

July 29, 2021

Mr. John Miller, PE
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor
Albany, New York 12233-7014

Re: Remedial Design Addendum No. 5
Supplemental Remedial Excavation Areas
Former Citizens Gas Works Manufactured Gas Plant Site
Carroll Gardens/Public Place
Borough of Brooklyn, Kings County, New York
Site Nos. C224012 and C224012B

Dear Mr. Miller:

Please find enclosed for your information Addendum No. 5 to the *100% Remedial Design Report* (Remedial Design) for Parcels I (Block 471, Lot 1; 42 5th Street), II (Block 471, Lot 100; 431 Hoyt Street), and III (Block 471, Lot 200; 477 Smith Street) of the former Citizens Gas Works manufactured gas plant site (hereinafter, the “Site”) located in Brooklyn, New York. Addendum No. 5 comprises several new and revised drawings that incorporate the new supplemental remedial excavation to be completed on Parcel I of the Site in accordance with National Grid’s April 26, 2021 proposal, which was approved by the New York State Department of Environmental Conservation (NYSDEC) on April 27, 2021. Design Drawing C-103 (Site Remedial Excavation Plan; attached) has been revised to include the new Parcel I supplemental remedial excavation (identified as “Area 12” on Drawing C-103), as well as the supplemental remedial excavations previously completed on Parcel III of the Site (identified as “Area 7”, “Area 8”, “Area 9”, “Area 10”, and “Area 11” on Drawing C-103).

The temporary support of excavation design for the new Parcel I supplemental remedial excavation (Area 12) is shown on the following new drawings, which are attached hereto:

- Design Drawing S-108, Area 12 Temporary Support of Excavation Plan;
- Design Drawing S-312, Area 12 Temporary Support of Excavation Section; and
- Design Drawing S-509, Area 12 Temporary Support of Excavation Details.

Minor revisions have also been made to the following drawings as part of this Addendum No. 5 to incorporate the supplemental remedial excavation work:

- Design Drawing G-001, Cover Sheet, Location Map, and List of Drawings;
- Design Drawing G-110, Historical Site Plan;
- Design Drawing C-108, Site Subgrade Grading Plan; and
- Design Drawing C-109, Site Restoration and Final Grading Plan.

Revised Design Drawing C-109 also reflects the additional recovery wells and modified recovery well construction details originally proposed by National Grid on January 22, 2021 and approved by NYSDEC on January 28, 2021.

Revised items on each drawing are denoted with a revision cloud and triangle and are summarized in the revision block at the bottom of the drawing. Revision triangles without the revision cloud denote revisions made in previous Remedial Design Addenda.

If you have any questions, please call me at (516) 545-2578, or contact me by e-mail at patrick.vanrossem@nationalgrid.com.

Sincerely,



Patrick J. Van Rossem
Project Manager
Site Investigation & Remediation

Enclosure

cc: C. Tsiamis, USEPA
A. Prophete, National Grid
J. Alonzo, de maximis
S. Raymond, GZA
D. Amate, GZA
T. Young, PE, Arcadis
M. Benoit, PE, Arcadis

CITY: SYRACUSE; DW: GROUP: ENVCAD; DB: K.SARTORI; B. DECLERO; J. HARRIS; PIC: PM; M. BENOIT; TM: A. GEORGE; C:\Users\jrharris\OneDrive\Arcadis\ALUS-NATIONAL GRID-FORMER CITIZENS GAS WORKS-BROOKLYN New York\Project Files\2021\01-14\Progress\01-DWG\CONTRACT-G-001-COVER.dwg; LAYOUT: COVER; SAVER: 7/28/2021 3:37 PM; ACADVER: 23.1S (LMS TECH); PAGES: 23; PLOTSTYLETABLE: PLOTCONT.CTB; PLOTTED: 7/29/2021 8:12 AM; BY: HARRIS, JESS

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DESIGN DRAWINGS

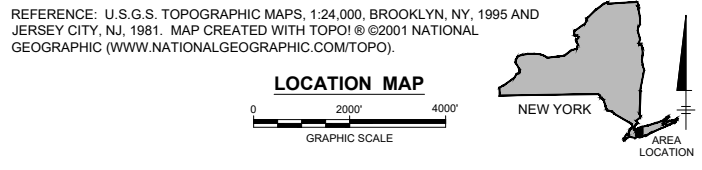
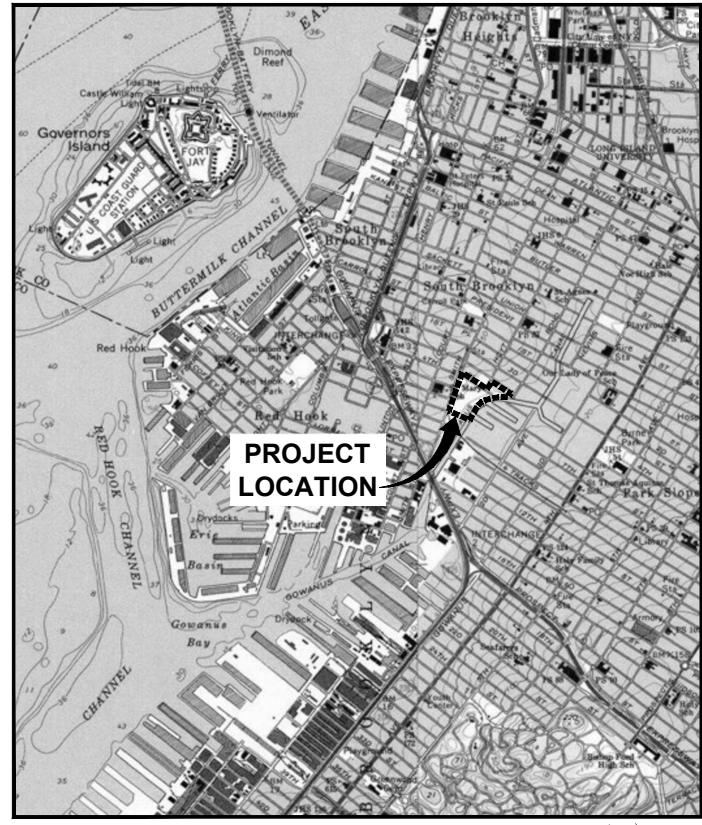
SITE REMEDICATION

FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE CARROLL GARDENS/PUBLIC PLACE BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK

DATE ISSUED
NOVEMBER 2017



BROOKLYN, NEW YORK



No.	Date	Revisions	By	Ckd
3	7/29/2021	ADDED DRAWINGS S-108, S-312, AND S-509 TO LIST OF DRAWINGS	MJB	MJB
2	11/13/2020	ADDED DRAWING S-508 TO LIST OF DRAWINGS	MJB	MJB
1	2/4/2019	ADDED NEW SHEETS TO LIST OF DRAWINGS	RPK	MJB

LIST OF DRAWINGS

GENERAL

- G-001 COVER SHEET, LOCATION MAP, AND LIST OF DRAWINGS
- G-002 GENERAL NOTES, REFERENCE DRAWINGS, ABBREVIATIONS, AND LEGEND
- G-101 EXISTING SITE PLAN
- G-102 EXISTING PARCEL I PLAN
- G-103 EXISTING PARCEL II PLAN
- G-104 EXISTING PARCEL III PLAN
- G-105 EXISTING SITE UTILITY PLAN
- G-106 EXISTING PARCEL I UTILITY PLAN
- G-107 EXISTING PARCEL II UTILITY PLAN
- G-108 EXISTING PARCEL III UTILITY PLAN
- G-109 EXISTING SITE BULKHEAD PLAN
- G-110 HISTORICAL SITE PLAN
- G-111 EXISTING SOIL BORING, TEST PIT, AND WELL PLAN
- G-112 SITE UTILIZATION PLAN
- G-113 TRUCK TRAFFIC PLAN
- G-501 EXISTING BULKHEAD DETAILS
- G-502 EXISTING SEWER DETAILS
- G-601 WELL CONSTRUCTION SCHEDULES

CIVIL

- C-101 FACILITY DEMOLITION PLAN
- C-102 SITE PREPARATION PLAN
- C-103 SITE REMEDIAL EXCAVATION PLAN
- C-106 HYDRAULIC RELIEF SYSTEM PLAN AND PROFILE STA. 0+00 TO STA. 4+75
- C-107 HYDRAULIC RELIEF SYSTEM PLAN AND PROFILE STA. 4+75 TO STA. 9+25
- C-108 SITE SUBGRADE GRADING PLAN
- C-109 SITE RESTORATION AND FINAL GRADING PLAN
- C-501 TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS
- C-502 TEMPORARY CONSTRUCTION DETAILS
- C-503 FENCING DETAILS
- C-504 HYDRAULIC RELIEF SYSTEM DETAILS
- C-505 HYDRAULIC RELIEF SYSTEM DETAILS
- C-506 STORM DRAINAGE DETAILS
- C-507 SITE RESTORATION DETAILS

STRUCTURAL

- S-101 PARCEL I REMEDIAL EXCAVATION SHORING PLAN AND CONSTRUCTION SEQUENCE
- S-102 PARCEL III REMEDIAL EXCAVATION SHORING PLAN AND CONSTRUCTION SEQUENCE
- S-103A SITE BULKHEAD BARRIER WALL PLAN
- S-104A BULKHEAD BARRIER WALL PLAN STA. 0+00 TO STA. 2+25
- S-105A BULKHEAD BARRIER WALL PLAN STA. 2+25 TO STA. 4+75
- S-106 BULKHEAD BARRIER WALL PLAN STA. 4+75 TO STA. 7+25
- S-107 BULKHEAD BARRIER WALL PLAN STA. 7+25 TO STA. 8+79
- S-108 AREA 12 TEMPORARY SUPPORT OF EXCAVATION PLAN
- S-201 BULKHEAD BARRIER WALL PROFILE STA. 0+00 TO STA. 2+25
- S-202 BULKHEAD BARRIER WALL PROFILE STA. 2+25 TO STA. 4+75
- S-203 BULKHEAD BARRIER WALL PROFILE STA. 4+75 TO STA. 7+25
- S-204 BULKHEAD BARRIER WALL PROFILE STA. 7+25 TO STA. 8+79
- S-301 PARCEL I REMEDIAL EXCAVATION SHORING SECTION
- S-302 AREA 1 REMEDIAL EXCAVATION SHORING SECTION
- S-303 AREA 2 REMEDIAL EXCAVATION SHORING SECTION
- S-304 AREA 3 REMEDIAL EXCAVATION SHORING SECTION
- S-305 AREA 4 REMEDIAL EXCAVATION SHORING SECTION
- S-306 PARCEL III REMEDIAL EXCAVATION SHORING SECTION
- S-307 PARCEL III REMEDIAL EXCAVATION SHORING SECTION
- S-308 BULKHEAD BARRIER WALL SECTIONS
- S-309 BULKHEAD BARRIER WALL SECTIONS
- S-310 BULKHEAD BARRIER WALL SECTIONS
- S-311 BULKHEAD BARRIER WALL SECTIONS
- S-312 AREA 12 TEMPORARY SUPPORT OF EXCAVATION SECTION
- S-501 REMEDIAL EXCAVATION SHORING DETAILS
- S-502 REMEDIAL EXCAVATION SHORING DETAILS
- S-503A BULKHEAD BARRIER WALL DETAILS
- S-504 BULKHEAD BARRIER WALL DETAILS
- S-505 BULKHEAD BARRIER WALL DETAILS
- S-506 BULKHEAD BARRIER WALL DETAILS
- S-507 BULKHEAD BARRIER WALL DETAILS
- S-508 BULKHEAD BARRIER WALL DETAILS
- S-509 AREA 12 TEMPORARY SUPPORT OF EXCAVATION DETAILS

PROCESS

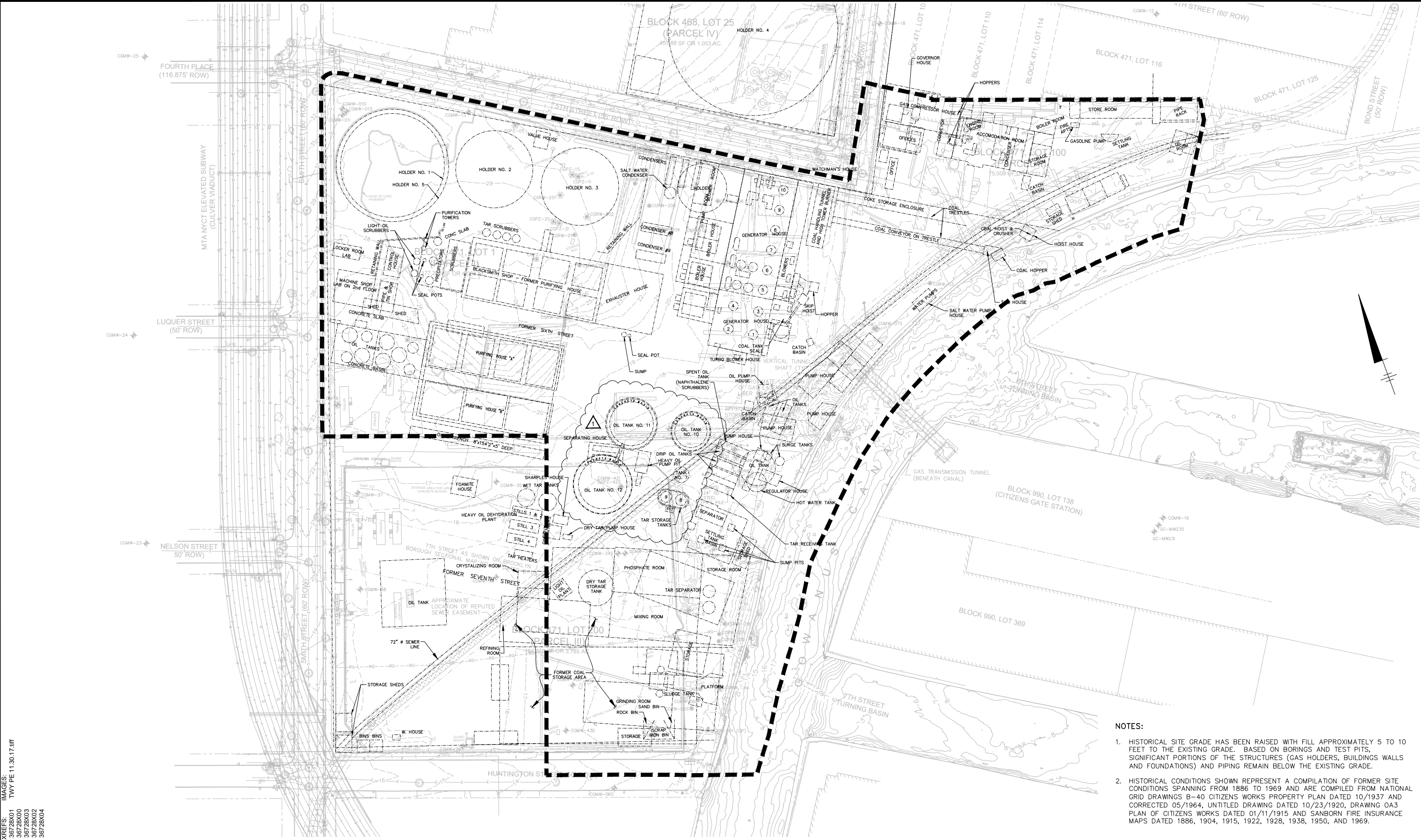
- D-601 TEMPORARY WASTEWATER TREATMENT SYSTEM PIPING AND INSTRUMENTATION DIAGRAM
- D-602 TEMPORARY WASTEWATER TREATMENT SYSTEM PIPING AND INSTRUMENTATION DIAGRAM



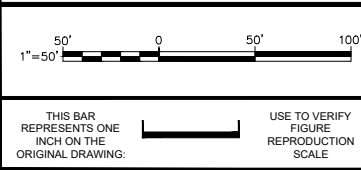
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 XREFS: 387728X01 387728X02 387728X03 387728X04
 IMAGES: TWY PE 11.30.17.rvt



- NOTES:**
1. HISTORICAL SITE GRADE HAS BEEN RAISED WITH FILL APPROXIMATELY 5 TO 10 FEET TO THE EXISTING GRADE. BASED ON BORINGS AND TEST PITS, SIGNIFICANT PORTIONS OF THE STRUCTURES (GAS HOLDERS, BUILDINGS WALLS AND FOUNDATIONS) AND PIPING REMAIN BELOW THE EXISTING GRADE.
 2. HISTORICAL CONDITIONS SHOWN REPRESENT A COMPILATION OF FORMER SITE CONDITIONS SPANNING FROM 1886 TO 1969 AND ARE COMPILED FROM NATIONAL GRID DRAWINGS B-40 CITIZENS WORKS PROPERTY PLAN DATED 10/1937 AND CORRECTED 05/1964, UNTITLED DRAWING DATED 10/23/1920, DRAWING OA3 PLAN OF CITIZENS WORKS DATED 01/11/1915 AND SANBORN FIRE INSURANCE MAPS DATED 1886, 1904, 1915, 1922, 1928, 1938, 1950, AND 1969.



No.	Date	Revisions	By	Ckd
1	7/29/2021	REVISED LOCATIONS OF FORMER OIL TANK NOS. 10-12, HEAVY OIL PUMP PIT, AND TAR STORAGE TANK NOS. 7-9	MJB	MJB

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Professional Engineer's Name
TERRY W. YOUNG
 Professional Engineer's No.
 074847
 State
 NY
 Date Signed
 11/30/2017
 Project Mgr.
 MJB
 Designed by
 APG
 Drawn by
 JLH
 Checked by
 MJB



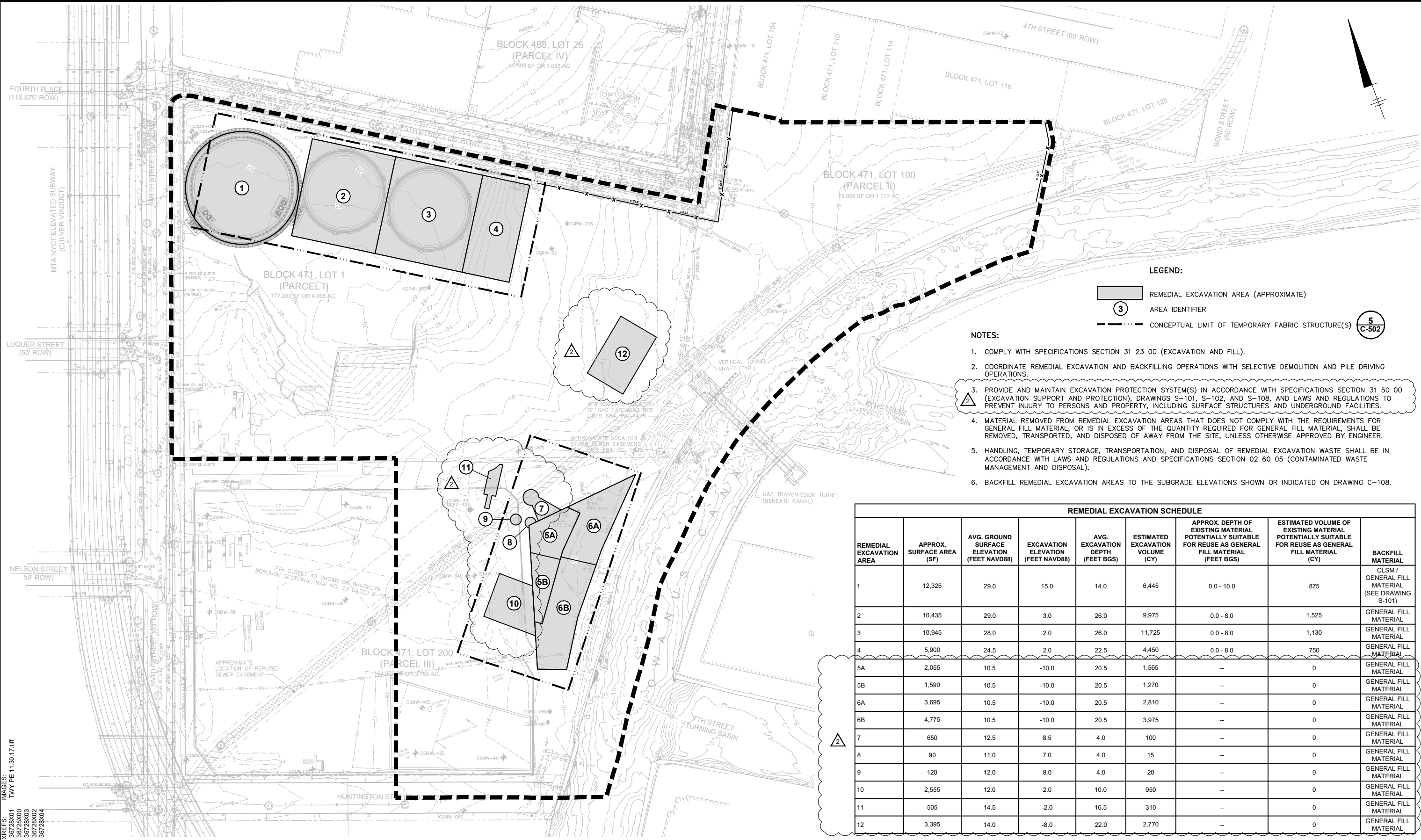
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 FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE
 CARROLL GARDENS/PUBLIC PLACE
 BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
 SITE REMEDIATION
HISTORICAL SITE PLAN

Arcadis Project No.
 B0036728.0001.00003
 Date
 NOVEMBER 2017
 Arcadis
 One Lincoln Center
 110 West Fayette Street, Suite 300
 Syracuse, NY 13202
 Tel. 315.446.9120

G-110

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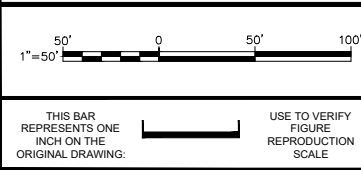


LEGEND:

- REMEDIAL EXCAVATION AREA (APPROXIMATE)
- 3 AREA IDENTIFIER
- CONCEPTUAL LIMIT OF TEMPORARY FABRIC STRUCTURE(S) 5 C-502

- NOTES:**
1. COMPLY WITH SPECIFICATIONS SECTION 31 23 00 (EXCAVATION AND FILL).
 2. COORDINATE REMEDIAL EXCAVATION AND BACKFILLING OPERATIONS WITH SELECTIVE DEMOLITION AND PILE DRIVING OPERATIONS.
 3. PROVIDE AND MAINTAIN EXCAVATION PROTECTION SYSTEM(S) IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 50 00 (EXCAVATION SUPPORT AND PROTECTION), DRAWINGS S-101, S-102, AND S-108, AND LAWS AND REGULATIONS TO PREVENT INJURY TO PERSONS AND PROPERTY, INCLUDING SURFACE STRUCTURES AND UNDERGROUND FACILITIES.
 4. MATERIAL REMOVED FROM REMEDIAL EXCAVATION AREAS THAT DOES NOT COMPLY WITH THE REQUIREMENTS FOR GENERAL FILL MATERIAL, OR IS IN EXCESS OF THE QUANTITY REQUIRED FOR GENERAL FILL MATERIAL, SHALL BE REMOVED, TRANSPORTED, AND DISPOSED OF AWAY FROM THE SITE, UNLESS OTHERWISE APPROVED BY ENGINEER.
 5. HANDLING, TEMPORARY STORAGE, TRANSPORTATION, AND DISPOSAL OF REMEDIAL EXCAVATION WASTE SHALL BE IN ACCORDANCE WITH LAWS AND REGULATIONS AND SPECIFICATIONS SECTION 02 60 05 (CONTAMINATED WASTE MANAGEMENT AND DISPOSAL).
 6. BACKFILL REMEDIAL EXCAVATION AREAS TO THE SUBGRADE ELEVATIONS SHOWN OR INDICATED ON DRAWING C-108.

REMEDIAL EXCAVATION SCHEDULE								
REMEDIAL EXCAVATION AREA	APPROX. SURFACE AREA (SF)	AVG. GROUND SURFACE ELEVATION (FEET NAVD88)	EXCAVATION ELEVATION (FEET NAVD88)	AVG. EXCAVATION DEPTH (FEET BGS)	ESTIMATED EXCAVATION VOLUME (CY)	APPROX. DEPTH OF EXISTING MATERIAL POTENTIALLY SUITABLE FOR REUSE AS GENERAL FILL MATERIAL (FEET BGS)	ESTIMATED VOLUME OF EXISTING MATERIAL POTENTIALLY SUITABLE FOR REUSE AS GENERAL FILL MATERIAL (CY)	BACKFILL MATERIAL
1	12,325	29.0	15.0	14.0	6,445	0.0 - 10.0	875	CLSM / GENERAL FILL MATERIAL (SEE DRAWING S-101)
2	10,435	29.0	3.0	26.0	9,975	0.0 - 8.0	1,525	GENERAL FILL MATERIAL
3	10,945	28.0	2.0	26.0	11,725	0.0 - 8.0	1,130	GENERAL FILL MATERIAL
4	5,900	24.5	2.0	22.5	4,450	0.0 - 8.0	750	GENERAL FILL MATERIAL
5A	2,055	10.5	-10.0	20.5	1,565	--	0	GENERAL FILL MATERIAL
5B	1,590	10.5	-10.0	20.5	1,270	--	0	GENERAL FILL MATERIAL
6A	3,695	10.5	-10.0	20.5	2,810	--	0	GENERAL FILL MATERIAL
6B	4,775	10.5	-10.0	20.5	3,975	--	0	GENERAL FILL MATERIAL
7	650	12.5	8.5	4.0	100	--	0	GENERAL FILL MATERIAL
8	90	11.0	7.0	4.0	15	--	0	GENERAL FILL MATERIAL
9	120	12.0	8.0	4.0	20	--	0	GENERAL FILL MATERIAL
10	2,555	12.0	2.0	10.0	950	--	0	GENERAL FILL MATERIAL
11	505	14.5	-2.0	16.5	310	--	0	GENERAL FILL MATERIAL
12	3,395	14.0	-8.0	22.0	2,770	--	0	GENERAL FILL MATERIAL



No.	Date	Revisions	By	Ckd
2	7/29/2021	ADDED SUPPLEMENTAL REMEDIAL EXCAVATION AREAS ON PARCELS I AND III AND UPDATED SCHEDULE	MJB	MJB
1	2/4/2019	ADDED APPROX. DEPTHS AND EST. VOLUMES OF REUSE MATERIAL	APG	MJB

Professional Engineer's Name
TERRY W. YOUNG
Professional Engineer's No.
074847
State
NY
Date Signed
11/30/2017
Project Mgr.
MJB
Designed by
APG
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MJW
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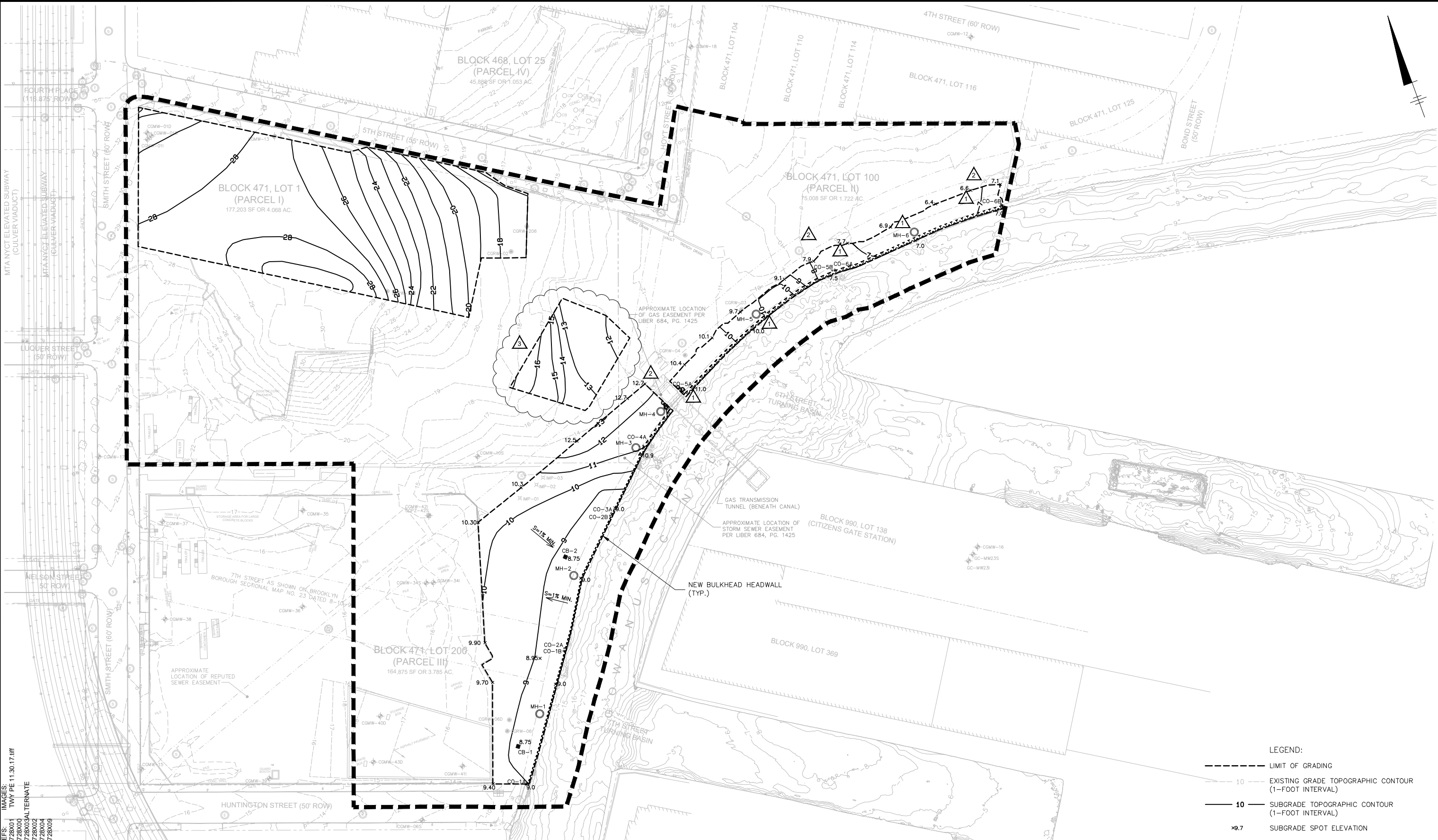
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FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE
CARROLL GARDENS/PUBLIC PLACE
BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
SITE REMEDIATION

Arcadis Project No.
B0036728.0001.00003
Date
NOVEMBER 2017
Arcadis
One Lincoln Center
110 West Fayette Street, Suite 300
Syracuse, NY 13202
Tel. 315.446.9120

C-103

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 38728X03
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 38728X09



LEGEND:

	LIMIT OF GRADING
	EXISTING GRADE TOPOGRAPHIC CONTOUR (1-FOOT INTERVAL)
	SUBGRADE TOPOGRAPHIC CONTOUR (1-FOOT INTERVAL)
	SUBGRADE SPOT ELEVATION

1"=50'

0 50' 100'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
3	7/29/2021	ADDED NEW SUBGRADE CONTOURS AND RESTORATION AREA ON PARCEL I	NWF	MJB
2	1/8/2021	REVISED EXISTING GRADE CONTOURS, LIMIT OF GRADING, SUBGRADE CONTOURS, AND SPOT ELEVATIONS ON PARCEL II	NWF	MJB
1	1/10/2020	ADDED ADDITIONAL MANHOLE AND REVISED STRUCTURE LABELS	DGN	MJB

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Professional Engineer's Name
TERRY W. YOUNG
 Professional Engineer's No.
 074847
 State
 NY
 Date Signed
 11/30/2017
 Project Mgr.
 MJB
 Checked by
 MJB
 Drawn by
 MJW



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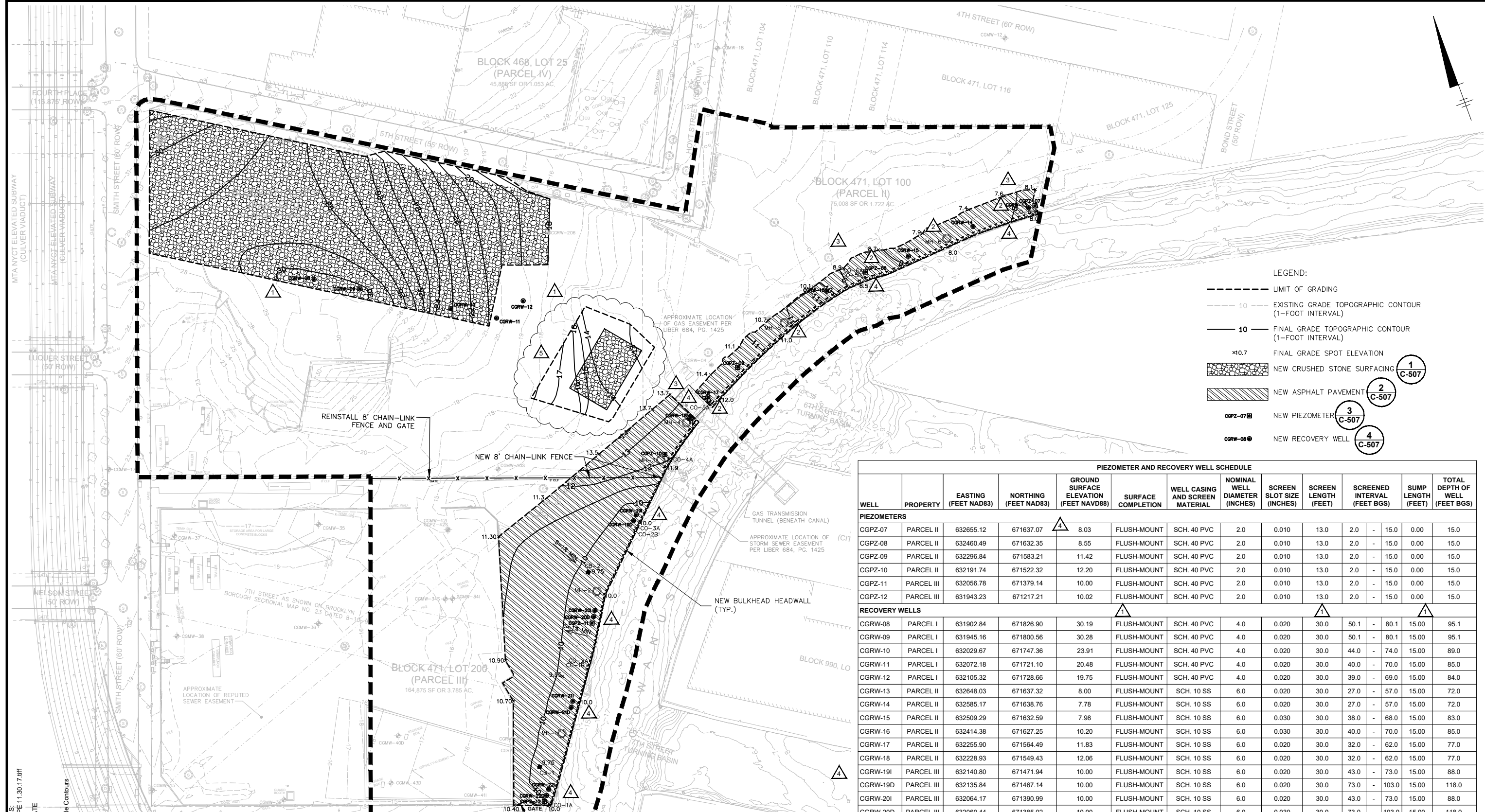
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 SITE REMEDIATION

SITE SUBGRADE GRADING PLAN

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 Arcadis
 One Lincoln Center
 110 West Fayette Street, Suite 300
 Syracuse, NY 13202
 Tel. 315.446.9120

C-108



- LEGEND:
- LIMIT OF GRADING
 - 10 --- EXISTING GRADE TOPOGRAPHIC CONTOUR (1-FOOT INTERVAL)
 - 10 --- FINAL GRADE TOPOGRAPHIC CONTOUR (1-FOOT INTERVAL)
 - x10.7 --- FINAL GRADE SPOT ELEVATION
 - [Pattern] --- NEW CRUSHED STONE SURFACING (1 C-507)
 - [Pattern] --- NEW ASPHALT PAVEMENT (2 C-507)
 - CGPW-07 --- NEW PIEZOMETER (3 C-507)
 - CGRW-08 --- NEW RECOVERY WELL (4 C-507)

PIEZOMETER AND RECOVERY WELL SCHEDULE													
WELL	PROPERTY	EASTING (FEET NAD83)	NORTHING (FEET NAD83)	GROUND SURFACE ELEVATION (FEET NAVD88)	SURFACE COMPLETION	WELL CASING AND SCREEN MATERIAL	NOMINAL WELL DIAMETER (INCHES)	SCREEN SLOT SIZE (INCHES)	SCREEN LENGTH (FEET)	SCREENED INTERVAL (FEET BGS)	SUMP LENGTH (FEET)	TOTAL DEPTH OF WELL (FEET BGS)	
PIEZOMETERS													
CGPW-07	PARCEL II	632655.12	671637.07	8.03	FLUSH-MOUNT	SCH. 40 PVC	2.0	0.010	13.0	2.0 - 15.0	0.00	15.0	
CGPW-08	PARCEL II	632460.49	671632.35	8.55	FLUSH-MOUNT	SCH. 40 PVC	2.0	0.010	13.0	2.0 - 15.0	0.00	15.0	
CGPW-09	PARCEL II	632296.84	671583.21	11.42	FLUSH-MOUNT	SCH. 40 PVC	2.0	0.010	13.0	2.0 - 15.0	0.00	15.0	
CGPW-10	PARCEL II	632191.74	671522.32	12.20	FLUSH-MOUNT	SCH. 40 PVC	2.0	0.010	13.0	2.0 - 15.0	0.00	15.0	
CGPW-11	PARCEL III	632056.78	671379.14	10.00	FLUSH-MOUNT	SCH. 40 PVC	2.0	0.010	13.0	2.0 - 15.0	0.00	15.0	
CGPW-12	PARCEL III	631943.23	671217.21	10.02	FLUSH-MOUNT	SCH. 40 PVC	2.0	0.010	13.0	2.0 - 15.0	0.00	15.0	
RECOVERY WELLS													
CGRW-08	PARCEL I	631902.84	671826.90	30.19	FLUSH-MOUNT	SCH. 40 PVC	4.0	0.020	30.0	50.1 - 80.1	15.00	95.1	
CGRW-09	PARCEL I	631945.16	671800.56	30.28	FLUSH-MOUNT	SCH. 40 PVC	4.0	0.020	30.0	50.1 - 80.1	15.00	95.1	
CGRW-10	PARCEL I	632029.67	671747.36	23.91	FLUSH-MOUNT	SCH. 40 PVC	4.0	0.020	30.0	44.0 - 74.0	15.00	89.0	
CGRW-11	PARCEL I	632072.18	671721.10	20.48	FLUSH-MOUNT	SCH. 40 PVC	4.0	0.020	30.0	40.0 - 70.0	15.00	85.0	
CGRW-12	PARCEL I	632105.32	671728.66	19.75	FLUSH-MOUNT	SCH. 40 PVC	4.0	0.020	30.0	39.0 - 69.0	15.00	84.0	
CGRW-13	PARCEL II	632648.03	671637.32	8.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	27.0 - 57.0	15.00	72.0	
CGRW-14	PARCEL II	632585.17	671638.76	7.78	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	27.0 - 57.0	15.00	72.0	
CGRW-15	PARCEL II	632509.29	671632.59	7.98	FLUSH-MOUNT	SCH. 10 SS	6.0	0.030	30.0	38.0 - 68.0	15.00	83.0	
CGRW-16	PARCEL II	632414.38	671627.25	10.20	FLUSH-MOUNT	SCH. 10 SS	6.0	0.030	30.0	40.0 - 70.0	15.00	85.0	
CGRW-17	PARCEL II	632255.90	671564.49	11.83	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	32.0 - 62.0	15.00	77.0	
CGRW-18	PARCEL II	632228.93	671549.43	12.06	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	32.0 - 62.0	15.00	77.0	
CGRW-19I	PARCEL III	632140.80	671471.94	10.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	43.0 - 73.0	15.00	88.0	
CGRW-19D	PARCEL III	632135.84	671467.14	10.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	73.0 - 103.0	15.00	118.0	
CGRW-20I	PARCEL III	632064.17	671390.99	10.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	43.0 - 73.0	15.00	88.0	
CGRW-20D	PARCEL III	632060.44	671385.02	10.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.030	30.0	73.0 - 103.0	15.00	118.0	
CGRW-21I	PARCEL III	632008.69	671307.64	10.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	43.0 - 73.0	15.00	88.0	
CGRW-21D	PARCEL III	632004.67	671301.91	10.00	FLUSH-MOUNT	SCH. 10 SS	6.0	0.030	30.0	73.0 - 103.0	15.00	118.0	
CGRW-22I	PARCEL III	631952.05	671227.94	9.92	FLUSH-MOUNT	SCH. 10 SS	6.0	0.020	30.0	43.0 - 73.0	15.00	88.0	
CGRW-22D	PARCEL III	631947.84	671222.31	9.95	FLUSH-MOUNT	SCH. 10 SS	6.0	0.030	30.0	73.0 - 103.0	15.00	118.0	

IMAGES: TWY PE 11.30.17.tif
 38728X01
 38728X02
 38728X03
 38728X04
 38728X09
 Proposed Final Grade Contours

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
5	7/29/2021	ADDED NEW FINAL GRADE CONTOURS AND RESTORATION AREA ON PARCEL I	NWF	MJB
4	2/10/2021	ADDED ADDITIONAL RECOVERY WELLS AND RELOCATED CERTAIN RECOVERY WELLS AND PIEZOMETERS	MJB	MJB
3	1/8/2021	REVISED EXISTING GRADE CONTOURS, LIMIT OF GRADING, FINAL GRADE CONTOURS, AND SPOT ELEVATIONS ON PARCEL II	NWF	MJB
2	1/10/2020	ADDED ADDITIONAL MANHOLE AND REVISED STRUCTURE LABELS	DGN	MJB
1	11/18/2019	REVISED PARCEL I RECOVERY WELL DETAILS TO REFLECT AS-BUILT CONDITIONS	APG	MJB

Professional Engineer's Name
TERRY W. YOUNG
 Professional Engineer's No.
 074847
 State
 NY
 Date Signed
 11/30/2017
 Project Mgr.
 MJB
 Designed by
 NWF/MJB
 Drawn by
 MJW
 Checked by
 SAP



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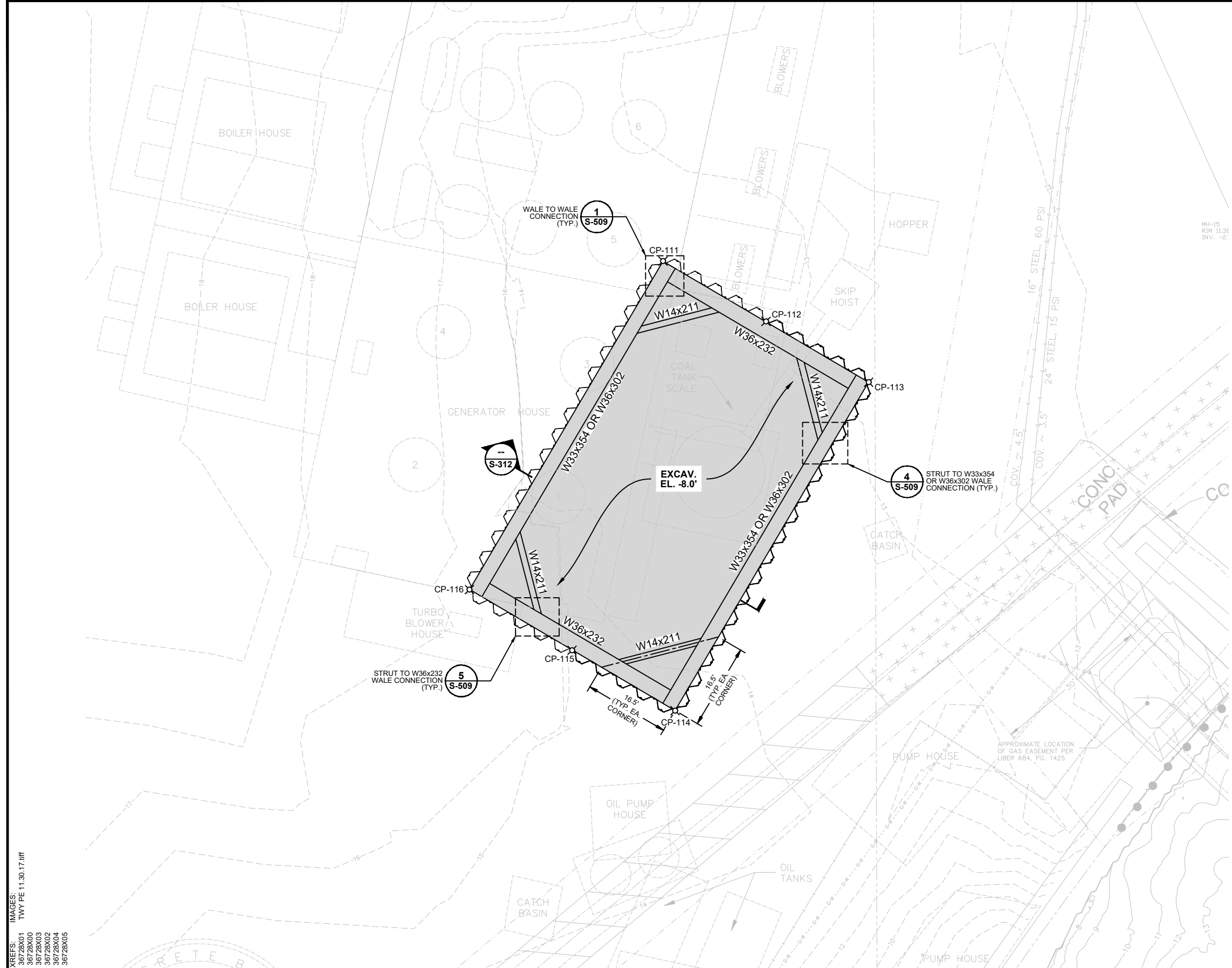
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 FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE
 CARROLL GARDENS/PUBLIC PLACE
 BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
 SITE REMEDIATION

SITE RESTORATION AND FINAL GRADING PLAN

Arcadis Project No. B0036728.0001.00003
 Date: NOVEMBER 2017
 Arcadis
 One Lincoln Center
 110 West Fayette Street, Suite 300
 Syracuse, NY 13202
 Tel. 315.446.9120

C-109

CITY: SYRACUSE, NY DIV/GROUP: ENV/CAD DR: B. GETTIS, B. DECLERO, L. POSENALIER, J. HARRIS
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LEGEND:

- SHEET PILE
- CP-111 PILE CONTROL POINT
- WIDE FLANGE WALE OR STRUT
- REMEDIAL EXCAVATION AREA
- LIMIT OF FORMER BUILDING/STRUCTURE (APPROXIMATE)

PILE CONTROL POINT SCHEDULE

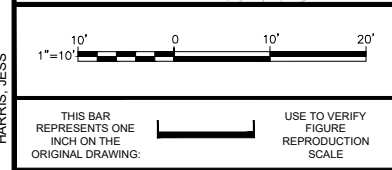
CONTROL POINT ID	EASTING (FEET NAD83)	NORTHING (FEET NAD83)
CP-111	632177.09	671670.88
CP-112	632191.81	671653.12
CP-113	632206.41	671635.30
CP-114	632149.57	671588.45
CP-115	632134.86	671606.20
CP-116	632120.25	671624.02

SHEET PILE SCHEDULE

WALL ALIGNMENT	LENGTH OF WALL (LF)	MIN. SHEET PILE TIP EL. (FEET NAVD88)	MIN. REQUIRED SECTION	
				FROM
CP-111	CP-112	23.0	-29.0	AZ 26-700
CP-112	CP-113	23.0	-28.5	AZ 19-700
CP-113	CP-114	73.5	-28.5	AZ 19-700
CP-114	CP-115	23.0	-28.5	AZ 19-700
CP-115	CP-116	23.0	-29.0	AZ 26-700
CP-116	CP-111	73.5	-29.0	AZ 26-700

- GENERAL CONSTRUCTION SEQUENCE:**
- SELECTIVELY DEMOLISH SURFACE CONCRETE AND REMOVE OVERLYING FILL AND DEBRIS TO NOT GREATER THAN ELEVATION +14.0 FEET.
 - PRE-TRENCH SHEET PILE ALIGNMENTS TO NOT LESS THAN 8.0 FEET BELOW GRADE.
 - IF REQUIRED, PRE-DRILL SHEET PILE ALIGNMENTS AT THE LOCATIONS AND TO THE DEPTHS DIRECTED BY ENGINEER.
 - DRIVE SHEET PILING AT THE LOCATIONS AND TO THE MINIMUM TIP ELEVATIONS SHOWN OR INDICATED.
 - EXCAVATE REMEDIAL EXCAVATION AREA TO NOT DEEPER THAN ELEVATION +3.0 FEET AND INSTALL INTERNAL BRACING AT ELEVATION +6.0 FEET.
 - EXCAVATE REMEDIAL EXCAVATION AREA TO ELEVATION -8.0 FEET OR, IF DIRECTED BY ENGINEER, TO TOP OF MEADOW MAT UNIT WHERE ENCOUNTERED SHALLOWER THAN ELEVATION -8.0 FEET.
 - BACKFILL REMEDIAL EXCAVATION AREA TO NOT LESS THAN ELEVATION +3.0 FEET AND REMOVE INTERNAL BRACING.
 - BACKFILL REMEDIAL EXCAVATION AREA TO SUBGRADE ELEVATIONS SHOWN OR INDICATED ON DRAWING C-108.
 - PULL ALL SHEET PILING.
 - RESTORE REMEDIAL EXCAVATION AREA AND OTHER DISTURBED AREAS TO THE FINAL GRADES AND CONDITIONS SHOWN OR INDICATED ON DRAWING C-109.

IMAGES: TWY PE 11.30.17.tif
 38728X01
 38728X02
 38728X03
 38728X04
 38728X05



Revisions

No.	Date	Revisions	By	Ckd

Professional Engineer's Name
TERRY W. YOUNG
 Professional Engineer's No.
 074847
 State: NY Date Signed: 7/29/2021 Project Mgr: MJB
 Designed by: MSG Drawn by: JLH Checked by: MJB



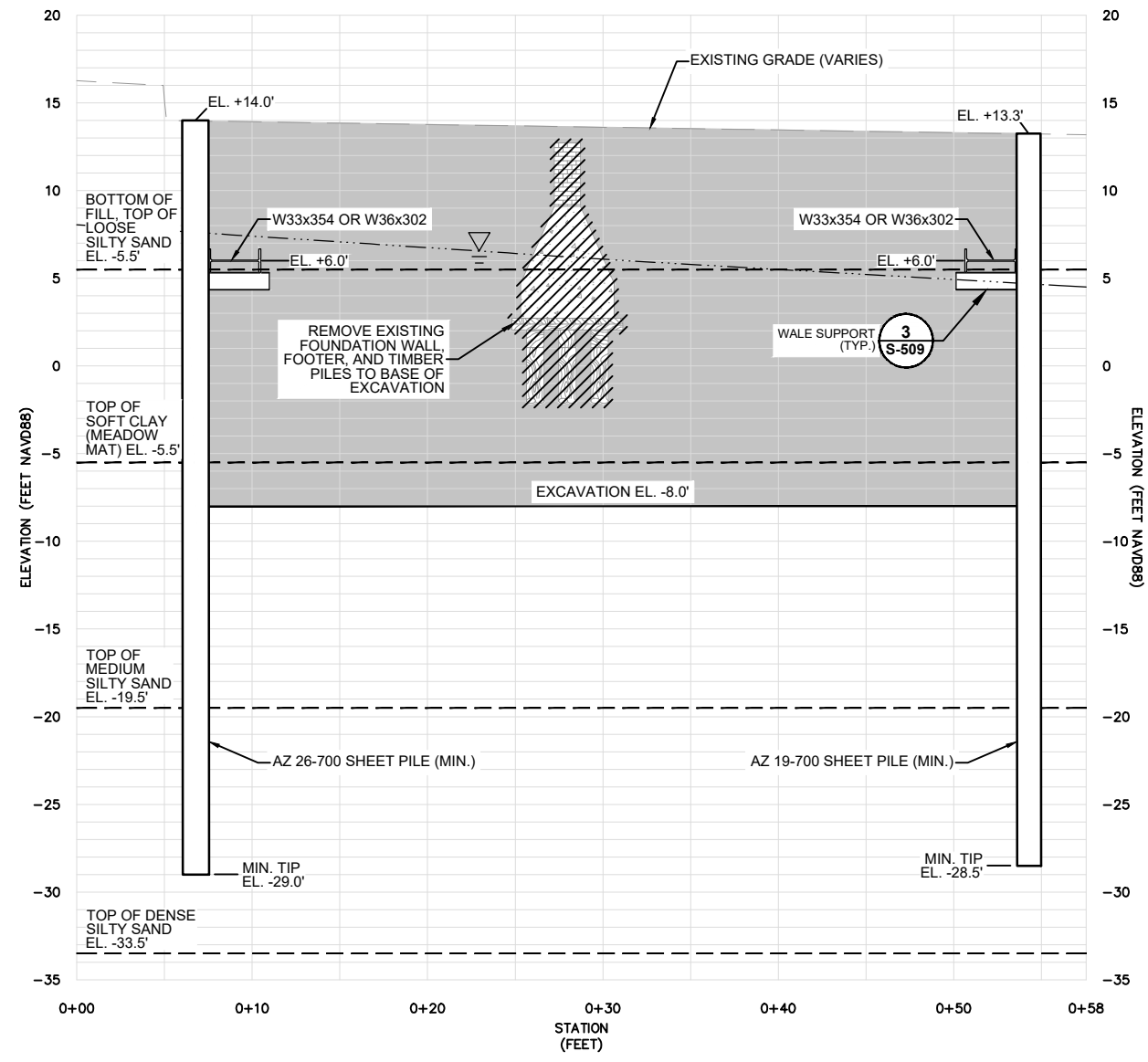
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 CARROLL GARDENS/PUBLIC PLACE
 BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
SITE REMEDIATION
AREA 12 TEMPORARY SUPPORT OF EXCAVATION PLAN

Arcadis Project No. B0036728.0001.00003
 Date: JULY 2021
 Arcadis One Lincoln Center 110 West Fayette Street, Suite 300 Syracuse, NY 13202 Tel. 315.446.9120

S-108

CITY: SYRACUSE, NY DIV/GROUP: ENV/CAD DB: B GETT'S, B DECLERO, L POSENALIER, J HARRIS
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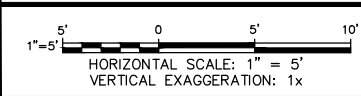


SECTION 1

- LEGEND:**
- INTERPOLATED WATER SURFACE (APRIL 4, 2005, HIGH TIDE)
 - INTERPOLATED GEOLOGIC CONTACT
 - REMEDIAL EXCAVATION AREA
 - EXISTING FEATURE TO BE DEMOLISHED/REMOVED

- NOTES:**
- SOIL TYPES AND GEOLOGIC CONTACTS ARE APPROXIMATE AND ARE INTERPOLATED BETWEEN SOIL BORING LOCATIONS. ACTUAL SUBSURFACE CONDITIONS MAY BE DIFFERENT THAN THOSE SHOWN OR INDICATED.
 - ADDITIONAL STRUCTURES AND UNDERGROUND FACILITIES MAY BE PRESENT THAT ARE NOT SHOWN OR INDICATED.

- REFERENCE DRAWINGS:**
- THE BROOKLYN UNION GAS COMPANY, DRAWING NUMBER 9-B-24, TITLED "SECTION THROUGH OLD BUILDINGS, GEN.R. HOUSE, AT CITIZENS & NASSAU WORKS", DATED JANUARY 21, 1918.
 - GEI CONSULTANTS, INC. PLATE NUMBER 8, TITLED "HIGH TIDE SHALLOW, INTERMEDIATE, DEEP, AND JAMECO AQUIFER GROUNDWATER CONTOURS APRIL 4, 2005", DATED OCTOBER 2005, IN "FINAL REMEDIAL INVESTIGATION REPORT", FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE, PREPARED FOR KEYSpan CORPORATION, BROOKLYN, NEW YORK.



THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. USE TO VERIFY REPRODUCTION SCALE.

No.	Date	Revisions	By	Ckd

Professional Engineer's Name
TERRY W. YOUNG
Professional Engineer's No.
074847
State
NY
Date Signed
7/29/2021
Project Mgr.
MJB
Designed by
MSG
Drawn by
JLH
Checked by
MJB



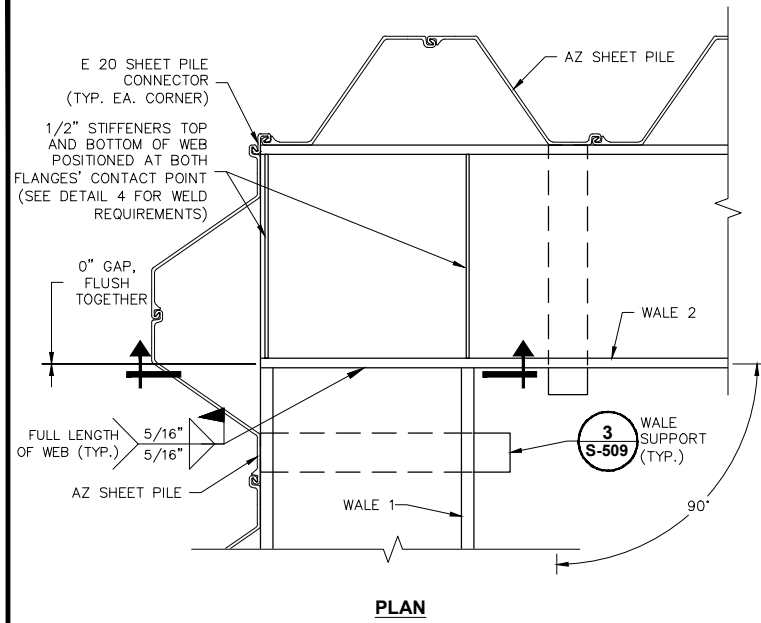
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SITE REMEDIATION
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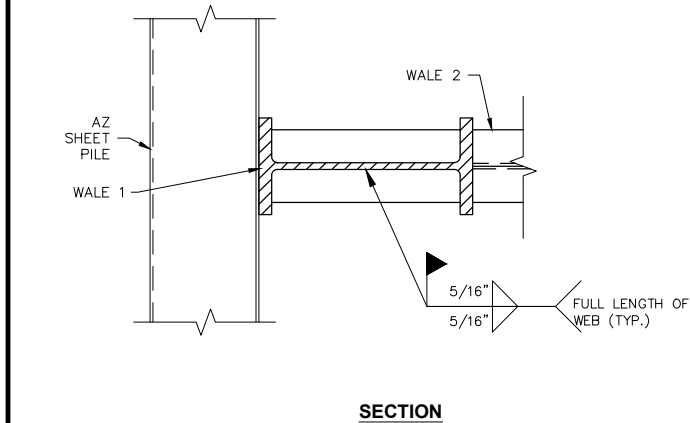
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S-312

CITY: SYRACUSE, NY DIV/GROUP: ENV/CAD DB: B.GETT'S, B. DECLERIO, L. POSENALIER, J. HARRIS
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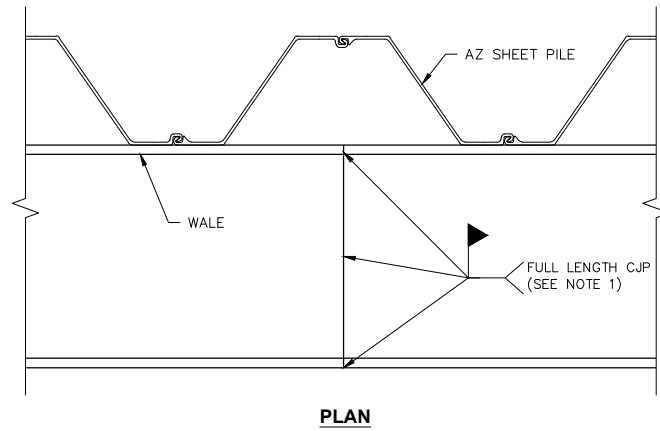


PLAN



SECTION

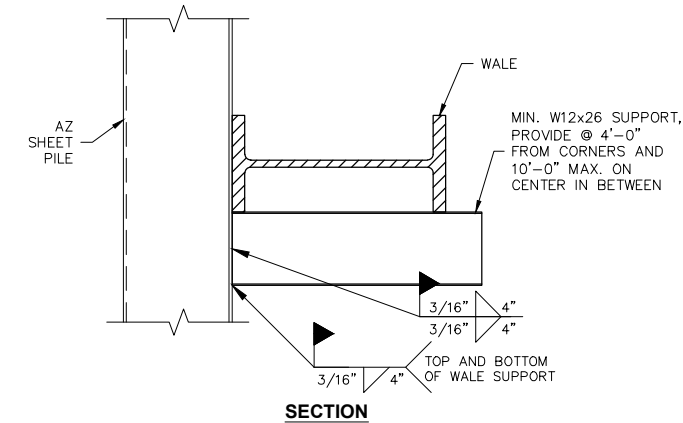
WALE TO WALE CONNECTION 1



PLAN

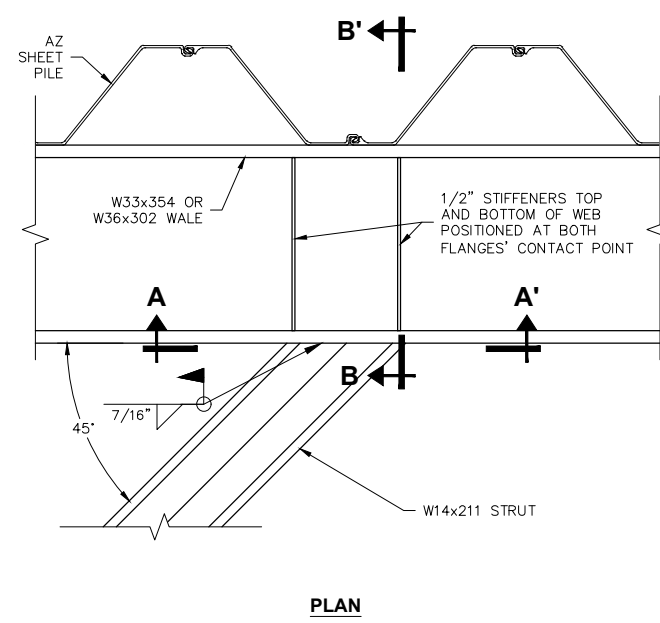
WALE SPLICE 2

NOTE:
 1. PROVIDE FULL LENGTH COMPLETE JOINT PENETRATION FIELD WELD SPLICES OF WALE BEAMS WHERE NEEDED TO ACCOMMODATE WALE PLACEMENT AND SHIPPING. CONTRACTOR MAY PROVIDE ALTERNATE CONTRACTOR-DESIGNED SPLICE DETAIL FOR PARTIAL LOADING. SUBMIT SIGNED AND SEALED CALCULATIONS BY A PROFESSIONAL ENGINEER SHOWING LOAD CAPACITIES FOR ALTERNATE SPLICE DETAIL WITH SHOP DRAWINGS FOR COORDINATION.

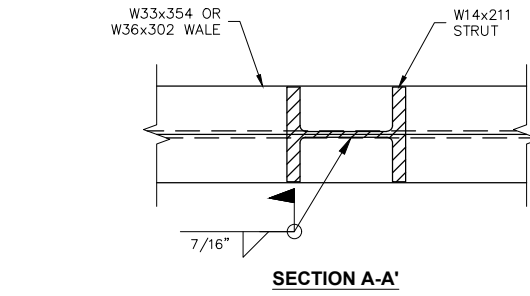


SECTION

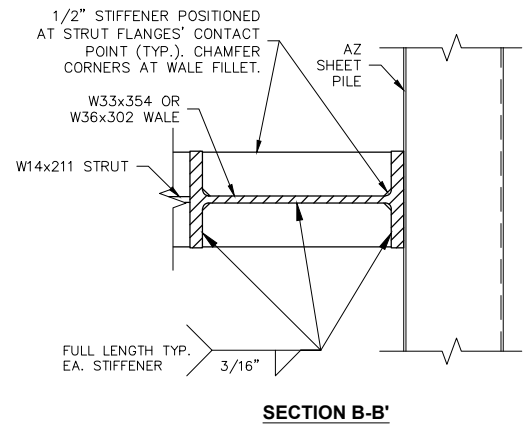
WALE SUPPORT 3



PLAN

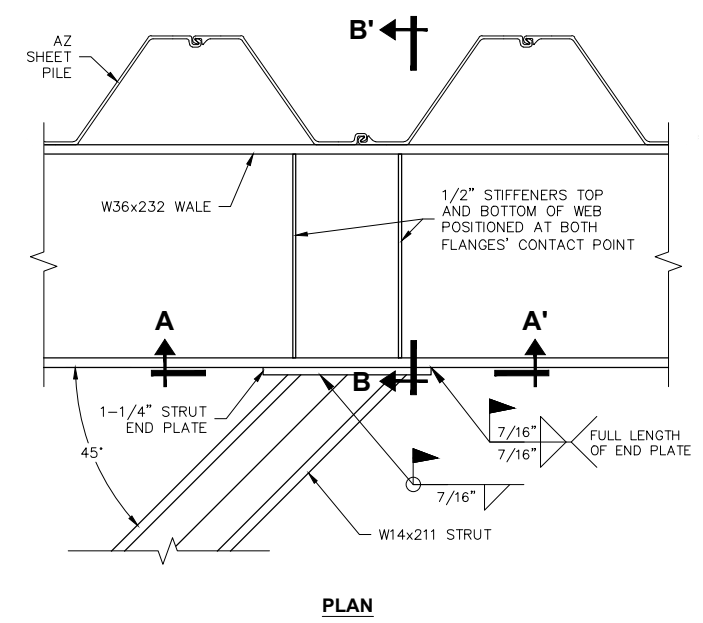


SECTION A-A'

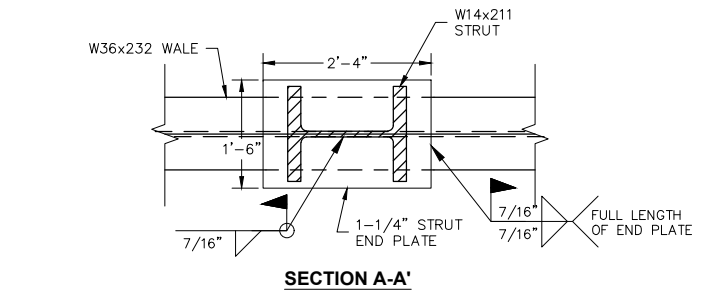


SECTION B-B'

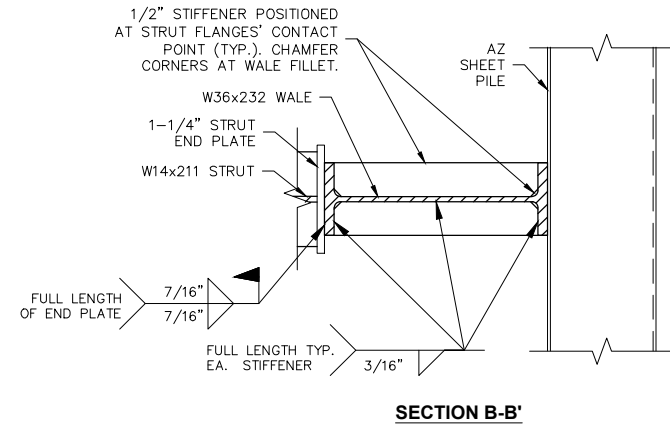
STRUT TO W33x354 OR W36x302 WALE CONNECTION 4



PLAN

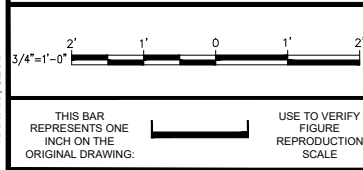


SECTION A-A'



SECTION B-B'

STRUT TO W36x232 WALE CONNECTION 5



No.	Date	Revisions	By	Ckd

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Professional Engineer's Name
TERRY W. YOUNG
 Professional Engineer's No.
 074847
 State: NY Date Signed: 7/29/2021 Project Mgr.: MJB
 Designed by: LAB Drawn by: JLH Checked by: MJB



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