Global Operations, Environment, Health & Safety

159 Plastics Avenue
Pittsfield, MA 01201

Transmitted via Overnight Courier

October 31, 2016

Mr. Dave Dickerson
Office of Site Remediation and Restoration
U.S. Environmental Protection Agency, Region I
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Re: GE-Pittsfield/Housatonic River Site
Unkamet Brook Area (GECD170)
Summary of Initial Post-Remediation Inspection Activities North of Merrill Road

Dear Mr. Dickerson:

On September 27, 2016, the General Electric Company (GE) performed an initial post-remediation inspection of portions of the Unkamet Brook Area Removal Action Area (RAA) north of Merrill Road. The inspection reported herein did not include the natural resource restoration/enhancement (NRR/E) measures installed in the area north of Merrill Road, which will be covered by separate report;[1] nor did it include the remediation activities south of Merrill Road, which were not complete at the time of the inspection and will be subject to a separate initial inspection, likely in November 2016.[2]

The September 2016 post-remediation non-NRRE inspection north of Merrill Road was conducted in accordance with the applicable Post-Removal Site Control requirements of GE's August 19, 2016 *Post-Removal Site Control Plan/Restoration Project Monitoring and Maintenance Plan* (PRSCP/RPMMP), which was conditionally approved by the U.S. Environmental Protection Agency (EPA) by letter dated September 6, 2016. The areas subject to inspection in this portion of the Unkamet Brook Area, depicted on the attached Figure 3B from the PRSCP/RPMMP, consist of the following:

- Portions of the GE-owned industrial property north of Merrill Road and east of Plastics Avenue (part of Parcel K12-9-1), which includes buildings and other areas currently leased by SABIC Innovative Plastics (SABIC) and also includes an approximately 1.7-acre Decorative Pond, which is a lined pond south of Dalton Avenue that is hydraulically connected to Unkamet Brook and receives storm water from the surrounding areas;

[1] The NRR/E measures installed in this area were also inspected on September 27, 2016, and a report on those inspection activities will be submitted separately to the natural resource trustees (Trustees).

[2] The non-NRR/E inspection on September 27, 2016 was also scheduled to include the Other Ground-Covering Feature Area under the Grant of Environmental Restriction and Easement (ERE) for the GE-owned industrial property west of Plastics Avenue (part of Parcel K11-7-2) which contains Buildings OP-1 and OP-2, operated by General Dynamics Corporation (General Dynamics) under lease from GE and contract with the U.S. Navy, as well as a parking lot used by General Dynamics. However, at the time of the inspection, GE was unable to arrange access to the area with General Dynamics. GE will perform the required inspection of this area in the near future.

- Unkamet Brook itself, which is largely an open channel flowing from north of Dalton Avenue (north of the RAA) through the RAA until it ultimately discharges into the Housatonic River, and a portion of which has been re-routed to the east of the former interior landfill as part of the remediation activities at this RAA;

- The former interior landfill, which is located west of the re-routed brook channel, with the western portion, which consists of a parking lot used by SABIC, covered with an asphalt-covered engineered barrier and the eastern, undeveloped portion covered with a vegetative landfill cap, including a cap over a City sanitary sewer (all installed as part of remediation activities); and

- Portions of the additional undeveloped land owned by GE north of Merrill Road and east of the former interior landfill (also part of Parcel K12-9-1), which consists primarily of wetlands, some of which are considered inundated wetlands.

Remediation and restoration activities were performed in the portion of the Unkamet Brook Area north of Merrill Road between December 2014 and September 2016 in accordance with GE's *Revised Final Removal Design/Removal Action Work Plan for Unkamet Brook Area-West* (April 2011) and *Revised Final Removal Design/Removal Action Work Plan for Unkamet Brook Area-Remainder* (April 2014), as conditionally approved by EPA on July 5, 2011 and May 21, 2014, respectively, as well as a Supplemental Information Package (SIP) and associated addenda to the SIP, which were also approved by EPA. The remediation and restoration activities, excluding NRR/E measures, included: installation of a vegetative landfill cap over the eastern portion of the former interior landfill (including the City sanitary sewer) and an expansion area to the south of the former interior landfill; (2) installation of asphalt-covered engineered barriers over the western portion of the former interior landfill and an adjacent area to the south of the former interior landfill and west of the expansion to the vegetative landfill cap; (3) re-routing of an approximately 600-foot reach of Unkamet Brook around the eastern edge of the former interior landfill; (4) soil removal, backfilling, and restoration at specified locations in the RAA; (5) sediment removal, placement of backfill and riprap, and restoration of the non-re-routed portions of Unkamet Brook; (6) seeding and planting of several types of vegetation within non-NRR/E areas; (7) cleaning, restoration, and protective measures for Culvert #1, including installation of beaver deterrent and debris diversion structures upstream of the inlets; and (8) maintenance of specified paved and landscaped areas that GE has agreed to maintain as such.

This letter documents the results of the initial post-remediation inspection of the areas north of Merrill Road. That inspection included observations of the above-referenced areas where remediation and restoration activities were completed, as shown in attached Figure 3B. As previously noted, areas south of Merrill Road, where remediation and restoration activities were not yet completed, were not inspected during the September 2016 inspection.

Summary of Inspection Activities

The September 27, 2016 non-NRRE inspection was conducted by representatives of GE. Representatives of EPA were also present. The inspection activities conducted are described below.

First, the September 2016 inspection included visual observations of the landfill cap and engineered barrier surfaces to visually identify potential problems, such as settlement or (for the vegetated portion of the barrier) the presence of stressed vegetation. Specifically:

- Areas covered by the vegetative landfill cap (including the sanitary sewer cap and expansion area) were visually inspected for the following conditions as they could affect the integrity of the barrier: (a) evidence of topsoil erosion; (b) establishment and coverage of vegetation (e.g., bare or sparsely vegetated areas); (c) deficiencies in the soil layer overlying the synthetic cover components (e.g., excessive erosion, surface water ponding, depressions, exposed synthetic cover components, vehicle ruts, or other abnormalities); (d) damage to synthetic cover components; (e) uneven settlement relative to surrounding areas; (f) volunteer tree and shrub saplings within or along the edges of the vegetative cap (including the edges of the gravel access road on the cap); and (g) other conditions that could jeopardize the integrity of the cap (including evidence of animal burrows, unauthorized excavation, etc.).

- The asphalt-covered engineered barriers were visually inspected for the following conditions as they would affect the integrity of the barriers: (a) excessive cracking, fissures, spalling, or potholes; (b) evidence of uneven settlement, depressions, surface water ponding, excessive rutting, or exposed subbase materials, or exposed sub-grade materials; (c) presence of nuisance vegetation (weeds); (d) damage to synthetic barrier components; (e) other conditions that could jeopardize the integrity of the barriers.

The above-described landfill cap/engineered barrier inspections also included visual inspection of the drainage systems and the perimeter drainage system discharge locations for conditions that could interfere with the operation of those systems (e.g., evidence of blockage or erosion). The cap/barrier inspections further included a visual inspection of the gas ventilation system installed over the former interior landfill to verify that the five collection pipes had not been damaged or obstructed.

In addition, the September 2016 inspection included visual observations of the unpaved areas that were backfilled and restored, including those in the inundated wetlands, focusing on the following: (a) evidence of topsoil erosion or gravel erosion (depending on the cover type); (b) the effectiveness of erosion controls in areas where vegetation was not yet established; (c) evidence of depressions and/or surface water ponding; (d) any areas where excessive settlement had occurred relative to the surrounding areas; (e) any drainage or growth problems (where applicable); (f) other conditions that could jeopardize the performance of the completed remediation actions (e.g., vehicle ruts, unauthorized excavations, etc.).

The backfilled/restored areas with an asphalt or other paved surface were inspected for: (a) excessive cracking, fissures, spalling, or potholes; (b) evidence of depressions and/or surface water ponding; (c) any areas where excessive settlement had occurred relative to the surrounding areas; (d) any drainage problems; and, (e) other conditions that could jeopardize the performance of the completed remediation.

Further, the approximate 600-foot section of Unkamet Brook that had been re-routed around the eastern edge of the former interior landfill was inspected for evidence of displacement of riprap within the channel or on the banks or any other conditions that could jeopardize the performance of the brook re-routing. Similarly, the backfilled/restored sediment removal areas in the portions of Unkamet Brook that were not re-routed were inspected for evidence of displacement of the riprap placed in the channel or on the banks or other conditions that could jeopardize the performance of the completed remediation.

The inspections of the non-NRR/E vegetation included: (a) the wetland vegetative communities in the backfilled/restored portions of the inundated wetlands; (b) the herbaceous vegetation in other affected non-NRR/E areas; and (c) the trees and shrubs planted in the other affected non-NRR/E planting areas. These areas are shown on attached Figure 4A from the PRSCP/RPMMP. It should be noted that, in

accordance with an agreement between GE and EPA, while the area between the eastern side of the vegetative landfill cap and the western side of the re-routed brook channel (designated as the Supplemental Planting Area) was planted with non-NRR/E trees and shrubs, only a portion of those trees and shrubs, located within a sub-area shown on Figure 4A, are subject to inspection.

The vegetation inspection consisted of both a qualitative field assessment of the non-NRR/E areas where vegetation was planted and a quantitative assessment within specific monitoring plots established within those planting areas.

- For the qualitative assessment, meander surveys of the planting areas shown on Figure 4A (including the designated sub-area in the Supplemental Planting Area) were conducted. During these surveys, visual observations were made of the wetland vegetation and other herbaceous vegetation to assess the establishment, coverage, and condition of the vegetation, including any evidence of stressed or sparse cover. These observations included evaluation of the vegetation installed in the inundated wetlands to ensure that it is growing as anticipated. The qualitative assessment also evaluated whether there was any evidence of damage from trespassing or herbivory and/or the presence of any of the invasive plant species listed in Table 1 of the PRSCP/RPMMP (or any other plant species listed by the Massachusetts Invasive Plant Advisory Group [MIPAG] as "invasive," "likely invasive, or "potentially invasive'). In addition, the meander survey included general observations of the trees and shrubs in each planting area to assess the survival and condition of those plantings, so as to ensure that they are surviving and growing as anticipated.

- The quantitative assessment was performed within designated monitoring plots established within each planting area north of Merrill Road, as shown on attached Figure 5A.[3] During this inspection, the number of trees and shrubs in each monitoring plot in those planting areas was counted to serve as the baseline for subsequent survival calculations.[4] The presence of any stressed trees or shrubs within the monitoring plots was also noted. In addition, the quantitative assessment included the following for each monitoring plot: (a) an estimate of the areal extent of groundcover by native herbaceous

[3] The attached Figure 5A represents a modification of the Figure 5A that was included in the PRSCP/RPMMP. During the September 2016 inspection, the locations of monitoring plots 3-1 and S-1 were modified and/or expanded in the field by representatives of EPA and GE to ensure that a representative number of plantings in each planting area were located within each monitoring plot. Subsequent to that inspection, at the request of EPA, monitoring plot 2-1 was expanded, monitoring plot S-1 was expanded a second time, and a new monitoring plot, designated 1-3, was established in Planting Area #1 to ensure that a representative number of plantings in each planting area were included in the monitoring plots. These new and revised monitoring plots are shown on the attached revised Figure 5A.

[4] Due to the post-inspection revision of the monitoring plots described in the above footnote, a supplemental inspection of expanded plots 2-1 and S-1 and new plot 1-3 was performed on October 14, 2016 to establish the baseline planting counts for those monitoring plots. During each subsequent inspection, field personnel will perform a stem count of the trees and shrubs in each monitoring plot (as revised) to identify live and dead plantings (as well as any stressed plantings). They will record the number, survival, and condition of the trees and shrubs in each monitoring plot. Based on the stem counts, the number of live trees and shrubs in each monitoring plot will be recorded and compared to the baseline number to determine a percent survival rate. The survival rates will be calculated separately for trees and shrubs. These results will be used to determine the survival rates for trees and shrubs in each planting area as follows: (a) Where there is only one monitoring plot within (or comprising) a planting area, the survival rates for that plot will be assigned to the overall planting area; and (b) where there are two or more monitoring plots within a planting area, the survival rates for those plots will be averaged to calculate percent survival rates for the planting area. The survival rates for trees and shrubs in each planting area will then be compared to a survival standard of 95% of the baseline planting number.

species; and (b) a determination of the presence of, and an estimate of percent coverage by, the invasive plant species listed in Table 1 of the PRSCP/RPMMP (or any other plant species listed by MIPAG as "invasive," "likely invasive, or "potentially invasive').[5]

The September 2016 inspection also included visual observations of Culvert #1. The inspection included a visual observation of the inlets and outlets of the twin culverts that comprise Culvert #1, as well as of the beaver deterrent and debris diversion structures upstream of the inlets to Culvert #1, to evaluate any evidence of damage to or blockage of the twin culverts, any damage to the beaver deterrent or debris diversion structures, and any other developments that would restrict flow through these twin culverts.

Lastly, the September 2016 inspection included visual observations of: (a) the paved areas that GE has agreed to maintain as paved (namely, the areas that are part of the Other Ground-Covering Feature Area under the ERE that GE has executed for Parcel K12-9-1, excluding the existing buildings); and (b) the landscaped area where a vegetative soil cover was previously placed over former building foundations and pavement (referred to as the Covered Slab Area in the ERE for Parcel K12-9-1). The paved areas were inspected for the following conditions: evidence of excessive cracking, fissures, spalling, rutting, potholes, heaving, uneven settlement, or exposed sub-grade material. The Covered Slab Area was visually inspected for evidence of soil erosion or other conditions that could jeopardize the integrity of the soil cover or prevent it from continuing to cover the underlying building foundations and pavement.

Summary of Observations During Inspection

The results of the September 2016 inspection are recorded on an Inspection Checklist, using the applicable form included in the PRSCP/RPMMP. The completed checklist, with an attached field form, is attached hereto.[6]

As shown in the attached Inspection Summary and Checklist, the September 2016 inspection showed that the vegetative landfill cap and the engineered barriers, specific barrier components, the backfilled/restored soil removal areas, the re-routed portion of Unkamet Brook, the backfilled/restored sediment removal areas in Unkamet Brook, Culvert #1 (and the associated beaver deterrent and debris diversion structures), the paved areas characterized as paved, and the Covered Slab Area were all in good condition, with the following exceptions:

[5] During each subsequent inspection, estimates of these same parameters will be made for each monitoring plot, and the results from these estimates within the monitoring plots will then be used to determine the areal coverage by native herbaceous species and the percent coverage by invasive species in each planting area, using the same procedures described in the prior footnote for trees and shrubs. In accordance with the PRSCP/RPMMP, those results will then be compared to goals of at least 95% areal coverage by native herbaceous species and 5% or less coverage by invasive species in each planting area.

[6] Since this was the initial vegetation inspection, there is no need in the present report for the use of both Forms A-1 and A-2 attached to the inspection checklist in the PRSCP/RPMMP, since Form A-2 was developed primarily to document a quantitative comparison of the observed trees and shrubs in each monitoring plot to the baseline numbers of tree/shrubs to determine percent survival. Instead, a modified version of Form A-1 presenting the results of the quantitative baseline assessment conducted of the trees and shrubs north of Merrill Road during the September 27 initial inspection (and the supplemental October 14 inspection of revised/new monitoring plots) has been included with the checklist and is discussed below.

- Two small areas of sparse vegetative cover were observed on the vegetative landfill cap over the former interior landfill/expansion area. In total, these areas were estimated to cover approximately 1,000 square feet (0.02 acre) and are anticipated to increase in vegetative density in subsequent growing seasons. Therefore, no repairs are recommended for these areas at this time.

- Small areas of broken pavement were observed in three locations. These consisted of an area between the former interior landfill and Building 130, and two areas between Buildings 119 and 51. These areas will be repaired as discussed below.

- A small area of ponding was observed near the entrance off Dalton Avenue, but no repairs are needed at this time.

For the vegetation inspection, the qualitative assessment showed that the herbaceous vegetation inspected was in generally good condition, establishing as intended, with no areas of stressed or sparse cover, except for the two small sparsely vegetated areas on the vegetative landfill cap, as discussed above. A small quantity of the invasive species coltsfoot (*Tussilago farfara*) was observed adjacent to a rock-armored swale providing surface drainage from the engineered cap of the former interior landfill. However, neither this species nor other invasive species was observed in the other inspected portions of the Unkamet Brook Area.[7] The qualitative assessment also indicated that the planted trees and shrubs in the planting areas were in generally good condition.

As noted above, the quantitative assessment included a count of the number of trees and shrubs in each monitoring plot in the planting areas north of Merrill Road to serve as the baseline for subsequent survival calculations. While three dead trees were observed in monitoring plot 2-1 in Planting Area #2 during the September inspection, those trees had already been replaced by the time of that inspection, and thus were not included in the baseline counts. The results of the baseline counts are provided, for each monitoring plot north of Merrill Road, in modified Form A-1 attached to the inspection checklist.[8] Apart from the three dead trees that had already been replaced, no other dead trees or shrubs were observed in any monitoring plot. However, one shrub in monitoring plot 1-1 (swamp rose), two shrubs in monitoring plot 5-1 (alternate leaf dogwood), and two shrubs in monitoring plot S-1 (swamp rose) were observed to be stressed.

In addition, as also shown in Form A-1, the quantitative assessment indicated that each monitoring plot had an areal coverage by native herbaceous species of 100%, and that no invasive species were observed in any monitoring plot.

[7] The phragmites removal areas in the northern portion of this RAA were subject to the separate NRR/E inspection, and the results of that inspection (including the presence of phragmites) will be provided in a separate report to the Trustees.

[8] These baseline counts reflect both the counts initially made on September 27 and the revised/expanded counts made during the October 14 supplemental inspection of the revised/new monitoring plots. These numbers will be used as the baseline numbers for purpose of subsequent survival calculations, using Form A-2 of the inspection checklist in the PRSCP/RPMMP.

Maintenance/Replanting Activities

Based on the September 2016 inspection, the following maintenance and repair activities were identified:

- Apply a non-selective, glyphosate-based herbicide to treat the area of coltsfoot;
- Fertilize the stressed shrubs in the monitoring plots, as described above, and re-evaluate them in the spring of 2017 to determine if they are still stressed; and
- Repair the areas of broken pavement identified between the former interior landfill and Building 130 and between Buildings 119 and 51.

In accordance with the PRSCP/RPMMP, these activities will be conducted within 90 days of the inspection date – i.e., this fall – unless otherwise required by EPA.

Schedule for Future Inspections

Future inspections of the Unkamet Brook Area will be conducted in accordance with the PRSCP/RPMMP until such time as that plan is replaced with the revised version to be included in the forthcoming Final Completion Report (FCR) for the Unkamet Brook Area Removal Action, as approved by EPA. The schedule for future inspections is summarized as follows:

- The landfill cap/engineered barriers north of Merrill Road will be inspected semi-annually in May and August or September, with the next inspection in May 2017. The engineered barriers south of Merrill Road are anticipated to be inspected initially in November 2016, and semi-annually thereafter in May and August or September.
- Backfilled/restored soil and sediment removal areas north of Merrill Road will be inspected semi-annually in May and August or September in 2017 and annually thereafter. Such areas located south of Merrill Road are expected to be inspected initially in November 2016, semi-annually in 2017, and annually thereafter.
- The re-routed brook channel will be inspected at the same frequency as the backfilled/restored areas north of Merrill Road, with the next inspection in May 2017.
- Culvert #1 and the associated structures will be inspected at the same frequency as the landfill cap/engineered barriers north of Merrill Road, with the next such inspection in May 2017 and semi-annually thereafter.
- The non-NRRE vegetation for areas north and south of Merrill Road will be inspected semi-annually for two years (2017 and 2018) in May and August or September.
- The Other Ground-Covering Feature Area and Covered Slab Area north of Merrill Road will be inspected annually in August or September, with the next inspection in 2017.
- The Other Ground-Covering Feature Area west of Plastics Avenue will be inspected initially later this fall, and then annually in August or September.

Future inspections will utilize the pertinent Inspection Checklist, with attached forms, included in the PRSCP/RPMMP or, after EPA approval of the FCR, the Inspection Checklist and forms provided in the revised version to be included in the FCR. Within 30 days following each inspection, an inspection report will be prepared and submitted to EPA.

The NRR/E plantings and restoration activities associated with the Unkamet Brook Area are subject to separate inspections in accordance with the frequencies and procedures set forth for those NRR/E measures in the PRSCP/RPMMP or any subsequent Restoration Project Monitoring and Maintenance Plan approved by the Trustees.

Please call me if you have any comments or questions.

Sincerely

Richard W. Gates

Richard W. Gates
Senior Project Manager – Environmental Remediation

Attachments

cc: Dean Tagliaferro, EPA
John Kilborn, EPA (electronic copy on CD)
Christopher Ferry, ASRC Primus (electronic copy on CD)
Scott Campbell, Avatar (2 hard copies + electronic copy on CD)
John Ziegler, MassDEP (electronic copy on CD)
Michael Gorski, MassDEP (electronic copy on CD)
Eva Tor, MassDEP (letter by e-mail)
Robert Leitch, USACE (electronic copy on CD)
Nancy E. Harper, MA AG (letter only)
Nate Joyner, Pittsfield Dept. of Community Development (electronic copy on CD)
Shannon Borelli, General Dynamics (electronic copy on CD)
Steve Karvasy, GE-CSSO (hard copy + CD)
Erin Cullen, GE Corporate Properties & Services (electronic copy on CD)
Andrew Silfer, GE (letter only)
Rod McLaren, GE (letter only)
Matthew Calacone, GE (electronic copy on CD)
James Bieke, Sidley Austin
James Nuss, ARCADIS
Corey Averill, ARCADIS
Public Information Repositories
GE Internal Repository

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.SARTORI LD: K.SARTORI PIC: C.AVERILL PM C.AVERILL TM: C.CUMMINGS LYR: ON=*;OFF=*REF*
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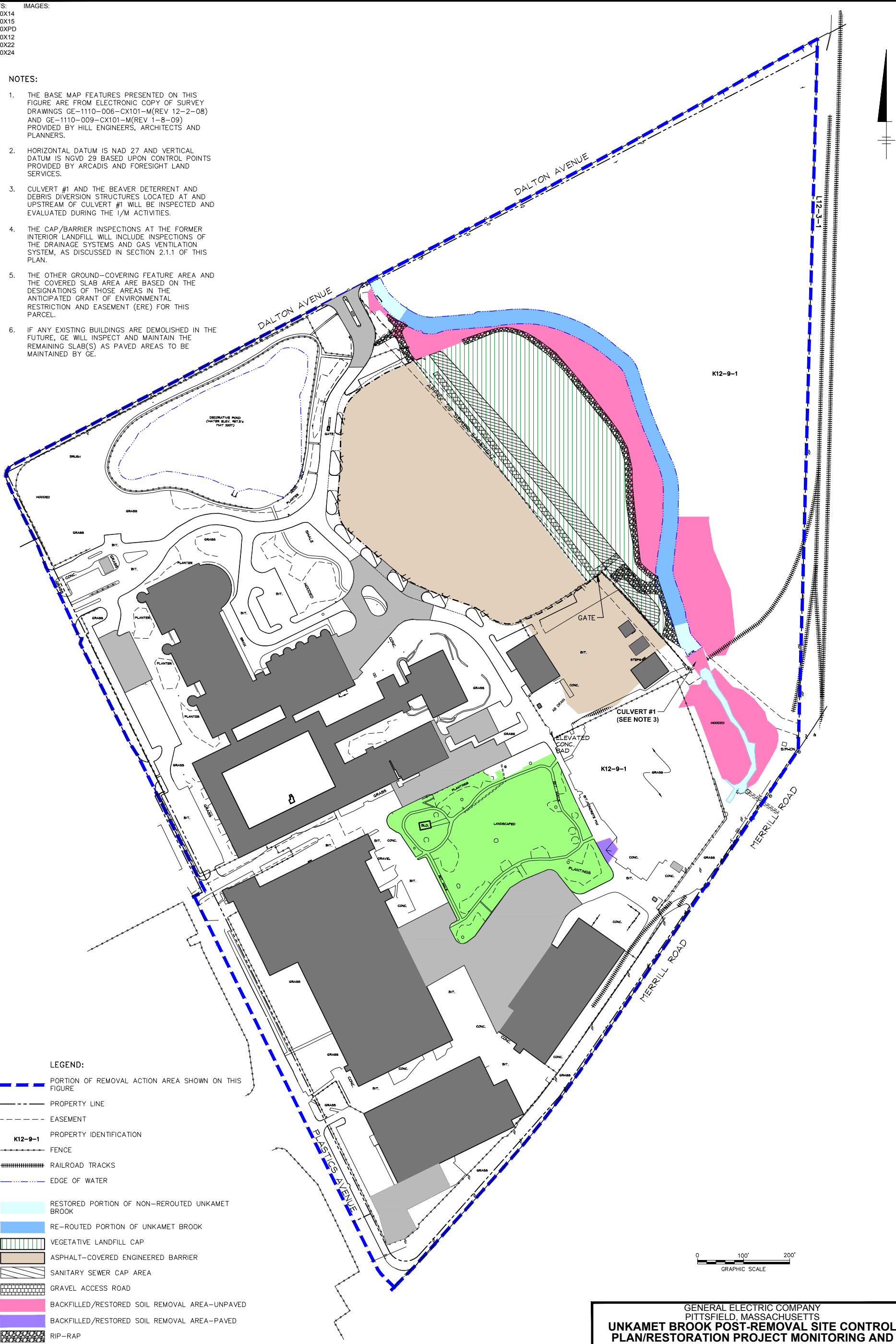
IMAGES:

NOTES:

1. THE BASE MAP FEATURES PRESENTED ON THIS FIGURE ARE FROM ELECTRONIC COPY OF SURVEY DRAWINGS GE-1110-006-CX101-M(REV 12-2-08) AND GE-1110-009-CX101-M(REV 1-8-09) PROVIDED BY HILL ENGINEERS, ARCHITECTS AND PLANNERS.
2. HORIZONTAL DATUM IS NAD 27 AND VERTICAL DATUM IS NGVD 29 BASED UPON CONTROL POINTS PROVIDED BY ARCADIS AND FORESIGHT LAND SERVICES.
3. CULVERT #1 AND THE BEAVER DETERRENT AND DEBRIS DIVERSION STRUCTURES LOCATED AT AND UPSTREAM OF CULVERT #1 WILL BE INSPECTED AND EVALUATED DURING THE I/M ACTIVITIES.
4. THE CAP/BARRIER INSPECTIONS AT THE FORMER INTERIOR LANDFILL WILL INCLUDE INSPECTIONS OF THE DRAINAGE SYSTEMS AND GAS VENTILATION SYSTEM, AS DISCUSSED IN SECTION 2.1.1 OF THIS PLAN.
5. THE OTHER GROUND-COVERING FEATURE AREA AND THE COVERED SLAB AREA ARE BASED ON THE DESIGNATIONS OF THOSE AREAS IN THE ANTICIPATED GRANT OF ENVIRONMENTAL RESTRICTION AND EASEMENT (ERE) FOR THIS PARCEL.
6. IF ANY EXISTING BUILDINGS ARE DEMOLISHED IN THE FUTURE, GE WILL INSPECT AND MAINTAIN THE REMAINING SLAB(S) AS PAVED AREAS TO BE MAINTAINED BY GE.



LEGEND:

- PORTION OF REMOVAL ACTION AREA SHOWN ON THIS FIGURE
- PROPERTY LINE
- EASEMENT
- K12-9-1 PROPERTY IDENTIFICATION
- FENCE
- RAILROAD TRACKS
- EDGE OF WATER
- RESTORED PORTION OF NON-REROUTED UNKAMET BROOK
- RE-ROUTED PORTION OF UNKAMET BROOK
- VEGETATIVE LANDFILL CAP
- ASPHALT-COVERED ENGINEERED BARRIER
- SANITARY SEWER CAP AREA
- GRAVEL ACCESS ROAD
- BACKFILLED/RESTORED SOIL REMOVAL AREA-UNPAVED
- BACKFILLED/RESTORED SOIL REMOVAL AREA-PAVED
- RIP-RAP
- EXISTING BUILDING THAT WILL BE PART OF OTHER GROUND-COVERING FEATURE AREA UNDER FORTHCOMING ERE (SEE NOTES 5 AND 6)
- PAVED NON-BUILDING AREA THAT WILL BE PART OF THE OTHER GROUND-COVERING FEATURE AREA UNDER FORTHCOMING ERE (SEE NOTE 5).
- COVERED SLAB AREA

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

UNKAMET BROOK POST-REMOVAL SITE CONTROL PLAN/RESTORATION PROJECT MONITORING AND MAINTENANCE PLAN

AREAS SUBJECT TO NON-NRR/E INSPECTIONS-NORTH OF MERRILL ROAD

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3B

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.SARTORI LD: K.SARTORI PIC: C.AVERILL PM C.AVERILL TM: C.CUMMINGS LYR: ON=*;OFF=*REF*
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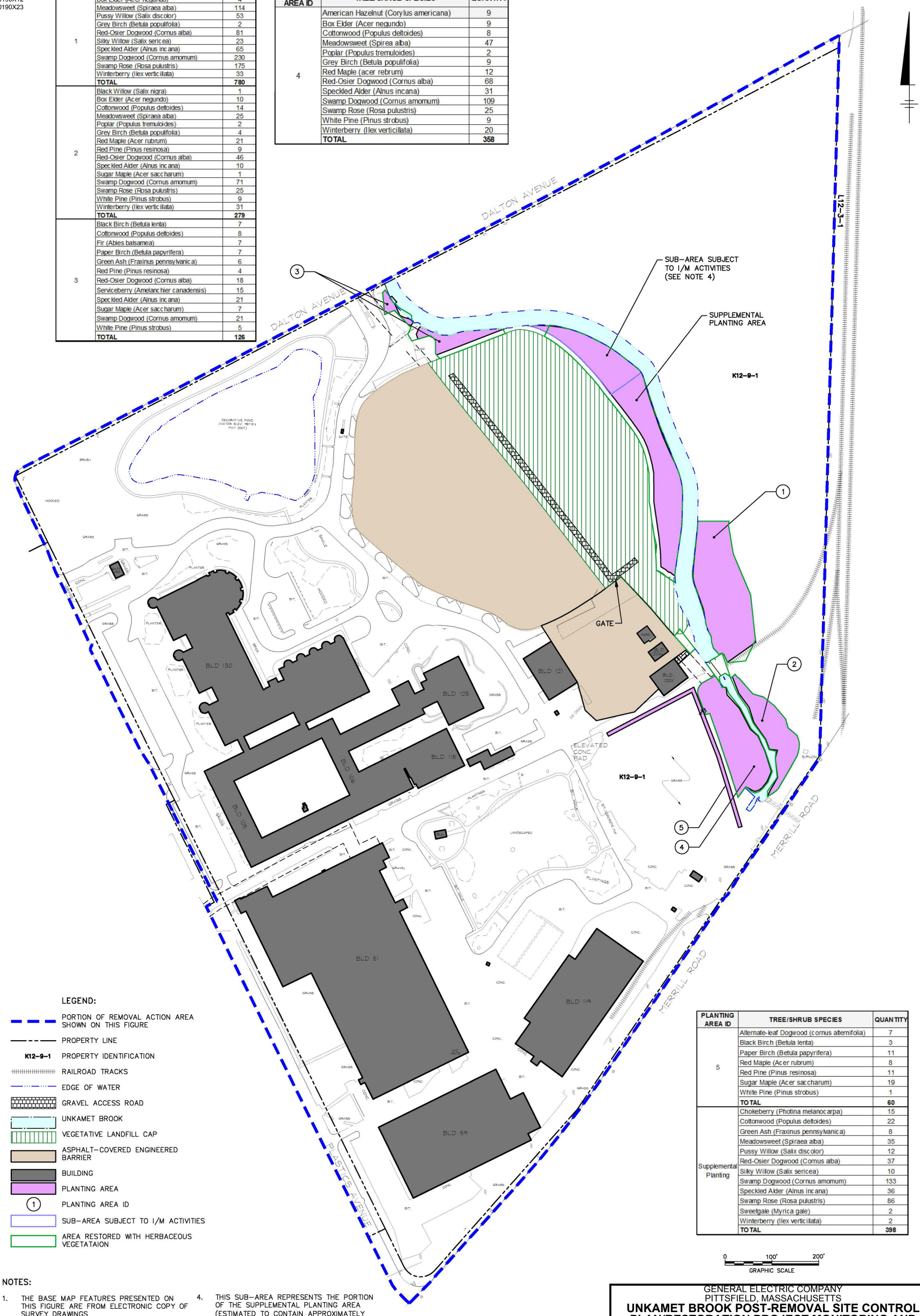
IMAGES:

PLANTING AREA ID	TREE/SHRUB SPECIES	QUANTITY
1	Box Elder (Acer negundo)	4
	Meadowsweet (Spiraea alba)	114
	Pussy Willow (Salix discolor)	53
	Grey Birch (Betula populifolia)	2
	Red-Osier Dogwood (Cornus alba)	81
	Silky Willow (Salix sericea)	23
	Speckled Alder (Alnus incana)	65
	Swamp Dogwood (Cornus amomum)	230
	Swamp Rose (Rosa pulustris)	175
	Winterberry (Ilex verticillata)	33
	TOTAL	**780**
2	Black Willow (Salix nigra)	1
	Box Elder (Acer negundo)	10
	Cottonwood (Populus deltoides)	14
	Meadowsweet (Spiraea alba)	25
	Poplar (Populus tremuloides)	2
	Grey Birch (Betula populifolia)	4
	Red Maple (Acer rubrum)	21
	Red Pine (Pinus resinosa)	9
	Red-Osier Dogwood (Cornus alba)	46
	Speckled Alder (Alnus incana)	10
	Sugar Maple (Acer saccharum)	1
	Swamp Dogwood (Cornus amomum)	71
	Swamp Rose (Rosa pulustris)	25
	White Pine (Pinus strobus)	9
	Winterberry (Ilex verticillata)	31
	TOTAL	**279**
3	Black Birch (Betula lenta)	7
	Cottonwood (Populus deltoides)	8
	Fir (Abies balsamea)	7
	Paper Birch (Betula papyrifera)	7
	Green Ash (Fraxinus pennsylvanica)	6
	Red Pine (Pinus resinosa)	4
	Red-Osier Dogwood (Cornus alba)	18
	Serviceberry (Amelanchier canadensis)	15
	Speckled Alder (Alnus incana)	21
	Sugar Maple (Acer saccharum)	7
	Swamp Dogwood (Cornus amomum)	21
	White Pine (Pinus strobus)	5
	TOTAL	**126**

PLANTING AREA ID	TREE/SHRUB SPECIES	QUANTITY
4	American Hazelnut (Corylus americana)	9
	Box Elder (Acer negundo)	9
	Cottonwood (Populus deltoides)	8
	Meadowsweet (Spirea alba)	47
	Poplar (Populus tremuloides)	2
	Grey Birch (Betula populifolia)	9
	Red Maple (acer rebrum)	12
	Red-Osier Dogwood (Cornus alba)	68
	Speckled Alder (Alnus incana)	31
	Swamp Dogwood (Cornus amomum)	109
	Swamp Rose (Rosa pulustris)	25
	White Pine (Pinus strobus)	9
	Winterberry (Ilex verticillata)	20
	TOTAL	**358**



LEGEND:

- PORTION OF REMOVAL ACTION AREA SHOWN ON THIS FIGURE
- PROPERTY LINE
- K12-9-1 PROPERTY IDENTIFICATION
- RAILROAD TRACKS
- EDGE OF WATER
- GRAVEL ACCESS ROAD
- UNKAMET BROOK
- VEGETATIVE LANDFILL CAP
- ASPHALT-COVERED ENGINEERED BARRIER
- BUILDING
- PLANTING AREA
- (1) PLANTING AREA ID
- SUB-AREA SUBJECT TO I/M ACTIVITIES
- AREA RESTORED WITH HERBACEOUS VEGETATAION

PLANTING AREA ID	TREE/SHRUB SPECIES	QUANTITY
5	Alternate-leaf Dogwood (cornus alternifolia)	7
	Black Birch (Betula lenta)	3
	Paper Birch (Betula papyrifera)	11
	Red Maple (Acer rubrum)	8
	Red Pine (Pinus resinosa)	11
	Sugar Maple (Acer saccharum)	19
	White Pine (Pinus strobus)	1
	TOTAL	**60**
Supplemental Planting	Chokeberry (Photina melanocarpa)	15
	Cottonwood (Populus deltoides)	22
	Green Ash (Fraxinus pennsylvanica)	8
	Meadowsweet (Spiraea alba)	35
	Pussy Willow (Salix discolor)	12
	Red-Osier Dogwood (Cornus alba)	37
	Silky Willow (Salix sericea)	10
	Swamp Dogwood (Cornus amomum)	133
	Speckled Alder (Alnus incana)	36
	Swamp Rose (Rosa pulustris)	86
	Sweetgale (Myrica gale)	2
	Winterberry (Ilex verticillata)	2
	TOTAL	**398**

0 100' 200'
GRAPHIC SCALE

NOTES:

1. THE BASE MAP FEATURES PRESENTED ON THIS FIGURE ARE FROM ELECTRONIC COPY OF SURVEY DRAWINGS GE-1110-006-CX101-M(REV 12-2-08) AND GE-1110-009-CX101-M(REV 1-8-09) PROVIDED BY HILL ENGINEERS, ARCHITECTS AND PLANNERS.
2. HORIZONTAL DATUM IS NAD 27 AND VERTICAL DATUM IS NGVD 29 BASED UPON CONTROL POINTS PROVIDED BY ARCADIS AND FORESIGHT LAND SERVICES.
3. THIS FIGURE REFLECTS HILL-ENGINEERS, ARCHITECTS, PLANNERS, INC'S REVISED PLANTING PLAN THAT WAS SUBMITTED TO EPA ON APRIL 24, 2016.
4. THIS SUB-AREA REPRESENTS THE PORTION OF THE SUPPLEMENTAL PLANTING AREA (ESTIMATED TO CONTAIN APPROXIMATELY ONE-QUARTER OF THE TREES AND SHRUBS PLANTED IN THAT AREA) IN WHICH THE TREES AND SHRUBS WILL BE SUBJECT TO INSPECTION AND MAINTENANCE (I/M) ACTIVITIES.

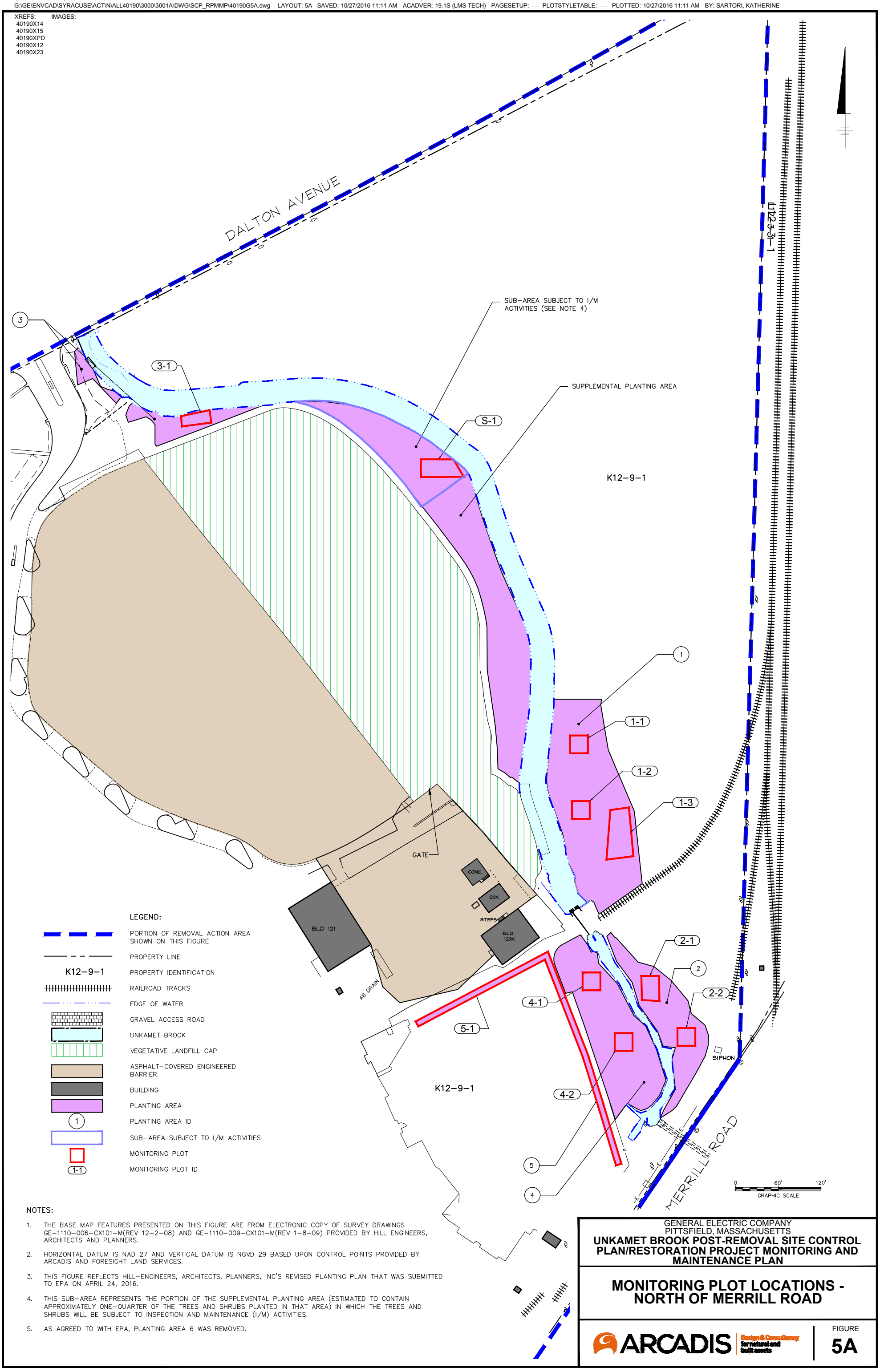
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
UNKAMET BROOK POST-REMOVAL SITE CONTROL PLAN/RESTORATION PROJECT MONITORING AND MAINTENANCE PLAN

RESTORATION PLANTING PLAN - NORTH OF MERRILL ROAD

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4A

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.SARTORI LD: K.SARTORI PIC: C.AVERILL PM C.AVERILL TM: C.CUMMINGS LYR: ON=*;OFF=*REF*
G:\GE\ENVCAD\SYRACUSE\ACT\NA\ALL40190\3000\3001A\DWG\SCP_RPMMP\40190G5A.dwg LAYOUT: 5A SAVED: 10/27/2016 11:11 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 10/27/2016 11:11 AM BY: SARTORI, KATHERINE
XREFS: IMAGES:
40190X14
40190X15
40190XPD
40190X12
40190X23



LEGEND:

- PORTION OF REMOVAL ACTION AREA SHOWN ON THIS FIGURE
- PROPERTY LINE
- K12-9-1 — PROPERTY IDENTIFICATION
- RAILROAD TRACKS
- EDGE OF WATER
- GRAVEL ACCESS ROAD
- UNKAMET BROOK
- VEGETATIVE LANDFILL CAP
- ASPHALT-COVERED ENGINEERED BARRIER
- BUILDING
- PLANTING AREA
- 1 — PLANTING AREA ID
- SUB-AREA SUBJECT TO I/M ACTIVITIES
- MONITORING PLOT
- 1-1 — MONITORING PLOT ID

NOTES:

1. THE BASE MAP FEATURES PRESENTED ON THIS FIGURE ARE FROM ELECTRONIC COPY OF SURVEY DRAWINGS GE-1110-006-CX101-M(REV 12-2-08) AND GE-1110-009-CX101-M(REV 1-8-09) PROVIDED BY HILL ENGINEERS, ARCHITECTS AND PLANNERS.
2. HORIZONTAL DATUM IS NAD 27 AND VERTICAL DATUM IS NGVD 29 BASED UPON CONTROL POINTS PROVIDED BY ARCADIS AND FORESIGHT LAND SERVICES.
3. THIS FIGURE REFLECTS HILL-ENGINEERS, ARCHITECTS, PLANNERS, INC'S REVISED PLANTING PLAN THAT WAS SUBMITTED TO EPA ON APRIL 24, 2016.
4. THIS SUB-AREA REPRESENTS THE PORTION OF THE SUPPLEMENTAL PLANTING AREA (ESTIMATED TO CONTAIN APPROXIMATELY ONE-QUARTER OF THE TREES AND SHRUBS PLANTED IN THAT AREA) IN WHICH THE TREES AND SHRUBS WILL BE SUBJECT TO INSPECTION AND MAINTENANCE (I/M) ACTIVITIES.
5. AS AGREED TO WITH EPA, PLANTING AREA 6 WAS REMOVED.

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

UNKAMET BROOK POST-REMOVAL SITE CONTROL PLAN/RESTORATION PROJECT MONITORING AND MAINTENANCE PLAN

MONITORING PLOT LOCATIONS - NORTH OF MERRILL ROAD

ARCADIS Design & Consultancy for natural and built assets

FIGURE 5A

APPENDIX A
INSPECTION CHECKLIST FOR REMEDIATED, RESTORED AND OTHER GROUND-COVEREING FEATURE AREAS
UNKAMET BROOK AREA

I. GENERAL INFORMATION

Inspection Date:	9/27/2016 and 10/14/2016
Conducted By/Phone Number:	Jason Steckel (317) 903-0765 and Gregg Rabasco (413) 822-1184
Other Individuals Present (and Affiliation):	David Dickerson (EPA), Izabela Zapisek (Avatar), Tom Potter (MassDEP)
Weather Conditions:	Cloudy, 60º F
Date of Last Inspection:	NA

[X] Check here to confirm that Figures 3A through 5C of the *Post-Removal Site Control Plan/Restoration Project Monitoring and Maintenance Plan for Unkamet Brook Area* (PRSCP/RPMMP; August 2016), as applicable, have been reviewed.

II. INSPECTION SUMMARY

1. Engineered Barriers

A. Landfill Cap and Vegetative Engineered Barrier *(Inspect the vegetative landfill cap at the former interior landfill [including the visible portion of the sanitary sewer cap and the gravel-covered access road portion of the cap] and the vegetative engineered barrier at Parcel L12-1-5 and note any evidence of the following conditions that could affect the integrity of the barrier components: (i) topsoil erosion; (ii) lack of establishment or coverage of planted vegetation [e.g., bare or sparsely vegetated areas]; (iii) deficiencies in the soil layer overlying the synthetic cover components [e.g., excessive erosion, surface water ponding, depressions, exposed synthetic cover components, vehicle ruts, or other abnormalities]; (iv) damage to synthetic cover components; (v) uneven settlement relative to surrounding areas; (vi) volunteer tree and shrub saplings within or along the edges of the vegetative cap [including the edges of the gravel access road] or engineered barrier; or (vii) other conditions that could jeopardize the integrity of the barrier [including animal burrows, unauthorized excavation, etc.].)*

- Two small areas of sparse vegetative cover were observed on the vegetative landfill cap over the former interior landfill/ expansion area. These areas were estimated to cover a total of approximately 1,000 square feet (0.02 acre) and are anticipated to increase in vegetative density in subsequent growing seasons. Thus, no repair action is recommended at this time.
- All other areas in good condition.

B. Asphalt-Covered Engineered Barriers *(Inspect the asphalt-covered engineered barriers at and adjacent to the former interior landfill and at Parcel L12-1-5 and note any evidence of the following conditions that could affect the integrity of the barrier components: (i) excessive cracking, fissures, spalling, or potholes; (ii) uneven settlement, depressions, surface water ponding, excessive rutting, exposed sub-base materials, or exposed sub-grade materials; (iii) presence of nuisance vegetation [weeds]; (iv) damage to synthetic cover components; or (v) other conditions that could jeopardize the integrity of the barrier.)*

- All areas in good condition.

C. Specific Barrier Components *(Inspect the following: (i) the drainage systems and perimeter drainage system discharge locations for conditions that could interfere with the operation of those systems [e.g. evidence of blockage or erosion]; and (ii) the gas ventilation system in the former interior landfill cap/engineered barrier [to the extent visible] to determine whether there has been any damage to or obstruction of the gas collection pipes.)*

- All areas in good condition.

2. Backfilled/Restored Areas

A. Backfilled/Restored Soil Removal Areas with Unpaved Surfaces (Including in Inundated Wetlands, but excluding Phragmites Removal Areas) *(Note any evidence of the following conditions: (i) topsoil or gravel erosion [depending on the cover type]; (ii) a failure of erosion controls in areas where vegetation is not established; (iii) depressions and/or surface water ponding; (iv) excessive settlement relative to the surrounding areas; (v) any drainage or growth problems (where applicable); (vi) volunteer tree and shrub saplings within or along the edges of the vegetative cap [including the edges of the gravel access road] or engineered barrier; or (vii) other conditions that could jeopardize the performance of the completed remediation actions [e.g., vehicle ruts, unauthorized excavations, etc.].)*

- All areas in good condition.

APPENDIX A
INSPECTION CHECKLIST FOR REMEDIATED, RESTORED AND OTHER GROUND-COVEREING FEATURE AREAS
UNKAMET BROOK AREA

B. Backfilled/Restored Soil Removal Areas with Asphalt or Other Paved Surfaces *(Note any evidence of the following conditions: (i) excessive cracking, fissures, spalling, or potholes; (ii) depressions and/or surface water ponding; (iii) excessive settlement relative to the surrounding areas; (iv) any drainage problems; or (v) other conditions that could jeopardize the performance of the completed remediation.)*
- All areas in good condition.
3. Re-routed Brook Channel *(For the re-routed section of Unkamet Brook, note any evidence of displacement of the riprap placed within the channel or on the banks or any other conditions that could jeopardize the performance of the brook re-routing.)*
- All areas in good condition.
4. Backfilled/Restored Sediment Removal Area in Unkamet Brook *(In portions of Unkamet Brook that have not been re-routed and have been backfilled and restored, note any evidence of displacement of the riprap placed in the channel or on the banks or any other conditions that could jeopardize the performance of the completed remediation actions.)*
- All areas in good condition.
5. Vegetation *(For the vegetation seeded or planted in restored areas [including inundated wetlands] other than those subject to natural resource restoration/enhancement plantings and those for which monitoring is not required, for a two-year period after planting: Conduct a qualitative assessment to (i) note the establishment, coverage, and condition of the wetland and herbaceous vegetation, including any evidence of stressed or sparse cover; (ii) verify that the vegetation is growing as anticipated and providing the necessary erosion control; (iii) note any evidence of damage from trespassing or herbivory; (iv) note the presence of any of the invasive plant species listed in Table 1 of the PRSCP/RPMMP or any other plant species listed by the Massachusetts Invasive Plant Advisory Group as "invasive," "likely invasive," or "potentially invasive"; (v) evaluate the general growth, vigor, and condition of the trees and shrubs planted in each planting area that are subject to monitoring; and (vi) note the condition of any tree cages, tree guards, or tree stakes [where present]. Conduct a quantitative assessment in each monitoring plot to determine the number, survival, and condition of the planted trees and shrubs [compared to the baseline quantity] and the coverage by native herbaceous vegetation and by invasive species, using attached Forms A-1 and A-2. If any deficient or other noteworthy conditions are identified, identify the property where such conditions are observed.)*
- All herbaceous vegetation in the inspected areas was establishing as intended, with no areas of stressed or sparse cover.
- Coltsfoot was observed adjacent to a rock-armored drainage swale leading from the former interior landfill.
- The qualitative assessment indicated that the planted trees and shrubs in the planting areas were in generally good condition.
- The quantitative assessment results for the monitoring plots are shown on the attached Form A-1: They showed the following:
• Three dead trees were observed in monitoring plot 2-1 in Planting Area #2, but those trees had already been replaced with the
same species by the time of the inspection. No other dead trees and no dead shrubs were observed.
• The baseline counts of trees and shrubs are presented on Form A-1.
• One shrub in monitoring plot 1-1 (Swamp rose), two shrubs in monitoring plot 5-1 (Alternate leaf dogwood), and two shrubs
in monitoring plot S-1 (Swamp rose) were observed to be stressed.
• Each monitoring plot had an areal coverage by native herbaceous species of 100%.
• No invasive species were observed in any monitoring plot.
6. Culvert #1 *(Inspect the inlets and outlets of the culverts that comprise Culvert #1, the beaver deterrent structures, and the debris diversion structure upstream of Culvert #1, and note any evidence of the following conditions: (i) damage to or blockage of the culverts; (ii) damage to the beaver deterrent structures or the debris diversion structure; or (iii) other developments that would restrict flow through the culverts.)*
- Diversion structures and beaver deterrent in place and functioning. All areas in good condition.

APPENDIX A
INSPECTION CHECKLIST FOR REMEDIATED, RESTORED AND OTHER GROUND-COVEREING FEATURE AREAS
UNKAMET BROOK AREA

7. Paved Areas Characterized as Paved
A. Paved Areas to be Maintained by GE (Other Ground-Covering Feature Areas) *(In portions of the Other Ground-Covering Feature Areas outside of those that were subject to remediation, note any evidence of excessive cracking, fissures, spalling, rutting, potholes, heaving, uneven settlement, or exposed sub-grade materials.)*
- Small areas of broken pavement were observed in an area between the former interior landfill and Building 130 and in two areas between Buildings 119 and 51.
- Small area of ponding observed near the entrance off Dalton Avenue, but no repairs are needed at this time.
B. Landscaped Area at Parcel K12-1-9 Where a Vegetative Soil Cover Was Previously Placed over Building Foundations and Pavement (Covered Slab Area) *(Note any evidence of soil erosion or other conditions that could jeopardize the integrity of the soil cover or prevent it from continuing to cover the underlying building foundations and pavement.)*
- All areas in good condition.
8. Other Observations *(Confirm that repair, maintenance, and/or replanting activities identified during the prior inspection have been performed; note any other general observations.)*
- NA
III. FOLLOW-UP MAINTENANCE AND REPAIR ACTIVITIES
- Spot treat area of coltsfoot observed adjacent to the former interior landfill.
- Fertilize stressed shrubs in various monitoring plots, and re-evaluate them in the spring of 2017.
- Repair the broken pavement observed in the area between the former interior landfill and Building 130 and in the two areas between Buildings 119 and 51.

FORM A-1
QUANTITATIVE ASSESSMENT OF NON-NRR/E VEGETATION – FIELD FORM
UNKAMET BROOK AREA – NORTH OF MERRILL ROAD

Inspection Date: 9-27-16 (supp, on 10-14-16) Conducted By: J. Steckel (supp. by Gregg Rabasco)

Area	Monitoring Plot[1]	Trees				Shrubs				Herbaceous Cover (%)	Invasive Plant Cover (%)
		Baseline #[1]	# Alive & Healthy	# Alive But Stressed	Approx Size Range	Baseline #[1]	# Alive & Healthy	# Alive But Stressed	Approx Size Range		
North of Merrill Road											
Planting Area #1	1-1	N/A[2]	N/A[2]	N/A[2]	N/A	13	12	1	18”-48”	100	0
	1-2	1	1	0	36”	14	14	0	18”-48”	100	0
	1-3	N/A[2]	N/A[2]	N/A[2]	N/A	70	70	0	12”-72”	100	0
Planting Area #2	2-1	4[3]	4	0	36”-48”	14	14	0	18”-48”	100	0
	2-2	4	4	0	48”-60”	8	8	0	18”-48”	100	0
Planting Area #3	3-1	9	9	0	36”-84”	20	20	0	30”-60”	100	0
Planting Area #4	4-1	1	1	0	60”	20	20	0	18”-48”	100	0
	4-2	5	5	0	48”-60”	12	12	0	18”-48”	100	0
Planting Area #5	5-1[4]	42	42	0	48”-60“	7	5	2	48”-60”	100	0
Supplemental Planting Sub-Area[5]	S-1	1	1	0	48”	14	12	2	18”-48”	100	0

Notes:

1. The listed monitoring plots reflect the revisions and addition to the monitoring plots made during and after the September 27, 2016 inspection, as described in the text of this report; and the baseline numbers presented reflect the counts made on September 27, 2016, supplemented by those made on October 14, 2016 of the revised/new monitoring plots.
2. This monitoring plot contains shrubs only.
3. A total of 3 dead trees were observed in this monitoring plot, but had already been replaced at the time of the inspection, so are not included in the baseline number.
4. This monitoring plot is co-extensive with the Planting Area.
5. This refers to the designated sub-area of the Supplemental Planting Area, as shown on Figure 4A of the PRSCP/RPMMP.