GE
159 Plastics Avenue
Pittsfield, MA 01201
USA

October 30, 2008

Ms. Dale C. Young
Lead Administrative Trustee
Massachusetts Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2119

Re: GE-Pittsfield/Housatonic River Site
Upper ½-Mile Reach of the Housatonic River (GECD800)
Completion of Installation of Restoration Work Report

Dear Ms. Young:

Pursuant to Paragraph 120 of the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site, this letter constitutes the General Electric Company's (GE's) Completion of Installation of Restoration Work Report for the restoration work performed by GE in the Upper ½-Mile Reach (½-Mile) of the Housatonic River, located between the Newell and Lyman Street Bridges in Pittsfield, Massachusetts. That work was performed in accordance with the Performance Standards and other requirements set forth in the *Removal Action Work Plan for Upper ½ Mile Reach of Housatonic River* (½-Mile Work Plan), which is Appendix F to the CD. As required by Paragraph 120 of the CD, this report describes the natural resource restoration activities performed by GE in the ½-Mile and how the applicable Performance Standards for the installation of those measures have been achieved. It also briefly mentions the post-restoration monitoring and maintenance activities for those measures, which are currently ongoing and are summarized in periodic reports to the U.S. Environmental Protection Agency (EPA) and Natural Resource Trustees (Trustees); but it does not discuss those activities in any detail since they are not required to be completed before the Trustees issue a Certification of Completion of Installation of Restoration Work.

A. Performance Standards for Installation of Restoration Work

The CD provides, in Paragraph 118.a, that, as part of the ½-Mile Removal Action, GE "shall perform habitat enhancements, including the installation of certain in-stream structures to increase variability in water flow and depth and enhance in-stream cover, and the restoration and enhancement of vegetation on the banks of the river in the Upper ½-Mile Reach, in accordance with the [½-Mile Work Plan]. The ½-Mile Work Plan sets forth, in Section 2.2, the following Performance Standards for the installation of these habitat enhancement measures:

- "To restore and enhance the aquatic habitat of the ½-Mile Reach, GE shall construct habitat enhancement structures in this reach, consisting of current deflectors, low-profile dams, and boulder clusters, as described in Section 9.1 of this Work Plan." Section 9.1 notes that low-profile dams include vortex rock weirs and "W" rock weirs.

- "GE shall restore and enhance the vegetation on the river banks through the planting of a floodplain forest community in accordance with the specifications set forth in Section 9.2 of the Work Plan. Trees shall be planted in varying densities, clumps, or if necessary, sinuous lines (using existing trees/stumps as applicable), using a planting density of 700 trees per acre. Understory species shall be planted at an approximate planting density of 730 shrubs per acre. Understory species shall be

planted (to the extent possible) in oblong patches 30 feet wide by 50 feet long (or similar configuration approved by the Trustees such that no more than 730 shrubs per acre are planted), scattered such that there is a minimum distance of 40 feet between patches, with plantings within each patch on four-foot centers. Woody vines shall be planted at an approximate planting density of 40 vines per acre. The vines will be planted in small, oblong patches measuring 15 feet wide by 30 feet long, scattered such that there is a minimum distance of 150 feet between patches, with plantings within each patch on four-foot centers. Open ground throughout the planted forest community area shall be sown with a herbaceous seed mixture of native grass and wildflower species to provide immediate erosion control and create a herbaceous community."

B. Habitat Restoration/Enhancement Measures Installed by GE

To satisfy the above-referenced Performance Standards, GE performed the following activities at the ½-Mile as part of the restoration activities conducted in 1999-2002 following remediation of the various portions of the ½-Mile:

GE installed a number of rock structures as aquatic habitat enhancement structures within the ½-Mile to maintain channel/slope stability and promote variability in hydraulic conditions and the development of aquatic habitat. These structures included approximately 19 boulder clusters, two single-wing deflectors, one "W"-shaped rock weir, and two vortex rock weirs. The approximate locations of these structures are shown on Figure 1.

GE restored the vegetative community of the riverbank areas disturbed during the performance of removal activities, using a mixture of appropriate native grass, wildflower, canopy, and understory species. For the canopy plantings, during the initial restoration of the respective disturbed areas, GE installed approximately 580 box elder trees (*Acer negundo*), 600 eastern cottonwoods (*Populus deltoides*), 190 silver maples (*Acer saccharinum*), and 160 black willows (*Salix nigra*). (Since those initial plantings, GE has also installed approximately 120 box elders, 80 eastern cottonwoods, 60 silver maples, and 100 black willows to maintain fulfillment of the Performance Standards relative to the required canopy species.) In total, approximately 75% of the planted trees were made up of equal numbers of box elders and cottonwoods, while the remaining 25% of planted canopy species were evenly divided between silver maples and black willows. Trees were planted in varying densities across the removal areas using a planting density of 700 trees per acre (including growth from stumps as part of the 700 trees per acre).

Understory plantings were installed (to the extent possible) in oblong patches approximately 30 feet wide by 50 feet long, with patches scattered across the planting areas such that a minimum distance of approximately 40 feet was maintained between patches. Individual understory specimen were planted on a random-mixed basis to maintain a heterogeneous distribution of species. During the initial restoration activities, GE installed approximately 260 serviceberry (*Amelanchier canadensis*) or choke-cherry (*Prunus virginiana*) shrubs, 240 northern arrowwoods (*Viburnum recognitum*), 260 silky dogwoods (*Cornus amomum*), and 200 winterberry specimens (*Ilex verticillata*) along both banks of the ½-Mile. (Since those initial plantings, GE has also installed approximately 70 choke-cherries, 90 northern arrowwoods, 220 silky dogwoods, and 120 winterberries to maintain fulfillment of the Performance Standards relative to the required understory species.)

In addition, red-osier dogwoods (*Cornus sericea*) were installed immediately above the toe of the slope, adjacent to the river and above the riprap. To the extent practicable, the red-osier dogwood were planted in a narrow band on approximate four-foot centers. Approximately 680 red-osier dogwoods were initially planted along the ½-Mile. (An additional approximate 100 red-osier dogwoods have been planted through the end of 2007 to maintain fulfillment of the Performance Standard.)

Woody vines (*Vitis riparia*) were planted in some planting areas, with an approximate planting density of 40 vines per acre in small, oblong patches measuring 15 feet wide by 30 feet long, scattered such that a minimum distance of approximately 150 feet existed between adjacent patches. Plantings within each

patch were installed on approximate four-foot centers. Approximately 88 woody vines were initially planted along the ½-Mile. (Since that time, natural recruitment and propagation have been sufficient to maintain fulfillment of associated Performance Standards, such that no additional woody vine plants have been installed.)

To establish general ground cover, an herbaceous community was planted using a commercial conservation wildlife mix of a variety of grasses and wildflowers, including little bluestem (*Andropogon scoparius*), big bluestem (*Andropogon gerardi*), switchgrass (*Panicum virgatum*), deertongue (*Panicum clandestinum*), fox sedge (*Carex vulpinoidea*), Pennsylvania smartweed (*Polygonum pensylvanicum*), Canada wild-rye (*Elymus canadensis*), partridge pea (*Chamaecristaa fasciculate*), annual sunflower (*Helianthus annuus*), cup-plant (*Silphium perfoliatum*), nodding bur-marigold (*Bidens cernua*), showy tick-trefoil (*Desmodium canadense*), ox-eye sunflower (*Heliopsis helianthoides*), and butterfly milkweed (*Ascelpias tuberose*). The mixture was planted at an approximate rate of 25 pounds per acre.

The plantings discussed above were installed in a series of numbered planting areas to facilitate area-specific planting activities and subsequent monitoring. The approximate locations of these planting areas, showing the vegetative communities referenced above, are depicted on Figure 2. A summary of the planting activities completed through the end of 2007 is included in Table 1.

These activities satisfied the Performance Standards in the CD and ½ Mile Work Plan for the installation of habitat enhancement measures in the ½-Mile.

C. Monitoring and Maintenance of Habitat Restoration/Enhancement Measures

The ½ Mile Work Plan also set forth a required program for the post-installation monitoring and maintenance of the habitat restoration/enhancement measures described above. That program, which was later modified in some respects by agreement between GE and the Trustees and/or directives of the Trustees, is currently ongoing. It includes annual monitoring of the aquatic habitat enhancement structures and monitoring of the restored bank vegetated at various specified intervals until that vegetation has been monitored for a total of seven years. The aquatic habitat enhancement structure monitoring is now scheduled to run through 2012, and the restored bank vegetation monitoring is anticipated to continue through 2009 when all of the planting areas will have fulfilled their 7-year monitoring requirements. Trip report and annual reports on these monitoring activities are submitted to EPA and the Trustees. For purposes of the present report, it is not necessary to describe those activities in detail, since, as noted above, these monitoring activities are not required to be completed before the Trustees issue a Certification of Completion of Installation of Restoration Work.

D. Final Restoration Installation Inspection

Paragraph 120 of the CD provides that, after GE submits this Completion of Installation Report, GE will schedule an installation inspection and meeting to be attended by GE, EPA, and the Trustees. Following this meeting, the Trustees' will make a determination of whether the installation of the restoration work has been completed in accordance with the applicable requirements and Performance Standards in the CD. I will be in contact with you to arrange a time for that inspection and meeting. In the meantime, please contact me if you have any questions or comments concerning this report.

Sincerely,

Lauren Putnam /for

Andrew T. Silfer, P.E.
GE Project Coordinator

ATS/amm

Attachment

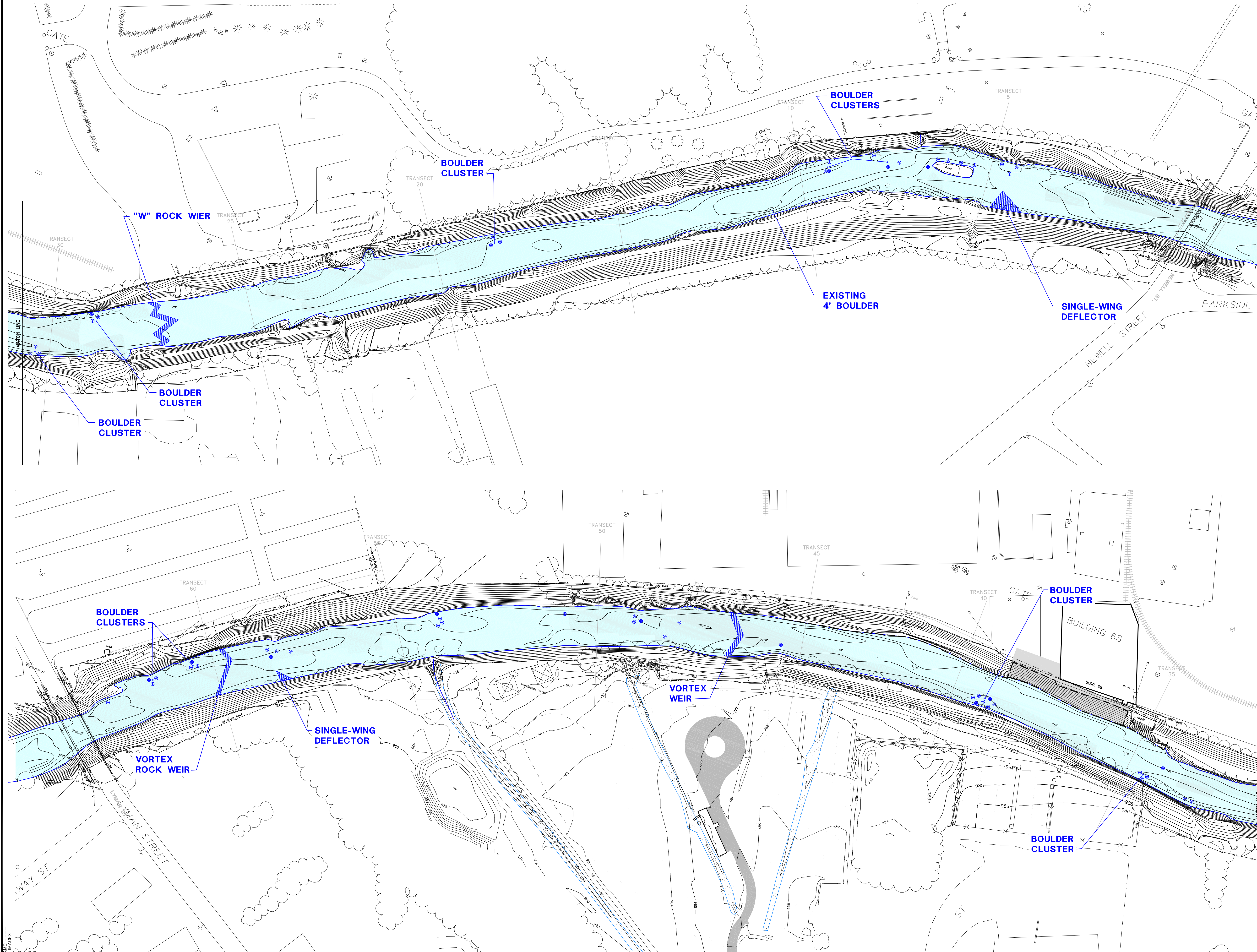
cc: Dale C. Young, MA EOEEA (3 extra copies)
Dean Tagliaferro, EPA
Tim Conway, EPA
Holly Inglis, EPA
Rose Howell, EPA
Linda Palmieri, Weston (2 copies)
K.C. Mitkevicius, USACE
Michael Gorski, MDEP (2 copies)
Anna Symington, MDEP
Jane Rothchild, MDEP
Susan Steenstrup, MDEP
Mayor James Ruberto, City of Pittsfield
Nancy E. Harper, MA AG
Michael Carroll, GE
Richard Gates, GE
Rod McLaren, GE
Mark Gravelding, ARCADIS
James Bieke, Goodwin Procter
Public Information Repositories
GE Internal Repositories

TABLE 1
SUMMARY OF BANK PLANTING AREAS

COMPLETION OF INSTALLATION OF RESTORATION WORK REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

					Vines	Understory				Dogwood Band	Canopy				
Area	Planting Date	Cell Area	Planting Area (ac)	Toe Planting Length (lf)	Woody Vines *Vitus riparia*	Serviceberry *Amelanchier canadensis* *Amelanchier arborea*	Northern Arrowwood *Viburnum dentatum*	Silky Dogwood *Cornus amomum*	Winterberry Holly *Ilex verticillata*	Red-Osier Dogwood *Cornus sericea*	Eastern Cottonwood *Populus deltoides*	Boxelder *Acer negundo*	Black Willow *Salix nigra*	Silver Maple *Acer saccharinum*	Total
1	May-00	A,C	0.30	328	0	0	37	37	36	82	79	79	26	26	**402**
1	Oct-00	A,C	--	--	0	36	0	0	0	0	0	0	0	0	**36**
1	Jun-01	A,C	--	--	22	0	1	1	0	0	0	0	0	0	**24**
1	Oct-01	A,C	--	--	0	10 *	10	9	10	8	10	10	24	21	**112**
1	Oct-02	A,C	--	--	0	6 *	5	6	6	6	0	0	0	0	**29**
1	Oct-03	A,C	--	--	0	0	0	36	0	9	0	0	0	0	**45**
2	May-00	D	0.17	NA	0	0	0	0	0	0	44	44	15	15	**118**
2	Oct-01	D	--	--	0	0	0	0	0	0	9	9	14	8	**40**
2	Oct-03	D	--	--	0	0	0	0	0	0	0	30	0	0	**30**
3	May-00	E	0.05	45	0	0	18	18	19	11	13	13	4	4	**100**
3	Oct-00	E	--	--	0	18	0	0	0	0	0	0	0	0	**18**
3	Jun-01	E	--	--	0	0	0	0	1	0	1	1	0	0	**3**
3	Oct-01	E	--	--	0	5 *	4	4	4	0	5	5	4	4	**35**
3	Oct-02	E	--	--	0	6 *	0	6	0	8	3	0	0	2	**25**
3	Oct-03	E	--	--	0	0	0	12	0	0	0	0	0	0	**12**
3	Nov-05	E	--	--	0	0	0	0	0	0	4	3	3	3	**13**
4A	Oct-00	G1,G2	0.16	395	0	19	18	18	18	74	64	63	5	10	**289**
4A	Oct-01	G1,G2	--	--	0	12 *	6	6	6	12	3	4	10	5	**64**
4A	Oct-02	G1,G2	--	--	0	8 *	4	4	10	8	30	10	0	0	**74**
4A	Oct-03	G1,G2	--	--	0	0	0	12	0	0	0	33	0	0	**45**
4A	Nov-05	G1,G2	--	--	0	4	4	4	4	0	5	4	4	4	**33**
4B	Jun-01	G2,G3	0.40	416	22	54	56	56	0	134	95	95	33	33	**578**
4B	Oct-01	G2,G3	--	--	0	0	0	0	53	0	0	0	0	0	**53**
4B	Oct-02	G2,G3	--	--	0	8 *	4	6	2	8	10	0	10	10	**58**
4B	Oct-03	G2,G3	--	--	0	0	0	34	0	0	0	0	0	0	**34**
4B	Oct-04	G2,G3	--	--	0	0	12	12	12	0	0	0	0	0	**36**
4B	Nov-06	G2,G3	--	--	0	3 *	4	3	3	0	0	0	0	0	**13**
5	Oct-00	F1,F2	0.10	NA	0	19	18	18	18	0	25	25	8	8	**139**
5	Oct-03	F1,F2	--	--	0	0	0	21	0	0	0	10	0	0	**31**
5	Nov-05	F1,F2	--	--	0	6 *	6	6	6	0	3	3	3	2	**35**
6	Jun-01	F3	0.07	226	0	0	0	0	0	57	21	21	7	7	**113**
6A	Jun-01	F3	0.05	NA	0	0	0	0	0	0	8	8	3	3	**22**
7	Jun-01	F3	0.01	NA	0	0	0	0	0	0	3	3	1	1	**8**
8	Oct-01	H1	0.02	32	0	0	0	0	0	6	6	4	2	2	**20**
8	Oct-02	H1	--	--	0	0	0	0	0	2	0	0	0	0	**2**
8A	Oct-01	H1	0.05	104	0	0	0	0	0	29	12	7	4	4	**56**
9	Oct-01	H1	0.01	NA	0	0	0	0	0	0	3	2	1	1	**7**
9A	Oct-01	H1,H2	0.06	187	0	0	0	0	0	31	12	7	4	4	**58**
9A	Oct-02	H1	--	--	0	0	0	0	0	2	0	0	0	0	**2**
10	Oct-01	B68	0.18	NA	0	18 *	18	19	18	0	47	47	16	16	**199**
10	Oct-04	B68	--	NA	0	0	3	3	2	0	0	0	0	0	**8**
10	Nov-06	B68	--	NA	0	0	1	0	0	0	0	0	0	0	**1**
11	Oct-01	H2	0.04	88	0	18 *	18	18	19	20	8	6	3	3	**113**
11	Oct-02	H2	--	--	0	0	0	0	0	2	0	0	0	0	**2**
11	Oct-03	H2	--	--	0	0	0	19	0	0	0	0	0	0	**19**
11A	Oct-01	H2	0.06	83	0	0	0	0	0	28	12	7	4	4	**55**
11A	Oct-02	H2	--	--	0	0	0	0	0	2	0	0	0	0	**2**
12	May-02	J1	0.19	269	0	18 *	0	19	18	67	50	50	0	17	**239**
12	Oct-02	J1	--	--	22	0	18	0	0	0	0	0	17	0	**57**
12	Oct-03	J1	--	--	0	0	0	12	0	13	0	0	0	0	**25**
12	Oct-04	J1	--	--	0	0	3	3	2	0	0	0	0	0	**8**
13	May-02	I1	0.10	234	0	18 *	0	18	19	41	26	26	0	9	**157**
13	Oct-02	I1	--	--	0	0	18	0	0	18	0	0	9	0	**45**
14	Oct-02	J3	0.21	192	22	37 *	37	36	36	48	56	56	19	19	**366**
15	May-02	I2	0.00	40	0	0	0	0	0	10	0	0	0	0	**10**
16	Oct-02	I2	0.01	72	0	0	0	0	0	18	3	3	1	1	**26**
17	Oct-02	I3	0.04	108	0	0	0	0	0	27	10	10	3	3	**53**
Total			--	--	**88**	**323**	**323**	**476**	**322**	**781**	**680**	**698**	**257**	**249**	**4197**

Notes:
1. Woody vines planted at an approximate density of 40 vines/acre on 4' centers in a 15'x30' patch with a minimum of 150' between patches.
2. Understory planted at an approximate density of 730 shrubs/acre (including red-osier dogwood) on 4' centers in a 30'x50' patch with a minumum of 40' between patches.
3. Canopy planted in varying densities, clumps, or if necessary, sinuous lines.
4. Dogwood band planted on 4' centers in a single row along the toe of the bank.
5. * - In consultation with EPA and Trustees, Chokecherry (*prunus virg*iniana) was planted in substitution of Serviceberry for these areas.



LEGEND:

AQUATIC ENHANCEMENT STRUCTURES

HABITAT ENHANCEMENT BOULDERS

NOTES:

1. ALL LOCATIONS AND DISTANCES ARE APPROXIMATE.

0 80' 160'

GRAPHIC SCALE

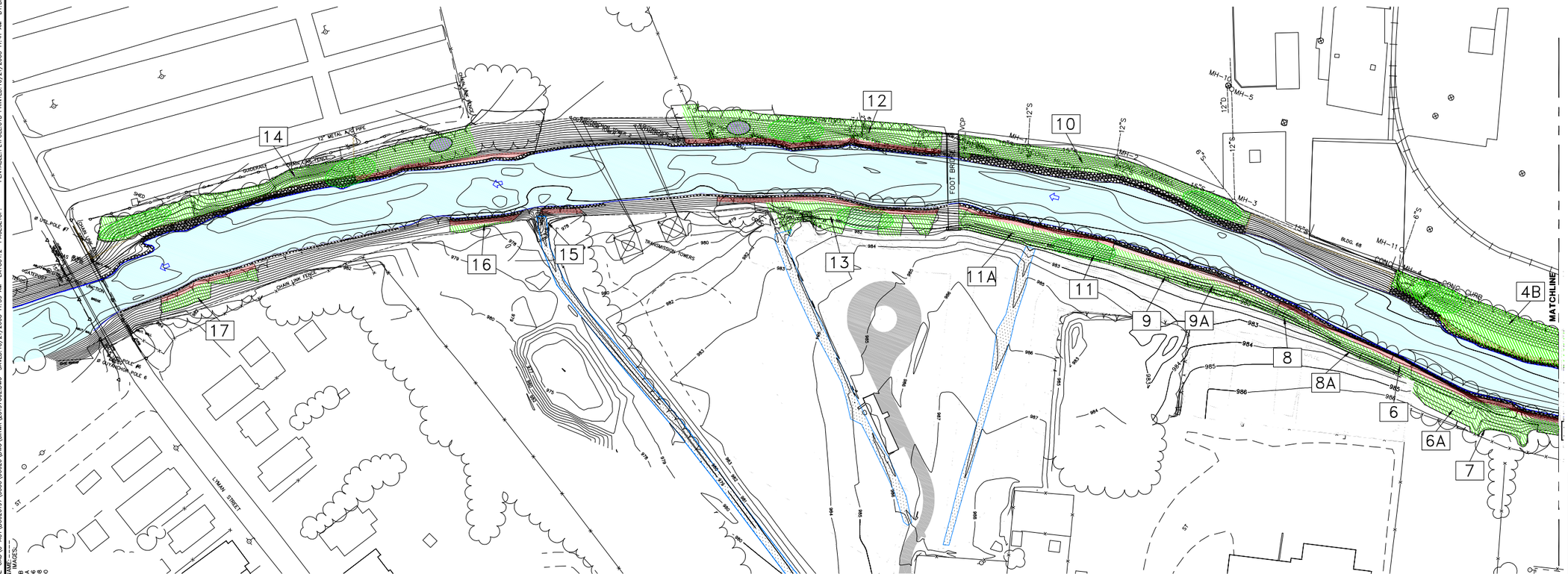
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

COMPLETION OF INSTALLATION OF RESTORATION WORK REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

HABITAT ENHANCEMENT STRUCTURE LOCATIONS

ARCADIS

FIGURE
1



NOTES:

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

0 80' 160'

GRAPHIC SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
COMPLETION OF INSTALLATION OF RESTORATION WORK REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

RESTORED BANK PLANTING AREAS

ARCADIS

FIGURE 2

SYR-85-NES, GMS, KLS, LAYER: ON=*, OFF=*REF*, [BANK-STABILIZATION, [POLY, [PROPERTY, [REMEDIATED, [SOURCE-CONTROL-SHADE, [TEMP1-3, [AB_EOP, [INSTALLED LINER, [LINER_HATCH_NEW, [EDGE_WATER_80, [05-HEADWALL-NOTES, [05-MW, [05-PAVT, [05-PIEZOMETER, [05-SEWER_CHAMBER, [05-TREE, [68-TREES, [LTP127, [LTP210, [LTP220, [NO-SHOW, [SYM200
G:\CAD\GE-CAD\C-ACT\[B0020197]\0000\0028\DWG\ORIWR\20197022.DWG SAVED:10/21/2008 11:39 AM LAYOUT:2 PAGESETUP:---- PENTABLE:PLTFULL.CTB PRINTED:10/21/2008 11:41 AM BY:BRITSLEY
PROJECTNAME:
XREFS: ATTACHED:
20197X1B
20197X1
20197X06
20197X08
20197X00