Corporate Environmental Programs
General Electric Company
100 Woodlawn Avenue, Pittsfield, MA 01201

Transmitted via Federal Express

June 22, 2004

Mr. Dean Tagliaferro
On-Scene Coordinator
U.S. Environmental Protection Agency
c/o Weston Environmental Engineering
One Lyman Street
Pittsfield, MA 01201

Re: GE-Pittsfield/Housatonic River Site
Newell Street Area I (GECD440)
Restoration of Parcel J9-23-22

Dear Mr. Tagliaferro:

As you are aware, the General Electric Company (GE) is currently involved in the performance of EPA-approved removal actions at the Newell Street Area I Removal Action Area located in Pittsfield, Massachusetts. As part of the access negotiations prior to the initiation of removal actions at Parcel J9-23-22, GE agreed to certain owner-requested modifications concerning the final restoration surfaces for this property. This letter presents a brief summary of the proposed modifications to the EPA-approved Technical Drawings and an evaluation of the potential impact such changes may have on site drainage.

Prior to the initiation of the removal actions at Parcel J9-23-22, several existing surface cover types were present at that property, including the following:

- A gravel driveway/parking lot which extended from Newell Street to approximately 50 feet northwest of the rear building.
- Miscellaneous bituminous asphalt and concrete pads.
- Compacted earth, including a drainage swale located along the property line between Parcel J9-23-22 and J9-23-23 which extended from just south of the rear building to a riprap outlet channel at the rear of the property.

Following performance of the required soil removal activities and placement of backfill (as required), the final surface cover for the property will be restored as follows:

- The portion of the property located between the northern building and Newell Street will be restored with a compacted 12-inch processed gravel base followed by a two-inch layer of asphalt pavement.
- The portion of the previously unlined drainage swale extending from just south of the rear building to the riprap drainage swale at the rear of the property will be restored with six inches of compacted gravel and a two-inch layer of asphalt.

- The restored surface cover for the remainder of the property -- which includes the engineered barrier area -- will consist of a minimum six-inch compacted gravel layer. However, the area over the barrier will be restored with an 18-inch compacted gravel layer including a layer of geotextile located approximately six inches below grade, to serve as an indication when six inches of gravel have been displaced and maintenance activities are necessary.

To reflect these changes, Technical Drawings 6, 12, 13, and 14 of the August 2003 *Final RD/RA Work Plan* have been revised and included herein. In addition to these revisions, Technical Drawing 12A was developed to present certain restoration details associated with the drainage swale, among others.

Based on the owner-requested modifications to the surface cover types at Parcel J9-23-22 and as requested by EPA, GE has performed additional evaluations to determine the impact (if any) during future precipitation events, with an emphasis on the existing riprap outlet channel at the rear of the property and the recently restored riverbank. GE has analyzed the pre-construction and post-removal action hydraulic runoff conditions for this property to determine whether changes to the existing riprap outlet channel are appropriate.

Prior to the recently initiated soil removal activities, stormwater runoff from Parcel J9-23-22, along with runoff from adjacent contributing watershed areas, flowed to an unlined drainage swale located along the property boundary between Parcel J9-23-22 and J9-23-23. Flow conveyed by this swale continued into a riprap swale located at the northeast corner of the property. The riprap swale then conveyed the runoff to the aforementioned riprap outlet channel constructed within the southern riverbank of the East Branch of the Housatonic River.

As previously indicated, the final restoration surfaces at Parcel J9-23-22 will consist of compacted gravel and, in some areas (including a portion of the restored drainage swale), asphalt pavement. To determine the drainage impacts (if any) to the riprap outlet channel as a result of the proposed surface cover modifications, the 2-, 10-, and 25-year, 24-hour storm events were analyzed under existing (i.e., pre-construction) and post-restoration conditions for the watershed discharging to the riprap outlet channel. The following table summarizes this analysis:

Storm Type/Duration	Peak Discharge (cubic feet per second)	
	Existing Conditions	Post-Restoration Conditions
2-year, 24-hour	2.71 cfs	3.18 cfs
10-year, 24-hour	5.62 cfs	6.16 cfs
25-year, 24-hour	6.76 cfs	7.30 cfs

As indicated above, the change in surface cover conditions associated with site restoration will result in a minor increase in peak discharge runoff to the riprap outlet channel. Based on site conditions observed on June 17, 2004, the riprap channel constructed within the riverbank (i.e., the portion located below the crest of the riverbank) appears to be well established with no apparent signs of instability. Considering the current condition of the outlet channel and the anticipated minimal increase in peak discharge, the bank portion of the outlet channel should remain stable following completion of the site restoration activities. However, GE proposes to restore the riprap swale upgradient of the outlet channel (i.e., the portion located above the crest of the riverbank) in accordance with Detail D on Technical Drawing 12A to better contain and convey runoff to the riprap outlet channel. Finally, to further improve flow control within the riprap swale and outlet channel, GE proposes to install a check dam at a location approximately 5 feet upgradient of the riverbank crest. The cross-section of this check dam is also included in Detail D on Technical Drawing 12A

Please feel free to contact me with any questions or comments regarding the information provided herein.

Sincerely,

Richard W. Gates

Richard W. Gates
Remediation Project Manager

CRA/csc
Attachments
V:\GE_Pittsfield_CD_Newell_St_Area_I\Correspondence\41342196Ltr.doc

cc: Susan Steenstrup, MDEP (2 copies)
Anna Symington, MDEP*
Rose Howell, EPA*
Holly Inglis, EPA
Dawn Jamros, Weston
Michael Carroll, GE*
Andrew Silfer, GE
Rod McLaren, GE
James Nuss, BBL
Corey Averill, BBL
James Bieke, Shea & Gardner
Public Information Repositories
GE Internal Repository

** (cover letter only)*

PHASE IV
(REFER TO DRAWING 12 FOR SITE RESTORATION PLAN)

PHASE III
(REFER TO DRAWING 5 FOR EXCAVATION LIMITS AND DRAWING 11 FOR SITE RESTORATION PLAN)

PHASE III — PHASE IV

CONTRACTOR SHALL REMOVE ADDITIONAL SOIL AS NECESSARY IN THIS AREA TO ACCOMODATE INSTALLATION OF MANHOLE, OUTLET PIPE AND RIP RAP APRON (SEE DRAWING 12)

ELEV. 980

CONTRACTOR SHALL NOT DAMAGE MONITORING WELL DURING PERFORMANCE OF EXCAVATION ACTIVITIES

CONTRACTOR SHALL REMOVE STORAGE TRAILER TO FACILITATE EXCAVATION ACTIVITIES AND RESET AS PART OF SITE RESTORATION

CONTRACTOR SHALL REMOVE AND DISPOSE OF BITUMINOUS PAVEMENT IN ITS ENTIRETY. CONTRACTOR SHALL DISPOSE OF ALL REMOVED MATERIALS ALONG WITH ADJACENT EXCAVATED SOILS (SEE NOTE 3)

CONTRACTOR SHALL EXCAVATE THIS AREA TO ACHIEVE THE REQUIRED BURIAL DEPTH FOR ENGINEERED BARRIER AS NECESSARY TO ACHIEVE FINAL SURFACE CONTOURS SPECIFIED ON DRAWING 12

CONTRACTOR SHALL PROVIDE APPROPRIATE EXCAVATION CONTROLS TO ENSURE STRUCTURAL STABILITY OF BUILDING

CONTRACTOR SHALL REMOVE AND REPLACE GRAVEL DRIVE TO THE LIMITS SHOWN. CONTRACTOR SHALL DISPOSE OF ALL REMOVED MATERIALS ALONG WITH ADJACENT EXCAVATED SOILS (SEE NOTE 3)

FILL AND VENT PIPES FOR UST. CONTRACTOR SHALL PROVIDE APPROPRIATE EXCAVATION CONTROLS TO ENSURE STRUCTURAL STABILITY OF UST.

CONTRACTOR SHALL REMOVE GRAVEL DRIVE WITHIN HATCHED AREAS. CONTRACTOR SHALL DISPOSE OF ALL REMOVED MATERIALS ALONG WITH ADJACENT EXCAVATED SOILS (SEE NOTE 3). CONTRACTOR SHALL RESTORE THIS AREA WITH A 1 FOOT COMPACTED PROCESSED GRAVEL BASE AND A 2-INCH THICK NON-RESIDENTIAL ASPHALT WEARING COURSE. CONTRACTOR SHALL RESTORE AREA TO ALLOW POSITIVE DRAINAGE OF SURFACE WATER TOWARD DRAINAGE SWALE LOCATED ADJACENT TO EAST/SOUTHEAST CORNER OF REAR BUILDING. ⚠ CONTRACTOR SHALL RESTORE REMAINDER OF PROPERTY FROM SIDE OF REAR BUILDING TO REAR PROPERTY LINE WITH A SIX-INCH COMPACTED GRAVEL LAYER. (SEE TECHNICAL DRAWINGS 12, 12A, 13, AND 14 FOR ADDITIONAL RESTORATION DETAILS IN ENGINEERED BARRIER AND DRAINAGE SWALE AREAS. ⚠

CONTRACTOR SHALL REMOVE AND DISPOSE OF BITUMINOUS PAVEMENT/CONCRETE IN ITS ENTIRETY. CONTRACTOR SHALL DISPOSE OF ALL REMOVED MATERIALS ALONG WITH ADJACENT EXCAVATED SOILS (SEE NOTE 3) ⚠

CONTRACTOR SHALL PROVIDE APPROPRIATE EXCAVATION CONTROLS TO ENSURE STRUCTURAL STABILITY OF BUILDING

NEWLY RESTORED AREA J9-23-12

RIVER BANK

OLD BACKSTOP

METAL RACKS

SAND STORAGE

OPEN FRONT BARN

CONTRACTOR SHALL EXCAVATE THIS AREA TO ACHIEVE REQUIRED FINAL SURFACE CONTOURS SPECIFIED ON DRAWING 12

273 NEWELL ST. J9-23-25

LAKEWOOD PLAYGROUND J9-23-26

SHED

CONTRACTOR SHALL PLACE 6-INCH COMPACTED PROCESSED GRAVEL LAYER TO THE LIMITS SHOWN ⚠

CONTRACTOR SHALL PROVIDE APPROPRIATE EXCAVATION CONTROLS TO ENSURE STRUCTURAL STABILITY OF BUILDING

ELEV. 982

ELEV. 983

ELEV. 981

ELEV. 980

ELEV. 985

GRAVEL

BIT PARKING

GRASS

CONC

GATE

261 NEWELL ST. J9-23-23 ⚠

269 NEWELL ST. J9-23-24

247-249 NEWELL ST. J9-23-22

2/7 SOIL "WEDGE"

CONTRACTOR SHALL REMOVE AND REPLACE BITUMINOUS PARKING AREA IN ITS ENTIRETY

CONTRACTOR SHALL ENSURE NO INTERRUPTION OF ELECTRIC SERVICE TO RECEIVING PARTIES ON J9-23-22

CONTRACTOR SHALL ARRANGE AND PAY FOR ABANDONMENT OF UTILITIES SERVICING J9-23-23

LEGEND:

- APPROXIMATE RAA BOUNDARY
- PARCEL BOUNDARY
- PHASE BOUNDRY
- EASEMENT
- TOP OF BANK
- WIRE FENCE
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- J9-23-26 PARCEL ID
- RIP RAP
- LIGHT POLE
- SIGN
- DECIDUOUS TREE
- EDGE OF BUSHES/HEDGE
- WATER SHUTOFF
- DRAIN MANHOLE
- CATCH BASIN
- GAS METER
- SANITARY MANHOLE
- UTILITY POLE
- FW-16R MONITORING WELL
- DRAIN LINE
- OVERHEAD WIRES
- GAS SERVICE
- WATER SERVICE
- SANITARY SEWER
- BUILDING
- FORMER BUILDING LOCATION
- LIMITS OF TSCA MATERIAL
- 1' DEPTH OF EXCAVATION
- ELEV. 983 BOTTOM ELEVATION OF EXCAVATION

NOTES:

1. BASE MAP MODIFIED FROM SURVEY BY HILL ENGINEERS, ARCHITECTS & PLANNERS, DATED 8/15/01. CONTOUR INTERVAL IS 1 FOOT.
2. UTILITY LOCATIONS ARE APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG-SAFE" AND HAVE ALL UNDERGROUND UTILITIES LOCATED.
3. EXCAVATIONS SHALL BE COMPLETED TO DEPTH OR ELEVATION INDICATED WITHIN SPECIFIED LIMITS. ALL EXCAVATED MATERIALS TO BE DISPOSED OF AT THE APPROPRIATE OPCA.
4. CONTRACTOR SHALL RELOCATE CARS AND MISCELLANEOUS VEHICLES WITHIN THE PROPERTY IN QUESTION PRIOR TO INITIATION OF EXCAVATION ACTIVITIES AND RETURN SUCH VEHICLES UPON COMPLETION OF SITE RESTORATION ACTIVITIES. CONTRACTOR SHALL DOCUMENT (BY PHOTOGRAPHY OR VIDEOTAPE) EXISTING CONDITION OF ALL VEHICLES SUBJECT TO RELOCATION AND WILL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM RELOCATION OF THE VEHICLES.
5. THE CONTRACTOR SHALL INVENTORY ALL TREES AND SHRUBS LOCATED WITHIN THE LIMITS OF EXCAVATION. THE CONTRACTOR SHALL THEN REMOVE AND DISPOSE OF ALL TREES AN SHRUBS (INCLUDING ROOT SYSTEMS). ABOVE-GRADE PORTIONS OF TREES AND SHRUBS TO BE DISPOSED OF AT A LOCAL PERMITTED RESOURCE RECOVERY FACILITY. PORTIONS OF TREES AND SHRUBS IN CONTACT WITH SITE SOILS WILL BE DISPOSED OF ALONG WITH ADJACENT EXCAVATED SOILS (SEE NOTE 3).
6. THE DRAWING DOES NOT REFLECT ALL NEWLY RESTORED VEGETATION ON J9-23-12. CONTRACTOR IS REQUIRED TO INVENTORY ALL PREVIOUSLY RESTORED TREES AND SHRUBS PRIOR TO PERFORMANCE OF SOIL REMOVAL ACTIVITIES. CONTRACTOR SHALL THEN REMOVE AND DISPOSE OF ALL TREES AND SHRUBS IN ACCORDANCE WITH NOTE 5. ALSO, THE CONTRACTOR IS RESPONSIBLE FOR RESTORING ANY OTHER RIVERBANK RESTORATION MATERIALS IMPACTED DURING PERFORMANCE OF SOIL REMOVAL ACTIVITIES.

CONFIDENTIAL

X: 10112X00, X01.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-CDL
6/22/04 SYR-85-KMD KMD NES
C/10112003/CONTRACT/10112G09.DWG

Graphic Scale
30' 0 30' 60'

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
⚠	6/22/04	ADDED NOTE REGARDING RESTORED SURFACE COVER	CRA
⚠	5/26/04	MISCELLANEOUS RESTORATION-RELATED CHANGES	CRA
⚠	10/15/03	DELETED NOTE REGARDING FUTURE BUILDING DEMOLITION ACTIVITIES.	CRA

Project Mgr. CRA
Designed by CRA/BSS
Drawn by KMD
Checked by JMN/WAR/CRA
Prof. Eng.
PE License

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
NEWELL STREET AREA I RAA REMEDIAL ACTION

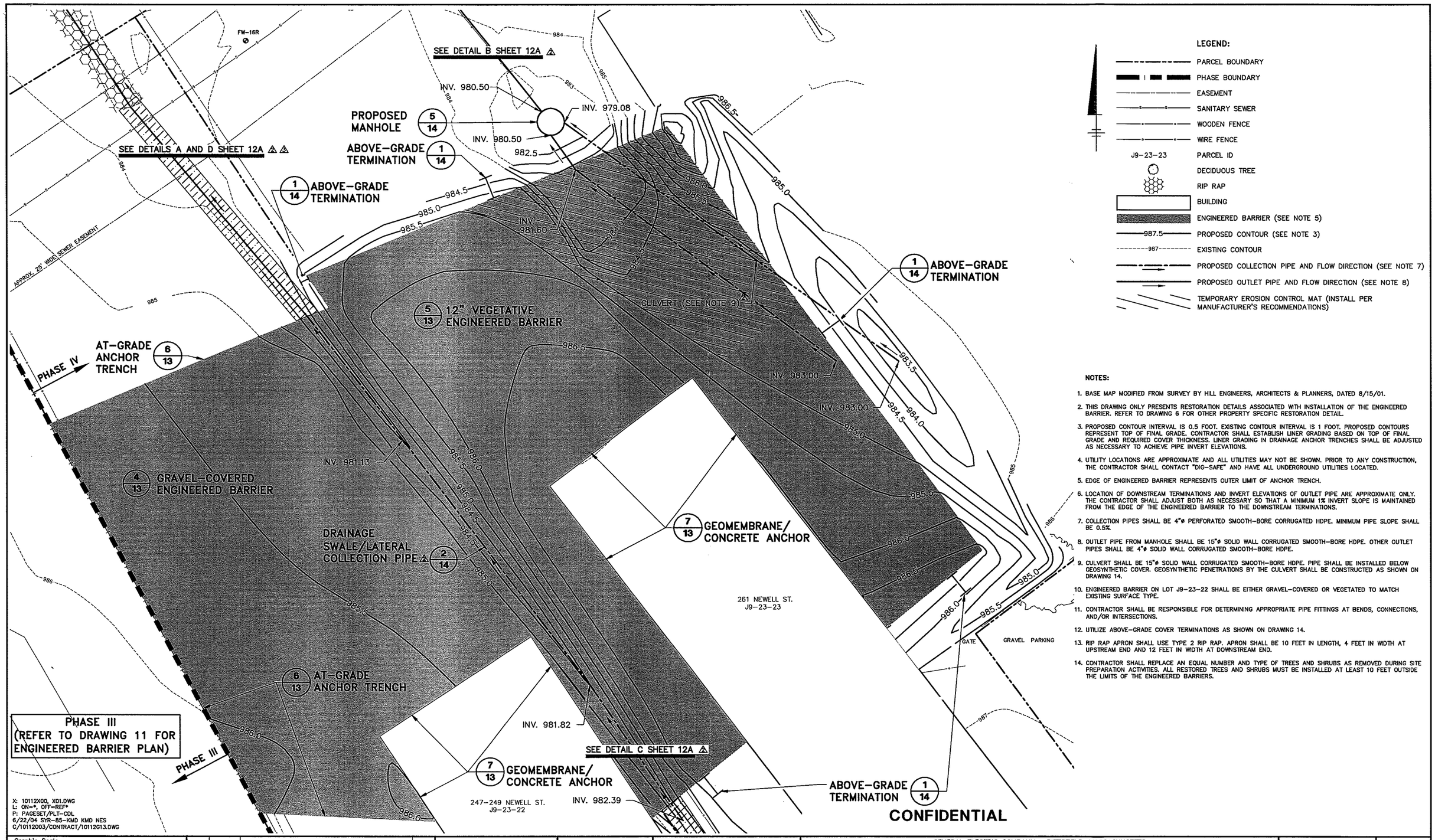
PHASE IV EXCAVATION LIMITS

TECHNICAL DRAWINGS

File Number 101.12
Date JULY 2003

Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

6



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4. UTILITY LOCATIONS ARE APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG-SAFE" AND HAVE ALL UNDERGROUND UTILITIES LOCATED.
5. EDGE OF ENGINEERED BARRIER REPRESENTS OUTER LIMIT OF ANCHOR TRENCH.
6. LOCATION OF DOWNSTREAM TERMINATIONS AND INVERT ELEVATIONS OF OUTLET PIPE ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL ADJUST BOTH AS NECESSARY SO THAT A MINIMUM 1% INVERT SLOPE IS MAINTAINED FROM THE EDGE OF THE ENGINEERED BARRIER TO THE DOWNSTREAM TERMINATIONS.
7. COLLECTION PIPES SHALL BE 4"ø PERFORATED SMOOTH-BORE CORRUGATED HDPE. MINIMUM PIPE SLOPE SHALL BE 0.5%.
8. OUTLET PIPE FROM MANHOLE SHALL BE 15"ø SOLID WALL CORRUGATED SMOOTH-BORE HDPE. OTHER OUTLET PIPES SHALL BE 4"ø SOLID WALL CORRUGATED SMOOTH-BORE HDPE.
9. CULVERT SHALL BE 15"ø SOLID WALL CORRUGATED SMOOTH-BORE HDPE. PIPE SHALL BE INSTALLED BELOW GEOSYNTHETIC COVER. GEOSYNTHETIC PENETRATIONS BY THE CULVERT SHALL BE CONSTRUCTED AS SHOWN ON DRAWING 14.
10. ENGINEERED BARRIER ON LOT J9-23-22 SHALL BE EITHER GRAVEL-COVERED OR VEGETATED TO MATCH EXISTING SURFACE TYPE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING APPROPRIATE PIPE FITTINGS AT BENDS, CONNECTIONS, AND/OR INTERSECTIONS.
12. UTILIZE ABOVE-GRADE COVER TERMINATIONS AS SHOWN ON DRAWING 14.
13. RIP RAP APRON SHALL USE TYPE 2 RIP RAP. APRON SHALL BE 10 FEET IN LENGTH, 4 FEET IN WIDTH AT UPSTREAM END AND 12 FEET IN WIDTH AT DOWNSTREAM END.
14. CONTRACTOR SHALL REPLACE AN EQUAL NUMBER AND TYPE OF TREES AND SHRUBS AS REMOVED DURING SITE PREPARATION ACTIVITIES. ALL RESTORED TREES AND SHRUBS MUST BE INSTALLED AT LEAST 10 FEET OUTSIDE THE LIMITS OF THE ENGINEERED BARRIERS.

X: 10112X00, X01.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-CDL
6/22/04 SYR-85-KMD KMD NES
C/10112003/CONTRACT/10112G13.DWG

CONFIDENTIAL

Graphic Scale
10' 0 10' 20'

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No.	Date	Revisions	Init
3	6/22/04	DELETED VEGETATIVE ENGINEERED BARRIER ON PARCEL J9-23-22, ADDED REFERENCE TO TECHNICAL DWG 12A	CRA
2	5/26/04	REVISED CULVERT REFERENCE REVISED DRAINAGE SWALE DETAIL AND ADDED REFERENCES TO TECHNICAL DWG 12A	CRA
1	10/15/03	REVISED NOTE REGARDING RIP RAP RESTORATION.	CRA

Project Mgr. CRA
Designed by BMS/CAA
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GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
NEWELL STREET AREA I RAA REMEDIAL ACTION

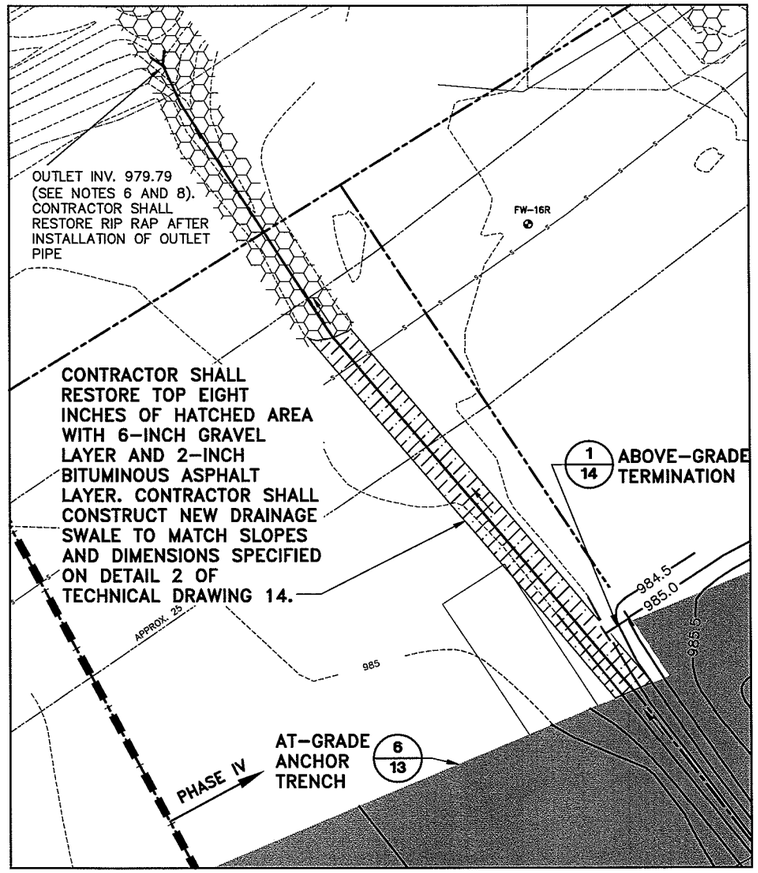
PHASE IV
ENGINEERED BARRIER PLAN

TECHNICAL DRAWINGS

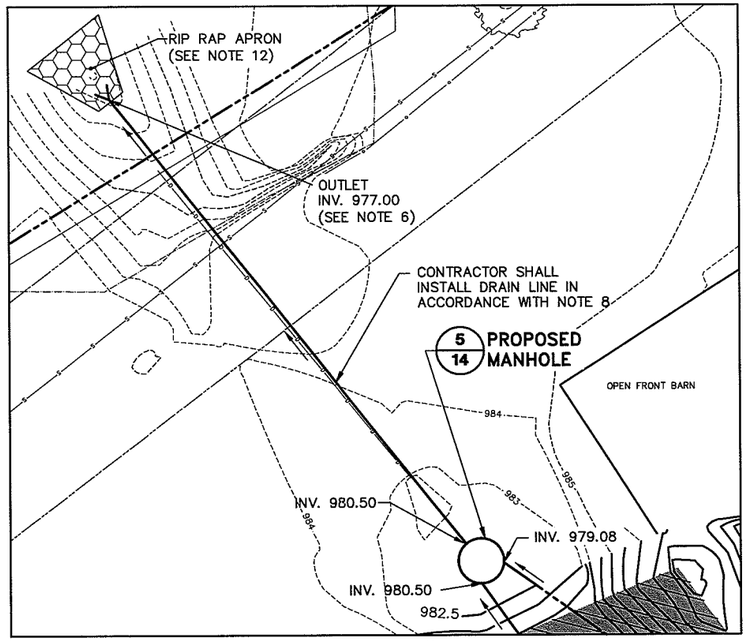
File Number 101.12
Date JULY 2003

Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

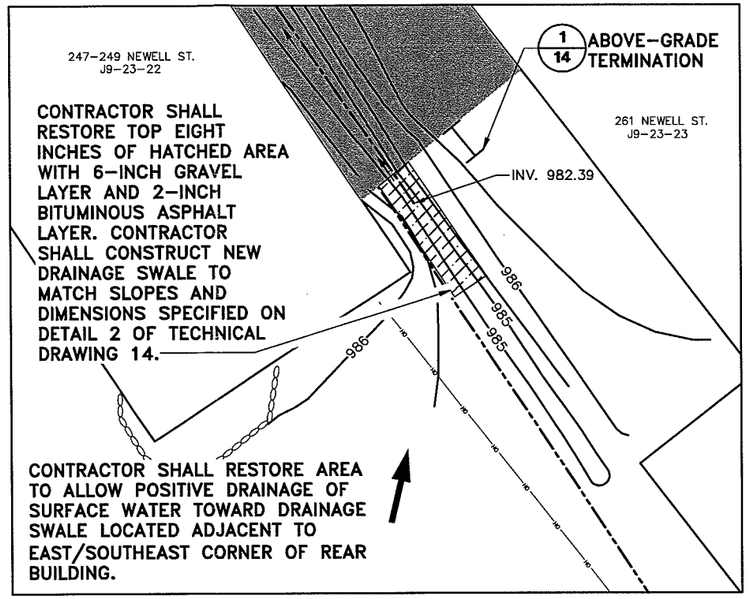
12



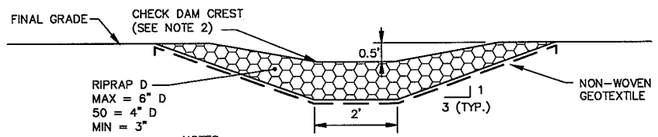
DETAIL A



DETAIL B



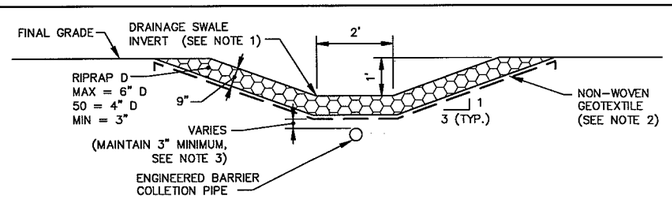
DETAIL C



NOTES:

1. CHECK DAM TO BE INSTALLED APPROXIMATELY 5' UPGRADIENT OF THE RIVER BANK CREST.
2. CHECK DAM CREST TO HAVE A MINIMUM TOP LENGTH OF 12" AND A MINIMUM BOTTOM LENGTH OF 3'.

CHECK DAM CROSS-SECTION



NOTES:

1. DITCH SHALL HAVE A MINIMUM SLOPE OF 1%.
2. GEOTEXTILE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. GEOTEXTILE TO BE OVERLAPPED ONTO EXISTING GEOTEXTILE AT RIVER BANK CREST A MINIMUM OF 18".
3. CONTRACTOR SHALL ENSURE THAT THE DRAINAGE PIPE FOR THE ENGINEERED BARRIER IS NOT DAMAGED DURING CONSTRUCTION OF THE DRAINAGE SWALE.

DRAINAGE SWALE CROSS-SECTION

NOTES:

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4. UTILITY LOCATIONS ARE APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG-SAFE" AND HAVE ALL UNDERGROUND UTILITIES LOCATED.
5. EDGE OF ENGINEERED BARRIER REPRESENTS OUTER LIMIT OF ANCHOR TRENCH.
6. LOCATION OF DOWNSTREAM TERMINATIONS AND INVERT ELEVATIONS OF OUTLET PIPE ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL ADJUST BOTH AS NECESSARY SO THAT A MINIMUM 1% INVERT SLOPE IS MAINTAINED FROM THE EDGE OF THE ENGINEERED BARRIER TO THE DOWNSTREAM TERMINATIONS.
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DETAIL D ⚠

NOT TO SCALE

LEGEND:

- PARCEL BOUNDARY
- PHASE BOUNDARY
- EASEMENT
- SANITARY SEWER
- WOODEN FENCE
- WIRE FENCE
- J9-23-23 PARCEL ID
- DECIDUOUS TREE
- RIP RAP
- BUILDING
- ENGINEERED BARRIER (SEE NOTE 5)
- 987.5 PROPOSED CONTOUR (SEE NOTE 3)
- 987 EXISTING CONTOUR
- PROPOSED COLLECTION PIPE AND FLOW DIRECTION (SEE NOTE 7)
- PROPOSED OUTLET PIPE AND FLOW DIRECTION (SEE NOTE 8)
- TEMPORARY EROSION CONTROL MAT (INSTALL PER MANUFACTURER'S RECOMMENDATIONS)

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X: 10112X00, X01.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-CDL
6/22/04 SYR-85-KMD KMD NES
C/10112003/CONTRACT/10112G17.DWG

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⚠	6/22/04	ADDED DETAIL D.	CRA

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GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
NEWELL STREET AREA I RAA REMEDIAL ACTION

PHASE IV
DRAINAGE SWALE AND OUTLET PIPE DETAILS

TECHNICAL DRAWINGS

File Number 101.12
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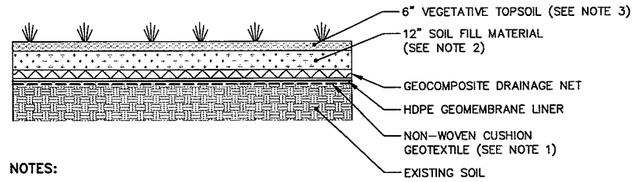
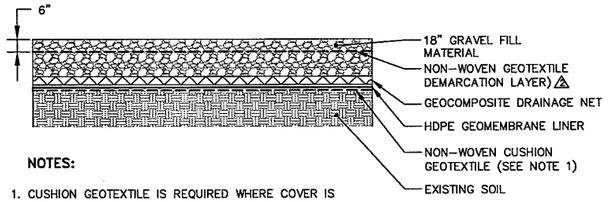


NOTES:

1. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.
2. AT CONTRACTOR'S DISCRETION, SOIL FILL MATERIAL MAY BE REPLACED WITH TOPSOIL.
3. ⚠ 5 INCH VEGETATIVE TOPSOIL LAYER TO BE REPLACED BY 4 INCH TOPSOIL LAYER AND SOD WHERE NOTED.

VEGETATIVE ENGINEERED BARRIER 1

NOT TO SCALE

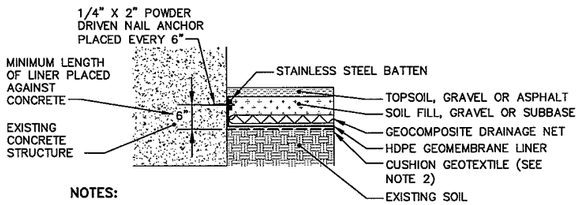


NOTES:

1. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.

GRAVEL-COVERED ENGINEERED BARRIER 4

NOT TO SCALE



NOTES:

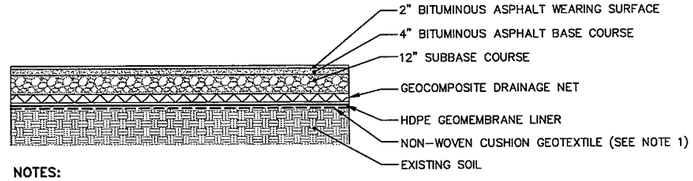
1. THIS DETAIL APPLICABLE TO COVER TERMINATIONS ADJACENT TO BUILDINGS, MANHOLES OR CONCRETE SLABS.
2. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.
3. CONTRACTOR SHALL EVALUATE THE FEASIBILITY OF USING THIS BATTEN STRIP METHOD ON THE MANHOLE PRIOR TO PROCEEDING.

GEOMEMBRANE/CONCRETE ANCHOR 7

NOT TO SCALE

GENERAL NOTES:

1. GEOSYNTHETICS ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY.
2. "AT-GRADE" REFERS TO ENGINEERED BARRIERS THAT ARE RECESSED INTO EXISTING GRADE.

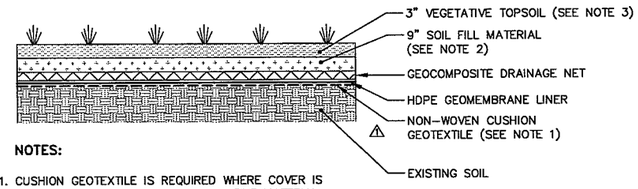


NOTES:

1. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.

ASPHALT-COVERED ENGINEERED BARRIER 2

NOT TO SCALE

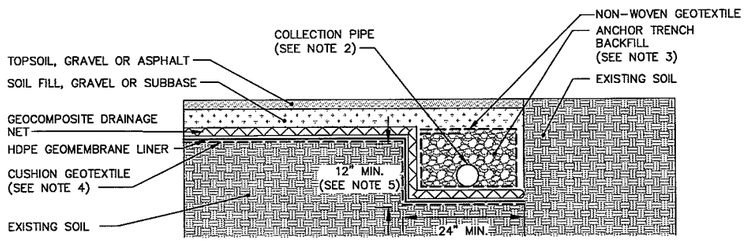


NOTES:

1. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.
2. AT CONTRACTOR'S DISCRETION, SOIL FILL MATERIAL MAY BE REPLACED WITH TOPSOIL.
3. PRIOR TO INSTALLATION OF THIS TYPE OF BARRIER, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VEGETATION.

12" VEGETATIVE ENGINEERED BARRIER 5

NOT TO SCALE

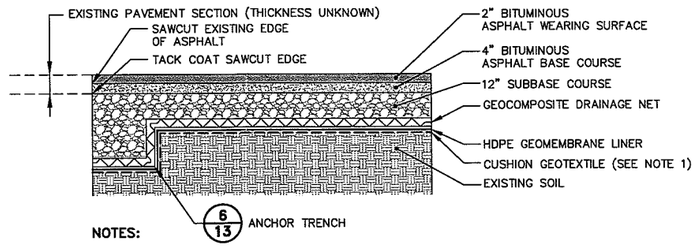


NOTES:

1. THIS DETAIL APPLICABLE TO AT-GRADE COVER TERMINATIONS WITH COLLECTION PIPES.
2. COLLECTION PIPE SHALL BE 4"ø PERFORATED SMOOTH-BORE CORRUGATED HDPE.
3. ANCHOR TRENCH SHALL BE BACKFILLED WITH FILTER STONE WRAPPED IN NON-WOVEN GEOTEXTILE.
4. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.
5. ANCHOR TRENCH DEPTH MAY EXCEED 12-INCH MINIMUM AS NECESSARY TO ACHIEVE COLLECTION PIPE INVERTS SHOWN ON DRAWINGS 9 THROUGH 12.

AT-GRADE DRAINAGE ANCHOR TRENCH 8

NOT TO SCALE

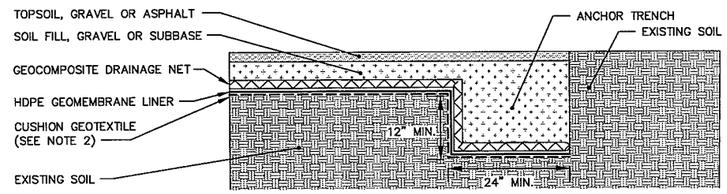


NOTES:

1. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.

AT-GRADE ASPHALT COVER TIE-IN 3

NOT TO SCALE

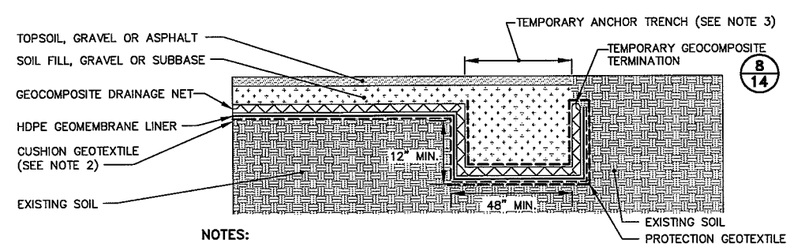


NOTES:

1. THIS DETAIL APPLICABLE TO AT-GRADE COVER TERMINATIONS WITHOUT COLLECTION PIPES.
2. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.

AT-GRADE ANCHOR TRENCH 6

NOT TO SCALE



NOTES:

1. THIS DETAIL APPLICABLE TO TEMPORARY AT-GRADE COVER TERMINATIONS.
2. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE UNCOMPACTED NATIVE MATERIAL.
3. UPON CONTINUATION OF ENGINEERED BARRIER CONSTRUCTION, THE CONTRACTOR SHALL CAREFULLY EXCAVATE TEMPORARY ANCHOR TRENCH BACKFILL, DISCARD PROTECTION GEOTEXTILE, AND BACKFILL TEMPORARY ANCHOR TRENCH.
4. IT IS RECOMMENDED THAT THE CONTRACTOR MARK OR RECORD THE LOCATION OF THE TEMPORARY ANCHOR TRENCH TO MINIMIZE DAMAGE TO THE GEOSYNTHETICS FOR FUTURE CONTINUATION OF ENGINEERED BARRIER.

TEMPORARY AT-GRADE TERMINATION 9

NOT TO SCALE

CONFIDENTIAL

X: 10112X00.DWG
L: ON=*, OFF=*REF*
P: PAGESET/PLT-CDL
6/22/04 SYR-85-KMD ROC-85-SLM SYR-85-GMS, NES
C/10112003/CONTRACT/10112G05.DWG

Graphic Scale

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No.	Date	Revisions	Init
⚠	6/22/04	REVISED DETAIL 4	CRA
⚠	9/24/03	REVISED DETAIL 1 AND DETAIL 5.	CRA

Project Mgr. CRA
Designed by BMS/CAA
Drawn by JER
Checked by JMN/WAR/PHB
Prof. Eng.
PE License

BBL
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
NEWELL STREET AREA I RAA REMEDIAL ACTION

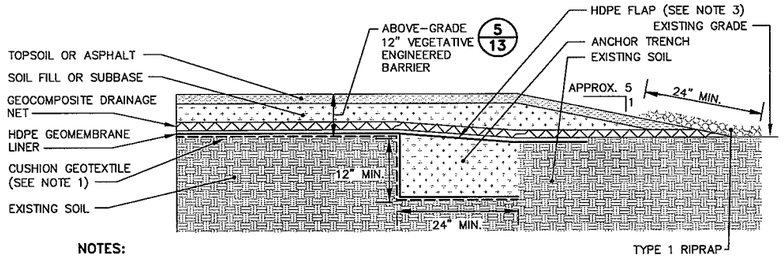
COVER DETAILS

TECHNICAL DRAWINGS

File Number 101.12
Date JULY 2003

Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

13

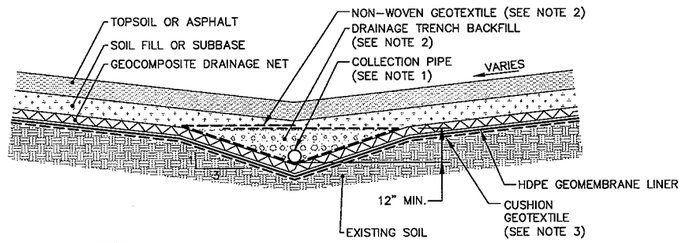


NOTES:

1. THIS DETAIL APPLICABLE TO ABOVE-GRADE COVER TERMINATIONS.
2. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE NATIVE MATERIAL.
3. THE CONTRACTOR SHALL INSTALL AN HDPE FLAP TO THE TOP OF THE LINER TO MINIMIZE PONDING WATER IN THE ANCHOR TRENCH. THE FLAP SHALL BE OF THE SAME MATERIAL AS THE LINER, BE LARGE ENOUGH TO SPAN THE ANCHOR TRENCH, AND BE CONTINUOUSLY WELDED TO THE TOP OF THE LINER. PRIOR TO INSTALLING THE FLAP, THE CONTRACTOR SHALL TERMINATE THE LINER IN THE ANCHOR TRENCH AND BACKFILL THE ANCHOR TRENCH.

⚠ ABOVE-GRADE TERMINATION (1)

NOT TO SCALE

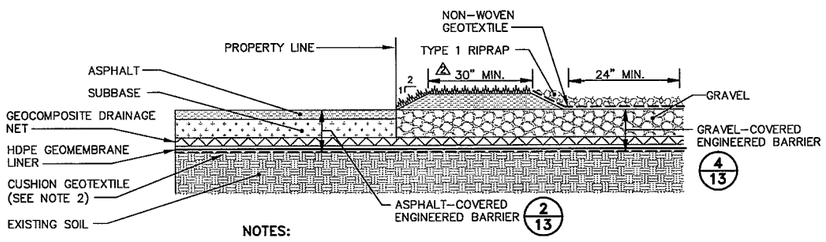


NOTES:

1. COLLECTION PIPE SHALL BE 4"ø PERFORATED SMOOTH BORE CORRUGATED HDPE.
2. DRAINAGE TRENCH TO BE BACKFILLED WITH FILTER STONE WRAPPED IN NON-WOVEN GEOTEXTILE. GEOTEXTILE SEAM TO BE SEWN.
3. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE NATIVE MATERIAL.

LATERAL COLLECTION PIPE (4)

NOT TO SCALE

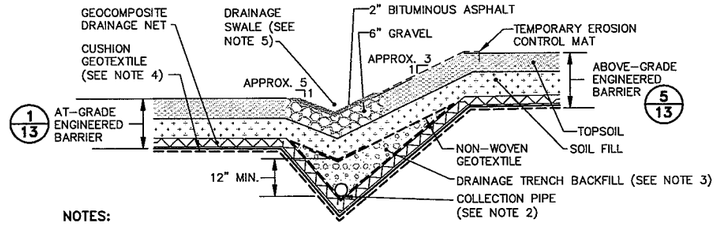


NOTES:

1. SOIL BERM SHALL BE COMPOSED OF TOPSOIL AND SOD.
2. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE NATIVE MATERIAL.

SOIL BERM (7)

NOT TO SCALE

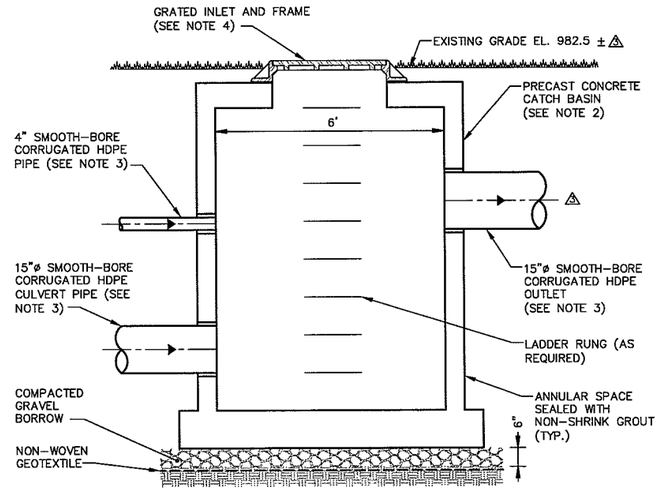


NOTES:

1. THIS DETAIL APPLICABLE TO DRAINAGE SWALES WITH A COLLECTION PIPE.
2. COLLECTION PIPE SHALL BE 4"ø PERFORATED SMOOTH-BORE CORRUGATED HDPE.
3. DRAINAGE TRENCH SHALL BE BACKFILLED WITH FILTER STONE WRAPPED IN NON-WOVEN GEOTEXTILE. GEOTEXTILE SEAM TO BE SEWN.
4. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE NATIVE MATERIAL.
5. PAVED PORTION OF DRAINAGE SWALE SHALL BE FIVE FEET IN WIDTH AND CENTERED ON COLLECTION PIPE.

DRAINAGE SWALE/LATERAL COLLECTION PIPE (2) ⚠

NOT TO SCALE



NOTES:

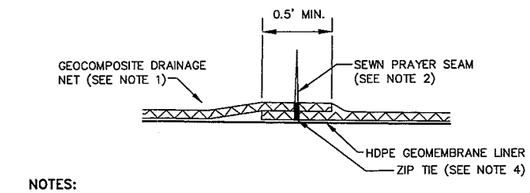
1. REFER TO DRAWING 12 FOR APPROXIMATE LOCATION OF CATCH BASIN.
2. PRECAST CONCRETE MANHOLE SHALL BE RATED FOR H-20 LOADING.
3. REFER TO DRAWING 12 FOR INVERT ELEVATIONS.
4. GRATED INLET AND FRAME SHALL BE RATED FOR H-20 LOADING. CONTRACTOR TO DETERMINE APPROPRIATE SIZE AND CONFIGURATION. GRATE SHALL BE CAPABLE OF PASSING 1 CFS WITH 1 INCH OF HEAD. TOP OF GRATE SHALL BE LOCATED APPROXIMATELY 2 INCHES ABOVE GRADE. ⚠

MANHOLE DETAIL (5)

NOT TO SCALE

GENERAL NOTES:

1. GEOSYNTHETICS ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY.
2. "ABOVE-GRADE" REFERS TO ENGINEERED BARRIERS THAT ARE CONSTRUCTED ON TOP OF EXISTING GRADE.
3. "AT-GRADE" REFERS TO ENGINEERED BARRIERS THAT ARE RECESSED INTO EXISTING GRADE.

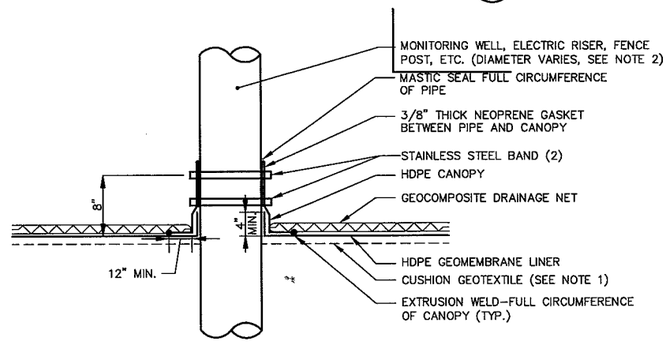


NOTES:

1. ALL GEOCOMPOSITE SHALL SHINGLE DOWNSLOPE.
2. THE TOP GEOTEXTILE COMPONENTS OF THE TWO GEOCOMPOSITE LAYERS SHALL BE PEELED BACK SO THAT A PRAYER SEAM MAY BE SEWN ABOVE THE GEOCOMPOSITE OVERLAP.
3. IF GEOTEXTILE IS UNABLE TO BE PEELED BACK WITHOUT CAUSING DAMAGE, A PATCH OF GEOTEXTILE SHALL BE HEAT BONDED TO THE TOP GEOTEXTILE LAYER OF THE OVER THE SEAM.
4. ZIP TIES SHALL BE PLACED EVERY 5' ALONG ADJACENT PANELS AND EVERY 6" ALONG BUTT SEAMS AND IN ANCHOR TRENCHES.

TYPICAL GEOCOMPOSITE SEAM (3)

NOT TO SCALE

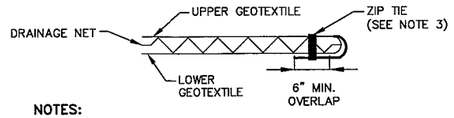


NOTES:

1. CUSHION GEOTEXTILE IS REQUIRED WHERE COVER IS INSTALLED ABOVE NATIVE MATERIAL.
2. THIS DETAIL MAY BE USED FOR OTHER PENETRATIONS THROUGH THE GEOSYNTHETICS.

GEOSYNTHETICS PENETRATION SEAL (6)

NOT TO SCALE



NOTES:

1. THIS DETAIL APPLICABLE TO TEMPORARY TERMINATION OF GEOSYNTHETICS, WHERE NECESSARY.
2. DRAINAGE NET AND LOWER GEOTEXTILE SHALL BE CUT SO THAT THE UPPER GEOTEXTILE MAY BE WRAPPED AROUND THE END OF THE GEOCOMPOSITE.
3. ZIP TIES SHALL BE PLACED EVERY 5' ALONG THE EDGES OF THE GEOCOMPOSITE.

TEMPORARY GEOCOMPOSITE TERMINATION (8)

NOT TO SCALE

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X: 10112X00.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-CDL
5/27/04 SYR-85-KMD ROC-85-SLM SYR-85-GMS LAF KMD
C/10112003/CONTRACT/10112G11.DWG

Graphic Scale: NOT TO SCALE

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No.	Date	Revisions	Init
⚠3	5/26/04	REVISED DETAILS 2 AND 5.	CRA
⚠2	10/15/03	REVISED DETAIL 7.	CRA
⚠1	9/24/03	REVISED DETAIL 1 AND ADDED NOTE 3.	CRA

Project Mgr. CRA
Designed by BMS/CAA
Drawn by JER
Checked by JMN/WAR/PHB
Prof. Eng.
PE License

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
NEWELL STREET AREA I RAA REMEDIAL ACTION

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TECHNICAL DRAWINGS

File Number 101.12
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