APPENDIX

P. Monitoring Well Summary Report

MONITORING WELL MODIFICATION REPORT

Onondaga Lakeview Amphitheater Project
Geddes, Onondaga County, New York

Prepared for:

Onondaga County
421 Montgomery Street
Syracuse, New York 13202

Prepared by:

Gilbane Building Company
333 West Washington Street, Suite 620
Syracuse, New York 13202

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Onondaga County Lakeview Amphitheater Project Monitoring Well Modification Report

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Onondaga County Lakeview Amphitheater Project Monitoring Well Modification Report

1. Introduction

The following Monitoring Well Modification Report has been prepared by Gilbane Building Company (Gilbane) for the construction of the Onondaga County Lakeview Amphitheater Project (Amphitheater). Specifically, the report details:

- An inventory of monitoring wells that are within the Amphitheater footprint;
- An identification of monitoring wells that were modified, protected or abandoned; and
- Procedures for how monitoring wells were modified, and protected (e.g., extended, flush mounted) or abandoned.

1.1 Modification Report Objective

The objective of the Modification Report is to document Monitoring Wells identified and abandoned (i.e. decommissioned) or modified. The methodology selected for decommissioning, the implementation procedures, and documentation process for the proper abandonment were in accordance with NYSDEC guidelines.

The scope of activities that were performed under the Modification Report includes the following:

- decommissioning selected Monitoring Wells using the grout-in-place methodology;
- completing applicable site restoration activities; and
- properly documenting the decommissioning effort.

The overall objective of the decommissioning effort was to remove any potential for adverse environmental effects due to unprotected, neglected, and/or improperly abandoned Monitoring Wells.

1.2 Project Summary

The Lakeview Point Site is located within one of the Onondaga Lake superfund subsites, known as Wastebeds 1 through 8. The project area is also listed on the New York State Registry of Inactive Hazardous Waste Sites as a State Superfund Class 2 site (NYS Registry: 734081). The majority of the project site is located within the areas known as Wastebeds 5 and 6 although access to the site may involve portions of Wastebeds 1 through 4. Located on a portion of Wastebed 5 is the closed Crucible Specialty Metals (i.e. Crucible Steel) landfill (NYS Registry: 734021), a former steel mill solid waste fill site which covers an area of approximately 20 acres and contains an estimated volume of about 225,000 cubic yards of both non-hazardous and hazardous wastes. To address remediation of the site consistent with the planned designated use, NYSDEC and EPA have issued a Record of Decision (ROD) for Operable Unit No. 1(OU1) designating the remedy for the OU. OU1 includes the soils and fill materials on Wastebeds 1 through 8 excluding site groundwater, which is a separate operable unit known as OU2. A separate Feasibility Study is currently underway for OU2.

As presented in the ROD, the remedy involved placement of vegetated cover and engineering/institutional controls on the site as a function of the intended use of each area. The cover system was applied over approximately 171 acres of the Wastebed 1-8 site including all of the open areas within the Amphitheater project limits exclusive of those which have already been remediated or capped. More specifically, the ROD calls for placement of a vegetative cover system consisting of either vegetative enhancement or placement of a soil or structural fill substrate capable of providing water holding capacity, rooting volume and growing conditions to support a planted vegetative cover utilizing native species appropriate for each area of use. The placement and thickness of the substrate range from a basic wood fiber mulch/compost/fertilizer layer to as much as one foot of gravel or two feet of soil and was a function of the characteristics and use of each area including areas of Passive Recreational Use (limited potential for soil contact, i.e. parking lots, etc.), areas of Active Recreational Use (potential for soil contact, i.e. park grounds, seating areas) and areas of Ecological Resources Value (undeveloped upland areas supporting native flora and fauna) among others. Any fill material brought to the Site met the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). Native species took precedence for the vegetative component of covers. Structures, such as buildings, pavement, or sidewalks serve as acceptable substitutes for the vegetated cover types described above.

Institutional controls in the form of environmental easements were also used as part of the remedy to provide for work that is consistent with a NYSDEC-approved Site Management Plan. This overall plan includes an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the remedy and details the steps and media-specific requirements necessary for an effective remedy along with a Monitoring Plan to assess the performance and effectiveness of the remedy.

The final remedy will be implemented by Honeywell International, Inc. (Honeywell) under the supervision of the involved regulatory agencies. Design and subsequent construction of the surface and subsurface features of the Amphitheater project are being coordinated with technical staff of Honeywell and the regulators so that they can be implemented in conjunction with both the existing IRM and future OU1 site remedies. This includes design of building features to address the potential for soil vapor issues consistent with the requirements of the ROD. Specifically, the construction provides protection for soil vapor intrusion through engineering controls which address the migration of vapors from soil or groundwater which could affect indoor air quality within the proposed structures. Also, although the Crucible Landfill is now outside the proposed Limits of Work (except for portions of the surface water drainage system), the design and construction of the proposed facilities took into account the conditions described in the Crucible Landfill Closure Plan and Post Closure Plan. These documents describe the function of the landfill cover system which has been in place since 1989 and the long term care and maintenance requirements to preserve and protect the cover and drainage features. Routine coordination meetings are being held with the Honeywell Remediation team and NYSDEC to coordinate all phases of work and to document construction quality for the affected elements of the remedy.

Non remedial structural scopes of work include the pile operation to support the Amphitheater building, stage and seating foundations. Additionally, non-remedial work includes cast-in-place concrete for the entirety of the building footprint and fixed seating area. The Amphitheater back-of-stage facility is a two story complex dedicated to special functions and servicing performers.

Figure 1–0 Overall Site Reference Diagram

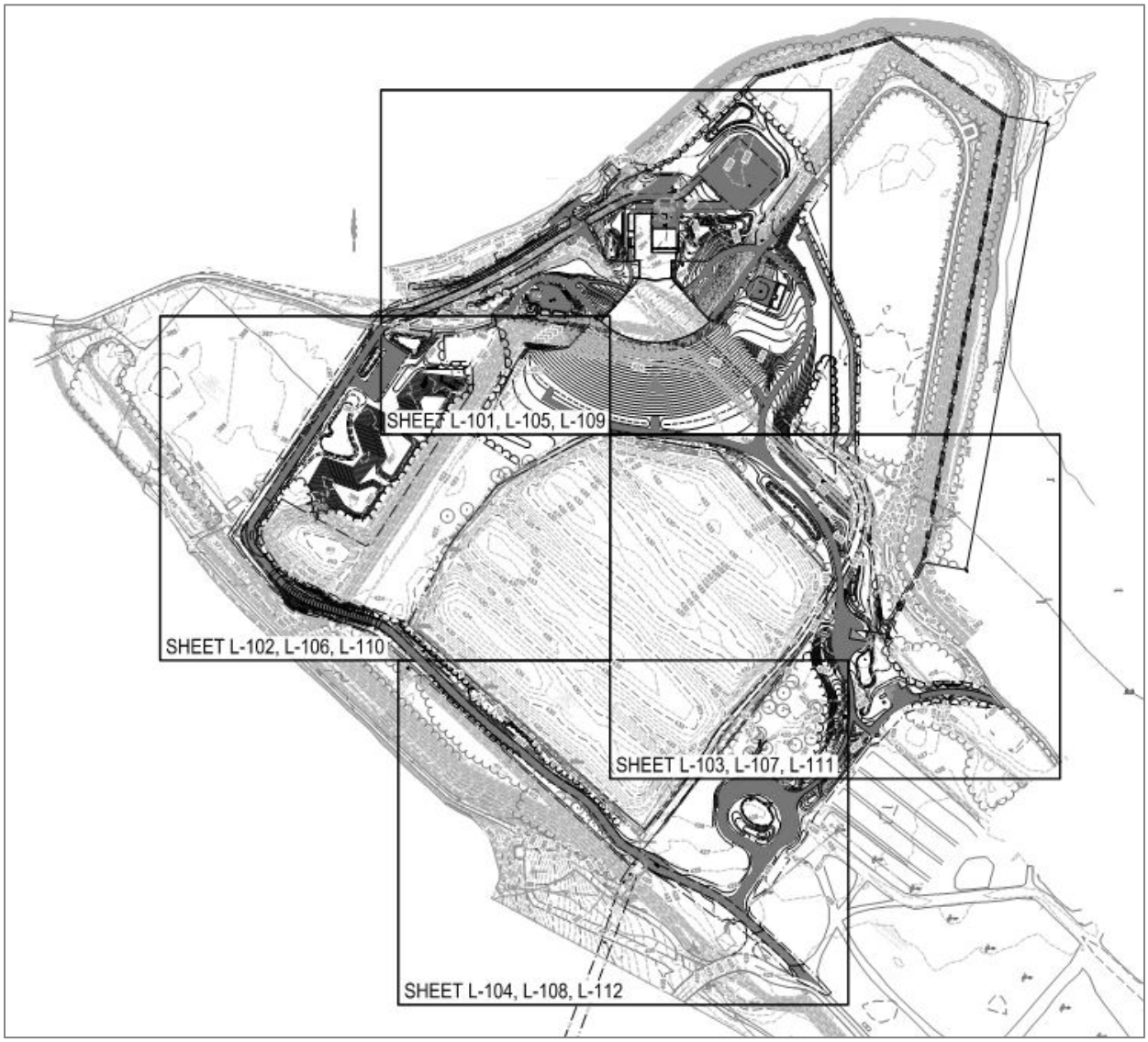


Figure 1-0 illustrates the overall Onondaga County Lakeview Amphitheater Project Site and final orientation with respect to the Lakeview Point.

2. Existing Information

Within the contract limit lines of the Amphitheater (reference Figure 1–0) are existing monitoring wells, inclinometers, piezometers, etc. that primarily belong to Crucible Specialty Metals (Crucible) and Honeywell. As part of the landfill closure requirements, post closure monitoring is required to be conducted and reported to the NYSDEC. Specifically, Crucible measures include:

- Groundwater Quality (water levels and groundwater sampling) from existing piezometers and monitor wells (annually);
- Settlement monitoring from existing inclinometers and settlement plate surveys

2.1 Compilation of Information

Prior to commencement of field activities related to the decommissioning, pertinent information regarding Monitoring Well construction was reviewed and compiled. Following the compilation and review of information, a pre-construction Monitoring Well inspection was performed. Following the pre-construction inspection, the information was then reviewed with Onondaga County and C&S Companies to develop a prioritized list of Monitoring Wells desired to be abandoned or modified. Prior to proceeding with any alteration, the prioritized (Monitoring Well) list was reviewed with the Monitoring Wells' owners to assess the feasibility for abandoning or modification. No work proceeded without advance approval from the owners of the Monitpring Wells.

2.2 Inventory of Monitoring Wells

Multiple documents were provided for review that provided Monitoring Wells (MWs) located (or previously located) at the Amphitheater Site.

The following wells (within the Amphitheater Project's boundary) are understood to belong to Crucible:

> CM107, CM108, CM109, CM201, DW102, DW103, MS104.1, MS104.2, MS104.3, MS104.4, MS104.5, MS104.6, MS105.1, MS105.2, MS105.3, MS105.4, MS105.5, MS106.1, MS106.2, MS106.3, MS106.4, MS106.5, PZ201.1, PZ201.2, and PZ201.3.

The following monitoring wells have been identified by O'Brien & Gere (on behalf of Honeywell) as those that are desired to be maintained following construction of the Amphitheater Project:

> MW-04BR, MW-04D, MW-04G, MW-04I, MW-04S, MW-05D, MW-05I, MW-05S, MW-16S, MW-16I, MW-16D, MW-17S, MW-17I, MW-17D, MW-18S, MW-18I, MW-18D, MW-18G, MW-23I, and MW-24G

O'Brien & Gere has indicated that the wells identified above (i.e. those preferred to be maintained) may be modified to accommodate the Amphitheater's construction; or abandoned (if required) and re-installed and developed following construction.

The following monitoring wells have been identified by O'Brien & Gere as those that may be abandoned:

> OW-1S, OW-02S, OW-05G, OW-06G, TW-01S, TW-03G, MW-15S, MW-30G, MW-25G, and MW-11I

Per O'Brien & Gere, the following (monitoring) wells have already been abandoned (i.e. assumed as decommissioned):

> OW51 (EB-05), OW52 (EB-05), OW53 (EB-05), MW-28G, MW-29G, and MW-26G

Ownership of the following monitoring wells have been determined to belong to Crucible (based on available information, site investigation, and coordination with varying agencies/consultants):

OW41 (EB-04), OW42 (EB-04), OW43 (EB-04), OW61 (EB-06), OW62 (EB-06), OW71 (EB-07), OW72 (EB-07), OW73 (EB-07), OW81 (EB- 08), OW82 (EB-08), OW91 (EB-09), and OW92 (EB-09).

Table 1-0 summarizes the known well locations (within the Amphitheater's footprint) based on provided information (reference Appendix ii.). Monitoring Wells designated as "Within contract limit line(s)" indicates that based on available information a Monitoring Well exists (or previously existed) on the overall site; but was not impacted by the Amphitheater Project (e.g. MW 106.1 is located on the Crucible landfill, within the contract limit; but is not impacted but the project). The wells within Table 1-0 that were within the project's site limits or were subject to the possibility of damage were protected during construction (reference Section 3.2 of Work Plan).

Table 1–0 Provided Monitoring Wells Coordinates

Applicable Monitoring Wells						
NAME	**SURF_ELEV**	**X**	**Y**	**Lat(Y)**	**Lon(X)**	**Comment**
CM107	424.2	916582.600070	1124940.899970	43.086900	-76.222600	Within contract limit line(s).
CM108	425.4	916109.900096	1125128.100010	43.087400	-76.224300	Within contract limit line(s).
CM109	427.1	915953.200088	1124098.700090	43.084600	-76.224900	Within contract limit line(s).
CM201	428.2	916802.500071	1124790.000090	43.086400	-76.221700	Within contract limit line(s).
DW102	410.2	916970.700035	1125528.499980	43.088500	-76.221100	Within contract limit line(s).
DW103	424.9	915654.399908	1124348.199980	43.085300	-76.226000	Within contract limit line(s).
MS104.1	426.8	916854.300018	1123850.600090	43.083900	-76.221600	Within contract limit line(s).
MS104.2	426.8	916854.300018	1123850.600090	43.083900	-76.221600	Within contract limit line(s).
MS104.3	426.8	916854.300018	1123850.600090	43.083900	-76.221600	Within contract limit line(s).
MS104.4	426.8	916854.300018	1123850.600090	43.083900	-76.221600	Within contract limit line(s).
MS104.5	426.8	916854.300018	1123850.600090	43.083900	-76.221600	Within contract limit line(s).
MS104.6	430.4	916854.300018	1123850.600090	43.083900	-76.221600	Within contract limit line(s).
MS105.1	425.8	916286.699952	1123976.000020	43.084200	-76.223700	Within contract limit line(s).
MS105.2	425.8	916286.699952	1123976.000020	43.084200	-76.223700	Within contract limit line(s).
MS105.3	425.8	916286.699952	1123976.000020	43.084200	-76.223700	Within contract limit line(s).
MS105.4	425.8	916286.699952	1123976.000020	43.084200	-76.223700	Within contract limit line(s).
MS105.5	425.8	916286.699952	1123976.000020	43.084200	-76.223700	Within contract limit line(s).
MS106.1	426.8	916344.399933	1124840.399960	43.086600	-76.223400	Within contract limit line(s).
MS106.2	426.8	916344.399933	1124840.399960	43.086600	-76.223400	Within contract limit line(s).
MS106.3	426.8	916344.399933	1124840.399960	43.086600	-76.223400	Within contract limit line(s).
MS106.4	426.8	916344.399933	1124840.399960	43.086600	-76.223400	Within contract limit line(s).
MS106.5	426.8	916344.399933	1124840.399960	43.086600	-76.223400	Within contract limit line(s).
MW-04D	388.66	916253.599970	1125514.000050	43.088400	-76.223800	Within contract limit line(s).
MW-04G	388.84	916249.700046	1125510.899980	43.088400	-76.223800	Within contract limit line(s).
MW-04I	388.75	916244.699964	1125508.799960	43.088400	-76.223800	Within contract limit line(s).
MW-04S	388.61	916240.800040	1125504.700020	43.088400	-76.223800	Within contract limit line(s).
MW-05D	388.19	915308.200022	1125359.099950	43.088000	-76.227300	Within contract limit line(s).
MW-05I	388.08	915311.100085	1125364.100030	43.088000	-76.227300	Within contract limit line(s).
MW-05S	388.27	915313.999954	1125369.200020	43.088100	-76.227300	Within contract limit line(s).
MW-11I	411.39	915484.000017	1124364.000070	43.085300	-76.226700	Within contract limit line(s).
OW-41 (EB-04)	426	916421.099991	1123587.300020	43.083200	-76.223200	Within contract limit line(s).
OW42 (EB-04)	426	916421.099991	1123587.300020	43.083200	-76.223200	Within contract limit line(s).
OW43 (EB-04)	426	916421.099991	1123587.300020	43.083200	-76.223200	Within contract limit line(s).
OW51 (EB-05)	424.5	915766.400069	1123925.100020	43.084100	-76.225600	Within contract limit line(s).
OW52 (EB-05)	424.5	915766.400069	1123925.100020	43.084100	-76.225600	Within contract limit line(s).
OW53 (EB-05)	424.5	915766.400069	1123925.100020	43.084100	-76.225600	Within contract limit line(s).
OW61 (EB-06)	387.4	915393.699984	1124170.200060	43.084800	-76.227000	Within contract limit line(s).
OW62 (EB-06)	387.4	915393.699984	1124170.200060	43.084800	-76.227000	Within contract limit line(s).

Applicable Monitoring Wells						
NAME	**SURF_ELEV**	**X**	**Y**	**Lat(Y)**	**Lon(X)**	**Comment**
OW71 (EB-07)	427.9	916582.299957	1123843.499990	43.083900	-76.222600	Within contract limit line(s).
OW72 (EB-07)	427.9	916582.299957	1123843.499990	43.083900	-76.222600	Within contract limit line(s).
OW73 (EB-07)	427.9	916582.299957	1123843.499990	43.083900	-76.222600	Within contract limit line(s).
OW81 (EB- 08)	425.2	916784.700060	1124196.500050	43.084800	-76.221800	Within contract limit line(s).
OW82 (EB-08)	425.2	916784.700060	1124196.500050	43.084800	-76.221800	Within contract limit line(s).
OW91 (EB-09)	410	917099.299948	1124649.599910	43.086100	-76.220600	Within contract limit line(s).
OW92 (EB-09)	410	917099.299948	1124649.599910	43.086100	-76.220600	Within contract limit line(s).
PZ201.1	428.2	916971.899907	1123767.799980	43.083600	-76.221100	Within contract limit line(s).
PZ201.2	428.2	916971.899907	1123767.799980	43.083600	-76.221100	Within contract limit line(s).
PZ201.3	428.2	916971.899907	1123767.799980	43.083600	-76.221100	Within contract limit line(s).
WB18-OW-1S	388.62	916227.511990	1125506.092940	43.088400	-76.223900	Within contract limit line(s).
WB18-OW-02S	388.44	916226.487926	1125484.388930	43.088400	-76.223900	Within contract limit line(s).
WB18-OW-05G	388.18	916263.340874	1125433.012050	43.088200	-76.223700	Within contract limit line(s).
WB18-OW-06G	388.24	916270.810985	1125485.949910	43.088400	-76.223700	Within contract limit line(s).
WB18-TW-01S	388.47	916232.109920	1125498.903000	43.088400	-76.223900	Within contract limit line(s).
WB18-TW-03G	388.54	916251.606056	1125490.127100	43.088400	-76.223800	Within contract limit line(s).
MW-15S	388.43	915132.813023	1124736.193060	43.086300	-76.228000	Within contract limit line(s).
MW-16S	425.6	916789.165940	1123922.812000	43.084100	-76.221800	Within contract limit line(s).
MW-16I	425.88	916798.216002	1123917.047890	43.084100	-76.221800	Within contract limit line(s).
MW-16D	426.12	916806.803890	1123918.032060	43.084100	-76.221700	Within contract limit line(s).
MW-17S	409.2	917054.621981	1125297.119000	43.087800	-76.220800	Within contract limit line(s).
MW-17I	409.33	917055.371877	1125313.449030	43.087900	-76.220800	Within contract limit line(s).
MW-17D	409.2	917074.006978	1125302.673030	43.087900	-76.220700	Within contract limit line(s).
MW-18S	424.69	916106.860045	1123894.476070	43.084000	-76.224300	Within contract limit line(s).
MW-18I	424.59	916102.582946	1123898.108990	43.084000	-76.224400	Within contract limit line(s).
MW-18D	425	916090.989085	1123905.728000	43.084000	-76.224400	Within contract limit line(s).
MW-18G	424.8	916097.453913	1123901.017960	43.084000	-76.224400	Within contract limit line(s).
MW-04BR	388.98	916260.726000	1125515.822000	43.088400	-76.223700	Within contract limit line(s).
MW-23I	429.72	917105.029596	1123306.560660	43.082400	-76.220600	Within contract limit line(s).
MW-28G	366.82	916195.188200	1125677.707000	43.088900	-76.224000	Within contract limit line(s).
MW-29G	366.02	915913.757500	1125531.398000	43.088500	-76.225100	Within contract limit line(s).
MW-30G	388.08	915687.402000	1125096.644000	43.087300	-76.225900	Within contract limit line(s).
MW-24G	408.17	917481.991000	1125915.407000	43.089500	-76.219200	Within contract limit line(s).
MW-25G	423.37	916554.592000	1125125.515000	43.087400	-76.222700	Within contract limit line(s).
MW-26G	377.77	916089.262000	1123713.810000	43.083500	-76.224400	Within contract limit line(s).
MS-301.1	-	-	-	-	-	Within contract limit line(s).
MS-301.2	-	-	-	-	-	Within contract limit line(s).
MS-301.3	-	-	-	-	-	Within contract limit line(s).
MS-301.4	-	-	-	-	-	Within contract limit line(s).
MS-301.5	-	-	-	-	-	Within contract limit line(s).
PL-4	-	-	-	-	-	Within contract limit line(s).
PZ-8.1, PZ-8.2	-	-	-	-	-	Within contract limit line(s).
INC-4	-	-	-	-	-	Within contract limit line(s).
W-201R	-	-	-	-	-	Within contract limit line(s).

Note: Monitoring wells identified above that do not include detailed information are either those proposed to be abandoned or modified; or are those whose information was not readily available. A survey was performed documenting location and surface elevation of modified monitoring wells.

Appendix iii. (Amphitheater Project Monitoring Well Identification - Post Modification, dated December 2015) includes final survey information of modified Monitoring Wells. Survey information performed by Thew Associates PE-LS, PLLC.

2.3 Monitoring Wells Abandoned

Appendix i. (Monitoring Well Location Map, dated December 2015) indicates known monitoring wells overlaid on the proposed Amphitheater Project site. Indicated monitoring wells are known based on the provided existing conditions survey (performed by Thew Associates, PLLC; dated April 4, 2014); provided monitoring well information (provided by O'Brien & Gere); and discovery.

The monitoring wells abandoned either were located within a new structure, roadway, or area; or are not conducive to modification (i.e. flush mount of wellhead).

Referencing the Potential Monitoring Well Location Map (Appendix i.) there were two (2) Monitoring Wells (MW-25G and CM108) abandoned (i.e. decommissioned); and varying Monitoring Wells modified (i.e. riser height adjusted). Onsite, there exists one settlement plate (PL-4) within the Amphitheater Project's footprint that was permitted to be modified and surveyed elevations were taken prior to modification and following. One (1) inclinometer and one (1) piezometer were additionally requested to be modified.

Of two (2) Monitoring Wells decommissioned, MW-25G is located in the proposed Amphitheater Lawn Seating Area; and CM108 is located at the constructed vendor overflow area of the amphitheater (at the rear of the Lawn Seating Area). Both MW-25G and CM108 were identified as wells that may be abandoned per O'Brien & Gere.

Table 2–0 Monitoring Wells Abandoned

Monitoring Wells to be Abandoned (i.e. Decommissioned)						
NAME	**SURF_ELEV**	**X**	**Y**	**Lat(Y)**	**Lon(X)**	**Comment**
MW-25G	423.37	916554.592000	1125125.515000	43.087400	-76.222700	Decommissioned.
CM108	425.4	916109.900096	1125128.100010	43.087400	-76.224300	Decommissioned.

Monitoring Well (MW) 25-G was granted advanced permission to be decommissioned. The well (25-G) was abandoned on June 4, 2015 by Parratt-Wolff, Inc. (Well Decommissioning Record is attached to the Work Plan as Appendix viii).

Monitoring Well (MW) CM108 was granted advanced permission to be decommissioned. The well (CM108) was abandoned on October 30, 2015 by Parratt-Wolff, Inc. (Well Decommissioning Record is attached to the Work Plan as Appendix viii).

The monitoring wells identified in Table 2-0 were protected from construction activities until the wells were decommissioned.

2.4 Monitoring Wells Modified

Select Monitoring Wells that are located within a new structure, roadway, or area developed for the Amphitheater Project were modified. Reference Section 3. Construction, for specifics on methods for Monitoring Well modification.

Table 2–1 Monitoring Wells Modified

Monitoring Wells Modified w. Pre-Modification Existing Information						
NAME	**SURF_ELEV**	**X**	**Y**	**Lat(Y)**	**Lon(X)**	**Comment**
MW-04D	388.66	916253.599970	1125514.000050	43.088400	-76.223800	Modified (i.e. riser height adjusted).
MW-04G	388.84	916249.700046	1125510.899980	43.088400	-76.223800	Modified (i.e. riser height adjusted).
MW-04I	388.75	916244.699964	1125508.799960	43.088400	-76.223800	Modified (i.e. riser height adjusted).
MW-04S	388.61	916240.800040	1125504.700020	43.088400	-76.223800	Modified (i.e. riser height adjusted).
MW-04BR	388.98	916260.726000	1125515.822000	43.088400	-76.223700	Modified (i.e. riser height adjusted).
WB18-OW-1S	388.62	916227.511990	1125506.092940	43.088400	-76.223900	Modified (i.e. riser height adjusted).
WB18-OW-02S	388.44	916226.487926	1125484.388930	43.088400	-76.223900	Modified (i.e. riser height adjusted).
WB18-OW-06G	388.24	916270.810985	1125485.949910	43.088400	-76.223700	Modified (i.e. riser height adjusted).
WB18-TW-01S	388.47	916232.109920	1125498.903000	43.088400	-76.223900	Modified (i.e. riser height adjusted).
WB18-TW-03G	388.54	916251.606056	1125490.127100	43.088400	-76.223800	Modified (i.e. riser height adjusted).
WB18-OW-05G	388.18	916263.340874	1125433.012050	43.088200	-76.223700	Modified (i.e. riser height adjusted).
MS-301.1	-	-	-	-	-	Modified (i.e. riser height adjusted).
MS-301.2	-	-	-	-	-	Modified (i.e. riser height adjusted).
MS-301.3	-	-	-	-	-	Modified (i.e. riser height adjusted).
MS-301.4	-	-	-	-	-	Modified (i.e. riser height adjusted).
MS-301.5	-	-	-	-	-	Modified (i.e. riser height adjusted).
PL-4	-	-	-	-	-	Modified (i.e. riser height adjusted).
PZ-8.1, PZ-8.2	-	-	-	-	-	Modified (i.e. riser height adjusted).
INC-4	-	-	-	-	-	Modified (i.e. riser height adjusted).
W-201R	-	-	-	-	-	Modified (i.e. riser height adjusted).
MW-10.1	-	-	-	-	-	Modified (i.e. riser height adjusted).
MW-10.2	-	-	-	-	-	Modified (i.e. riser height adjusted).
B-6; PZ-8.1	-	-	-	-	-	Modified (i.e. riser height adjusted).
W-201R	-	-	-	-	-	Modified (i.e. riser height adjusted).

Note: Monitoring wells identified above that do not include detailed information are either those proposed to be abandoned or modified; or are those whose information was not readily available. A survey was performed documenting location and surface elevation of modified monitoring wells.

Appendix iii. (Amphitheater Project Monitoring Well Identification - Post Modification, dated December 2015) includes final survey information of modified Monitoring Wells. Survey information performed by Thew Associates PE-LS, PLLC.

The monitoring wells identified in Table 2-1 were protected from construction activities until the wells were modified.

3. Construction

During construction, Monitoring Wells were either abandoned (i.e. decommissioned), modified (e.g. riser pipe height adjusted, wellhead installed limiting access, etc.), or protected. Following construction, unimpaired accessibility was restored to protected monitoring wells. The following procedure was followed for modification (of Monitoring Wells):

- Protect existing well from damage while completing work.
- Prior to cutting operation, remove existing cap (taking care to prevent damage) for reuse.
- Cut existing pipe to elevation indicated (reference Appendix v.). Rethread (or prep to epoxy) to accept reused cap (if existing cap is undamaged, otherwise a new cap will be installed).
- Grade surrounding area away from well to prevent ponding.

- Coordinate final elevation with proposed grade.
- Inner pipe (reference Appendix v. Monitoring Well Modification Detail) shall be cut down as needed to maintain original function. Survey elevation of inner PVC pipe upon completion.
- Survey final location and elevation of all modified wells.

Modification details are presented on the diagram provided in Appendix v. (C&S Well Modification Detail Drawing, dated May 2015).

3.1 Method for Decommissioning

To determine the method of decommissioning, Figure 2 of NYSDEC CP-43: Groundwater Monitoring Well Decommissioning Policy (dated August 2009) was referenced.

Based on initial review of the criteria for selecting appropriate decommissioning methods and review of Monitoring Well available information, including visual inspection of Monitoring Well conditions; grouting in-place was the selected method of decommissioning at the Amphitheater Site (for the two Monitoring Wells scheduled to be decommissioned).

In summary, grout seals the borehole and any portion of the Monitoring Well that is not removed. This method is specified for the decommissioning of small-diameter cased Monitoring Wells, such as those identified at the site for decommissioning under this Work Plan.

Grouting in-place involves filling the casing with grout to a level of five ft below ground surface, cutting the Monitoring Well casing at the five-ft depth, and removing the top portion of the casing and associated Monitoring Well materials from the ground (e.g., stick up riser, protective casing, etc.). The casing was grouted according to established procedures. In addition, the upper five ft of the borehole was filled to the ground surface and restored using suitable material. If excessive grout is noted as being lost down-hole, grouting will be conducted in stages to reduce the pressure caused by the height of the grout column.

Referencing *New York State Department of Environmental Conservation (NYSDEC) CP-43: Groundwater Monitoring Well Decommissioning Policy, dated August 2009*:

Grouting In-Place

> Grouting in-place is the proposed decommissioning method. The grout seals the borehole and any portion of the monitoring well that may be left in the ground. Whenever possible a well shall be sealed first with grout before attempting subsequent decommissioning steps.

Selecting, Mixing, and Placing Grout

> The goal of well decommissioning is to eliminate the capability of water to travel up or down within the volume of the former well and its boring. There are two types of grout mixes that may be used to seal monitoring wells: a standard mix and a special mix. Both mixes use Type 1 Portland cement and four percent bentonite by weight.

Grout Placement

Guidance requires that grout be placed in the well from the bottom to the top by means of a "tremie." A tremie is a pipe, a hose or a tube extending from the grout supply to the bottom of the well. The tremie delivers the grout all the way down through the water column without its being diluted and mixed with the water that may be present in the well. The tremie pipe or tube is withdrawn as (or after) the well is filled with grout.

Backfilling & Site Restoration

The uppermost of the borehole at the land surface shall be filled with material physically similar to the natural soils. The surface of the borehole should be restored to the condition of the area surrounding the borehole. For example, concrete or asphalt will be patched with concrete or asphalt of the same type and thickness, grassed areas will be seeded, and topsoil will be used in other areas.

If any existing Monitoring Well are not abandoned/decommissioned, but determined by Owner to be modified and flush-mounted the proposed Typical Wellhead Detail (reference Appendix v.) will be referenced. Care was taken to ensure there is not a concern for water infiltration with respect to final grading.

3.2 Method for Protection

Existing monitoring wells located within the contract limit lines of the Amphitheater Project were protected from (construction) activities. Following construction, unimpaired accessibility was restored to protected monitoring wells.

Prior to commencing construction activities within proximity to a monitoring well(s), wells were prominently identified and as feasible segregated by using barricades.

Figure 2-0 Examples of Identified Monitoring Wells

All vehicle operators were educated and instructed on the Monitoring Wells within their immediate vicinity and the importance for ensuring no damage was inflicted.

4. Documentation

Monitoring Wells that were modified or decommissioned have been surveyed. Survey results are included in the report in Appendix iii. (Amphitheater Project Monitoring Well Identification - Post Modification, dated December 2015).

4.1 Field Documentation

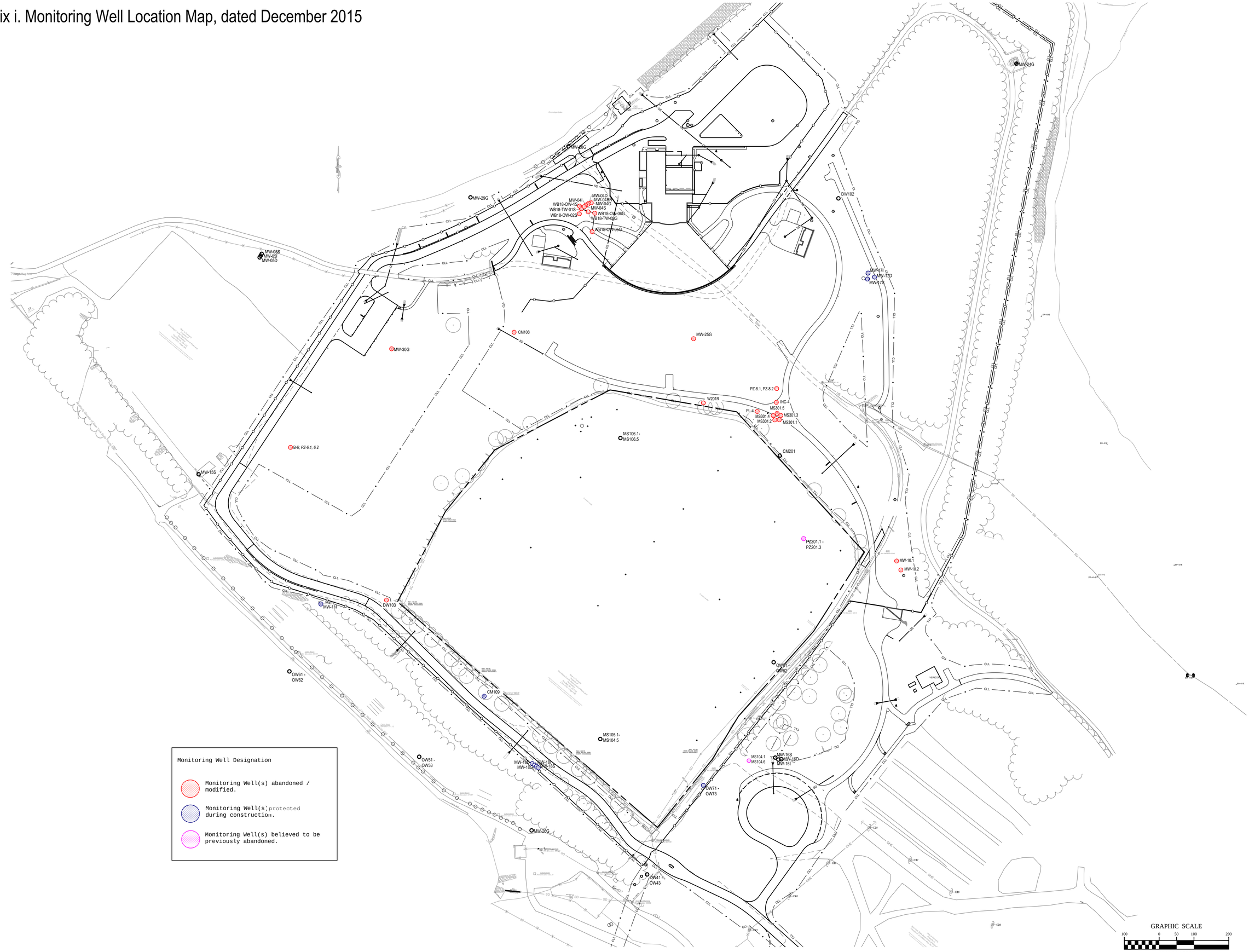
Documentation of the decommissioning process including decommissioning logs and survey data for the abandoned/modified wells are included in this document (as Appendices). They contain:

- Monitoring well's identification and known construction details. (e.g., registration number, location, owner, and any other features).
- Date, time, person responsible, and contractor/consultant performing the work.
- Procedures and materials used (including predicted volume of grout, volume of grout used, and an explanation if any discrepancy exists between these values).

5. References

- New York State Department of Environmental Conservation (NYSDEC) CP-43: Groundwater Monitoring Well Decommissioning Policy, dated August 2009
- C&S Historic Boring Location Plan B-001 and B-002, dated 09/15/14
- C&S Well Modification Detail Drawing, dated May 2015
- O'Brien & Gere Exposure Areas & Sampling Locations, dated May 2014
- S&ME Site Plan Crucible Specialty Metals Landfill Site, dated 12/04/2014

Appendix i. Monitoring Well Location Map, dated December 2015



MONITORING WELL LOCATION MAP DECEMBER 2015

Appendix ii. Amphitheater Project Monitoring Well Identification / Action, dated December 2015

ONONDAGA AMPHITHEATER PROJECT MONITORING WELL IDENTIFICATION / ACTION (PRE-MODIFICATION / ABANDONMENT EXISTING INFORMATION)

NAME	SURF_ELEV	X	Y	Well_Casing	Lat(Y)	Lon(X)	Comment	Ownership / Direction		Action / Note
CM107	424.2	916582.600070	1124940.899970	0.00	43.086900	-76.222600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
CM108	425.4	916109.900096	1125128.100010	0.00	43.087400	-76.224300	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to decommissioning.	Decommissioned.
CM109	427.1	915953.200088	1124098.700090	0.00	43.084600	-76.224900	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
CM201	428.2	916802.500071	1124790.000090	0.00	43.086400	-76.221700	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
DW102	410.2	916970.700035	1125528.499980	412.82	43.088500	-76.221100	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
DW103	424.9	915654.399908	1124348.199980	427.00	43.085300	-76.226000	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MS104.1	426.8	916854.300018	1123850.600090	347.80	43.083900	-76.221600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
MS104.2	426.8	916854.300018	1123850.600090	0.00	43.083900	-76.221600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
MS104.3	426.8	916854.300018	1123850.600090	0.00	43.083900	-76.221600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
MS104.4	426.8	916854.300018	1123850.600090	428.45	43.083900	-76.221600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
MS104.5	426.8	916854.300018	1123850.600090	428.98	43.083900	-76.221600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
MS104.6	430.4	916854.300018	1123850.600090	435.21	43.083900	-76.221600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
MS105.1	425.8	916286.699952	1123976.000020	356.80	43.084200	-76.223700	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS105.2	425.8	916286.699952	1123976.000020	0.00	43.084200	-76.223700	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS105.3	425.8	916286.699952	1123976.000020	0.00	43.084200	-76.223700	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS105.4	425.8	916286.699952	1123976.000020	0.00	43.084200	-76.223700	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS105.5	425.8	916286.699952	1123976.000020	0.00	43.084200	-76.223700	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS106.1	426.8	916344.399933	1124840.399960	353.80	43.086600	-76.223400	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS106.2	426.8	916344.399933	1124840.399960	0.00	43.086600	-76.223400	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS106.3	426.8	916344.399933	1124840.399960	0.00	43.086600	-76.223400	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS106.4	426.8	916344.399933	1124840.399960	435.21	43.086600	-76.223400	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MS106.5	426.8	916344.399933	1124840.399960	0.00	43.086600	-76.223400	Within contract limit line(s).	Unconfirmed ownership; assumed as Crucible.		
MW-04D	388.66	916253.599970	1125514.000050	390.74	43.088400	-76.223800	Within contract limit line(s).	O'Brien & Gere request to maintain.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-04G	388.84	916249.700046	1125510.899980	390.75	43.088400	-76.223800	Within contract limit line(s).	O'Brien & Gere request to maintain.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-04I	388.75	916244.699964	1125508.799960	390.85	43.088400	-76.223800	Within contract limit line(s).	O'Brien & Gere request to maintain.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-04S	388.61	916240.800040	1125504.700020	390.43	43.088400	-76.223800	Within contract limit line(s).	O'Brien & Gere request to maintain.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-05D	388.19	915308.200022	1125359.099950	389.41	43.088000	-76.227300	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-05I	388.08	915311.100085	1125364.100030	390.02	43.088000	-76.227300	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-05S	388.27	915313.999954	1125369.200020	390.27	43.088100	-76.227300	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-11I	411.39	915484.000017	1124364.000070	413.21	43.085300	-76.226700	Within contract limit line(s).	Potentially abandoned per O'Brien & Gere.		
OW-41 (EB-04)	426	916421.099991	1123587.300020	0.00	43.083200	-76.223200	Within contract limit line(s).	Unknown ownership.		
OW42 (EB-04)	426	916421.099991	1123587.300020	0.00	43.083200	-76.223200	Within contract limit line(s).	Unknown ownership.		
OW43 (EB-04)	426	916421.099991	1123587.300020	0.00	43.083200	-76.223200	Within contract limit line(s).	Unknown ownership.		
OW51 (EB-05)	424.5	915766.400069	1123925.100020	0.00	43.084100	-76.225600	Within contract limit line(s).	Previously abandoned.		
OW52 (EB-05)	424.5	915766.400069	1123925.100020	0.00	43.084100	-76.225600	Within contract limit line(s).	Previously abandoned.		
OW53 (EB-05)	424.5	915766.400069	1123925.100020	0.00	43.084100	-76.225600	Within contract limit line(s).	Previously abandoned.		
OW61 (EB-06)	387.4	915393.699984	1124170.200060	0.00	43.084800	-76.227000	Within contract limit line(s).	Unknown ownership.		
OW62 (EB-06)	387.4	915393.699984	1124170.200060	0.00	43.084800	-76.227000	Within contract limit line(s).	Unknown ownership.		
OW71 (EB-07)	427.9	916582.299957	1123843.499990	0.00	43.083900	-76.222600	Within contract limit line(s).	Unknown ownership.		
OW72 (EB-07)	427.9	916582.299957	1123843.499990	0.00	43.083900	-76.222600	Within contract limit line(s).	Unknown ownership.		
OW73 (EB-07)	427.9	916582.299957	1123843.499990	0.00	43.083900	-76.222600	Within contract limit line(s).	Unknown ownership.		
OW81 (EB- 08)	425.2	916784.700060	1124196.500050	0.00	43.084800	-76.221800	Within contract limit line(s).	Unknown ownership.		
OW82 (EB-08)	425.2	916784.700060	1124196.500050	0.00	43.084800	-76.221800	Within contract limit line(s).	Unknown ownership.		
OW91 (EB-09)	410	917099.299948	1124649.599910	0.00	43.086100	-76.220600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
OW92 (EB-09)	410	917099.299948	1124649.599910	0.00	43.086100	-76.220600	Within Amphitheater (site) footprint.	Crucible Specialty Metals		
PZ201.1	428.2	916971.899907	1123767.799980	0.00	43.083600	-76.221100	Within contract limit line(s).	Likely belongs to Crucible.		
PZ201.2	428.2	916971.899907	1123767.799980	0.00	43.083600	-76.221100	Within contract limit line(s).	Likely belongs to Crucible.		
PZ201.3	428.2	916971.899907	1123767.799980	0.00	43.083600	-76.221100	Within contract limit line(s).	Likely belongs to Crucible.		
WB18-OW-1S	388.62	916227.511990	1125506.092940	390.87	43.088400	-76.223900	Within contract limit line(s).	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
WB18-OW-02S	388.44	916226.487926	1125484.388930	390.70	43.088400	-76.223900	Within contract limit line(s).	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
WB18-OW-05G	388.18	916263.340874	1125433.012050	389.79	43.088200	-76.223700	Within Amphitheater (site) footprint.	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
WB18-OW-06G	388.24	916270.810985	1125485.949910	39.43	43.088400	-76.223700	Within contract limit line(s).	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
WB18-TW-01S	388.47	916232.109920	1125498.903000	390.45	43.088400	-76.223900	Within contract limit line(s).	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
WB18-TW-03G	388.54	916251.606056	1125490.127100	390.64	43.088400	-76.223800	Within contract limit line(s).	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-15S	388.43	915132.813023	1124736.193060	390.40	43.086300	-76.228000	Within contract limit line(s).	May be abandoned per O'Brien & Gere.		
MW-16S	425.6	916789.165940	1123922.812000	428.11	43.084100	-76.221800	Within Amphitheater (site) footprint.	O'Brien & Gere request to maintain.		
MW-16I	425.88	916798.216002	1123917.047890	427.62	43.084100	-76.221800	Within Amphitheater (site) footprint.	O'Brien & Gere request to maintain.		
MW-16D	426.12	916806.803890	1123918.032060	427.96	43.084100	-76.221700	Within Amphitheater (site) footprint.	O'Brien & Gere request to maintain.		
MW-17S	409.2	917054.621981	1125297.119000	410.90	43.087800	-76.220800	Within Amphitheater (site) footprint.	O'Brien & Gere request to maintain.		
MW-17I	409.33	917055.371877	1125313.449030	411.75	43.087900	-76.220800	Within Amphitheater (site) footprint.	O'Brien & Gere request to maintain.		

Appendix ii. Amphitheater Project Monitoring Well Identification / Action, dated December 2015

ONONDAGA AMPHITHEATER PROJECT MONITORING WELL IDENTIFICATION / ACTION (PRE-MODIFICATION / ABANDONMENT EXISTING INFORMATION)

NAME	SURF_ELEV	X	Y	Well_Casing	Lat(Y)	Lon(X)	Comment	Ownership / Direction		Action / Note
MW-17D	409.2	917074.006978	1125302.673030	411.55	43.087900	-76.220700	Within Amphitheater (site) footprint.	O'Brien & Gere request to maintain.		
MW-18S	424.69	916106.860045	1123894.476070	426.59	43.084000	-76.224300	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-18I	424.59	916102.582946	1123898.108990	426.30	43.084000	-76.224400	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-18D	425	916090.989085	1123905.728000	427.08	43.084000	-76.224400	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-18G	424.8	916097.453913	1123901.017960	426.59	43.084000	-76.224400	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-04BR	388.98	916260.726000	1125515.822000	391.35	43.088400	-76.223700	Within contract limit line(s).	O'Brien & Gere request to maintain.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-23I	429.72	917105.029596	1123306.560660	431.67	43.082400	-76.220600	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-28G	366.82	916195.188200	1125677.707000	369.33	43.088900	-76.224000	N/A	Previously abandoned.		
MW-29G	366.02	915913.757500	1125531.398000	368.30	43.088500	-76.225100	Within contract limit line(s).	Previously abandoned.		
MW-30G	388.08	915687.402000	1125096.644000	390.33	43.087300	-76.225900	Within Amphitheater (site) footprint.	May be abandoned per O'Brien & Gere.	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-24G	408.17	917481.991000	1125915.407000	410.39	43.089500	-76.219200	Within contract limit line(s).	O'Brien & Gere request to maintain.		
MW-25G	423.37	916554.592000	1125125.515000	425.77	43.087400	-76.222700	Within Amphitheater (site) footprint.	May be abandoned per O'Brien & Gere.	Existing information prior to decommissioning.	Decommissioned.
MW-26G	377.77	916089.262000	1123713.810000	380.15	43.083500	-76.224400	Within contract limit line(s).	Previously abandoned.		
MS-301.1	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MS-301.2	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MS-301.3	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MS-301.4	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MS-301.5	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
PL-4	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
PZ-8.1, PZ-8.2	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
INC-4	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
W-201R	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-10.1	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
MW-10.2	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).
B-6; PZ-8.2	-	-	-	-	-	-	Within Amphitheater (site) footprint.	Crucible Specialty Metals	Existing information prior to modification(s).	Modified (i.e. riser height adjusted).

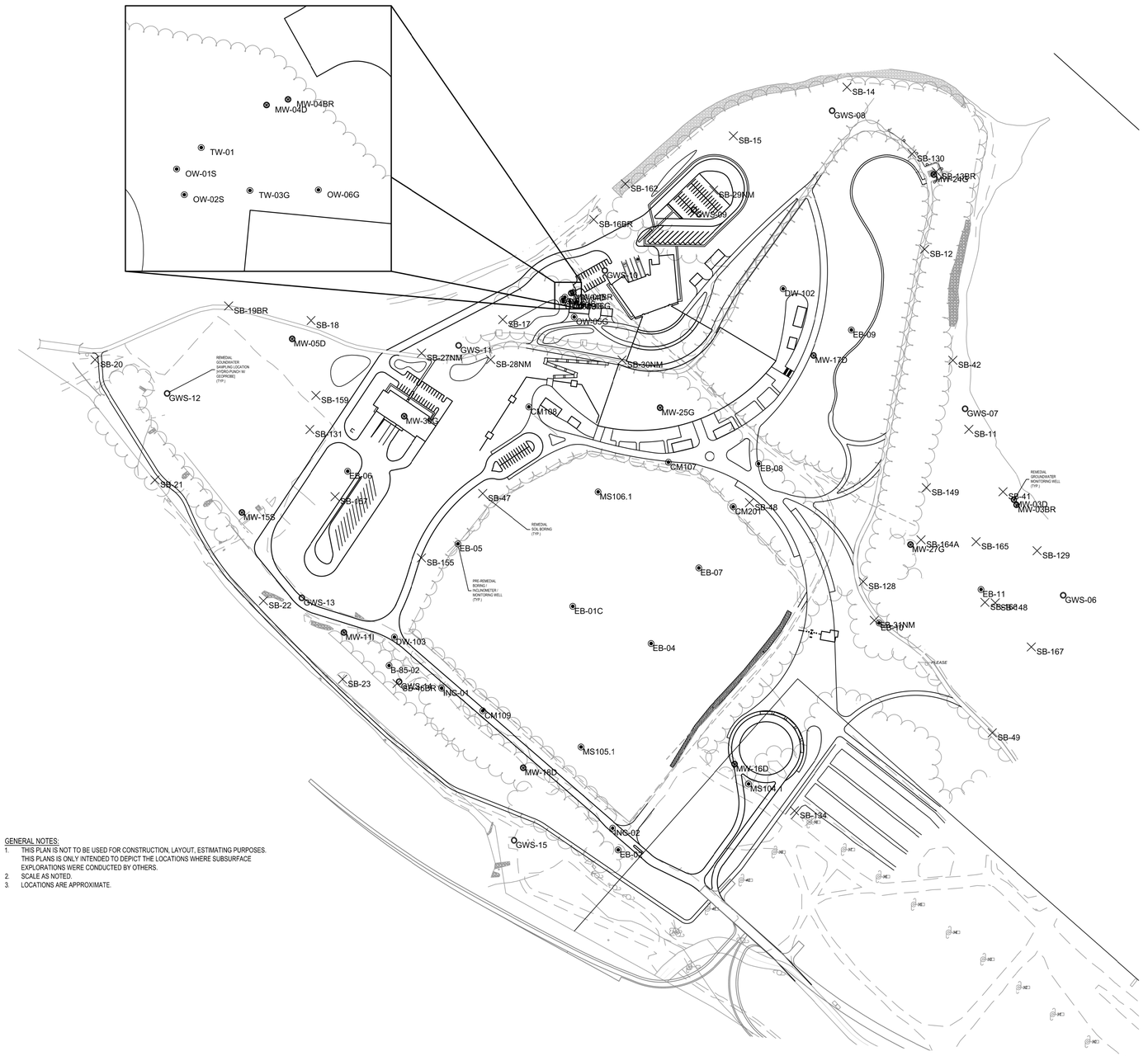
Note: Monitoring wells identified above that do not include detailed information are either those proposed to be abandoned or modified; or are those whose information was not readily available. A survey was performed documenting location and surface elevation of modified monitoring wells.

ONONDAGA AMPHITHEATER PROJECT MONITORING WELL POST-MODIFICATION

Name	Northing	Easting	Elevation	Code	Description	Action / Note
DW103	1124404.346	915593.212	423.052	MWDW_103	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MW-04D	1125513.812	916253.611	390.022	MW04D_CA	Surface Elevation	Modified (i.e. riser height adjusted).
MW-04D	1125513.978	916252.92	389.846	MW04D_CO	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-04G	1125511.908	916249.227	389.934	MW04G_CO	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-04G	1125511.356	916249.511	390.085	MW04G_CA	Surface Elevation	Modified (i.e. riser height adjusted).
MW-04I	1125509.292	916245.146	390.049	MW04I_CO	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-04I	1125508.57	916245.379	389.72	MW04I_PV	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MW-04S	1125504.733	916241	390.233	MW04S_TO	Surface Elevation	Modified (i.e. riser height adjusted).
MW-04S	1125504.949	916240.318	390.08	MW04S_CO	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-1S	1125506.092	916227.721	390.024	MWOW01S_	Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-1S	1125505.877	916228.346	389.822	MWOW01S_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-02S	1125485.155	916226.699	391.047	MWOW02S_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-02S	1125484.442	916226.576	391.221	MWOW02S_	Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-05G	1125432.631	916264.265	392.756	MWOW05G_	Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-05G	1125432.741	916263.621	392.693	MWOW05G_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-06G	1125485.933	916271.046	390.181	MWOW06G_	Surface Elevation	Modified (i.e. riser height adjusted).
WB18-OW-06G	1125485.534	916270.488	390.016	MWOW06G_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
WB18-TW-01S	1125499.777	916232.442	389.993	MWTW01S_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
WB18-TW-01S	1125498.993	916232.229	390.173	MWTW01S_	Surface Elevation	Modified (i.e. riser height adjusted).
WB18-TW-03G	1125490.783	916251.045	390.434	MWTW03G_	Surface Elevation	Modified (i.e. riser height adjusted).
WB18-TW-03G	1125490.198	916251.651	390.204	MWTW03G_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-04BR	1125516.172	916260.146	389.754	MW04BR_C	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-04BR	1125515.896	916260.808	389.45	MW04BR_P	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MW-30G	1125096.334	915687.31	392.144	MW30G_PV	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.1	1124905.352	916804.456	424.846	MWMS301 11	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.1	1124905.904	916804.923	424.767	MWMS301 1_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.2	1124892.525	916799.923	424.629	MWMS301 2_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.2	1124892.195	916799.11	424.626	MWMS301 2_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.3	1124910.389	916795.109	424.87	MWMS301 3_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.3	1124909.663	916794.97	424.92	MWMS301 3_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.4	1124893.685	916787.588	424.338	MWMS301 4_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.4	1124893.254	916788.189	424.418	MWMS301 4_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.5	1124904.353	916784.747	424.87	MWMS301 5_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MS-301.5	1124904.737	916784.141	424.866	MWMS301 5_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
PL-4	1124916.834	916736.425	423.588	PL_4_CON	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
PL-4	1124916.792	916735.712	424.301	PL_4_TOP	Surface Elevation	Modified (i.e. riser height adjusted).
PZ-8.1	1124981.269	916793.622	426.391	PZ8 1_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
PZ-8.2	1124981.145	916793.762	426.363	PZ8 2_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
INC-4	1124942.868	916793.087	425.651	INC_4_CO	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
INC-4	1124942.786	916792.616	426.206	INC_4_PV	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
W-201R	1124975.096	916513.063	425.954	MW201R_T	Surface Elevation	Modified (i.e. riser height adjusted).
MW-10.1	1124462.211	917150.065	424.611	MWW10 1_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-10.1	1124462.311	917149.653	424.001	MWW10 1_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
MW-10.2	1124488.69	917136.594	423.964	MWW10 2_	Concrete Base Surface Elevation	Modified (i.e. riser height adjusted).
MW-10.2	1124488.533	917136.899	424.376	MWW10 2_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
B-6; PZ-8.1	1124887.013	915398.428	387.845	PZB6PZ6 1_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).
B-6; PZ-8.2	1124886.884	915398.334	387.823	PZB6PZ6 2_	Inner PVC Surface Elevation	Modified (i.e. riser height adjusted).

Note: Survey Information Provided by Thew Associates PE-LS, PLLC (Marcy, New York); Survey performed on December 8, 2015.

Subsurface Invest. Location	Coordinates		Ground Surface Elevation (ft)	Depth to Bedrock (ft)	Top of Bedrock Elevation (ft)	Total Depth Explored (ft)	Bottom of Boring Elevation (ft)
	Easting (X - Coord)	Northing (Y-Coord)					
PRE REMEDIAL INVESTIGATION LOCATIONS - Boring / Inclinometer / Monitoring Well							
B-85-02	915636.21	1124251.80	411.0	RNE	--	102.0	309.0
CM107	916582.59	1124940.94	424.2	RNE	--	64.0	360.2
CM108	916109.86	1125128.09	425.4	RNE	--	66.0	359.4
CM109	915953.23	1124998.72	427.1	RNE	--	66.0	361.1
CM201	916802.52	1124790.03	428.2	RNE	--	70.0	358.2
DW-102	916970.70	1125528.50	410.2	RNE	--	140.0	270.2
DW-103	915654.40	1124348.18	424.9	RNE	--	167.0	257.9
INC-01	915814.73	1124175.14	425.0	RNE	--	125.0	300.0
INC-02	916393.91	1123700.87	425.0	RNE	--	125.0	300.0
MS104.1	916854.27	1123850.62	426.8	RNE	--	82.0	344.8
MS105.1	916286.68	1123975.96	425.8	RNE	--	80.0	345.8
MS106.1	916344.39	1124840.40	426.8	RNE	--	80.0	346.8
EB-01C	916258.67	1124452.63	425.8	RNE	--	65.2	360.6
EB-02	916413.31	1123627.21	426.5	RNE	--	66.0	360.5
EB-04	916524.16	1124326.59	426.0	RNE	--	85.0	341.0
EB-05	915869.52	1124664.37	424.5	RNE	--	67.0	357.5
EB-06	915496.72	1124910.43	387.4	RNE	--	40.0	347.4
EB-07	916685.39	1124582.73	427.9	RNE	--	87.0	340.9
EB-08	916887.81	1124935.69	425.2	RNE	--	63.0	362.2
EB-09	917202.38	1125388.82	410.0	RNE	--	71.5	338.5
EB-10	917296.16	1124396.18	421.9	RNE	--	72.5	349.4
EB-11	917641.15	1124509.74	421.9	RNE	--	30.0	391.9
OW-01S	916223.97	1125492.85	388.6	RNE	--	26.0	362.6
OW-02S	916226.49	1125484.39	388.4	RNE	--	26.0	362.4
OW-05G	916283.34	1125433.01	388.2	RNE	--	54.0	334.2
OW-06G	916270.81	1125485.95	388.2	RNE	--	50.0	338.2
TW-01	916232.06	1125499.93	388.5	RNE	--	28.0	360.5
TW-03G	916248.17	1125485.77	388.5	RNE	--	54.0	334.5
REMEDIAL INVESTIGATION LOCATIONS							
Groundwater Sampling Location (Hydro-punch w/ Geoprobe)							
GWS-06	917919.64	1124489.99	365.3	RNE	--	48.0	317.3
GWS-07	917587.58	1125121.98	365.3	RNE	--	56.0	309.3
GWS-08	917137.33	1126131.89	387.0	RNE	--	52.0	335.0
GWS-09	916668.49	1125795.90	388.1	RNE	--	44.0	344.1
GWS-10	916367.25	1125590.13	381.3	RNE	--	40.0	341.3
GWS-11	915871.83	1125336.68	391.0	RNE	--	44.0	347.0
GWS-12	914884.50	1125173.98	387.4	RNE	--	48.0	339.4
GWS-13	915340.76	1124481.31	388.8	RNE	--	52.0	336.8
GWS-14	915670.25	1124197.42	411.5	RNE	--	64.0	347.5
GWS-15	916059.56	1123659.55	376.8	RNE	--	44.0	332.8
Groundwater Monitoring Well							
MW-03BR	917761.35	1124796.51	366.2	145.0	221.2	175.0	191.2
MW-03D	917752.46	1124813.96	366.3	RNE	--	138.0	228.3
MW-04BR	916260.73	1125515.82	389.0	170.5	218.5	204.0	185.0
MW-04D	916253.64	1125513.96	388.7	RNE	--	153.5	235.2
MW-05D	915308.18	1125359.05	388.2	RNE	--	137.0	251.2
MW-11I	915484.03	1124363.97	411.5	RNE	--	58.0	353.5
MW-15S	915138.30	1124770.57	388.4	RNE	--	26.0	362.4
MW-16D	916806.80	1123918.03	426.1	132.9	293.2	133.0	293.1
MW-16I	916806.80	1123918.03	426.1	RNE	--	81.0	345.1
MW-17D	917074.01	1125302.67	409.2	RNE	--	185.6	223.6
MW-18D	916090.99	1123905.73	425.0	146.0	279.0	186.6	238.4
MW-24G	917481.99	1125915.41	408.2	RNE	--	164.0	244.2
MW-25G	916554.59	1125125.52	423.4	RNE	--	144.0	279.4
MW-27G	917402.10	1124662.05	375.9	RNE	--	64.0	311.9
MW-30G	915687.40	1125096.64	388.1	RNE	--	66.0	322.1
Soil Boring							
SB-11	917600.06	1125052.29	365.1	RNE	--	60.0	305.1
SB-12	917450.60	1125662.54	409.0	RNE	--	100.0	309.0
SB-13BR	917490.22	1125925.36	408.2	248.8	159.4	248.9	159.3
SB-14	917187.28	1126211.85	387.4	RNE	--	76.0	311.4
SB-15	916802.77	1126046.79	387.6	RNE	--	80.0	307.6
SB-16BR	916329.41	1125763.28	366.3	134.5	231.8	134.7	231.6
SB-17	916020.67	1125424.43	388.7	RNE	--	62.0	326.7
SB-18	915372.46	1125421.18	389.8	RNE	--	54.0	335.8
SB-19BR	915093.00	1125470.40	388.8	136.0	252.8	136.1	252.7
SB-20	914640.26	1125287.98	376.8	RNE	--	54.0	322.8
SB-21	914843.38	1124880.82	377.8	RNE	--	44.0	333.8
SB-22	915210.77	1124471.52	380.7	RNE	--	34.0	346.7
SB-23	915479.46	1124205.77	382.1	RNE	--	36.0	346.1
SB-27NM	915746.70	1125310.70	388.9	RNE	--	54.0	334.9
SB-28NM	915979.65	1125288.74	390.3	RNE	--	50.0	340.3
SB-29NM	916735.79	1125862.79	387.4	RNE	--	54.0	333.4
SB-30NM	916426.12	1125287.30	387.4	RNE	--	50.0	337.4
SB-31NM	917279.74	1124405.23	417.0	RNE	--	92.0	325.0
SB-41	917715.36	1124840.95	365.9	RNE	--	64.0	301.9
SB-42	917545.98	1125286.46	366.5	RNE	--	74.0	292.5
SB-46BR	915662.97	1124190.98	411.5	157.0	254.5	159.2	252.3
SB-47	915953.00	1124835.00	423.2	RNE	--	74.0	349.2
SB-48	916857.00	1124804.00	422.4	RNE	--	72.0	350.4
SB-49	917679.00	1124024.00	420.8	RNE	--	84.0	336.8
SB-128	917242.14	1124536.59	419.5	RNE	--	4.0	415.5
SB-129	917831.24	1124641.07	367.1	RNE	--	12.0	355.1
SB-130	917407.68	1125985.87	408.6	RNE	--	10.0	398.6
SB-131	915368.41	1125051.79	386.5	RNE	--	10.0	376.5
SB-134	917008.92	1123759.90	426.5	RNE	--	10.0	416.5
SB-155	915746.45	1124616.68	423.3	RNE	--	96.0	327.3
SB-157	915454.10	1124824.36	386.5	RNE	--	58.0	328.5
SB-159	915389.33	1125167.36	386.2	RNE	--	60.0	326.2
SB-162	916437.43	1125883.98	364.0	RNE	--	64.0	300.0
SB-164A	917438.75	1124678.12	370.7	RNE	--	14.0	356.7
SB-165	917624.44	1124671.68	368.2	RNE	--	10.0	358.2
SB-166	917654.53	1124466.19	372.2	RNE	--	16.0	356.2
SB-167	917811.83	1124314.97	370.7	RNE	--	18.0	352.7



GENERAL NOTES:
1. THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION, LAYOUT, ESTIMATING PURPOSES. THIS PLANS IS ONLY INTENDED TO DEPICT THE LOCATIONS WHERE SUBSURFACE EXPLORATIONS WERE CONDUCTED BY OTHERS.
2. SCALE AS NOTED.
3. LOCATIONS ARE APPROXIMATE.

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NOT FOR CONSTRUCTION

ONONDAGA COUNTY SEAL

ONONDAGA COUNTY LAKEVIEW AMPHITHEATER

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	125.407.100
DATE:	SEPTEMBER 15, 2014
DRAWN BY:	-
DESIGNED BY:	-
CHECKED BY:	-

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

HISTORIC BORING LOCATION PLAN

B-001

Sep 12, 2014 – 5:56pm
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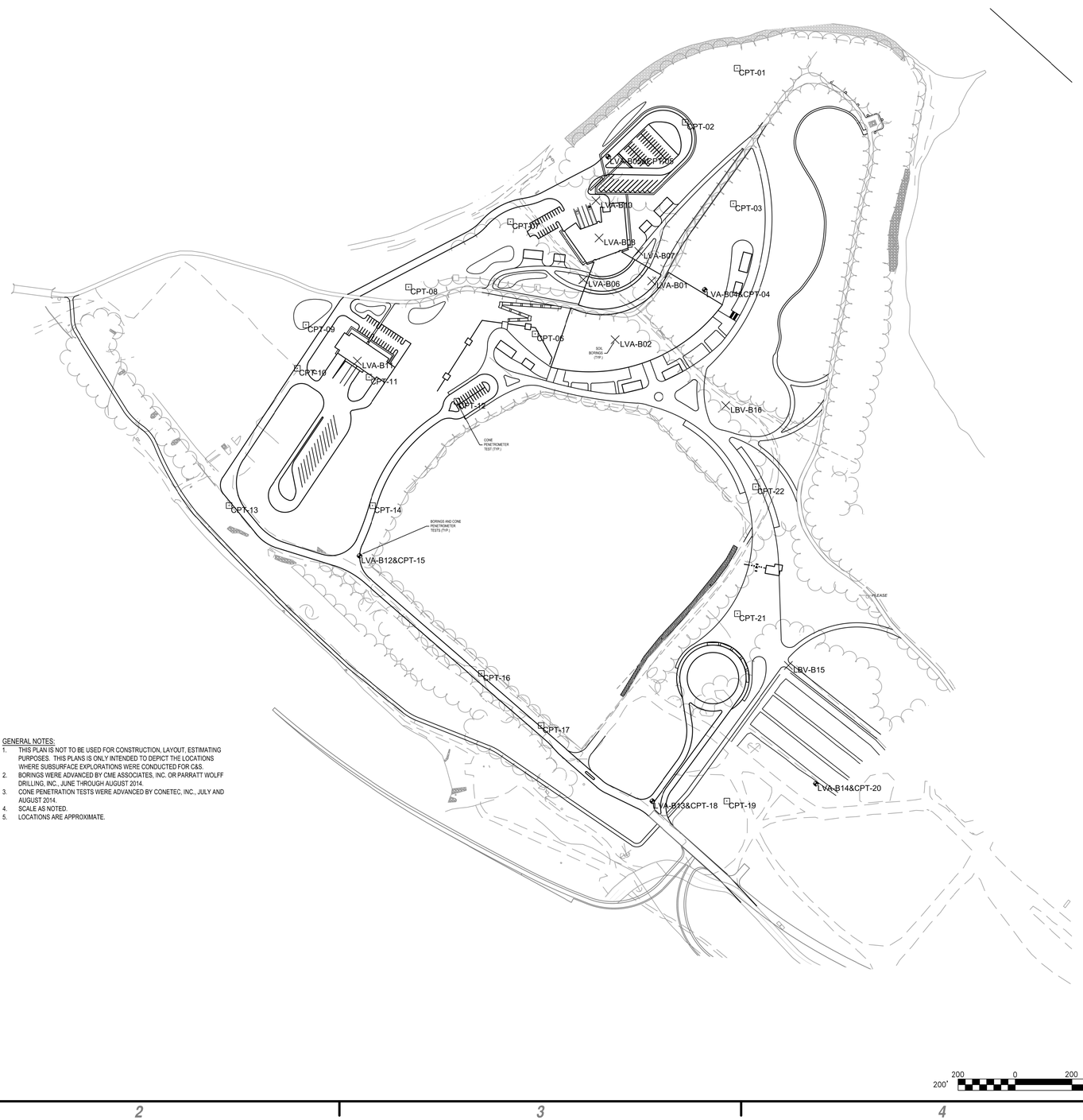
SOIL BORING & CONE PENETRATION TESTING LOCATIONS - GEOTECHNICAL INVESTIGATION							
Boring / Cone Penetration Test Loc	Coordinates		Ground Surface Elevation (ft)	Depth to Bedrock (ft)	Top of Bedrock Elevation (ft)	Total Depth Explored (ft)	Bottom of Boring Elevation (ft)
	Easting (X - Coord)	Northing (Y-Coord)					
SOIL BORINGS							
LVA-B01	916697.5	1125368.3	410.9	RNE	--	165.0	245.9
LVA-B02	916569.5	1125161.6	424.1	RNE	--	162	262.1
LVA-B03			REMOVED FROM INVESTIGATION PROGRAM				
LVA-B06	916458.0	1125373.1	389.5	194.5	195.0	213.0	176.5
LVA-B07	916652.3	1125472.0	392.5	199.0	193.5	214.0	178.5
LVA-B08	916513.0	1125519.5	386.6	190.0	196.6	205.0	181.6
LVA-B09			REMOVED FROM INVESTIGATION PROGRAM				
LVA-B10	916502.0	1125650.3	385.8	158.6	227.2	173.8	212.0
LVA-B11	915662.0	1125086.4	389.5	140.0	249.5	155.0	234.5
LBV-B15	917178.7	1124016.2	428.8	RNE	--	100.0	328.8
LBV-B16	916957.6	1124930.0	411.1	RNE	--	75.0	336.1
CONE PENETROMETER TESTS							
CPT-01	916997.9	1126116.2	387.5	RNE	--	40.0	347.5
CPT-02	916816.2	1125926.2	386.8	RNE	--	40.0	346.8
CPT-03	916984.5	1125639.6	407.9	RNE	--	40.0	367.9
CPT-06	916287.9	1125182.0	423.4	RNE	--	40.0	383.4
CPT-07	916201.4	1125576.7	387.6	RNE	--	40.0	347.6
CPT-08	915842.8	1125346.5	388.9	RNE	--	40.0	348.9
CPT-09	915481.9	1125213.7	387.7	RNE	--	30.0	357.7
CPT-10	915451.9	1125061.0	387.0	RNE	--	30.0	357.0
CPT-11	915703.3	1125029.9	388.4	RNE	--	129.5	258.9
CPT-12	916012.1	1124944.8	423.4	RNE	--	30.0	393.4
CPT-13	915211.4	1124578.1	388.4	RNE	--	40.0	348.4
CPT-14	915716.3	1124578.1	424.0	RNE	--	30.0	394.0
CPT-16	916098.9	1123987.8	426.4	RNE	--	40.0	386.4
CPT-17	916308.8	1123805.1	423.2	RNE	--	40.0	383.2
CPT-19	916962.0	1123539.2	428.6	RNE	--	40.0	388.6
CPT-21	916998.8	1124197.9	422.2	RNE	--	40.0	382.2
CPT-22	917062.7	1124644.2	423.8	RNE	--	30.0	393.8
SEISMIC CONE PENETROMETER TESTS							
SCPT-23	916880.0	1125320.0	408.0	RNE	--	165.0	243.0
SCPT-24	916600.0	1125425.0	388.2	RNE	--	155.0	233.2
SCPT-25	915668.0	1125038.0	389.0	RNE	--	80.0	309.0
BORINGS & CONE PENETROMETER TESTS							
LVA-B04 & CPT-04	916884.4	1125336.9	408.7	RNE	--	75.0	333.7
LVA-B05 & CPT-05	916545.3	1125804.9	389.9	RNE	--	40.0	349.9
LVA-B12 & CPT-15	915670.0	1124401.4	423.4	RNE	--	40.0	383.4
LVA-B13 & CPT-18	916699.9	1123538.8	429.5	RNE	--	40.0	389.5
LVA-B14 & CPT-20	917275.7	1123600.3	428.5	RNE	--	30.0	398.5



GENERAL NOTES:

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2. BORINGS WERE ADVANCED BY CME ASSOCIATES, INC. OR PARRATT WOLFF DRILLING, INC., JUNE THROUGH AUGUST 2014.
3. CONE PENETRATION TESTS WERE ADVANCED BY CONETEC, INC., JULY AND AUGUST 2014.
4. SCALE AS NOTED.
5. LOCATIONS ARE APPROXIMATE.

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NOT FOR CONSTRUCTION

ONONDAGA COUNTY LAKEVIEW AMPHITHEATER

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO: 125.407.100
DATE: SEPTEMBER 15, 2014
DRAWN BY: -
DESIGNED BY: -
CHECKED BY: -

BORING AND C.P.T. LOCATION PLAN

B-002

Sep 12, 2014 - 6:00pm
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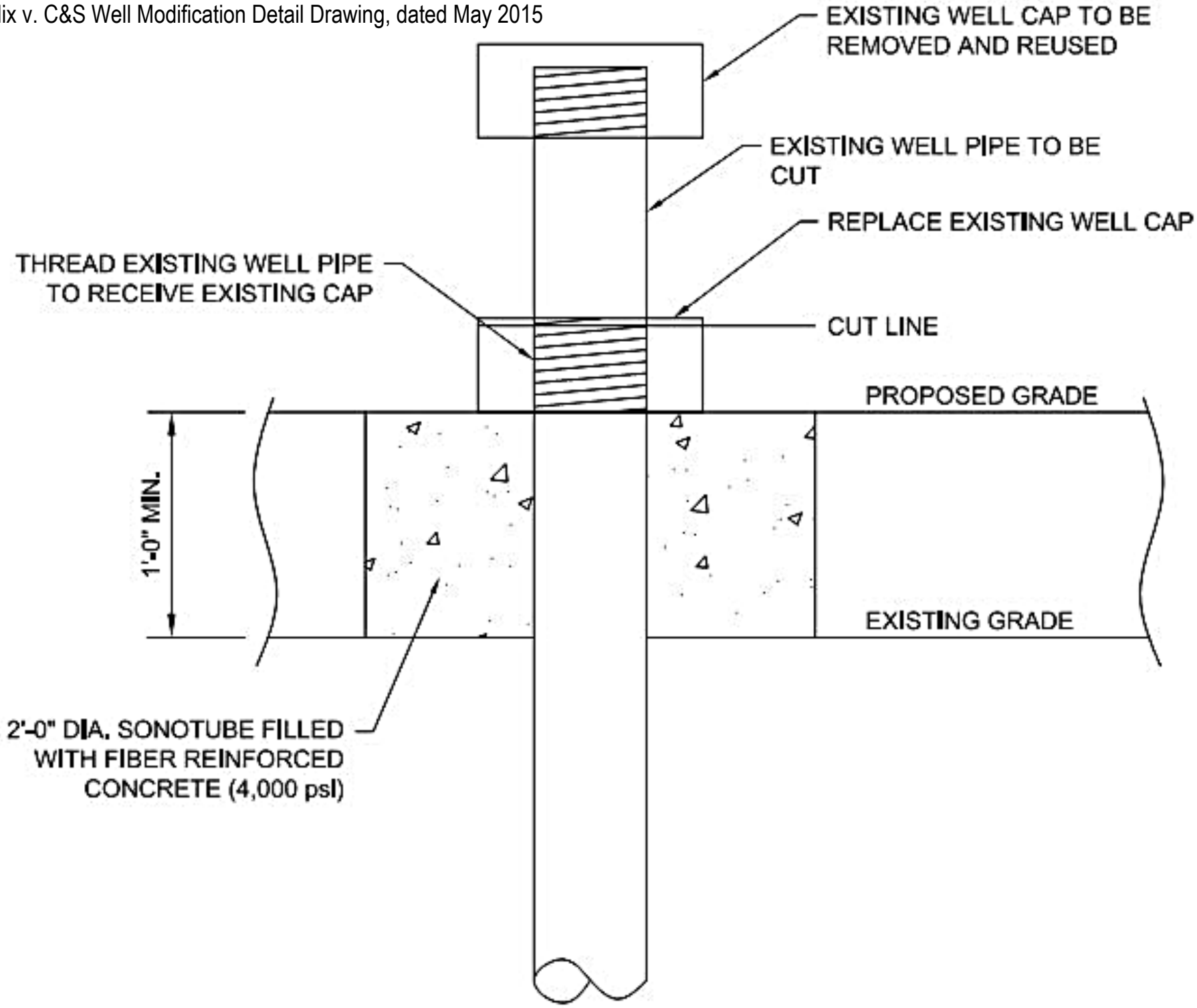
Appendix v. C&S Well Modification Detail Drawing, dated May 2015



Appendix vi. O'Brien & Gere Exposure Areas & Sampling Locations, dated May 2014

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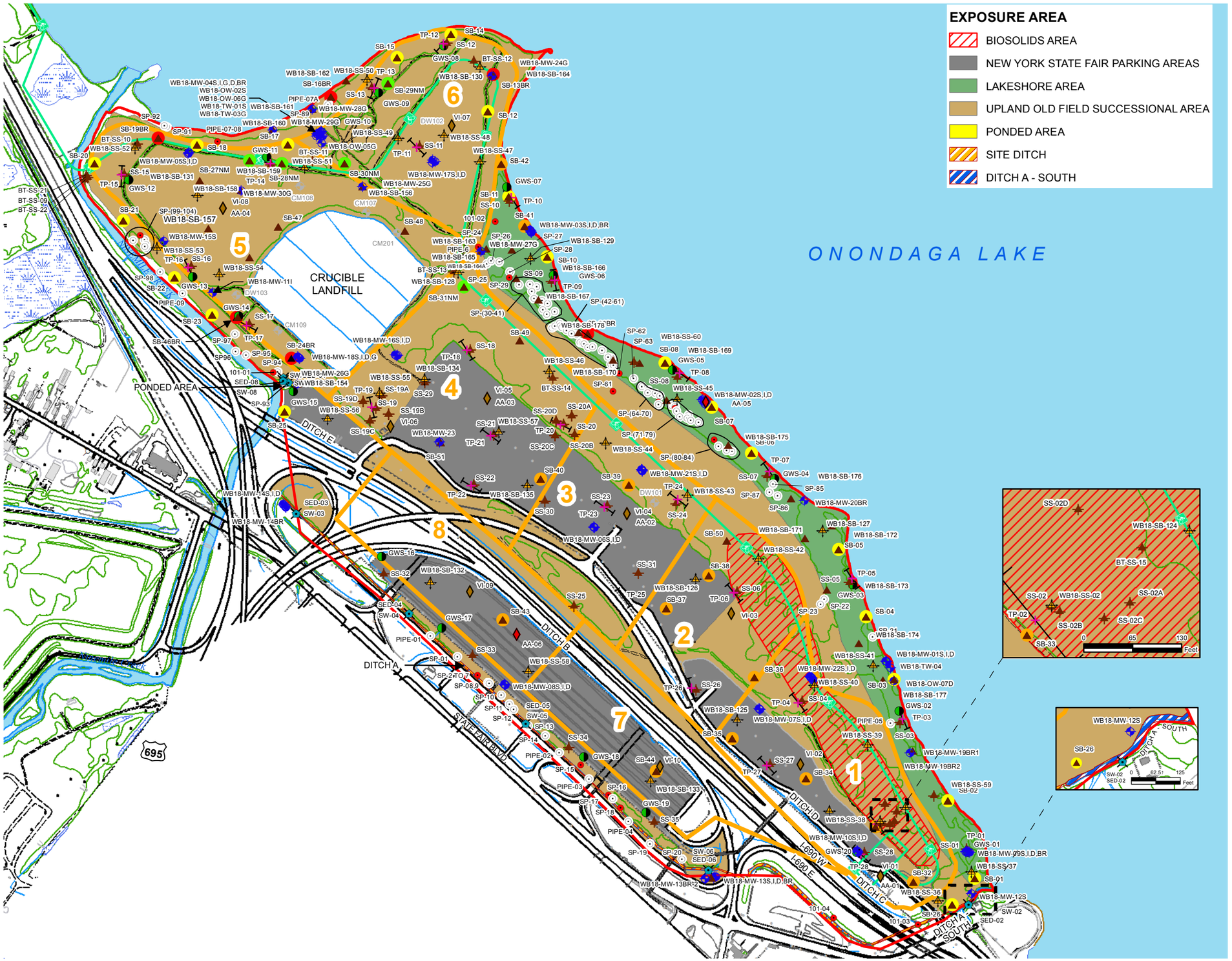

FIGURE 4

LEGEND

LOCATION TYPE

- AMBIENT AIR
- MONITORING WELL
- GROUND WATER SCREENING
- SOIL BORING
- SURFACE SOIL
- SURFACE WATER/SEDIMENT
- TEST PIT SAMPLE
- VAPOR INTRUSION
- SEEP WATER/SEDIMENT (sampled)
- SEEP WATER/SEDIMENT (not sampled)
- SOIL SAMPLE (Cr SPECIATION)
- CRUCIBLE WELL (not sampled)
- BORING TO TOP OF BEDROCK/TILL
- BORING TO SILT AND CLAY
- BORING (SOURCE CHARACTERIZATION)
- BORING (NMC GRAVEL/ SAND DELINEATION)
- BIKE TRAIL
- TEST PIT
- APPROXIMATE WASTEBED BOUNDARY
- SITE BOUNDARY

HONEYWELL
WASTEBEDS 1-8 SITE
GEDDES, NEW YORK

EXPOSURE AREAS & SAMPLING LOCATIONS

0 350 700 1,400
Feet

MAY 2014
1163.39642

O'BRIEN & GERE

PLOTDATE: 05/15/14 3:26:48 PM stantosa

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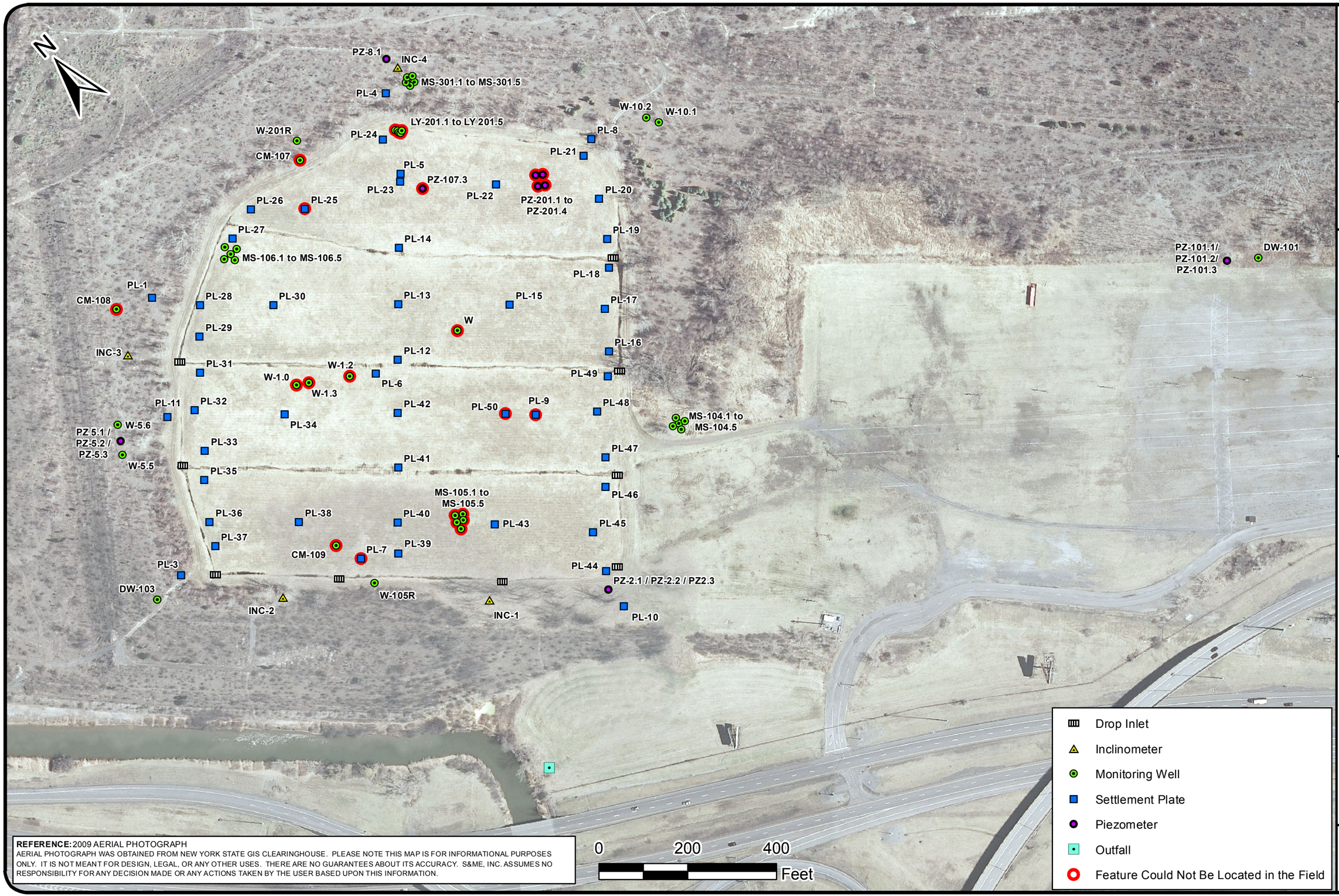
Appendix vii. S&ME Site Plan Crucible Specialty Metals Landfill Site, dated 12/04/2014



REFERENCE: 2009 AERIAL PHOTOGRAPH
AERIAL PHOTOGRAPH WAS OBTAINED FROM NEW YORK STATE GIS CLEARINGHOUSE. PLEASE NOTE THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS INFORMATION.

DATE: 12.04.2014
DRAWN BY: DDH
CHECKED BY: RAS
SCALE: 1 " = 200 '
PROJECT NO. 4335-14-211NE
ENGINEERING LICENSE NO. F-0176

S&ME
WWW.SMEINC.COM

SITE PLAN
CRUCIBLE SPECIALTY METALS LANDFILL SITE
STATE FAIR BOULEVARD
TOWN OF GEDDES, ONONDAGA COUNTY, NEW YORK

FIGURE NO.
3

Q:\4335\14\211NE Maestri update\03_site layout.mxd

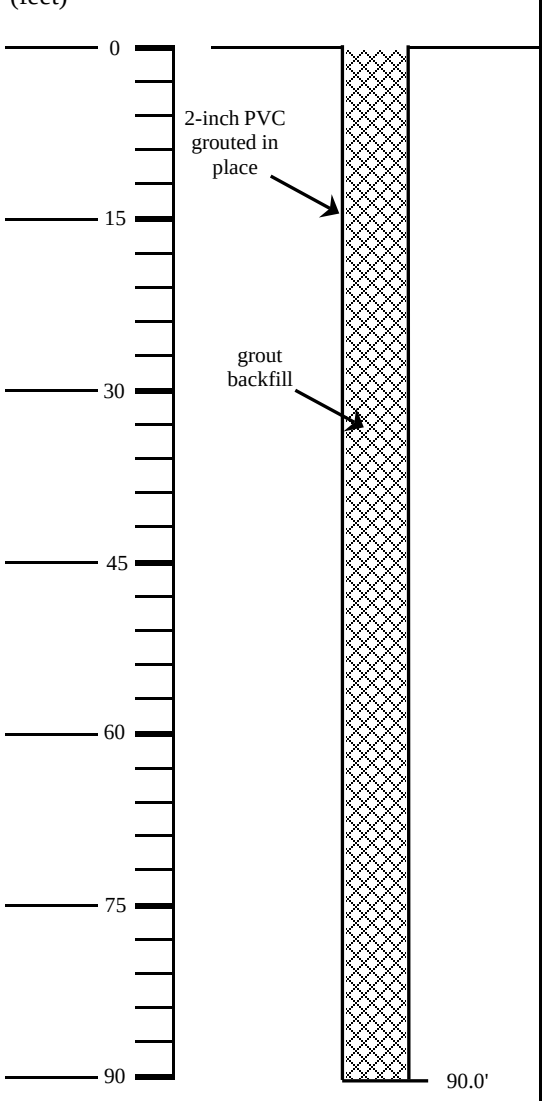
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: **LakeView Amphitheater**	Well I.D.: **MW-25G**
Site Location: **Geddes, New York**	Driller: **Jolaan Price**
Drilling Co.: **Parratt-Wolff, Inc.**	Inspector:
	Date: **6/4/15**

DECOMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	NA
Drilling Method(s)	NA
Borehole Dia. (in.)	NA
Temporary Casing Installed? (y/n)	N
Depth temporary casing installed	NA
Casing type/dia. (in.)	NA
Method of installing	NA
CASING PULLING	
Method employed	NA
Casing retrieved (feet)	NA
Casing type/dia. (in)	NA
CASING PERFORATING	
Equipment used	NA
Number of perforations/foot	NA
Size of perforations	NA
Interval perforated	NA
GROUTING	
Interval grouted (FBLS)	0 - 90'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	20
Quantity of cement used (lbs.)	282
Cement type	Portland
Quantity of bentonite used (lbs.)	12
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	30
Volume of grout used (gal.)	30

WELL SCHEMATIC*



COMMENTS:
No NAPL present

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

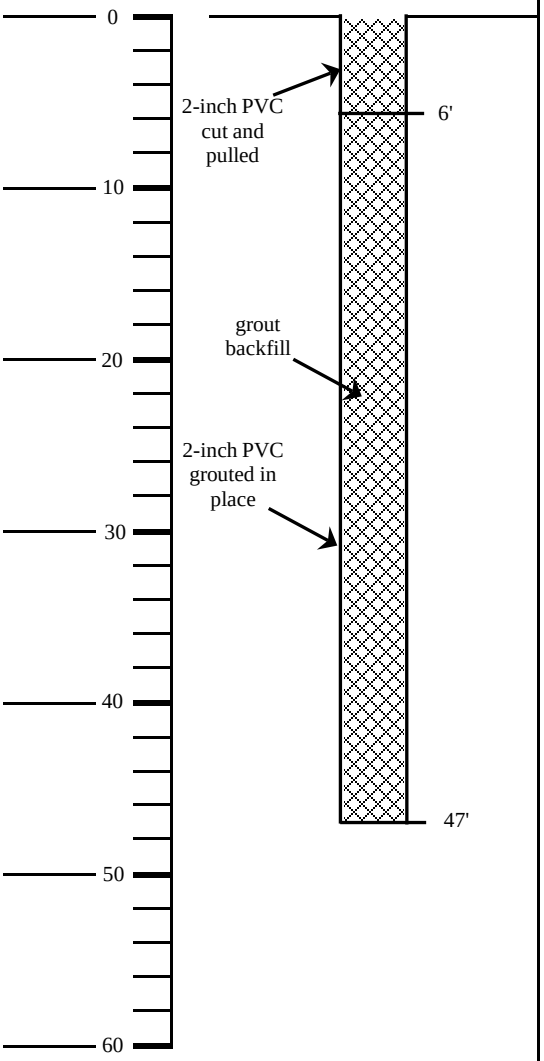
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: **LakeView Amphitheater**	Well I.D.: **CM108**
Site Location: **Geddes, New York**	Driller: **Jolaan Price**
Drilling Co.: **Parratt-Wolff, Inc.**	Inspector:
	Date: **10/30/15**

DECOMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	NA
Drilling Method(s)	NA
Borehole Dia. (in.)	NA
Temporary Casing Installed? (y/n)	N
Depth temporary casing installed	NA
Casing type/dia. (in.)	NA
Method of installing	NA
CASING PULLING	
Method employed	cut and pull
Casing retrieved (feet)	6.0'
Casing type/dia. (in)	PVC / 2"
CASING PERFORATING	
Equipment used	NA
Number of perforations/foot	NA
Size of perforations	NA
Interval perforated	NA
GROUTING	
Interval grouted (FBLS)	0 - 47'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	20
Quantity of cement used (lbs.)	188
Cement type	Portland
Quantity of bentonite used (lbs.)	5
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	20
Volume of grout used (gal.)	13

WELL SCHEMATIC*



COMMENTS:
Pulled protective casing and 6.0 feet of 2-inch PVC and
grouted to surface.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative