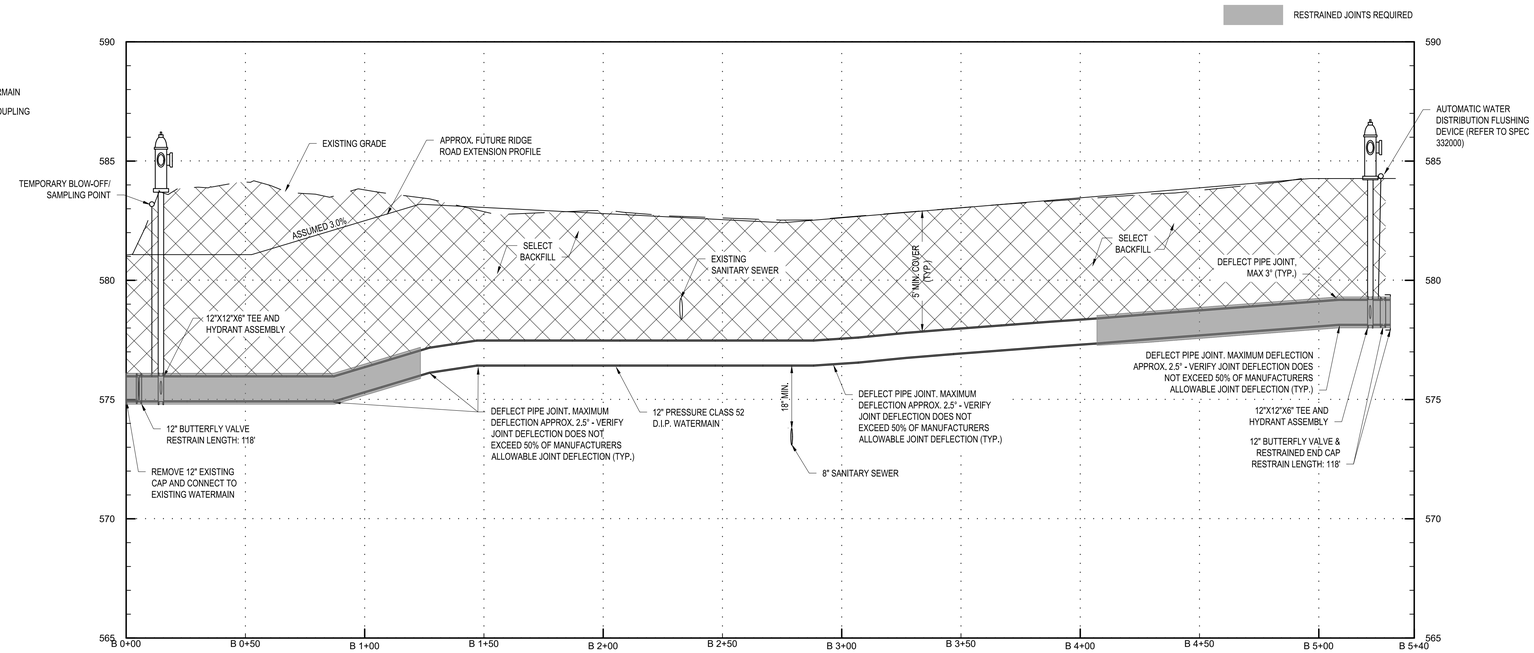




INTERCONNECTION DETAIL #2
SCALE: N.T.S



WATER PROFILE - STATIONING B
HORZ: 1" = 30'
VERT: 1" = 3'

HORZ. 0 30' 60'

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Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

STATE OF NEW YORK
VICTOR J. O'BRIEN
075813
LICENSED PROFESSIONAL ENGINEER

FORMER BETHLEHEM STEEL PUBLIC SANITARY SEWER AND WATER LINE EXTENSIONS
LACKAWANNA, NY

MARK	DATE	DESCRIPTION
		REVISIONS

EDA PROJECT NO:	01-79-15063
C&S PROJECT NO:	135F.001.001
DATE:	JULY 27, 2022
DRAWN BY:	MRO
DESIGNED BY:	MRO
CHECKED BY:	VO

WATER MAIN PLAN & PROFILE

CW106

Jul 27, 2022 – 3:16pm
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NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Commercial or Industrial Use

Have Ecological Resources been identified? no

Is this soil originating from the site? no

How many cubic yards of soil will be imported/reused? 50-100

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? yes

Does it contain less than 10%, by weight, material that would pass a size 10 sieve? yes

Does it contain less than 10%, by weight, material that would pass a size 100 sieve? yes

Is this virgin material from a permitted mine or quarry? yes

Is this material recycled concrete or brick from a DEC registered processing facility? no

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

This request is for 2" crushed rock. This material passes the 80 sieve test that waives the DER-10 sampling requirement.

No samples collected

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

NA

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

New Enterprise Stone & Lime Co., Inc. (Buffalo Crushed Stone)

Location where fill was obtained:

8615 Wehrle Drive, Willamsville, New York

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

NA

Provide a list of supporting documentation included with this request:

Sieve analysis

The information provided on this form is accurate and complete.

Signature

11/09/2022

Date

Cody Martin

Print Name

C&S Engineers, Inc.

Firm

Gradation Sheet

Buffalo Crushed Stone

Sample of 2/6	Date 10/6/22	Time
From Pt. 23	Mill	

Sieve Size	Sieve Size	Weight Retained	% Retained	% Passing	Spec.
90mm	3-1/2"		0.0	100.0	
75mm	3"		0.0	100.0	
63mm	2-1/2"		0.0	100.0	
50mm	2"		0.0	**100.0**	100
37.5mm	1-1/2"		0.0		
25.0mm	1"	0.75	3.8	**96.2**	90/100
19.0mm	3/4"	6.20	31.8	**64.4**	
12.5mm	1/2"	11.05	56.7	**7.7**	0/15
9.5mm	3/8"	1.25	6.4	**1.3**	
6.3mm	1/4"	0.15	0.8	**0.5**	
4.75mm	4		0.0		
3.2mm	1/8"		0.0		
2.36mm	8		0.0		
2.0mm	10		0.0		
1.4mm	14		0.0		
1.18mm	16		0.0		
850µm	20		0.0		
600µm	30		0.0		
425µm	40		0.0		
300µm	50		0.0		
180µm	80	0.05	0.3	**0.3**	<10
150µm	100		0.0		
75µm	200		0.0		
	Pan	0.05	0.3		
	Total	19.50	100		

Wash Loss:		
Before:		
After:		
Loss:	0.0	
	#DIV/0!	%

Carthage Mills **Product Data**

Geotextiles | Erosion Control | Geogrids | Geomembranes

FX®-45HS

Carthage Mills' FX-45HS is a multipurpose nonwoven geotextile made of polypropylene staple fibers which are formed into a random network, needlepunched and heatset for dimensional stability. FX-45HS is part of the Carthage **FX-HS Series** of nonwoven geotextiles, is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

AASHTO M 288: FX-45HS meets the geotextile requirements of Class 3, ≥50% elongation for Subsurface Drainage, Separation, and Stabilization.

PROPERTY	TEST METHOD	DATA	
		METRIC	ENGLISH
☐ **Mechanical**			
Grab Tensile Strength	ASTM D 4632	0.53 kN	120 lbs
Grab Tensile Elongation		50%	
Trapezoidal Tear	ASTM D 4533	0.22 kN	50 lbs
CBR Puncture	ASTM D 6241	1.38 kN	310 lbs
☐ **Endurance**			
UV Resistance	ASTM D 4355	70% @ 500 hrs	
☐ **Hydraulics / Filtration**			
Permittivity [1]	ASTM D 4491	1.70 sec^{-1}	
Water Flow Rate [1]		5,500 lpm/m^2	135 gpm/ft^2
Apparent Opening Size (AOS) [1]	ASTM D 4751	0.212 mm	70 US Std. Sieve
☐ **Physical**			
Mass Per Unit Area (Typical)	ASTM D 5261	152.55 g/m^2	4.5 oz/yd^2
Standard Roll Sizes / Packaging / Weight	Measured (Typical)	3.81 m x 109.7 m 418 m^2 68 kg	12.5 ft x 360 ft 500 yd^2 150 lbs
		4.57 m x 109.7 m 501.6 m^2 90 kg	15.0 ft x 360 ft 600 yd^2 198 lbs

NOTES: Mullen Burst Strength ASTM D 3786 is no longer recognized by ASTM D35 on Geosynthetics. Puncture Strength ASTM D 4833 is not recognized by AASHTO M 288 and has been replaced with CBR Puncture ASTM D 6241.

(1) At the time of manufacturing. Handling, storage and shipping may change these properties.
- Unless otherwise stated, all values stated here are Minimum Average Roll Values (MARV).
- The properties reported above are effective 11-01-20 and are subject to change without notice.

» **AASHTO M 288: Geotextile Product Selection Guide**

Carthage Mills
4243 Hunt Road
Cincinnati, OH 45242
www.carthagemills.com

513-794-1600 TELEPHONE
800-543-4430 TOLL FREE
513-794-3434 FACSIMILE
info@carthagemills.com

Since 1958: America's *First* Geotextile Company