

February 21, 2019

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. 2
Revised Bracing Design for Temporary Excavation Support Systems
Former Citizens Gas Works Manufactured Gas Plant Site
Carroll Gardens/Public Place
Borough of Brooklyn, Kings County, New York
Site No. C224012

Dear Mr. Miller:

Please find enclosed for your information Addendum No. 2 to the *100% Remedial Design Report* (Remedial Design) for Parcels I (Block 471, Lot 1), II (Block 471, Lot 100), and III (Block 471, Lot 200) of the former Citizens Gas Works manufactured gas plant site (hereinafter, the "Site") located in Brooklyn, New York. Addendum No. 2 comprises revised Drawings S-101 (Parcel I Remedial Excavation Shoring Plan and Construction Sequence), S-501 (Remedial Excavation Shoring Details), and S-502 (Remedial Excavation Shoring Details). Revised Drawing S-101 reflects a change in one of the wale sizes for the temporary excavation support system in Remedial Excavation Area 4. Revised Drawings S-501 and S-502 reflect a change from bolted connections to welded connections for the bracing used in the temporary excavation support systems for the remedial excavations on Parcels I and III of the Site. Revised items on each drawing are denoted with a revision triangle and are summarized in the revision block at the bottom of the drawing.

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

Sincerely,

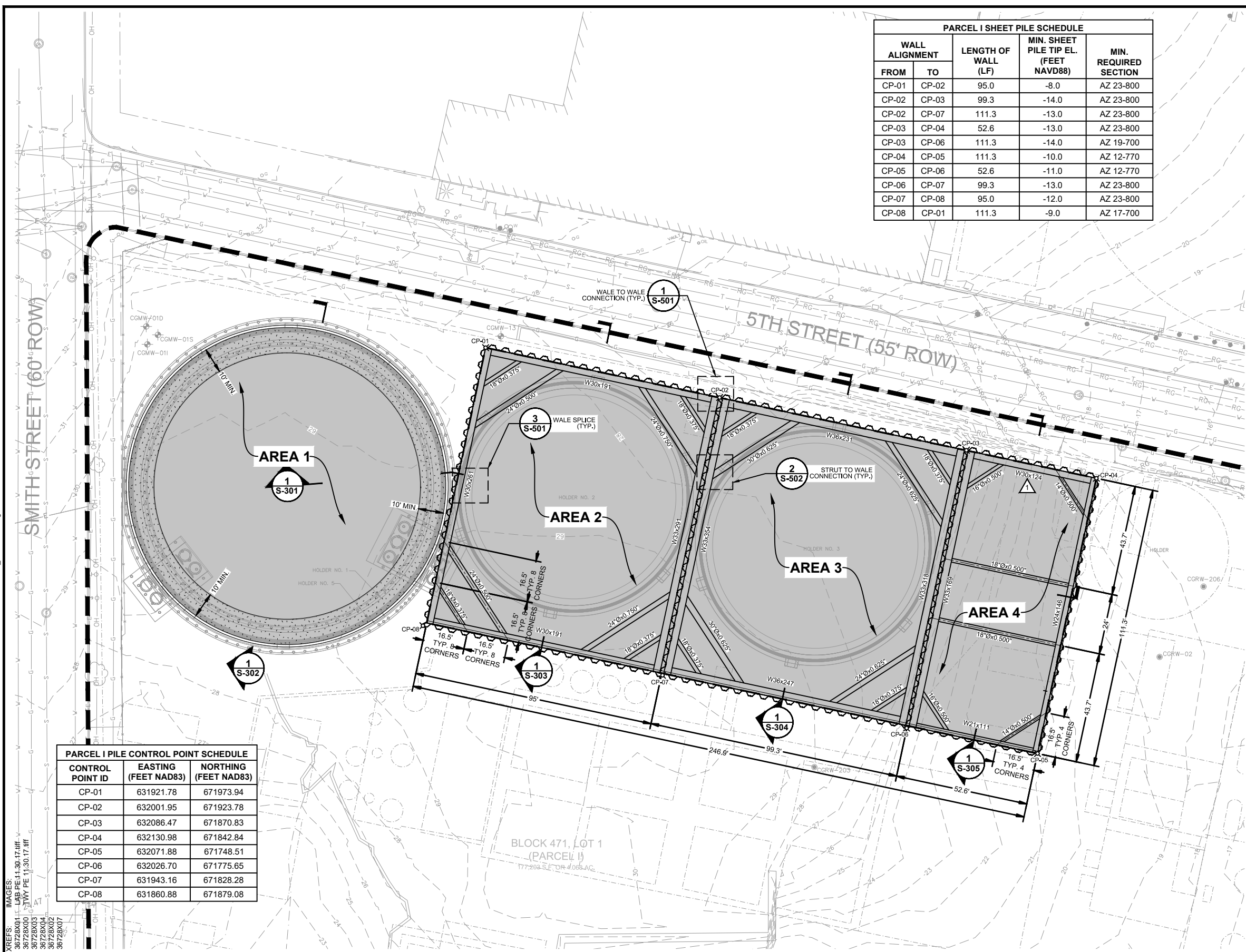
Handwritten signature of Patrick J. Van Rossem in blue ink, with the initials 'NJB' written at the end.

Patrick J. Van Rossem
Project Manager
Site Investigation & Remediation

Enclosure

cc: C. Doroski, NYSDOH
C. Tsiamis, USEPA
T. Leissing, National Grid
A. Prophete, National Grid
J. Alonzo, de maximis
C. Young, de maximis
T. Young, PE, Arcadis
M. Benoit, PE, Arcadis

CITY: SYRACUSE, NY DIV: GROUP: ENV: CAD DB: B GETTS, B DECLERO, L POSEMAUER, J HARRIS
C:\BIM\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\FORMER CITIZENS GAS WORKS MCP SITE\2019\B0036728\000101-DWG\36728_PARCEL I.dwg LAYOUT: S-101 SAVED: 2/3/2019 12:54 PM PLOTSTYLETABLE: --- PLOTTED: 2/4/2019 7:05 AM BY: HARRIS, JESS



PARCEL I SHEET PILE SCHEDULE				
WALL ALIGNMENT		LENGTH OF WALL (LF)	MIN. SHEET PILE TIP EL. (FEET NAVD88)	MIN. REQUIRED SECTION
FROM	TO			
CP-01	CP-02	95.0	-8.0	AZ 23-800
CP-02	CP-03	99.3	-14.0	AZ 23-800
CP-02	CP-07	111.3	-13.0	AZ 23-800
CP-03	CP-04	52.6	-13.0	AZ 23-800
CP-03	CP-06	111.3	-14.0	AZ 19-700
CP-04	CP-05	111.3	-10.0	AZ 12-770
CP-05	CP-06	52.6	-11.0	AZ 12-770
CP-06	CP-07	99.3	-13.0	AZ 23-800
CP-07	CP-08	95.0	-12.0	AZ 23-800
CP-08	CP-01	111.3	-9.0	AZ 17-700

LEGEND:

CP-01 PILE CONTROL POINT

W36x231 WIDE FLANGE WALE

14"Øx0.500" PIPE STRUT

NEW CLSM GRAVITY WALL

REMEDIAL EXCAVATION AREA

- GENERAL CONSTRUCTION SEQUENCE:
- EXCAVATE INTERIOR PERIMETER OF AREA 1 TO TOP OF HOLDER FOUNDATION SLAB (ELEVATION +15.0 FEET) AND INSTALL CLSM GRAVITY WALL.
 - PRE-TRENCH SHEET PILE ALIGNMENTS OF AREAS 2, 3, AND 4 TO NOT LESS THAN 8.0 FEET BELOW EXISTING GRADE.
 - DRIVE SHEET PILING AT THE LOCATIONS AND TO THE MINIMUM TIP ELEVATIONS SHOWN OR INDICATED.
 - INSTALL TEMPORARY FRAMED FABRIC STRUCTURE OVER REMEDIAL EXCAVATION AREAS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - EXCAVATE REMAINDER OF AREA 1 WITHIN LIMITS OF CLSM GRAVITY WALL TO TOP OF HOLDER FOUNDATION SLAB (ELEVATION +15.0 FEET).
 - BACKFILL AREA WITHIN LIMITS OF AREA 1 CLSM GRAVITY WALL TO SUBGRADE ELEVATIONS SHOWN OR INDICATED ON DRAWING C-108.
 - EXCAVATE AREA 2 TO ELEVATION +20.0 FEET AND INSTALL INTERNAL BRACING.
 - EXCAVATE AREA 2 TO ELEVATION +3.0 FEET.
 - BACKFILL AREA 2 TO ELEVATION +20.0 FEET AND REMOVE INTERNAL BRACING.
 - BACKFILL AREA 2 TO SUBGRADE ELEVATIONS SHOWN OR INDICATED ON DRAWING C-108.
 - EXCAVATE AREA 3 TO ELEVATION +18.0 FEET AND INSTALL INTERNAL BRACING.
 - EXCAVATE AREA 3 TO ELEVATION +2.0 FEET.
 - BACKFILL AREA 3 TO ELEVATION +18.0 FEET AND REMOVE INTERNAL BRACING.
 - BACKFILL AREA 3 TO SUBGRADE ELEVATIONS SHOWN OR INDICATED ON DRAWING C-108.
 - EXCAVATE AREA 4 TO ELEVATION +15.0 FEET AND INSTALL INTERNAL BRACING.
 - EXCAVATE AREA 4 TO ELEVATION +2.0 FEET.
 - BACKFILL AREA 4 TO ELEVATION +15.0 FEET AND REMOVE INTERNAL BRACING.
 - BACKFILL AREA 4 TO SUBGRADE ELEVATIONS SHOWN OR INDICATED ON DRAWING C-108.
 - REMOVE TEMPORARY FRAMED FABRIC STRUCTURE.
 - PULL ALL SHEET PILING.
 - RESTORE REMEDIAL EXCAVATION AREAS AND OTHER DISTURBED AREAS TO THE FINAL GRADES AND CONDITIONS SHOWN OR INDICATED ON DRAWING C-109.

- NOTES:
- COMPLY WITH SPECIFICATIONS SECTIONS 31 23 00 (EXCAVATION AND FILL) AND 31 50 00 (EXCAVATION SUPPORT AND PROTECTION).
 - COORDINATE PILE DRIVING OPERATIONS WITH SELECTIVE DEMOLITION AND REMEDIAL EXCAVATION OPERATIONS.
 - BEFORE PROCEEDING WITH PILE DRIVING OPERATIONS, LOCATE, IDENTIFY, AND REMOVE OR RELOCATE OBSTRUCTING STRUCTURES AND UNDERGROUND FACILITIES. COMPLY WITH SPECIFICATIONS SECTION 02 41 19 (SELECTIVE DEMOLITION) FOR DEMOLITIONS AND REMOVALS.
 - TEMPORARY STOCKPILES ARE PROHIBITED WITHIN 25 FEET OF REMEDIAL EXCAVATION AREAS DURING EXCAVATION AND BACKFILLING OPERATIONS.
 - CONSTRUCTION VEHICLES AND VEHICLE LOADING ARE PROHIBITED BETWEEN REMEDIAL EXCAVATION AREAS AND 5TH STREET DURING REMEDIAL EXCAVATION AND BACKFILLING OPERATIONS.

PARCEL I PILE CONTROL POINT SCHEDULE		
CONTROL POINT ID	EASTING (FEET NAD83)	NORTHING (FEET NAD83)
CP-01	631921.78	671973.94
CP-02	632001.95	671923.78
CP-03	632086.47	671870.83
CP-04	632130.98	671842.84
CP-05	632071.88	671748.51
CP-06	632026.70	671775.65
CP-07	631943.16	671828.28
CP-08	631860.88	671879.08

20'

0

20'

40'

1"=20'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

1	2/4/2019	REVISED WALE SIZE IN AREA 4	RPK	MJB
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
11/30/2017

Project Mgr.
MJB

Designed by
RPK

Drawn by
JLH

Checked by
APC

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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

PARCEL I REMEDIAL EXCAVATION SHORING PLAN AND CONSTRUCTION SEQUENCE

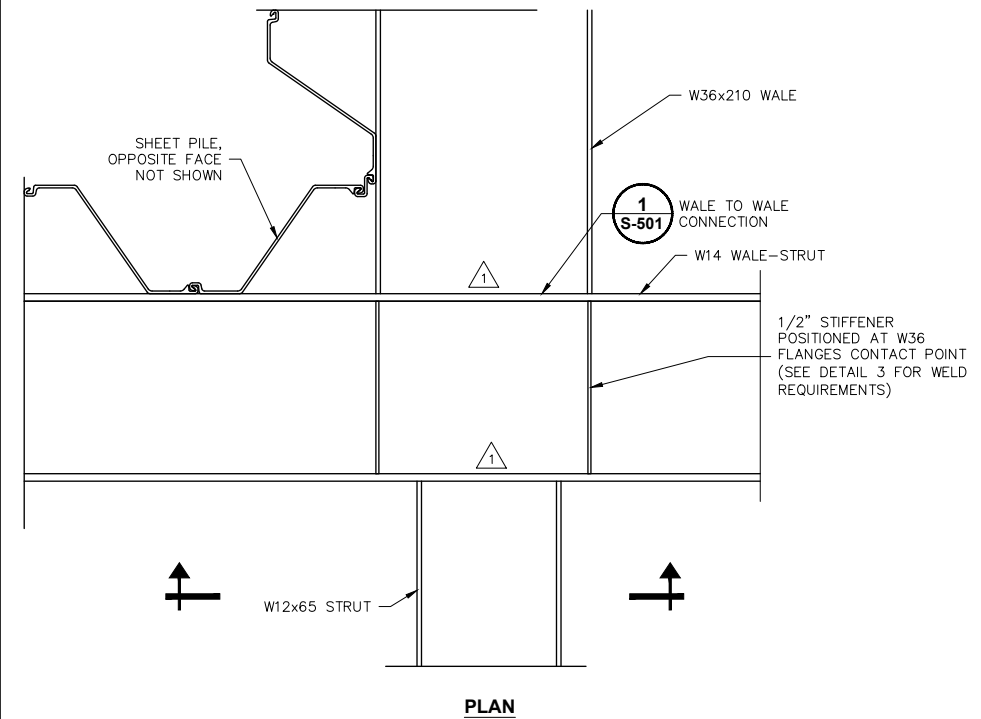
Arcadis Project No.
B0036728.0001.00003

Date
NOVEMBER 2017

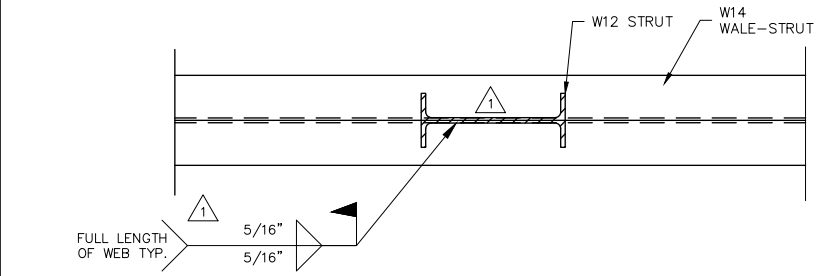
Arcadis
One Lincoln Center
110 West Fayette Street, Suite 300
Syracuse, NY 13202
Tel. 315.446.9120

S-101

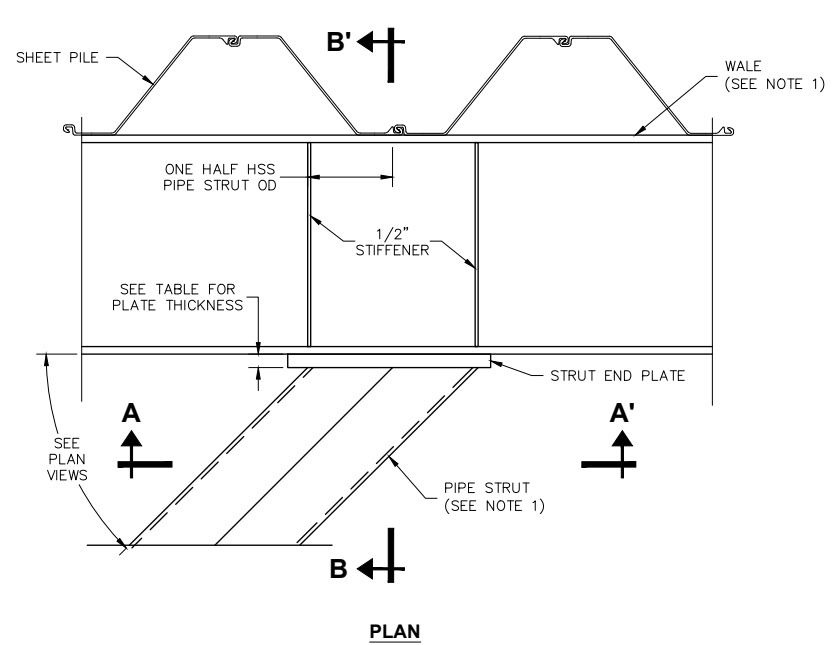
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XREFS: 36728X00
IMAGES: LAB FE 11.30.17.rvt
TWTY FE 11.30.17.rvt



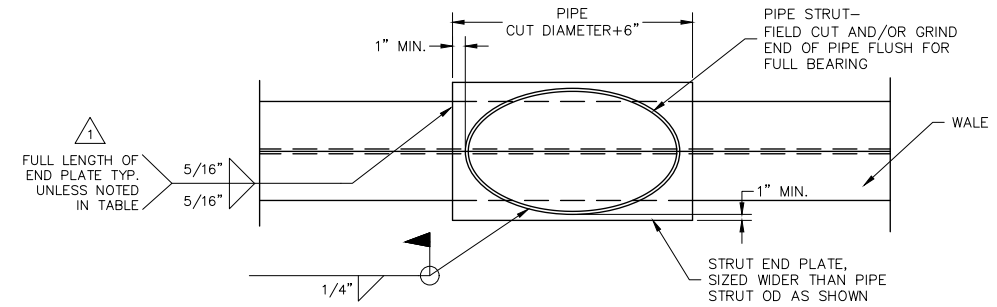
PLAN



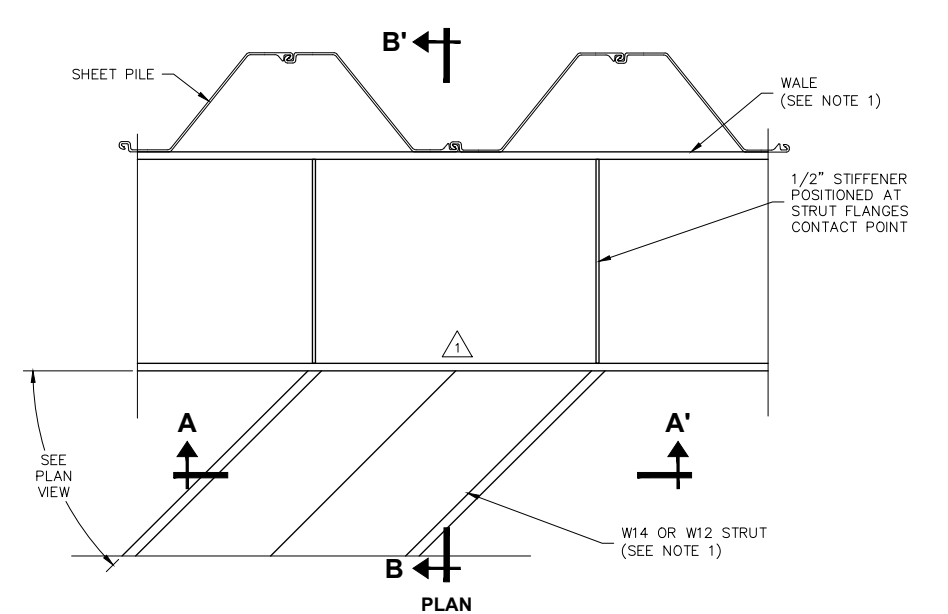
SECTION



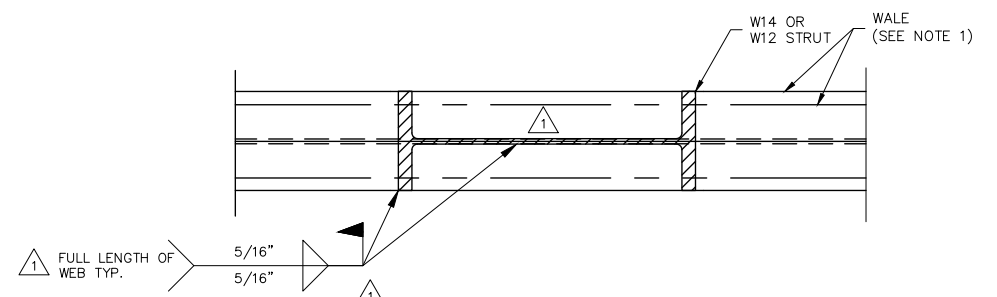
PLAN



SECTION A-A'



PLAN

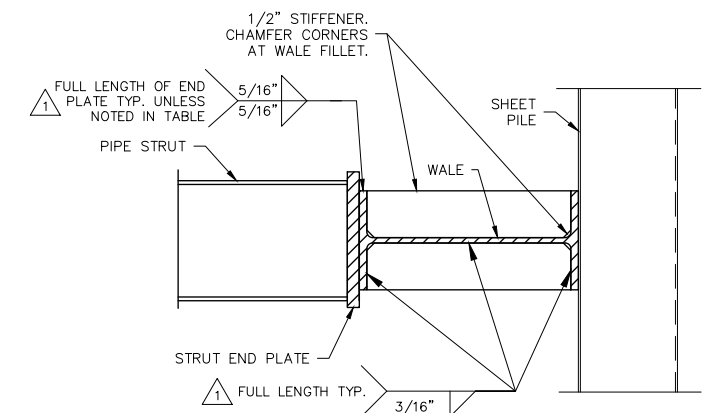


SECTION A-A'

STRUT TO WALE-STRUT CONNECTION

1

PIPE STRUT TO WALE CONNECTION REQUIREMENTS		
PIPE STRUT OD (x THICKNESS)	PIPE STRUT END PLATE THICKNESS	ADDITIONAL REQUIREMENTS
14"x0.500"	1"	
16"x0.500"	1"	
18"x0.375"	1"	
18"x0.500"	1-1/4"	
20"x0.500"	1-3/4"	3/8" FILLET WELD END PLATE TO WALE
24"x0.500"	1-1/2"	2-1/4" THICK PLATE IN AREA 5 AT W36x232
24"x0.625 "	1-1/4"	
24"x0.750"	1-1/2"	3/8" FILLET WELD END PLATE TO WALE
30"x0.625"	1-3/4"	3/8" FILLET WELD END PLATE TO WALE



SECTION B-B'

PIPE STRUT TO WALE CONNECTION

2

NOTE:
1. REQUIRED STRUT AND WALE SECTIONS VARY. SEE DRAWINGS S-101 AND S-102.

WIDE FLANGE STRUT TO WALE CONNECTION

3

3/4"=1'-0"

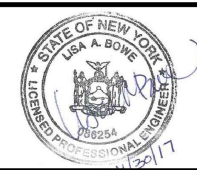
2' 1' 0 1' 2'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions
1	2/4/2019	CONNECTION REVISIONS

Professional Engineer's Name LISA A. BOWE		
Professional Engineer's No. 086254		
State NY	Date Signed 11/30/2017	Project Mgr. MJB
Designed by LAB	Drawn by JLH	Checked by APC



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CARROLL GARDENS/PUBLIC PLACE
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SITE REMEDIATION

REMEDIAL EXCAVATION
SHORING DETAILS

Arcadis Project No. B0036728.0001.00003	
Date NOVEMBER 2017	S-502
Arcadis One Lincoln Center 110 West Fayette Street, Suite 300 Syracuse, NY 13202 Tel. 315.446.9120	