



TR5: Technical Report  
Pile Driving  
Must be typewritten.

DEPT BLDGS Job No. 121185528  
Scan Code ESHS7401060

Sheet number 1 of 2 sheets

**1 Location Information** Required for all applications.

House No(s) 250 Street Name SOUTH STREET  
Borough MANHATTAN Block 248 Lot 7501 BIN 1089771 CB No. 103

**2 Applicant Information** Required for all applications.

Last Name BOYER First Name RONALD Middle Initial D  
Business Name LANGAN ENG, ENVIRON, SURVEY & LAND ARCH Business Telephone (973) 560-4900  
Business Address 300 KIMBALL DRIVE, 4TH FLOOR Business Fax (973) 560-4901  
City PARSTIPPANY State NJ Zip 07054 Mobile Telephone  
E-Mail License Number 085831  
 P.E.  R.A.

**3 Pile Driving Contractor** Required for all applications.

Last Name Ramamurthy First Name Kay Middle Initial  
Business Name Falco Construction Corp. Business Telephone 718-241-2100  
Business Address 2300 East 69th Street Business Fax 718-968-1919  
City W. Brooklyn State NY Zip 11234 Mobile Telephone

**4 Pile Information** Required for all applications.


Type DRIVEN OPEN-ENDED PIPE  
Material STEEL  
Load Capacity 200 (COMPRESSION) tons  
18 (TENSION), 3 (LATERAL)

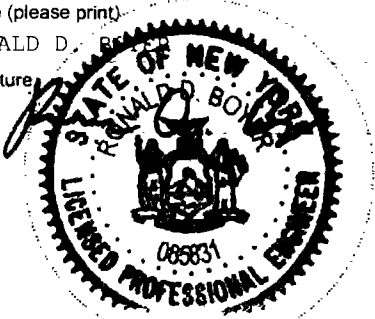
**5 Hammer Information** Required for all applications.

Make JUNTAN  
Model Number HHK-5S  
Energy 54.4 KIP-FT

**6 Statements and Signatures** Required for all applications.

I hereby state that the above information is correct and complete to the best of my knowledge and that the above tests were performed in accordance with all Administrative Code Provisions and Departmental Rules, Regulations and Directives.  
Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both.  
It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print) RONALD D. BOYER  
Signature  Date 9/11/16



P.E. / R.A. Seal (apply seal, then sign and date over seal)

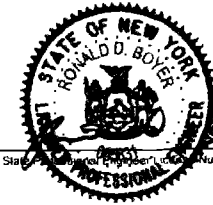
Approvals - Internal Use Only			
Examined and Recommended for Approval		Approved	
Examiner Name	Date	Borough Commissioner Signature	Date
Signature	Date		



**TABLE**  
**Summary of Driven Pile Installation**

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License Number 085831



8/31/16  
Date

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A.
- 3 The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A.
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B.
- 5 Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.

Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
1	L22	200	18	3	3.5	14	0.62	79.6	81.9	-78.4	4/1/2015	10@ 25"	-0.25	0.68	23-foot-long follower used
2	L22	200	18	3	3.5	13.75	0.707	80.0	80.7	-77.2	4/1/2015	10@ 25"	0.17	0.04	20.5-foot-long follower used
3	L22	200	18	3	3.5	13.875	0.75	80.0	79.1	-75.6	4/1/2015	11, 12	-0.05	-0.04	
4	L23	200	18	3	4.5	13.875	0.750	80.0	85.1	-80.6	4/6/2015	10@ 5"	-0.42	-0.12	20.5-foot-long follower used
5	L23	200	18	3	4.5	13.750	0.750	80.0	84.3	-79.8	4/6/2015	10@ 5"	-0.23	0.21	20.5-foot-long follower used
6	L24	200	18	3	4.0	13.75	0.707	80.0	77.6	-73.6	3/30/2015	15@ 75"	-0.12	-0.17	20.5-foot-long follower used
7	L24	200	18	3	4.0	13.75	0.707	80.0	76.9	-72.9	3/30/2015	10@ 5"	-0.31	0.05	20.5-foot-long follower used
8	L25	200	18	3	4.0	13.875	0.750	79.8	79.8	-75.8	4/7/2015	10@ 0"	-0.72	-0.07	
9	L25	200	18	3	4.0	13.750	0.707	80.0	75.8	-71.6	4/7/2015	11, 16	-0.57	0.38	
10	L26	200	18	3	3.0	13.875	0.75	80.0	77.6	-74.6	3/27/2015	12@ 5"	-0.75	0.15	20.5-foot-long follower used
11	L26	200	18	3	3.0	13.875	0.75	80.0	79.5	-76.5	3/27/2015	15@ 75"	-0.60	-0.19	20.5-foot-long follower used
12	PHW1	200	18	3	4.0	13.875	0.750	80.0	83.4	-79.4	5/5/2015	20	-0.35	-0.06	23-foot-long follower used
13	PHW1	200	18	3	4.0	14.000	0.820	98.5	84.1	-80.1	5/5/2015	13@ 5"	-0.50	0.11	23-foot-long follower used
14	PJW1	200	18	3	4.0	14.000	0.820	99.5	83.0	-78.0	5/5/2015	13@ 5"	-0.37	3.04	
15	PJW1	200	18	3	4.0	13.875	0.750	80.0	85.0	-81.0	5/6/2015	5@ 0"	-0.48	0.20	18.8-foot-long follower used
16	PKW1	200	18	3	4.0	14.000	0.820	99.5	82.9	-78.9	5/6/2015	12@ 5"	-0.51	-0.27	
17	PK-W1	200	18	3	4.0	14.000	0.820	80.0	83.6	-79.6	5/11/2015	22@ 1"	-0.86	0.16	18.8-foot-long follower used
18	PL-W1	200	18	3	4.0	14.000	0.820	81.0	84.3	-80.3	5/12/2015	11@ 5"	-0.03	0.14	20-foot-long follower used
19	PR-W1	200	18	3	4.0	14.000	0.820	80.0	73.7	-69.7	5/14/2015	11@ 5"	-0.48	0.07	18.8-foot-long follower used
20	PR-W1	200	18	3	4.0	14.000	0.82	95.0	73.2	-69.2	5/13/2015	8@ 0"	-0.39	-0.20	
21	PT-W1	200	18	3	4.0	14.000	0.82	95.0	75	-71.0	5/13/2015	8@ 0"	0.50	-0.16	
22	PT-W1	200	18	3	4.0	14.000	0.82	79.0	76.1	-72.1	5/14/2015	8@ 0"	-0.39	5.02	
23	PV-W1	200	18	3	4.0	14.000	0.82	80.5	87.7	-83.7	5/14/2015	10@ 5"	-0.57	-0.09	18.8-foot-long follower used
24	PV-W1	200	18	3	4.0	14.000	0.820	95.0	88.0	-84.0	5/12/2015	11, 14	-0.54	0.13	
25	PW-W1	200	18	3	4.0	14.000	0.820	80.0	87.9	-83.9	5/14/2015	10@ 5"	-0.31	-0.38	18.8-foot-long follower used
26	PW-W1	200	18	3	4.0	14.000	0.820	95.0	86.0	-82.0	5/11/2015	10@ 0"	-0.54	-0.44	
27	A1	200	18	3	3.5	13.75	0.707	80.0	83.5	-80.0	4/1/2015	20	0.18	-0.13	20.5-foot-long follower used
28	A1	200	18	3	3.5	13.875	0.75	80.0	83.2	-79.7	4/1/2015	10@ 5"	0.18	-0.10	20.5-foot-long follower used
29	A1	200	18	3	3.5	13.75	0.707	80.0	83.6	-80.1	4/1/2015	20	0.36	-0.12	20.5-foot-long follower used
30	A1	200	18	3	3.5	13.75	0.707	80.0	83.7	-80.2	4/1/2015	20	0.25	-0.03	20.5-foot-long follower used
31	B1	200	18	3	3.0	13.750	0.707	80.0	82.2	-79.2	3/11/2015	5@ 25"	0.54	0.14	20.5-foot-long follower used
32	B1	200	18	3	3.0	13.875	0.707	80.0	84.4	-81.4	3/11/2015	5@ 25"	0.21	0.23	20.5-foot-long follower used
33	B1	200	18	3	3.0	13.750	0.750	81.9	85.1	-82.1	3/11/2015	5@ 25"	-0.37	0.29	20.5-foot-long follower used
34	B1	200	18	3	3.0	13.750	0.707	80.0	80.6	-77.6	3/11/2015	5@ 25"	0.17	0.32	20.5-foot-long follower used
35	B1	200	18	3	3.0	13.750	0.707	81.0	80.1	-77.1	3/11/2015	20	0.08	0.24	20.5-foot-long follower used
36	B1	200	18	3	3.0	13.750	0.707	80.0	80.7	-77.7	3/11/2015	10@ 5"	0.01	-0.02	20.5-foot-long follower used
37	C1	200	18	3	4.0	13.875	0.75	80.0	78.3	-74.3	3/30/2015	15, 14	-0.17	0.08	

TR-5. Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D. BOYER  
Signature New York State Professional Engineer License No. 085831




8/31/16  
Date

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													N/S	E/W	
38	C1	200	18	3	4.0	13.75	0.707	80.0	75.4	-71.4	3/30/2015	11.13	-0.12	-0.18	
39	C1	200	18	3	4.0	13.875	0.750	81.0	75.1	-71.1	4/7/2015	10.0 25"	-0.19	-0.16	
40	C1	200	18	3	4.0	13.875	0.75	80.0	78.1	-74.1	3/30/2015	10.0 5"	-0.05	-0.05	
41	C1	200	18	3	4.0	13.875	0.750	80.0	77.5	-73.5	4/7/2015	13.13	0.29	0.17	
42	C1	200	18	3	4.0	13.750	0.707	80.0	74.2	-70.2	4/7/2015	17.13	0.10	0.04	
43	G1	200	18	3	4.0	13.875	0.750	79.6	73.2	-69.2	4/7/2015	10.0 5"	-0.40	0.66	
44	G1	200	18	3	4.0	13.875	0.750	79.0	75.1	-71.1	4/7/2015	11.13	-0.25	-0.17	
45	G1	200	18	3	4.0	13.750	0.707	80.0	72.3	-68.3	4/7/2015	12.0 5"	0.01	0.46	
46	G1	200	18	3	4.0	14	0.82	79.6	74.75	-70.8	4/7/2015	12.16	0.20	-0.34	
66	PC1	200	18	3	3.0	13.75	0.75	79.0	75.1	-72.1	3/27/2015	10.0 5"	0.00	-0.02	
67	PC1	200	18	3	3.0	13.875	0.75	79.0	74.9	-71.9	3/27/2015	15.0 75"	-0.22	-0.09	
68	PC1	200	18	3	3.0	13.875	0.75	79.0	74.4	-71.4	3/27/2015	10.0 5"	0.16	0.10	
69	PC1	200	18	3	3.0	13.75	0.707	81.0	75.1	-72.1	3/27/2015	15.0 75"	-0.17	0.05	
70	KP10	200	18	3	3.0	13.75	0.707	80.1	77.5	-74.5	3/26/2015	13.11	-0.07	-0.28	
71	KP10	200	18	3	3.0	13.875	0.75	79.0	82.5	-79.5	3/26/2015	10.0 5"	-0.12	0.70	20 5-foot-long follower used
72	KP10	200	18	3	3.0	13.875	0.75	80.0	82	-79.0	3/26/2015	15.0 75"	-0.24	-0.16	20 5-foot-long follower used
73	KP10	200	18	3	3.0	13.75	0.707	80.0	83.1	-80.1	3/26/2015	15.0 75"	-0.23	0.46	20 5-foot-long follower used
95	L21	200	18	3	2.5	14	0.82	80.0	78.5	-76.0	3/31/2015	15.0 75"	-0.03	0.23	
96	L21	200	18	3	2.5	13.75	0.707	80.0	77.5	-75.0	3/31/2015	11.14	-0.18	0.14	
97	L21	200	18	3	2.5	14	0.82	80.0	76.9	-74.4	3/31/2015	11.15	0.12	0.00	
98	XA3.2	200	18	3	3.0	13.875	0.750	78.9	76.4	-73.4	3/18/2015	10.0 5"	-0.24	-0.10	
99	XA3.2	200	18	3	3.0	13.875	0.750	80.0	76.8	-73.8	3/18/2015	13.13	-0.05	0.07	
100	XA3.2	200	18	3	3.0	13.750	0.707	80.0	77.3	-74.3	3/18/2015	14.12	-0.19	0.15	
101	XA3.2	200	18	3	3.0	13.750	0.707	78.9	77.4	-74.4	3/18/2015	10.0 25"	-0.22	-0.20	
102	B3	200	18	3	3.5	13.875	0.750	80.0	80.4	-76.9	4/6/2015	12.0 5"	0.12	0.21	20 5-foot-long follower used
103	B3	200	18	3	3.5	13.875	0.750	81.1	80.0	-76.5	4/7/2015	10.0 5"	-0.04	-0.32	20 5-foot-long follower used
104	B3	200	18	3	3.5	13.875	0.750	80.0	81.0	-77.5	4/6/2015	20	0.02	0.18	20 5-foot-long follower used
105	B3	200	18	3	3.5	13.875	0.750	81.0	81.2	-77.7	4/7/2015	20	0.04	-0.10	20 5-foot-long follower used
106	C3	200	18	3	3.0	13.75	0.707	81.0	74.6	-71.6	3/26/2015	10.0 25"	0.20	-0.20	
107	C3	200	18	3	3.0	13.875	0.75	79.9	77.6	-74.6	3/25/2015	15.0 75"	0.03	-0.09	
108	C3	200	18	3	3.0	13.75	0.707	80.9	78.4	-75.4	3/26/2015	10.0 25"	0.05	-0.19	20 5-foot-long follower used
109	C3	200	18	3	3.0	13.75	0.75	80.2	82.2	-79.0	3/28/2015	15.0 75"	-0.16	-0.15	20 5-foot-long follower used
110	C3	200	18	3	3.0	13.75	0.707	79.8	77.2	-74.2	3/25/2015	12.15	0.29	-0.18	
111	C3	200	18	3	3.0	13.75	0.707	81.0	80.5	-77.5	3/26/2015	15.0 75"	0.28	-0.16	20 5-foot-long follower used
112	TF1	200	18	3	3.0	13.75	0.75	80.0	72.25	-69.3	3/27/2015	20	-0.05	-0.38	
113	TF1	200	18	3	3.0	13.75	0.75	80.0	78.3	-75.3	3/27/2015	11.14	0.06	0.01	
114	TF1	200	18	3	3.0	13.75	0.75	80.0	72.8	-69.8	3/27/2015	12.0 5"	-0.38	-0.51	

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Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

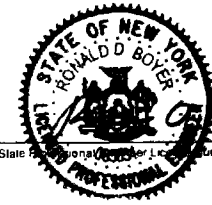


RONALD D. BOYER  
Signature  
New York State Professional Engineer License Number 085631  
Date 8/9/16

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													N/S	E/W	
115	TF1	200	18	3	3.0	13.875	0.75	80.0	73.9	-70.9	3/28/2015	10:0 5"	-0.01	-0.38	
116	TF1	200	18	3	3.0	13.75	0.707	80.0	77.2	-74.2	3/28/2015	12. 12	0.03	-0.13	
117	L20	200	18	3	4.0	14	0.82	80.0	84.5	-80.5	4/2/2015	12:0 5"	-0.15	-0.08	23-foot-long follower used
118	L20	200	18	3	4.0	14	0.82	80.0	82.7	-78.7	4/2/2015	12:0 5"	0.32	-0.26	23-foot-long follower used
119	L20	200	18	3	4.0	14	0.82	80.0	86.6	-82.6	4/2/2015	12:0 5"	0.05	0.19	23-foot-long follower used
120	L20	200	18	3	4.0	14	0.707	80.0	84.5	-80.5	4/2/2015	20	0.11	-0.22	20.5-foot-long follower used
121	XA4	200	18	3	3.0	13.750	0.707	80.0	77.2	-74.2	3/17/2015	17:0 75"	0.05	0.07	
122	XA4	200	18	3	3.0	13.750	0.707	80.0	79.2	-76.2	3/18/2015	5:0 25"	0.00	-0.09	20.5-foot-long follower used
123	XA4	200	18	3	3.0	13.875	0.707	80.0	81.4	-78.4	3/18/2015	5:0 25"	-0.11	0.05	20.5-foot-long follower used
124	XA4	200	18	3	3.0	13.875	0.750	80.0	78.2	-75.2	3/18/2015	2:0 25"	0.23	-0.36	20.5-foot-long follower used
125	9	200	18	3	1.5	13.875	0.750	80.0	82.6	-81.1	3/7/2015	1:0 0.5"	-0.34	0.36	20.5-foot-long follower used
126	9	200	18	3	1.5	13.875	0.750	80.0	81.7	-80.2	3/7/2015	5:0 25"	1.34	0.15	20.5-foot-long follower used
127	9	200	18	3	1.5	13.875	0.750	80.0	81.9	-80.4	3/7/2015	5:0 25"	1.02	0.93	20.5-foot-long follower used
128	9	200	18	3	1.5	13.750	0.707	81.8	80.9	-79.4	3/7/2015	10:0"	0.16	-0.44	20.5-foot-long follower used
129	9	200	18	3	1.5	13.750	0.707	80.0	81.1	-79.6	3/7/2015	10:0 5"	0.23	0.19	20.5-foot-long follower used
130	9	200	18	3	1.5	13.875	0.707	80.0	81.2	-79.7	3/7/2015	6:0 25"	-0.09	0.41	20.5-foot-long follower used
131	9	200	18	3	1.5	13.875	0.750	80.0	83.6	-82.1	3/7/2015	5:0 25"	0.04	0.17	20.5-foot-long follower used
132	9	200	18	3	1.5	13.875	0.750	80.0	82.0	-80.5	3/7/2015	5:0 25"	-0.07	0.05	20.5-foot-long follower used
133	9	200	18	3	1.5	13.750	0.750	80.0	81.7	-80.2	3/7/2015	7:0 25"	0.09	0.04	20.5-foot-long follower used
134	10	200	18	3	1.5	13.875	0.750	80.0	76.0	-74.5	3/10/2015	20	0.08	-0.14	
135	10	200	18	3	1.5	13.750	0.707	80.0	76.9	-75.4	3/10/2015	10:0 5"	-0.02	-0.24	
136	10	200	18	3	1.5	13.750	0.707	80.0	76.0	-74.5	3/10/2015	10:0 5"	0.35	-0.31	
137	10	200	18	3	1.5	13.750	0.707	80.0	76.4	-74.9	3/10/2015	5:0 25"	-0.77	-0.61	
138	10	200	18	3	1.5	13.875	0.707	80.0	76.0	-74.5	3/10/2015	10:0"	-1.12	-0.27	
139	10	200	18	3	1.5	13.750	0.707	81.3	74.5	-73.0	3/10/2015	10:0"	0.00	-0.28	
140	10	200	18	3	1.5	13.750	0.707	80.0	75.0	-73.5	3/10/2015	5:0 25"	0.03	-0.31	
141	10	200	18	3	1.5	13.875	0.707	80.0	77.0	-75.5	3/10/2015	10:0"	0.17	-0.24	
142	10	200	18	3	1.5	13.750	0.707	80.0	76.8	-75.3	3/10/2015	5:0 25"	0.07	-0.60	
143	10	200	18	3	1.5	13.750	0.707	80.0	78.4	-76.9	3/10/2015	11:0 75"	0.10	-0.18	
144	10	200	18	3	12.0	13.750	0.707	96.1	84.0	-72.0	10/28/2014	9. 12	-0.34	0.14	Index Pile No. 1 - PDA indicated capacity greater than or equal to 800 kips at the end of driving
145	11	200	18	3	1.5	13.875	0.707	80.0	82.0	-80.5	3/5/2015	11. 15	0.24	0.30	
146	11	200	18	3	1.5	13.875	0.750	79.9	82.0	-80.5	3/3/2015	11. 16	0.34	0.08	
147	11	200	18	3	1.5	13.750	0.707	80.0	82.0	-80.5	3/5/2015	10:0 25"	0.28	0.01	
148	11	200	18	3	1.5	13.750	0.707	80.0	82.0	-80.5	3/5/2015	10:0 5"	0.20	0.26	
149	11	200	18	3	1.5	13.750	0.707	80.0	82.0	-80.5	3/4/2015	5:0 25"	0.33	-0.15	
150	11	200	18	3	1.5	13.750	0.750	80.0	82.0	-80.5	3/4/2015	5:0 25"	0.54	0.03	
151	11	200	18	3	1.5	14.000	0.820	81.0	82.0	-80.5	3/3/2015	15:0 75"	0.29	0.21	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 065831 Date

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A
- 3 The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B
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Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
152	11	200	18	3	1.5	13.875	0.707	78.0	82.0	-80.5	3/4/2015	5/0.25"	0.03	-0.11	
153	11	200	18	3	1.5	13.875	0.707	82.4	82.0	-80.5	3/4/2015	13/0.75"	-0.27	0.41	
154	11	200	18	3	1.5	13.750	0.707	79.0	82.0	-80.5	3/4/2015	10/0.5"	0.18	-0.19	
155	12	200	18	3	1.5	13.875	0.750	79.9	82.0	-80.5	3/3/2015	10/0.5"	-0.03	-0.09	
157	12	200	18	3	1.5	13.750	0.707	79.9	76.1	-74.6	3/4/2015	5/0.25"	-0.26	-0.31	20.5-foot-long follower used
158	12	200	18	3	1.5	13.750	0.750	80.0	77.3	-75.8	3/4/2015	11.12"	-0.21	0.33	
159	12	200	18	3	1.5	13.875	0.750	80.0	77.2	-75.7	3/4/2015	5/0.25"	0.12	-0.38	
160	12	200	18	3	1.5	13.875	0.750	80.0	76.1	-74.6	3/4/2015	5/0.25"	-0.05	0.33	
161	12	200	18	3	1.5	13.750	0.707	80.0	76.0	-74.5	3/4/2015	5/0.25"	-0.53	-0.18	
162	12	200	18	3	1.5	13.750	0.707	80.0	76.9	-75.4	3/4/2015	10/0.5"	-0.52	0.11	
163	TF2	200	18	3	3.0	13.75	0.707	80.0	77.8	-74.8	3/26/2015	2'	-0.01	0.22	
164	TF2	200	18	3	3.0	13.75	0.707	81.0	78.5	-75.5	3/26/2015	11.15"	0.00	0.11	
165	TF2	200	18	3	3.0	13.75	0.707	81.0	80	-77.0	3/26/2015	10/0.5"	0.22	0.14	
166	TF2	200	18	3	3.0	13.75	0.707	81.0	77.9	-74.9	3/26/2015	13/0.75"	-0.17	0.23	
167	TG2	200	18	3	3.0	13.75	0.707	81.0	83.4	-80.4	3/27/2015	20"	-0.14	0.20	20.5-foot-long follower used
168	TG2	200	18	3	3.0	13.75	0.707	81.0	80.4	-77.4	3/27/2015	13/0.5"	-0.33	0.14	20.5-foot-long follower used
169	TG2	200	18	3	3.0	13.75	0.707	80.0	80.4	-77.4	3/27/2015	12/0.5"	-0.14	-0.13	20.5-foot-long follower used
170	TG2	200	18	3	3.0	13.875	0.75	79.8	80.5	-77.5	3/27/2015	12/0.5"	-0.33	-0.03	20.5-foot-long follower used
171	TH2	200	18	3	3.0	13.75	0.707	80.0	81.6	-78.6	3/28/2015	15/0.75"	-0.20	-0.03	20.5-foot-long follower used
172	TH2	200	18	3	3.0	13.75	0.707	80.0	81.1	-78.1	3/26/2015	15/0.75"	-0.50	0.12	20.5-foot-long follower used
173	TH2	200	18	3	3.0	13.75	0.707	80.0	81.7	-78.7	3/26/2015	10/0.5"	0.35	0.15	20.5-foot-long follower used
197	L19	200	18	3	3.0	13.875	0.750	80.0	83.4	-80.4	4/13/2015	8/0.25"	0.09	0.04	20-foot-long follower used
198	L19	200	18	3	3.0	13.875	0.750	79.8	84.7	-81.7	4/13/2015	7'	0.00	0.11	20-foot-long follower used
199	L19	200	18	3	3.0	13.875	0.750	80.0	87.0	-84.0	4/13/2015	10/0.5"	-0.54	0.05	20-foot-long follower used
200	L19	200	18	3	3.0	13.875	0.750	80.6	83.1	-80.1	4/13/2015	8/0.25"	0.10	0.12	20-foot-long follower used
201	8	200	18	3	1.5	13.750	0.707	80.0	84.0	-82.5	3/7/2015	5/0.25"	0.05	-0.10	20.5-foot-long follower used
202	8	200	18	3	1.5	13.875	0.750	80.0	83.4	-81.9	3/7/2015	5/0.25"	-0.28	-0.06	20.5-foot-long follower used
203	8	200	18	3	1.5	13.750	0.707	80.0	83.5	-82.0	3/7/2015	7/0.25"	0.16	-0.08	20.5-foot-long follower used
204	8	200	18	3	1.5	13.875	0.750	80.0	84.2	-82.7	3/7/2015	5/0.25"	0.13	-0.33	20.5-foot-long follower used
205	8	200	18	3	1.5	13.875	0.750	82.0	82.7	-81.2	3/7/2015	5/0.25"	0.37	-0.08	20.5-foot-long follower used
206	8	200	18	3	1.5	13.875	0.707	80.0	84.3	-82.8	3/7/2015	5/0.25"	0.39	-0.34	20.5-foot-long follower used
207	8	200	18	3	3.5	13.875	0.707	80.0	85.2	-81.7	3/7/2015	5/0.25"	-0.05	0.27	20.5-foot-long follower used
208	8	200	18	3	1.5	13.750	0.707	80.0	84.0	-82.5	3/7/2015	5/0.25"	0.09	-0.38	20.5-foot-long follower used
209	8	200	18	3	1.5	13.750	0.707	80.0	83.4	-81.9	3/7/2015	10/0.5"	0.34	0.12	20.5-foot-long follower used
210	8	200	18	3	3.5	13.875	0.750	80.5	83.5	-80.0	4/30/2015	25"	0.21	0.07	20-foot-long follower used
211	8	200	18	3	3.0	13.875	0.707	80.0	84.7	-81.7	3/7/2015	5/0.25"	0.11	0.25	20.5-foot-long follower used
212	27	200	18	3	1.5	13.875	0.750	81.3	80.6	-79.3	3/10/2015	10/0.5"	-0.30	-0.64	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State License No. 085831 Date 8/31/16

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
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Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpr, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
213	27	200	18	3	1.5	13.750	0.750	82.0	76.6	75.1	3/9/2015	10@25"	0.34	0.35	20.5-foot-long follower used
214	27	200	18	3	1.5	13.875	0.750	80.0	80.6	-79.1	3/10/2015	5@25"	0.37	-0.06	20.5-foot-long follower used
216	27	200	18	3	1.5	13.875	0.707	80.0	79.5	-78.0	3/10/2015	5@25"	-0.25	0.16	20.5-foot-long follower used
216	27	200	18	3	1.5	13.875	0.707	80.0	78.5	-77.0	3/10/2015	10@5"	0.37	-0.25	20.5-foot-long follower used
217	27	200	18	3	1.5	13.875	0.750	80.0	80.0	-78.5	3/10/2015	10@5"	0.58	0.47	20.5-foot-long follower used
218	27	200	18	3	1.5	13.875	0.750	80.0	78.0	-76.5	3/9/2015	12@.75"	0.25	0.11	20.5-foot-long follower used
219	27	200	18	3	1.5	13.750	0.707	80.0	81.3	-79.8	3/10/2015	5@25"	-0.04	-0.17	20.5-foot-long follower used
220	27	200	18	3	1.5	13.750	0.707	80.0	79.9	-78.4	3/10/2015	5@25"	0.57	-0.17	20.5-foot-long follower used
221	27	200	18	3	1.5	13.750	0.707	80.0	79.4	-77.9	4/30/2015	20@5"	0.04	0.07	20.5-foot-long follower used
222	27	200	18	3	1.5	13.750	0.707	80.0	81.4	-79.9	3/10/2015	5@25"	0.31	-0.62	20.5-foot-long follower used
223	27	200	18	3	1.5	13.750	0.707	80.0	78.3	-76.8	3/9/2015	13@"	1.05	-0.36	20.5-foot-long follower used
224	27	200	18	3	1.5	13.750	0.707	80.0	81.9	-80.4	3/10/2015	5@25"	-0.38	0.04	20.5-foot-long follower used
225	27	200	18	3	1.5	13.875	0.750	79.6	81.7	-80.2	3/9/2015	10@5"	0.22	-0.25	20.5-foot-long follower used
226	27	200	18	3	1.5	13.875	0.750	81.4	81.0	-79.5	3/9/2015	10@5"	-0.94	0.27	20.5-foot-long follower used
227	27	200	18	3	1.5	13.875	0.750	80.0	82.0	-80.5	3/10/2015	5@25"	0.09	0.00	20.5-foot-long follower used
228	27	200	18	3	1.5	13.750	0.750	80.0	81.2	-79.7	4/30/2015	10@5"	0.41	-0.07	20.5-foot-long follower used
229	28	200	18	3	1.5	13.875	0.750	82.0	73.4	-71.9	3/5/2015	5@25"	1.05	0.10	
230	28	200	18	3	1.5	13.875	0.750	80.0	73.8	-72.3	3/6/2015	5@25"	0.17	0.33	
231	28	200	18	3	1.5	13.875	0.750	81.6	79.3	-77.8	3/5/2015	12, 13	0.31	0.02	
232	28	200	18	3	1.5	13.875	0.750	80.1	74.8	-73.3	3/5/2015	15@.75"	0.05	0.09	
233	28	200	18	3	1.5	13.875	0.707	81.0	73.3	-71.8	3/6/2015	12, 13	-0.03	-0.16	
234	28	200	18	3	1.5	13.750	0.750	80.0	72.7	-71.2	3/5/2015	13, 13	1.25	0.21	
235	28	200	18	3	1.5	13.875	0.750	80.0	74.0	-72.5	3/6/2015	10@5"	0.11	0.08	
236	28	200	18	3	1.5	13.875	0.750	79.0	77.6	-76.1	3/6/2015	5@25"	-0.05	0.01	
237	28	200	18	3	1.5	13.875	0.750	80.0	74.8	-73.3	3/6/2015	15@.75"	-0.04	0.13	
238	28	200	18	3	1.5	13.750	0.707	80.0	74.0	-72.5	3/6/2015	7@"	-0.17	-0.15	
239	28	200	18	3	1.5	13.750	0.707	80.0	78.0	-76.5	3/6/2015	10@25"	0.06	0.27	
240	28	200	18	3	1.5	13.875	0.750	80.0	75.1	-73.6	3/6/2015	5@25"	0.36	0.18	
241	28	200	18	3	1.5	13.875	0.750	80.0	79.3	-77.8	3/5/2015	5@25"	0.63	0.94	
242	28	200	18	3	1.5	13.875	0.707	80.0	77.4	-75.9	3/6/2015	10@5"	-0.41	0.01	
243	28	200	18	3	1.5	13.750	0.707	80.0	75.1	-73.6	3/6/2015	10@5"	-0.3	0.13	
244	28	200	18	3	1.5	13.750	0.707	80.0	79.0	-77.5	3/6/2015	15@.75"	-0.01	-0.03	20.5-foot-long follower used
245	28	200	18	3	1.5	13.875	0.707	80.0	78.0	-76.5	3/6/2015	12@.75"	0.24	0.65	
246	13	200	18	3	2.5	13.875	0.750	80.0	77.5	-75.0	3/17/2015	11, 11	0.02	-0.21	
247	13	200	18	3	2.5	13.750	0.707	80.0	82.9	-80.4	3/17/2015	7@25"	0.00	-0.01	20.5-foot-long follower used
248	13	200	18	3	2.5	13.750	0.707	80.0	82.7	-80.2	3/17/2015	6@25"	-0.16	0.62	20.5-foot-long follower used
249	13	200	18	3	2.5	14.000	0.750	80.0	77.9	-75.4	3/17/2015	5@25"	-0.37	-0.01	



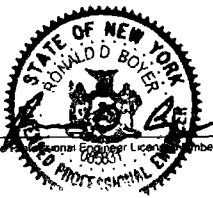
TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G S Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
250	13	200	18	3	2.5	13.875	0.750	80.0	83.6	-81.1	3/17/2015	15@ 75"	-0.38	0.03	20.5-foot-long follower used
251	13	200	18	3	2.5	13.750	0.707	80.0	82.2	-79.7	3/17/2015	10@ 5"	-0.24	0.03	20.5-foot-long follower used
252	13	200	18	3	2.5	13.750	0.707	80.0	77.6	-75.1	3/17/2015	10@ 5"	-0.12	0.36	20.5-foot-long follower used
253	13	200	18	3	2.5	13.750	0.707	80.0	84.8	-82.3	3/17/2015	12@ 5"	-0.15	-0.26	20.5-foot-long follower used
254	13	200	18	3	2.5	13.750	0.707	80.0	80.3	-77.8	3/17/2015	20	-0.09	-0.02	20.5-foot-long follower used
255	13	200	18	3	2.5	13.875	0.707	80.0	80.3	-77.8	3/17/2015	6@ 25"	0.13	0.40	20.5-foot-long follower used
256	13	200	18	3	2.5	13.750	0.707	80.0	83.2	-80.7	3/17/2015	21	-0.20	-0.31	20.5-foot-long follower used
257	D5	200	18	3	2.5	13.750	0.707	80.0	87.6	-85.1	4/1/2015	10@ 25"	0.6*	-0.11	20.5-foot-long follower used
258	D5	200	18	3	2.5	13.750	0.707	80.0	88.5	-86.0	4/1/2015	20	-0.26	-0.08	20.5-foot-long follower used
259	D5	200	18	3	2.5	13.750	0.707	80.0	86.3	-83.8	4/1/2015	10@ 25"	0.02	-0.40	20.5-foot-long follower used
260	D5	200	18	3	2.5	13.750	0.750	80.0	85.9	-83.4	4/1/2015	10@ 25"	0.01	-0.35	20.5-foot-long follower used
261	D7	200	18	3	1.5	14.000	0.820	81.2	81.4	-79.9	3/3/2015	5@ 25"	0.02	-0.11	23-foot-long follower used
262	D7	200	18	3	1.5	13.750	0.707	80.0	80.1	-78.6	3/3/2015	5@ 25"	-0.25	-0.04	20.5-foot-long follower used
263	G5	200	18	3	3.0	13.875	0.75	80.0	82.1	-79.1	3/31/2015	10@ 5"	-0.09	-0.19	20.5-foot-long follower used
264	G5	200	18	3	3.0	14	0.82	80.0	82.4	-79.4	3/31/2015	12@ 5"	-0.14	-0.07	23-foot-long follower used
265	G5	200	18	3	3.0	13.75	0.707	80.0	83.2	-80.2	3/31/2015	10@ 5"	0.12	-0.08	20.5-foot-long follower used
266	G5	200	18	3	3.0	13.875	0.75	80.0	81.0	-78.0	3/31/2015	22	0.34	-0.12	20.5-foot-long follower used
267	G5	200	18	3	3.0	14	0.82	80.0	81.25	-78.3	3/31/2015	20	0.05	-0.10	23-foot-long follower used
268	G5	200	18	3	3.0	14	0.82	80.0	80.8	-77.8	3/31/2015	15@ 75"	0.21	-0.29	23-foot-long follower used
270	E7	200	18	3	1.5	13.750	0.707	80.8	79.9	-78.4	3/2/2015	5@ 25"	-0.01	0.38	
271	E7	200	18	3	1.5	13.875	0.750	80.0	82.4	-80.9	3/2/2015	5@ 25"	-0.35	0.14	20.5-foot-long follower used
272	E7	200	18	3	1.5	13.875	0.750	81.5	81.8	-80.3	3/2/2015	5@ 25"	-0.13	0.19	20.5-foot-long follower used
273	E7	200	18	3	1.5	13.750	0.750	82.1	76.4	-74.9	3/2/2015	5@ 25"	0.11	0.21	
274	K2	200	18	3	3.5	13.75	0.707	79.0	83.3	-79.8	3/30/2015	10@ 5"	-0.37	-0.09	20.5-foot-long follower used
275	K2	200	18	3	3.5	14	0.82	80.0	84.2	-80.7	3/30/2015	10@ 5"	-0.15	0.35	23-foot-long follower used
276	K2	200	18	3	3.5	13.75	0.75	79.0	83.75	-80.3	3/30/2015	10@ 5"	-0.23	-0.26	20.5-foot-long follower used
277	K2	200	18	3	3.5	13.75	0.707	80.0	83.8	-80.3	3/30/2015	10@ 25"	0.10	-0.07	20.5-foot-long follower used
278	K2	200	18	3	3.5	13.75	0.75	79.3	83.5	-80.0	3/30/2015	15@ 75"	0.13	0.35	20.5-foot-long follower used
279	K2	200	18	3	3.5	14	0.82	80.7	83.5	-80.0	3/30/2015	10@ 5"	0.03	-0.32	23-foot-long follower used
321	J4	200	18	3	3.0	14	0.82	80.1	86.0	-83.0	3/31/2015	10@ 25"	0.04	-0.17	23-foot-long follower used
322	J4	200	18	3	3.0	13.875	0.75	80.0	85.0	-82.0	3/31/2015	12@ 5"	-0.06	-0.25	20.5-foot-long follower used
323	J4	200	18	3	3.0	13.75	0.75	79.0	84.3	-81.3	3/31/2015	10@ 25"	-0.06	0.20	20.5-foot-long follower used
324	J8	200	18	3	3.0	13.875	0.75	80.0	77.0	-74.0	3/31/2015	10@ 5"	0.05	0.05	
325	J8	200	18	3	3.0	13.75	0.707	80.0	80.0	-77.0	3/31/2015	10@ 5"	-0.13	-0.13	20.5-foot-long follower used
326	J8	200	18	3	3.0	13.75	0.707	80.0	79.2	-76.2	3/31/2015	10@ 5"	0.58	-0.16	20.5-foot-long follower used
327	L-4	200	18	3	3.5	14.000	0.820	82.0	82.7	-79.2	5/12/2015	20'1"	0.03	0.07	18.8-foot-long follower used
328	L-4	200	18	3	3.5	13.875	0.750	81.0	82.5	-79.0	5/12/2015	12@ 5"	-0.02	0.11	18.8-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085831 Date 8/31/16

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A
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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. GS Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U O N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
329	L-4	200	18	3	3.5	14.000	0.820	81.0	80.4	-76.9	5/12/2015	10/0.5"	0.11	-0.05	18.8-foot-long follower used
330	L-4	200	18	3	3.5	13.875	0.750	80.0	81.4	-77.9	5/12/2015	7.0"	0.01	0.17	18.8-foot-long follower used
331	L-4	200	18	3	3.5	14.000	0.820	81.0	81.2	-77.7	5/12/2015	10/0.5"	-0.05	-0.01	20-foot-long follower used
332	L-4	200	18	3	3.5	14.000	0.820	80.0	80.6	-77.1	5/12/2015	11/0.5"	0.01	0.23	18.8-foot-long follower used
333	PG-8	200	18	3	3.5	14.000	0.820	81.0	80.3	-76.8	5/30/2015	22	0.30	-0.19	18.8-foot-long follower used
334	PG-8	200	18	3	3.5	14.000	0.820	80.5	80.5	-77.0	5/30/2015	22	0.36	-0.60	18.8-foot-long follower used
335	PG-8	200	18	3	3.5	14.000	0.820	82.0	82.2	-78.7	5/30/2015	12/0.5"	0.09	-0.36	18.8-foot-long follower used
336	PG-8	200	18	3	3.5	14.000	0.820	78.5	76.2	-72.7	5/30/2015	10/0.25"	-0.19	-0.16	
337	PG-8	200	18	3	3.5	14.000	0.820	80.0	80.6	-77.3	5/30/2015	12/0.5"	0.11	-0.23	18.8-foot-long to follower used
338	PG-8	200	18	3	3.5	14.000	0.820	80.0	80.9	-77.4	5/30/2015	22	0.31	-0.20	18.8-foot-long follower used
339	PH-P22	200	18	3	8.0	13.750	0.707	120.8	82.4	-74.4	6/12/2015	10/0.25"	0.28	-0.02	
340	PH-P22	200	18	3	3.5	14.000	0.820	80.0	78.3	-74.6	5/29/2015	13, 13	0.22	-0.08	
387	SW	200	18	3	2.5	13.875	0.750	80.0	79.0	-76.5	4/17/2015	10/0.5"	0.24	-0.07	21-foot-long follower used
388	SW	200	18	3	2.5	13.875	0.750	80.0	81.5	-79.0	4/17/2015	10/0.5"	0.25	-0.34	21-foot-long follower used
392	SW-1	200	18	3	2.5	13.875	0.75	80.2	84.8	-82.3	3/28/2015	10/0.5"	-0.41	-0.04	20.5-foot-long follower used
393	SW-1	200	18	3	2.5	13.75	0.707	80.0	84.1	-81.5	3/28/2015	20	-0.65	-0.36	20.5-foot-long follower used
394	SW-1	200	18	3	2.5	13.875	0.75	80.1	83.7	-81.2	3/28/2015	10/0.5"	-0.31	-0.44	20.5-foot-long follower used
395	SW-1	200	18	3	2.5	13.875	0.75	79.1	84.3	-81.8	3/28/2015	10/0.5"	-0.55	-0.31	20.5-foot-long follower used
396	SW-1	200	18	3	2.5	13.75	0.707	80.0	82.3	-79.8	3/28/2015	5/0.75"	-0.29	-0.45	20.5-foot-long follower used
397	SW-1	200	18	3	2.5	13.75	0.707	81.5	85.5	-83.0	3/28/2015	10/0.5"	0.46	0.14	20.5-foot-long follower used
398	SW-1	200	18	3	2.5	13.875	0.75	80.0	85.6	-83.1	3/28/2015	10/0.5"	0.50	0.36	20.5-foot-long follower used
399	SW-1	200	18	3	2.5	13.75	0.707	80.0	84.7	-82.2	3/28/2015	20	-0.34	-0.06	20.5-foot-long follower used
400	SW-1	200	18	3	2.5	13.875	0.707	81.5	84.2	-81.7	3/28/2015	10/0.5"	0.37	-0.20	20.5-foot-long follower used
401	SW-1	200	18	3	2.5	13.75	0.75	80.0	84.6	-82.1	3/28/2015	20	0.03	0.24	20.5-foot-long follower used
402	SW-1	200	18	3	2.5	13.875	0.75	80.3	83.2	-80.7	3/28/2015	10/0.5"	0.13	0.24	20.5-foot-long follower used
403	SW-1	200	18	3	2.5	13.75	0.75	80.0	83.6	-81.1	3/28/2015	20	0.14	-0.04	20.5-foot-long follower used
404	SW-1	200	18	3	2.5	13.875	0.75	80.7	84.5	-82.0	3/28/2015	10/0.5"	-0.12	0.03	20.5-foot-long follower used
405	SW-1	200	18	3	2.5	13.875	0.75	80.4	85.5	-83.0	3/28/2015	10/0.5"	-0.12	-0.04	20.5-foot-long follower used
406	SW-1	200	18	3	2.5	13.875	0.707	80.0	84.4	-81.9	3/20/2015	5/0.25"	-0.02	0.05	20.5-foot-long follower used
407	SW-1	200	18	3	2.5	13.875	0.750	80.0	83.1	-80.6	3/20/2015	10/0.5"	0.10	0.23	20.5-foot-long follower used
408	SW-1	200	18	3	2.5	13.875	0.750	80.7	82.7	-80.2	3/20/2015	5/0.25"	0.10	0.21	20.5-foot-long follower used
409	SW-1	200	18	3	2.5	13.875	0.750	80.0	83.6	-81.1	3/20/2015	5/0.25"	0.16	0.09	20.5-foot-long follower used
410	SW-1	200	18	3	2.5	13.750	0.707	79.5	83.8	-81.3	3/20/2015	5/0.25"	-0.26	0.25	20.5-foot-long follower used
411	SW-1	200	18	3	2.5	13.750	0.707	80.0	83.8	-81.3	3/20/2015	10/0.5"	0.12	0.28	20.5-foot-long follower used
412	SW-1	200	18	3	2.5	13.875	0.750	81.6	82.5	-80.0	3/20/2015	10/0.5"	0.10	-0.29	20.5-foot-long follower used
413	SW-1	200	18	3	2.5	13.750	0.707	80.0	81.6	-79.1	3/20/2015	15/0.75"	-0.20	0.12	20.5-foot-long follower used
414	SW-1	200	18	3	2.5	13.750	0.707	80.0	81.3	-78.8	3/20/2015	15/0.75"	-0.01	0.58	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License Number 085831 Date 8/31/16

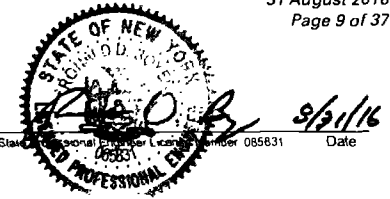


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Pile No.	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
415	SW-1	200	18	3	2.5	13.750	0.707	80.0	82.5	-80.0	3/20/2015	10/0.5"	0.42	0.38	20.5-foot-long follower used
416	SW-1	200	18	3	2.5	13.750	0.750	81.8	81.8	-79.3	3/20/2015	14/0.5"	-0.03	-0.24	20.5-foot-long follower used
417	SW-1	200	18	3	2.5	13.750	0.707	80.0	81.3	-78.8	3/19/2015	15/0.75"	-0.46	0.45	20.5-foot-long follower used
418	SW-1	200	18	3	2.5	13.750	0.707	80.0	81.5	-79.1	3/19/2015	10/0.5"	-0.05	0.33	20.5-foot-long follower used
419	SW-1	200	18	3	2.5	13.875	0.750	80.0	82.9	-80.4	3/19/2015	21	0.18	0.20	20.5-foot-long follower used
420	SW-1	200	18	3	2.5	13.750	0.707	80.0	80.5	-78.0	3/19/2015	10/0.5"	0.51	-0.38	20.5-foot-long follower used
421	SW-1	200	18	3	2.5	13.875	0.750	80.0	82.9	-80.4	3/19/2015	10/0.5"	-0.23	0.12	20.5-foot-long follower used
422	SW-1	200	18	3	2.5	13.750	0.707	81.7	82.4	-79.9	3/19/2015	22	0.26	0.55	20.5-foot-long follower used
423	SW-1	200	18	3	2.5	13.875	0.750	80.0	83.0	-77.5	3/19/2015	17/0.75"	0.02	0.97	20.5-foot-long follower used
424	SW-1	200	18	3	2.5	13.875	0.750	80.0	81.6	-79.1	3/19/2015	20	0.06	0.10	20.5-foot-long follower used
425	SW-1	200	18	3	2.5	13.875	0.750	80.0	82.5	-80.0	3/19/2015	22	-0.41	0.04	20.5-foot-long follower used
426	SW-1	200	18	3	2.5	13.750	0.707	80.0	80.0	-77.5	3/19/2015	10/0.5"	-0.08	0.39	20.5-foot-long follower used
427	SW-1	200	18	3	2.5	13.875	0.707	79.9	81.6	-79.1	3/19/2015	17/0.75"	-0.44	-0.06	20.5-foot-long follower used
428	SW-1	200	18	3	2.5	13.875	0.750	80.0	83.6	-81.1	3/19/2015	15/0.75"	-0.21	-0.11	20.5-foot-long follower used
429	SW-1	200	18	3	2.5	13.750	0.707	80.0	79.4	-76.9	3/19/2015	10/0.5"	-0.59	0.55	20.5-foot-long follower used
430	SW-1	200	18	3	2.5	13.750	0.707	80.0	81.2	-78.7	3/19/2015	6/0.25"	0.05	0.50	20.5-foot-long follower used
431	SW-1	200	18	3	2.5	13.875	0.707	80.0	81.9	-79.4	3/18/2015	21	0.32	0.19	20.5-foot-long follower used
432	F9	200	18	3	1.5	13.750	0.707	80.0	76.2	-76.7	4/30/2015	5/0.25"	0.00	0.09	20-foot-long follower
433	F9	200	18	3	1.5	13.750	0.707	80.0	79.8	-78.3	3/2/2015	5/0.25"	-0.03	0.01	20.5-foot-long follower used
434	F9	200	18	3	1.5	13.875	0.750	80.0	79.9	-78.4	3/2/2015	5/0.25"	0.11	0.14	20.5-foot-long follower used
435	J11	200	18	3	3.5	14.000	0.820	82.5	80.8	-77.3	6/17/2015	11.12	-0.29	0.28	
436	J11	200	18	3	3.5	14.000	0.820	81.0	82.3	-78.8	6/18/2015	22	-0.07	0.09	20-foot-long follower used
437	J11	200	18	3	3.5	14.000	0.820	79.0	81.2	-77.7	6/18/2015	23/0.75"	0.00	-0.22	20-foot-long follower used
438	J11	200	18	3	3.5	14.000	0.820	80.0	81.1	-77.6	6/18/2015	12/0.5"	-0.33	0.18	20-foot-long follower used
439	J11	200	18	3	3.5	14.000	0.820	79.0	81.0	-77.5	6/18/2015	15/0.5"	0.14	0.20	20-foot-long follower used
440	L11	200	18	3	3.5	14.000	0.820	80.6	76.4	-72.9	6/22/2015	11/0.5"	0.10	-0.24	
441	L11	200	18	3	3.5	13.750	0.707	80.7	79.1	-75.6	6/22/2015	17.17	0.21	-0.01	
442	L11	200	18	3	3.5	14.000	0.820	82.0	76.1	-72.6	6/22/2015	15.15	-0.11	-0.12	
443	L11	200	18	3	3.5	14.000	0.820	80.5	75.8	-72.3	6/22/2015	12.12	0.01	0.07	
444	L11	200	18	3	3.5	14.000	0.820	80.3	78.2	-74.7	6/22/2015	11.15	-0.15	0.01	
445	PH-P26	200	18	3	-0.5	14.000	0.820	80.0	75.1	-75.6	6/22/2015	22	-0.05	0.06	
446	PH-P26	200	18	3	0.0	14.000	0.820	81.0	74.5	-74.5	6/23/2015	12.13	-0.31	0.16	
447	PH-P26	200	18	3	0.5	14.000	0.820	80.0	74.25	-73.8	6/23/2015	21	-0.33	-0.21	
475	L10	200	18	3	2.0	14.125	0.875	80.2	89.2	-87.2	4/14/2015	15/0.75"	-0.25	0.33	23-foot-long follower used
476	L10	200	18	3	2.0	14.125	0.875	79.7	89.3	-87.3	4/14/2015	11/0.5"	-0.69	-0.57	23-foot-long follower used
477	L10	200	18	3	2.0	14.000	0.820	95.0	87.0	-85.0	4/14/2015	20	-0.34	0.02	
478	L10	200	18	3	2.0	13.875	0.750	80.0	87.7	-85.7	4/14/2015	15/0.75"	0.05	-0.64	20-foot-long follower used

TR-5: Technical Report  
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New York, New York  
Langan Project No. 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License Number 085631 Date



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													N/S	E/W	
479	L11	200	18	3	2.5	13.875	0.750	79.0	87.0	-84.5	4/14/2015	10/0.5"	-0.17	0.48	20-foot-long follower used
480	L11	200	18	3	2.5	13.875	0.750	80.0	88.6	-86.1	4/14/2015	8/0.25"	0.19	0.21	20-foot-long follower used
481	L18	200	18	3	2.5	13.875	0.750	80.5	83.0	-80.5	4/17/2015	10/0.5"	0.62	-0.05	21-foot-long follower used
482	L18	200	18	3	2.5	13.750	0.707	80.0	85.2	-82.7	4/17/2015	15/0.75"	0.01	0.59	21-foot-long follower used
483	7	200	18	3	2.5	13.875	0.707	80.0	80.2	-77.7	3/14/2015	20	0.08	0.22	20.5-foot-long follower used
484	7	200	18	3	2.5	13.875	0.707	80.0	81.0	-78.5	3/14/2015	6/0.25"	0.16	-0.61	20.5-foot-long follower used
485	7	200	18	3	2.5	13.875	0.707	80.0	80.0	-77.5	3/14/2015	10/0.5"	-0.07	-0.09	20.5-foot-long follower used
486	7	200	18	3	2.5	13.75	0.707	80.0	81.6	-79.1	3/14/2015	10/0.5"	-0.47	0.00	20.5-foot-long follower used
487	7	200	18	3	2.5	13.75	0.707	80.0	80.0	-77.5	3/14/2015	10/0.5"	-0.36	0.43	20.5-foot-long follower used
488	7	200	18	3	2.5	13.75	0.707	80.0	84.4	-81.9	3/14/2015	10/0"	-0.02	0.29	20.5-foot-long follower used
489	7	200	18	3	2.5	13.875	0.707	80.0	82.0	-79.5	3/14/2015	5/0.25"	0.04	-0.08	20.5-foot-long follower used
490	7	200	18	3	2.5	13.875	0.707	80.0	81.0	-78.5	3/14/2015	10/0.5"	-0.58	-0.04	20.5-foot-long follower used
491	7	200	18	3	2.5	13.875	0.707	80.0	84.6	-82.1	3/14/2015	5/0.25"	-0.09	0.01	20.5-foot-long follower used
492	7	200	18	3	2.5	13.875	0.75	80.0	83.6	-81.1	3/14/2015	5/0.25"	-0.27	0.47	20.5-foot-long follower used
493	7	200	18	3	2.5	13.75	0.707	80.0	85.8	-83.3	3/14/2015	11/0.5"	0.05	0.12	20.5-foot-long follower used
494	7	200	18	3	2.5	13.75	0.707	80.0	86.0	-83.5	3/14/2015	15/0.75"	-0.15	0.18	20.5-foot-long follower used
495	7	200	18	3	2.5	13.875	0.707	80.0	86.2	-83.7	3/14/2015	5/0.25"	-0.08	-0.05	20.5-foot-long follower used
496	26	200	18	3	2.5	13.875	0.707	80.0	83.7	-81.2	3/13/2015	5/0.25"	-0.28	-0.14	20.5-foot-long follower used
497	26	200	18	3	2.5	13.875	0.707	80.0	86.7	-84.2	3/13/2015	5/0.25"	-0.54	-0.44	20.5-foot-long follower used
498	26	200	18	3	2.5	13.750	0.707	80.0	82.1	-79.6	3/13/2015	7/0.75"	-0.19	-0.17	20.5-foot-long follower used
499	26	200	18	3	2.5	13.875	0.707	80.0	85.8	-83.3	3/13/2015	5/0.25"	-0.23	-0.05	20.5-foot-long follower used
500	26	200	18	3	12.0	13.750	0.707	100.2	92.5	-80.5	10/27/2014	10.15	-0.46	0.40	Index Pile No. 8 - PDA indicated capacity greater than or equal to 800 kips at the end of driving
501	26	200	18	3	2.5	13.750	0.707	80.0	79.2	-76.7	3/13/2015	8/0.25"	-0.02	0.02	20.5-foot-long follower used
502	26	200	18	3	2.5	13.875	0.707	80.0	83.7	-81.2	3/13/2015	5/0.25"	0.19	0.26	20.5-foot-long follower used
503	26	200	18	3	2.5	13.875	0.707	80.0	85.0	-82.5	3/13/2015	10/0.5"	-0.17	0.35	20.5-foot-long follower used
504	26	200	18	3	2.5	13.875	0.707	80.0	84.8	-82.3	3/13/2015	5/0.25"	-0.55	0.38	20.5-foot-long follower used
505	26	200	18	3	2.5	13.875	0.750	80.0	84.4	-81.9	3/13/2015	5/0.25"	0.09	-0.10	20.5-foot-long follower used
506	26	200	18	3	2.5	13.875	0.750	80.0	84.8	-82.3	3/13/2015	5/0.25"	-0.23	0.42	20.5-foot-long follower used
507	26	200	18	3	2.5	13.750	0.707	80.0	85.4	-82.9	3/13/2015	18/0.75"	-0.26	-0.72	20.5-foot-long follower used
508	26	200	18	3	2.5	13.750	0.707	80.0	85.4	-82.9	3/14/2015	6/0.25"	-0.33	-0.16	20.5-foot-long follower used
509	26	200	18	3	2.5	13.875	0.750	80.0	84.8	-82.3	3/14/2015	5/0.25"	-0.29	0.20	20.5-foot-long follower used
510	26	200	18	3	2.5	13.750	0.707	80.0	87.4	-84.9	3/13/2015	5/0.25"	-0.39	-0.12	20.5-foot-long follower used
511	26	200	18	3	2.5	13.750	0.707	80.0	86.4	-83.9	3/13/2015	5/0.25"	-0.45	0.23	20.5-foot-long follower used
512	26	200	18	3	2.5	13.875	0.750	80.0	85.3	-82.8	3/14/2015	5/0.25"	0.05	-0.33	20.5-foot-long follower used
513	29	200	18	3	3.0	13.875	0.707	80.0	75.0	-72.0	3/12/2015	10/0.5"	-0.52	0.27	20.5-foot-long follower used
514	29	200	18	3	3.0	13.875	0.750	80.0	75.8	-72.8	3/12/2015	10/0"	-0.45	-0.01	20.5-foot-long follower used
515	29	200	18	3	3.0	13.875	0.750	80.0	83.1	-80.1	3/12/2015	10/0.5"	-0.46	0.32	20.5-foot-long follower used

TR-5. Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085631

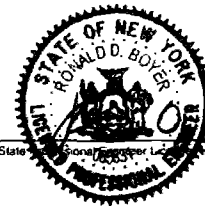
8/2/16  
Date

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers; see Attachment A
- 3 The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B
- 5 Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.

Pile No.	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
516	29	200	18	3	3.0	13.875	0.750	80.0	78.9	-75.9	3/12/2015	50' 25"	0.02	-0.31	20.5-foot-long follower used
517	29	200	18	3	3.0	13.750	0.707	80.0	76.1	-73.1	3/12/2015	150' 75"	-0.47	0.27	20.5-foot-long follower used
518	29	200	18	3	3.0	13.875	0.750	80.0	75.4	-72.4	3/12/2015	50' 25"	-0.31	0.04	20.5-foot-long follower used
519	29	200	18	3	3.0	13.750	0.750	80.0	81.1	-78.1	3/12/2015	50' 25"	0.25	-0.25	20.5-foot-long follower used
520	29	200	18	3	3.0	13.875	0.750	80.0	81.6	-78.6	3/12/2015	50' 25"	-0.14	-0.31	20.5-foot-long follower used
521	29	200	18	3	3.0	13.875	0.750	80.0	83.7	-80.7	3/12/2015	50' 25"	-0.64	0.22	20.5-foot-long follower used
522	29	200	18	3	3.0	13.750	0.750	80.0	83.8	-80.8	3/12/2015	20	-0.59	-0.15	20.5-foot-long follower used
523	29	200	18	3	3.0	13.750	0.750	80.0	83.4	-80.4	3/12/2015	50' 25"	-0.60	-0.17	20.5-foot-long follower used
524	29	200	18	3	3.0	13.750	0.750	80.0	84.9	-81.9	3/12/2015	50' 25"	0.13	0.35	20.5-foot-long follower used
525	29	200	18	3	3.0	13.750	0.750	80.0	84.6	-81.6	3/12/2015	150' 75"	-0.43	0.17	20.5-foot-long follower used
526	29	200	18	3	3.0	13.750	0.707	80.0	83.2	-80.2	3/12/2015	20	-0.21	0.19	20.5-foot-long follower used
527	29	200	18	3	3.0	13.750	0.707	80.0	83.7	-80.7	3/12/2015	50' 25"	-0.20	-0.36	20.5-foot-long follower used
528	29	200	18	3	3.0	13.750	0.750	80.0	84.5	-81.5	3/12/2015	50' 25"	-0.02	0.05	20.5-foot-long follower used
529	29	200	18	3	3.0	13.750	0.707	80.0	85.2	-82.2	3/12/2015	100' 5"	-0.21	-0.27	20.5-foot-long follower used
530	29	200	18	3	3.0	13.875	0.750	80.0	85.5	-82.5	3/12/2015	50' 25"	-0.36	-0.09	20.5-foot-long follower used
531	29	200	18	3	3.0	13.875	0.750	79.9	83.8	-80.8	3/12/2015	50"	-0.26	-0.11	20.5-foot-long follower used
532	14	200	18	3	1.5	13.875	0.750	80.0	84.2	-82.7	3/2/2015	50' 25"	0.03	-0.22	20.5-foot-long follower used
533	14	200	18	3	1.5	13.750	0.707	81.1	82.6	-81.1	3/2/2015	50' 25"	-0.31	-0.36	20.5-foot-long follower used
534	14	200	18	3	1.5	13.750	0.707	80.0	85.6	-84.1	2/28/2015	60' 25"	-0.14	-0.14	20.5-foot-long follower used
535	14	200	18	3	1.5	13.750	0.707	80.0	78.4	-76.9	2/28/2015	60' 25"	0.20	0.01	
536	14	200	18	3	1.5	13.875	0.750	80.0	83.4	-81.9	3/2/2015	100' 25"	0.06	-0.05	20.5-foot-long follower used
537	14	200	18	3	1.5	13.750	0.707	80.0	83.1	-81.6	3/2/2015	50' 25"	0.11	-0.05	20.5-foot-long follower used
538	14	200	18	3	1.5	13.750	0.707	80.0	84.4	-82.9	3/2/2015	50' 25"	-0.11	-0.35	20.5-foot-long follower used
539	14	200	18	3	1.5	13.750	0.707	80.0	81.3	-79.8	3/2/2015	60' 25"	-0.25	-0.15	20.5-foot-long follower used
540	14	200	18	3	1.5	13.875	0.750	80.0	83.3	-81.6	3/2/2015	50' 25"	0.10	0.15	20.5-foot-long follower used
541	14	200	18	3	1.5	13.750	0.707	80.0	82.4	-80.9	3/2/2015	50' 25"	-0.12	-0.43	20.5-foot-long follower used
542	14	200	18	3	1.5	13.750	0.707	80.0	83.9	-82.4	3/2/2015	50' 25"	-0.37	0.02	20.5-foot-long follower used
543	14	200	18	3	1.5	13.750	0.707	80.0	81.7	-80.2	3/2/2015	50' 25"	-0.11	-0.22	20.5-foot-long follower used
544	14	200	18	3	1.5	13.875	0.707	80.0	82.7	-81.2	3/2/2015	50' 25"	-0.27	-0.55	20.5-foot-long follower used
545	14	200	18	3	1.5	13.750	0.707	80.0	81.1	-79.6	3/2/2015	50' 25"	-0.20	-0.23	20.5-foot-long follower used
546	PC30	200	18	3	1.5	13.750	0.707	80.0	74.9	-73.4	3/3/2015	50' 25"	0.05	0.07	
547	PC30	200	18	3	1.5	13.750	0.707	80.0	74.1	-72.6	3/3/2015	11, 12	-0.16	0.13	
548	PC30	200	18	3	1.5	13.750	0.750	80.0	74.5	-73.0	3/3/2015	11, 11	-0.06	0.14	
549	PC30	200	18	3	1.5	13.750	0.707	80.0	75.4	-73.9	3/4/2015	50' 25"	0.00	0.12	
550	PC30	200	18	3	1.5	13.750	0.707	80.0	75.9	-74.4	3/4/2015	50' 25"	0.15	0.18	
551	PC30	200	18	3	1.5	13.875	0.750	80.0	74.4	-72.9	3/3/2015	120' 5"	0.07	0.16	
552	PG-P30	200	18	3	3.5	14.000	0.820	80.7	82.5	-79.0	6/19/2015	20	0.22	-0.14	20-foot-long follower used



TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No 009225510




RONALD D. BOYER  
Signature New York State License Number 085831 Date 8/31/16

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
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Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U O N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
646	25	200	18	3	2.5	14.000	0.820	98.0	90.4	-87.9	4/24/2015	10.0 5"	0.11	0.17	
647	25	200	18	3	2.5	14.000	0.820	99.0	94.4	-91.9	4/30/2015	11.12	-0.19	0.21	
648	25	200	18	3	2.5	14.000	0.820	100.0	91.0	-88.5	4/24/2015	11.11	0.06	0.41	
649	25	200	18	3	2.5	14.000	0.820	97.0	92.2	-89.7	4/22/2015	12.12/0.75"	-0.43	0.50	
650	PG-P35	200	18	3	3.0	14.000	0.820	81.6	83.0	-80.0	7/3/2015	21	0.14	0.15	19-foot-long follower used
651	PG-P35	200	18	3	3.0	14.000	0.820	81.4	83.2	-80.2	7/3/2015	11.0 5"	-0.18	0.06	19-foot-long follower used
652	PG-P35	200	18	3	3.0	14.000	0.820	80.7	85.0	-82.0	7/3/2015	21	0.10	0.15	19-foot-long follower used
653	PG-P35	200	18	3	3.0	14.000	0.820	80.4	85.5	-82.5	7/3/2015	12.0 5"	-0.10	0.07	19-foot-long follower used
654	PH-P34	200	18	3	2.5	14.000	0.820	81.0	82.1	-79.6	7/7/2015	20	0.09	0.33	19-foot-long follower used
655	PH-P34	200	18	3	2.5	14.000	0.820	78.0	87.1	-64.6	7/7/2015	20	-0.15	0.04	19-foot-long follower used
711	Column L5	200	18	3	2.0	14.000	0.820	95.0	86.5	-84.5	5/9/2015	11.13	0.29	0.44	
712	Column L5	200	18	3	2.0	14.000	0.820	95.0	86.8	-84.8	5/9/2015	11.12	0.10	0.66	
713	SW-12	200	18	3	2.5	13.875	0.750	103.0	93.5	-91.0	3/10/2015	20	-0.04	0.07	
714	SW-12	200	18	3	2.5	13.875	0.707	100.0	93.8	-91.3	3/11/2015	12.0 5"	0.28	-0.41	
715	SW-12	200	18	3	2.5	13.875	0.750	102.0	94.0	-91.5	3/9/2015	5.0 25"	0.19	0.03	
716	SW-12	200	18	3	2.5	13.875	0.707	100.0	93.3	-90.8	3/11/2015	7.0 25"	-0.51	0.03	
718	SW-12	200	18	3	2.5	13.875	0.707	100.0	94.9	-92.4	3/11/2015	20	0.05	0.00	
719	SW-12	200	18	3	2.5	13.750	0.707	103.0	94.0	-91.5	3/10/2015	12.0 5"	0.16	0.19	
720	SW-12	200	18	3	2.5	13.875	0.750	100.0	93.2	-90.7	3/12/2015	20	0.48	-0.08	
721	SW-12	200	18	3	2.5	13.875	0.750	105.0	94.1	-91.6	3/10/2015	11.0 5"	-0.17	0.11	
722	SW-12	200	18	3	2.5	13.750	0.707	100.0	94.0	-91.5	3/12/2015	11.12	0.03	0.14	
723	SW-12	200	18	3	2.5	13.875	0.707	100.0	93.2	-90.7	3/13/2015	13.15	-0.14	0.09	
724	SW-12	200	18	3	2.5	13.875	0.707	100.0	95.3	-92.8	3/11/2015	22	0.33	-0.16	
725	SW-12	200	18	3	2.5	13.875	0.707	103.0	94.0	-91.5	3/13/2015	20	-0.38	0.49	
726	SW-12	200	18	3	2.5	13.875	0.707	103.0	94.7	-92.2	3/16/2015	15.16	-0.17	-0.11	
727	SW-12	200	18	3	2.5	13.750	0.707	100.0	93.8	-91.3	3/10/2015	12.0 5"	0.08	0.01	
729	15	200	18	3	2.0	13.750	0.707	80.0	86.5	-84.5	3/19/2015	12.0 5"	-0.56	-0.74	
730	15	200	18	3	2.0	13.875	0.750	82.5	85.7	-83.7	3/19/2015	20	-0.12	-0.28	20.5-foot-long follower used
731	15	200	18	3	2.0	13.750	0.707	82.0	85.5	-83.5	3/18/2015	11.0 5"	0.11	-0.16	20.5-foot-long follower used
732	15	200	18	3	2.0	13.875	0.750	82.0	86.6	-84.6	3/19/2015	20	-0.41	-0.37	20.5-foot-long follower used
733	15	200	18	3	2.0	13.875	0.750	83.0	83.5	-81.5	3/18/2015	10.0 5"	0.21	0.17	20.5-foot-long follower used
734	15	200	18	3	2.0	13.875	0.750	83.0	85.2	-83.2	3/19/2015	10.0 5"	-0.32	-0.78	20.5-foot-long follower used
735	15	200	18	3	2.0	13.875	0.707	81.0	85.0	-83.0	3/19/2015	12.0 5"	-0.45	-0.15	20.5-foot-long follower used
736	15	200	18	3	2.0	13.875	0.750	82.0	85.4	-83.4	3/18/2015	21	-0.03	-0.30	20.5-foot-long follower used
737	15	200	18	3	2.0	13.875	0.750	82.0	84.0	-82.0	3/19/2015	6.0 25"	-0.18	-0.70	20.5-foot-long follower used
738	15	200	18	3	2.0	13.875	0.750	84.0	84.4	-82.4	3/18/2015	20	0.42	0.10	20.5-foot-long follower used
739	15	200	18	3	2.5	13.750	0.707	95.0	82.0	-79.5	3/16/2015	15.0 75"	-0.07	-0.96	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D. BOYER  
Signature New York State Professional Engineer License No. 085831 Date 8/31/16



- The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A.
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- Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.


Pile No.	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
740	15	200	18	3	2.0	13.750	0.707	82.5	84.3	-82.3	3/19/2015	7'0"	-0.24	-0.23	20.5-foot-long follower used
741	15	200	18	3	2.0	13.750	0.707	83.0	85.0	-83.0	3/18/2015	2'0"	0.52	-0.28	20.5-foot-long follower used
742	17	200	18	3	2.5	13.875	0.750	80.0	79.2	-76.7	3/23/2015	10'0"	-0.10	-0.66	20.5-foot-long follower used
743	17	200	18	3	2.5	13.750	0.750	80.0	78.8	-76.3	3/23/2015	14.11	-0.12	-0.45	
744	17	200	18	3	2.5	13.750	0.707	80.0	81.7	-79.2	3/23/2015	10'0.5"	-0.53	-0.48	20.5-foot-long follower used
745	17	200	18	3	2.5	13.750	0.750	80.0	82.7	-80.2	3/23/2015	10'0.5"	-0.51	-0.27	20.5-foot-long follower used
746	17	200	18	3	2.5	13.875	0.750	81.7	79.7	-77.2	3/23/2015	14.11	-0.04	-0.63	
747	17	200	18	3	2.5	13.875	0.750	81.7	78.4	-75.9	3/23/2015	13'0.75"	-0.13	-0.18	
748	17	200	18	3	2.5	13.750	0.707	80.0	81.9	-79.4	3/23/2015	5'0.25"	-0.42	-0.72	20.5-foot-long follower used
749	17	200	18	3	2.5	13.750	0.707	80.0	85.3	-82.8	3/23/2015	10'0.5"	-0.09	0.15	20.5-foot-long follower used
750	17	200	18	3	2.5	13.750	0.707	81.5	78.8	-76.3	3/23/2015	10'0.5"	-0.36	-0.66	
751	17	200	18	3	2.5	13.875	0.750	81.7	79.1	-76.6	3/23/2015	10'0.5"	-0.07	-0.07	
752	17	200	18	3	2.5	14.000	0.820	81.7	83.5	-81.0	3/23/2015	10'0.5"	0.36	0.28	23-foot-long follower used
753	17	200	18	3	2.5	13.750	0.707	81.3	83.5	-81.0	3/23/2015	10'0.5"	-0.40	-0.41	20.5-foot-long follower used
762	16	200	18	3	2.0	13.750	0.707	82.0	88.5	-86.5	3/17/2015	21	0.00	-0.61	20.5-foot-long follower used
763	16	200	18	3	2.0	13.875	0.750	80.0	89.4	-87.4	3/17/2015	5'0"	0.14	-0.51	20.5-foot-long follower used
764	16	200	18	3	2.0	13.875	0.750	80.0	87.1	-85.1	3/17/2015	11'0.5"	0.45	0.05	20.5-foot-long follower used
765	16	200	18	3	2.0	13.750	0.707	80.0	87.4	-85.4	3/17/2015	10'0.5"	-0.06	-0.38	20.5-foot-long follower used
766	16	200	18	3	2.0	13.875	0.750	83.0	87.5	-85.5	3/17/2015	6'0.25"	-0.12	0.03	20.5-foot-long follower used
767	16	200	18	3	2.0	13.875	0.750	80.0	85.5	-83.5	3/17/2015	2'0"	0.00	-0.06	20.5-foot-long follower used
768	16	200	18	3	2.0	13.875	0.750	80.0	86.7	-84.7	3/17/2015	22	-0.57	0.33	20.5-foot-long follower used
769	16	200	18	3	2.0	13.750	0.707	80.0	85.2	-83.2	3/17/2015	11'0.5"	-0.29	-0.42	20.5-foot-long follower used
770	16	200	18	3	2.0	13.875	0.750	80.0	83.6	-81.6	3/17/2015	6'0"	-0.05	-0.44	20.5-foot-long follower used
771	16	200	18	3	2.0	13.875	0.750	81.5	85.2	-83.2	3/17/2015	6'0"	-0.63	0.06	20.5-foot-long follower used
772	16	200	18	3	2.0	13.875	0.750	80.0	86.2	-84.2	3/17/2015	6'0.25"	-0.29	-0.69	20.5-foot-long follower used
800	L16	200	18	3	2.5	14.000	0.820	95.0	84.2	-81.7	4/20/2015	12.20'1"	0.41	-0.36	20.5-foot-long follower used
801	L16	200	18	3	2.5	14.000	0.820	95.0	84.5	-82.0	4/18/2015	10'0"	0.11	-0.41	
802	L16	200	18	3	2.5	14.000	0.820	96.0	86.2	-83.7	4/20/2015	12.12	0.21	-0.27	20.5-foot-long follower used
803	L16	200	18	3	2.5	14.000	0.820	95.0	85.8	-83.3	4/18/2015	10'0.25"	-0.01	-0.41	
804	L15	200	16	3	2.5	14.000	0.820	98.0	91.1	-88.6	5/7/2015	11.15	-0.15	0.20	
805	L15	200	18	3	2.5	14.000	0.820	95.0	89.2	-86.7	4/16/2015	11.14	-0.23	-0.16	
806	L15	200	16	3	2.5	14.000	0.820	95.0	93.5	-91.0	5/7/2015	12.13	-0.46	-0.24	
807	L15	200	18	3	2.5	14.000	0.820	95.0	88.8	-86.3	5/6/2015	12.15	0.12	-0.14	
808	PH-P48	200	18	3	2.5	14.000	0.820	95.0	89.5	-87.0	7/23/2015	13.13	0.41	-0.02	
809	PH-P48	200	18	3	2.5	14.000	0.820	95.0	89.5	-87.0	7/24/2015	11.13	0.43	-0.01	
810	PH-P48	200	18	3	2.5	14.000	0.820	95.0	89.5	-87.0	7/24/2015	11.11	-0.07	-0.11	
811	PH-P48	200	18	3	2.5	14.000	0.820	95.0	90.3	-87.8	7/27/2015	11.13	0.10	-0.20	





TR-5. Technical Report  
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Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License No. 085631 Date 8/20/16



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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	EW	
879	SW 13 (1)	200	18	3	2.0	13.875	0.750	95.0	93.7	-91.7	2/20/2015	5'0.25"	0.33	0.16	20 5-foot-long follower used
880	SW 13 (1)	200	18	3	2.0	13.875	0.707	95.0	96.0	-94.0	2/20/2015	20	0.44	0.05	20 5-foot-long follower used
881	SW 13 (1)	200	18	3	2.0	13.750	0.707	93.0	94.8	-92.8	2/23/2015	5'0.25"	0.37	0.20	20 5-foot-long follower used
882	SW 13 (1)	200	18	3	2.0	13.875	0.707	95.0	92.9	-90.9	2/23/2015	10'0"	0.65	-0.20	20 5-foot-long follower used
883	SW-13 (1)	200	18	3	1.5	13.875	0.707	100.0	94.0	-92.5	3/16/2015	21	1.01	-0.18	
884	SW 13 (1)	200	18	3	2.0	13.750	0.707	94.2	95.3	-93.3	2/23/2015	13'0.5"	0.17	-0.33	20 5-foot-long follower used
885	SW 13 (1)	200	18	3	2.0	13.750	0.750	92.0	95.7	-93.7	2/21/2015	20	0.52	-0.02	20 5-foot-long follower used
886	SW-13 (1)	200	18	3	1.5	13.875	0.707	100.0	97.2	-95.7	3/12/2015	5'0"	-0.05	-0.42	
887	SW-13 (1)	200	18	3	1.5	13.750	0.707	103.0	92.1	-90.6	3/16/2015	22	0.66	-0.17	
888	SW-13 (1)	200	18	3	1.5	13.875	0.707	102.0	92.2	-90.7	3/12/2015	11'0.5"	0.54	-0.05	
889	SW-13 (1)	200	18	3	1.5	13.875	0.707	102.0	93.5	-92.0	3/16/2015	21	1.01	0.05	
890	3'	200	18	3	2.5	13.875	0.750	96.0	90.5	-88.0	4/6/2015	21	-0.05	-0.24	
891	3'	200	18	3	2.5	13.875	0.750	96.0	91.0	-88.5	4/8/2015	15'0.5"	-0.05	0.13	
892	3'	200	18	3	2.5	13.875	0.750	96.0	90.8	-88.3	4/8/2015	12.16	0.20	-0.12	
893	3'	200	18	3	2.5	13.875	0.750	96.0	92.9	-90.4	4/7/2015	13.15	-0.23	-0.28	
894	3'	200	18	3	2.5	13.875	0.750	106.0	91.6	-89.1	4/9/2015	8'0"	0.27	-0.19	
895	3'	200	18	3	2.5	13.750	0.707	98.0	90.0	-87.5	4/9/2015	15'0.5"	-0.23	0.14	
896	3'	200	18	3	2.5	13.750	0.707	100.0	90.5	-88.0	4/13/2015	13'0.5"	0.17	-0.13	
897	3'	200	18	3	2.5	13.875	0.750	96.0	91.6	-89.1	4/8/2015	12.17	-0.16	0.01	
898	3'	200	18	3	2.5	13.875	0.750	91.0	94.1	-91.6	4/8/2015	11'0.5"	0.05	0.05	20 5-foot-long follower used
899	3'	200	18	3	2.5	13.875	0.750	105.0	94.9	-92.4	4/13/2015	10'0.5"	-0.40	-0.07	
900	3'	200	18	3	2.5	13.875	0.750	96.0	92.5	-90.0	4/7/2015	8'0"	0.31	0.30	
901	3'	200	18	3	2.5	13.875	0.750	96.0	93.4	-90.9	4/8/2015	12.15	-0.08	0.06	
902	3'	200	18	3	2.5	14.000	0.820	95.0	93.3	-90.8	4/13/2015	23	-0.33	0.19	20-foot-long follower used
903	3'	200	18	3	2.5	14.000	0.820	95.0	91.8	-89.3	4/14/2015	14.16	-0.08	0.23	
904	3'	200	18	3	2.5	13.875	0.750	96.5	93.2	-90.7	4/9/2015	13.17	0.24	-0.24	
905	3'	200	18	3	2.5	13.875	0.750	109.0	94.5	-92.0	4/9/2015	12.12	-0.11	0.20	
906	3'	200	18	3	2.5	13.875	0.750	110.0	93.0	-90.5	4/13/2015	14.17	-0.16	-0.22	
907	18	200	18	3	3.0	13.875	0.750	92.0	91.0	-88.0	3/25/2015	8'0.25"	-0.05	-0.18	20 5-foot-long follower used
908	18	200	18	3	2.5	14.000	0.820	95.0	75.4	-72.9	4/16/2015	20	0.20	-0.01	
909	18	200	18	3	3.0	13.875	0.750	100.0	93.2	-90.2	3/21/2015	11.11	-0.08	0.18	
910	18	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	4/13/2015	11.14	-0.08	0.19	
911	18	200	18	3	2.5	13.875	0.750	96.0	97.0	-94.5	4/7/2015	20	0.40	-0.05	20 5-foot-long follower used
912	18	200	18	3	2.5	14.000	0.820	95.0	92.1	-89.6	4/15/2015	12.18	-0.23	0.03	
913	18	200	18	3	2.5	13.875	0.750	96.0	99.6	-97.1	4/12/2015	6'0.25"	-0.16	0.23	20 5-foot-long follower used
914	18	200	18	3	2.5	14.000	0.820	95.0	95.5	-93.0	4/16/2015	10'0.5"	-0.16	-0.18	20 5-foot-long follower used
915	18	200	18	3	2.5	14.000	0.820	95.0	92.1	-89.6	4/14/2015	12.12	0.39	-0.01	

TR-5: Technical Report  
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RONALD D BOYER  
Signature New York State License No. 085831 Date

9/31/16

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													N/S	E/W	
916	18	200	18	3	3.0	13.875	0.750	100.0	92.7	-89.7	3/21/2015	11.11	-0.08	0.13	
917	18	200	18	3	2.5	13.875	0.750	91.0	94.0	-91.5	4/15/2015	10.0 5"	0.17	0.11	20 5-foot-long follower used
918	18	200	18	3	2.5	13.875	0.750	96.0	92.0	-89.5	4/7/2015	11.15	0.17	-0.10	
919	18	200	18	3	2.5	14.000	0.820	95.0	91.7	-89.2	4/15/2015	10.0 5"	-0.08	-0.12	
920	18	200	18	3	2.5	13.875	0.750	96.0	92.0	-89.5	4/1/2015	11.11	0.33	-0.28	
921	18	200	18	3	2.5	14.000	0.820	95.0	92.2	-89.7	4/15/2015	12.16	0.47	-0.55	
922	PE-P52	200	18	3	2.5	14.000	0.820	95.0	92.9	-90.4	5/9/2015	12.12	0.18	-0.76	
923	PE-P52	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	7/30/2015	20.00	0.25	-0.44	18-foot-long follower used
924	PE-P52	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	7/30/2015	20.00	0.10	-0.32	18-foot-long follower used
925	L8	200	18	3	2.5	14.000	0.820	95.0	97.0	-94.5	5/8/2015	10.0 5"	0.13	-0.05	22-foot-long follower used
926	L8	200	18	3	2.5	14.000	0.820	98.0	97.5	-95.0	5/8/2015	22'1"	0.24	-0.27	22-foot-long follower used
927	L8	200	18	3	2.5	14.000	0.820	98.0	97.1	-94.6	5/8/2015	10.0 5"	0.19	-0.07	22-foot-long follower used
928	L8	200	18	3	2.5	14.000	0.820	95.0	95.6	-93.1	5/8/2015	10.0 5"	0.38	-0.34	22-foot-long follower used
980	SW-8	200	18	3	1.5	13.75	0.707	96.0	92.6	-91.1	3/27/2015	10.0"	0.77	-0.30	20 5-foot-long follower used
981	SW-8	200	18	3	2.0	13.875	0.750	92.0	93.5	-91.5	3/25/2015	5.0"	0.90	-0.57	20 5-foot-long follower used
982	SW-8	200	18	3	1.5	13.75	0.707	91.0	91.1	-89.6	3/28/2015	10.0 5"	0.66	-0.38	20 5-foot-long follower used
983	SW-8	200	18	3	2.0	13.875	0.75	92.0	93.1	-91.1	3/26/2015	13.0 5"	0.66	-0.41	20 5-foot-long follower used
984	SW-8	200	18	3	1.5	13.875	0.75	93.0	89.6	-88.1	3/28/2015	8'0 25"	1.29	-0.87	
985	SW-8	200	18	3	1.5	13.875	0.75	95.0	90.2	-88.7	3/26/2015	18.18	1.06	0.05	20 5-foot-long follower used
986	SW-8	200	18	3	2.5	13.75	0.707	89.0	94.5	-92.0	3/28/2015	12'0 5"	0.56	-0.22	20 5-foot-long follower used
987	SW-8	200	18	3	2.5	13.875	0.750	89.0	92.7	-90.2	3/30/2015	10.0 5"	0.83	-0.35	20 5-foot-long follower used
988	SW-8	200	18	3	2.5	13.875	0.750	96.0	92.6	-90.1	4/2/2015	12.15	0.87	-0.34	
989	SW-8	200	18	3	2.5	13.875	0.750	96.0	95.1	-92.6	3/31/2015	20	1.17	-0.33	
990	SW-8	200	18	3	2.5	13.875	0.750	96.0	94.3	-91.8	4/1/2015	10.0 5"	0.55	-0.44	20 5-foot-long follower used
991	SW-8	200	18	3	2.5	13.875	0.750	96.0	92.8	-90.3	4/2/2015	10.0 5"	0.90	-0.08	
992	SW-8	200	18	3	2.5	13.875	0.750	90.0	94.8	-92.3	3/30/2015	10.0 5"	0.71	-0.59	20 5-foot-long follower used
993	SW-8	200	18	3	2.5	13.875	0.750	96.0	92.4	-89.9	4/3/2015	10.0 5"	0.41	-0.46	
994	SW-8	200	18	3	2.5	13.875	0.750	96.0	92.2	-89.7	4/7/2015	10.0"	1.37	-0.06	
995	SW-8	200	18	3	2.5	13.875	0.750	88.0	93.7	-91.2	3/31/2015	10.0 5"	0.85	-0.41	20 5-foot-long follower used
996	SW-8	200	18	3	2.5	13.875	0.750	96.0	93.1	-90.6	4/2/2015	11.0 5"	0.86	-0.44	
997	SW-8	200	18	3	2.5	13.875	0.750	96.0	93.2	-90.7	4/3/2015	14.20	0.72	-0.09	
998	SW-8	200	18	3	2.5	13.875	0.750	96.0	99.3	-96.8	3/31/2015	12'0 5"	0.33	-0.47	20 5-foot-long follower used
999	SW-8	200	18	3	2.5	13.875	0.750	96.0	96.8	-94.3	4/7/2015	10.0 5"	0.36	0.30	20 5-foot-long follower used
1000	SW-8	200	18	3	2.5	13.750	0.707	89.0	95.9	-93.4	3/30/2015	10.0 5"	0.69	-0.30	20 5-foot-long follower used
1001	SW-8	200	18	3	2.5	13.875	0.750	86.0	100.0	-97.5	4/2/2015	6'0 25"	0.51	0.05	20 5-foot-long follower used
1002	SW-8	200	18	3	2.5	13.875	0.750	96.0	99.7	-97.2	4/3/2015	10.0 5"	0.36	-0.18	20 5-foot-long follower used
1003	SW-8	200	18	3	2.5	13.750	0.707	93.0	100.0	-97.5	3/31/2015	10.0 5"	0.46	-0.25	20 5-foot-long follower used

TR-5 Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510




RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085831

8/31/16  
Date

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A
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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
1004	SW-B	200	18	3	2.5	13.875	0.750	96.0	98.7	-96.2	3/31/2015	11'0" 5"	0.58	-0.46	20.5-foot-long follower used
1005	SW-B	200	18	3	2.5	13.875	0.750	96.0	95.7	-93.2	4/1/2015	12'0" 5"	0.76	-0.21	20.5-foot-long follower used
1006	SW-B	200	18	3	2.5	13.875	0.75	98.0	94.1	-91.6	3/27/2015	6'0"	0.40	-0.50	
1007	SW-B	200	18	3	2.5	13.75	0.707	94.0	94.6	-92.1	3/28/2015	8'0" 25"	0.59	-0.09	20.5-foot-long follower used
1008	SW-B	200	18	3	2.5	13.750	0.707	89.0	92.7	-90.2	3/30/2015	14'0" 5"	0.63	0.07	20.5-foot-long follower used
1023	PF-P54	200	18	3	2.5	14.000	0.820	95.0	95.2	-92.7	7/23/2015	20' 00"	0.01	0.06	18-foot-long follower used
1024	PF-P54	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	7/23/2015	12' 12"	0.21	0.00	
1025	PF-P54	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	7/22/2015	12' 12"	0.14	-0.10	
1026	PF-P54	200	18	3	2.5	14.000	0.820	95.0	94.8	-92.3	7/21/2015	20' 00"	0.18	-0.19	18-foot-long follower used
1027	PF-P54	200	18	3	2.5	14.000	0.820	95.0	94.1	-91.6	7/21/2015	20' 00"	0.16	-0.09	18-foot-long follower used
1111	23	200	18	3	2.0	13.750	0.707	80.0	87.3	-85.3	2/19/2015	12'0" 5"	0.27	0.03	20.5-foot-long follower used
1112	23	200	18	3	2.0	13.875	0.707	80.4	89.8	-87.8	2/19/2015	7'0" 25"	-0.09	0.21	20.5-foot-long follower used
1113	23	200	18	3	2.0	13.875	0.750	80.0	90.5	-88.5	2/19/2015	9'0" 5"	-0.20	0.11	20.5-foot-long follower used
1114	23	200	18	3	2.0	13.750	0.707	80.0	86.2	-84.2	2/19/2015	7'0" 25"	-0.23	-0.12	20.5-foot-long follower used
1115	23	200	18	3	2.0	13.875	0.707	80.0	88.2	-86.2	2/19/2015	12' 7'0"	-0.15	0.13	20.5-foot-long follower used
1116	23	200	18	3	2.0	13.750	0.707	80.0	90.0	-88.0	2/19/2015	20'	-0.20	0.14	20.5-foot-long follower used
1117	23	200	18	3	2.0	13.875	0.750	80.0	90.5	-88.5	2/21/2015	20'	0.03	0.05	20.5-foot-long follower used
1118	23	200	18	3	2.0	13.750	0.707	80.0	86.6	-84.6	2/19/2015	7'0" 25"	0.24	-0.20	20.5-foot-long follower used
1119	23	200	18	3	2.0	13.750	0.707	80.6	91.0	-89.0	2/19/2015	5'0" 25"	0.32	0.12	20.5-foot-long follower used
1120	23	200	18	3	2.0	13.875	0.707	80.0	91.0	-89.0	2/20/2015	20'	0.42	-0.06	20.5-foot-long follower used
1121	23	200	18	3	2.0	13.750	0.707	80.0	86.5	-84.5	2/19/2015	12'0" 5"	0.31	-0.02	20.5-foot-long follower used
1122	23	200	18	3	2.0	13.750	0.707	80.0	88.5	-86.5	2/19/2015	5'0" 25"	0.49	0.14	20.5-foot-long follower used
1123	23	200	18	3	2.0	13.875	0.707	80.0	91.5	-89.5	2/20/2015	20'	0.23	-0.11	20.5-foot-long follower used
1124	23	200	18	3	2.0	13.875	0.707	80.0	91.6	-89.6	2/21/2015	20'	0.30	-0.23	20.5-foot-long follower used
1125	23	200	18	3	2.0	13.750	0.750	80.0	87.7	-85.7	2/19/2015	7'0" 25"	0.21	-0.17	20.5-foot-long follower used
1126	23	200	18	3	2.0	13.750	0.750	80.0	89.3	-87.3	2/19/2015	7'0" 25"	0.31	0.02	20.5-foot-long follower used
1127	23	200	18	3	2.0	13.750	0.707	80.0	91.3	-89.3	2/21/2015	20'	0.52	-0.40	20.5-foot-long follower used
1128	35	200	18	3	2.0	13.750	0.707	80.0	90.8	-88.8	2/27/2015	5'0" 25"	0.31	-0.18	20.5-foot-long follower used
1129	35	200	18	3	2.0	13.875	0.750	80.9	88.8	-86.8	3/4/2015	12'0" 5"	0.15	-0.22	20.5-foot-long follower used
1130	35	200	18	3	2.0	13.750	0.707	80.0	90.5	-88.5	3/3/2015	20'	0.04	-0.39	20.5-foot-long follower used
1131	35	200	18	3	2.0	13.875	0.707	80.0	91.3	-89.3	2/27/2015	10'0" 5"	0.11	-0.28	20.5-foot-long follower used
1132	35	200	18	3	2.0	13.875	0.707	80.0	90.1	-88.1	2/27/2015	5'0" 25"	0.03	-0.02	20.5-foot-long follower used
1133	35	200	18	3	2.0	13.750	0.707	80.0	89.4	-87.4	3/4/2015	10'0" 5"	0.36	-0.26	20.5-foot-long follower used
1134	35	200	18	3	2.0	13.875	0.750	80.0	88.1	-86.1	3/4/2015	10'0" 5"	0.27	-0.23	20.5-foot-long follower used
1135	35	200	18	3	2.0	13.750	0.750	80.0	89.0	-87.0	3/3/2015	5'0" 25"	0.25	-0.22	20.5-foot-long follower used
1136	35	200	18	3	2.0	13.750	0.707	80.0	88.2	-86.2	2/28/2015	10'0" 5"	0.37	0.02	20.5-foot-long follower used
1137	35	200	18	3	2.0	13.750	0.707	80.0	90.2	-88.2	2/28/2015	5'0" 25"	0.01	0.29	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

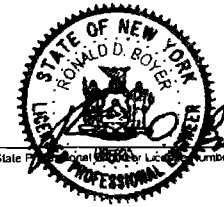


RONALD D BOYER  
Signature New York State Professional Engineer License Number 085831 Date 8/31/16

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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	EW	
1138	35	200	18	3	2.0	13.750	0.707	80.0	87.8	-85.6	2/28/2015	5/0 25"	0.07	0.19	20.5-foot-long follower used
1139	35	200	18	3	2.0	13.875	0.707	80.0	88.3	-86.3	3/4/2015	11/0 5"	-0.07	-0.09	20.5-foot-long follower used
1140	35	200	18	3	2.0	13.875	0.707	80.0	89.3	-87.3	3/4/2015	11/0 5"	-0.05	-0.12	20.5-foot-long follower used
1141	35	200	18	3	2.0	13.750	0.707	80.0	88.1	-86.1	2/26/2015	15/0 75"	-0.21	-0.15	20.5-foot-long follower used
1142	35	200	18	3	2.0	13.875	0.750	80.0	89.8	-87.8	2/28/2015	10/0 5"	-0.31	0.13	20.5-foot-long follower used
1143	35	200	18	3	2.0	13.875	0.707	80.0	87.0	-85.0	2/28/2015	10/0 5"	-0.06	0.07	20.5-foot-long follower used
1144	35	200	18	3	2.0	13.875	0.707	80.0	86.3	-86.3	2/28/2015	5/0 25"	0.03	-0.20	20.5-foot-long follower used
1145	35	200	18	3	2.0	13.875	0.707	80.0	88.4	-86.4	2/28/2015	5/0 25"	-0.38	-0.04	20.5-foot-long follower used
1146	35	200	18	3	2.0	13.750	0.707	80.0	83.6	-81.6	2/28/2015	5/0 25"	0.24	-0.28	20.5-foot-long follower used
1147	35	200	18	3	2.0	13.750	0.707	80.0	89.0	-87.0	2/18/2015	12/0 5"	-0.02	-0.34	20.5-foot-long follower used
1148	35	200	18	3	2.0	13.875	0.707	80.0	87.8	-85.8	2/28/2015	10/0 5"	-0.16	-0.17	20.5-foot-long follower used
1149	35	200	18	3	2.0	13.875	0.750	80.0	88.8	-86.8	2/18/2015	10/0 5"	0.52	-0.30	20.5-foot-long follower used
1150	35	200	18	3	2.0	13.750	0.707	80.0	86.5	-84.5	2/18/2015	5/0 25"	0.34	-0.22	20.5-foot-long follower used
1151	115	200	18	3	2.0	13.75	0.75	95.0	91.5	-89.5	2/13/2015	10/0 5"	0.53	-0.49	
1152	115	200	18	3	2.0	13.75	0.707	95.0	90.1	-88.1	2/12/2015	10/0 5"	0.25	-0.04	
1153	115	200	18	3	2.0	13.75	0.707	95.0	90.9	-88.9	2/11/2015	10/0 5"	0.38	0.18	
1154	115	200	18	3	2.0	13.875	0.750	95.0	91.3	-89.3	2/17/2015	13/0 5"	0.39	-0.24	
1156	115	200	18	3	2.0	13.75	0.707	95.0	90.5	-88.5	2/19/2015	5/0 25"	0.26	-0.03	
1157	116	200	18	3	2.0	13.75	0.707	95.0	89.3	-87.3	2/17/2015	14. 14	0.57	-0.34	
1158	115	200	18	3	2.0	13.750	0.707	94.0	90.7	-88.7	2/17/2015	7/0 25"	0.42	-0.16	
1161	115	200	18	3	2.0	13.75	0.707	94.9	89.9	-87.9	2/13/2015	7/0 25"	0.10	0.00	
1162	115	200	18	3	2.0	13.75	0.707	94.9	89.3	-87.3	2/12/2015	15/0 75"	0.00	-0.08	
1165	22	200	18	3	2.0	13.875	0.750	80.0	84.7	-82.7	2/17/2015	18/0 75"	0.02	0.05	20.5-foot-long follower used
1166	22	200	18	3	2.0	13.875	0.750	80.0	84.9	-82.9	2/17/2015	6/0 25"	0.02	0.19	20.5-foot-long follower used
1167	22	200	18	3	2.0	13.750	0.707	80.0	85.2	-83.2	2/17/2015	17/0 75"	-0.33	-0.23	20.5-foot-long follower used
1168	22	200	18	3	2.0	13.750	0.707	80.0	82.3	-80.3	2/17/2015	10/0 5"	-0.01	0.16	20.5-foot-long follower used
1169	22	200	18	3	2.0	13.875	0.750	80.0	84.2	-82.2	2/17/2015	16/0 75"	-0.21	-0.11	20.5-foot-long follower used
1170	22	200	18	3	2.0	13.875	0.750	80.0	84.8	-82.8	2/17/2015	13/0 5"	-0.26	-0.02	20.5-foot-long follower used
1171	22	200	18	3	2.0	13.750	0.707	80.0	84.6	-82.6	2/17/2015	10/0 25"	-0.06	-0.17	20.5-foot-long follower used
1172	22	200	18	3	2.0	13.750	0.750	80.0	85.3	-83.3	2/17/2015	10/0 5"	-0.28	-0.15	20.5-foot-long follower used
1173	22	200	18	3	2.0	13.750	0.707	80.6	82.3	-80.3	2/17/2015	20	0.00	-0.06	20.5-foot-long follower used
1174	22	200	18	3	2.0	13.750	0.707	80.0	84.1	-82.1	2/17/2015	13/0 5"	-0.19	-0.08	20.5-foot-long follower used
1175	21	200	18	3	2.0	13.875	0.75	78.8	86.3	-84.3	2/13/2015	5/0 25"	0.20	-0.32	20.5-foot-long follower used
1176	21	200	18	3	2.0	13.75	0.707	79.8	84.1	-82.1	2/14/2015	17/0 75"	0.56	-0.15	20.5-foot-long follower used
1177	21	200	18	3	2.0	13.75	0.707	81.6	85.0	-83.0	2/14/2015	5/0 25"	0.38	-0.06	20.5-foot-long follower used
1178	21	200	18	3	2.0	13.75	0.707	80.0	86.6	-84.6	2/14/2015	5/0 25"	0.35	-0.12	20.5-foot-long follower used
1179	21	200	18	3	1.5	13.75	0.707	80.0	84.6	-83.1	2/14/2015	7/0 25"	0.58	-0.54	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085631 Date 8/31/16

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													N/S	EW	
1180	21	200	18	3	1.5	13.75	0.707	78.4	84.9	-83.4	2/14/2015	120.5'	0.72	-0.51	20.5-foot-long follower used
1181	21	200	18	3	2.0	13.75	0.707	78.2	84.7	-82.7	2/14/2015	100.25'	0.39	-0.02	20.5-foot-long follower used
1182	21	200	18	3	2.0	13.75	0.707	80.0	85.7	-83.7	2/10/2015	100.5'	0.35	-0.03	20.5-foot-long follower used
1183	21	200	18	3	2.0	13.75	0.707	80.1	84.2	-82.2	2/12/2015	150.75'	0.21	-0.26	20.5-foot-long follower used
1184	21	200	18	3	2.0	13.875	0.707	80.7	84.4	-82.4	2/12/2015	180.75'	0.35	-0.28	20.5-foot-long follower used
1185	21	200	18	3	2.0	13.75	0.75	82.4	84.6	-82.6	2/12/2015	70.25'	0.32	-0.21	20.5-foot-long follower used
1187	20	200	18	3	2.0	13.75	0.707	80.0	86.9	-84.9	2/12/2015	50.25'	-0.11	-0.29	20.5-foot-long follower used
1188	20	200	18	3	2.0	13.75	0.707	80.0	86.8	-84.8	2/11/2015	120.5'	0.53	-0.08	20.5-foot-long follower used
1189	20	200	18	3	2.0	13.75	0.707	80.0	85.8	-83.8	2/11/2015	120.5'	0.25	0.10	20.5-foot-long follower used
1190	20	200	18	3	2.0	13.75	0.707	80.0	85.1	-83.1	2/11/2015	110.5'	0.27	0.47	20.5-foot-long follower used
1191	20	200	18	3	2.0	13.75	0.707	81.5	85.5	-83.5	2/11/2015	150.75'	0.46	-0.34	20.5-foot-long follower used
1192	20	200	18	3	2.0	13.75	0.707	80.0	85.2	-83.2	2/11/2015	120.5'	0.10	-0.09	20.5-foot-long follower used
1193	20	200	18	3	2.0	13.75	0.707	81.6	84.4	-82.4	2/11/2015	150.5'	-0.05	-0.30	20.5-foot-long follower used
1194	20	200	18	3	2.0	13.75	0.707	81.6	83.7	-81.7	2/11/2015	150.75'	-0.04	0.15	20.5-foot-long follower used
1249	PB-P65	200	18	3	2.5	14.30	0.820	79.0	77.3	-74.8	7/31/2015	11, 14	0.36	0.12	
1250	L2	200	18	3	2.5	13.750	0.707	80.0	79.1	-76.6	4/3/2015	100.25'	0.29	-0.19	20.5-foot-long follower used
1251	L1	200	18	3	2.5	13.750	0.707	80.0	86.7	-84.2	4/3/2015	20	0.59	0.21	20.5-foot-long follower used
1252	PF-P60	200	18	3	2.5	14.000	0.820	80.0	83.2	-80.7	7/22/2015	20	0.18	-0.35	18-foot-long follower used
1253	PF-P60	200	18	3	2.5	14.000	0.820	80.0	84.8	-82.3	7/22/2015	20	0.38	-0.13	18-foot-long follower used
1254	PF-P60	200	18	3	2.5	14.000	0.820	79.0	84.8	-82.3	7/22/2015	20	0.21	-0.21	18-foot-long follower used
1255	PF-P60	200	18	3	2.5	14.000	0.820	80.0	85.5	-83.0	7/22/2015	20	0.27	-0.02	18-foot-long follower used
1256	PF-P60	200	18	3	2.5	14.000	0.820	80.0	83.8	-81.3	7/22/2015	20	-0.01	-0.17	18-foot-long follower used
1257	PF-P60	200	18	3	2.5	14.000	0.820	80.0	84.8	-82.3	7/22/2015	20	0.09	-0.10	18-foot-long follower used
1258	PF-P60	200	18	3	2.5	14.000	0.820	81.0	83.8	-81.3	7/22/2015	20	0.21	-0.22	18-foot-long follower used
1259	PF-P60	200	18	3	2.5	14.000	0.820	79.5	81.0	-78.5	7/22/2015	20	-0.04	-0.10	18-foot-long follower used
1260	PF-P62	200	18	3	2.5	14.000	0.820	80.0	85.5	-83.0	7/21/2015	20	0.30	-0.04	18-foot-long follower used
1261	PF-P62	200	18	3	2.5	14.000	0.820	81.5	86.1	-83.6	7/21/2015	20	-0.13	-0.18	18-foot-long follower used
1262	PF-P62	200	18	3	2.5	14.000	0.820	82.0	87.1	-84.6	7/23/2015	20	0.00	0.20	18-foot-long follower used
1263	PF-P62	200	18	3	2.5	14.000	0.820	76.0	87.7	-85.2	7/20/2015	20	0.77	-0.13	18-foot-long follower used
1264	PF-P62	200	18	3	2.5	14.000	0.820	81.0	80.2	-77.7	7/20/2015	20	0.03	0.16	18-foot-long follower used
1265	PF-P62	200	18	3	2.5	14.000	0.820	80.0	80.5	-78.0	7/20/2015	20	0.23	-0.39	18-foot-long follower used
1266	PF-P62	200	18	3	0.0	14.000	0.820	80.0	79.1	-79.1	7/21/2015	20	0.33	0.17	18-foot-long follower used
1267	PF-P62	200	18	3	0.0	14.000	0.820	80.0	81.8	-81.8	7/21/2015	20	0.59	-0.33	18-foot-long follower used
1268	PF-P62	200	18	3	0.0	14.000	0.820	80.0	78.3	-78.3	7/21/2015	20	0.77	0.46	18-foot-long follower used
1301	WP2-PB	200	18	3	2.5	14.000	0.820	95.0	98.8	-96.3	7/28/2015	20	0.76	-0.23	18-foot-long follower used
1302	SW-25A	200	18	3	3.5	13.75	0.707	80.0	92.4	-88.9	2/24/2015	70.5'	0.07	-0.23	20.5-foot-long follower used
1303	SW-25A	200	18	3	3.5	13.75	0.750	80.0	86.5	-83.0	2/24/2015	50.25'	0.59	0.04	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



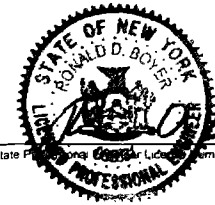
RONALD D. BOYER  
Signature New York State License Number 085831 Date

9/30/16  
Date

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc).
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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpf, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
1304	SW-25A	200	18	3	3.5	13.75	0.707	81.6	84.2	-80.7	2/25/2015	5/0 25"	0.68	-0.10	20.5-foot-long follower used
1305	SW-25A	200	18	3	3.0	13.75	0.707	80.2	84.4	-81.4	2/25/2015	5/0 25"	0.4	0.19	20.5-foot-long follower used
1306	SW-25A	200	18	3	3.0	13.75	0.707	81.8	84.9	-81.9	2/25/2015	5/0 25"	-0.23	-0.32	20.5-foot-long follower used
1307	SW-25A	200	18	3	3.0	13.75	0.707	80.0	85.5	-82.5	2/25/2015	10/0 5"	-0.13	-0.15	20.5-foot-long follower used
1308	SW-25A	200	18	3	3.0	13.75	0.750	80.0	84.6	-81.6	2/25/2015	6/0 25"	0.16	0.14	20.5-foot-long follower used
1309	SW-25A	200	18	3	3.0	13.75	0.707	80.0	84.2	-81.2	2/25/2015	5/0 25"	-0.05	-0.02	20.5-foot-long follower used
1310	SW-25A	200	18	3	3.0	13.75	0.707	81.7	83.3	-80.3	2/25/2015	5/0 25"	-0.20	0.19	20.5-foot-long follower used
1311	SW-25A	200	18	3	3.0	13.75	0.707	80.0	83.6	-80.6	2/25/2015	6/0 25"	-0.06	-0.10	20.5-foot-long follower used
1312	SW-25A	200	18	3	3.5	13.875	0.750	80.0	83.8	-80.3	2/24/2015	7/0 25"	-0.05	-0.11	20.5-foot-long follower used
1313	SW-25A	200	18	3	3.5	13.875	0.750	81.0	90.3	-86.8	2/24/2015	7/0 5"	0.44	0.01	20.5-foot-long follower used
1314	SW-25A	200	18	3	3.5	13.875	0.707	80.0	89.8	-86.3	2/21/2015	20	-0.12	0.12	20.5-foot-long follower used
1315	SW-25A	200	18	3	3.5	13.875	0.707	80.0	83.5	-80.0	2/24/2015	5/0 25"	0.03	-0.06	20.5-foot-long follower used
1316	SW-25A	200	18	3	3.5	13.875	0.750	80.0	82.8	-79.3	2/25/2015	7/0 25"	-0.16	0.25	20.5-foot-long follower used
1317	SW-25A	200	18	3	3.0	13.875	0.750	81.0	81.9	-78.9	2/25/2015	10/0 5"	0.14	-0.13	20.5-foot-long follower used
1318	SW-25A	200	18	3	3.0	13.750	0.707	80.9	83.6	-80.6	2/25/2015	15/0 75"	0.19	0.03	20.5-foot-long follower used
1319	SW-25A	200	18	3	3.0	13.875	0.750	80.0	84.2	-81.2	2/25/2015	5/0 25"	0.72	0.28	20.5-foot-long follower used
1320	2	200	18	3	3.0	13.875	0.750	80.0	85.4	-82.4	4/25/2015	10/0 5"	0.40	0.02	21-foot-long follower used
1321	2	200	18	3	3.0	13.875	0.750	82.5	86.2	-83.2	4/25/2015	20	0.31	0.17	21-foot-long follower used
1322	2	200	18	3	3.0	13.875	0.750	80.0	86.1	-83.1	4/27/2015	10/0 5"	0.28	-0.20	21-foot-long follower used
1323	2	200	18	3	3.0	13.875	0.750	80.0	85.1	-82.1	4/25/2015	10/0 5"	0.30	0.18	21-foot-long follower used
1324	2	200	18	3	3.0	13.875	0.750	80.0	85.6	-82.6	4/25/2015	10/0 5"	0.37	0.05	21-foot-long follower used
1325	2	200	18	3	3.0	13.875	0.750	80.0	86.0	-83.0	4/25/2015	10/0 5"	0.34	0.21	21-foot-long follower used
1326	2	200	18	3	3.0	13.875	0.750	80.0	85.4	-82.4	4/25/2015	10/0 5"	0.09	0.06	21-foot-long follower used
1327	2	200	18	3	3.0	13.750	0.707	80.0	86.9	-83.9	4/27/2015	8/0 25"	0.52	-0.15	21-foot-long follower used
1328	2	200	18	3	3.0	13.875	0.750	79.5	86.1	-83.1	4/25/2015	10/0 5"	0.37	0.12	21-foot-long follower used
1329	2	200	18	3	3.0	13.875	0.750	79.5	85.6	-82.6	4/25/2015	10/0 5"	0.50	0.02	21-foot-long follower used
1330	2	200	18	3	3.0	13.875	0.750	79.0	86.3	-82.3	4/25/2015	15/0 75"	0.43	0.17	21-foot-long follower used
1331	2	200	18	3	3.0	13.875	0.750	80.0	86.7	-83.7	4/25/2015	15/0 75"	0.42	0.01	21-foot-long follower used
1332	2	200	18	3	3.0	13.875	0.750	80.0	85.9	-82.9	4/25/2015	8/0 25"	0.64	-0.07	21-foot-long follower used
1333	2	200	18	3	3.0	13.875	0.750	81.0	85.2	-82.2	4/25/2015	10/0 5"	0.45	-0.03	21-foot-long follower used
1334	1	200	18	3	2.5	13.875	0.750	80.0	84.1	-81.6	4/3/2015	10/0 25"	-0.11	-0.19	20.5-foot-long follower used
1335	1	200	18	3	2.5	13.750	0.707	80.0	83.8	-81.3	4/3/2015	21	0.31	0.03	20.5-foot-long follower used
1336	1	200	18	3	2.5	13.875	0.750	80.0	83.2	-80.7	4/3/2015	5/0	-0.16	-0.32	20.5-foot-long follower used
1337	1	200	18	3	2.5	13.875	0.750	80.0	83.4	-80.9	4/3/2015	20	0.20	0.20	20.5-foot-long follower used
1338	1	200	18	3	2.5	13.875	0.750	80.0	83.25	-80.8	4/3/2015	20	0.27	-0.02	20.5-foot-long follower used
1339	1	200	18	3	2.5	13.875	0.750	80.0	83.1	-80.6	4/3/2015	20	0.06	-0.26	20.5-foot-long follower used
1340	1	200	18	3	2.5	13.875	0.750	80.0	83.0	-80.5	4/3/2015	12/0 5"	0.40	0.17	20.5-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D BOYER  
Signature New York State Professional Engineer License Number 085831

8/31/16  
Date

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Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U O N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
1341	1	200	18	3	2.5	13.875	0.750	80.0	82.1	-79.6	4/3/2015	10.0"	0.38	0.13	20.5-foot-long follower used
1342	1	200	18	3	2.5	13.750	0.707	80.0	82.5	-80.0	4/3/2015	12.0 5"	0.27	-0.31	20.5-foot-long follower used
1343	1	200	18	3	2.5	13.875	0.750	80.0	82.1	-79.6	4/3/2015	10.0"	0.14	-0.06	20.5-foot-long follower used
1344	1	200	18	3	2.5	13.750	0.707	80.0	81.8	-79.3	4/3/2015	11.0"	0.44	-0.13	20.5-foot-long follower used
1345	1	200	18	3	2.5	13.875	0.750	79.0	82.1	-79.6	4/3/2015	10.0"	0.16	0.13	20.5-foot-long follower used
1346	1	200	18	3	2.5	14.000	0.820	80.0	83.3	-80.8	4/2/2015	10.0"	0.21	-0.01	23-foot-long follower used
1347	1	200	18	3	2.5	13.875	0.750	81.0	82.1	-79.6	4/3/2015	15.0 75"	0.20	-0.13	20.5-foot-long follower used
1348	1	200	18	3	2.5	13.875	0.750	80.0	84.1	-81.6	4/3/2015	12.0 5"	0.73	-0.10	20.5-foot-long follower used
1349	1	200	18	3	2.5	13.875	0.750	80.0	84.5	-82.0	4/2/2015	10.0 5"	0.52	-0.27	20.5-foot-long follower used
1401	SW-12	200	18	3	2.5	14.000	0.820	96.0	95.9	-93.4	4/22/2015	11, 12	-0.11	0.03	
1402	SW-12	200	18	3	2.5	14.000	0.820	95.0	96.8	-94.3	4/24/2015	20	0.34	0.18	23-foot-long follower used
1403	SW-12	200	18	3	2.5	14.000	0.820	100.0	97.9	-95.4	4/22/2015	11, 11	0.17	-0.02	
1404	SW-12	200	18	3	2.5	14.000	0.820	99.0	95.8	-93.3	4/24/2015	15.0 75"	0.15	-0.14	
1405	SW-12	200	18	3	2.5	14.000	0.820	99.0	97.25	-94.8	4/27/2015	20	-0.13	-0.19	
1406	SW-12	200	18	3	2.5	14.000	0.820	100.0	98.6	-96.1	4/22/2015	15.0 75"	-0.06	0.18	
1407	SW-12	200	18	3	2.5	14.000	0.820	100.0	94.4	91.9	4/24/2015	11, 12	-0.09	-0.06	
1408	SW-12	200	18	3	2.5	14.000	0.820	99.0	98.8	-96.3	4/24/2015	10.0 5"	-0.06	-0.21	23-foot-long follower used
1409	SW-9	200	18	3	2.5	14.000	0.820	98.0	95.9	-93.4	5/6/2015	11, 12	0.37	-0.20	
1410	SW-9	200	18	3	2.5	14.000	0.820	98.0	95.4	-92.9	5/6/2015	12, 15	0.38	-0.30	
1411	SW-9	200	18	3	2.5	14.000	0.820	99.0	94.8	-92.3	5/5/2015	20	0.43	0.01	
1412	SW-9	200	18	3	2.5	14.000	0.820	98.0	96.8	-94.3	5/5/2015	22	0.53	-0.04	20.5-foot-long follower used
1413	SW-9	200	18	3	2.5	14.000	0.820	100.0	96.25	-93.8	5/5/2015	13, 17	0.54	0.05	
1414	SW-9	200	18	3	2.5	14.000	0.820	99.0	94.2	-91.7	5/2/2015	10.0 5"	0.35	-0.35	
1415	SW-9	200	18	3	2.5	14.000	0.820	100.0	97.1	-94.6	5/5/2015	12, 18	0.60	0.07	
1416	SW-9	200	18	3	2.5	14.000	0.820	98.0	96.25	-93.8	5/1/2015	10.0 5"	0.39	-0.24	
1417	SW-9	200	18	3	2.5	14.000	0.820	100.0	95.7	-93.2	5/5/2015	12, 15	1.00	-0.30	
1418	SW-9	200	18	3	2.5	14.000	0.820	100.0	94.0	-91.5	5/1/2015	10.0 5"	0.33	-0.20	
1419	SW-9	200	18	3	2.5	14.000	0.820	99.0	95.5	-93.0	5/2/2015	10.0 5"	0.47	-0.28	
1420	SW-9	200	18	3	2.5	14.000	0.820	100.0	96.6	-94.1	5/1/2015	13, 14	0.33	0.01	
1422	SW-13 (11)	200	18	3	2.0	13.750	0.707	95.1	96.0	-94.0	2/24/2015	5.0 25"	0.28	0.29	20.5-foot-long follower used
1423	SW-13 (11)	200	18	3	2.0	13.750	0.750	95.0	99.6	-97.6	2/26/2015	5.0 25"	0.40	0.01	20.5-foot-long follower used
1424	SW-13 (11)	200	18	3	2.0	13.750	0.707	95.0	95.6	-93.6	2/24/2015	12.0 5"	0.51	0.14	20.5-foot-long follower used
1425	SW-13 (11)	200	18	3	2.0	13.875	0.750	95.0	99.0	-97.0	2/26/2015	11.0 5"	0.32	0.06	20.5-foot-long follower used
1426	SW-13 (11)	200	18	3	2.0	13.750	0.707	95.2	99.1	-97.1	2/23/2015	5.0 25"	0.23	0.11	20.5-foot-long follower used
1427	SW-13 (11)	200	18	3	2.0	13.875	0.707	100.0	98.5	-96.5	2/26/2015	5.0 25"	0.22	0.07	20.5-foot-long follower used
1428	SW-13 (11)	200	18	3	2.0	13.750	0.707	95.0	97.7	-95.7	2/25/2015	5.0 5"	0.65	-0.06	20.5-foot-long follower used
1429	SW-13 (11)	200	18	3	2.0	13.750	0.707	100.0	96.7	-96.7	2/28/2015	20	0.52	0.09	20.5-foot-long follower used



TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State License No. 085631 Date 8/31/16

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													N/S	EW	
1430	SW-13(11)	200	18	3	2.0	13.875	0.750	95.0	100.3	-98.3	2/26/2015	5/0 25"	0.36	-0.04	20.5-foot-long follower used
1431	SW-13(11)	200	18	3	2.0	13.750	0.707	100.0	99.0	-97.0	2/27/2015	5/0 25"	0.91	-0.38	20.5-foot-long follower used
1432	SW-13(11)	200	18	3	2.0	13.875	0.707	95.0	99.1	-97.1	2/25/2015	6/0 25"	0.61	0.24	20.5-foot-long follower used
1433	SW-13(11)	200	18	3	2.0	13.875	0.750	95.0	98.9	-96.9	3/2/2015	5/0 25"	0.44	0.29	20.5-foot-long follower used
1434	SW-13(11)	200	18	3	2.0	13.750	0.707	100.0	98.7	-96.7	3/4/2015	5/0 25"	0.50	-0.45	20.5-foot-long follower used
1435	SW-13(11)	200	18	3	2.0	13.750	0.707	130.0	98.7	-96.7	3/4/2015	6/0 25"	0.38	-0.07	20.5-foot-long follower used
1436	SW-13(11)	200	18	3	3.0	13.750	0.707	100.0	98.3	-95.3	3/3/2015	12 12	0.65	0.11	
1437	SW-13(11)	200	18	3	12.0	13.750	0.707	108.0	105.6	-93.6	1/13/2015	5/0 25"	1.37	-0.53	
1438	SW-14	200	18	3	2.0	13.750	0.707	100.0	94.6	-92.6	2/28/2015	5/0 5"	0.25	-0.38	
1439	SW-14	200	18	3	2.0	13.875	0.707	95.0	91.7	-89.7	2/26/2015	5/0 25"	0.18	-0.07	
1440	SW-14	200	18	3	2.0	13.750	0.707	100.0	94.6	-92.6	3/3/2015	6/0 25"	-0.25	0.33	
1441	SW-14	200	18	3	2.0	13.750	0.707	95.0	91.9	-89.9	2/28/2015	10/0 5"	0.07	-0.05	
1442	SW-14	200	18	3	2.0	13.750	0.707	100.0	93.8	-91.8	3/6/2015	7/0 25"	0.22	-0.01	
1444	SW-14	200	18	3	2.0	13.750	0.750	100.0	94.8	-92.6	3/2/2015	21	0.09	0.09	
1445	SW-14	200	18	3	2.0	13.750	0.707	100.0	94.5	-92.5	2/26/2015	5/0 25"	-0.02	-0.37	20.5-foot-long follower used
1446	SW-14	200	18	3	2.0	13.750	0.707	103.0	95.5	-93.5	3/4/2015	5/0 25"	-0.17	-0.21	
1447	SW-14	200	18	3	2.0	13.750	0.707	95.0	94.3	-92.3	3/3/2015	21	0.33	-0.32	20.5-foot-long follower used
1448	SW-14	200	18	3	2.0	13.750	0.707	95.0	95.5	-93.5	3/6/2015	5/0"	-0.18	0.05	
1449	SW-14	200	18	3	2.0	13.875	0.750	100.0	94.9	-92.9	3/4/2015	12/0 5"	0.26	0.13	
1450	SW-14	200	18	3	2.0	13.875	0.750	92.0	96.6	-94.6	3/5/2015	6/0 25"	0.38	-0.13	20.5-foot-long follower used
1451	SW-14	200	18	3	2.0	13.875	0.707	103.0	94.6	-92.6	3/9/2015	13/0 5"	0.32	-0.17	
1452	SW-14	200	18	3	2.0	13.875	0.750	103.0	94.9	-92.9	3/9/2015	10/0 25"	0.15	0.10	
1453	SW-14	200	18	3	2.0	13.875	0.707	100.0	95.8	-93.8	3/6/2015	6/0 25"	0.08	-0.05	
1454	SW-14(2)	200	16	3	2.0	14.000	0.820	95.0	93.3	-91.3	4/21/2015	10/0 5"	0.07	0.13	
1455	SW-14(2)	200	16	3	2.0	14.000	0.820	96.0	92.4	-90.4	4/21/2015	12. 15	0.54	-0.23	
1456	SW-14(2)	200	18	3	2.0	14.000	0.820	96.0	92.3	-90.3	4/22/2015	20	0.98	0.46	
1457	SW-14(2)	200	16	3	2.0	14.000	0.820	99.0	94.3	-92.3	4/27/2015	10/0 5"	0.51	-0.08	
1458	SW-14(2)	200	18	3	2.0	14.000	0.820	96.0	91.9	-89.9	4/22/2015	12, 12	0.45	-0.12	
1459	5	200	18	3	2.0	13.875	0.750	100.0	86.9	-84.9	3/9/2015	8/0 25"	0.09	0.51	
1460	5	200	18	3	2.0	13.875	0.707	82.0	88.6	-86.6	3/11/2015	7/0 25"	0.32	0.20	20.5-foot-long follower used
1461	5	200	18	3	2.0	13.875	0.750	100.0	89.5	-87.5	3/9/2015	4/0"	0.18	0.20	
1462	5	200	18	3	2.0	13.750	0.707	80.0	87.9	-85.9	3/10/2015	10/0 5"	0.28	0.32	20.5-foot-long follower used
1463	5	200	18	3	2.0	13.750	0.707	81.5	87.7	-85.7	3/11/2015	5/0 25"	0.22	0.45	20.5-foot-long follower used
1464	5	200	18	3	2.0	13.875	0.750	81.7	88.7	-86.7	3/11/2015	20	0.46	0.10	20.5-foot-long follower used
1465	5	200	18	3	2.0	13.875	0.750	103.0	89.5	-87.5	3/10/2015	22	-0.31	-0.38	
1466	5	200	18	3	2.0	13.750	0.707	81.5	86.9	-84.9	3/10/2015	6/0 25"	0.21	0.00	20.5-foot-long follower used
1467	5	200	18	3	2.0	13.875	0.707	103.0	88.8	-86.8	3/10/2015	8/0"	-0.15	0.22	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085831 Date 8/31/16



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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx G S Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	EW	
1466	5	200	18	3	2.0	13.875	0.707	82.0	90.5	-88.5	3/10/2015	6'0.25"	0.11	-0.54	20.5-foot-long follower used
1469	5	200	18	3	2.0	13.750	0.707	81.3	89.2	-87.2	3/11/2015	5'0.25"	0.09	0.36	20.5-foot-long follower used
1470	5	200	18	3	2.0	13.875	0.750	81.7	89.5	-87.5	3/11/2015	5'0"	-0.07	0.38	20.5-foot-long follower used
1471	5	200	18	3	2.0	13.875	0.750	80.0	88.9	-86.9	3/11/2015	5'0.25"	0.21	0.89	20.5-foot-long follower used
1472	5	200	18	3	2.0	13.875	0.750	82.2	89.0	-87.0	3/11/2015	5'0.25"	0.38	0.26	20.5-foot-long follower used
1473	5	200	18	3	2.0	13.875	0.707	82.5	90.0	-88.0	3/11/2015	11'0.5"	0.08	0.07	20.5-foot-long follower used
1474	30	200	18	3	2.5	13.750	0.707	81.8	84.0	-81.5	3/25/2015	15'0.75"	-0.25	-0.24	20.5-foot-long follower used
1475	30	200	18	3	2.5	14.000	0.820	81.3	84.5	-82.0	3/25/2015	20	-0.24	-0.36	23-foot-long follower used
1476	30	200	18	3	2.5	13.750	0.707	80.0	84.1	-81.6	3/24/2015	20	-0.01	-0.17	20.5-foot-long follower used
1477	30	200	18	3	2.5	13.750	0.707	80.0	83.8	-81.3	3/25/2015	20	-0.58	-0.99	20.5-foot-long follower used
1478	30	200	18	3	2.5	13.875	0.750	80.0	81.8	-79.3	3/25/2015	20	-0.93	-0.38	20.5-foot-long follower used
1479	30	200	18	3	2.5	13.750	0.707	80.0	81.8	-79.3	3/23/2015	5'0.25"	-0.05	-0.30	20.5-foot-long follower used
1480	30	200	18	3	2.5	13.750	0.707	77.5	80.4	-77.9	3/25/2015	10'0.5"	-0.75	-0.11	20.5-foot-long follower used
1481	30	200	18	3	2.5	13.750	0.707	79.0	83.5	-81.0	3/23/2015	10'0.5"	-0.39	-1.19	20.5-foot-long follower used
1482	30	200	18	3	2.5	13.875	0.750	80.0	80.4	-77.9	3/24/2015	10'0"	-0.28	-0.24	20.5-foot-long follower used
1483	30	200	18	3	2.5	13.875	0.750	80.0	80.4	-77.9	3/25/2015	20	0.06	-0.33	20.5-foot-long follower used
1484	30	200	18	3	2.5	13.875	0.750	81.6	79.9	-77.4	3/24/2015	10'0"	-0.43	-0.61	20.5-foot-long follower used
1485	30	200	18	3	2.5	13.750	0.707	80.0	81.0	-78.5	3/24/2015	10'0.5"	0.10	-0.62	20.5-foot-long follower used
1486	30	200	18	3	2.5	13.875	0.750	80.2	82.1	-79.6	3/25/2015	11'0.5"	0.41	-0.68	20.5-foot-long follower used
1487	30	200	18	3	2.5	13.750	0.707	80.3	79.3	-76.8	3/24/2015	10'0"	-0.56	-0.65	20.5-foot-long follower used
1488	30	200	18	3	2.5	13.750	0.707	80.0	82.5	-80.0	3/24/2015	10'0.5"	-0.29	-0.03	20.5-foot-long follower used
1489	TE-WT2	200	18	3	3.5	14.000	0.820	79.0	81.3	-77.8	6/18/2015	13'0.5"	0.04	0.17	20-foot-long follower used
1490	TE-WT2	200	18	3	3.5	14.000	0.820	82.0	84.6	-81.1	6/18/2015	21	0.01	0.03	20-foot-long follower used
5100	PH-1	200	18	3	4.0	13.875	0.750	80.0	89.1	-85.1	5/5/2015	8'0.25"	-0.27	-0.02	20-foot-long follower used
5101	PH-1	200	18	3	4.0	13.875	0.750	80.0	84.9	-80.9	5/6/2015	10'0.25"	-0.20	-0.16	20-foot-long follower used
5102	PH-1	200	18	3	4.0	13.875	0.750	80.0	85.4	-81.4	5/6/2015	12'0.5"	-0.29	0.01	20-foot-long follower used
5103	PH-1	200	18	3	4.0	14.000	0.820	99.5	88.8	-84.8	5/5/2015	11, 13	-0.19	0.01	
5104	PH-1	200	18	3	4.0	13.875	0.750	80.0	87.1	-83.1	5/6/2015	12'0.5"	-0.05	-0.32	18.8-foot-long follower used
5105	PHP14	200	18	3	4.0	14.000	0.820	98.5	89.9	-85.9	5/5/2015	18'0.75"	-0.11	-0.05	
5106	PHP14	200	18	3	4.0	13.875	0.750	80.0	88.2	-84.2	5/6/2015	22	0.19	-0.19	18.8-foot-long follower used
5107	PHP14	200	18	3	4.0	14.000	0.820	80.0	90.2	-86.2	5/6/2015	20	0.03	-0.11	20-foot-long follower used
5108	PHP14	200	18	3	4.0	14.000	0.820	100.0	88.8	-84.8	5/6/2015	14, 15	-0.22	-0.15	
5109	PHP14	200	18	3	4.0	14.000	0.820	82.0	88.4	-84.4	5/6/2015	13'0.5"	0.16	-0.23	20-foot-long follower used
5110	M-1	200	18	3	4.0	14.000	0.820	99.0	84.6	-80.6	5/6/2015	15, 16	-0.48	0.36	
5111	M-1	200	18	3	4.0	13.875	0.750	81.5	83.1	-79.1	5/11/2015	5'0"	-0.59	-0.05	20-foot-long follower used
5112	M-1	200	18	3	4.0	14.000	0.820	81.0	85.7	-81.7	5/12/2015	10'0.5"	-0.40	0.86	20-foot-long follower used
5113	M-1	200	18	3	4.0	13.875	0.750	80.0	87.3	-83.3	5/11/2015	10'0.5"	-0.05	-0.38	20-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085631 Date

8/31/16

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U O N)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
5114	M-P10	200	18	3	4.0	14.000	0.820	80.0	85.3	-81.3	5/11/2015	5/0 25"	-0.13	0.18	18 8-foot-long follower used
5115	M-P10	200	18	3	4.0	14.000	0.820	81.0	85.3	-81.3	5/11/2015	10/0 5"	-0.01	-0.14	18 8-foot-long follower used
5116	M-P10	200	18	3	4.0	14.000	0.820	99.0	86.4	-82.4	5/11/2015	14. 18	-0.09	0.02	
5117	M-P10	200	18	3	4.0	14.000	0.820	81.0	86.1	-82.1	5/11/2015	6/0 25"	-0.04	-0.25	18 8-foot-long follower used
5118	WB-P15	200	18	3	4.0	14.000	0.82	81.5	83.8	-79.8	5/13/2015	7/0 25"	-0.43	-0.59	20-foot-long follower used
5119	WB-P15	200	18	3	4.0	14.000	0.82	81.0	79.2	-75.2	5/13/2015	12/0 5"	0.04	0.37	20-foot-long follower used
5120	PK-1	200	18	3	4.0	14.000	0.82	81.0	82.9	-78.9	5/13/2015	10/0 5"	-0.40	-0.32	20-foot-long follower used
5121	PK-1	200	18	3	4.0	14.000	0.82	80.0	82.6	-78.6	5/13/2015	10/0 5"	-0.04	-0.43	20-foot-long follower used
5122	PK-P10	200	18	3	4.0	14.000	0.82	81.0	83	-79.0	5/14/2015	22/1"	-0.31	-0.30	18 8-foot-long follower used
5123	PK-P10	200	18	3	4.0	14.000	0.82	80.0	82.4	-78.4	5/14/2015	20/1"	-0.24	-0.28	18 8-foot-long follower used
5124	PK-P10	200	18	3	4.0	14.000	0.82	80.0	82.6	-78.6	5/14/2015	23/1"	-0.15	-0.17	18 8-foot-long follower used
5125	PK-P10	200	18	3	4.0	14.000	0.82	95.0	80.6	-76.6	5/13/2015	5/0"	0.00	-0.21	
5126	PK-P16	200	18	3	3.5	14.000	0.820	96.0	89.8	-86.3	5/27/2015	11 16	-0.13	0.09	
5127	PK-P15	200	18	3	4.0	14.000	0.82	98.0	90	-86.0	5/14/2015	5. 14	-0.18	-0.10	
5128	PL-1	200	18	3	4.0	14.000	0.82	80.0	81.3	-77.3	5/14/2015	14/0 5"	-0.45	-0.39	18 8-foot-long follower used
5129	PL-1	200	18	3	4.0	14.000	0.82	80.0	81.3	-77.3	5/14/2015	24/1"	-0.11	-0.09	18 8-foot-long follower used
5130	PL-1	200	18	3	4.0	14.000	0.820	99.0	82.0	-78.0	5/7/2015	10/0 25"	-0.19	-0.49	
5131	PL-P10	200	18	3	4.0	14.000	0.82	97.0	84.25	-80.3	5/15/2015	11. 11	-0.02	-0.45	
5132	PL-P10	200	18	3	4.0	14.000	0.820	95.0	89.9	-85.9	5/14/2015	11/0 5"	-0.13	-0.21	
5142	PR-P10	200	18	3	3.5	14	0.82	80.0	85.6	-82.1	5/22/2015	11/0 5"	-0.34	-0.29	19-foot-long follower used
5143	PR-P10	200	18	3	3.5	14	0.82	80.6	82.4	-78.9	5/22/2015	13/0 5"	-0.17	0.03	19-foot-long follower used
5144	PR-P10	200	18	3	4.0	14.000	0.820	95.0	79.4	-75.4	5/12/2015	11 11	-0.12	-0.37	
5145	PT-P10	200	18	3	4.0	13.875	0.75	95.0	77.8	-73.8	5/15/2015	5/0"	0.14	-0.20	
5146	PT-P10	200	18	3	4.0	14	0.82	81.0	82.3	-78.3	5/15/2015	8/0"	-0.41	-0.20	18 8-foot-long follower used
5147	PT-P10	200	18	3	4.0	14	0.82	79.0	80.7	-76.7	5/15/2015	12/0 5"	-0.17	-0.36	18 8-foot-long follower used
5148	PT-P10	200	18	3	4.0	14	0.82	79.0	81.4	-77.4	5/15/2015	20/1"	-0.12	0.02	18 8-foot-long follower used
5149	PT-P10	200	18	3	4.0	14	0.82	82.0	81.7	-77.7	5/15/2015	12/0 5"	-0.03	-0.48	18 8-foot-long follower used
5155	PV-P10	200	18	3	4.0	13.875	0.75	95.0	84.4	-80.4	5/15/2015	11 11	-0.12	0.51	
5156	PV-P10	200	18	3	4.0	14.000	0.82	99.0	84.2	-80.2	5/14/2015	11 15	0.09	-0.03	
5157	PV-P10	200	18	3	4.0	14	0.82	80.0	83.7	-79.7	5/16/2015	10/0 5"	0.06	0.33	19-foot-long follower used
5158	PV-P10	200	18	3	4.0	14	0.82	79.7	85.4	-81.4	5/16/2015	20/1"	0.09	-0.22	19-foot-long follower used
5159	PV-P10	200	18	3	4.0	14	0.82	79.5	85.3	-81.3	5/16/2015	11/0 5"	0.27	0.22	19-foot-long follower used
5160	PV-P10	200	18	3	4.0	14	0.82	80.0	85.4	-81.4	5/16/2015	10/0 25"	0.24	-0.24	19-foot-long follower used
5161	PW-P10	200	18	3	4.0	14.000	0.82	95.0	88.4	-84.4	5/14/2015	13. 11	-0.51	-0.09	
5162	PW-P10	200	18	3	4.0	14	0.82	99.0	88.8	-84.8	5/15/2015	14. 15	-0.21	-0.23	
5163	PH-P18	200	18	3	3.5	14.000	0.82	79.0	81.2	-77.2	5/13/2015	7/0 25"	-0.25	-0.08	18 8-foot-long follower used
5164	PH-P18	200	18	3	3.5	14.000	0.82	82.0	79.9	-76.4	5/13/2015	11. 16	-0.24	-0.03	

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- 3 The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B
- 5 Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.

Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U O N)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
5165	PH-P18	200	18	3	3.5	14.000	0.820	95.0	80.1	-76.6	5/13/2015	60.25"	-0.22	0.16	
5166	PH-P18	200	18	3	3.5	14.000	0.82	81.5	80.3	-76.8	5/13/2015	11.12	-0.07	0.17	
5167	PH-P18	200	18	3	3.5	13.750	0.707	81.0	80	-76.5	5/13/2015	10.0.5"	-0.18	0.09	18.8-foot-long follower used
5168	WB-P18	200	18	3	3.5	13.750	0.707	80.0	80.6	-77.3	5/13/2015	22/1"	0.27	0.02	20-foot-long follower used
5169	WB-P18	200	18	3	3.5	13.875	0.75	79.0	80.1	-76.6	5/13/2015	13/0.5"	0.25	0.81	20-foot-long follower used
5170	PK-P17	200	18	3	3.5	14.000	0.820	93.0	90.2	-86.7	5/26/2015	17.8/0.5"	0.11	0.03	
5171	PK-P17	200	18	3	3.5	14.000	0.820	92.0	90.5	-87.0	5/26/2015	11.15	-0.30	-0.12	
5172	PK-P17	200	18	3	3.5	14	0.82	95.0	87.3	-83.8	5/22/2015	10/0.5"	0.05	0.24	
5173	PK-P17	200	18	3	3.5	14.000	0.820	92.0	89.2	-85.7	5/26/2015	12.12/0.75"	0.15	-0.03	
5174	PK-P17	200	18	3	3.5	14.000	0.820	95.0	88.9	-85.4	5/26/2015	10/0.5"	0.19	-0.29	
5175	PK-P17	200	18	3	3.5	14	0.82	95.5	88.3	-84.8	5/22/2015	10/0.5"	-0.25	0.00	
5193	PV-P17	200	18	3	4.0	14	0.82	80.0	86.5	-82.5	5/18/2015	10/0.5"	0.04	0.05	18.8-foot-long follower used
5194	PV-P17	200	18	3	4.0	14	0.82	99.0	85.8	-81.8	5/15/2015	11.13	0.22	0.02	
5195	PV-P17	200	18	3	4.0	14.000	0.82	98.0	86.7	-82.7	5/14/2015	11.11	-0.04	0.09	
5196	PV-P17	200	18	3	4.0	14.000	0.82	95.0	88.7	-84.7	5/14/2015	12.11	0.19	0.37	
5197	PV-P17	200	18	3	4.0	14.000	0.82	95.0	90	-86.0	5/13/2015	11.11	0.35	0.03	
5198	PV-P17	200	18	3	4.0	14.000	0.82	95.0	89.2	-85.2	5/13/2015	11.11	0.15	0.15	
5202	M-P22	200	18	3	3.5	14.000	0.820	80.0	80.5	-77.0	5/29/2015	12/0.5"	-0.05	-0.21	18.8-foot-long follower used
5203	M-P22	200	18	3	3.5	14.000	0.820	80.0	79.3	-75.8	5/29/2015	22.00	0.13	-0.41	18.8-foot-long follower used
5204	PK-P22	200	18	3	3.0	14.000	0.820	97.0	87.2	-84.2	6/1/2015	11/0.5"	-0.13	0.11	
5205	PK-P22	200	18	3	3.0	14.000	0.820	95.0	86.0	-83.0	6/2/2015	13.15	-0.20	-0.25	
5232	M-P30	200	18	3	2.0	14.000	0.820	79.5	81.8	-79.8	6/20/2015	20/1"	-0.15	-0.30	18.8-foot-long follower used
5233	M-P30	200	18	3	2.0	14.000	0.820	81.5	85.6	-83.6	6/20/2015	10/0.5"	-0.21	-0.85	18.8-foot-long follower used
5234	PK-P26	200	18	3	3.0	14.000	0.820	94.0	91.9	-88.9	6/6/2015	10/0.5"	-0.31	-0.26	
5235	PK-P26	200	18	3	3.0	13.875	0.750	95.0	92.3	-89.3	6/6/2015	20	-0.37	-0.04	
5242	PK-P30	200	18	3	3.5	13.875	0.750	95.0	90.2	-86.7	6/8/2015	12/0.5"	0.40	-0.45	
5243	PK-P30	200	18	3	3.5	13.875	0.750	95.0	88.2	-84.7	6/8/2015	12.13	0.08	-0.11	
5262	PW-P27	200	18	3	2.0	14.000	0.820	106.0	92.2	-90.2	6/18/2015	11.11	0.17	0.02	
5263	PW-P27	200	18	3	2.0	13.875	0.750	95.0	95.3	-93.3	6/18/2015	22	0.31	0.00	19-foot-long follower used
5264	WZ1-P33	200	18	3	3.5	14.000	0.820	80.8	86.5	-83.0	6/23/2015	13/0.5"	0.12	-0.01	20-foot-long follower used
5265	WZ1-P33	200	18	3	3.5	14.000	0.820	80.0	88.2	-84.7	6/23/2015	13/0.5"	0.18	0.04	20-foot-long follower used
5266	PK-P33	200	18	3	3.5	13.875	0.750	95.0	90.3	-86.8	6/9/2015	20	-0.03	0.03	
5267	PK-P33	200	18	3	3.0	13.875	0.750	95.0	88.3	-85.3	6/9/2015	11.15	-0.16	-0.04	
5268	PK-P33	200	18	3	3.0	14.000	0.820	95.0	87.0	-84.0	6/12/2015	11.12	-0.17	-0.06	
5269	PK-P33	200	18	3	3.0	14.000	0.820	95.0	88.9	-85.9	6/12/2015	20	0.24	0.13	
5270	PK-P33	200	18	3	3.0	14.000	0.820	94.5	88.4	-85.4	6/9/2015	11.17	0.07	-0.13	
5271	PK-P33	200	18	3	3.0	14.000	0.820	95.0	88.5	-85.5	6/17/2015	13.12	-0.30	0.03	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D. BOYER  
Signature New York State Professional Engineer License Number 065831 Date 8/31/16




- The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A
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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl, U O N)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
5272	PK-P33	200	18	3	3.0	13.875	0.750	95.0	88.3	-85.3	6/8/2015	11.16	-0.08	0.08	
5273	PK-P33	200	18	3	3.0	13.875	0.750	94.5	87.9	-84.9	6/9/2015	12.17	-0.03	0.08	
5286	PJ-P33	200	18	3	3.5	13.875	0.750	95.0	90.3	-86.8	6/8/2015	10.0 25"	-0.06	0.00	
5287	PJ-P33	200	18	3	3.5	13.875	0.750	95.0	90.0	-86.5	6/6/2015	10.0 25"	-0.18	-0.01	
5288	PJ-P33	200	18	3	3.5	13.875	0.750	95.0	90.1	-86.6	6/6/2015	10.0 5"	-0.14	-0.13	
5289	PJ-P33	200	18	3	3.5	14.000	0.820	94.0	90.0	-86.5	6/6/2015	12.0 5"	-0.23	0.21	
5290	PV-P33	200	18	3	3.5	14.000	0.820	94.0	88.3	-84.8	6/5/2015	10.0 5"	-0.14	0.10	
5291	PV-P33	200	18	3	3.5	14.000	0.820	95.5	89.0	-85.5	6/4/2015	15.0 5"	0.07	0.15	
5293	PW-P33	200	18	3	2.0	14.000	0.820	125.4	108.8	-106.8	6/8/2015	12.16	0.03	-0.30	
5294	PH-P36	200	18	3	3.0	14.000	0.820	80.3	89.5	-86.5	7/3/2015	11.0 5"	0.22	-0.35	19-foot-long follower used
5295	PH-P36	200	18	3	2.5	14.000	0.820	80.0	88.5	-86.0	7/7/2015	20	-0.06	-0.15	19-foot-long follower used
5296	PH-P35	200	18	3	2.5	14.000	0.820	95.0	89.0	-86.5	7/8/2015	12.12	0.14	0.14	
5297	PH-P35	200	18	3	2.5	14.000	0.820	95.0	88.2	-85.7	7/8/2015	12.12	0.23	-0.43	
5298	PH-P35	200	18	3	2.5	14.000	0.820	80.0	88.5	-86.0	7/7/2015	20	0.23	-0.08	19-foot-long follower used
5299	PH-P35	200	18	3	2.5	14.000	0.820	80.0	87.2	-84.7	7/6/2015	20.0 75"	0.17	-0.08	19-foot-long follower used
5300	PH-P35	200	18	3	2.5	14.000	0.820	80.0	92.0	-89.5	7/6/2015	11.0 5"	-0.06	-0.38	19-foot-long follower used
5301	PH-P40	200	18	3	3.0	14.000	0.820	79.8	87.5	-84.5	7/3/2015	12.0 5"	0.07	0.04	19-foot-long follower used
5302	PH-P40	200	18	3	3.0	14.000	0.820	81.2	88.7	-85.7	7/3/2015	23	0.17	-0.06	19-foot-long follower used
5303	PH-P40	200	18	3	3.0	14.000	0.820	80.3	90.1	-87.1	7/3/2015	23	0.19	0.19	19-foot-long follower used
5304	PH-P35	200	18	3	2.5	14.000	0.820	80.0	90.1	-87.6	7/7/2015	20	0.28	-0.05	19-foot-long follower used
5305	PH-P35	200	18	3	2.5	14.000	0.820	95.0	89.2	-86.7	7/7/2015	12.12	0.20	0.08	
5306	PJ-P40	200	18	3	2.5	14.000	0.820	95.0	91.7	-89.2	7/9/2015	12.12	0.11	0.16	
5307	PJ-P40	200	18	3	2.5	14.000	0.820	96.0	91.2	-88.7	7/9/2015	12.12	0.17	-0.01	
5308	PJ-P40	200	18	3	2.5	14.000	0.820	95.0	90.8	-88.3	7/13/2015	12.12	0.03	0.12	
5309	PJ-P40	200	18	3	2.5	14.000	0.820	95.0	90.2	-87.7	7/14/2015	12.12	0.21	-0.14	
5310	PJ-P40	200	18	3	2.5	14.000	0.820	95.0	94.5	-92.0	7/14/2015	12.12	-0.07	-0.04	
5311	PK-P35	200	18	3	2.5	14.000	0.820	94.0	87.6	-85.1	6/16/2015	12.11	-0.23	-0.17	
5312	PK-P35	200	18	3	2.5	14.000	0.820	95.0	88.3	-85.8	6/16/2015	12.12	0.34	-0.29	
5325	PT-P40	200	18	3	3.0	14.000	0.820	94.5	86.3	-83.3	6/10/2015	13.0 5"	0.10	-0.34	
5326	PT-P40	200	18	3	3.0	13.875	0.750	95.0	84.3	-81.3	6/11/2015	10.0 5"	-0.04	-0.04	
5327	PT-P40	200	18	3	3.0	13.875	0.750	95.0	84.5	-81.5	6/11/2015	10.0 25"	-0.24	-0.08	
5328	PT-P40	200	18	3	3.0	13.875	0.750	95.0	85.4	-82.4	6/11/2015	10.0 5"	-0.10	0.02	
5329	PT-P40	200	18	3	3.0	13.875	0.750	95.0	84.3	-81.3	6/10/2015	10.0 5"	-0.05	0.07	
5330	PT-P40	200	18	3	3.0	13.875	0.750	95.0	85.0	-82.0	6/9/2015	12.0 5"	-0.09	-0.22	
5331	PT-P40	200	18	3	3.0	13.875	0.750	95.0	84.0	-81.0	6/11/2015	15.0 5"	-0.02	-0.19	
5332	PT-P40	200	18	3	3.0	13.875	0.750	95.0	83.5	-80.5	6/9/2015	10.0 5"	0.07	-0.13	
5340	PH-P42	200	18	3	2.5	14.000	0.820	95.0	91.9	-89.4	7/21/2015	11.12	0.12	-0.20	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License No. 085631 Date 8/31/16




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													N/S	E/W	
5341	PH-P42	200	18	3	2.5	14.000	0.820	95.0	89.3	-86.8	7/22/2015	12.14	0.18	-0.19	
5342	PH-P42	200	18	3	2.5	14.000	0.820	95.0	91.3	-88.8	7/22/2015	12.13	0.04	-0.29	
5343	PH-P42	200	18	3	2.5	14.000	0.820	95.0	91.2	-88.7	7/21/2015	12.12	0.14	-0.16	
5344	PH-P42	200	18	3	2.5	14.000	0.820	95.0	91.0	-88.5	7/22/2015	12.12	0.06	0.12	
5345	PH9-P40	200	18	3	2.5	14.000	0.820	95.0	91.2	-88.7	7/13/2015	12.12	0.07	-0.34	
5346	PJ-P40	200	18	3	2.5	14.000	0.820	95.0	88.2	-85.7	7/16/2015	12.12	-0.24	-0.06	
5347	PH9-P42	200	18	3	2.5	14.000	0.820	95.0	87.2	-84.7	7/14/2015	12.12	0.01	0.17	
5348	PH-P42	200	18	3	2.5	14.000	0.820	95.0	90.0	-87.5	7/17/2015	12.12	-0.15	-0.34	
5349	PH-P45	200	18	3	2.5	14.000	0.820	95.0	86.3	-83.8	7/21/2015	12.13	0.26	-0.01	
5350	PH-P45	200	18	3	2.5	14.000	0.820	95.0	87.2	-84.7	7/23/2015	11.14	0.56	0.07	
5351	PH-P45	200	18	3	2.5	14.000	0.820	95.0	87.0	-84.5	7/22/2015	12.13	-0.21	0.11	
5352	PH-P45	200	18	3	2.5	14.000	0.820	95.0	86.7	-84.2	7/23/2015	12.13	0.36	-0.19	
5353	PH-P45	200	18	3	2.5	14.000	0.820	95.0	87.6	-85.1	7/21/2015	13.13	-0.01	-0.10	
5354	PH-P45	200	18	3	2.5	14.000	0.820	95.0	88.0	-85.5	7/21/2015	15.16	0.01	-0.72	
5355	PJ-P45	200	18	3	2.5	14.000	0.820	95.0	89.5	-87.0	7/17/2015	12.12	-0.08	-0.11	
5356	PJ-P45	200	18	3	2.5	14.000	0.820	95.0	92.0	-89.5	7/16/2015	12.12	0.34	0.07	
5357	PJ-P45	200	18	3	2.5	14.000	0.820	95.0	87.5	-85.0	7/17/2015	12.12	-0.03	-0.03	
5365	PM-P46	200	18	3	2.5	13.875	0.750	100.0	90.4	-87.9	6/26/2015	12.05	0.11	-0.04	
5366	PM-P46	200	18	3	2.0	13.875	0.750	96.0	89.6	-87.6	6/27/2015	10.05	0.17	-0.24	
5367	PM-P46	200	18	3	2.5	13.875	0.750	95.0	96.1	-93.6	6/26/2015	12.05	0.12	0.43	19-foot-long follower used
5368	PM-P46	200	18	3	2.5	13.875	0.750	99.0	91.6	-89.1	6/26/2015	18.15	-0.18	-0.24	
5369	PM-P46	200	18	3	2.0	13.875	0.750	95.0	91.4	-89.4	6/27/2015	11.11	0.25	-0.04	
5370	PM-P46	200	18	3	2.0	14.000	0.820	94.6	95.5	-93.5	6/27/2015	15.05	-0.44	0.12	18-foot-long follower used
5371	PT-P46	200	18	3	3.0	13.875	0.750	95.0	94.5	-91.5	6/12/2015	20	-0.26	-0.06	19-foot-long follower used
5372	PT-P46	200	18	3	3.0	14.000	0.820	95.0	92.0	-89.0	6/16/2015	11.14	-0.03	-0.02	
5373	PT-P46	200	18	3	3.0	14.000	0.820	96.0	94.5	-91.5	6/16/2015	11.13	-0.05	-0.06	
5374	PT-P46	200	18	3	3.0	13.875	0.750	95.0	94.3	-91.3	6/15/2015	11.13	-0.19	-0.26	
5375	PT-P46	200	18	3	3.0	13.875	0.750	95.0	94.1	-91.1	6/15/2015	10.05	-0.08	-0.16	20-foot-long follower used
5376	PT-P46	200	18	3	3.0	13.875	0.750	95.0	93.5	-90.5	6/12/2015	11.00 75"	0.38	-0.02	
5377	PT-P46	200	18	3	3.0	13.875	0.750	95.0	93.9	-90.9	6/15/2015	11.12	-0.18	-0.27	
5378	PT-P46	200	18	3	3.0	13.875	0.750	95.0	94.0	-91.0	6/12/2015	10.05	-0.29	0.03	19-foot-long follower used
5379	PJ-P50	200	18	3	2.5	14.000	0.820	95.0	96.8	-94.3	7/20/2015	21	0.00	0.08	22-foot long follower used
5380	PJ-P50	200	18	3	2.5	14.000	0.820	95.0	96.2	-93.7	7/20/2015	22	0.11	0.06	22-foot long follower used
5381	PJ-P50	200	18	3	2.5	14.000	0.820	95.0	96.1	-93.6	7/20/2015	13.05	0.07	0.11	22-foot long follower used
5382	PK-P50	200	18	3	2.5	13.875	0.750	95.0	94.5	-92.0	6/29/2015	12.05	-0.02	-0.07	20-foot-long follower used
5383	PK-P50	200	18	3	2.5	13.875	0.750	95.0	95.7	-93.2	6/29/2015	10.05	-0.44	0.06	20-foot-long follower used
5384	PK-P50	200	18	3	2.5	13.875	0.750	94.0	93.5	-91.0	6/30/2015	11.05	0.15	-0.33	20-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License No. 085831 Date 8/31/16



- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bp. U O N )	Deviations from Design Coordinates		Remarks
													N/S	E/W	
5385	PK-P50	200	18	3	2.5	13.875	0.750	94.5	96.1	-93.6	6/29/2015	11.0 5"	-0.17	-0.21	20-foot-long follower used
5386	PM-P50	200	18	3	1.5	13.875	0.750	95.0	99.2	-97.7	6/26/2015	15.0 5"	0.04	0.01	22-foot-long follower used
5387	PM-P50	200	18	3	2.5	13.875	0.750	95.0	94.2	-91.7	6/29/2015	12.0 5"	-0.07	-0.27	22-foot-long follower used
5388	PM-P50	200	18	3	2.5	13.875	0.750	95.0	93.5	-91.0	6/29/2015	12.0 5"	0.00	-0.07	22-foot-long follower used
5389	PM-P50	200	18	3	2.5	13.875	0.750	95.0	95.4	-92.9	6/29/2015	20	0.12	0.06	22-foot-long follower used
5390	PM-P50	200	18	3	2.5	14.000	0.820	93.0	93.7	-91.2	6/29/2015	11.0 5"	-0.30	-0.30	22-foot-long follower used
5391	PT-P50	200	18	3	2.5	14.000	0.820	95.0	95.1	-92.6	6/30/2015	25	-0.36	0.18	22-foot-long follower used
5392	PT-P50	200	18	3	2.5	13.875	0.750	94.0	93.2	-90.7	6/30/2015	12.12	-0.23	-0.10	
5393	PT-P50	200	18	3	2.5	13.875	0.750	94.5	95.9	-93.4	6/30/2015	14.0 5"	-0.17	-0.04	22-foot-long follower used
5394	PT-P50	200	18	3	2.5	13.875	0.750	95.0	96.9	-94.4	6/30/2015	27	-0.28	-0.19	22-foot-long follower used
5395	PT-P50	200	18	3	2.5	13.875	0.750	95.0	95.2	-92.7	6/30/2015	25	0.02	0.00	22-foot-long follower used
5396	PT-P50	200	18	3	2.5	13.875	0.750	95.0	94.9	-92.4	6/30/2015	13.0 5"	-0.23	-0.13	22-foot-long follower used
5397	PJ-P52	700	18	3	2.5	14.000	0.820	95.0	96.8	-94.3	7/27/2015	23	-0.03	-0.26	22-foot-long follower used
5398	PJ-P52	200	18	3	2.5	14.000	0.820	95.0	93.3	-90.8	7/28/2015	12.12	0.43	-0.09	
5399	PK-P51	200	18	3	2.5	13.875	0.750	95.0	93.0	-90.5	7/1/2015	15.18	0.12	-0.06	
5400	PK-P51	200	18	3	2.5	13.875	0.750	95.0	94.0	-91.5	7/2/2015	11.0 5"	-0.36	-0.08	20-foot-long follower used
5401	PK-P51	200	18	3	2.5	13.875	0.750	95.0	94.5	-92.0	7/2/2015	10.0 5"	0.23	0.17	20-foot-long follower used
5402	PK-P51	200	18	3	2.5	13.875	0.750	95.0	94.5	-92.0	7/2/2015	11.0 5"	0.27	0.03	20-foot-long follower used
5403	PK-P51	200	18	3	2.5	14.000	0.820	106.0	96.8	-94.3	7/1/2015	15.16	0.35	0.69	
5404	PL-P51	200	18	3	2.5	13.875	0.750	95.0	95.0	-92.5	7/1/2015	23	0.20	-0.22	18-foot-long follower used
5405	PL-P52	200	18	3	2.5	14.000	0.820	106.0	93.3	-90.8	7/1/2015	12.13	0.02	0.18	
5406	PM-P51	200	18	3	1.5	13.875	0.750	95.0	97.4	-95.9	6/26/2015	16.0 5"	0.07	-0.07	21-foot-long follower used
5407	PM-P51	200	18	3	1.5	14.000	0.820	97.1	96.4	-94.9	6/26/2015	15.0 5"	0.19	0.01	21-foot-long follower used
5408	PM-P51	200	18	3	1.5	13.875	0.750	95.0	99.2	-97.7	6/26/2015	24	0.07	-0.07	22-foot-long follower used
5409	PM-P51	200	18	3	1.5	13.875	0.750	95.0	96.4	-94.9	6/24/2015	15.0 5"	0.07	0.07	22-foot-long follower used
5410	PM-P51	200	18	3	1.5	13.875	0.750	94.7	94.0	-92.5	6/26/2015	14.0 5"	0.07	0.07	21-foot-long follower used
5411	PM-P51	200	18	3	1.5	13.875	0.750	95.0	98.8	-97.3	6/24/2015	13.0 5"	-0.04	-0.07	22-foot-long follower used
5412	PT-P51	200	18	3	1.5	13.875	0.750	95.0	98.5	-97.0	6/26/2015	14.0 5"	-0.50	0.28	21-foot-long follower used
5413	PT-P51	200	18	3	1.5	13.875	0.750	95.5	103.5	-102.0	6/26/2015	15.0 5"	-0.01	0.09	21-foot-long follower used
5414	PT-P51	200	18	3	1.5	13.875	0.750	95.0	98.4	-96.9	6/26/2015	13.0 25"	-0.18	-0.35	21-foot-long follower used
5415	PT-P51	200	18	3	1.5	13.875	0.750	95.0	99.7	-98.2	6/26/2015	22	-0.22	-0.01	21-foot-long follower used
5416	PT-P51	200	18	3	1.5	13.875	0.750	95.0	103.6	-102.1	6/24/2015	22	0.16	0.27	22-foot-long follower used
5417	PT-P51	200	18	3	1.5	14.000	0.820	116.0	104.3	-102.8	6/23/2015	12.13	-0.11	0.01	
5418	PJ-P54	200	18	3	2.5	14.000	0.820	95.0	90.8	-88.3	7/28/2015	12.14	0.44	-0.38	
5419	PJ-P54	200	18	3	2.5	14.000	0.820	94.0	88.0	-85.5	7/28/2015	14.15	-0.01	-0.25	
5420	PH-P55	200	18	3	2.5	14.000	0.820	95.0	83.2	-80.7	7/24/2015	12.12	0.23	-0.07	
5421	PH-P55	200	18	3	2.5	14.000	0.820	95.0	84.3	-81.8	7/24/2015	12.12	-0.25	0.18	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085831

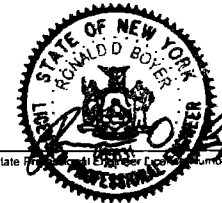
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Pile No.	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
5422	PK-P55	200	18	3	2.5	14.000	0.820	79.0	84.1	-81.6	7/8/2015	20'1"	0.22	-0.32	18-foot-long follower used
5423	PK-P55	200	18	3	2.5	13.875	0.750	80.0	86.6	-84.1	7/8/2015	20'1"	0.49	-0.26	18-foot-long follower used
5424	PK-P55	200	18	3	2.5	13.875	0.750	95.0	82.5	-80.0	7/7/2015	12, 12	0.07	0.07	
5425	PK-P55	200	18	3	2.5	14.000	0.820	81.0	86.6	-84.1	7/8/2015	20'1"	0.07	-0.07	18-foot-long follower used
5426	PK-P55	200	18	3	2.5	14.000	0.820	81.0	89.6	-87.1	7/8/2015	20'1"	0.07	0.07	18-foot-long follower used
5427	PK-P55	200	18	3	2.5	14.000	0.820	81.0	88.6	-86.1	7/8/2015	20'1"	0.07	-0.07	18-foot-long follower used
5428	PK-P55	200	18	3	2.5	13.875	0.750	95.0	86.3	-83.8	7/7/2015	11, 13	0.07	-0.07	
5429	PK-P55	200	18	3	2.5	13.875	0.750	95.0	89.0	-86.5	7/7/2015	11, 13	0.03	-0.44	
5430	PK-P55	200	18	3	2.5	13.875	0.750	95.0	88.2	-85.7	7/8/2015	12, 12	0.07	-0.07	
5431	PK-P55	200	18	3	2.5	13.875	0.750	95.0	88.8	-86.3	7/7/2015	11, 13	0.31	-0.06	
5432	PK-P55	200	18	3	2.5	13.875	0.750	95.0	88.7	-86.2	7/7/2015	11, 12	0.08	0.14	
5450	PH 9-P58.7	200	18	3	2.5	14.000	0.820	95.0	83.2	-80.7	7/16/2015	13, 12	0.44	0.00	
5451	PH 9-P58.7	200	18	3	2.5	14.000	0.820	95.0	81.0	-78.5	7/17/2015	13, 14	0.24	-0.20	
5467	PM-P60	200	18	3	2.5	14.000	0.820	95.0	85.2	-82.7	7/14/2015	12, 12	0.34	0.24	
5468	PM-P60	200	18	3	2.5	14.000	0.820	95.0	87.8	-85.3	7/13/2015	11, 11	0.29	0.04	
5469	PM-P60	200	18	3	2.5	14.000	0.820	95.0	84.2	-81.7	7/13/2015	15, 10/0.25"	0.40	0.00	
5470	PM-P60	200	18	3	2.5	14.000	0.820	95.0	87.0	-84.5	7/13/2015	12, 13	0.23	0.12	
5471	PM-P60	200	18	3	2.5	14.000	0.820	95.0	89.0	-86.5	7/13/2015	12, 12	0.17	-0.02	
5472	PM-P60	200	18	3	2.5	14.000	0.820	95.0	87.7	-85.2	7/10/2015	12, 12	0.33	0.03	
5473	PM-P60	200	18	3	2.5	14.000	0.820	95.0	88.9	-86.4	7/10/2015	11, 13	0.34	0.17	
5474	PM-P60	200	18	3	2.5	14.000	0.820	105.0	90.3	-87.8	7/10/2015	14, 13	0.35	-0.01	
5475	PM-P60	200	18	3	2.5	14.000	0.820	95.0	98.5	-96.0	7/11/2015	20	-0.07	-0.07	18-foot-long follower used
5476	PM-P60	200	18	3	2.5	14.000	0.820	95.0	91.7	-89.2	7/11/2015	12, 12	-0.05	-0.24	
5477	PT-P58	200	18	3	2.0	14.000	0.820	106.0	101.1	-99.1	6/11/2015	11, 11	0.12	-0.22	
5478	PT-P58	200	18	3	2.0	14.000	0.820	106.0	105.6	-103.6	6/11/2015	12, 20	-0.17	0.14	19-foot-long follower used
5479	PT-P58	200	18	3	2.0	14.000	0.820	107.0	109.4	-107.4	6/10/2015	23	0.16	0.05	19-foot-long follower used
5480	PH 9-P60	200	18	3	2.5	14.000	0.820	95.0	80.2	-77.7	7/17/2015	14, 14	0.16	-0.05	
5481	PH 9-P62	200	18	3	2.0	14.000	0.820	95.0	83.2	-78.2	7/17/2015	11, 12	0.10	0.02	
5482	PL-P61	200	18	3	3.0	14	0.82	85.0	83.0	-80.0	10/7/2015	2x12/1"	0.50	-0.27	
5483	PL-P61	200	18	3	3.0	14	0.82	85.0	81.0	-78.0	10/7/2015	2x12/1"	-0.34	0.08	
5484	PM-P60	200	18	3	2.0	14.000	0.820	105.0	83.5	-81.5	7/15/2015	12, 12	0.50	-0.01	
5485	PK-PM65	200	18	3	2.7	14	0.82	90.0	82.6	-79.9	10/7/2015	2x12/1"	0.07	0.07	
5486	PR-P61	200	18	3	-3.0	14	0.82	88.0	86.0	-89.0	10/10/2015	2x12/1"	-0.47	0.33	
5487	PR-P61	200	18	3	-3.0	14	0.82	88.0	84.5	-87.5	10/10/2015	2x12/1"	-0.28	-0.24	
5489	PT-P60	200	18	3	2.5	14.000	0.820	105.0	103.2	-100.7	7/11/2015	12, 12	0.36	-0.06	
5491	PT-P60	200	18	3	2.5	14.000	0.820	105.0	102.5	-100.0	7/13/2015	12, 12	-0.23	-0.48	
5492	PT-P60	200	18	3	2.5	14.000	0.820	105.0	107.5	-105.0	7/11/2015	20	0.57	-0.02	18-foot-long follower used



TR-5 Technical Report  
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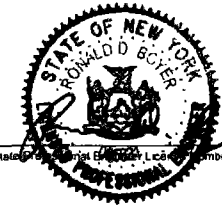
RONALD D. BOYER  
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													N/S	E/W	
5493	PT-P60	200	18	3	2.5	14.000	0.820	105.0	105.5	-103.0	7/11/2015	20	0.26	-0.15	18-foot-long follower used
5494	PT-P60	200	18	3	2.5	14.000	0.820	105.0	107.6	-105.1	7/10/2015	20	0.31	-0.10	18-foot-long follower used
5496	PT-P60	200	18	3	2.5	14.000	0.820	105.0	86.0	-83.5	7/10/2015	12, 12	0.28	0.02	
5518	PR-P62	200	18	3	-3.0	14	0.82	98.0	85.0	-88.0	10/10/2015	2x12/1"	-0.06	0.33	
5528	PT-P62	200	18	3	-4.5	14	0.82	101.0	100.9	-105.4	10/9/2015	24/1"	-0.04	0.19	18-foot-long follower used
5529	PT-P62	200	18	3	-6.0	14	0.82	108.0	104.0	-110.0	10/8/2015	2x12/1"	0.07	-0.07	
5530	PT-P62	200	18	3	-4.5	14	0.82	101.0	98	-102.5	10/9/2015	2x12/1"	0.07	0.07	
5531	PT-P62	200	18	3	-6.0	14	0.82	103.0	101.9	-107.9	10/9/2015	24/1"	0.28	-0.01	18-foot-long follower used
5532	SW-1	200	18	3	3.0	13.875	0.750	80.0	87.6	-84.6	4/9/2015	15'0 75"	-0.04	-0.17	20-foot-long follower used
5533	SW-1	200	18	3	3.0	13.750	0.707	80.0	86.0	-83.0	4/9/2015	22	-0.10	-0.14	20-foot-long follower used
5534	SW-1	200	18	3	3.0	14.000	0.820	78.0	69.4	-66.4	4/8/2015	20'0 5"	-0.09	-0.34	
5535	SW-1	200	18	3	3.0	13.875	0.750	80.7	86.2	-83.2	4/9/2015	10'0 5"	0.15	-0.09	20-foot-long follower used
5536	SW-1	200	18	3	3.0	13.750	0.707	80.0	69.1	-66.1	4/9/2015	20	-0.2	-0.33	
5537	SW-1	200	18	3	3.0	13.875	0.750	80.0	84.3	-81.3	4/9/2015	15'0 75"	-0.05	0.25	20-foot-long follower used
5538	SW-1	200	18	3	3.0	13.875	0.750	77.5	83.5	-80.5	4/9/2015	11'0 5"	0.16	-0.05	20-foot-long follower used
5539	SW-1	200	18	3	3.0	13.875	0.750	76.0	71.3	-68.3	4/9/2015	10'0 5"	-0.20	-0.07	
5540	SW-1	200	18	3	3.0	13.750	0.707	80.0	80.6	-77.6	4/9/2015	15'0 75"	-0.17	0.12	
5541	SW-1	200	18	3	3.0	13.875	0.750	80.0	80.5	-77.5	4/9/2015	12'0 5"	0.16	-0.16	20-foot-long follower used
5542	SW-1	200	18	3	3.0	13.875	0.750	80.5	82.0	-79.0	4/9/2015	10'0 5"	0.47	-0.50	20-foot-long follower used
5543	SW-1	200	18	3	3.0	13.750	0.707	80.0	81.7	-78.7	4/9/2015	10'0 5"	-0.42	0.02	20-foot-long follower used
5544	SW-1	200	18	3	3.0	13.875	0.750	80.0	80.4	-77.4	4/9/2015	10'0 5"	0.19	-0.20	20-foot-long follower used
5545	SW-1	200	18	3	3.0	13.750	0.707	80.0	77.9	-74.9	4/9/2015	10'0 5"	0.16	-0.45	
5546	SW-1	200	18	3	3.0	13.875	0.750	77.8	81.2	-78.2	4/9/2015	15'0 75"	-0.21	-0.08	20-foot-long follower used
5547	SW-1	200	18	3	3.0	13.875	0.750	80.1	80.9	-77.9	4/9/2015	8'0 25"	-0.10	-0.16	20-foot-long follower used
5548	SW-1	200	18	3	3.0	13.875	0.750	82.0	81.0	-78.0	4/9/2015	8'0 25"	-0.21	0.23	
5549	SW-1	200	18	3	3.0	13.875	0.750	81.0	81.3	-78.3	4/9/2015	15'0 75"	-0.18	-0.01	20-foot-long follower used
5550	SW-1	200	18	3	3.0	13.750	0.707	79.7	80.6	-77.6	4/9/2015	18'0 75"	-0.21	-0.11	20-foot-long follower used
5551	SW-1	200	18	3	3.0	13.875	0.750	80.0	80.6	-77.6	4/9/2015	13'0 5"	0.10	-0.11	
5552	XA3.2	200	18	3	3.5	13.750	0.707	80.0	76.2	-72.7	4/6/2015	10'0 5"	-0.05	0.16	
5557	XA3.2	200	18	3	3.5	13.875	0.750	80.0	77.5	-74.0	4/6/2015	10'0"	0.03	-0.16	
5558	XA4	200	18	3	3.5	13.875	0.750	80.0	79.0	-75.5	4/6/2015	10'0 25"	-0.17	0.15	20.5-foot-long follower used
5563	XA4	200	18	3	4.0	13.875	0.750	80.0	82.7	-78.7	4/6/2015	10'0 25"	-0.26	-0.14	
6001	12	200	18	3	3.5	13.750	0.707	80.0	78.1	-74.6	4/13/2015	10'0 5"	-0.30	0.60	
6002	E7	200	18	3	3.0	13.750	0.707	79.8	84.4	-81.4	4/13/2015	15'0 75"	0.16	-0.22	20-foot-long follower used
6003	SW-12	200	18	3	2.5	14.000	0.820	95.0	95.1	-92.6	5/9/2015	10'0 5"	0.29	0.89	22-foot-long follower used
6004	SW-12	200	18	3	2.5	14.000	0.820	90.0	98.5	-96.0	7/27/2015	20.00	-0.09	0.41	
6005	WT3-WTA	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	7/27/2015	12.12	0.19	-0.06	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085631 Date 8/31/16

1. The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc)
2. Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A
3. The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A
4. A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B
5. Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.

Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. GS Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	EW	
6006	SW-14	200	18	3	2.5	14.000	0.820	95.0	93.5	-91.0	7/28/2015	12, 12	-0.43	0.28	
6007	WTA-PP/P54	200	18	3	2.5	14.000	0.820	95.0	97.1	-94.6	7/28/2015	20.00	0.53	0.18	15-foot-long follower used
6008	PF-P55	200	18	3	2.5	14.000	0.820	95.0	89.5	-87.0	7/30/2015	12, 12	-0.32	-0.07	
6009	PF-P56	200	18	3	2.5	14.000	0.820	95.0	90.5	-88.0	7/29/2015	12, 12	0.38	-0.22	
6010	PL-P13	200	18	3	3.5	14	0.82	95.0	85	-81.5	5/18/2015	13.0 5"	-0.01	0.12	
6011	PL-P13	200	18	3	4.0	14.000	0.82	99.0	81.2	-77.2	5/15/2015	20.1"	-0.25	0.36	
6012	PL-P13	200	18	3	3.5	14	0.82	98.0	84.7	-81.2	5/19/2015	12.0 5"	-0.10	-0.04	
6013	PL-P13	200	18	3	4.0	14	0.82	92.5	83.3	-79.3	5/21/2015	11, 13	0.14	0.20	
6014	PL-P13	200	18	3	4.0	14	0.82	95.0	83.1	-79.1	5/21/2015	11.0 5"	-0.28	0.01	
6015	PN-P13	200	18	3	3.5	13.875	0.75	95.0	85.7	-82.2	5/18/2015	16, 16	-0.32	-0.12	
6016	PN-P13	200	18	3	4.0	14.000	0.82	95.0	82.2	-78.2	5/15/2015	10.0 5"	-0.15	-0.07	
6017	PN-P13	200	18	3	4.0	14	0.82	91.7	85.2	-81.2	5/20/2015	11.0 5"	0.04	-0.20	
6018	PN-P13	200	18	3	4.0	13.875	0.75	94.8	85.3	-81.3	5/20/2015	11.0 5"	0.09	-0.03	
6019	PQ-P15	200	18	3	4.0	13.875	0.75	95.0	84	-80.0	5/19/2015	10.0 5"	0.13	-0.15	
6020	PQ-P15	200	18	3	4.0	14	0.82	95.0	84	-80.0	5/15/2015	11, 15	0.06	-0.01	
6021	PQ-P15	200	18	3	3.5	14	0.82	81.0	82.3	-78.8	5/20/2015	13.0 5"	0.07	-0.07	19-foot-long follower used
6022	PQ-P15	200	18	3	3.5	14	0.82	80.0	86.1	-82.6	5/20/2015	23	0.03	0.00	19-foot-long follower used
6023	PS-P15	200	18	3	4.0	14	0.82	79.0	84.5	-80.5	5/18/2015	11.0 5"	0.02	-0.06	18 8-foot-long follower
6024	PS-P15	200	18	3	4.0	13.75	0.707	78.0	82.2	-76.2	5/18/2015	13.0 5"	0.15	-0.26	18 8-foot-long follower
6025	PS-P15	200	18	3	4.0	13.875	0.75	80.0	82.9	-78.9	5/18/2015	10.0 5"	-0.07	-0.17	18 8-foot-long follower
6026	PS-P15	200	18	3	4.0	14	0.82	94.0	85.5	-81.5	5/18/2015	13, 10.0 5"	0.21	0.00	
6027	PS-P15	200	18	3	4.0	13.875	0.75	80.0	84.6	-80.6	5/18/2015	20	0.39	-0.13	18 8-foot-long follower
6028	PS-P15	200	18	3	4.0	14	0.82	81.0	84.9	-80.9	5/18/2015	13.0 5"	-0.38	-0.75	18 8-foot-long follower
6029	PL-P17	200	18	3	3.5	14	0.82	95.0	86.3	-82.8	5/22/2015	13, 14	0.47	-0.36	
6030	PL-P17	200	18	3	3.5	14	0.82	95.0	84.5	-81.0	5/21/2015	11.0 5"	-0.05	0.14	
6031	PL-P17	200	18	3	3.5	14	0.82	95.0	82.6	-79.3	5/21/2015	11, 11.0 7.5"	0.19	-0.48	
6032	PL-P17	200	18	3	3.5	14	0.82	95.0	87.6	-84.1	5/21/2015	12, 14	0.35	-0.34	
6033	PL-P17	200	18	3	3.5	14	0.82	91.8	88	-84.5	5/20/2015	11.0 5"	0.10	0.12	
6034	PN-P17	200	18	3	3.6	14.000	0.820	94.7	88.3	-84.7	5/19/2015	14, 13	-0.02	-0.02	
6035	PN-P17	200	18	3	3.5	13.875	0.75	97.0	89	-86.5	5/19/2015	11, 11	-0.01	-0.60	
6036	PQ-P17	200	18	3	3.5	14	0.82	79.0	90.6	-87.0	5/20/2015	20	0.25	-0.31	19-foot-long follower used
6037	PQ-P17	200	18	3	3.5	14	0.82	93.0	85.9	-82.4	5/18/2015	11, 14	0.08	-0.19	
6038	PN-P17	200	18	3	3.5	14	0.82	95.0	91	-87.5	5/19/2015	12, 14	-0.07	-0.04	
6039	PN-P17	200	18	3	3.6	14	0.82	95.0	92.1	-88.5	5/19/2015	11, 12	0.22	-0.31	
6040	PQ-P17	200	18	3	3.5	14	0.82	80.0	85.25	-81.8	5/21/2015	22	0.49	0.30	19-foot-long follower used
6041	PQ-P17	200	18	3	4.0	13.875	0.75	95.0	80.4	-76.4	5/15/2015	10.0 5"	0.37	-0.17	
6044	PS/PT-P17	200	18	3	3.5	14.000	0.820	95.2	86.4	-82.9	5/26/2015	12, 15	0.18	-0.41	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
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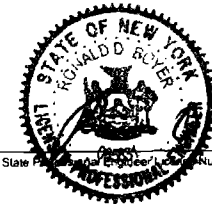


RONALD D. BOYER  
Signature New York State License No. 085831 Date 8/31/16

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Pile No	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U O N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
6045	PS/PT-P17	200	18	3	3.5	14.000	0.620	81.3	87	-83.5	5/26/2015	12/0.5"	0.06	-0.30	19-foot-long follower used
6046	PS/PT-P17	200	18	3	3.5	13.75	0.707	94.5	87.3	-83.8	5/20/2015	17/0.75"	0.06	-0.17	
6047	PS/PT-P17	200	18	3	3.5	14	0.82	95.0	87.9	-84.4	5/21/2015	14.12	-0.28	-0.39	
6048	PS/PT-P17	200	18	3	4.0	14	0.82	95.0	88.5	-84.5	5/16/2015	20/0.75"	-1.29	1.12	
6049	PS/PT-P17	200	18	3	4.0	14	0.82	95.5	94.8	-90.8	5/16/2015	15/0.5"	0.27	-0.22	19-foot-long follower used
6052	PS/PT-P17	200	18	3	3.5	13.875	0.75	97.0	88.6	-85.1	5/19/2015	11.14	0.20	-0.31	
6053	PS/PT-P17	200	18	3	3.5	13.875	0.75	90.0	86.9	-83.4	5/19/2015	11.13	0.26	-0.21	
6061	PP-P23	200	18	3	3.0	14.000	0.820	79.5	83.7	-80.7	5/29/2015	10/0.5"	-0.44	-0.38	18.8-foot-long follower
6062	PP-P23	200	18	3	3.0	14.000	0.820	95.2	84.4	-81.4	5/28/2015	15.13, 6/0.5"	0.25	-0.17	
6063	PP-P23	200	18	3	3.0	14.000	0.820	95.0	84.4	-81.4	5/28/2015	11/0.5"	0.00	-0.16	
6064	PP-P23	200	18	3	3.0	14.000	0.820	80.0	83.8	-80.8	5/28/2015	12/0.5"	-0.04	-0.34	19-foot-long follower used
6065	PP-P23	200	18	3	3.0	14.000	0.820	97.0	83.25	-80.3	5/27/2015	11.12	-0.25	-0.13	
6066	PP-P23	200	18	3	3.0	14.000	0.820	94.5	88.4	-85.4	5/27/2015	11.13	-0.64	-0.59	
6067	PP-P23	200	18	3	3.0	14.000	0.820	92.5	83.25	-80.3	5/28/2015	13.16	0.00	-0.20	
6084	PW-P23	200	18	3	2.0	14.000	0.820	95.5	90.0	-88.0	6/4/2015	11.14	0.22	-0.31	
6085	PW-P23	200	18	3	2.0	14.000	0.820	95.0	89.5	-87.5	6/5/2015	12.14	-0.02	-0.12	
6086	PW-P17	200	18	3	4.0	14.000	0.820	95.0	84.9	-80.9	5/13/2015	11.11	0.01	-0.29	
6087	PW-P17	200	18	3	4.0	14	0.82	95.0	87.5	-83.5	5/12/2015	11.14	-0.30	-0.24	
6088	PS/PT-P17	200	18	3	3.5	14	0.82	95.0	87.2	-83.7	5/21/2015	11.16	-0.45	-0.10	
6089	PS/PT-P17	200	18	3	3.5	14.000	0.620	95.0	81.7	-78.2	5/26/2015	16.16	-3.46	-0.22	
6090	PS/PT-P17	200	18	3	3.5	14	0.82	95.0	90.7	-87.2	5/20/2015	14.13	-0.08	-0.50	
6091	PS/PT-P17	200	18	3	3.5	14.000	0.620	95.0	87.6	-84.1	5/26/2015	12.16	-0.25	-0.21	
6099	PV-P23	200	18	3	3.5	14.000	0.820	95.0	88.2	-84.7	5/28/2015	12.13	0.19	-0.22	
6100	PV-P23	200	18	3	3.5	14.000	0.820	94.0	88.5	-85.0	5/28/2015	11.80.5"	0.01	-0.14	
6101	PV-P23	200	18	3	3.5	14.000	0.820	94.5	92.3	-88.8	5/28/2015	11.14	-0.44	-0.89	
6102	PV-P23	200	18	3	3.5	14.000	0.820	95.0	89.7	-86.2	5/27/2015	11.12	-0.33	0.21	
6103	PV-P23	200	18	3	3.5	14.000	0.820	92.0	91.2	-87.7	5/27/2015	22	0.04	-0.18	19-foot-long follower used
6104	PV-P23	200	18	3	3.5	14.000	0.820	92.0	91.4	-87.9	5/27/2015	20/0.5"	0.00	-0.05	19-foot-long follower used
6105	PP-P27	200	18	3	3.0	14.000	0.820	95.0	85.7	-82.7	6/4/2015	13.14	-0.13	-0.19	
6106	PP-P27	200	18	3	3.0	14.000	0.820	95.0	87.8	-84.8	6/3/2015	12.20	0.13	-0.09	
6107	PP-P27	200	18	3	3.0	14.000	0.820	95.0	87.0	-84.0	6/3/2015	11/0.5"	0.28	-0.13	
6108	PP-P27	200	18	3	3.0	14.000	0.820	95.0	86.9	-83.9	6/3/2015	11.15	0.28	0.05	
6109	PP-P27	200	18	3	3.0	14.000	0.820	95.5	88.3	-85.3	6/3/2015	10/0.5"	0.24	-0.57	
6110	PP-P27	200	18	3	3.0	14.000	0.820	95.0	87.9	-84.9	6/2/2015	20/1"	0.06	0.12	
6111	PP-P27	200	18	3	3.0	14.000	0.820	95.0	88	-85.0	6/2/2015	14.16	0.12	-0.12	
6112	PT-P27	200	18	3	3.5	14.000	0.820	95.0	90.4	-86.9	5/30/2015	11.11	0.02	0.02	
6113	PT-P27	200	18	3	3.5	14.000	0.820	94.0	88.8	-85.3	5/29/2015	13.15	0.48	-0.22	

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
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RONALD D. BOYER  
Signature New York State Professional Engineer License Number 085831

*By* *8/31/16*  
Date

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													N/S	EW	
6114	PT-P27	200	18	3	3.5	14.000	0.820	94.0	88.7	-85.2	6/2/2015	10.0 5"	-0.06	-0.13	
6115	PT-P27	200	18	3	3.5	14.000	0.820	95.0	89.8	-86.3	5/30/2015	15.0 75"	0.04	-0.33	
6116	PT-P27	200	18	3	3.5	14.000	0.820	95.5	89.8	-86.3	5/29/2015	10.0 5"	0.14	0.01	
6117	PT-P27	200	18	3	3.5	14.000	0.820	94.5	90.2	-86.7	5/29/2015	10.0 5"	0.13	-0.34	
6118	PV-P27	200	18	3	3.5	14.000	0.820	95.0	89.7	-86.2	5/30/2015	11.17	-0.06	-0.05	
6119	PV-P27	200	18	3	3.5	14.000	0.820	95.0	91.3	-87.8	5/30/2015	12.12	-0.03	-0.08	
6120	PV-P27	200	18	3	3.5	14.000	0.820	95.0	90.3	-86.8	5/30/2015	12.15	0.09	-0.19	
6121	PV-P27	200	18	3	3.5	14.000	0.820	94.0	92.0	-88.5	5/29/2015	11.12	0.00	0.00	
6122	PV-P27	200	18	3	3.5	14.000	0.820	95.0	92.4	-88.9	5/29/2015	10.0 5"	0.21	0.26	
6123	PV-P27	200	18	3	3.5	14.000	0.820	94.5	92.5	-89.0	5/28/2015	10.0 5"	0.05	0.01	
6124	PK-P23	200	18	3	3.0	14.000	0.820	95.0	86.9	-85.9	5/29/2015	13.13	-0.07	-0.45	
6125	PK-P23	200	18	3	3.0	14.000	0.820	95.0	88.8	-85.8	5/30/2015	11.13	-0.59	-0.35	
6126	PK-P23	200	18	3	12.0	13.750	0.707	101.6	99.9	-87.9	10/27/2014	10.11	0.49	0.06	Inex Pile No. 4 - POA indicated capacity greater than or equal to 800 kips at the end of driving
6127	PK-P23	200	18	3	3.0	14.000	0.820	95.0	90.3	-87.3	5/30/2015	12.0 5"	0.33	0.15	
6128	PK-P23	200	18	3	3.0	14.000	0.820	95.0	88.9	-85.9	5/29/2015	12.14	0.04	0.00	
6129	PK-P23	200	18	3	3.0	14.000	0.820	95.0	93.2	-90.2	6/1/2015	11.13	0.22	-0.26	
6130	PK-P23	200	18	3	3.0	14.000	0.820	95.0	91.8	-88.8	5/29/2015	11.14	0.19	-0.74	
6138	PP-P33	200	18	3	3.0	14.000	0.820	94.1	88.6	-85.6	6/5/2015	11.14	-0.01	-0.07	
6139	PP-P33	200	18	3	3.0	14.000	0.820	94.0	89.2	-86.2	6/5/2015	13.13	0.09	-0.01	
6140	PQ-P33	200	18	3	12.0	13.750	0.707	104.1	98.9	-86.9	10/28/2014	14.10	-0.06	-0.09	
6141	PP-P33	200	18	3	3.0	14.000	0.820	95.0	89.2	-86.2	6/5/2015	13.0 5"	-0.19	-0.28	
6142	PP-P33	200	18	3	3.0	14.000	0.820	95.0	89.0	-86.0	6/4/2015	14.13	-0.03	-0.31	
6143	PP-P33	200	18	3	3.0	14.000	0.820	95.0	89.5	-85.5	6/4/2015	12.0 5"	0.42	-0.07	
6144	PP-P33	200	18	3	3.0	14.000	0.820	93.5	83.7	-80.7	6/5/2015	22	-0.09	-0.15	
6145	PT-P33	200	18	3	3.5	13.875	0.750	95.0	86.5	-83.0	6/5/2015	8.0 25"	0.03	-0.17	
6146	PT-P33	200	18	3	3.5	14.000	0.820	94.5	87.5	-84.0	6/4/2015	11.14	0.23	-0.05	
6147	PT-P33	200	18	3	3.5	13.875	0.750	95.0	89.8	-85.3	6/8/2015	8.0 25"	-0.04	0.16	
6148	PT-P33	200	18	3	3.5	14.000	0.820	93.5	84.5	-81.0	6/5/2015	10.0 25"	-0.09	0.18	
6149	PT-P33	200	18	3	3.5	14.000	0.820	94.5	85.5	-82.0	6/3/2015	11.90 5"	-0.06	-0.14	
6150	PT-P33	200	18	3	3.5	14.000	0.820	95.0	89.3	-85.8	6/3/2015	10.0 5"	-0.13	0.32	
6151	PT-P33	200	18	3	3.5	14.000	0.820	93.5	87.6	-84.1	6/6/2015	11.0 5"	-0.25	-0.31	
6152	PK-P40	200	18	3	1.0	13.750	0.707	94.9	87.9	-86.9	10/15/2014	14.0 75"	-0.19	-0.16	
6153	PK-P40	200	18	3	2.0	14.000	0.820	95.0	87.9	-85.9	6/22/2015	11.11	0.06	0.34	
6154	PK-P40	200	18	3	2.5	14.000	0.820	95.0	87.7	-85.2	6/16/2015	12.13	-0.12	-0.29	
6155	PK-P40	200	18	3	2.0	13.875	0.750	95.0	87.7	-85.7	6/20/2015	12.13	-0.01	0.02	
6156	PK-P40	200	18	3	2.0	13.875	0.750	95.0	89.3	-87.3	6/20/2015	13.13	-0.35	0.03	
6157	PL-P40	200	18	3	2.0	13.875	0.750	95.0	90.5	-88.5	6/23/2015	11.16	-0.43	0.26	

TR-5 Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510



RONALD D. BOYER  
Signature New York State License No. 085831 Date 8/31/16

- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.)
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A.
- 3 The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A.
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B.
- 5 Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.

Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl. U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	EW	
6158	PL-P40	200	18	3	2.0	13.875	0.750	95.0	90.8	-88.8	6/19/2015	11, 11	-0.19	-0.01	
6159	PK-P40	200	18	3	2.5	14.000	0.820	94.0	87.2	-84.7	6/17/2015	11, 13	0.10	0.18	
6160	PK-P40	200	18	3	2.0	13.875	0.750	95.0	87.3	-85.3	6/19/2015	11, 13	0.31	-1.10	
6161	PP-P40	200	18	3	2.0	13.875	0.750	95.0	89.0	-87.0	6/23/2015	11, 13	0.11	-0.21	
6162	PN-P40	200	18	3	2.0	13.875	0.750	109.4	89.8	-87.8	6/23/2015	11, 12	0.01	0.10	
6163	PP-P40	200	18	3	2.0	14.000	0.820	95.0	91.2	-89.2	6/22/2015	11, 12	0.14	-0.06	
6164	PP-P40	200	18	3	2.0	13.875	0.750	95.0	91.7	-89.7	6/22/2015	11, 12	0.77	-0.06	
6165	PN-P40	200	18	3	2.0	14.000	0.820	95.0	92.3	-90.3	6/19/2015	11, 12	-0.14	-0.15	
6166	PP-P40	200	18	3	2.0	13.875	0.750	95.0	91.6	-89.6	6/22/2015	12, 11	0.00	-0.25	
6167	PN-P40	200	18	3	2.0	13.875	0.750	95.0	90.2	-86.2	6/19/2015	11, 12	0.27	-0.10	
6168	PN-P40	200	18	3	2.0	13.875	0.750	95.0	89.5	-87.5	6/20/2015	12, 17	0.20	-0.31	
6169	PL-P40	200	18	3	3.0	14.000	0.820	97.5	96.3	-93.3	6/10/2015	20/0.75'	0.26	-0.04	19-foot-long follower used
6170	PL-P40	200	18	3	3.0	13.875	0.750	95.0	100.3	-97.3	6/10/2015	21	0.16	-0.14	19-foot-long follower used
6171	PL-P40	200	18	3	3.0	13.875	0.750	95.0	96.4	-93.4	6/9/2015	10/0.5'	0.08	0.20	
6172	PL-P40	200	18	3	3.0	13.875	0.750	95.0	101.5	-98.5	6/9/2015	20/0.75'	-0.05	-0.02	19-foot-long follower used
6173	PW-P40	200	18	3	1.0	14.000	0.820	116.0	121.5	-120.5	6/18/2015	13/0.5'	-0.31	0.10	19-foot-long follower used
6174	PW-P40	200	18	3	1.0	14.000	0.820	116.0	119.2	-118.2	6/18/2015	12/0.5'	0.33	-0.95	19-foot-long follower used
6176	PK-P46	200	18	3	2.5	13.875	0.750	95.0	88.9	-86.4	6/24/2015	11, 13	0.04	0.64	
6177	PK-P46	200	18	3	2.5	13.875	0.750	95.0	90.6	-88.1	6/24/2015	11, 13	0.22	-0.27	
6178	PK-P46	200	18	3	2.5	13.875	0.750	95.0	87.9	-85.4	6/24/2015	14, 13	0.15	0.16	
6179	PK-P46	200	18	3	2.0	13.875	0.750	95.0	88.5	-86.5	6/25/2015	11, 15	-0.02	-0.32	
6180	PK-P46	200	18	3	2.5	13.875	0.750	95.0	90.3	-87.8	6/23/2015	13, 17	0.28	-0.19	
6181	PK-P46	200	18	3	2.5	13.875	0.750	94.9	92.5	-90.0	6/24/2015	12, 13	0.37	-0.06	
6182	PL-P46	200	18	3	2.0	14.000	0.820	93.0	93.2	-91.2	6/25/2015	20	0.17	-0.43	
6183	PL-P46	200	18	3	2.0	13.875	0.750	95.0	91.4	-89.4	6/25/2015	11, 12	0.13	-0.14	
6184	PK-P48	200	18	3	2.0	13.875	0.750	95.0	96.6	-94.6	6/27/2015	12/0.5'	-0.02	0.34	18-foot-long follower used
6185	PK-P48	200	18	3	2.0	13.875	0.750	95.0	94.6	-92.6	6/27/2015	24	0.10	-0.06	18-foot-long follower used
6186	PT-P55	200	18	3	2.5	13.875	0.750	100.0	102.2	-99.7	7/6/2015	14/0.5'	0.19	0.00	22-foot-long follower used
6187	PT-P55	200	18	3	2.5	13.875	0.750	99.7	104.6	-102.3	7/6/2015	13/0.5'	0.35	0.19	22-foot-long follower used
6188	PT-P55	200	18	3	2.5	13.875	0.750	101.0	107.4	-104.9	7/3/2015	20	0.07	-0.28	19-foot-long follower used
6189	PT-P55	200	18	3	2.5	13.875	0.750	104.5	109.9	-107.4	7/2/2015	23	0.39	-0.07	22-foot-long follower used
6190	PT-P55	200	18	3	2.5	13.875	0.750	101.0	108.6	-106.1	7/6/2015	14/0.5'	0.06	0.23	22-foot-long follower used
6191	PT-P55	200	18	3	2.5	13.875	0.750	102.0	105.2	-102.7	7/2/2015	25	0.25	-0.09	22-foot-long follower used
6192	PT-P55	200	18	3	2.5	14.000	0.820	103.0	109.7	-107.2	7/1/2015	12/0.5'	0.08	0.20	22-foot-long follower used
6193	PT-P55	200	18	3	2.5	14.000	0.820	104.0	101.3	-98.6	7/1/2015	15/0.5'	-0.09	-0.14	22-foot-long follower used
6194	PT-P55	200	18	3	2.5	13.875	0.750	103.5	103.1	-100.6	7/1/2015	24	-0.10	-0.10	22-foot-long follower used
6195	PT-P55	200	18	3	2.5	14.000	0.820	104.5	105.4	-102.9	7/2/2015	13/0.5'	-0.01	-0.12	22-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License No. 085631 Date



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Pile No.	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
6196	PT-P55	200	18	3	2.5	14.000	0.820	116.0	111.5	-109.0	7/1/2015	11.14	0.26	0.20	
6197	PK-P60	200	18	3	2.5	13.875	0.750	95.0	90.3	-87.8	7/9/2015	11.12	0.21	-0.14	
6198	PK-P58	200	18	3	2.5	14.000	0.820	95.0	88.9	-86.4	7/13/2015	12.13	0.06	-0.04	
6199	PK-P58	200	18	3	2.5	14.000	0.820	95.0	90.3	-87.8	7/10/2015	11.13	0.20	0.03	
6200	PK-P60	200	18	3	2.5	13.875	0.750	95.0	89.8	-87.3	7/9/2015	12.13	0.36	0.15	
6202	PK-P60	200	18	3	2.5	13.875	0.750	95.0	89.6	-87.1	7/10/2015	12.11	0.33	-0.34	
6203	PK-P60	200	18	3	2.5	13.875	0.750	94.0	90.8	-88.3	7/8/2015	12.12	0.08	0.17	
6204	PK-P60	200	18	3	2.5	13.875	0.750	95.0	89.6	-87.1	7/9/2015	12.12	0.14	0.16	
6205	PK-P60	200	18	3	2.5	13.875	0.750	95.0	90.9	-88.4	7/9/2015	11.12	0.02	-0.01	
6206	PK-P60	200	18	3	2.5	13.875	0.750	94.0	91.4	-88.9	7/8/2015	11.12	0.27	0.00	
6207	PK-P60	200	18	3	2.5	13.875	0.750	95.0	90.2	-87.7	7/8/2015	11.12	0.13	-0.13	
6208	PK-P58	200	18	3	2.5	14.000	0.820	95.0	88.8	-86.3	7/15/2015	12.12	0.12	0.01	
6209	PM-P58	200	18	3	2.5	14.000	0.820	101.0	90.3	-87.8	7/14/2015	11.13	0.31	-0.23	
6210	PM-P58	200	18	3	2.5	14.000	0.820	95.0	91.8	-89.3	7/14/2015	11.14	-0.07	-0.07	
6211	PM-P58	200	18	3	2.5	14.000	0.820	105.0	88.8	-86.3	7/14/2015	11.13	-0.27	-0.34	
6212	PH-P65	200	18	3	2.5	14.000	0.820	105.0	80.2	-77.7	7/17/2015	12.15	0.51	0.13	
6213	PH-P65	200	18	3	2.5	14.000	0.820	95.0	83.2	-80.7	7/17/2015	12.13	0.17	-0.10	
6214	PJ-P65	200	18	3	1.0	14.000	0.820	105.0	83.2	-82.2	7/16/2015	11.12	0.07	-0.07	
6215	PJ-P65	200	18	3	1.0	14.000	0.820	95.0	82.2	-81.2	7/16/2015	11.14	0.15	0.02	
6216	PK-65	200	18	3	3.0	14	0.82	85.0	79.5	-76.5	10/6/2015	2x12/1"	0.11	-0.25	
6217	PK-65	200	18	3	3.0	14	0.82	85.0	79.5	-76.5	10/7/2015	2x12/1"	0.11	0.07	
6218	PK-65	200	18	3	3.0	14	0.82	85.0	80.0	-77.0	10/6/2015	2x12/1"	0.07	-0.09	
6219	PK-65	200	18	3	3.0	14	0.82	85.0	80.5	-77.5	10/8/2015	2x12/1"	0.09	-0.07	
6220	PK-65	200	18	3	3.0	14	0.82	79.0	78.5	-75.5	10/5/2015	24/1"	0.07	-0.26	18' Follower used
6221	PK-65	200	18	3	3.0	14	0.82	86.0	79.0	-76.0	10/6/2015	2x12/1"	0.10	0.07	
6222	PK-65	200	18	3	3.0	14	0.82	85.0	80.0	-77.0	10/6/2015	2x12/1"	0.02	0.22	
6223	PK-65	200	18	3	3.0	14	0.82	85.0	79.0	-76.0	10/5/2015	2x12/1"	0.07	-0.07	
6224	PK-65	200	18	3	3.0	14	0.82	79.0	79.0	-76.0	10/5/2015	24/1"	-0.11	-0.07	18' Follower used
6225	PK-65	200	18	3	3.0	14	0.82	85.0	80.0	-77.0	10/5/2015	2x12/1"	-0.07	0.07	
6226	PK-65	200	18	3	3.0	14	0.82	90.0	80.0	-77.0	10/5/2015	2x12/1"	0.07	-0.07	
6227	PL-65	200	18	3	2.7	14	0.82	90.0	82.0	-79.3	10/5/2015	2x12/1"	0.36	0.44	
6228	PM-65	200	18	3	2.0	14	0.82	90.0	83.0	-81.0	10/5/2015	2x12/1"	-0.13	-0.31	
6229	PM-65	200	18	3	1.0	14	0.82	90.0	86.0	-85.0	10/3/2015	2x12/1"	-0.07	0.07	
6230	PM-65	200	18	3	0.0	14	0.82	95.0	85.0	-85.0	10/3/2015	2x12/1"	0.07	0.07	
6231	PM-65	200	18	3	0.0	14	0.82	116.0	83.0	-83.0	10/2/2015	2x12/1"	-0.07	-0.07	
6232	PM-65	200	18	3	2.0	14	0.82	90.0	86.0	-84.0	10/5/2015	2x12/1"	0.07	0.07	
6233	PM-65	200	18	3	1.0	14	0.82	90.0	85.0	-84.0	10/3/2015	2x12/1"	0.07	0.07	

TR-5. Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D BOYER  
Signature New York State Professional Engineer License Number 085831 Date



8/31/16

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Pile No	Shear Wall (SW) or Column No	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpi, U O N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
6234	PM-65	200	18	3	0.0	14	0.82	90.0	90.0	-90.0	10/3/2015	2x12/1"	0.07	-0.07	
6235	PM-65	200	18	3	0.0	14	0.82	95.0	85.0	-85.0	10/3/2015	2x12/1"	0.07	-0.07	
6236	PR-65	200	18	3	-3.0	14	0.82	83.0	84	-87.0	10/13/2015	24/1"	0.37	0.10	18' Follower used
6237	PT-65	200	18	3	-3.0	14	0.82	102.0	96.0	-99.0	10/16/2015	24/1"	-0.12	0.10	18' Follower used
6238	PT-P65	200	18	3	1.0	14.000	0.820	116.0	110.1	-109.1	7/15/2015	11, 12	0.06	0.07	
6239	PT-65	200	18	3	-4.5	14	0.82	106.0	105	-109.5	10/9/2015	24/1"	0.07	-0.07	18' Follower used
6240	PT-65	200	18	3	-6.0	14	0.82	108.0	110.0	-116.0	10/8/2015	24/1"	0.11	0.06	18' Follower used
6241	PT-65	200	18	3	-3.0	14	0.82	104.0	94.4	-97.4	10/10/2015	24/1"	-0.07	0.09	
6242	PT-65	200	18	3	-4.0	14	0.82	101.0	105.0	-109.0	10/9/2015	24/1"	0.10	0.07	18' Follower used
6243	PT-65	200	18	3	-5.0	14	0.82	110.0	104.5	-109.5	10/9/2015	2x12/1"	0.07	-0.07	
6244	PT-65	200	18	3	-6.0	14	0.82	110.0	106.0	-114.0	10/8/2015	2x12/1"	-0.07	0.07	
6245	PT-P27	200	18	3	3.5	13.875	0.750	95.5	88.7	-85.2	5/30/2015	11, 12	-0.14	0.11	
6246	PK-P27	200	18	3	3.0	13.875	0.750	95.0	85.7	-82.7	6/6/2015	12, 15	0.15	0.04	Formerly 6137
6247	PK-P27	200	18	3	3.0	13.875	0.750	95.0	91.8	-88.8	6/6/2015	10/0.5'	-0.19	-0.26	Formerly 6133
6248	PK-P27	200	18	3	3.0	13.875	0.750	95.0	84.1	-81.1	6/15/2015	11, 12	0.14	0.26	Formerly 6131
6249	PK-P27	200	18	3	3.0	13.875	0.750	95.0	90.2	-87.2	6/15/2015	11, 13	0.05	0.05	Formerly 6132
6250	PK-P27	200	18	3	3.0	14.000	0.820	95.0	89.2	-86.2	6/16/2015	12, 12	0.08	0.05	Formerly 6134
6251	PK-P27	200	18	3	3.0	14.000	0.820	95.0	89.2	-86.2	6/12/2015	11, 13	0.01	-0.04	Formerly 6135
6252	PK-P27	200	18	3	3.0	14.000	0.820	94.0	88.7	-85.7	6/15/2015	12, 12	-0.01	0.09	Formerly 6136
6253	PT-P23	200	18	3	3.5	14.000	0.820	95.0	92.6	-89.1	6/4/2015	20/0.5'	0.06	0.03	18.6 foot-long follower used
6254	PT-P23	200	18	3	12.0	13.750	0.707	102.4	103.4	-91.4	10/28/2014	11, 12	0.46	-2.21	
6255	PT-P23	200	18	3	3.5	14.000	0.820	94.5	94.5	-91.0	6/5/2015	15/0.5'	-1.16	0.71	18.8-foot-long follower used
6256	PT-P23	200	18	3	3.5	14.000	0.820	95.0	90.2	-86.7	6/5/2015	11, 12	0.26	-0.25	
6257	PT-P23	200	18	3	3.5	14.000	0.820	92.0	88.3	-84.8	5/27/2015	11, 13	1.27	-0.80	
6258	PT-P23	200	18	3	3.5	14.000	0.820	92.0	95.2	-91.7	5/27/2015	15/0.5'	-0.41	2.00	19-foot-long follower used
6259	PT-P23	200	18	3	3.5	14.000	0.820	95.0	88.0	-84.5	5/28/2015	12, 12	1.24	0.13	
6260	PW-P33	200	18	3	2.0	14.000	0.820	116.0	104.1	-102.1	6/15/2015	12, 13	-0.16	0.04	Replacement Pile for Pile No 5292
6261	PW-P40	200	18	3	1.0	14.000	0.820	116.0	118.8	-117.8	6/17/2015	21	-0.34	-0.07	19-foot-long follower used
6262	PK-P60	200	18	3	2.5	14.000	0.820	95.0	88.9	-86.4	7/10/2015	11, 12	0.06	0.15	
6263	PM-P55	200	18	3	2.5	13.875	0.750	101.0	93.3	-90.8	7/3/2015	11, 13	0.12	-0.14	
6264	PM-P55	200	18	3	2.5	13.875	0.750	101.0	95.3	-92.8	7/3/2015	11/0.5'	0.10	-0.11	
6265	PM-P55	200	18	3	2.5	13.875	0.750	94.0	89.0	-86.5	7/3/2015	11, 12	-0.01	0.19	
6266	PM-P55	200	18	3	2.5	13.875	0.750	95.0	91.4	-88.9	7/2/2015	11, 12	0.34	-0.42	22-foot-long follower used
6267	PM-P55	200	18	3	2.5	13.875	0.750	95.0	91.3	-88.8	7/2/2015	12, 12	0.33	0.00	
6268	PM-P55	200	18	3	2.5	14.000	0.820	116.0	90.9	-88.4	7/1/2015	11, 13	0.20	0.07	
6269	PM-P55	200	18	3	2.5	13.875	0.750	95.0	88.2	-85.7	7/2/2015	12, 12	-0.25	-0.06	22-foot-long follower used
6270	PM-P55	200	18	3	2.5	13.875	0.750	95.0	88.1	-85.6	7/6/2015	11, 12	-0.03	0.15	22-foot-long follower used

TR-5: Technical Report  
SUMMARY OF DRIVEN PIPE PILE INSTALLATION  
Proposed 250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D. BOYER  
Signature New York State Professional Engineer Number 085831 Date 8/31/16



- 1 The open-ended pipe piles were driven to an end of driving resistance of at least two subsequent 11 blows per inch, or refusal (i.e. 20 blows per inch, 10 blows per 0.5 inch, 5 blows per 0.25 inch, etc.).
- 2 Deviations from Design Coordinates are provided on a 22 January 2016 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A.
- 3 The Project Structural Engineer's submittal review stamp indicates that as of 20 May 2016 their office has reviewed and approved the driven pile as-built deviations, see last page of Attachment A.
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B.
- 5 Special inspection of all pile welds was performed by 20/20 Inspections, Inc., see TR1 form separately submitted by 20/20 Inspections, Inc.

Pile No.	Shear Wall (SW) or Column No.	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)	Approx. G.S. Elevation (NAVD88) (feet)	Pipe Pile Diameter (in)	Pipe Wall Thickness (in)	Total Pile Length (feet)	Pile Tip Depth below Grade (feet)	Approx. Tip Elevation (NAVD88) (feet)	Date Driven to End of Driving Resistance	End of Driving Resistance (bpl, U.O.N.)	Deviations from Design Coordinates		Remarks
													N/S	E/W	
6271	Hoist Pad	200	18	3	2.5	14 000	0.820	95.0	90.5	-88.0	7/30/2015	12, 12	0.74	0.45	
6272	Hoist Pad	200	18	3	2.5	14 000	0.820	95.0	88.5	-86.0	7/28/2015	11, 16	0.22	0.03	
6273	Hoist Pad	200	18	3	2.5	14 000	0.820	95.0	81.8	-79.3	7/29/2015	12, 12	0.33	0.15	
6274	Hoist Pad	200	18	3	2.5	14 000	0.820	95.0	85.2	-82.7	7/29/2015	12, 12	0.30	0.13	
6275	Hoist Pad	200	18	3	2.5	14 000	0.820	95.0	81.8	-79.3	7/29/2015	12, 12	0.34	0.19	
6300	Column 21	200	18	3	2.0	14 000	0.820	95.0	84.5	-82.5	9/15/2015	11, 12	0.00	-0.12	Formerly Pile 6276



**Driven Pile Installation Summary  
Attachment A**



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX 201-871-8950

DATE: 01/22/16

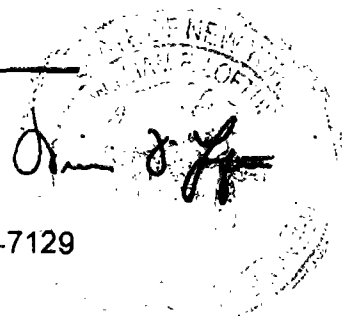
REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Y-7129



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1	327.9112	23.7583	327.66148	24.43707	-0.25	0.68	4/16/2015
2	327.9111	26.2583	328.0771	26.30305	0.17	0.04	4/16/2015
3	325.6611	25.0082	325.61204	24.9679	-0.05	-0.04	4/16/2015
4	327.9329	55.8749	327.51622	55.75406	-0.42	-0.12	4/23/2015
5	327.9329	58.3749	327.69895	58.58844	-0.23	0.21	4/23/2015
6	327.9325	84.5416	327.8143	84.37013	-0.12	-0.17	5/8/2015
7	327.9325	87.0416	327.62395	87.09019	-0.31	0.05	5/8/2015
8	327.9321	114.2083	327.21258	114.14184	-0.72	-0.07	5/13/2015
9	327.9321	116.7083	327.35917	117.08726	-0.57	0.38	5/13/2015
10	327.9316	150.2083	327.18336	150.36151	-0.75	0.15	5/13/2015
11	327.9316	152.7083	327.33497	152.51662	-0.60	-0.19	5/13/2015
12	327.9316	180.9	327.58088	180.83866	-0.35	-0.06	7/7/2015
13	327.9316	183.4	327.43371	183.50918	-0.50	0.11	7/7/2015
14	327.9306	202.5737	327.55915	202.60936	-0.37	0.04	7/7/2015
15	327.9306	205.0737	327.45102	204.87731	-0.48	-0.20	7/7/2015
16	327.9306	222.3236	327.42556	222.04971	-0.51	-0.27	7/7/2015
17	327.9306	224.8236	327.06565	224.98432	-0.86	0.16	7/7/2015
18	327.9363	236.9205	327.9018	237.06279	-0.03	0.14	7/10/2015
19	327.9306	256.4882	327.45099	256.56046	-0.48	0.07	7/10/2015
20	327.9306	258.9882	327.54191	258.78747	-0.39	-0.20	7/10/2015
21	327.9306	271.7746	327.42845	271.61769	-0.50	-0.16	7/10/2015
22	327.9306	274.2746	327.54119	274.29808	-0.39	0.02	7/10/2015
23	327.9306	293.1438	327.36302	293.05528	-0.57	-0.09	7/10/2015
24	327.9306	295.6438	327.39514	295.77455	-0.54	0.13	7/10/2015
25	327.9084	304.3288	327.60167	303.95238	-0.31	-0.38	7/10/2015
26	327.9084	306.8288	327.37268	306.38861	-0.54	-0.44	7/10/2015
27	322.411	31.6249	322.5949	31.49906	0.18	-0.13	4/16/2015
28	322.411	34.1249	322.58738	34.02463	0.18	-0.10	4/16/2015
29	319.911	31.6249	320.27548	31.50314	0.36	-0.12	4/16/2015



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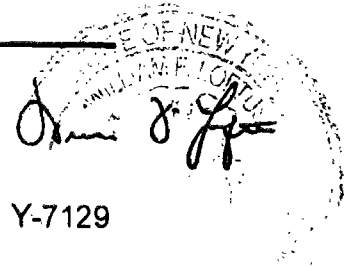
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
30	319.911	34.1249	320.16239	34.09119	0.25	-0.03	4/16/2015
31	322.413	54.625	322.94876	54.76439	0.54	0.14	4/23/2015
32	322.4131	57.125	322.62383	57.35485	0.21	0.23	4/23/2015
33	322.4131	59.625	322.03978	59.91068	-0.37	0.29	4/23/2015
34	319.913	54.6251	320.08452	54.94044	0.17	0.32	4/23/2015
35	319.9131	57.1251	319.99327	57.36986	0.08	0.24	4/23/2015
36	319.9131	59.6251	319.92155	59.60791	0.01	-0.02	4/23/2015
37	322.4126	83.2916	322.24444	83.37131	-0.17	0.08	5/8/2015
38	322.4127	85.7916	322.29264	85.61622	-0.12	-0.18	5/8/2015
39	322.4127	88.2916	322.22491	88.13356	-0.19	-0.16	5/8/2015
40	319.9126	83.2917	319.86266	83.23873	-0.05	-0.05	5/8/2015
41	319.9127	85.7917	320.20162	85.9593	0.29	0.17	5/8/2015
42	319.9127	88.2917	320.01769	88.32983	0.10	0.04	5/8/2015
43	322.41	114.2	322.00979	114.86343	-0.40	0.66	5/13/2015
44	322.41	116.7	322.16066	116.53027	-0.25	-0.17	5/13/2015
45	319.91	114.2	319.92268	114.67793	0.01	0.48	5/13/2015
46	319.91	116.7	320.10742	116.36184	0.20	-0.34	5/13/2015
66	322.41	136.68	322.40504	136.65503	0.00	-0.02	5/13/2015
67	322.41	139.18	322.19321	139.09025	-0.22	-0.09	5/13/2015
68	319.91	136.68	320.06885	136.7765	0.16	0.10	5/13/2015
69	319.91	139.18	319.74192	139.2277	-0.17	0.05	5/13/2015
70	318.9548	150.2082	318.88679	149.92431	-0.07	-0.28	6/1/2015
71	318.9548	152.7082	318.83831	153.4116	-0.12	0.70	6/1/2015
72	316.4548	150.2082	316.21303	150.04918	-0.24	-0.16	6/1/2015
73	316.4548	152.7082	316.22632	153.16515	-0.23	0.46	6/1/2015
95	298.4568	21.6043	298.42966	21.83669	-0.03	0.23	4/16/2015
96	295.9628	21.4318	295.78353	21.56847	-0.18	0.14	4/16/2015
97	297.0546	23.7627	297.17583	23.75881	0.12	0.00	4/16/2015
98	291.74	34.03	291.50474	33.92558	-0.24	-0.10	4/16/2015



# William F. Loftus

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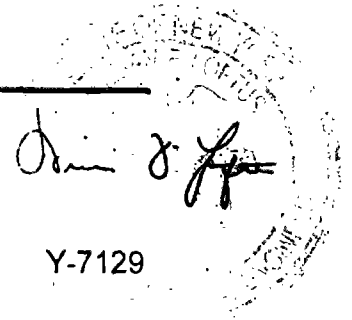
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

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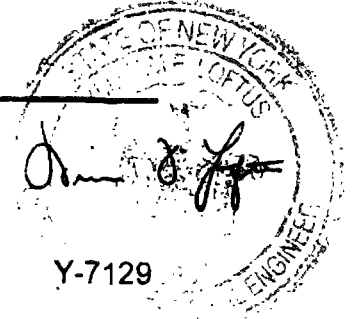
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
99	291.74	36.53	291.68826	36.60372	-0.05	0.07	4/16/2015
100	289.24	34.03	289.05064	34.17991	-0.19	0.15	4/16/2015
101	289.24	36.53	289.02415	36.33022	-0.22	-0.20	4/16/2015
102	293.49	55.29	293.61208	55.08011	0.12	-0.21	4/23/2015
103	293.49	58.96	293.4511	58.64104	-0.04	-0.32	4/23/2015
104	289.83	55.29	289.84825	55.47482	0.02	0.18	4/23/2015
105	289.83	58.96	289.87486	58.86435	0.04	-0.10	4/23/2015
106	294.16	84.54	294.36306	84.33772	0.20	-0.20	4/23/2015
107	294.16	87.04	294.18722	86.94677	0.03	-0.09	4/23/2015
108	291.66	84.54	291.71312	84.34857	0.05	-0.19	4/23/2015
109	291.66	87.04	291.4995	86.88831	-0.16	-0.15	4/23/2015
110	289.16	84.54	289.45225	84.36329	0.29	-0.18	4/23/2015
111	289.16	87.04	289.44319	86.88266	0.28	-0.16	4/23/2015
112	307.0556	108.8387	307.00653	108.46243	-0.05	-0.38	5/13/2015
113	308.8889	112.0142	308.96637	112.02651	0.08	0.01	5/13/2015
114	306.3845	111.3431	306.00668	110.82814	-0.38	-0.51	5/13/2015
115	303.8801	110.672	303.86854	110.29229	-0.01	-0.38	5/13/2015
116	305.7134	113.8475	305.74388	113.71658	0.03	-0.13	5/13/2015
117	268.0422	19.537	267.89355	19.45545	-0.15	-0.08	4/29/2015
118	267.8725	22.0312	267.54917	21.7668	-0.32	-0.26	4/29/2015
119	265.548	19.3673	265.59741	19.56143	0.05	0.19	4/29/2015
120	265.3783	21.8615	265.48589	21.6403	0.11	-0.22	4/29/2015
121	277.9115	35.125	277.95916	35.19437	0.05	0.07	4/23/2015
122	277.9115	37.625	277.9161	37.53078	0.00	-0.09	4/23/2015
123	275.4115	35.125	275.30348	35.17413	-0.11	0.05	4/23/2015
124	275.4115	37.625	275.63983	37.26486	0.23	-0.36	4/23/2015
125	252.8888	28.6832	252.54894	29.03956	-0.34	0.36	6/30/2015
126	254.1388	30.8483	255.48256	30.99716	1.34	0.15	6/30/2015
127	255.3888	33.0134	256.40761	33.94645	1.02	0.93	6/30/2015



# William F. Loftus

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
128	250.7238	29.9332	250.90451	29.49362	0.18	-0.44	6/30/2015
129	251.9737	32.0983	251.74175	32.28581	-0.23	0.19	6/30/2015
130	253.2237	34.2633	253.13068	34.67125	-0.09	0.41	6/30/2015
131	248.5587	31.1831	248.59935	31.35705	0.04	0.17	6/30/2015
132	249.8087	33.3482	249.73801	33.40182	-0.07	0.05	6/30/2015
133	251.0586	35.5133	251.15	35.55	0.09	0.04	7/1/2015
134	260.97	40.85	261.05295	40.7142	0.08	-0.14	4/29/2015
135	262.22	43.02	262.20011	42.78339	-0.02	-0.24	4/29/2015
136	263.47	45.15	263.81762	44.84307	0.35	-0.31	4/29/2015
137	264.81	47.35	264.03716	46.74284	-0.77	-0.61	4/29/2015
138	259.43	43.18	259.30528	42.90608	-0.12	-0.27	4/29/2015
139	260.68	45.35	260.67604	45.06917	0.00	-0.28	4/29/2015
140	261.93	47.51	261.96455	47.19578	0.03	-0.31	4/29/2015
141	256.84	43.23	257.00643	42.99254	0.17	-0.24	4/29/2015
142	258.11	45.39	258.18134	44.79199	0.07	-0.60	4/29/2015
143	259.36	47.56	259.46424	47.37624	0.10	-0.18	4/29/2015
144	260.61	49.72	260.27133	49.85889	-0.34	0.14	4/29/2015
145	273.35	62.28	273.59361	62.58198	0.24	0.30	5/6/2015
146	274.6	64.45	274.94369	64.36541	0.34	-0.08	5/6/2015
147	275.85	66.61	276.13139	66.61566	0.28	0.01	5/6/2015
148	270.5573	62.4503	270.76008	62.71039	0.20	0.26	5/6/2015
149	271.8073	64.6154	272.13267	64.46097	0.33	-0.15	5/6/2015
150	273.0573	66.7805	273.59438	66.80579	0.54	0.03	5/6/2015
151	274.3073	68.9455	274.59318	69.15993	0.29	0.21	5/6/2015
152	269.2338	64.6578	269.26388	64.55026	0.03	-0.11	5/6/2015
153	270.4837	66.8229	270.21103	67.228	-0.27	0.41	5/6/2015
154	271.7337	68.988	271.91388	68.79601	0.18	-0.19	5/6/2015
155	280.17	76.315	280.14	76.22	-0.03	-0.09	5/4/2015
157	282.67	80.6451	282.41	80.34	-0.26	-0.31	5/4/2015



# William F. Loftus

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Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
158	278.8481	78.6475	278.64	78.98	-0.21	0.33	5/4/2015
159	280.0981	80.8126	280.22	80.43	0.12	-0.38	5/4/2015
160	276.27	78.69	276.22	79.02	-0.05	0.33	5/4/2015
161	277.52	80.85	276.99	80.67	-0.53	-0.18	5/4/2015
162	278.77	83.02	278.25	83.13	-0.52	0.11	5/4/2015
163	295.5836	116.1354	295.56925	116.3567	-0.01	0.22	5/13/2015
164	296.8336	118.3005	296.83231	118.41043	0.00	0.11	5/13/2015
165	293.4185	117.3854	293.63499	117.5268	0.22	0.14	5/13/2015
166	294.6685	119.5505	294.50084	119.77718	-0.17	0.23	5/13/2015
167	306.4167	134.8995	306.27997	135.09486	-0.14	0.20	5/13/2015
168	307.6667	137.0646	307.3371	137.20428	-0.33	0.14	5/13/2015
169	304.2516	136.1495	304.10698	136.02167	-0.14	-0.13	5/13/2015
170	305.5016	138.3146	305.17161	138.2884	-0.33	-0.03	5/13/2015
171	310.3586	142.7272	310.16341	142.69456	-0.20	-0.03	6/1/2015
172	311.6086	144.8923	311.11257	145.01636	-0.50	0.12	6/1/2015
173	309.035	144.9347	309.38709	145.08556	0.35	0.15	6/1/2015
197	238.0249	17.4947	238.11305	17.53776	0.09	0.04	7/3/2015
198	237.8552	19.9889	237.85119	20.10199	0.00	0.11	7/3/2015
199	235.5307	17.325	234.99194	17.37709	-0.54	0.05	7/3/2015
200	235.361	19.8192	235.46396	19.93517	0.10	0.12	7/3/2015
201	242.92	34.24	242.87199	34.13529	-0.05	-0.10	6/30/2015
202	245.17	38.14	244.88511	38.08058	-0.28	-0.06	6/30/2015
203	242.96	36.82	243.11657	36.73579	0.16	-0.08	6/30/2015
204	240.75	35.49	240.87752	35.15703	0.13	-0.33	6/30/2015
205	243	39.39	243.37359	39.31174	0.37	-0.08	6/30/2015
206	240.79	38.07	241.17745	38.02934	0.39	-0.04	6/30/2015
207	238.59	36.74	238.53885	37.00766	-0.05	0.27	6/30/2015
208	240.84	40.64	240.92717	40.26493	0.09	-0.38	6/30/2015
209	238.63	39.32	238.97362	39.19868	0.34	-0.12	6/30/2015



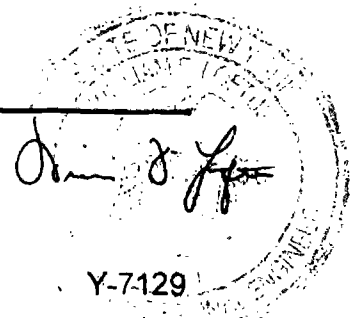
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
210	236.42	37.99	236.63436	38.0625	0.21	0.07	6/30/2015
211	238.67	41.89	238.7802	42.13531	0.11	0.25	6/30/2015
212	250.7403	47.6289	250.43581	46.98754	-0.30	-0.64	7/3/2015
213	252.9903	51.5261	253.32766	51.87941	0.34	0.35	7/3/2015
214	248.5328	46.3054	248.6004	46.24816	0.07	-0.06	7/3/2015
215	250.7828	50.2025	250.7377	50.36545	-0.05	0.16	7/3/2015
216	253.0327	54.0997	253.40747	53.8522	0.37	-0.25	7/3/2015
217	248.5752	48.8789	249.15556	49.34571	0.58	0.47	7/3/2015
218	250.8252	52.7761	251.07922	52.88421	0.25	0.11	7/3/2015
219	246.3677	47.5553	246.32706	47.38414	-0.04	-0.17	7/3/2015
220	248.6177	51.4525	249.18411	51.28279	0.57	-0.17	7/3/2015
221	250.8676	55.3496	250.91185	55.41462	0.04	0.07	7/3/2015
222	246.4102	50.1289	246.72446	49.50707	0.31	-0.62	7/3/2015
223	248.6601	54.026	249.70714	53.66398	1.05	-0.36	7/3/2015
224	244.2027	48.8053	243.82668	48.84937	-0.38	0.04	7/3/2015
225	246.4526	52.7024	246.6682	52.45149	0.22	-0.25	7/3/2015
226	248.7025	56.5996	247.76492	56.86674	-0.94	0.27	7/3/2015
227	244.2451	51.3789	244.33172	51.38126	0.09	0.00	7/3/2015
228	246.495	55.276	246.90329	55.20423	0.41	-0.07	7/3/2015
229	263.1567	69.1354	264.20271	69.23521	1.05	0.10	6/30/2015
230	265.4066	73.0325	265.57263	73.36001	0.17	0.33	6/30/2015
231	260.9492	67.8118	261.26	67.83516	0.31	0.02	6/30/2015
232	263.1991	71.7089	263.25255	71.79789	0.05	0.09	6/30/2015
233	265.4491	75.6061	265.42073	75.4465	-0.03	-0.16	6/30/2015
234	260.9916	70.3853	262.33765	70.59685	1.35	0.21	6/30/2015
235	263.2415	74.2825	263.35303	74.36581	0.11	0.08	6/30/2015
236	258.7841	69.0617	258.73123	69.0684	-0.05	0.01	6/30/2015
237	261.034	72.9589	260.99435	73.08503	-0.04	0.13	6/30/2015
238	263.284	76.856	263.11357	76.70841	-0.17	-0.15	6/30/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
239	258.8265	71.6353	258.88816	71.90303	0.06	0.27	6/30/2015
240	261.0765	75.5325	261.43259	75.34895	0.36	-0.18	6/30/2015
241	256.619	70.3117	257.24749	71.24957	0.63	0.94	6/30/2015
242	258.8689	74.2089	258.45967	74.2184	-0.41	0.01	6/30/2015
243	261.1189	78.106	260.98761	78.23701	-0.13	0.13	6/30/2015
244	256.6614	72.8853	256.64652	72.85047	-0.01	-0.03	6/30/2015
245	258.9114	76.7824	259.14796	77.43031	0.24	0.65	6/30/2015
246	270.83	82.6	270.84949	82.38517	0.02	-0.21	6/15/2015
247	273.05	86.49	273.05152	86.47769	0.00	-0.01	6/15/2015
248	270.88	85.17	270.72283	85.78501	-0.16	0.62	6/15/2015
249	268.67	83.85	268.29903	83.84453	-0.37	-0.01	6/15/2015
250	270.92	87.74	270.54282	87.77393	-0.38	0.03	6/15/2015
251	268.71	86.42	268.46567	86.45374	-0.24	0.03	6/15/2015
252	266.5	85.1	266.37646	85.46095	-0.12	0.36	6/15/2015
253	268.75	88.99	268.6006	88.73159	-0.15	-0.26	6/15/2015
254	266.55	87.67	266.46393	87.64961	-0.09	-0.02	6/15/2015
255	264.34	86.35	264.4695	86.75318	0.13	0.40	6/15/2015
256	266.59	90.24	266.3919	89.93001	-0.20	-0.31	6/15/2015
257	276.4102	94.2076	276.42412	94.09977	0.01	-0.11	6/15/2015
258	276.4102	96.7076	276.14909	96.62834	-0.26	-0.08	6/15/2015
259	273.9102	94.2076	273.92676	93.81159	0.02	-0.40	6/15/2015
260	273.9102	96.7076	273.92335	96.36152	0.01	-0.35	6/15/2015
261	262.4102	95.4574	262.43245	95.34838	0.02	-0.11	6/15/2015
262	259.9102	95.4573	259.66157	95.41953	-0.25	-0.04	6/15/2015
263	277.6597	114.2098	277.57	114.02	-0.09	-0.19	6/15/2015
264	277.6598	116.7098	277.52	116.64	-0.14	-0.07	6/15/2015
265	275.1597	114.2099	275.28	114.13	0.12	-0.08	6/15/2015
266	275.1598	116.7099	275.50	116.59	0.34	-0.12	6/15/2015
267	272.6597	114.21	272.71	114.11	0.05	-0.10	6/15/2015





# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

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DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
268	272.6598	116.71	272.87	116.42	0.21	-0.29	6/15/2015
269	262.9933	108.9574	262.97381	108.62627	-0.02	-0.33	6/15/2015
270	262.9933	112.624	262.98493	113.00611	-0.01	0.38	5/6/2015
271	261.16	110.7907	260.81228	110.93116	-0.35	0.14	6/15/2015
272	259.3267	108.9573	259.19207	109.14934	-0.13	0.19	5/6/2015
273	259.3266	112.624	259.43506	112.83104	0.11	0.21	5/6/2015
274	298.4117	148.9724	298.04028	148.88054	-0.37	-0.09	6/1/2015
275	298.4118	151.4724	298.26616	151.82258	-0.15	0.35	6/1/2015
276	298.4118	153.9724	298.18122	153.71568	-0.23	-0.26	6/1/2015
277	295.9117	148.9724	296.01647	148.89905	0.10	-0.07	6/1/2015
278	295.9118	151.4724	296.03856	151.81747	0.13	0.35	6/1/2015
279	295.9118	153.9724	295.94509	153.95608	0.03	-0.02	6/1/2015
321	279.1596	137.4409	279.19975	137.26679	0.04	-0.17	6/1/2015
322	275.4096	135.2758	275.34755	135.02837	-0.06	-0.25	6/1/2015
323	275.4096	139.6059	275.3533	139.80317	-0.06	0.20	6/1/2015
324	258.143	134.9573	258.19324	135.01149	0.05	0.05	9/1/2015
325	260.308	138.7073	260.17498	138.5806	-0.13	-0.13	9/1/2015
326	255.9779	138.7073	256.56273	138.5472	0.58	-0.16	9/1/2015
327	279.1592	164.2055	279.19374	164.2717	0.03	0.07	9/4/2015
328	279.1592	166.7055	279.13967	166.81378	-0.02	0.11	9/4/2015
329	276.6592	164.2054	276.77077	164.15891	0.11	-0.05	9/4/2015
330	276.6592	166.7054	276.66633	166.87407	0.01	0.17	9/4/2015
331	274.1592	164.2054	274.10659	164.19223	-0.05	-0.01	9/4/2015
332	274.1592	166.7054	274.16933	166.93507	0.01	0.23	9/4/2015
333	259.4114	162.9573	259.71332	162.76265	0.30	-0.19	7/17/2015
334	259.4113	165.4573	259.77524	164.85263	0.36	-0.60	7/17/2015
335	259.4113	167.9573	259.31692	167.59401	-0.09	-0.36	7/17/2015
336	256.9114	162.9573	256.71714	162.80042	-0.19	-0.16	7/17/2015
337	256.9113	165.4573	257.01745	165.22471	0.11	-0.23	7/17/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
338	256.9113	167.9573	257.21822	167.75464	0.31	-0.20	7/17/2015
339	267.4328	176.607	267.71105	176.58241	0.28	-0.02	7/17/2015
340	267.2603	179.1011	267.4769	179.01864	0.22	-0.08	7/17/2015
387	212.4835	54.0271	212.7225	53.96012	0.24	-0.07	8/10/2015
388	208.1534	56.5271	208.40145	56.18573	0.25	-0.34	8/10/2015
392	227.8	59.05	227.38833	59.00689	-0.41	-0.04	8/3/2015
393	225.63	60.3	224.97668	59.94118	-0.65	-0.36	8/3/2015
394	223.47	61.55	223.15953	61.11447	-0.31	-0.44	8/3/2015
395	229.05	61.22	228.50432	60.90887	-0.55	-0.31	8/3/2015
396	226.88	62.47	226.58543	62.01717	-0.29	-0.45	8/3/2015
397	224.72	63.72	225.18231	63.85521	0.46	0.14	8/3/2015
398	230.3	63.38	230.80095	63.45708	0.50	0.08	8/3/2015
399	228.13	64.63	228.09082	64.57032	-0.04	-0.06	8/3/2015
400	225.97	65.88	226.34188	65.67629	0.37	-0.20	8/3/2015
401	231.55	65.55	231.57704	65.79494	0.03	0.24	8/3/2015
402	229.38	66.8	229.51016	67.03563	0.13	0.24	8/3/2015
403	227.22	68.05	227.36203	68.01445	0.14	-0.04	8/3/2015
404	232.8	67.71	232.68176	67.74043	-0.12	0.03	8/3/2015
405	230.63	68.96	230.50962	68.9173	-0.12	-0.04	8/3/2015
406	228.47	70.21	228.45464	70.25959	-0.02	0.05	8/3/2015
407	234.05	69.88	234.14552	70.10926	0.10	0.23	8/3/2015
408	231.88	71.13	231.98083	71.33934	0.10	0.21	8/3/2015
409	229.72	72.38	229.87819	72.46697	0.16	0.09	8/3/2015
410	234.21	72.67	233.93076	72.91816	-0.28	0.25	8/3/2015
411	232.05	73.92	232.17349	74.19972	0.12	0.28	8/3/2015
412	235.46	74.83	235.56176	74.54007	0.10	-0.29	8/3/2015
413	233.3	76.08	233.09817	76.20069	-0.20	0.12	8/3/2015
414	237.79	76.37	237.77727	76.96001	-0.01	0.59	8/3/2015
415	235.63	77.62	236.04842	78.00072	0.42	0.38	8/3/2015



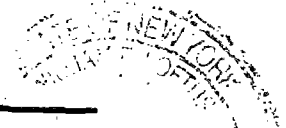
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



Y-7129

DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
416	233.46	78.87	233.42563	78.6275	-0.03	-0.24	8/3/2015
417	239.04	78.53	238.58146	78.97579	-0.46	0.45	8/3/2015
418	236.88	79.78	236.82969	80.11416	-0.05	0.33	8/3/2015
419	234.71	81.03	234.88876	81.23326	0.18	0.20	8/3/2015
420	240.29	80.7	240.80202	80.31762	0.51	-0.38	8/3/2015
421	238.13	81.95	237.90082	82.0651	-0.23	0.12	8/3/2015
422	235.96	83.2	236.22029	83.74698	0.26	0.55	8/3/2015
423	241.54	82.86	241.56146	83.83246	0.02	0.97	8/3/2015
424	239.38	84.11	239.44456	84.20961	0.06	0.10	8/3/2015
425	237.21	85.36	237.62374	85.39758	0.41	0.04	8/3/2015
426	242.79	85.03	242.71294	85.42297	-0.08	0.39	8/3/2015
427	240.63	86.28	240.19367	86.21947	-0.44	-0.06	8/3/2015
428	238.46	87.53	238.25061	87.42249	-0.21	-0.11	8/3/2015
429	244.04	87.19	243.44768	87.73671	-0.59	0.55	8/3/2015
430	241.88	88.44	241.9267	88.93619	0.05	0.50	8/3/2015
431	239.71	89.69	240.0325	89.88288	0.32	0.19	8/3/2015
432	246.16	110.6238	246.16046	110.7102	0.00	0.09	5/6/2015
433	247.4099	112.8738	247.37704	112.88095	-0.03	0.01	5/6/2015
434	244.9099	112.8738	245.02154	113.01402	0.11	0.14	5/6/2015
435	241.493	135.6237	241.20458	135.9077	-0.29	0.28	10/6/2015
436	241.4929	139.2904	241.42709	139.37758	-0.07	0.09	10/6/2015
437	239.6596	137.4571	239.65624	137.23877	0.00	-0.22	10/6/2015
438	237.8263	135.6237	237.49287	135.80048	-0.33	0.18	10/6/2015
439	237.8262	139.2904	237.96712	139.49123	0.14	0.20	10/6/2015
440	241.4926	163.6237	241.5924	163.38446	0.10	-0.24	10/6/2015
441	241.4925	167.2904	241.6988	167.2764	0.21	-0.01	10/6/2015
442	239.6592	165.4571	239.5502	165.33856	-0.11	-0.12	10/6/2015
443	237.8259	163.6237	237.84004	163.68896	0.01	0.07	10/6/2015
444	237.8259	167.2904	237.67904	167.30161	-0.15	0.01	10/6/2015



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ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
445	248.8906	176.5774	248.84161	176.52021	-0.05	-0.06	8/3/2015
446	246.7323	175.1752	246.42597	175.33186	-0.31	0.16	8/3/2015
447	246.5597	177.6692	246.23385	177.46406	-0.33	-0.21	8/3/2015
475	174.699	13.15	174.45114	13.48277	-0.25	0.33	8/3/2015
476	174.6	15.64	173.91447	15.0744	-0.69	-0.57	8/3/2015
477	172.27	12.98	171.93324	13.00451	-0.34	0.02	8/3/2015
478	172.1	15.47	172.15186	14.82761	0.05	-0.64	8/3/2015
479	180.0694	25.4781	179.8964	25.95611	-0.17	0.48	8/3/2015
480	179.1559	28.8936	179.34649	29.10395	0.19	0.21	8/3/2015
481	192.0054	46.1292	192.62455	46.07609	0.62	-0.05	8/3/2015
482	191.0919	49.5447	191.10394	50.13805	0.01	0.59	8/3/2015
483	201.92	59.07	201.99594	59.29117	0.08	0.22	8/10/2015
484	203.17	61.23	203.33294	60.61616	0.16	-0.61	8/10/2015
485	204.42	63.4	204.3467	63.30966	-0.07	-0.09	8/10/2015
486	200.6	61.28	200.13341	61.27996	-0.47	0.00	8/10/2015
487	201.85	63.44	201.48537	63.86765	-0.36	0.43	8/10/2015
488	198.02	61.32	197.99841	61.60593	-0.02	0.29	8/10/2015
489	199.27	63.48	199.3097	63.40414	0.04	-0.08	8/10/2015
490	200.52	65.65	199.93799	65.60687	-0.58	-0.04	8/10/2015
491	196.7	63.53	196.61471	63.54034	-0.09	0.01	8/10/2015
492	197.95	65.69	197.68052	66.1638	-0.27	0.47	8/10/2015
493	194.13	63.57	194.18366	63.69242	0.05	0.12	8/10/2015
494	195.38	65.73	195.23403	65.90613	-0.15	0.18	8/10/2015
495	196.63	67.9	196.5503	67.84929	-0.08	-0.05	8/10/2015
496	207.5629	70.3434	207.28303	70.20089	-0.28	-0.14	8/10/2015
497	209.8129	74.2406	209.27566	73.80486	-0.54	-0.44	8/10/2015
498	205.3554	69.0198	205.16574	68.84964	-0.19	-0.17	8/10/2015
499	207.6054	72.917	207.3754	72.86551	-0.23	-0.05	8/10/2015
500	209.8553	76.8141	209.39917	77.21611	-0.46	0.40	8/10/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

*William F. Loftus*  
Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
501	205.3978	71.5934	205.38027	71.61209	-0.02	0.02	8/10/2015
502	207.6478	75.4905	207.45705	75.75476	-0.19	0.26	8/10/2015
503	203.1903	70.2698	203.024	70.62143	-0.17	0.35	8/10/2015
504	205.4403	74.1669	204.89203	73.78983	-0.55	-0.38	8/10/2015
505	207.6902	78.0641	207.78	77.96	0.09	-0.10	8/13/2015
506	203.2328	72.8434	203.00207	73.26294	-0.23	0.42	8/10/2015
507	205.4827	76.7405	205.22282	76.01608	-0.26	-0.72	8/10/2015
508	201.0252	71.5198	200.6978	71.35845	-0.33	-0.16	8/10/2015
509	203.2752	75.4169	202.98743	75.619	-0.29	0.20	8/10/2015
510	205.5251	79.3141	205.13831	79.19441	-0.39	-0.12	8/10/2015
511	201.0677	74.0933	200.61825	74.32642	-0.45	0.23	8/10/2015
512	203.3176	77.9905	203.36856	77.65566	0.05	-0.33	8/10/2015
513	222.01	93.37	221.49464	93.64434	-0.52	0.27	9/1/2015
514	223.26	95.53	222.80651	95.52259	-0.45	-0.01	9/1/2015
515	224.51	97.7	224.0451	98.02361	-0.46	0.32	9/1/2015
516	225.76	99.86	225.73916	99.55026	-0.02	-0.31	9/1/2015
517	219.84	94.62	219.3728	94.88584	-0.47	0.27	9/1/2015
518	221.1	96.78	220.78513	96.82498	-0.31	0.04	9/1/2015
519	222.35	98.95	222.6	98.7	0.25	-0.25	9/1/2015
520	223.6	101.11	223.46409	100.80096	-0.14	-0.31	9/1/2015
521	218.52	96.86	217.8833	97.0849	-0.64	0.22	9/1/2015
522	219.77	98.99	219.17734	98.84163	-0.59	-0.15	9/1/2015
523	221.02	101.15	220.4151	100.97721	-0.60	-0.17	9/1/2015
524	215.92	96.87	216.04616	97.21542	0.13	0.35	9/1/2015
525	217.2	99.03	216.76796	99.19955	-0.43	0.17	9/1/2015
526	218.45	101.2	218.23984	101.38533	-0.21	0.19	9/1/2015
527	219.7	103.36	219.5	103	-0.20	-0.36	9/1/2015
528	213.78	98.12	213.76283	98.16961	-0.02	0.05	9/1/2015
529	215.03	100.28	214.81722	100.01491	-0.21	-0.27	9/1/2015



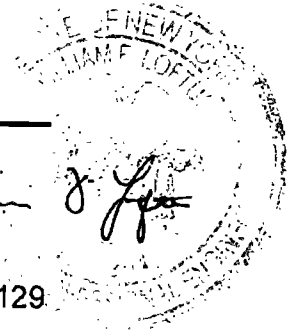
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

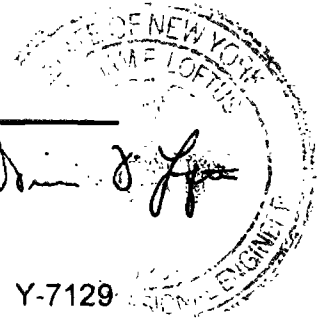
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
530	216.28	102.45	215.92405	102.35822	-0.36	-0.09	9/1/2015
531	217.53	104.61	217.25	104.5	-0.28	-0.11	9/1/2015
532	228.56	106.71	228.58641	106.49263	0.03	-0.22	9/1/2015
533	229.81	108.88	229.4986	108.81957	-0.31	-0.06	9/1/2015
534	226.35	105.39	226.20512	105.25323	-0.14	-0.14	9/1/2015
535	229.85	111.45	230.05099	111.46101	0.20	0.01	9/1/2015
536	226.4	107.96	226.45567	107.91096	0.06	-0.05	9/1/2015
537	227.65	110.13	227.75664	110.08047	0.11	-0.05	9/1/2015
538	224.19	106.64	224.07826	106.28932	-0.11	-0.35	9/1/2015
539	227.69	112.7	227.44453	112.54761	-0.25	-0.15	9/1/2015
540	224.23	109.21	224.13452	109.35724	-0.10	0.15	9/1/2015
541	225.48	111.38	225.36101	110.95268	-0.12	-0.43	9/1/2015
542	222.02	107.89	221.65242	107.90959	-0.37	0.02	9/1/2015
543	225.52	113.95	225.41119	113.72662	-0.11	-0.22	9/1/2015
544	222.07	110.46	221.79909	109.91483	-0.27	-0.55	9/1/2015
545	223.32	112.63	223.11951	112.39854	-0.20	-0.23	9/1/2015
546	231.8654	129.2899	231.91424	129.36484	0.05	0.07	10/8/2015
547	231.6928	131.7839	231.53107	131.91809	-0.16	0.13	10/8/2015
548	231.5203	134.2779	231.4636	134.41592	-0.06	0.14	10/8/2015
549	229.3713	129.1173	229.36693	129.23714	0.00	0.12	10/8/2015
550	229.1988	131.6114	229.34386	131.79029	0.15	0.18	10/8/2015
551	229.0263	134.1054	229.09314	134.26439	0.07	0.16	10/8/2015
552	231.1148	156.8866	231.33023	156.74185	0.22	-0.14	10/6/2015
553	231.1149	159.3866	230.88442	158.92714	-0.23	-0.46	10/6/2015
554	228.6148	156.8867	228.5518	156.73964	-0.06	-0.15	10/6/2015
555	228.6149	159.3867	228.33762	158.91017	-0.28	-0.48	10/6/2015
556	226.1148	156.8868	226.00715	156.7802	-0.11	-0.11	10/6/2015
557	226.1149	159.3868	225.91722	159.25328	-0.20	-0.13	10/6/2015
558	228.94	175.19	228.826	175.114	-0.11	-0.08	9/1/2015



# William F. Loftus

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ENGLEWOOD CLIFFS, NJ 07632  
OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
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SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
559	226.78	173.79	226.787	173.968	0.01	0.18	9/1/2015
560	226.61	176.29	226.901	176.562	0.29	0.27	9/1/2015
594	154.81	11.78	154.1041	12.42392	-0.71	0.64	9/1/2015
595	154.64	14.28	154.76271	14.72316	0.12	0.44	9/1/2015
596	152.32	11.61	152.3575	11.95919	0.04	0.35	9/1/2015
597	152.15	14.11	151.50317	14.38042	-0.65	0.27	9/1/2015
598	159.8955	25.2947	160.41457	25.59058	0.52	0.30	9/1/2015
599	157.405	25.5126	157.3587	25.67074	-0.05	0.16	9/1/2015
600	158.8463	27.6451	159.30347	28.17386	0.46	0.53	9/1/2015
609	141.8792	31.574	141.9	31.4	0.02	-0.17	9/1/2015
610	143.13	33.74	143	34	-0.13	0.26	9/1/2015
611	144.3791	35.9042	144.56555	36.12636	0.19	0.22	9/1/2015
612	139.3056	31.6165	139.5	31.25	0.19	-0.37	9/1/2015
613	141.8056	35.9466	142.30642	36.11172	0.50	0.17	9/1/2015
614	143.0555	38.1117	143.24965	38.43788	0.19	0.33	9/1/2015
615	137.1406	32.8665	137	33.08	-0.14	0.21	9/1/2015
616	138.3905	35.0315	138	34.75	-0.39	-0.28	9/1/2015
617	140.8905	39.3617	141.52313	39.6341	0.63	0.27	9/1/2015
618	135.817	35.074	135.75	34.85	-0.07	-0.22	9/1/2015
619	137.07	37.24	137.25	37	0.18	-0.24	9/1/2015
620	138.3169	39.4041	138.29791	39.77943	-0.02	0.38	9/1/2015
636	149.9538	44.8101	150.25	44.5	0.30	-0.31	9/1/2015
637	151.2	46.97	151	46.75	-0.20	-0.22	9/1/2015
638	152.4537	49.1402	152.15	49.37	-0.30	0.23	9/1/2015
639	147.3802	44.8525	146.82475	44.9063	-0.56	0.05	9/1/2015
640	148.6302	47.0176	148.80323	46.92432	0.17	-0.09	9/1/2015
641	149.8802	49.1826	149.88	49	0.00	-0.18	9/1/2015
642	151.1301	51.3477	151.459	51.305	0.33	-0.04	8/27/2015
643	145.2151	46.1025	145.26251	46.40909	0.05	0.31	9/1/2015



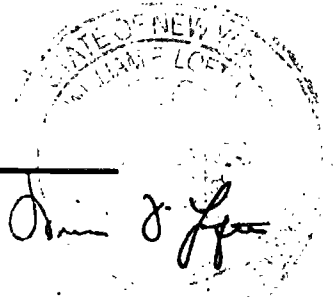
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16

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SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
644	146.4651	48.2675	146.26953	48.19147	-0.20	-0.08	9/1/2015
645	147.7151	50.4326	147.6898	50.38785	-0.03	-0.04	9/1/2015
646	148.965	52.5977	149.07821	52.76642	0.11	0.17	9/1/2015
647	143.8915	48.31	143.70019	48.5204	-0.19	0.21	9/1/2015
648	145.14	50.47	145.07541	50.87846	-0.06	0.41	9/1/2015
649	146.3915	52.6401	145.96381	53.13727	-0.43	0.50	9/1/2015
650	206.6277	154.7757	206.76849	154.92475	0.14	0.15	8/3/2015
651	206.3747	158.4336	206.19822	158.49406	-0.18	0.06	8/3/2015
652	202.9698	154.5227	203.06842	154.67281	0.10	0.15	8/3/2015
653	202.7167	158.1806	202.61195	158.24944	-0.10	0.07	8/3/2015
654	207.5758	172.4666	207.4843	172.79407	-0.09	0.33	11/16/2015
655	207.4033	174.9607	207.25	175	-0.15	0.04	11/13/2015
711	105.0602	8.8081	105.35	9.25	0.29	0.44	9/10/2015
712	102.5662	8.6356	102.67	9.30	0.10	0.66	9/10/2015
713	109.55	27.91	109.50559	27.98044	-0.04	0.07	9/4/2015
714	107.38	29.16	107.6588	28.7523	0.28	-0.41	9/4/2015
715	105.22	30.41	105.40714	30.43979	0.19	0.03	9/4/2015
716	110.8	30.07	110.29278	30.09715	-0.51	0.03	9/4/2015
718	106.47	32.57	106.52309	32.56723	0.05	0.00	9/4/2015
719	112.05	32.24	112.20919	32.42575	0.16	0.19	9/4/2015
720	109.88	33.49	110.35962	33.40821	0.48	-0.08	9/4/2015
721	107.72	34.74	107.55329	34.85075	-0.17	0.11	9/4/2015
722	113.3	34.4	113.3295	34.54473	0.03	0.14	9/4/2015
723	111.13	35.65	110.98603	35.73859	-0.14	0.09	9/4/2015
724	108.97	36.9	109.29613	36.71852	0.33	-0.18	9/4/2015
725	114.55	36.57	114.16767	37.05527	-0.38	0.49	9/4/2015
726	112.38	37.82	112.21389	37.70864	-0.17	-0.11	9/4/2015
727	110.22	39.07	110.29716	39.07685	0.08	0.01	9/4/2015
729	183.605	129.0156	183.04815	128.27874	-0.56	-0.74	11/5/2015





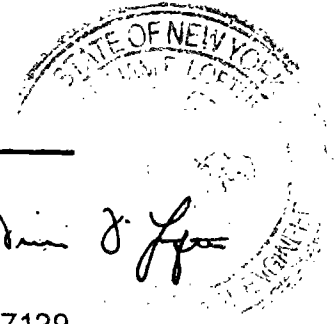
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16

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PROJ: 250 SOUTH STREET

Y-7129

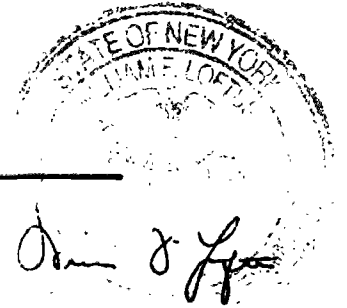
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
730	185.8553	132.9126	185.73169	132.6354	-0.12	-0.28	11/5/2015
731	188.1056	136.8095	188.2136	136.64976	0.11	-0.16	11/5/2015
732	183.6478	131.589	183.24141	131.21966	-0.41	-0.37	11/5/2015
733	185.8977	135.4861	186.10951	135.65504	0.21	0.17	11/5/2015
734	181.4399	130.2656	181.12038	129.48332	-0.32	-0.78	11/5/2015
735	183.6902	134.1625	183.24217	134.00817	-0.45	-0.15	11/5/2015
736	185.9405	138.0595	185.90577	137.75567	-0.03	-0.30	11/5/2015
737	181.4827	132.8389	181.30373	132.14062	-0.18	-0.70	11/5/2015
738	183.7326	136.7361	184.1493	136.83591	0.42	0.10	11/5/2015
739	179.2748	131.5156	179.20081	130.55883	-0.07	-0.96	11/5/2015
740	181.5251	135.4125	181.28433	135.1835	-0.24	-0.23	11/5/2015
741	183.7754	139.3094	184.29844	139.02499	0.52	-0.28	11/5/2015
742	166.7547	123.1537	166.65671	122.49679	-0.10	-0.66	10/28/2015
743	168.0047	125.3187	167.88654	124.86727	-0.12	-0.45	10/28/2015
744	169.2547	127.4838	168.72424	127.00535	-0.53	-0.48	10/28/2015
745	170.5047	129.6488	169.99491	129.37383	-0.51	-0.27	10/28/2015
746	164.5897	124.4037	164.54777	123.77866	-0.04	-0.63	10/28/2015
747	165.8397	126.5687	165.71288	126.39065	-0.13	-0.18	10/28/2015
748	167.0896	128.7337	166.67394	128.01622	-0.42	-0.72	10/28/2015
749	168.3396	130.8988	168.2534	131.04524	-0.09	0.15	10/28/2015
750	162.4246	125.6536	162.06702	124.99838	-0.36	-0.66	10/28/2015
751	163.6746	127.8187	163.60087	127.74595	-0.07	-0.07	10/28/2015
752	164.9246	129.9838	165.27981	130.26152	0.36	0.28	10/28/2015
753	166.1746	132.1488	165.77515	131.73535	-0.40	-0.41	10/28/2015
762	173.66	135.62	173.65745	135.01085	0.00	-0.61	11/5/2015
763	174.91	137.79	175.05176	137.27771	0.14	-0.51	11/5/2015
764	176.16	139.95	176.61467	140.00199	0.45	0.05	11/5/2015
765	177.41	142.12	177.34513	141.73993	-0.06	-0.38	11/5/2015
766	172.3365	137.8306	172.21454	137.85619	-0.12	0.03	11/5/2015



# William F. Loftus

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
767	173.5865	139.9957	173.58447	139.93775	0.00	-0.06	11/5/2015
768	174.8365	142.1608	174.26243	142.46375	-0.57	0.30	11/5/2015
769	169.76	137.87	169.46976	137.44981	-0.29	-0.42	11/5/2015
770	171.01	140.04	170.95575	139.59759	-0.05	-0.44	11/5/2015
771	172.04	142.32	171.41167	142.38179	-0.63	0.06	11/5/2015
772	173.51	144.37	173.2162	143.67888	-0.29	-0.69	11/5/2015
800	153.2015	130.1138	153.607	129.754	0.41	-0.36	10/28/2015
801	153.0294	132.6079	153.13632	132.19843	0.11	-0.41	10/28/2015
802	150.7074	129.9417	150.91587	129.67129	0.21	-0.27	10/28/2015
803	150.5353	132.4358	150.52661	132.02219	-0.01	-0.41	10/28/2015
804	151.3993	156.1667	151.25	156.37	-0.15	0.20	11/13/2015
805	151.2272	158.6608	151	158.5	-0.23	-0.16	11/13/2015
806	148.9053	155.9946	148.45	155.75	-0.46	-0.24	11/13/2015
807	148.7332	158.4887	148.85	158.35	0.12	-0.14	11/13/2015
808	150.703	166.2336	151.11635	166.20982	0.41	-0.02	12/2/2015
809	150.5309	168.7277	150.9645	168.71453	0.43	-0.01	12/2/2015
810	148.2089	166.0615	148.13826	165.95733	-0.07	-0.10	12/2/2015
811	148.0368	168.5556	148.13536	168.35669	0.10	-0.20	12/2/2015
812	139.5465	108.9541	140.94679	108.64342	1.40	-0.31	10/15/2015
813	139.3739	111.4481	141.00896	111.04041	1.64	-0.41	10/15/2015
814	139.401	129.1592	139.89681	128.7277	0.50	-0.43	10/20/2015
815	139.2289	131.6533	139.51637	131.49302	0.29	-0.16	10/20/2015
816	136.907	128.9871	137.34485	128.66795	0.44	-0.32	10/20/2015
817	136.7349	131.4812	137.09694	131.58761	0.36	0.11	10/20/2015
818	138.8164	146.0755	139.05751	146.00011	0.24	-0.08	11/5/2015
819	138.5634	149.7335	138.41094	149.21328	-0.15	-0.52	11/5/2015
820	136.8609	147.778	137.06389	147.8594	0.20	0.08	11/5/2015
821	135.1585	145.8225	135.11851	145.53385	-0.04	-0.29	11/5/2015
822	134.9055	149.4804	135.11747	149.36177	0.21	-0.12	11/5/2015



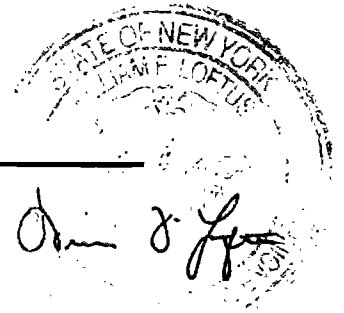
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



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DATE: 01/22/16

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ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
823	136.9875	164.0316	137.01851	163.96785	0.03	-0.06	10/20/2015
824	136.815	166.5256	137.19505	166.10683	0.38	-0.42	10/20/2015
825	136.6425	169.0196	136.80778	169.13151	0.17	0.11	10/20/2015
826	134.4935	163.8591	134.70787	164.43006	0.21	0.57	10/20/2015
827	134.3209	166.3531	134.28356	166.23151	-0.04	-0.12	10/20/2015
828	134.1484	168.8471	134.13797	168.74615	-0.01	-0.10	10/20/2015
855	99.45493	57.5103	99.91359	57.64292	0.46	0.13	9/21/2015
856	100.7049	59.67538	102.78229	58.77556	2.08	-0.90	9/21/2015
857	101.9549	61.84046	102.44293	61.69198	0.49	-0.15	9/21/2015
859	97.28985	58.76027	97.92672	58.63772	0.64	-0.12	9/21/2015
860	98.53982	60.92535	98.92693	61.26475	0.39	0.34	9/21/2015
861	99.78979	63.09043	100.3339	63.3822	0.54	0.29	9/21/2015
863	95.12477	60.01024	95.7124	59.75133	0.59	-0.26	9/21/2015
864	96.37474	62.17532	96.85673	62.34054	0.48	0.17	9/21/2015
865	97.62471	64.3404	98.09263	64.52674	0.47	0.19	9/21/2015
867	92.95969	61.26021	93.17531	60.91846	0.22	-0.34	9/21/2015
868	94.20966	63.42529	94.71576	63.5558	0.51	0.13	9/21/2015
869	95.45963	65.59037	95.78678	65.4885	0.33	-0.10	9/21/2015
870	104.9665	66.64378	105.70131	66.66848	0.73	0.02	9/21/2015
871	106.2165	68.80886	106.9537	68.80032	0.74	-0.01	9/21/2015
872	107.4664	70.97394	108.37933	70.91823	0.91	-0.06	9/21/2015
873	108.7164	73.13903	109.55921	73.17172	0.84	0.03	9/21/2015
874	109.9664	75.30411	110.11248	75.41139	0.15	0.11	9/21/2015
875	102.8014	67.89375	103.65174	67.72025	0.85	-0.17	9/21/2015
876	104.0514	70.05883	104.91386	70.41319	0.86	0.35	9/21/2015
877	105.3013	72.22391	105.93163	72.55798	0.63	0.33	9/21/2015
878	106.5513	74.389	107.62378	74.25597	1.07	-0.13	9/21/2015
879	107.8013	76.55408	108.13003	76.70963	0.33	0.16	9/21/2015
880	100.6363	69.14372	101.07295	69.19723	0.44	0.05	9/21/2015



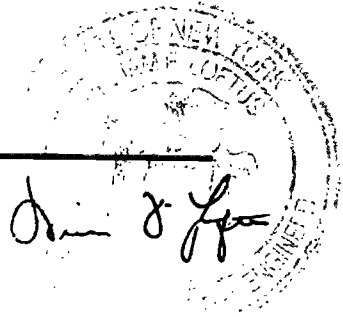
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

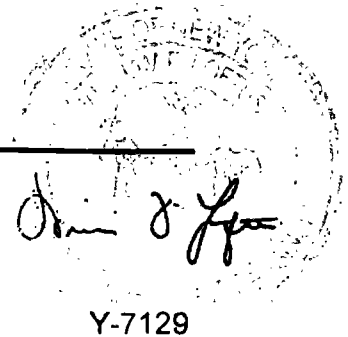
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
881	101.8863	71.3088	102.25961	71.50868	0.37	0.20	9/21/2015
882	103.1363	73.47389	103.78817	73.2778	0.65	-0.20	9/21/2015
883	104.3862	75.63897	105.40077	75.45796	1.01	-0.18	9/21/2015
884	105.6362	77.80405	105.80155	77.47857	0.17	-0.33	9/21/2015
885	98.47124	70.39369	98.99562	70.37575	0.52	-0.02	9/21/2015
886	99.72121	72.55877	99.66761	72.13557	-0.05	-0.42	9/21/2015
887	100.9712	74.72386	101.62684	74.55493	0.66	-0.17	9/21/2015
888	102.2212	76.88894	102.76266	76.8409	0.54	-0.05	9/21/2015
889	103.4711	79.05402	104.47658	79.10189	1.01	0.05	9/21/2015
890	120.8029	92.23772	120.75	92	-0.05	-0.24	10/15/2015
891	122.0525	94.40302	122	94.5	-0.05	0.10	10/15/2015
892	123.3021	96.56831	123.5	96.45	0.20	-0.12	10/15/2015
893	118.2293	92.2797	118	92	-0.23	-0.28	10/15/2015
894	119.4789	94.445	119.75	94.25	0.27	-0.19	10/15/2015
895	120.7285	96.6103	120.5	96.75	-0.23	0.14	10/15/2015
896	121.9781	98.7756	122.15	98.65	0.17	-0.13	10/15/2015
897	116.9053	94.48698	116.75	94.5	-0.16	0.01	10/15/2015
898	118.1549	96.65228	118.2	96.7	0.05	0.05	10/15/2015
899	119.4045	98.81758	119	98.75	-0.40	-0.07	10/15/2015
900	114.3318	94.52897	114.02	94.83	-0.31	0.30	10/15/2015
901	115.5814	96.69427	115.5	96.75	-0.08	0.06	10/15/2015
902	116.8309	98.85957	116.5	99.05	-0.33	0.19	10/15/2015
903	118.0805	101.0249	118	101.25	-0.08	0.23	10/15/2015
904	113.0078	96.73625	113.25	96.5	0.24	-0.24	10/15/2015
905	114.2574	98.90155	114.15	98.7	-0.11	-0.20	10/15/2015
906	115.507	101.0669	115.35	100.85	-0.16	-0.22	10/15/2015
907	127.5532	103.9289	127.5	103.75	-0.05	-0.18	10/15/2015
908	130.0531	108.259	130.25	108.25	0.20	-0.01	10/15/2015
909	124.9796	103.9713	124.9	104.15	-0.08	0.18	10/15/2015



# William F. Loftus

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120 CHARLOTTE PLACE  
 ENGLEWOOD CLIFFS, NJ 07632  
 OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
 ATTN:  
 SUBJ: Pile Deviations  
 PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

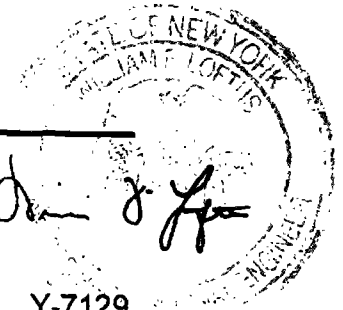
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
910	126.2296	106.1364	126.15	106.33	-0.08	0.19	10/15/2015
911	127.4796	108.3015	127.88	108.25	0.40	-0.05	10/15/2015
912	128.7295	110.4665	128.5	110.5	-0.23	0.03	10/15/2015
913	123.656	106.1788	123.5	105.95	-0.16	-0.23	10/15/2015
914	124.906	108.3439	124.75	108.16	-0.16	-0.18	10/15/2015
915	126.156	110.509	126.55	110.5	0.39	-0.01	10/15/2015
916	121.0825	106.2212	121	106.35	-0.08	0.13	10/15/2015
917	122.3325	108.3863	122.5	108.5	0.17	0.11	10/15/2015
918	123.5824	110.5514	123.75	110.45	0.17	-0.10	10/15/2015
919	124.8324	112.7165	124.75	112.6	-0.08	-0.12	10/15/2015
920	119.7589	108.4288	120.08685	108.15177	0.33	-0.28	10/15/2015
921	122.2588	112.7589	122.72701	112.21363	0.47	-0.55	10/15/2015
922	124.6007	129.3881	124.78056	128.62513	0.18	-0.76	10/20/2015
923	122.4424	127.9858	122.68763	127.54838	0.25	-0.44	10/20/2015
924	122.2698	130.4799	122.371	130.16241	0.10	-0.32	10/20/2015
925	123.2292	145.5824	123.36055	145.53477	0.13	-0.05	11/5/2015
926	123.0571	148.0765	123.29903	147.80156	0.24	-0.27	11/5/2015
927	120.7351	145.4103	120.92189	145.33859	0.19	-0.07	11/5/2015
928	120.563	147.9044	120.94462	147.56857	0.38	-0.34	11/5/2015
980	124.77	77.24	125.5414	76.94002	0.77	-0.30	9/21/2015
981	126.02	79.41	126.91627	78.84496	0.90	-0.57	9/21/2015
982	127.27	81.57	127.92758	81.19123	0.66	-0.38	9/21/2015
983	122.6	78.49	123.26003	78.07566	0.66	-0.41	9/21/2015
984	123.85	80.66	125.1432	79.78956	1.29	-0.87	9/21/2015
985	125.1	82.82	126.15612	82.86725	1.06	0.05	9/21/2015
986	116.98	81.74	117.63917	81.52007	0.66	-0.22	10/8/2015
987	118.23	83.91	119.05951	83.55667	0.83	-0.35	10/8/2015
988	119.48	86.07	120.34866	85.73131	0.87	-0.34	10/8/2015
989	114.82	82.99	115.98924	82.65703	1.17	-0.33	10/8/2015



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120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632  
OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
990	116.07	85.16	116.61981	84.71707	0.55	-0.44	10/15/2015
991	117.31	87.32	118.20954	87.23568	0.90	-0.08	10/15/2015
992	112.65	84.24	113.36262	83.64711	0.71	-0.59	10/15/2015
993	113.9	86.41	114.30894	85.94613	0.41	-0.46	10/15/2015
994	115.15	88.57	116.52348	88.5109	1.37	-0.06	10/15/2015
995	110.48	85.49	111.33402	85.08438	0.85	-0.41	10/15/2015
996	111.74	87.66	112.5991	87.22324	0.86	-0.44	10/15/2015
997	112.99	89.82	113.71154	89.72548	0.72	-0.09	10/15/2015
998	107.33	88.75	107.65518	88.28268	0.33	-0.47	10/15/2015
999	108.59	90.92	108.952	91.21946	0.36	0.30	10/15/2015
1000	104.75	88.8	105.43735	88.50138	0.69	-0.30	10/15/2015
1001	106.01	90.96	106.51876	91.01077	0.51	0.05	10/15/2015
1002	107.25	93.13	107.6134	92.95413	0.36	-0.18	10/15/2015
1003	102.58	90.05	103.04422	89.80074	0.46	-0.25	10/15/2015
1004	103.85	92.21	104.43164	91.74561	0.58	-0.46	10/15/2015
1005	105.09	94.38	105.85218	94.17161	0.76	-0.21	10/15/2015
1006	100.42	91.3	100.81586	90.79563	0.40	-0.50	10/15/2015
1007	101.67	93.47	102.26463	93.38313	0.59	-0.09	10/15/2015
1008	102.92	95.63	103.55468	95.70427	0.63	0.07	10/15/2015
1023	108.8879	144.0053	108.89313	144.06478	0.01	0.06	11/5/2015
1024	108.6349	147.6633	108.84782	147.66037	0.21	0.00	11/5/2015
1025	106.9325	145.7078	107.07237	145.60786	0.14	-0.10	11/5/2015
1026	105.23	143.7523	105.41464	143.55808	0.18	-0.19	11/5/2015
1027	104.977	147.4102	105.13958	147.32185	0.16	-0.09	11/5/2015
1111	58.1811	95.2987	58.45015	95.32715	0.27	0.03	10/5/2015
1112	60.3423	94.0421	60.25	94.25	-0.09	0.21	10/5/2015
1113	62.5035	92.7855	62.3	92.9	-0.20	0.11	10/6/2015
1114	58.2314	97.8721	58	97.75	-0.23	-0.12	10/6/2015
1115	60.4	96.6155	60.25	96.75	-0.15	0.13	10/5/2015



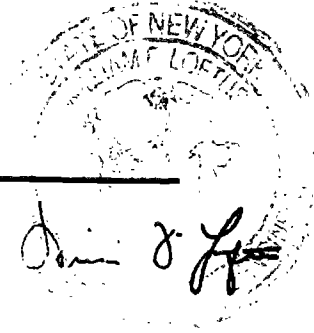
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



Y-7129

DATE: 01/22/16

REVISED 5/16/16

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SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1116	62.5539	95.3589	62.35	95.5	-0.20	0.14	10/5/2015
1117	64.7151	94.1023	64.75	94.15	0.03	0.05	10/5/2015
1118	60.443	99.1889	60.68566	98.98766	0.24	-0.20	10/5/2015
1119	62.608	97.939	62.93196	98.05408	0.32	0.12	10/5/2015
1120	64.7654	96.6757	65.18256	96.61508	0.42	-0.06	10/5/2015
1121	60.4933	101.7623	60.80297	101.74278	0.31	-0.02	10/5/2015
1122	62.6545	100.5057	63.14432	100.64626	0.49	0.14	10/5/2015
1123	64.8158	99.2491	65.04618	99.14103	0.23	-0.11	10/5/2015
1124	66.98	98.01	67.27708	97.78046	0.30	-0.23	10/5/2015
1125	62.7049	103.0791	62.91081	102.91126	0.21	-0.17	10/5/2015
1126	64.858	101.8361	65.17137	101.86108	0.31	0.02	10/5/2015
1127	67.0273	100.5659	67.54645	100.16287	0.52	-0.40	10/5/2015
1128	78.1	114.78	78.4095	114.59866	0.31	-0.18	10/15/2015
1129	79.35	116.94	79.49576	116.72424	0.15	-0.22	10/15/2015
1130	80.6	119.11	80.64089	118.72224	0.04	-0.39	10/15/2015
1131	75.8941	113.4522	76.00832	113.1922	0.11	-0.26	10/15/2015
1132	80.644	121.6795	80.67835	121.65945	0.03	-0.02	5/6/2015
1133	75.9365	116.0257	76.29339	115.76482	0.36	-0.26	10/15/2015
1134	77.1865	118.1908	77.45627	117.96239	0.27	-0.23	10/15/2015
1135	78.4364	120.3559	78.68837	120.136	0.25	-0.22	5/6/2015
1136	73.729	114.7021	74.10197	114.72604	0.37	0.02	10/15/2015
1137	78.4789	122.9294	78.48987	123.21542	0.01	0.29	5/6/2015
1138	73.7714	117.2757	73.83799	117.47057	0.07	0.19	10/15/2015
1139	75.0214	119.4408	74.95474	119.3549	-0.07	-0.09	5/6/2015
1140	76.2714	121.6058	76.22207	121.48867	-0.05	-0.12	5/6/2015
1141	71.5639	115.9521	71.35	115.8	-0.21	-0.15	10/15/2015
1142	76.3138	124.1794	76.00869	124.27462	-0.31	0.10	5/6/2015
1143	71.6063	118.5257	71.54369	118.59432	-0.06	0.07	5/6/2015
1144	72.8563	120.6907	72.88486	120.48757	0.03	-0.20	5/6/2015



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120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

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DATE: 01/22/16  
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SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1145	74.1063	122.8558	73.72162	122.8119	-0.38	-0.04	5/6/2015
1146	69.3988	117.2021	69.63535	116.91936	0.24	-0.28	10/15/2015
1147	74.1487	125.4294	74.12884	125.09131	-0.02	-0.34	10/15/2015
1148	69.44	119.78	69.28021	119.61155	-0.16	-0.17	5/6/2015
1149	70.69	121.94	71.20772	121.64073	0.52	-0.30	10/15/2015
1150	71.94	124.1	72.28415	123.87995	0.34	-0.22	10/15/2015
1151	93.31978	142.0095	93.85229	141.52182	0.53	-0.49	10/20/2015
1152	93.14726	144.5036	93.39763	144.46304	0.25	-0.04	10/20/2015
1153	92.97474	146.9976	93.35791	147.17663	0.38	0.18	10/20/2015
1154	90.82574	141.837	91.21316	141.59213	0.39	-0.24	10/20/2015
1155	90.65322	144.3311	90.81916	144.15135	0.17	-0.18	10/20/2015
1156	90.4807	146.8251	90.7363	146.79732	0.26	-0.03	10/20/2015
1157	88.3317	141.6645	88.90259	141.32349	0.57	-0.34	10/20/2015
1158	88.15918	144.1585	88.57695	143.99663	0.42	-0.16	10/20/2015
1159	87.98666	146.6526	88.35841	146.49866	0.37	-0.15	10/20/2015
1160	85.83766	141.492	86.40945	141.73585	0.57	0.24	10/20/2015
1161	85.66514	143.986	85.76543	143.99063	0.10	0.00	10/20/2015
1162	85.49262	146.4801	85.48926	146.40279	0.00	-0.08	10/20/2015
1165	52.334	101.6474	52.35	101.7	0.02	0.05	10/5/2015
1166	53.584	103.8125	53.6	104	0.02	0.19	10/5/2015
1167	54.8339	105.9776	54.5	105.75	-0.33	-0.23	10/5/2015
1168	49.7604	101.6899	49.75	101.85	-0.01	0.16	10/5/2015
1169	51.0104	103.855	50.8	103.75	-0.21	-0.11	10/5/2015
1170	52.2604	106.02	52	106	-0.26	-0.02	10/5/2015
1171	53.5104	108.1851	53.45	108.02	-0.06	-0.17	10/5/2015
1172	48.4253	103.9041	48.15	103.75	-0.28	-0.15	10/5/2015
1173	49.6868	106.0625	49.69	106	0.00	-0.06	10/5/2015
1174	50.9368	108.2276	50.75	108.15	-0.19	-0.08	10/5/2015
1175	64.07	120.97	64.27296	120.64625	0.20	-0.32	10/15/2015

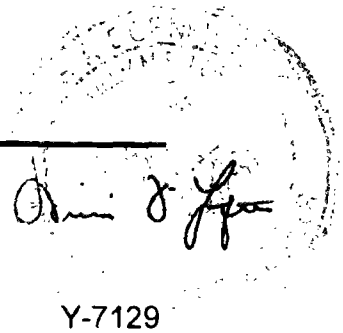




# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632  
OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

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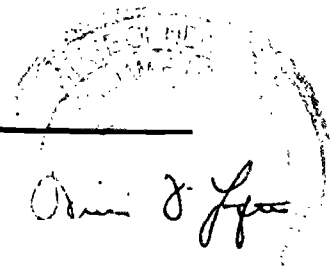
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1176	65.17	123.21	65.73327	123.05777	0.56	-0.15	10/15/2015
1177	66.27	125.46	66.65287	125.38451	0.38	-0.08	10/15/2015
1178	67.36	127.71	67.71068	127.58873	0.35	-0.12	10/15/2015
1179	61.82	122.06	62.39843	121.51757	0.58	-0.54	10/15/2015
1180	62.92	124.31	63.643	123.7989	0.72	-0.51	10/15/2015
1181	64.02	126.56	64.40703	126.54068	0.39	-0.02	10/15/2015
1182	65.12	128.8	65.46573	128.77001	0.35	-0.03	10/15/2015
1183	59.58	123.16	59.78841	122.89803	0.21	-0.26	10/15/2015
1184	60.68	125.41	61.02608	125.12726	0.35	-0.28	10/15/2015
1185	61.77	127.65	62.08929	127.43755	0.32	-0.21	10/15/2015
1187	73.7	140.65	73.58959	140.36199	-0.11	-0.29	10/20/2015
1188	73.52	143.15	74.05209	143.06586	0.53	-0.08	10/20/2015
1189	73.36	145.64	73.61118	145.74194	0.25	0.10	10/20/2015
1190	71.3728	141.7425	71.64603	142.21349	0.27	0.47	10/20/2015
1191	71.2002	144.2365	71.66303	143.89928	0.46	-0.34	10/20/2015
1192	69.21	140.34	69.31459	140.24591	0.10	-0.09	10/20/2015
1193	69	142.83	68.9462	142.52668	-0.05	-0.30	10/20/2015
1194	68.87	145.33	68.83453	145.47634	-0.04	0.15	10/20/2015
1249	31.3267	104.3995	31.68332	104.51771	0.36	0.12	10/5/2015
1250	31.3265	115.9531	31.61396	115.76124	0.29	-0.19	10/20/2015
1251	31.3264	127.54	31.91637	127.7475	0.59	0.21	10/20/2015
1252	61.4832	141.311	61.6601	140.96423	0.18	-0.35	10/20/2015
1253	61.3105	143.8053	61.69461	143.67054	0.38	-0.13	10/20/2015
1254	58.9891	141.1385	59.20065	140.92854	0.21	-0.21	10/20/2015
1255	58.8165	143.6329	59.08876	143.61124	0.27	-0.02	10/20/2015
1256	56.4949	140.9663	56.4836	140.79351	-0.01	-0.17	10/20/2015
1257	56.3226	143.46	56.40909	143.356	0.09	-0.10	10/20/2015
1258	54.0009	140.7939	54.21253	140.57674	0.21	-0.22	10/20/2015
1259	53.8285	143.2875	53.79168	143.18874	-0.04	-0.10	10/20/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632  
OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1260	49.9242	141.7649	50.22627	141.72304	0.30	-0.04	10/20/2015
1261	46.02	140.2419	45.89459	140.066	-0.13	-0.18	10/20/2015
1262	45.8476	142.7354	45.85202	142.93849	0.00	0.20	10/20/2015
1263	39.6365	141.0189	39.90574	140.88915	0.27	-0.13	10/20/2015
1264	36.3088	140.8224	36.33749	140.98443	0.03	0.16	10/20/2015
1265	33.901	139.4035	34.12631	139.01232	0.23	-0.39	10/20/2015
1266	33.7286	141.8969	34.05941	142.07033	0.33	0.17	10/20/2015
1267	31.407	139.2304	32.00049	138.90241	0.59	-0.33	10/20/2015
1268	31.2345	141.7253	32.00319	141.26276	0.77	-0.46	10/20/2015
1301	46.453	53.4635	47.21651	53.23289	0.76	-0.23	10/5/2015
1302	39.93	63.98	40	63.75	0.07	-0.23	10/5/2015
1303	41.63	65.82	42.21727	65.85637	0.59	0.04	10/5/2015
1304	43.33	67.65	44.01392	67.55325	0.68	-0.10	10/5/2015
1305	45.03	69.49	45.43728	69.67714	0.41	0.19	10/5/2015
1306	46.73	71.32	46.5	71	-0.23	-0.32	10/5/2015
1307	48.43	73.15	48.3	73	-0.13	-0.15	10/5/2015
1308	46.59	74.85	46.75	74.99	0.16	0.14	10/5/2015
1309	44.9	73.02	44.85	73	-0.05	-0.02	10/5/2015
1310	43.2	71.18	43	71.37	-0.20	0.19	10/5/2015
1311	41.5	69.35	41.44	69.25	-0.06	-0.10	10/5/2015
1312	39.8	67.51	39.75	67.4	-0.05	-0.11	10/5/2015
1313	38.1	65.68	38.53872	65.68714	0.44	0.01	10/5/2015
1314	36.27	67.38	36.15	67.5	-0.12	0.12	10/5/2015
1315	37.97	69.21	38	69.15	0.03	-0.06	10/5/2015
1316	39.66	71.05	39.5	71.3	-0.16	0.25	10/5/2015
1317	41.36	72.88	41.5	72.75	0.14	-0.13	10/5/2015
1318	43.06	74.72	43.25	74.75	0.19	0.03	10/5/2015
1319	44.76	76.55	45.48411	76.82578	0.72	0.28	10/5/2015
1320	52.1613	81.833	52.56252	81.85628	0.40	0.02	10/5/2015



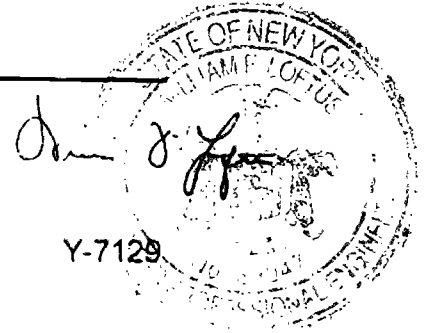
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632  
OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
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PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1321	54.3263	80.583	54.63266	80.75133	0.31	0.17	10/5/2015
1322	56.8999	80.5405	57.17515	80.33962	0.28	-0.20	10/5/2015
1323	50.8377	84.0405	51.14008	84.22373	0.30	0.18	10/5/2015
1324	53.4112	83.998	53.77972	84.04669	0.37	0.05	10/5/2015
1325	55.5763	82.748	55.91833	82.96282	0.34	0.21	10/5/2015
1326	52.0877	86.2055	52.17742	86.26397	0.09	0.06	10/5/2015
1327	58.1498	82.7055	58.66569	82.55379	0.52	-0.15	10/5/2015
1328	56.8263	84.9131	57.19883	85.03489	0.37	0.12	10/5/2015
1329	54.6612	86.1631	55.15687	86.1848	0.50	0.02	10/5/2015
1330	53.3377	88.3706	53.76779	88.54474	0.43	0.17	10/5/2015
1331	59.3998	84.8706	59.81735	84.88492	0.42	0.01	10/5/2015
1332	58.1394	87.0417	58.7803	86.97244	0.64	-0.07	10/5/2015
1333	55.9112	88.3281	56.36577	88.30052	0.45	-0.03	10/5/2015
1334	47.9171	91.1598	47.8042	90.97005	-0.11	-0.19	10/5/2015
1335	46.6662	88.9103	46.97247	88.94471	0.31	0.03	10/5/2015
1336	46.6679	93.4103	46.51073	93.08883	-0.16	-0.32	10/5/2015
1337	45.4171	91.1608	45.61585	91.36279	0.20	0.20	10/5/2015
1338	44.1663	88.9112	44.43165	88.89545	0.27	-0.02	10/5/2015
1339	44.1663	93.4112	44.22987	93.15208	0.06	-0.26	10/5/2015
1340	42.9171	91.1617	43.31475	91.33105	0.40	0.17	10/5/2015
1341	41.6663	88.9122	42.04494	89.04606	0.38	0.13	10/5/2015
1342	41.668	93.4122	41.93382	93.10517	0.27	-0.31	10/5/2015
1343	40.4171	91.1626	40.55408	91.09776	0.14	-0.06	10/5/2015
1344	36.3284	90.5362	36.77293	90.40519	0.44	-0.13	10/5/2015
1345	36.3284	93.0362	36.48485	93.17078	0.16	0.13	10/5/2015
1346	33.8284	90.5362	34.04134	90.52185	0.21	-0.01	10/5/2015
1347	33.8284	93.0362	34.03216	92.90146	0.20	-0.13	10/5/2015
1348	31.3284	90.5362	32.05432	90.44097	0.73	-0.10	10/5/2015
1349	31.3284	93.0362	31.8446	92.76417	0.52	-0.27	10/5/2015



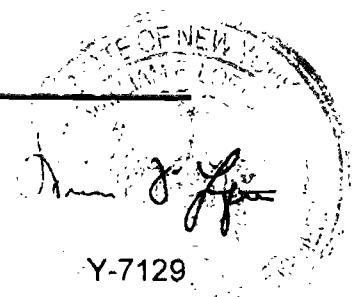
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Y-7129

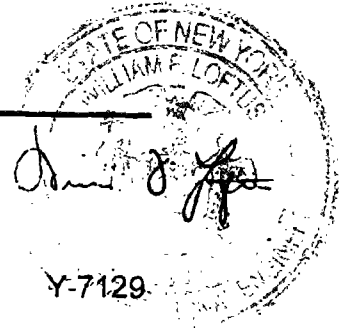
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1401	124.51	53.82	124.4	53.85	-0.11	0.03	9/10/2015
1402	122.34	55.07	122	55.25	-0.34	0.18	9/10/2015
1403	120.18	56.32	120.35	56.3	0.17	-0.02	9/10/2015
1404	124.55	56.39	124.7	56.25	0.15	-0.14	9/10/2015
1405	122.38	57.64	122.25	57.45	-0.13	-0.19	9/10/2015
1406	126.76	57.71	126.7	57.89	-0.06	0.18	9/10/2015
1407	124.59	58.96	124.5	58.9	-0.09	-0.06	9/10/2015
1408	122.43	60.21	122.37	60	-0.06	-0.21	9/10/2015
1409	97.42	104.58	97.79184	104.37511	0.37	-0.20	9/21/2015
1410	95.26	105.83	95.64333	105.52725	0.38	-0.30	9/21/2015
1411	93.09	107.08	93.52003	107.09243	0.43	0.01	9/21/2015
1412	98.67	106.74	99.19864	106.69934	0.53	-0.04	9/21/2015
1413	96.51	107.99	97.05133	108.03656	0.54	0.05	9/21/2015
1414	94.34	109.24	94.69456	108.88722	0.35	-0.35	9/21/2015
1415	100.05	109.12	100.64894	109.18653	0.60	0.07	9/21/2015
1416	97.88	110.37	98.27225	110.12852	0.39	-0.24	9/21/2015
1417	95.72	111.62	96.71728	111.31687	1.00	-0.30	9/21/2015
1418	101.36	111.4	101.69024	111.20077	0.33	-0.20	9/21/2015
1419	99.2	112.65	99.66713	112.36771	0.47	-0.28	9/21/2015
1420	97.03	113.9	97.36388	113.90947	0.33	0.01	9/21/2015
1422	81.91	33.86	82.18926	34.14831	0.28	0.29	9/4/2015
1423	79.74	35.11	80.13858	35.11519	0.40	0.01	9/4/2015
1424	84.11	37.69	84.61958	37.83179	0.51	0.14	9/4/2015
1425	81.95	38.94	82.26636	38.99724	0.32	0.06	9/4/2015
1426	86.29	41.47	86.5166	41.5827	0.23	0.11	9/4/2015
1427	84.13	42.72	84.34768	42.79306	0.22	0.07	9/21/2015
1428	88.53	45.34	89.17667	45.28184	0.65	-0.06	9/21/2015
1429	86.37	46.59	86.88597	46.68314	0.52	0.09	9/21/2015
1430	90.47	49.16	90.83265	49.11677	0.36	-0.04	9/21/2015



# William F. Loftus

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ENGLEWOOD CLIFFS, NJ 07632  
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DATE: 01/22/16  
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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1431	88.57	50.41	89.47924	50.0491	0.91	-0.36	9/21/2015
1432	92.95	52.99	93.55789	53.22909	0.61	0.24	9/21/2015
1433	90.78	54.24	91.22317	54.52608	0.44	0.29	9/21/2015
1434	98.64	55.09	99.13794	54.64151	0.50	-0.45	9/21/2015
1435	96.04	56.59	96.41705	56.5233	0.38	-0.07	9/21/2015
1436	93.87	57.84	94.51758	57.94585	0.65	0.11	9/21/2015
1437	91.28	59.34	92.65372	58.81096	1.37	-0.53	9/21/2015
1438	63.42	48.69	63.66944	48.3081	0.25	-0.38	10/8/2015
1439	61.26	49.94	61.44217	49.86939	0.18	-0.07	10/8/2015
1440	64.67	50.85	64.41872	51.17912	-0.25	0.33	10/8/2015
1441	62.51	52.1	62.58335	52.0496	0.07	-0.05	10/8/2015
1442	65.92	53.02	66.1446	53.00529	0.22	-0.01	10/8/2015
1444	67.17	55.18	67.26023	55.26667	0.09	0.09	10/8/2015
1445	65.01	56.43	64.99106	56.05986	-0.02	-0.37	10/8/2015
1446	68.42	57.35	68.24684	57.13619	-0.17	-0.21	10/8/2015
1447	66.26	58.6	66.58962	58.28331	0.33	-0.32	10/8/2015
1448	69.67	59.51	69.49209	59.55991	-0.18	0.05	10/8/2015
1449	67.51	60.76	67.77159	60.89304	0.26	0.13	10/8/2015
1450	70.92	61.68	71.29545	61.5459	0.38	-0.13	10/8/2015
1451	68.76	62.93	69.07518	62.76031	0.32	-0.17	10/8/2015
1452	72.17	63.84	72.31895	63.94253	0.15	0.10	10/8/2015
1453	70.01	65.09	70.09298	65.03734	0.08	-0.05	10/8/2015
1454	82.92	80.44	82.99279	80.57256	0.07	0.13	9/10/2015
1455	79.02	82.69	79.56464	82.46413	0.54	-0.23	9/10/2015
1456	81.91	83.19	82.88913	83.6524	0.98	0.46	9/10/2015
1457	84.79	83.69	85.29615	83.61212	0.51	-0.08	9/10/2015
1458	80.89	85.94	81.33617	85.81682	0.45	-0.12	9/10/2015
1459	131.14	11.05	131.23035	11.55603	0.09	0.51	9/1/2015
1460	128.98	12.3	129.29812	12.5021	0.32	0.20	9/1/2015



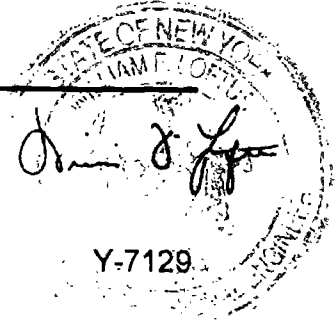
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16

REVISED 5/16/16

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SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

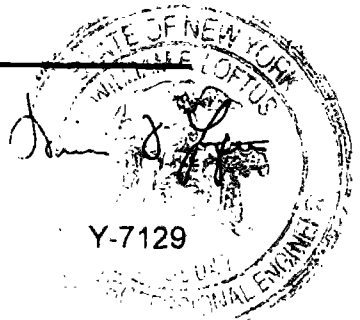
Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1461	126.81	13.55	126.98859	13.7538	0.18	0.20	9/1/2015
1462	132.39	13.21	132.66576	13.52657	0.28	0.32	9/1/2015
1463	130.23	14.46	130.45071	14.90862	0.22	0.45	9/1/2015
1464	128.06	15.712	128.52173	15.80736	0.46	0.10	9/1/2015
1465	133.64	15.38	133.33	15	-0.31	-0.38	9/1/2015
1466	131.48	16.63	131.69005	16.6268	0.21	0.00	9/1/2015
1467	129.31	17.88	129.15583	18.09982	-0.15	0.22	9/1/2015
1468	134.89	17.54	135	17	0.11	-0.54	9/1/2015
1469	132.73	18.79	132.82244	19.14546	0.09	0.36	9/1/2015
1470	130.56	20.04	130.48742	20.41681	-0.07	0.38	9/1/2015
1471	136.14	19.71	136.34678	20.59973	0.21	0.89	9/1/2015
1472	133.98	20.96	134.36465	21.22287	0.38	0.26	9/1/2015
1473	131.81	22.21	131.8877	22.28	0.08	0.07	9/1/2015
1474	178.5833	117.7802	178.33746	117.54351	-0.25	-0.24	10/28/2015
1475	180.8333	121.6773	180.5912	121.31527	-0.24	-0.36	10/28/2015
1476	176.3758	116.4566	176.37027	116.28956	-0.01	-0.17	10/28/2015
1477	178.6258	120.3537	178.04278	119.36608	-0.58	-0.99	10/28/2015
1478	180.8758	124.2508	179.94097	123.87188	-0.93	-0.38	10/28/2015
1479	176.4183	119.0302	176.36412	118.73413	-0.05	-0.30	10/28/2015
1480	178.6683	122.9273	177.92161	122.8145	-0.75	-0.11	10/28/2015
1481	176.4607	121.6037	176.07071	120.41758	-0.39	-1.19	10/28/2015
1482	174.2532	120.2802	173.99492	120.04323	-0.26	-0.24	10/28/2015
1483	176.5032	124.1773	176.56779	123.85172	0.06	-0.33	10/28/2015
1484	172.0457	118.9566	171.61238	118.35079	-0.43	-0.61	10/28/2015
1485	174.2957	122.8537	174.3976	122.23565	0.10	-0.62	10/28/2015
1486	176.5457	126.7508	176.9521	126.06839	0.41	-0.68	10/28/2015
1487	172.0882	121.5301	171.52781	120.88339	-0.56	-0.65	10/28/2015
1488	174.3382	125.4273	174.04605	125.39793	-0.29	-0.03	10/28/2015
1489	211.4887	128.3092	211.53	128.48	0.04	0.17	9/1/2015



# William F. Loftus

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 OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16  
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 SUBJ: Pile Deviations  
 PROJ: 250 SOUTH STREET

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Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1490	209.3236	129.5592	209.34	129.59	0.01	0.03	9/1/2015
5100	323.11	179.8687	322.84762	179.85	-0.27	-0.02	7/10/2015
5101	322.86	183.5266	322.66448	183.36377	-0.20	-0.16	7/10/2015
5102	321.16	181.5712	320.86417	181.57971	-0.29	0.01	7/10/2015
5103	319.46	179.6158	319.26282	179.62299	-0.19	0.01	7/10/2015
5104	319.20	183.2737	319.15468	182.95004	-0.05	-0.32	7/10/2015
5105	309.21	178.91	309.10289	178.85692	-0.11	-0.05	7/10/2015
5106	308.95	182.5648	309.14713	182.37416	0.19	-0.19	7/10/2015
5107	307.25	180.6094	307.27664	180.49893	0.03	-0.11	7/10/2015
5108	305.55	178.6539	305.32739	178.50714	-0.22	-0.15	7/10/2015
5109	305.30	182.3118	305.45508	182.08197	0.16	-0.23	7/10/2015
5110	322.41	192.8749	321.92369	193.23057	-0.48	0.36	7/7/2015
5111	322.41	195.3748	321.8166	195.31989	-0.59	-0.05	7/7/2015
5112	319.91	192.8749	319.51285	193.7307	-0.40	0.86	7/7/2015
5113	319.91	195.3748	319.85827	194.99263	-0.05	-0.38	7/7/2015
5114	311.99	192.8697	311.86096	193.05391	-0.13	0.18	7/10/2015
5115	311.99	195.3696	311.98457	195.23226	-0.01	-0.14	7/10/2015
5116	309.49	192.8697	309.40216	192.89343	-0.09	0.02	7/10/2015
5117	309.4937	195.3696	309.45116	195.12418	-0.04	-0.25	7/10/2015
5118	304.8125	190.465	304.38348	189.87109	-0.43	-0.59	7/10/2015
5119	299.8244	190.12	299.86838	190.48625	0.04	0.37	7/10/2015
5120	321.2446	221.9232	320.84014	221.60166	-0.40	-0.32	7/7/2015
5121	321.0721	224.4172	321.0275	223.98736	-0.04	-0.43	7/7/2015
5122	314.1172	221.4303	313.80268	221.12807	-0.31	-0.30	7/7/2015
5123	313.9448	223.9243	313.70448	223.64661	-0.24	-0.28	7/7/2015
5124	311.6232	221.2578	311.46106	221.08864	-0.16	-0.17	7/7/2015
5125	311.4507	223.7518	311.45123	223.54383	0.00	-0.21	7/7/2015
5126	303.10	215.1555	302.96998	215.24335	-0.13	0.09	7/17/2015
5127	298.12	214.8105	297.93689	214.70936	-0.18	-0.10	7/17/2015



# William F. Loftus

## CONSULTING ENGINEERS

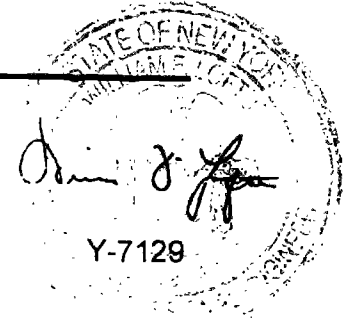
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5128	322.46	235.8744	322.00743	235.48428	-0.45	-0.39	7/10/2015
5129	319.97	235.7019	319.85082	235.61187	-0.11	-0.09	7/10/2015
5130	321.06	238.0398	320.86774	237.55175	-0.19	-0.49	7/10/2015
5131	311.96	234.5624	311.93364	234.11621	-0.02	-0.45	7/10/2015
5132	311.78	237.0564	311.65054	236.84894	-0.13	-0.21	7/10/2015
5142	309.63	257.2894	309.29082	256.99794	-0.34	-0.29	7/10/2015
5143	309.46	259.7834	309.28473	259.809	-0.17	0.03	7/10/2015
5144	311.79	258.6917	311.67	258.32506	-0.12	-0.37	7/10/2015
5145	311.3421	269.9587	311.48	269.76171	0.14	-0.20	7/10/2015
5146	311.0891	273.6166	310.68	273.4133	-0.41	-0.20	7/10/2015
5147	309.3881	271.64	309.22	271.28204	-0.17	-0.36	7/10/2015
5148	307.6842	269.7057	307.56	269.72395	-0.12	0.02	7/10/2015
5149	307.4312	273.3636	307.40	272.88491	-0.03	-0.48	7/10/2015
5155	310.4945	291.9313	310.37327	292.44082	-0.12	0.51	7/10/2015
5156	310.322	294.4253	310.41396	294.39427	0.09	-0.03	7/10/2015
5157	308.0005	291.7588	308.05717	292.08502	0.06	0.33	7/10/2015
5158	307.828	294.2529	307.91603	294.03539	0.09	-0.22	7/10/2015
5159	305.5065	291.5864	305.77791	291.80693	0.27	0.22	7/10/2015
5160	305.334	294.0804	305.5787	293.83806	0.24	-0.24	7/10/2015
5161	308.3161	305.3129	307.8045	305.23	-0.51	-0.09	7/10/2015
5162	305.8221	305.1404	305.61185	304.91521	-0.21	-0.23	7/10/2015
5163	289.2538	177.5271	289.00188	177.45109	-0.25	-0.08	7/28/2015
5164	289.0008	181.185	288.76489	181.15673	-0.24	-0.03	7/28/2015
5165	287.3	179.25	287.08395	179.40371	-0.22	0.16	7/28/2015
5166	285.5959	177.27	285.53088	177.44003	-0.07	0.17	7/28/2015
5167	285.3429	180.93	285.16128	181.02633	-0.18	0.09	7/28/2015
5168	286.8578	189.22	287.12783	189.24462	0.27	0.02	7/17/2015
5169	281.8697	188.88	282.1164	189.68887	0.25	0.81	7/28/2015
5170	287.0157	218.30	287.1278	218.3314	0.11	0.03	7/21/2015





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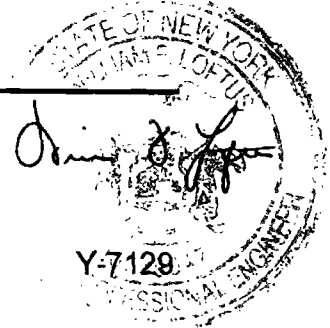
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5171	286.8432	220.80	286.54721	220.67694	-0.30	-0.12	7/21/2015
5172	286.6707	223.29	286.72354	223.53543	0.05	0.24	7/21/2015
5173	284.5216	218.13	284.67568	218.09856	0.15	-0.03	7/21/2015
5174	284.3492	220.6246	284.54084	220.33428	0.19	-0.29	7/21/2015
5175	284.1767	223.1186	283.93162	223.12325	-0.25	0.00	7/21/2015
5193	283.3096	290.0513	283.34993	290.10496	0.04	0.05	7/17/2015
5194	283.1388	292.5199	283.35502	292.54366	0.22	0.02	7/17/2015
5195	280.8156	289.8788	280.7725	289.9728	-0.04	0.09	7/17/2015
5196	280.6431	292.3728	280.83065	292.74	0.19	0.37	7/17/2015
5197	278.3215	289.7063	278.67	289.73674	0.35	0.03	7/17/2015
5198	278.149	292.2003	278.30	292.35162	0.15	0.15	7/17/2015
5202	265.4091	187.7395	265.35665	187.52658	-0.05	-0.21	7/10/2015
5203	260.4211	187.3946	260.54955	186.98045	0.13	-0.41	7/10/2015
5204	276.4614	213.3129	276.32685	213.42	-0.13	0.11	7/28/2015
5205	271.4734	212.9679	271.27	212.71619	-0.20	-0.25	7/28/2015
5232	233.4855	185.5317	233.333	185.22711	-0.15	-0.30	8/3/2015
5233	228.4975	185.19	228.28446	184.34048	-0.21	-0.85	8/3/2015
5234	249.8183	211.46	249.50654	211.20634	-0.31	-0.26	8/10/2015
5235	244.8303	211.12	244.46	211.08357	-0.37	-0.04	8/10/2015
5242	231.7779	210.2227	232.17959	209.77653	0.40	-0.45	8/10/2015
5243	226.7899	209.88	226.87285	209.76549	0.08	-0.11	8/10/2015
5262	232.83	300.0924	233.00	300.11	0.17	0.02	9/10/2015
5263	230.34	299.92	230.65	299.92	0.31	0.00	9/10/2015
5264	218.9264	179.847	219.04	179.83	0.12	-0.01	8/27/2015
5265	218.5815	184.8351	218.76	184.87	0.18	0.04	8/27/2015
5266	217.2185	204.5428	217.19	204.57	-0.03	0.03	10/15/2015
5267	216.8736	209.53	216.72	209.49	-0.16	-0.04	10/15/2015
5268	214.935	214.62	214.77	214.56	-0.17	-0.06	10/15/2015
5269	214.7625	217.11	215.01	217.24	0.24	0.13	10/15/2015



# William F. Loftus

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120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

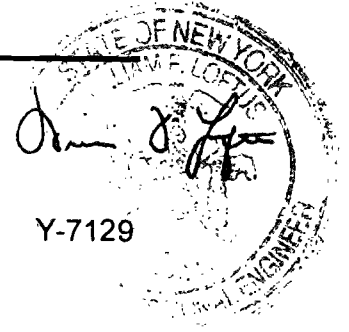
DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET



Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5270	212.4406	214.4455	212.51	214.32	0.07	-0.13	10/15/2015
5271	212.2685	216.9395	211.96928	216.97371	-0.30	0.03	10/15/2015
5272	209.9469	214.273	209.86585	214.3485	-0.08	0.08	10/15/2015
5273	209.7745	216.767	209.74142	216.84687	-0.03	0.08	10/15/2015
5286	210.3127	280.2416	210.25	280.24	-0.06	0.00	9/24/2015
5287	210.1402	282.74	209.963	282.721	-0.18	-0.01	9/24/2015
5288	207.8187	280.07	207.674	279.936	-0.14	-0.13	9/24/2015
5289	207.6462	282.56	207.415	282.776	-0.23	0.21	9/24/2015
5290	205.3247	279.90	205.182	279.997	-0.14	0.10	9/24/2015
5291	205.1522	282.39	205.226	282.538	0.07	0.15	9/24/2015
5293	205.3957	298.1951	205.426	297.893	0.03	-0.30	9/24/2015
5294	199.47	171.32	199.69112	170.96938	0.22	-0.35	11/13/2015
5295	199.22	174.98	199.15953	174.82684	-0.06	-0.15	11/13/2015
5296	197.51	173.02	197.65381	173.16399	0.14	0.14	11/13/2015
5297	195.81	171.07	195.57922	170.63826	-0.23	-0.43	11/13/2015
5298	195.56	174.72	195.79455	174.6408	0.23	-0.08	11/13/2015
5299	191.9034	170.79	192.07465	170.71811	0.17	-0.08	11/13/2015
5300	191.6504	174.45	191.58591	174.06896	-0.06	-0.38	11/13/2015
5301	189.9479	172.50	190.01473	172.54047	0.07	0.04	11/13/2015
5302	188.2455	170.54	188.4124	170.48324	0.17	-0.06	11/13/2015
5303	187.9925	174.1994	188.18267	174.38892	0.19	0.19	11/13/2015
5304	201.3934	179.7205	201.6689	179.67209	0.28	-0.05	11/13/2015
5305	201.0485	184.7085	201.24741	184.78548	0.20	0.08	11/13/2015
5306	190.4085	192.4095	190.51425	192.57241	0.11	0.16	8/10/2015
5307	190.1556	196.0674	190.32234	196.05835	0.17	-0.01	8/10/2015
5308	188.4531	194.1119	188.48506	194.23108	0.03	0.12	8/10/2015
5309	186.7506	192.1565	186.9576	192.0152	0.21	-0.14	8/10/2015
5310	186.4977	195.8144	186.43159	195.77188	-0.07	-0.04	8/10/2015
5311	199.6801	204.4946	199.4456	204.32745	-0.23	-0.17	11/13/2015



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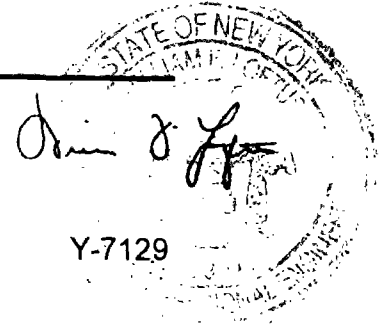
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16



Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5312	199.3352	209.4826	199.68002	209.1894	0.34	-0.29	11/13/2015
5325	185.9434	260.597	186.03874	260.25674	0.10	-0.34	12/14/2015
5326	185.7706	263.0963	185.72969	263.05189	-0.04	-0.04	12/14/2015
5327	185.5985	265.5851	185.35548	265.50325	-0.24	-0.08	12/14/2015
5328	183.6125	261.6888	183.51394	261.71013	-0.10	0.02	12/14/2015
5329	183.4401	264.1828	183.39232	264.24995	-0.05	0.07	12/14/2015
5330	181.4542	260.2865	181.3599	260.06853	-0.09	-0.22	12/14/2015
5331	181.2817	262.7806	181.25775	262.58942	-0.02	-0.19	12/14/2015
5332	181.1092	265.2746	181.17915	265.14775	0.07	-0.13	12/14/2015
5340	182.418	167.8392	182.53653	167.64061	0.12	-0.20	8/10/2015
5341	182.1651	171.4971	182.34891	171.30893	0.18	-0.19	8/10/2015
5342	180.4626	169.5416	180.50034	169.25045	0.04	-0.29	8/10/2015
5343	178.7601	167.5862	178.89601	167.42358	0.14	-0.16	8/10/2015
5344	178.5072	171.2441	178.56804	171.36597	0.06	0.12	8/10/2015
5345	180.1427	192.2842	180.20802	191.94177	0.07	-0.34	12/2/2015
5346	179.9703	194.7782	179.73293	194.71731	-0.24	-0.06	12/2/2015
5347	177.6487	192.1117	177.65586	192.2769	0.01	0.17	12/2/2015
5348	177.4763	194.6058	177.32341	194.57061	-0.15	-0.04	12/2/2015
5349	168.0787	167.4322	168.33918	167.42238	0.26	-0.01	8/10/2015
5350	167.9062	169.9262	168.46425	169.99407	0.56	0.07	8/10/2015
5351	165.5846	167.2597	165.37701	167.36837	-0.21	0.11	8/10/2015
5352	165.4122	169.7537	165.77037	169.56394	0.36	-0.19	8/10/2015
5353	163.0906	167.0873	163.08157	166.98958	-0.01	-0.10	8/10/2015
5354	162.9181	169.5813	162.92684	168.86513	0.01	-0.72	8/10/2015
5355	166.715	192.6086	166.63927	192.49926	-0.08	-0.11	12/2/2015
5356	163.1235	190.1884	163.46662	190.26328	0.34	0.07	12/2/2015
5357	162.8245	194.5113	162.79039	194.47876	-0.03	-0.03	12/2/2015
5365	159.5352	229.3673	159.64317	229.32555	0.11	-0.04	10/15/2015
5366	159.3628	231.8613	159.53305	231.62015	0.17	-0.24	10/15/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5367	159.1903	234.3554	159.31068	234.7511	0.12	0.40	10/15/2015
5368	157.0412	229.1948	156.8569	228.95324	-0.18	-0.24	10/15/2015
5369	156.8687	231.6888	157.11821	231.65077	0.25	-0.04	10/15/2015
5370	156.6963	234.1829	156.25921	234.30762	-0.44	0.12	10/15/2015
5371	158.5091	258.6996	158.25356	258.61606	-0.26	-0.08	12/14/2015
5372	158.3362	261.1989	158.30746	261.17612	-0.03	-0.02	12/14/2015
5373	158.1641	263.6877	158.11163	263.62828	-0.05	-0.06	12/14/2015
5374	156.1782	259.7914	155.98832	259.52837	-0.19	-0.26	12/14/2015
5375	156.0057	262.2854	155.92689	262.1241	-0.08	-0.16	12/14/2015
5376	154.0198	258.3891	154.39651	258.36617	0.38	-0.02	12/14/2015
5377	153.8473	260.8832	153.66948	260.60922	-0.18	-0.27	12/14/2015
5378	153.6749	263.3772	153.38192	263.40789	-0.29	0.03	12/14/2015
5379	136.4101	190.5249	136.41136	190.60058	0.00	0.08	12/14/2015
5380	132.8194	188.0926	132.92638	188.15622	0.11	0.06	12/14/2015
5381	132.5204	192.4156	132.59082	192.52235	0.07	0.11	12/14/2015
5382	133.8818	208.9656	133.85856	208.89136	-0.02	-0.07	12/30/2015
5383	133.7093	211.4596	133.2705	211.51765	-0.44	0.06	12/30/2015
5384	131.3878	208.7931	131.53303	208.46308	0.15	-0.33	12/30/2015
5385	131.2153	211.2872	131.0452	211.07783	-0.17	-0.21	12/30/2015
5386	132.138	228.1408	132.1771	228.1478	0.04	0.01	11/13/2015
5387	131.885	231.7987	131.81367	231.53047	-0.07	-0.27	11/13/2015
5388	130.1826	229.8433	130.17867	229.76857	0.00	-0.07	11/13/2015
5389	128.4801	227.8879	128.59579	227.94779	0.12	0.06	11/13/2015
5390	128.2271	231.5458	127.92316	231.24389	-0.30	-0.30	11/13/2015
5391	129.5783	256.6988	129.2160	256.8760	-0.36	0.18	8/5/2015
5392	129.4058	259.1928	129.1750	259.0900	-0.23	-0.10	8/5/2015
5393	129.2333	261.6869	129.0650	261.6510	-0.17	-0.04	8/5/2015
5394	127.0843	256.5263	126.8020	256.3410	-0.28	-0.19	8/5/2015
5395	126.9118	259.0204	126.9360	259.0210	0.02	0.00	8/5/2015



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## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5396	126.7393	261.5144	126.5070	261.3870	-0.23	-0.13	8/5/2015
5397	118.7685	176.8464	118.74	176.58844	-0.03	-0.26	10/28/2015
5398	116.102	179.168	116.54	179.07935	0.43	-0.09	10/28/2015
5399	122.3664	207.5845	122.48	207.52944	0.12	-0.06	12/30/2015
5400	122.1134	211.2424	121.75	211.15794	-0.36	-0.08	12/30/2015
5401	120.4107	209.287	120.64	209.46184	0.23	0.17	12/30/2015
5402	118.7085	207.3315	118.98	207.36	0.27	0.03	12/30/2015
5403	118.4555	210.9894	118.80	211.67919	0.35	0.69	12/30/2015
5404	120.0138	217.4445	120.21	217.22008	0.20	-0.22	12/30/2015
5405	117.5198	217.272	117.54	217.45074	0.02	0.18	12/30/2015
5406	120.4617	226.6657	120.53	226.59499	0.07	-0.07	12/30/2015
5407	120.2892	229.1597	120.48	229.1694	0.19	0.01	12/30/2015
5408	120.1167	231.6537	120.19	231.58299	0.07	-0.07	12/30/2015
5409	117.9676	226.4932	118.04	226.56391	0.07	0.07	12/30/2015
5410	117.7952	228.9872	117.87	229.05791	0.07	0.07	12/30/2015
5411	117.6227	231.4812	117.58	231.40677	-0.04	-0.07	12/30/2015
5412	118.4383	255.9284	117.94	256.21	-0.50	0.28	8/5/2015
5413	118.2658	258.4224	118.26	258.51	-0.01	0.09	8/5/2015
5414	118.0933	260.9165	117.92	260.57	-0.18	-0.35	8/5/2015
5415	115.9443	255.7559	115.73	255.74	-0.22	-0.01	8/5/2015
5416	115.7718	258.2499	115.93	258.52	0.16	0.27	8/5/2015
5417	115.5993	260.744	115.49	260.76	-0.11	0.01	8/5/2015
5418	101.5164	175.65	101.95678	175.27454	0.44	-0.38	10/20/2015
5419	98.8499	177.97	98.83984	177.72479	-0.01	-0.25	10/20/2015
5420	84.2644	174.46	84.49672	174.3946	0.23	-0.07	10/20/2015
5421	81.5979	176.78	81.34605	176.96558	-0.25	0.18	10/20/2015
5422	94.8086	206.26	95.02445	205.93637	0.22	-0.32	1/22/2016
5423	94.6361	208.76	95.12328	208.49657	0.49	-0.26	1/22/2016
5424	92.6502	204.86	92.72091	204.93071	0.07	0.07	1/22/2016



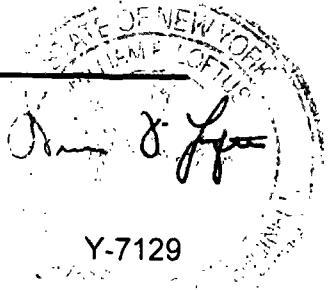
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950



DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5425	92.4778	207.36	92.54851	207.28929	0.07	-0.07	1/22/2016
5426	92.3053	209.85	92.37601	209.92071	0.07	0.07	1/22/2016
5427	90.3194	205.95	90.39011	205.87929	0.07	-0.07	1/22/2016
5428	90.1469	208.45	90.21761	208.37929	0.07	-0.07	1/22/2016
5429	93.2476	214.34	93.27902	213.89688	0.03	-0.44	1/22/2016
5430	93.0752	216.83	93.14591	216.75929	0.07	-0.07	1/22/2016
5431	90.7536	214.17	91.05942	214.112	0.31	-0.06	1/22/2016
5432	90.5811	216.66	90.6638	216.79507	0.08	0.14	1/22/2016
5450	67.01	173.2671	67.44903	173.26893	0.44	0.00	10/28/2015
5451	64.35	175.5886	64.58087	175.39018	0.24	-0.20	10/28/2015
5467	61.6029	222.5945	61.93914	222.83844	0.34	0.24	1/22/2016
5468	61.4304	225.0885	61.71809	225.12611	0.29	0.04	1/22/2016
5469	61.2579	227.5826	61.65591	227.58669	0.40	0.00	1/22/2016
5470	59.272	223.6863	59.50354	223.80183	0.23	0.12	1/22/2016
5471	59.0995	226.1803	59.26745	226.16505	0.17	-0.02	1/22/2016
5472	57.1136	222.284	57.44406	222.3115	0.33	0.03	1/22/2016
5473	56.9412	224.7781	57.28335	224.95251	0.34	0.17	1/22/2016
5474	56.7687	227.2721	57.12006	227.26437	0.35	-0.01	1/22/2016
5475	63.6627	232.7616	63.59199	232.69	-0.07	-0.07	2/5/2016
5476	63.1448	235.2073	63.0992	234.97	-0.05	-0.24	2/5/2016
5477	71.5473	253.9385	71.67	253.72	0.12	-0.22	8/14/2015
5478	67.2244	253.6395	67.06	253.78	-0.17	0.14	8/14/2015
5479	69.115	257.5292	69.27	257.58	0.16	0.05	8/14/2015
5480	49.7602	172.074	49.92375	172.02	0.16	-0.05	10/20/2015
5481	47.0937	174.3955	47.195	174.41	0.10	0.02	10/20/2015
5482	47.3896	212.3395	46.89139	212.07	-0.50	-0.27	2/5/2016
5483	44.8956	212.167	44.55491	212.25	-0.34	0.08	2/5/2016
5484	43.2778	217.2187	43.77948	217.21	0.50	-0.01	2/5/2016
5485	40.7837	217.0462	40.85441	217.12	0.07	0.07	2/5/2016



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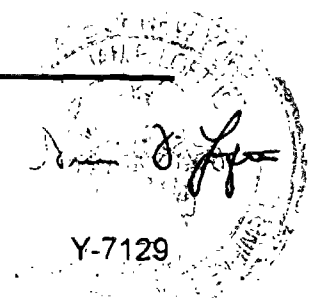
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5486	49.2724	238.0313	48.80666	238.36	-0.47	0.33	2/5/2016
5487	46.7784	237.8588	46.49592	237.62	-0.28	-0.24	2/5/2016
5489	58.167	253.0278	58.5230	252.9700	0.36	-0.06	8/14/2015
5491	55.6673	252.8499	55.4370	252.3660	-0.23	-0.48	8/14/2015
5492	55.008	255.3509	55.5830	255.3310	0.57	-0.02	8/14/2015
5493	53.16	252.6721	53.4200	252.5200	0.26	-0.15	8/14/2015
5494	52.9951	255.1719	53.3060	255.0740	0.31	-0.10	8/14/2015
5496	50.5111	254.9637	50.7890	254.9880	0.28	0.02	8/14/2015
5518	39.039	237.3254	38.9814	237.65	-0.06	0.33	2/24/2016
5528	41.1505	251.84	41.11048	252.02	-0.04	0.19	2/24/2016
5529	40.978	254.33	41.04871	254.26	0.07	-0.07	2/24/2016
5530	38.6565	251.66	38.72721	251.73	0.07	0.07	2/24/2016
5531	38.484	254.16	38.76538	254.15	0.28	-0.01	2/24/2016
5532	206.21	24.17	206.17	24.00	-0.04	-0.17	8/3/2015
5533	204.05	25.42	203.95	25.28	-0.10	-0.14	8/3/2015
5534	207.46	26.34	207.37	26.00	-0.09	-0.34	8/3/2015
5535	205.3	27.59	205.45	27.50	0.15	-0.09	8/3/2015
5536	208.71	28.50	208.5	28.17	-0.21	-0.33	8/3/2015
5537	206.55	29.75	206.5	30.00	-0.05	0.25	8/3/2015
5538	215.89	27.72	216.05	27.67	0.16	-0.05	8/3/2015
5539	213.58	29.06	213.38012	28.99	-0.20	-0.07	8/3/2015
5540	210.17	31.03	210	31.15	-0.17	0.12	8/3/2015
5541	208.01	32.28	208.17	32.12	0.16	-0.16	8/3/2015
5542	217.73	30.90	218.19546	30.40	0.47	-0.50	8/3/2015
5543	215.42	32.23	215	32.25	-0.42	0.02	8/3/2015
5544	212.01	34.20	212.2	34.00	0.19	-0.20	8/3/2015
5545	209.84	35.45	210	35.00	0.16	-0.45	8/3/2015
5546	213.71	37.16	213.5	37.08	-0.21	-0.08	8/3/2015
5547	211.55	38.41	211.45	38.25	-0.10	-0.16	8/3/2015



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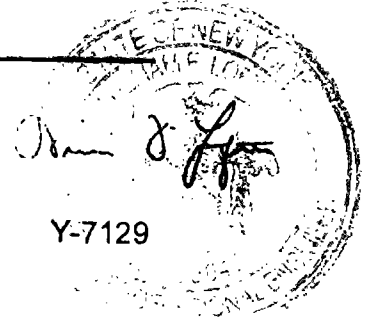
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5548	215.21	39.76	215	39.99	-0.21	0.23	8/3/2015
5549	213.05	41.01	212.87	41.00	-0.18	-0.01	8/3/2015
5550	216.71	42.36	216.5	42.25	-0.21	-0.11	8/3/2015
5551	214.55	43.61	214.65	43.50	0.10	-0.11	8/3/2015
5552	293.99	35.28	293.94263	35.44491	-0.05	0.16	4/16/2015
5557	286.9919	35.28	287.01825	35.12129	0.03	-0.16	4/16/2015
5558	280.1585	36.37	279.98949	36.52	-0.17	0.15	4/23/2015
5563	273.1586	36.37	272.89518	36.23	-0.26	-0.14	4/23/2015
6001	282.9372	77.73	282.64	78.33	-0.30	0.60	5/4/2015
6002	263.915	107.77	264.07686	107.55	0.16	-0.22	6/15/2015
6003	103.89	32.62	104.18207	33.51	0.29	0.89	9/4/2015
6004	105.14	34.78	105.05373	35.19	-0.09	0.41	9/4/2015
6005	61.18	54.31	61.37	54.25	0.19	-0.06	10/9/2015
6006	62.43	56.47	62.00	56.75	-0.43	0.28	10/9/2015
6007	108.77	70.22	109.30367	70.40	0.53	0.18	9/21/2015
6008	95.64	144.67	95.32097	144.60	-0.32	-0.07	10/20/2015
6009	87.88	148.15	88.26474	147.93	0.38	-0.22	10/20/2015
6010	306.4293	233.59	306.42	233.71195	-0.01	0.12	7/17/2015
6011	306.1764	237.25	305.93	237.3103	-0.25	0.06	7/17/2015
6012	304.4739	235.30	304.37	235.25619	-0.10	-0.04	7/17/2015
6013	302.7714	233.34	302.92	233.53817	0.14	0.20	7/17/2015
6014	302.5185	237.00	302.24	237.01335	-0.28	0.01	7/17/2015
6015	305.1947	242.95	304.88	242.83346	-0.32	-0.12	7/17/2015
6016	305.0222	245.44	304.87	245.37435	-0.15	-0.07	7/17/2015
6017	302.7007	242.78	302.74	242.57454	0.04	-0.20	7/17/2015
6018	302.5282	245.27	302.61	245.24081	0.09	-0.03	7/17/2015
6019	296.2493	249.10	296.38	248.94791	0.13	-0.15	7/17/2015
6020	296.0768	251.59	296.14	251.58	0.06	-0.01	7/17/2015
6021	293.7553	248.92	293.83	248.85835	0.07	-0.07	7/17/2015





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120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

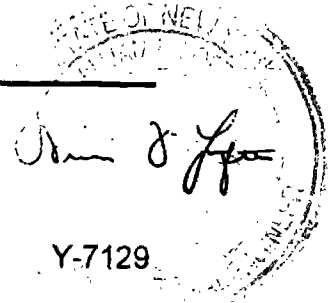
DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET



Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6022	293.5828	251.42	293.61	251.41904	0.03	0.00	7/17/2015
6023	295.2891	262.98	295.31	262.92362	0.02	-0.06	7/17/2015
6024	295.1166	265.47	295.26	265.21376	0.15	-0.26	7/17/2015
6025	294.9442	267.97	294.87	267.7948	-0.07	-0.17	7/17/2015
6026	292.7951	262.81	293.00	262.80811	0.21	0.00	7/17/2015
6027	292.6226	265.30	293.01	265.16733	0.39	-0.13	7/17/2015
6028	292.4501	267.80	292.07	267.0488	-0.38	-0.75	7/17/2015
6029	286.6433	232.23	287.10935	231.86	0.47	-0.36	7/21/2015
6030	286.3903	235.88	286.33897	236.02	-0.05	0.14	7/21/2015
6031	284.6849	233.93	284.8743	233.45	0.19	-0.48	7/21/2015
6032	282.9854	231.97	282.63743	231.64	-0.35	-0.34	7/21/2015
6033	282.7324	235.63	282.82755	235.75	0.10	0.12	7/21/2015
6034	285.4087	241.58	285.39109	241.56	-0.02	-0.02	7/21/2015
6035	285.2362	244.07	285.22631	243.47	-0.01	-0.60	7/21/2015
6036	284.943	248.31	285.18831	248.01	0.25	-0.31	7/21/2015
6037	284.7705	250.81	284.85483	250.61	0.08	-0.19	7/21/2015
6038	282.9147	241.41	282.84002	241.37	-0.07	-0.04	7/21/2015
6039	282.7422	243.90	282.9606	243.59	0.22	-0.31	7/21/2015
6040	282.449	248.14	282.93564	248.44	0.49	0.30	7/21/2015
6041	282.2765	250.64	282.34413	250.46	0.07	-0.17	7/21/2015
6044	284.5378	268.67	284.71	268.25966	0.18	-0.41	7/17/2015
6045	284.3653	271.16	284.43	270.86395	0.06	-0.30	7/17/2015
6046	282.2069	269.76	282.27	269.58842	0.06	-0.17	7/17/2015
6047	282.39	267.10	282.11	266.71095	-0.28	-0.39	7/17/2015
6048	283.9	263.45	282.61	264.57238	-1.29	1.12	7/17/2015
6049	282.7358	262.11	283.01	261.8886	0.27	-0.22	7/17/2015
6052	280.05	268.358	280.25	268.04923	0.20	-0.31	7/17/2015
6053	279.88	270.852	280.14	270.64694	0.26	-0.21	7/17/2015
6061	262.873	242.53	262.43	242.15212	-0.44	-0.38	7/17/2015



# William F. Loftus

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120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

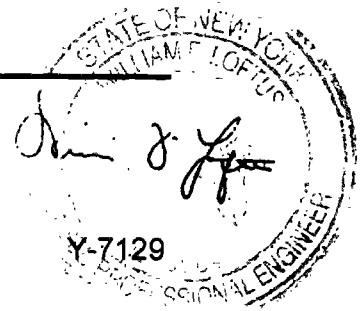
DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6062	262.7006	245.02	262.95	244.85527	0.25	-0.17	7/17/2015
6063	260.7147	241.13	260.72	240.97015	0.00	-0.16	7/17/2015
6064	260.5422	243.62	260.51	243.27783	-0.04	-0.34	7/17/2015
6065	260.3697	246.11	260.12	245.97971	-0.25	-0.13	7/17/2015
6066	258.3838	242.22	257.75	241.62329	-0.64	-0.59	7/17/2015
6067	258.2113	244.71	258.21	244.51095	0.00	-0.20	7/17/2015
6084	257.7704	301.82	257.99203	301.51	0.22	-0.31	8/3/2015
6085	255.2803	301.64	255.25947	301.52	-0.02	-0.12	8/3/2015
6086	281.1312	303.43	281.14	303.14614	0.01	-0.29	7/17/2015
6087	278.6411	303.26	278.34	303.01639	-0.30	-0.24	7/17/2015
6088	285.64	263.57	285.19	263.4664	-0.45	-0.10	7/17/2015
6089	285.47	266.06	285.01	265.8436	-0.46	-0.22	7/17/2015
6090	279.66	263.15	279.58	262.64719	-0.08	-0.50	7/17/2015
6091	279.49	265.65	279.24	265.4448	-0.25	-0.21	7/17/2015
6099	259.95	288.44	260.13572	288.22	0.19	-0.22	8/3/2015
6100	259.78	290.93	259.78848	290.79	0.01	-0.14	8/3/2015
6101	257.46	288.26	257.01634	287.37	-0.44	-0.89	8/3/2015
6102	257.28	290.76	256.95367	290.97	-0.33	0.21	8/3/2015
6103	254.96	288.09	254.99788	287.91	0.04	-0.18	8/3/2015
6104	254.79	290.59	254.78582	290.54	0.00	-0.05	8/3/2015
6105	238.1	242.07	237.972	241.88	-0.13	-0.19	9/24/2015
6106	237.01	239.74	237.141	239.65	0.13	-0.09	9/24/2015
6107	236.69	244.23	236.97	244.10	0.28	-0.13	9/24/2015
6108	235.6	241.9	235.88	241.95	0.28	0.05	9/24/2015
6109	234.51	239.57	234.747	239.00	0.24	-0.57	9/24/2015
6110	234.2	244.05	234.261	244.17	0.06	0.12	9/24/2015
6111	233.11	241.72	233.234	241.60	0.12	-0.12	9/24/2015
6112	236.4	266.59	236.42428	266.61	0.02	0.02	9/10/2015
6113	235.31	264.26	235.79316	264.04	0.48	-0.22	9/10/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16

*John J. F...*  
Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6114	235	268.75	234.94158	268.62	-0.06	-0.13	9/10/2015
6115	232.81	264.09	232.85486	263.76	0.04	-0.33	9/10/2015
6116	232.5	268.58	232.63703	268.59	0.14	0.01	9/10/2015
6117	231.41	266.25	231.54034	265.91	0.13	-0.34	9/10/2015
6118	235.01	286.71	234.94509	286.66	-0.06	-0.05	9/10/2015
6119	234.84	289.21	234.8125	289.13	-0.03	-0.08	9/10/2015
6120	232.52	286.54	232.61432	286.35	0.09	-0.19	9/10/2015
6121	232.34	289.03	232.33747	289.03	0.00	0.00	9/10/2015
6122	230.02	286.37	230.22555	286.63	0.21	0.26	9/10/2015
6123	229.85	288.86	229.90355	288.87	0.05	0.01	9/10/2015
6124	264.73	219.27	264.66	218.82255	-0.07	-0.45	7/17/2015
6125	263.64	216.94	263.05	216.59285	-0.59	-0.35	7/17/2015
6126	263.32	221.51	263.81	221.56699	0.49	0.06	7/17/2015
6127	262.2403	219.0948	262.58	219.2446	0.33	0.15	7/17/2015
6128	261.1503	216.7648	261.19	216.76133	0.04	0.00	7/17/2015
6129	260.8403	221.2548	261.06	220.99411	0.22	-0.26	7/17/2015
6130	259.75	218.92	259.94	218.17986	0.19	-0.74	7/17/2015
6138	213.16	240.34	213.15	240.27	-0.01	-0.07	9/29/2015
6139	212.08	237.76	212.17	237.75	0.09	-0.01	9/29/2015
6140	211.73	242.79	211.67	242.70	-0.06	-0.09	9/29/2015
6141	210.66	240.17	210.47	239.89	-0.19	-0.28	9/29/2015
6142	209.59	237.59	209.56	237.28	-0.03	-0.31	9/29/2015
6143	209.24	242.58	209.66	242.51	0.42	-0.07	9/29/2015
6144	208.17	240	208.08	239.85	-0.09	-0.15	9/29/2015
6145	211.46	264.87	211.485	264.70	0.03	-0.17	9/24/2015
6146	210.37	262.54	210.602	262.49	0.23	-0.05	9/24/2015
6147	210.06	267.03	210.022	267.19	-0.04	0.16	9/24/2015
6148	208.9688	264.6979	208.88	264.88	-0.09	0.18	9/24/2015
6149	207.87	262.37	207.812	262.23	-0.06	-0.14	9/24/2015



# William F. Loftus

## CONSULTING ENGINEERS

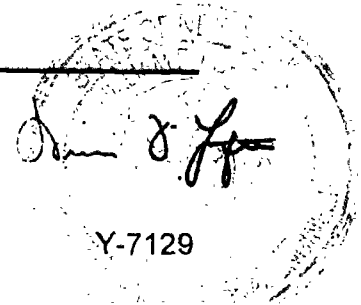
120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 01/22/16  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 SOUTH STREET

REVISED 5/16/16



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6150	207.56	266.85	207.425	267.17	-0.13	0.32	9/24/2015
6151	206.47	264.52	206.22	264.21	-0.25	-0.31	9/24/2015
6152	189.48	211.84	189.29039	211.68	-0.19	-0.16	12/2/2015
6153	189.17	216.3	189.23496	216.64	0.06	0.34	12/2/2015
6154	187.33	210.41	187.20921	210.12	-0.12	-0.29	12/2/2015
6155	186.84	217.39	186.82578	217.41	-0.01	0.02	12/2/2015
6156	186.63	220.47	186.28238	220.50	-0.35	0.03	12/2/2015
6157	187.67	223.55	187.24489	223.81	-0.43	0.26	12/2/2015
6158	185.18	223.37	184.9947	223.36	-0.19	-0.01	12/2/2015
6159	185	211.5	185.09656	211.68	0.10	0.18	12/2/2015
6160	184.69	215.99	185	214.89	0.31	-1.10	12/2/2015
6161	187.06	232.36	187.17193	232.15	0.11	-0.21	12/2/2015
6162	186.89	234.85	186.90476	234.95	0.01	0.10	12/2/2015
6163	186.72	237.35	186.85553	237.29	0.14	-0.06	12/2/2015
6164	186.54	239.84	187.3068	239.78	0.77	-0.06	12/2/2015
6165	184.57	232.19	184.4283	232.04	-0.14	-0.15	12/2/2015
6166	184.4	234.68	184.39726	234.43	0.00	-0.25	12/2/2015
6167	184.22	237.17	184.49305	237.07	0.27	-0.10	12/2/2015
6168	184.05	239.67	184.25301	239.36	0.20	-0.31	12/2/2015
6169	184.5	277.88	184.78296	277.84	0.28	-0.04	12/14/2015
6170	184.25	281.54	184.43083	281.40	0.18	-0.14	12/14/2015
6171	180.84	277.62	180.91989	277.82	0.08	0.20	12/14/2015
6172	180.59	281.28	180.54363	281.26	-0.05	-0.02	12/14/2015
6173	182.59	296.62	182.27952	296.72	-0.31	0.10	12/14/2015
6174	181.5	294.29	181.17366	293.34	-0.33	-0.95	12/14/2015
6176	162.07	210.92	162.10617	210.96	0.04	0.04	10/15/2015
6177	161.89	213.41	162.1096	213.14	0.22	-0.27	10/15/2015
6178	159.57	210.74	159.62399	210.90	0.05	0.16	10/15/2015
6179	159.4	213.24	159.38423	212.92	-0.02	-0.32	10/15/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

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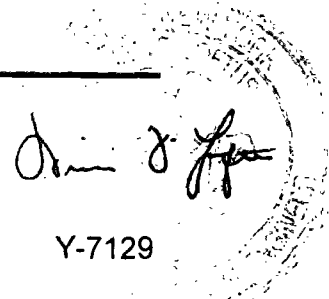
DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET



Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6180	157.08	210.57	157.36227	210.38	0.28	-0.19	10/15/2015
6181	156.9	213.06	157.26505	213.00	0.37	-0.06	10/15/2015
6182	160.17	220.14	160.33859	219.71	0.17	-0.43	10/15/2015
6183	157.68	219.97	157.81391	219.83	0.13	-0.14	10/15/2015
6184	142.88	218.94	142.86106	219.28	-0.02	0.34	10/15/2015
6185	140.39	218.77	140.48846	218.71	0.10	-0.06	10/15/2015
6186	91.59	252.82	91.78000	252.82180	0.19	0.00	8/6/2015
6187	91.42	255.31	91.76744	255.50370	0.35	0.19	8/6/2015
6188	91.24	257.81	91.30678	257.52560	0.07	-0.28	8/6/2015
6189	91.07	260.3	91.45768	260.23380	0.39	-0.07	8/6/2015
6190	89.26	253.91	89.31856	254.14230	0.06	0.23	8/6/2015
6191	89.09	256.41	89.33965	256.32390	0.25	-0.09	8/6/2015
6192	88.91	258.9	88.99441	259.09930	0.08	0.20	8/6/2015
6193	87.1	252.51	87.01107	252.37180	-0.09	-0.14	8/6/2015
6194	86.93	255	86.83218	254.89810	-0.10	-0.10	8/6/2015
6195	86.76	257.5	86.74575	257.38190	-0.01	-0.12	8/6/2015
6196	86.58	259.99	86.83710	260.19010	0.26	0.20	8/6/2015
6197	68.44	203.44	68.65344	203.30	0.21	-0.14	10/15/2015
6198	68.13	207.93	68.19025	207.89	0.06	-0.04	10/15/2015
6199	67.04	205.6	67.23577	205.63	0.20	0.03	10/15/2015
6200	65.95	203.27	66.30523	203.42	0.36	0.15	10/15/2015
6202	64.5469	205.4219	64.87789	205.08	0.33	-0.34	10/15/2015
6203	63.45	203.09	63.53119	203.26	0.08	0.17	10/15/2015
6204	63.14	207.58	63.27917	207.74	0.14	0.16	10/15/2015
6205	62.05	205.25	62.07053	205.24	0.02	-0.01	10/15/2015
6206	60.96	202.92	61.23283	202.92	0.27	0.00	10/15/2015
6207	60.65	207.41	60.77813	207.28	0.13	-0.13	10/15/2015
6208	72.22	214.06	72.34287	214.07	0.12	0.01	10/15/2015
6209	69.73	213.89	70.03787	213.66	0.31	-0.23	10/15/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

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REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Y-7129

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6210	68.71	221.33	68.63929	221.26	-0.07	-0.07	2/5/2016
6211	66.21	221.16	65.94114	220.82	-0.27	-0.34	2/5/2016
6212	31.58	161.03	32.08961	161.16	0.51	0.13	11/5/2015
6213	31.58	163.53	31.74757	163.43	0.17	-0.10	11/5/2015
6214	31.58	179.7	31.64807	179.63	0.07	-0.07	12/30/2015
6215	31.58	182.2	31.72602	182.22	0.15	0.02	12/30/2015
6216	35.83	198.86	35.93584	198.61	0.11	-0.25	2/24/2016
6217	35.83	201.36	35.94	201.43	0.11	0.07	2/24/2016
6218	35.83	203.88	35.90071	203.79	0.07	-0.09	2/24/2016
6219	35.83	206.36	35.92	206.29	0.09	-0.07	2/24/2016
6220	33.58	200.11	33.65023	199.85	0.07	-0.26	2/24/2016
6221	33.58	202.61	33.68	202.68	0.10	0.07	2/24/2016
6222	33.58	205.11	33.59844	205.33	0.02	0.22	2/24/2016
6223	31.33	198.86	31.40071	198.79	0.07	-0.07	2/24/2016
6224	31.33	201.36	31.22	201.29	-0.11	-0.07	2/24/2016
6225	31.33	203.86	31.25929	203.93	-0.07	0.07	2/24/2016
6226	31.33	206.36	31.40071	206.29	0.07	-0.07	2/24/2016
6227	31.58	211.25	31.939	211.69	0.36	0.44	2/24/2016
6228	33.83	219.29	33.70241	218.98	-0.13	-0.31	2/5/2016
6229	33.83	221.79	33.75929	221.86	-0.07	0.07	2/5/2016
6230	33.83	224.29	33.90071	224.36	0.07	0.07	2/5/2016
6231	33.83	226.79	33.75929	226.72	-0.07	-0.07	2/5/2016
6232	31.33	219.29	31.40071	219.36	0.07	0.07	2/5/2016
6233	31.33	221.79	31.40071	221.86	0.07	0.07	2/5/2016
6234	31.33	224.29	31.40071	224.22	0.07	-0.07	2/5/2016
6235	31.33	226.79	31.40071	226.72	0.07	-0.07	2/5/2016
6236	31.58	237.06	31.35718	236.16	-0.22	-0.90	2/24/2016
6237	33.83	248.7	33.70889	248.80	-0.12	0.10	2/24/2016
6238	33.83	251.2	33.890071	251.27	0.06	0.07	2/24/2016



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120 CHARLOTTE PLACE

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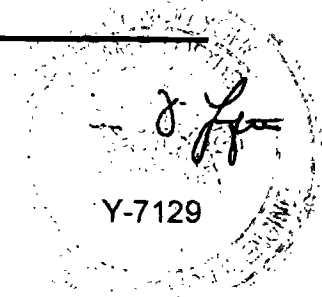
DATE: 01/22/16

REVISED 5/16/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET



Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6239	33.83	253.7	33.90071	253.63	0.07	-0.07	2/24/2016
6240	33.83	256.2	33.94	256.26	0.11	0.06	2/24/2016
6241	31.33	248.7	31.25929	248.79	-0.07	0.09	2/24/2016
6242	31.33	251.2	31.43	251.27	0.10	0.07	2/24/2016
6243	31.33	253.7	31.40071	253.63	0.07	-0.07	2/24/2016
6244	31.33	256.2	31.25929	256.27	-0.07	0.07	2/24/2016
6245	233.91	266.42	233.77311	266.53	-0.14	0.11	9/10/2015
6246	234.97	218.4624	235.11624	218.50	0.15	0.04	8/11/2015
6247	237.47	214.8766	237.28375	214.62	-0.19	-0.26	8/11/2015
6248	239.63	216.2788	239.76664	216.53	0.14	0.26	8/11/2015
6249	239.46	218.7729	239.50728	218.82	0.05	0.05	8/11/2015
6250	237.30	217.3706	237.37876	217.42	0.08	0.05	8/11/2015
6251	237.13	219.8646	237.14034	219.83	0.01	-0.04	8/11/2015
6252	235.14	215.9684	235.13343	216.05	-0.01	0.09	8/11/2015
6253	261.25	266.06	261.31025	266.09	0.06	0.03	8/3/2015
6254	260.94	270.55	261.40387	268.34	0.46	-2.21	8/3/2015
6255	259.09	264.65	257.92944	265.36	-1.16	0.71	8/3/2015
6256	258.85	268.15	259.10928	267.90	0.26	-0.25	8/3/2015
6257	258.61	271.64	259.88112	270.84	1.27	-0.80	8/3/2015
6258	256.76	265.75	256.34742	267.75	-0.41	2.00	8/3/2015
6259	256.45	270.24	257.68536	270.37	1.24	0.13	8/3/2015
6260	210.38	298.54	210.22	298.58	-0.16	0.04	8/3/2015
6261	177.5871	296.27	177.25	296.196	-0.34	-0.07	12/14/2015
6262	65.52	209.2325	65.58	209.38	0.06	0.15	1/22/2016
6263	93.73	225.302	93.84776	225.16	0.12	-0.14	1/22/2016
6264	91.43	229.67	91.53332	229.56	0.10	-0.11	1/22/2016
6265	91.1251	227.1674	91.12	227.36	-0.01	0.19	1/22/2016
6266	88.93	229.5083	89.27162	229.09	0.34	-0.42	1/22/2016
6267	88.6	226.801	88.92611	226.80	0.33	0.00	1/22/2016



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CONSULTING ENGINEERS

120 CHARLOTTE PLACE

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SUBJ: Pile Deviations

PROJ: 250 SOUTH STREET

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
6268	88.76	224.479	88.95714	224.55	0.20	0.07	1/22/2016
6269	91.2921	224.643	91.03947	224.58	-0.25	-0.06	1/22/2016
6270	93.558	227.8258	93.52826	227.97	-0.03	0.15	1/22/2016
6271	94.2166	153.04	94.96065	153.49	0.74	0.45	10/28/2015
6272	93.9864	166.62	94.2057	166.65	0.22	0.03	10/28/2015
6273	69.0641	150.14	69.3965	150.29	0.33	0.15	10/28/2015
6274	76.6075	163.21	76.90357	163.33	0.30	0.13	10/28/2015
6275	64.1366	158.57	64.48058	158.75	0.34	0.19	10/28/2015
6300	61.88	130.68	61.88251	130.56362	0.00	-0.12	10/16/2015

A	Reviewed	Submission is in general conformance with design concept.
B	Reviewed as noted	Submission is in general conformance with design concept except as noted. Revise and resubmit for the record only.
C	Revise and Resubmit	Submission is in general conformance with design concept except as noted. Revise and resubmit for review and approval.
D	Rejected	Submission is not in conformance with design concept.
X	Not Reviewed	STRUCTURE SURVEY & CALCULATION
Received 05/20/16		Issued 05/20/16 By WH
Includes Review by if checked off: (✓)		
Project:		
252 South St		
No: 1335-00		
SECURITY DOCUMENT CONFIDENTIAL FOR OFFICIAL USE ONLY. Do not remove this notice. Properly destroy document if being discarded (if permitted by law).		

<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> APPROVED AS NOTED
<input type="checkbox"/> NOT APPROVED - RESUBMIT	<input type="checkbox"/> REVIEWED
<input type="checkbox"/> APPROVED FOR CONSTRUCTION ACCORDING TO NOTATION REVISED AND RESUBMIT	
<p><b>Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for general conformance with design concept and general compliance with the information in the contract documents. Contractor is responsible for: Confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all trades; and performing his work in a safe and satisfactory manner.</b></p>	
<p>This approval represents our review of _____ submission of this document only for those modifications requested herein or in previous submissions or as specifically noted by Contractor in this submission. Any other modification to this drawing by the Contractor of previously reviewed material is specifically disapproved.</p>	
<p>It is understood that Engineers notation on submittal is not to be construed as authorization for additional work or cost.</p>	
<p><b>WSP</b> Building Structures</p>	
DATE: 05/20/2016	BY: KS



**Driven Pile Installation Summary  
Attachment B**

THE UNIVERSITY OF THE STATE OF NEW YORK  
THE STATE EDUCATION DEPARTMENT  
88 WASHINGTON AVENUE  
ALBANY, NEW YORK 12210

PROFESSIONAL ENGINEER  
7208 m

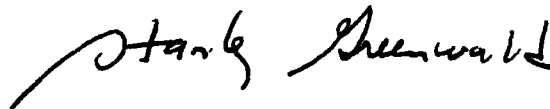
January 19, 1982

STATE BOARD FOR ENGINEERING  
AND LAND SURVEYING  
810: 474-3040

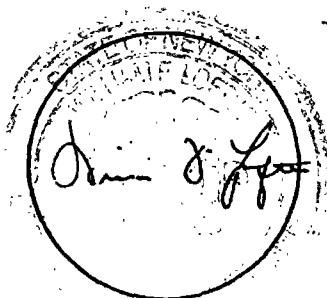
THIS IS TO CERTIFY THAT  
WILLIAM F. LOFTUS, PE #39047

having applied for exemption under Section 7208, paragraph m, to make  
land surveys where such land surveys are essential to engineering projects,  
and having submitted satisfactory evidence, on or before July 1, 1972  
that he is competent and  
experienced in such land surveys, and the STATE BOARD FOR ENGINEERING  
AND LAND SURVEYING having recommended the granting of such exemption;

THEREFORE, in accordance with the provisions of Section 7208,  
paragraph m, of the Education Law, the said PROFESSIONAL ENGINEER is  
hereby granted this exemption to make land surveys where such land surveys  
are essential to engineering projects.



Stanley M. Greenwald, PE  
Executive Secretary  
State Board for Engineering and  
Land Surveying



**TR5 FORM – DRILLED CAISSONS**



TR5: Technical Report  
Pile Driving  
Must be typewritten.

Orient and affix BIS  
job number label here

Sheet number 1 of 2 sheets

**1 Location Information** Required for all applications.

House No(s) 250 Street Name SOUTH STREET  
Borough MANHATTAN Block 248 Lot 7501 BIN 1089771 CB No. 103

**2 Applicant Information** Required for all applications.

Last Name BOYER First Name RONALD Middle Initial D  
Business Name LANGAN FNG, ENVIRON, SURVEY & LAND ARCH Business Telephone (201) 794-6900  
Business Address 619 RIVER DRIVE, CTR 1, 4TH FLOOR Business Fax (201) 794-0366  
City ELMWOOD PARK State NJ Zip 07407 Mobile Telephone  
E-Mail License Number 085831  
 P.E.  R.A.

**3 Pile Driving Contractor** Required for all applications.

Last Name Grillo First Name John Middle Initial R.  
Business Name Hayward Baker Inc. Business Telephone 201-489-1700  
Business Address 235 Fairfield Avenue Business Fax 973-575-0126  
City W. Caldwell State NJ Zip 07006 Mobile Telephone

**4 Pile Information** Required for all applications

Type DRILLED CAISSON  
Material STEEL & CEMENT GROUT  
Load Capacity Various - See Attached Tables tons

**5 Hammer Information** Required for all applications.

Make N/A  
Model Number N/A  
Energy N/A

**6 Statements and Signatures** Required for all applications.

I hereby state that the above information is correct and complete to the best of my knowledge and that the above tests were performed in accordance with all Administrative Code Provisions and Departmental Rules, Regulations and Directives.

Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both.

It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

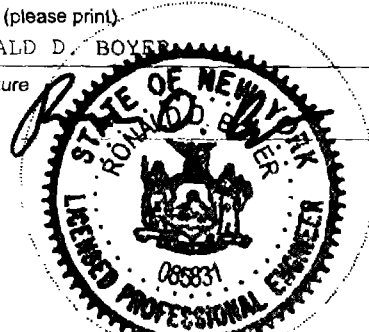
Name (please print)

RONALD D. BOYER

Signature

Date

8/31/16



P.E. / R.A. Seal (apply seal, then sign and date over seal)

**Approvals - Internal Use Only**

Examined and Recommended for Approval		Approved	
Examiner Name		Borough Commissioner Signature	Date
Signature	Date		

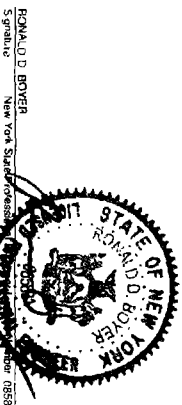


**TABLES**  
**Drilled Caisson Installation Summary**







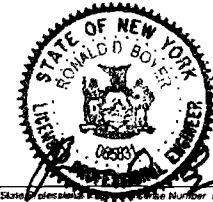


RONALD D. BOYER  
Professional Engineer  
New York State License No. 085831  
Date: 8/31/16

TR-5: Technical Report  
DRILLED CAISSON INSTALLATION SUMMARY - TYPE A  
730 South Street Development  
New York, New York  
Langran Project No. 002252010

1. Caisson casings were drilled into 3018 NYC Blug Core Class 1c or better rock. Approximate length of rock socket includes total length extending into NYC Blug Core Class 1c or better rock.
2. Deviations from Design Conditions are provided on a 2/7 February 2015 pre-qualification survey prepared, signed and sealed by William F. Lotz as Consulting Engineers, see Attachment A.
3. The Project Structural Engineer's substantial review stamp reflecting that as of 5 May 2016 their office has reviewed and approved the drilled caisson as built conditions, see Attachment A.
4. A 19 January 1982 letter from the State Board of Engineering and Land Surveying, indicating William F. Lotz is qualified to sign and seal the survey, is attached as Attachment B.
5. Several caisson elevations were reduced due to low concrete unconfined compressive strength results. See Attachment C for a signed and sealed letter from the Project Structural Engineer accepting the lower caisson capacities.

Caisson ID	Design Compression Capacity (kips)	Design Lateral Capacity (kips)	Design Uplift Capacity (kips)	Casting Type (90 lbs)	Casting Size (C.D. x H)	Approx. Casting Tip Elevation (ft)	Approx. Rock Socket Depth (ft)	Approx. Rock Socket Diameter (ft)	Approx. Rock Socket Elevation (ft)	Approx. Length of Rock Socket (ft)	Full-length Min. 730s Steel Reinforcement	Additional Min. 730s Steel Reinforcement at the Casting Splice	Additional Min. 730s Steel Reinforcement in the Rock Socket	Concrete Compression Strength (ksi)	Caisson Compression Capacity (kips)	Deviations from Design Conditions	Remarks
91-A	1,500	300	11	Permanent	24"x0.50"	98.10	22.5'	1.4	18.70	18.70	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	3,360 N 2,437 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
92-A	1,438	500	11	Permanent	24"x0.50"	99.84	22.5'	1.4	18.30	18.30	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	10,816	6,152 N 3,087 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
93-A	1,383	500	11	Permanent	24"x0.50"	99.84	22.5'	1.4	18.30	18.30	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	3,706	5,522 N 3,087 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
94-A	1,478	500	11	Permanent	24"x0.50"	96.34	22.5'	1.4	17.90	17.90	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	11,410	6,152 N 3,087 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
95-A	1,500	500	11	Permanent	24"x0.50"	94.96	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,290	7,142 N 1,388 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
96-A	1,500	500	11	Permanent	24"x0.50"	97.46	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	7,142 N 3,087 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
97-A	1,500	500	11	Permanent	24"x0.50"	97.46	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	7,142 N 3,087 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
98-A	1,500	500	11	Permanent	24"x0.50"	99.84	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	7,142 N 3,087 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
99-A	1,500	500	11	Permanent	24"x0.50"	99.84	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	7,142 N 3,087 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
100-A	1,472	500	11	Permanent	24"x0.50"	98.30	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	11,400	6,242 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
101-A	1,500	500	11	Permanent	24"x0.50"	97.50	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	7,142 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
102-A	1,500	500	11	Permanent	24"x0.50"	96.50	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	6,242 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
103-A	1,414	500	11	Permanent	24"x0.50"	96.50	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	10,460	6,242 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
104-A	1,433	500	11	Permanent	24"x0.50"	96.20	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	10,720	7,142 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
105-A	1,500	500	11	Permanent	24"x0.50"	96.10	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,700	7,142 N 2,587 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
106-A	1,433	500	11	Permanent	24"x0.50"	96.20	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	10,720	6,242 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
107-A	1,500	500	11	Permanent	24"x0.50"	95.70	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	7,142 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
108-A	1,416	500	11	Permanent	24"x0.50"	97.94	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	10,460	6,242 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
109-A	1,500	500	11	Permanent	24"x0.50"	96.80	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	6,242 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
110-A	1,500	500	11	Permanent	24"x0.50"	96.30	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	7,142 N 2,587 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
111-A	1,483	500	11	Permanent	24"x0.50"	94.80	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	11,460	7,142 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
112-A	1,500	500	11	Permanent	24"x0.50"	95.10	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	6,242 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
113-A	1,500	500	11	Permanent	24"x0.50"	96.80	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,000	6,242 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
114-A	1,500	500	11	Permanent	24"x0.50"	96.20	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	6,242 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
115-A	1,500	500	11	Permanent	24"x0.50"	96.20	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	6,242 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
116-A	1,500	500	11	Permanent	24"x0.50"	96.20	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	6,242 N 1,687 W	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	
117-A	1,500	500	11	Permanent	24"x0.50"	96.20	22.5'	1.4	18.00	18.00	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	(5) #18 Bars (1.4)	12,200	6,242 N 1,687 E	The caisson compression capacity has been reduced due to low concrete compressive strength results and has been accepted by WSP for the lower capacity.	



8/31/16  
Date

**TR-5: Technical Report**  
**DRILLED CAISSON INSTALLATION SUMMARY - TYPE B & C**  
250 South Street Development  
New York, New York  
Langan Project No. 009225510

**RONALD D. BOYER**  
Signature New York State Professional Engineer License Number 082831

1. Caisson casings were sealed into 200R NYC Bldg Code Class 1c or better rock. Approximate length of rock socket indicates socket length extending into NYC Bldg Code Class 1c or better rock.
2. Deviations from Design Coordinates are provided on a 27 February 2015 pile deviation survey prepared, signed and sealed by William F. Loftus Consulting Engineers, see Attachment A.
3. The Project Structural Engineer's submittal review stamp indicates that as of 5 May 2016 their office has reviewed and approved the drilled caisson as-built deviations. See first page of Attachment A.
4. A 19 January 1982 letter from the State Board for Engineering and Land Surveying indicating William F. Loftus is qualified to sign and seal land surveys is attached as Attachment B.

Caisson ID	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Casing Type (50 ksi)	Casing Size (O.D. x thickness)	Approx. Casing Tip Elevation (feet) (NAVD88)	Approx. Rock Socket Diameter	Approx. Rock Socket Tip Elevation (feet) (NAVD88)	Approx. Length of Rock Socket Below Casing (feet)	Full-length Min. 75ksi Steel Reinforcement	Grout Compressive Strength (psi)	Caisson Completion Date	Deviations from Design Coordinates	Remarks
118-B	200	45	Permanent	9.625"x0.472"	-105.80	8"	-114.40	8.60	(1) #28 Bar	>6,000	5/19/2015	4.80" S 6.00" E	
119-B	200	45	Permanent	9.625"x0.472"	-116.00	8"	-123.00	7.00	(1) #28 Bar	>6,000	5/19/2015	3.95" S 2.64" E	
120-B	200	45	Permanent	9.625"x0.472"	-118.00	8"	-125.30	7.30	(1) #28 Bar	>6,000	5/19/2015	1.08" S 1.56" E	
121-B	200	45	Permanent	9.625"x0.472"	-106.30	8"	-113.60	7.30	(1) #28 Bar	>6,000	5/20/2015	3.12" S 3.60" W	
122-B	200	45	Permanent	9.625"x0.472"	-111.00	8"	-118.70	7.70	(1) #28 Bar	>6,000	5/20/2015	0.96" N 1.68" W	
123-B	200	45	Permanent	9.625"x0.472"	-113.10	8"	-120.40	7.30	(1) #28 Bar	>6,000	5/20/2015	3.72" S 0.96" W	
124-B	200	45	Permanent	9.625"x0.472"	-106.00	8"	-113.20	7.20	(1) #28 Bar	>6,000	5/20/2015	0.72" S 1.68" W	
125-B	200	45	Permanent	9.625"x0.472"	105.00	8"	-112.10	7.10	(1) #28 Bar	>6,000	5/20/2015	0.48" N 0.72" W	
126-B	200	45	Permanent	9.625"x0.472"	-104.10	8"	-111.10	7.00	(1) #28 Bar	>6,000	5/20/2015	2.16" S 1.68" W	
127-B	200	45	Permanent	9.625"x0.472"	115.70	8"	-123.50	7.80	(1) #28 Bar	>6,000	4/29/2015	2.76" S 0.60" E	
128-B	200	45	Permanent	9.625"x0.472"	-116.00	8"	-123.50	7.50	(1) #28 Bar	>6,000	4/30/2015	1.08" S 3.24" E	
129-B	200	45	Permanent	9.625"x0.472"	-116.10	8"	-123.60	7.70	(1) #28 Bar	>6,000	4/29/2015	1.20" N 4.32" E	
130-B	200	45	Permanent	9.625"x0.472"	-115.40	8"	-124.40	9.00	(1) #28 Bar	>6,000	4/30/2015	1.20" N 2.28" E	
131-B	200	45	Permanent	9.625"x0.472"	-116.30	8"	-124.30	8.00	(1) #28 Bar	>6,000	4/30/2015	0.60" N 2.88" E	
132-B	200	45	Permanent	9.625"x0.472"	-116.50	8"	-124.30	7.80	(1) #28 Bar	>6,000	4/30/2015	1.80" N 3.36" E	
133-C	200	45	Permanent	9.625"x0.472"	-123.00	8"	131.40	8.40	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/1/2015	3.36" S 0.84" E	
134-C	200	45	Permanent	9.625"x0.472"	116.70	8"	-124.90	8.20	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/1/2015	0.36" N 2.16" E	
135-C	200	45	Permanent	9.625"x0.472"	-115.70	8"	124.00	8.30	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/1/2015	0.12" S 2.04" E	
136-C	200	45	Permanent	9.625"x0.472"	-126.00	8"	-133.50	7.50	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/1/2015	0.84" N 3.24" E	
137-C	200	45	Permanent	9.625"x0.472"	-132.00	8"	-139.20	7.20	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/1/2015	1.68" S 0.24" W	
138-C	200	45	Permanent	9.625"x0.472"	132.30	8"	140.80	8.50	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/4/2015	1.68" N 1.80" E	
139-C	200	45	Permanent	9.625"x0.472"	-132.30	8"	-140.00	7.70	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/1/2015	1.44" N 4.08" E	
140-C	200	45	Permanent	9.625"x0.472"	-133.00	8"	-140.60	7.60	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/4/2015	0.36" S 7.80" E	
141-C	200	45	Permanent	9.625"x0.472"	-134.60	8"	-142.10	7.50	(1) #14 in cased section up to 6' above casing tip & then (1) #28 to socket tip	>6,000	5/4/2015	0.84" N 2.88" E	

**TR-5: Technical Report  
DRILLED CAISSON INSTALLATION SUMMARY - Bracket Caissons**  
250 South Street Development  
New York, New York  
Langan Project No. 009225510

RONALD D. BOYER  
Signature

New York State Professional Engineer License Number 085831



8/31/16  
Date

- 1 Caisson casings were seated into 2008 NYC Bldg Code Class 1c or better rock. Approximate length of rock socket indicates socket length extending into NYC Bldg Code Class 1c or better rock.
- 2 Deviations from Design Coordinates are provided on a 27 February 2015 pile deviation survey prepared, signed, and sealed by William F. Loftus Consulting Engineers, see Attachment A.
3. The Project Structural Engineer's submittal review stamp indicates that as of 5 May 2016 their office has reviewed and approved the drilled caisson as-built deviations, see first page of Attachment A.
- 4 A 19 January 1982 letter from the State Board for Engineering and Land Surveying, indicating William F. Loftus is qualified to sign and seal land surveys, is attached as Attachment B.

Caisson ID	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Casing Type (50 ksi)	Casing Size (O.D. x thickness)	Approx. Casing Tip Elevation (feet) (NAVD88)	Approx. Rock Socket Diameter	Approx. Rock Socket Tip Elevation (feet) (NAVD88)	Approx. Length of Rock Socket Below Casing (feet)	Full-length Steel Reinforcement	Additional Steel Reinforcement in the Rock Socket	Grout Compressive Strength (psi)	Caisson Completion Date	Deviations from Design Coordinates	Remarks
A	400	200	Permanent	13.375"x0.514"	-97.30	12"	-107.90	10.60	(1) #28 Bar	(3) #14 Bars	>8,000	8/4/2015	0.96" S 4.92" W	
B	400	0	Permanent	13.375"x0.514"	-106.10	12"	-117.20	11.10	(1) #20 Bar	(3) #18 Bars	>8,000	8/5/2015	2.16" S 1.80" W	
C	400	0	Permanent	13.375"x0.514"	-107.00	12"	-117.10	10.10	(1) #20 Bar	(3) #18 Bars	>8,000	8/5/2015	0.12" N 3.00" W	
D	400	0	Permanent	13.375"x0.514"	-105.00	12"	-115.50	10.50	(1) #20 Bar	(3) #18 Bars	>8,000	8/5/2015	0.72" N 10.20" E	
E	400	0	Permanent	13.375"x0.514"	-111.60	12"	-121.90	10.30	(1) #20 Bar	(3) #18 Bars	>8,000	8/3/2015	3.60" S 1.32" E	
F	400	0	Permanent	13.375"x0.514"	-111.60	12"	-121.90	10.30	(1) #20 Bar	(3) #18 Bars	>8,000	8/3/2015	3.96" S 1.20" E	
G	400	0	Permanent	13.375"x0.514"	-115.70	12"	-126.70	11.00	(1) #20 Bar	(3) #18 Bars	>8,000	8/3/2015	7.20" N 6.12" W	
H	400	0	Permanent	13.375"x0.514"	-116.00	12"	-125.50	9.50	(1) #20 Bar	(3) #18 Bars	>8,000	8/3/2015	7.08" N 8.52" E	
I	400	0	Permanent	13.375"x0.514"	-131.30	12"	-141.40	10.10	(1) #20 Bar	(3) #18 Bars	>8,000	8/10/2015	1.20" N 5.28" W	
J	400	200	Permanent	13.375"x0.514"	-111.50	12"	-122.10	10.60	(1) #28 Bar	(3) #14 Bars	>8,000	8/10/2015	0.84" S 0.00" E	
K	400	200	Permanent	13.375"x0.514"	-102.60	12"	-113.60	11.00	(1) #28 Bar	(3) #14 Bars	>8,000	8/10/2015	15.00" N 14.16" W	

**Drilled Caisson Installation Summary  
Attachment A**



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE

ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

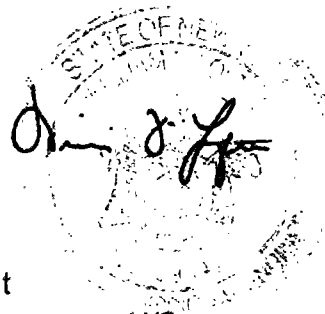
DATE: 2/27/15

REVISED 5/4/16

ATTN:

SUBJ: Pile Deviations

PROJ: 250 South St Caissons



APPROVED  APPROVED AS NOTED  
 NOT APPROVED - RESUBMIT  REVIEWED  
 APPROVED FOR CONSTRUCTION ACCORDING TO NOTATION REVISED AND RESUBMIT  
 Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for general conformance with design concept and general compliance with the information in the contract documents. Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all trades; and performing his work in a safe and satisfactory manner.  
 This approval represents our review of 3  
 submission of this document only for those modifications requested herein or in previous submissions or as specifically noted by Contractor in this submission. Any other modification to this drawing by the Contractor of previously reviewed material is specifically disapproved.  
 It is understood that Engineers notation on submittal is not to be construed as authorization for additional work or cost.  
 WSP  
 Building Structures  
 DATE 05/05/2016 BY KS  
 Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
1A	200.1288	16.1338	200.33256	16.37722	0.20	0.24	7/23/2015
2A	202.63	20.4653	202.68	20.51462	0.05	0.05	7/23/2015
3A	220.3065	46.0562	220.30802	46.24621	0.00	0.19	5/27/2015
4A	222.8065	50.3864	222.83758	50.34495	0.03	-0.04	5/27/2015
5A	225.3065	54.7165	224.86562	54.45701	-0.44	-0.26	5/27/2015
6A	215.965	48.5628	215.47245	48.42975	-0.49	-0.13	5/27/2015
7A	218.465	52.8929	218.16789	52.86447	-0.30	-0.03	7/23/2015
8A	220.9764	57.2165	220.73144	57.37427	-0.24	0.16	7/23/2015
9A	248.7195	90.2711	248.33141	89.97578	-0.39	-0.30	5/27/2015
10A	251.2195	94.6012	250.85233	94.37646	-0.37	-0.22	5/27/2015
11A	253.7195	98.9313	253.03259	98.88689	-0.69	-0.04	5/27/2015
12A	244.3894	92.7711	244.14812	92.38066	-0.24	-0.39	5/27/2015
13A	246.8894	97.1012	246.93377	96.79302	0.04	-0.31	5/27/2015
14A	249.3894	101.4313	249.55131	101.7499	0.16	0.32	5/27/2015
15A	240.0593	95.2711	240.07132	95.33551	0.01	0.06	5/27/2015
16A	242.5593	99.6012	242.4688	99.24742	-0.09	-0.35	5/27/2015
17A	245.0593	103.9313	244.90837	103.52878	-0.15	-0.40	5/27/2015
18A	150.3983	25.4976	150.6329	25.3134	0.23	-0.18	7/23/2015
19A	152.8753	29.7879	152.8387	29.5888	-0.04	-0.20	7/23/2015
20A	155.3983	34.1578	155.4083	34.14246	0.01	-0.02	7/23/2015
21A	146.0682	27.9976	146.01419	27.88109	-0.05	-0.12	7/23/2015
22A	148.5452	32.2879	148.59579	32.1943	0.05	-0.09	7/23/2015
23A	151.0681	36.6578	151.04278	36.74729	-0.03	0.09	7/23/2015
24A	156.9817	41.5671	157.42909	42.15002	0.45	0.58	7/23/2015
25A	161.3134	44.0698	160.93882	44.09799	-0.37	0.03	7/23/2015
26A	156.9833	46.5698	157.12334	46.2812	0.14	-0.29	7/23/2015
27A	167.1902	52.7527	166.86957	52.85754	-0.32	0.10	7/23/2015
28A	169.6902	57.0828	169.39262	57.36812	-0.30	0.29	7/23/2015
29A	164.1488	56.818	163.76108	57.5809	-0.39	0.76	7/23/2015



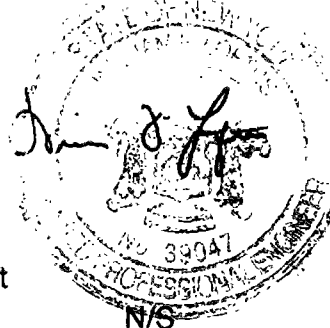
# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632  
OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 2/27/15  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 South St Caissons

REVISED 5/4/16



Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
30A	170.9602	63.2777	171.10494	63.36041	0.14	0.08	7/23/2015
31A	174.4602	69.3399	174.45575	69.94695	0.00	0.61	7/23/2015
32A	178.2726	75.9433	177.99855	76.05186	-0.27	0.11	7/23/2015
33A	182.0851	82.5467	182.19694	82.92887	0.11	0.38	5/27/2015
34A	185.5851	88.6089	185.64292	89.09439	0.06	0.49	5/27/2015
35A	190.3151	92.8062	190.54325	92.76292	0.23	-0.04	5/27/2015
36A	193.3152	98.0024	193.82526	97.59684	0.51	-0.41	5/27/2015
37A	196.5406	102.5873	196.79513	102.6372	0.25	0.05	5/27/2015
38A	199.0406	106.9174	199.00994	107.0447	-0.03	0.13	8/6/2015
39A	201.5406	111.2475	201.41322	111.23688	-0.13	-0.01	8/6/2015
40A	204.0405	115.5776	204.03354	115.16494	-0.01	-0.41	8/6/2015
41A	206.5405	119.9077	206.62636	119.25377	0.09	-0.65	8/6/2015
42A	209.0405	124.2378	208.96648	123.88289	-0.07	-0.35	8/6/2015
43A	185.985	95.3062	186.02744	95.45803	0.04	0.15	5/27/2015
44A	188.9851	100.5024	189.0534	100.29439	0.07	-0.21	5/27/2015
45A	192.2105	105.0873	191.82253	104.67034	-0.39	-0.42	8/10/2015
46A	194.7105	109.4174	194.66651	109.27996	-0.04	-0.14	8/10/2015
47A	197.2104	113.7475	196.95339	113.27924	-0.26	-0.47	8/10/2015
48A	199.7104	118.0776	199.72261	117.60716	0.01	-0.47	8/10/2015
49A	202.2104	122.4077	201.97594	121.61523	-0.23	-0.79	8/6/2015
50A	204.7104	126.7378	204.50256	126.53351	-0.21	-0.20	8/6/2015
51A	159.8187	59.318	159.21311	59.68111	-0.61	0.36	8/6/2015
52A	154.7772	59.9193	154.80831	60.16309	0.03	0.24	8/6/2015
53A	157.2772	64.2494	156.98009	64.6769	-0.30	0.43	8/6/2015
54A	150.4471	62.4193	150.49365	62.711	0.05	0.29	8/6/2015
55A	152.9471	66.7494	152.99642	67.08501	0.05	0.34	8/6/2015
56A	166.3693	81.9973	165.90931	81.89036	-0.46	-0.11	8/6/2015
57A	171.7202	85.2602	171.77327	84.94695	0.05	-0.31	8/6/2015
58A	175.8866	92.4767	176.24504	92.20648	0.36	-0.27	8/6/2015



# William F. Loftus

## CONSULTING ENGINEERS

120 CHARLOTTE PLACE  
 ENGLEWOOD CLIFFS, NJ 07632  
 OFFICE: 201-871-4800 - FAX: 201-871-1850

DATE: 2/27/15  
 ATTN:  
 SUBJ: Pile Deviations  
 PROJ: 250 South St Caissons

REVISED 5/4/16



Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
59A	183.1572	100.403	183.2036	99.74489	0.05	-0.66	8/6/2015
60A	178.8271	102.903	178.73565	102.7113	-0.09	-0.19	8/6/2015
61A	146.5397	66.9847	146.78298	67.27882	0.24	0.29	8/6/2015
62A	141.634	69.817	141.62885	69.86957	-0.01	0.05	8/6/2015
63A	148.2501	79.2765	148.27304	78.99394	0.02	-0.28	8/6/2015
64A	152.2501	86.2047	152.19	86.24	-0.06	0.04	8/6/2015
65A	174.497	105.403	173.85388	104.85569	-0.64	-0.55	8/6/2015
66A	170.1669	107.903	169.62766	108.18234	-0.54	0.28	8/6/2015
67A	168.6388	112.9229	168.4224	112.75186	-0.22	-0.17	8/6/2015
68A	102.3825	20.4982	102.59267	20.47049	0.21	-0.03	7/23/2015
69A	104.8825	24.8283	104.96386	25.07874	0.08	0.25	7/23/2015
70A	117.0475	40.8988	117.34868	40.92814	0.30	0.03	7/23/2015
71A	119.5475	45.2289	119.76414	45.1812	0.22	-0.05	7/23/2015
72A	122.0475	49.559	122.31163	49.52901	0.26	-0.03	7/23/2015
73A	112.7174	43.3987	112.98486	43.50446	0.27	0.11	7/23/2015
74A	115.2174	47.7289	115.52964	47.91117	0.31	0.18	7/23/2015
75A	117.7174	52.059	118.07148	52.33862	0.35	0.28	7/23/2015
76A	128.76	61.18	128.54686	61.08415	-0.21	-0.10	7/23/2015
77A	131.26	65.51	131.30968	65.2176	0.05	-0.29	7/23/2015
78A	124.43	63.68	124.64706	62.84155	0.22	-0.84	7/23/2015
79A	126.93	68.01	126.61987	67.01087	-0.31	-1.00	7/23/2015
80A	133.7785	72.043	134.4166	72.83147	0.64	0.79	7/23/2015
81A	136.2784	76.3731	136.46437	77.06116	0.19	0.69	7/23/2015
82A	129.4483	74.5429	129.475	74.10331	0.03	-0.44	7/23/2015
83A	131.9483	78.8731	131.77349	78.51673	-0.17	-0.36	7/23/2015
84A	137.7675	81.2868	137.95905	81.65218	0.19	0.37	5/27/2015
85A	140.7675	86.4829	140.8917	86.65217	0.12	0.17	5/27/2015
86A	144.6842	93.2669	144.60881	93.221	-0.08	-0.05	5/27/2015
87A	147.4683	98.5877	147.66263	98.50308	0.19	-0.08	8/6/2015



# William F. Loftus

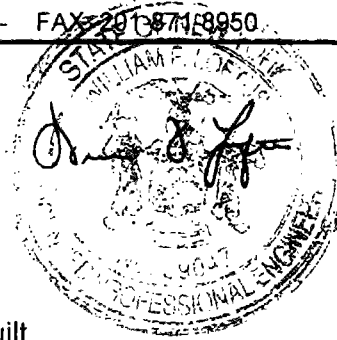
## CONSULTING ENGINEERS

120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632

OFFICE: 201-871-4800 - FAX: 201-871-8950

DATE: 2/27/15  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 South St Caissons

REVISED 5/4/16



Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
88A	150.4682	103.7838	150.74938	103.40491	0.28	-0.38	8/6/2015
89A	153.4682	108.98	153.56826	108.77485	0.10	-0.21	8/6/2015
90A	163.383	111.8197	163.37592	111.74337	-0.01	-0.08	8/6/2015
91A	162.0715	116.7146	161.74526	116.5166	-0.33	-0.20	8/6/2015
92A	157.1766	115.403	157.26141	115.11543	0.08	-0.29	8/6/2015
93A	152.2817	114.0914	152.74423	113.84317	0.46	-0.25	8/6/2015
94A	155.865	120.2979	155.8513	120.33441	-0.01	0.04	8/10/2015
95A	78.3225	30.1581	78.39793	30.24742	0.08	0.09	7/23/2015
96A	57.8407	41.514	57.84605	41.21124	0.01	-0.30	7/23/2015
97A	60.3407	45.8441	60.46927	45.46969	0.13	-0.37	7/23/2015
98A	75.6295	67.3279	75.85111	67.39292	0.22	0.07	9/11/2015
99A	78.1293	71.6581	78.48395	71.74103	0.35	0.08	9/11/2015
100A	80.6293	75.9882	80.86498	75.84678	0.24	-0.14	9/11/2015
101A	71.2997	69.8277	71.64153	69.66876	0.34	-0.16	9/11/2015
102A	73.7997	74.1578	74.09752	74.40228	0.30	0.24	9/11/2015
103A	76.2992	78.4882	76.57041	78.62631	0.27	0.14	9/11/2015
104A	87.5044	87.8966	87.77516	87.62783	0.27	-0.27	9/11/2015
105A	87.5063	92.8991	87.48581	92.71074	-0.02	-0.19	7/23/2015
106A	83.1749	90.3962	83.25894	90.23314	0.08	-0.16	9/11/2015
107A	96.1024	93.7884	96.06878	93.74953	-0.03	-0.04	7/23/2015
108A	98.6038	98.121	98.63522	98.0613	0.03	-0.06	7/23/2015
109A	93.4567	98.2059	93.48069	98.04918	0.02	-0.16	7/23/2015
110A	87.8757	98.5382	88.03792	98.30922	0.16	-0.23	7/23/2015
111A	90.3771	102.8707	90.33692	102.80334	-0.04	-0.07	7/23/2015
112A	103.8449	115.6959	103.78	115.77	-0.06	0.07	10/9/2015
113A	106.3678	120.0657	106.29	120.15	-0.08	0.08	10/9/2015
114A	108.8665	124.3935	108.97	124.5	0.10	0.11	10/9/2015
115A	99.5135	118.1967	99.41	118.12	-0.10	-0.08	10/9/2015
116A	102.0363	122.5665	102.21	122.41	0.17	-0.16	10/9/2015





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120 CHARLOTTE PLACE  
ENGLEWOOD CLIFFS, NJ 07632  
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DATE: 2/27/15  
ATTN:  
SUBJ: Pile Deviations  
PROJ: 250 South St Caissons

REVISED 5/4/16

Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
117A	104.535	126.8943	104.33	127.01	-0.20	0.12	10/9/2015
118B	155.77	294.68	155.37269	295.185	-0.40	0.50	5/27/2015
119B	155.54	290.66	155.21471	290.87928	-0.33	0.22	5/27/2015
120B	151.78	294.4	151.6924	294.53279	-0.09	0.13	5/27/2015
121B	128	292.84	127.73866	292.54093	-0.26	-0.30	5/27/2015
122B	126.07	289.29	126.15227	289.15	0.08	-0.14	5/7/2015
123B	123.68	292.54	123.3651	292.46	-0.31	-0.08	5/7/2015
124B	118.85	292.21	118.79363	292.07455	-0.06	-0.14	5/27/2015
125B	116.59	288.63	116.62667	288.567	0.04	-0.06	5/27/2015
126B	112.69	289.53	112.51052	289.38863	-0.18	-0.14	5/27/2015
127B	90.78	289.86	90.54614	289.91	-0.23	0.05	5/7/2015
128B	87.07	285.6	86.98423	285.87	-0.09	0.27	5/7/2015
129B	86.79	289.59	86.89312	289.95	0.10	0.36	5/7/2015
130B	82.8	289.31	82.90481	289.50	0.10	0.19	5/7/2015
131B	68.98	288.68	69.03264	288.92	0.05	0.24	5/7/2015
132B	64.99	288.4	65.1449	288.68	0.15	0.28	5/7/2015
133C	57	287.93	56.71614	288.00	-0.28	0.07	5/7/2015
134C	54.73	284.6	54.7627	284.78	0.03	0.18	5/7/2015
135C	52.01	287.59	51.9964	287.76	-0.01	0.17	5/7/2015
136C	49.74	284.26	49.81465	284.53	0.07	0.27	5/7/2015
137C	47.02	287.24	46.88426	287.22	-0.14	-0.02	5/7/2015
138C	35.75	282.45	35.89118	282.60	0.14	0.15	5/7/2015
139C	35.47	286.44	35.59335	286.78	0.12	0.34	5/7/2015
140C	31.75	282.18	31.72325	282.83	-0.03	0.65	5/7/2015
141C	31.48	286.17	31.55	286.40578	0.07	0.24	5/7/2015
1-PTD	291.6615	57.1256	291.84	57.21	0.18	0.08	8/6/2015
2-PTD	181.3204	27.6426	181.1887	27.46128	-0.13	-0.18	7/23/2015
3-PTD	177.9049	26.7291	177.82676	26.80621	-0.08	0.08	7/23/2015
4-PTD	193.2564	48.2937	193.26	48.41	0.00	0.12	8/6/2015



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DATE: 2/27/15

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PROJ: 250 South St Caissons

Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
5-PTD	189.8409	47.3802	189.89	47.33	0.05	-0.05	8/6/2015
6-PTD	139.3101	32.3755	139.32518	32.26602	0.02	-0.11	7/23/2015
7-PTD	138.3951	35.7906	137.51445	36.32723	-0.88	0.54	7/23/2015
8-PTD	276.6578	137.4409	276.73846	137.35218	0.08	-0.09	8/6/2015
9-PTD	258.1429	137.4591	258.50985	137.62843	0.37	0.17	8/6/2015
10-PTD	301.3219	190.2178	302.00486	190.31904	0.68	0.10	8/6/2015
11-PTD	299.6159	214.917	300.41651	214.82849	0.80	-0.09	8/6/2015
12-PTD	284.3625	189.0283	284.47	188.77	0.11	-0.26	8/6/2015
13-PTD	273.99	213.3529	273.82	213.08	-0.17	-0.27	8/7/2015
14-PTD	262.9156	187.5693	262.86428	187.38408	-0.05	-0.19	8/6/2015
15-PTD	247.323	211.2696	247.38511	211.20183	0.06	-0.07	8/6/2015
16-PTD	235.1474	275.0283			-235.15	-275.03	
17-PTD	230.7408	185.3196	231.10821	185.16649	0.37	-0.15	8/6/2015
18-PTD	229.0332	210.0105	229.3703	209.70634	0.34	-0.30	8/6/2015
19-PTD	218.7502	182.3425	219.01054	182.139	0.26	-0.20	8/6/2015
20-PTD	217.0423	207.0383	217.34588	206.62413	0.30	-0.41	8/6/2015
21-PTD	204.6722	156.4782	204.6722	156.44	0.00	-0.04	8/6/2015
22-PTD	201.2232	182.2182	201.39824	182.1832	0.18	-0.03	8/6/2015
23-PTD	199.4828	206.9886	199.70251	206.77355	0.22	-0.22	8/6/2015
24-PTD	187.3708	213.96	187.12223	213.829	-0.25	-0.13	12/2/2015
25-PTD	186.4209	232.0651			-186.42	-232.07	
25A-PTD	182.54	279.57	182.88225	279.98229	0.34	0.41	12/14/2015
26-PTD	185.9914	238.2081			-185.99	-238.21	
27-PTD	163.85	192.41	163.75	192.04	-0.10	-0.37	11/17/2015
28-PTD	133.921	190.3501	133.96311	190.10813	0.04	-0.24	12/14/2015
29-PTD	118.5984	179.3403	118.71929	179.33605	0.12	0.00	10/28/2015
30-PTD	116.2718	176.6788	115.85	176.5	-0.42	-0.18	10/28/2015
31-PTD	101.3463	178.1413	101.41346	177.8011	0.07	-0.34	10/28/2015
32-PTD	99.0219	175.4854	99.51904	175.29866	0.50	-0.19	10/28/2015



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Y-7188

Pile Number	Proposed North	Proposed East	Asbuilt North	Asbuilt East	N/S	E/W	
33-PTD	84.0942	176.9582	84.17262	176.64919	0.08	-0.31	10/28/2015
34-PTD	81.7798	174.2821	81.94095	174.37224	0.16	0.09	10/28/2015
35-PTD	66.8312	175.7651	67.26733	175.64928	0.44	-0.12	10/28/2015
36-PTD	64.5178	173.0987	64.74755	172.89581	0.23	-0.20	10/28/2015
37-PTD	49.5899	174.5669	49.81431	174.46431	0.22	-0.10	10/28/2015
38-PTD	47.2634	171.9053	47.43872	171.79363	0.18	-0.11	10/28/2015
39-PTD	69.3056	255.0348	69.32	255.08	0.01	0.05	8/14/2015
A	122.59	258.72	122.51	258.31	-0.08	-0.41	8/6/2015
B	132.18	290.38	132.00415	290.23022	-0.18	-0.15	8/6/2015
C	121.33	288.96	121.33653	288.71201	0.01	-0.25	8/6/2015
D	106.74	288.62	106.79771	289.47472	0.06	0.85	8/6/2015
E	98.78	289.64	98.48	289.75	-0.30	0.11	8/6/2015
F	94.78	289.64	94.45	289.74	-0.33	0.10	8/6/2015
G	76.95	289.31	77.55	288.80	0.60	-0.51	8/6/2015
H	72.96	289.04	73.55	289.75	0.59	0.71	8/6/2015
I	42.23	284.16	42.33	283.72	0.10	-0.44	8/10/2015
J	59.19	256.88	59.12	256.88	-0.07	0.00	8/11/2015
K	47.60	252.53	48.85	251.35	1.25	-1.18	8/10/2015
Tower Crane 1	125.14	20.52	125.31709	20.48	0.18	-0.04	11/18/2015
tower crane 2	130.88	30.5	131.06193	30.56	0.18	0.06	11/18/2015
Tower Crane 3	115.16	26.23	115.33113	26.34	0.07	0.11	11/18/2015
Tower Crane 4	120.93	36.27	121.00151	36.23	0.07	0.04	11/18/2015

**AAI**  
 ARCHITECTS, P.C.

<input type="checkbox"/> A	Reviewed	Submission is in general conformance with design concept.
<input type="checkbox"/> B	Reviewed as noted	Submission is in general conformance with design concept except as noted. Revise and resubmit for the record only.
<input type="checkbox"/> C	Revise and Resubmit	Submission is in general conformance with design concept except as noted. Revise and resubmit for review and approval.
<input type="checkbox"/> D	Rejected	Submission is not in conformance with design concept.
<input checked="" type="checkbox"/> X	Not Reviewed	STRUCTURE CALCULATION
Received 05/05/16		Issued 05/05/16 By WH
Includes Review by if checked off: (✓)		
Project:	252 South St	
No:	1335-00	
SECURITY DOCUMENT CONFIDENTIAL FOR OFFICIAL USE ONLY. Do not remove this notice. Property destroy document if being discarded (if permitted by law).		

**Drilled Caisson Installation Summary  
Attachment B**

THE UNIVERSITY OF THE STATE OF NEW YORK  
THE STATE EDUCATION DEPARTMENT  
88 WASHINGTON AVENUE  
ALBANY, NEW YORK 12210

PROFESSIONAL ENGINEER  
7208 m

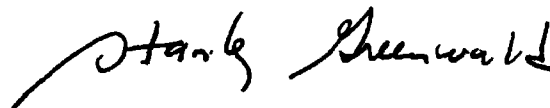
January 19, 1982

STATE BOARD FOR ENGINEERING  
AND LAND SURVEYING  
SIB: 474-2646

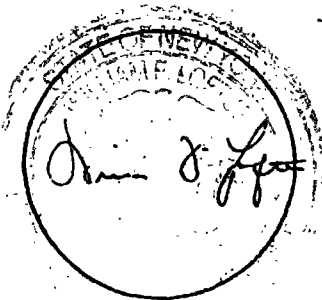
THIS IS TO CERTIFY THAT  
WILLIAM F. LOFTUS, PE #39047

having applied for exemption under Section 7208, paragraph m, to make  
land surveys where such land surveys are essential to engineering projects,  
and having submitted satisfactory evidence, on or before July 1, 1972  
that he is competent and  
experienced in such land surveys, and the STATE BOARD FOR ENGINEERING  
AND LAND SURVEYING having recommended the granting of such exemption;

THEREFORE, in accordance with the provisions of Section 7208,  
paragraph m, of the Education Law, the said PROFESSIONAL ENGINEER is  
hereby granted this exemption to make land surveys where such land surveys  
are essential to engineering projects.



Stanley M. Greenwald, PE  
Executive Secretary  
State Board for Engineering and  
Land Surveying



**Drilled Caisson Installation Summary  
Attachment C**



228 East 45th Street  
3rd Floor  
New York, NY 10017  
Tel: 212 687-9888  
www.wspgroup.com/usa

June 1, 2016

Mr. Anthony Abbruzzese  
EXTELL Development Company  
805 Third Avenue 7th floor  
New York, New York 10022

RE: Downgraded Caisson Capacities  
250 South Street  
WSP Job # B1302510

Dear Mr. Abbruzzese,

We reviewed the downgraded caisson capacities indicated in the Caisson Installation Summary report prepared by LANGAN dated 3/30/2016.

Based on our review, the building loads imposed on caissons #1-A thru 4-A, 11-A, 12-A, 14-A thru 17-A, 25-A thru 30-A, 46-A, 51-A, 52-A, 54-A, 55-A, 58-A, 59-A, 63-A, 72-A, 81-A, 84-A thru 86-A, 88-A, 89-A, 92-A thru 94-A, 100-A, 103-A, 104-A, 106-A, 108-A, and 111-A will not exceed downgraded caisson capacities.

Therefore, the capacities listed in the LANGAN's Caisson Installation Summary dated 3/30/2016 are structurally acceptable.

Please feel free to contact us with any questions on this matter.

Very truly yours,

  
Ahmad Rahimian, PhD, P.E., S.E., ASCE  
Director of Building  


Caisson ID	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)
<b>Type A Caissons</b>			
1-A	1000	350	11
2-A	1000	350	11
3-A	1375	500	11
4-A	1375	500	11
5-A	1500	500	11
6-A	1500	500	11
7-A	1500	500	11
8-A	1500	500	11
9-A	1500	500	11
10-A	1500	500	11
11-A	1350	500	11
12-A	1430	500	11
13-A	1500	500	11
14-A	1350	500	11
15-A	1375	500	11
16-A	1375	500	11
17-A	1350	500	11
18-A	1500	500	11
19-A	1500	500	11
20-A	1500	500	11
21-A	1500	500	11
22-A	1500	500	11
23-A	1500	500	11
24-A	1500	500	11
25-A	1475	500	11
26-A	1487	500	11
27-A	1390	500	11
28-A	1390	500	11
29-A	1400	500	11
30-A	1465	500	11
31-A	1500	500	11
32-A	1500	500	11
33-A	1500	500	11
34-A	1500	500	11
35-A	1500	500	11
36-A	1500	500	11
37-A	1500	500	11
38-A	1500	500	11
39-A	1500	500	11
40-A	1500	500	11
41-A	1500	500	11
42-A	1500	500	11
43-A	1500	500	11
44-A	1500	500	11
45-A	1500	500	11
46-A	1375	500	11



<b>Caisson ID</b>	<b>Design Compression Capacity (tons)</b>	<b>Design Tension Capacity (tons)</b>	<b>Design Lateral Capacity (tons)</b>
47-A	1500	500	11
48-A	1500	500	11
49-A	1500	500	11
50-A	1500	500	11
51-A	1265	500	11
52-A	1275	500	11
53-A	1500	500	11
54-A	1250	500	11
55-A	1275	500	11
56-A	1500	500	11
57-A	1500	500	11
58-A	1375	500	11
59-A	1485	500	11
60-A	1500	500	11
61-A	1500	500	11
62-A	1500	500	11
63-A	1200	500	11
64-A	1500	500	11
65-A	1500	500	11
66-A	1500	500	11
67-A	1500	500	11
68-A	1500	500	11
69-A	1500	500	11
70-A	1500	500	11
71-A	1500	500	11
72-A	1490	500	11
73-A	1500	500	11
74-A	1500	500	11
75-A	1500	500	11
76-A	1500	500	11
77-A	1500	500	11
78-A	1500	500	11
79-A	1500	500	11
80-A	1500	500	11
81-A	1225	500	11
82-A	1500	500	11
83-A	1500	500	11
84-A	1225	500	11
85-A	1300	500	11
86-A	1429	500	11
87-A	1500	500	11
88-A	1470	500	11
89-A	1378	500	11
90-A	1500	500	11
91-A	1500	500	11
92-A	1439	500	11
93-A	1363	500	11

Caisson ID	Design Compression Capacity (tons)	Design Tension Capacity (tons)	Design Lateral Capacity (tons)
94-A	1478	500	11
95-A	1500	500	11
96-A	1500	500	11
97-A	1500	500	11
98-A	1500	500	11
99-A	1500	500	11
100-A	1477	500	11
101-A	1500	500	11
102-A	1500	500	11
103-A	1416	500	11
104-A	1433	500	11
105-A	1500	500	11
106-A	1433	500	11
107-A	1500	500	11
108-A	1416	500	11
109-A	1500	500	11
110-A	1500	500	11
111-A	1463	500	11
112-A	1500	500	11
113-A	1500	500	11
114-A	1500	500	11
115-A	1500	500	11
116-A	1500	500	11
117-A	1500	500	11

Type B & C Caissons			
118-B	200	45	-
119-B	200	45	-
120-B	200	45	-
121-B	200	45	-
122-B	200	45	-
123-B	200	45	-
124-B	200	45	-
125-B	200	45	-
126-B	200	45	-
127-B	200	45	-
128-B	200	45	-
129-B	200	45	-
130-B	200	45	-
131-B	200	45	-
132-B	200	45	-
133-C	200	45	-
134-C	200	45	-
135-C	200	45	-
136-C	200	45	-
137-C	200	45	-

Caisson ID	Design Compression Capacity (kips)	Design Tension Capacity (kips)	Design Lateral Capacity (kips)
138-C	200	45	-
139-C	200	45	-
140-C	200	45	-
141-C	200	45	-

Tower Crane Caissons			
TC-1	500	282	-
TC-2	500	282	-
TC-3	500	282	-
TC-4	500	282	-

Bracket Caissons			
A	400	200	-
B	400	-	-
C	400	-	-
D	400	-	-
E	400	-	-
F	400	-	-
G	400	-	-
H	400	-	-
I	400	-	-
J	400	200	-
K	400	200	-