LEGEND

- GRANITE BND
- GRANITE BND W/DH
- MARBLE BND W/DH
- MARBLE BND
- CONC H BND
- CONC BND W/DH
- IP FOUND
- IP W/CAP
- GUN BARREL FND
- DRILL HOLE–SURVEY CONTROL PT.
- PTS STAKE
- MAG NAIL
- PK NAIL
- WIRE FENCE
- EDGE OF TREELINE
- WOOD FENCE
- CHAINLINK FENCE
- TREES
- SHRUBERY
- CARWASH VACUUM STATION
- GUY ANCHOR
- MONITORING WELL
- EXISTING CONTOURS
- LIMIT OF REMEDIATION
- EDGE OF RIVER
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- LUMINAIRE
- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- SANITARY SEWER
- STORM SEWER
- WATER
- GAS
- OVERHEAD LINES
- TELEPHONE
- ELECTRIC
- GUARDRAIL
- RETAINING WALL
- ROCK/BOULDER
- POST
- WATER SHUTOFF VALVE
- GATE VALVE OR GAS VALVE
- HYDRANT
- SIGNPOST
- PARKING BUMPER
- UTILITY POLE
- DETAIL NUMBER
- SHEET WHERE DETAIL IS SHOWN
- SHEET WHERE DETAIL IS REFERENCED
- SECTION IDENTIFIER
- SHEET WHERE SECTION IS SHOWN
- SHEET WHERE SECTION IS REFERENCED
- CELL BOUNDARY AND DESIGNATION
- STAGING AREA
- FINAL GRADE CONTOURS
- PRECAST CONCRETE WALL PANELS
- TOP OF SLOPE
- TOE OF SLOPE
- ℄ RIVER
- FLOW DIRECTION
- CONTROL POINT FOR SHEET PILE WALL
- SHEET PILE
- RIVER WALK
- FINAL GRADE SPOT ELEV.
- DS DOWNSTREAM
- US UPSTREAM
- EE/CA AGGRADING BAR SAMPLING LOCATION

GENERAL NOTES:

1. EXISTING SURVEYS PROVIDED BY: SK–DESIGN GROUP INC., 2 FEDERICO DRIVE, PITTSFIELD MA 01201, JAMES E. SEIDL P.L.S.; COL–EAST, INC., HARRIMAN & WEST AIRPORT, P.O. BOX 347, NORTH ADAMS MA 01247; HILL ENGINEERS, ARCHITECTS, PLANNERS, INC., 50 DEPOT ST., DALTON MA 01226.
2. TOPOGRAPHIC FIELD SURVEY AND PLANS WERE PREPARED IN ACCORDANCE WITH THE PROCEDURAL AND TECHNICAL STANDARDS FOR THE PRACTICE OF LAND SURVEYING IN THE COMMONWEALTH OF MASSACHUSETTS BETWEEN SEPTEMBER 19, 2000 AND DECEMBER 1, 2000.
3. HORIZONTAL DATUM BASED ON MASSACHUSETTS STATE PLANE COORDINATES NAD 1983.
4. VERTICAL DATUM BASED ON NAVD 1988.
5. "EXCAVATION SUBCONTRACTOR" SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO EXCAVATING, TRENCHING, OR GRADING.
6. "EXCAVATION SUBCONTRACTOR" SHALL VERIFY AND COORDINATE THE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK.
7. DISCREPANCIES IDENTIFIED BY THE "EXCAVATION SUBCONTRACTOR" BETWEEN THE SPECIFICATIONS, DRAWINGS, AND SITE CONDITIONS SHALL BE REPORTED TO THE GENERAL CONTRACTOR. WORK PERFORMED BY THE "EXCAVATION SUBCONTRACTOR" PRIOR TO RESOLUTION OF SUCH DISCREPANCY BY THE GENERAL CONTRACTOR SHALL BE DONE AT THE "EXCAVATION SUBCONTRACTOR'S" RISK.
8. THE "EXCAVATION SUBCONTRACTOR" IS RESPONSIBLE FOR INFORMATION CONTAINED IN THE FOLLOWING REFERENCES:

8.1 BASIS OF DESIGN, 1.5 MILE REMOVAL ACTION PHASE 3, OCTOBER 2004.

9. EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROJECT RELATED SNOW REMOVAL, WITHIN THE AREAS SHOWN ON THESE DRAWINGS AND OUTSIDE OF THE AREAS SHOWN ON THESE DRAWINGS, SUCH AS ACCESS ROADS, STAGING AREAS, TRAILER AREAS, STOCKPILE AREAS, ETC. SNOW SHALL NOT BE PLOWED ONTO RESTORED RIVERBANKS, BEYOND SILT FENCES, OR IN AREAS NOT APPROVED BY THE ENGINEER.

DRAWING SCHEDULE

SHEET	SHEET REFERENCE NUMBER	TITLE	SHEET	SHEET REFERENCE NUMBER	TITLE	SHEET	SHEET REFERENCE NUMBER	TITLE
1	1000	GENERAL NOTES AND LEGEND	16	1015	TSCA REMOVAL AREAS GREATER THAN 3 FOOT DEPTH INTERVAL 3 OF 4	31	2008	CROSS SECTIONS 2 OF 9
2	1001	PLAN OF EXISTING CONDITIONS 1 OF 4	17	1016	TSCA REMOVAL AREAS GREATER THAN 3 FOOT DEPTH INTERVAL 4 OF 4	32	2009	CROSS SECTIONS 3 OF 9
3	1002	PLAN OF EXISTING CONDITIONS 2 OF 4	18	1017	SHEET PILE CONTAINMENT CELL LAYOUT 1 OF 4	33	2010	CROSS SECTIONS 4 OF 9
4	1003	PLAN OF EXISTING CONDITIONS 3 OF 4	19	1018	SHEET PILE CONTAINMENT CELL LAYOUT 2 OF 4	34	2011	CROSS SECTIONS 5 OF 9
5	1004	PLAN OF EXISTING CONDITIONS 4 OF 4	20	1019	SHEET PILE CONTAINMENT CELL LAYOUT 3 OF 4	35	2012	CROSS SECTIONS 6 OF 9
6	1005	REMOVAL AREAS 1 OF 4	21	1020	SHEET PILE CONTAINMENT CELL LAYOUT 4 OF 4	36	2013	CROSS SECTIONS 7 OF 9
7	1006	REMOVAL AREAS 2 OF 4	22	1021	SHEET PILE INSTALLATION DETAILS	37	2014	CROSS SECTIONS 8 OF 9
8	1007	REMOVAL AREAS 3 OF 4	23	2000	GRADING PLAN 1 OF 4	38	2015	CROSS SECTIONS 9 OF 9
9	1008	REMOVAL AREAS 4 OF 4	24	2001	GRADING PLAN 2 OF 4	39	2101	RIVERBED AND RIVERBANK RESTORATION 1 OF 4
10	1009	TSCA REMOVAL AREAS 0–3 FOOT DEPTH INTERVAL 1 OF 4	25	2002	GRADING PLAN 3 OF 4	40	2102	RIVERBED AND RIVERBANK RESTORATION 2 OF 4
11	1010	TSCA REMOVAL AREAS 0–3 FOOT DEPTH INTERVAL 2 OF 4	26	2003	GRADING PLAN 4 OF 4	41	2103	RIVERBED AND RIVERBANK RESTORATION 3 OF 4
12	1011	TSCA REMOVAL AREAS 0–3 FOOT DEPTH INTERVAL 3 OF 4	27	2004	ENLARGED GRADING PLANS	42	2104	RIVERBED AND RIVERBANK RESTORATION 4 OF 4
13	1012	TSCA REMOVAL AREAS 0–3 FOOT DEPTH INTERVAL 4 OF 4	28	2005	RIVERBED ARMORING DETAILS	43	2105	AQUATIC HABITAT STRUCTURE DETAILS
14	1013	TSCA REMOVAL AREAS GREATER THAN 3 FOOT DEPTH INTERVAL 1 OF 4	29	2006	RIVERBANK ARMORING DETAILS	44	2106	REVEGETATION TABLE AND NOTES
15	1014	TSCA REMOVAL AREAS GREATER THAN 3 FOOT DEPTH INTERVAL 2 OF 4	30	2007	CROSS SECTIONS 1 OF 9	45	2107	REVEGETATION DETAILS

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05					
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
B	FINAL DESIGN	10/8/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name: 1000.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

GENERAL NOTES AND LEGEND

Sheet reference number:
1000
1 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1000.dwg, 1000, 2/8/2005 11:12:23 AM, gprabab, 1:1

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
B	FINAL DESIGN	10/21/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name: 1001-1004.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

PLAN OF EXISTING CONDITIONS
1 OF 4

Sheet reference number:
1001
2 OF 45

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05					
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1001-1004.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

PLAN OF EXISTING CONDITIONS
2 OF 4

Sheet reference number:
1002
3 OF 45

m:\design\DMC\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1001-1004.dwg, 1002, 2/8/2005 11:15:06 AM, glandab, 1:1

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1001-1004.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

PLAN OF EXISTING CONDITIONS
3 OF 4

Sheet reference number:
1003
4 OF 45

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1001-1004.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

PLAN OF EXISTING CONDITIONS
4 OF 4

Sheet reference number:
1004
5 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1001-1004.dwg, 1004, 2/8/2005 11:16:48 AM, glandab, 1:1

NOTES:

1. SEDIMENT EXCAVATION SHALL PROCEED TO THE ELEVATIONS SHOWN ON THESE DRAWINGS OR TO BEDROCK, WHICH EVER OCCURS FIRST. IF BEDROCK IS ENCOUNTERED ABOVE THE REQUIRED EXCAVATION ELEVATION, BEDROCK WASHING MAY BE REQUIRED.

2. FOR THE PURPOSES OF THIS DRAWING, RIVERBANK EXCAVATION DEPTHS REPRESENT THE DEPTH OF CONTAMINATED MATERIAL BELOW EXISTING GRADE REQUIRING REMOVAL TO MEET THE RECREATIONAL OR RESIDENTIAL CLEANUP LEVELS SPECIFIED IN EPA'S NOVEMBER 21, 2000 ACTION MEMORANDUM. SPECIFICALLY, FOR NON-RESIDENTIAL RIVERBANKS, THE CLEANUP LEVEL IS 10 PPM FOR SOILS FROM 0 TO 3 FEET. FOR RESIDENTIAL PROPERTIES, THE CLEANUP CRITERIA ARE THE FOLLOWING:

   1. 2 PPM FOR THE TOP THREE FEET;
   2. ARITHMETIC AVERAGE OF 10 PPM FOR 3-15 FEET; AND
   3. A NOT-TO-EXCEED LIMIT OF 50 PPM FOR 3-15 FEET.

   FURTHERMORE, THE MAXIMUM DEPTH OF EXCAVATION ON RESIDENTIAL PROPERTIES SHALL BE TO THE GROUNDWATER TABLE. ALL CLEANUP CRITERIA SHALL BE EVALUATED USING POST-REMEDIATION ELEVATIONS, ACCOUNTING FOR REPLACEMENT OF CONTAMINATED MATERIAL WITH CLEAN BACKFILL. REFER TO SHEETS 2007 TO 2015 FOR ACTUAL CUTS SHOWN ON CROSS-SECTIONS. ACTUAL CUTS DIFFER FROM THOSE SHOWN ON THIS SHEET TO ACCOUNT FOR CHANGES IN FINAL GRADES, AND TERMINATING THE EXCAVATION AT THE GROUNDWATER TABLE (EXCEPT THAT THE EXCAVATION SHALL PROCEED BELOW THE GROUNDWATER TABLE TO ALLOW FOR THE PLACEMENT OF THREE FEET OF CLEAN BACKFILL).

3. THE TWO 54" HDPE GRAVITY DIVERSION PIPES SHALL BE EXTENDED FROM APPROXIMATELY STATION 544+00 TO STATION 548+00.

4. EXCAVATION LIMITS "TOP OF BANK" TO BE DETERMINED IN THE FIELD.

5. ELECTRONIC CAD FILES AND/OR CONTROL POINTS SHALL BE PROVIDED TO THE EXCAVATION SUBCONTRACTOR AND SURVEYOR AS NECESSARY TO DEFINE THE LIMIT OF REMEDIATION IN THE FIELD.

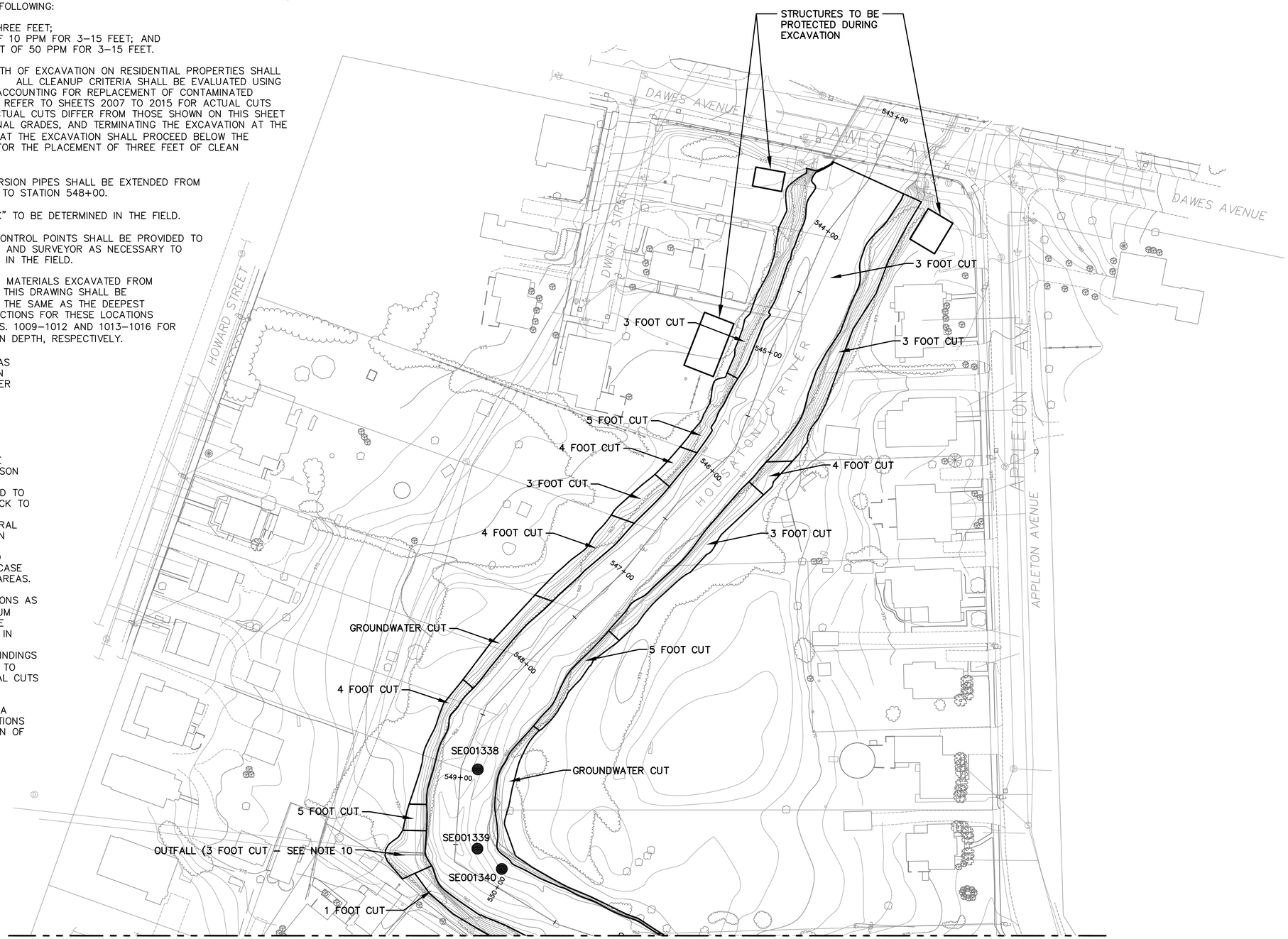
6. WHERE DATA ARE NOT AVAILABLE, MATERIALS EXCAVATED FROM DEPTHS BELOW THOSE SHOWN ON THIS DRAWING SHALL BE CLASSIFIED (TSCA OR NON-TSCA) THE SAME AS THE DEEPEST OVERLYING LAYER. SEE CROSS-SECTIONS FOR THESE LOCATIONS (DRAWINGS 2007-2015). SEE DWGS. 1009-1012 AND 1013-1016 FOR TSCA EXCAVATIONS <3' AND >3' IN DEPTH, RESPECTIVELY.

7. MATERIALS EXCAVATED FROM AREAS BEYOND THE LIMIT OF REMEDIATION SHALL BE SEGREGATED FROM OTHER EXCAVATED MATERIALS FOR CHARACTERIZATION AND DISPOSAL PURPOSES, AS DIRECTED BY THE ENGINEER.

8. VERTICAL EXCAVATION CUT FACES EXCEEDING 4' IN HEIGHT SHALL BE EVALUATED BY A COMPETENT PERSON FOR STABILITY. THE EXCAVATION SUBCONTRACTOR MAY BE REQUIRED TO SLOPE THESE VERTICAL FACES BACK TO MINIMIZE THE CHANCES OF SLOPE FAILURE. ADDITIONALLY, THE GENERAL CONTRACTOR AND THE EXCAVATION SUBCONTRACTOR SHALL INCREASE OBSERVATIONS OF THESE CUTS TO DETERMINE STABILITY AND IN NO CASE SHALL PERSONNEL ENTER THESE AREAS.

9. AGGRADING BAR SAMPLING LOCATIONS AS IDENTIFIED IN THE EE/CA ADDENDUM SHALL BE EXCAVATED BEYOND THE DEPTHS SHOWN ON THIS DRAWING IN ACCORDANCE WITH ACTUAL FIELD CONDITIONS OBSERVED AND THE FINDINGS OF THE EE/CA ADDENDUM. REFER TO SHEETS 2007 TO 2015 FOR ACTUAL CUTS SHOWN ON CROSS-SECTIONS.

10. EXCAVATION AT THE OUTFALL AREA SHALL BE BASED ON FIELD CONDITIONS ENCOUNTERED AND THE DISCRETION OF THE ENGINEER.



GRAPHIC SCALE
40 20 0 20 40
APPROXIMATE SCALE IN FEET

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05					
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
B	FINAL DESIGN	10/8/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name: 1005-1008.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

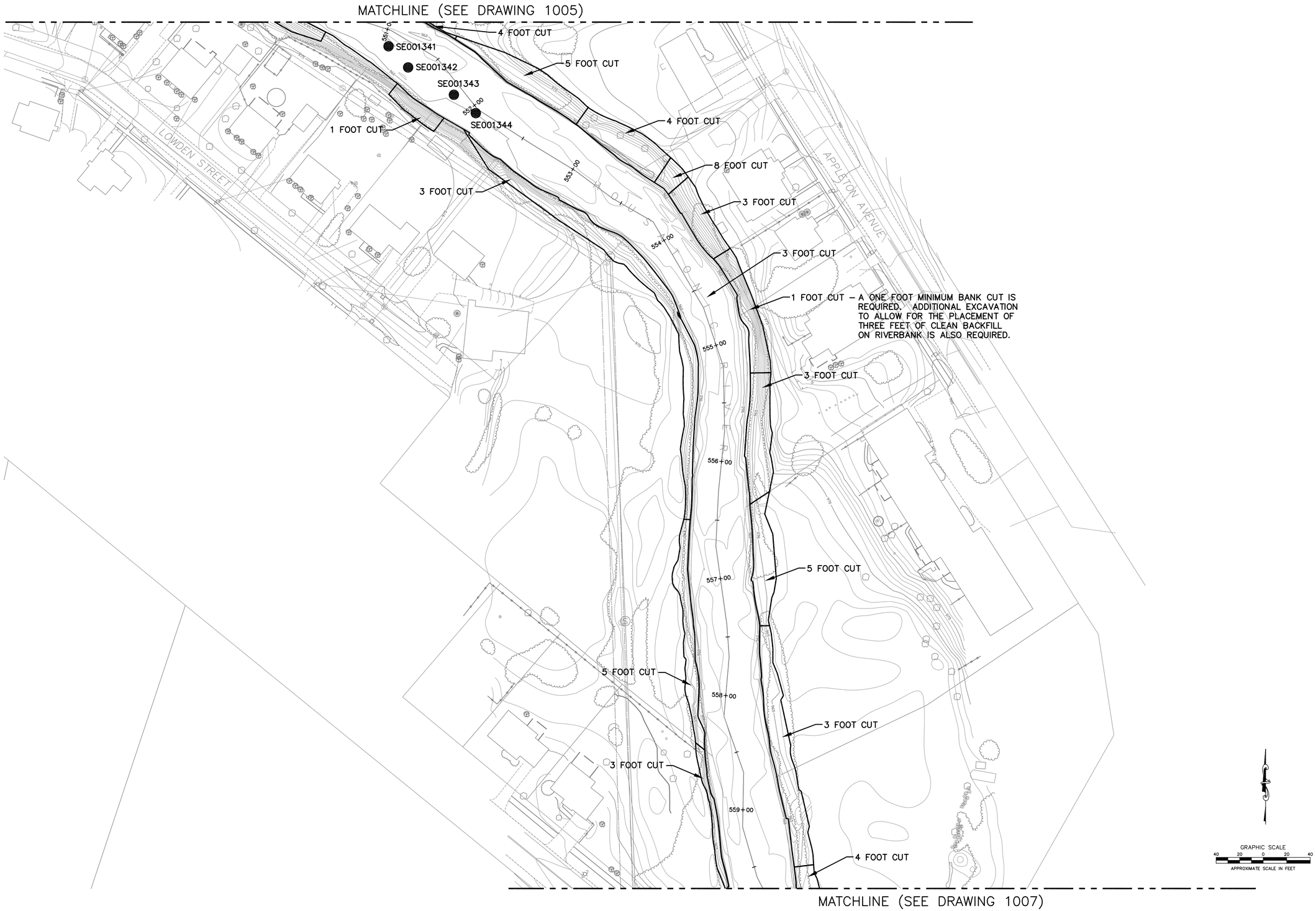
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

REMOVAL AREAS
1 OF 4

Sheet reference number:
1005
6 OF 45

M:\Design\PWO\ACOE\SSERC\2nd_0.5cm\Design Drawings - Phase III\1005-1008.dwg, 1005, 2/8/2005 11:18:29 AM, gjoradek, 1:1



FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1005-1008.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

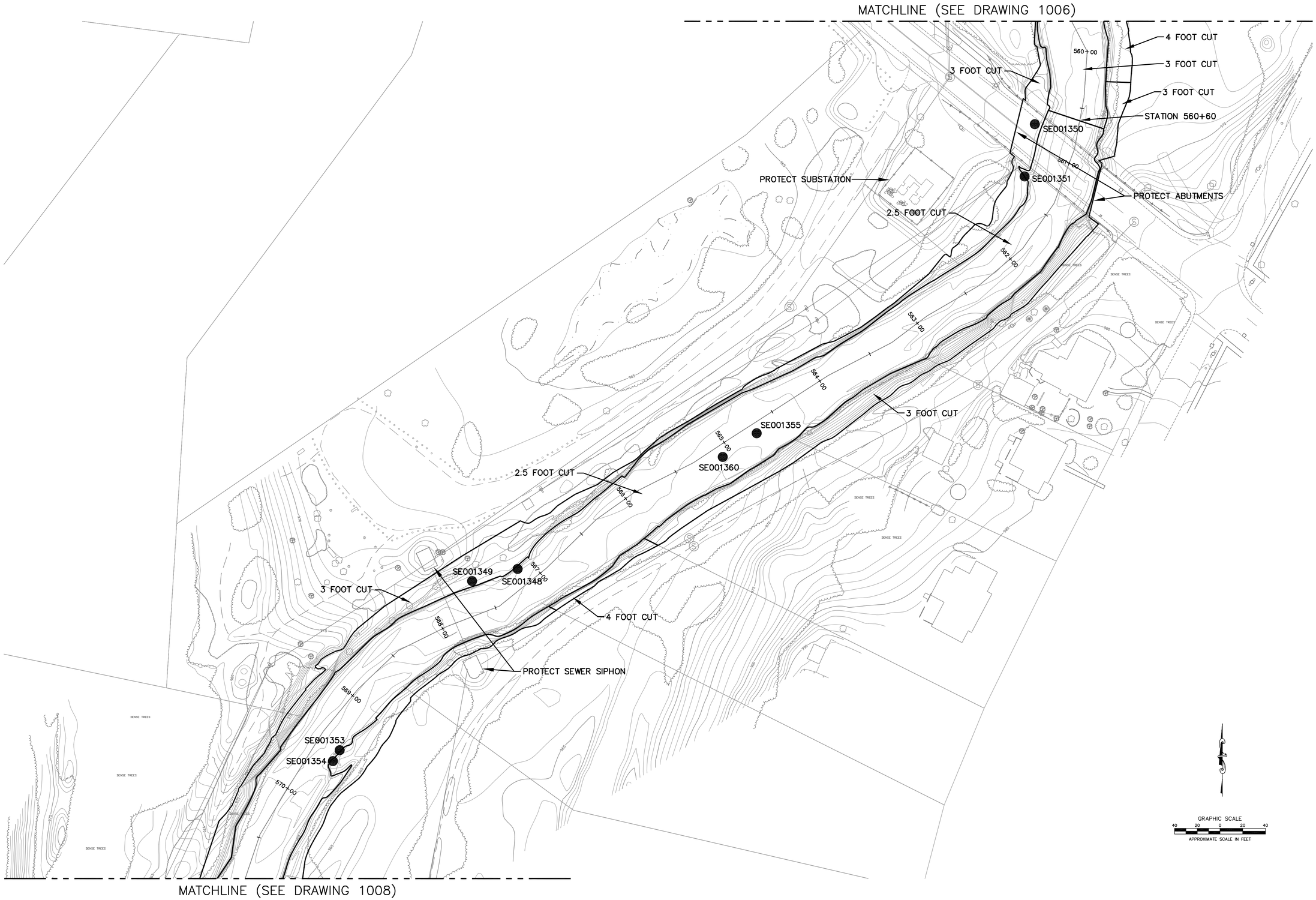
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

REMOVAL AREAS
2 OF 4

Sheet reference number:
1006
7 OF 45

m:\design\DMC\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1005-1008.dwg, 1006, 2/8/2005 11:19:24 AM, glorando, 1:1



FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1005-1008.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

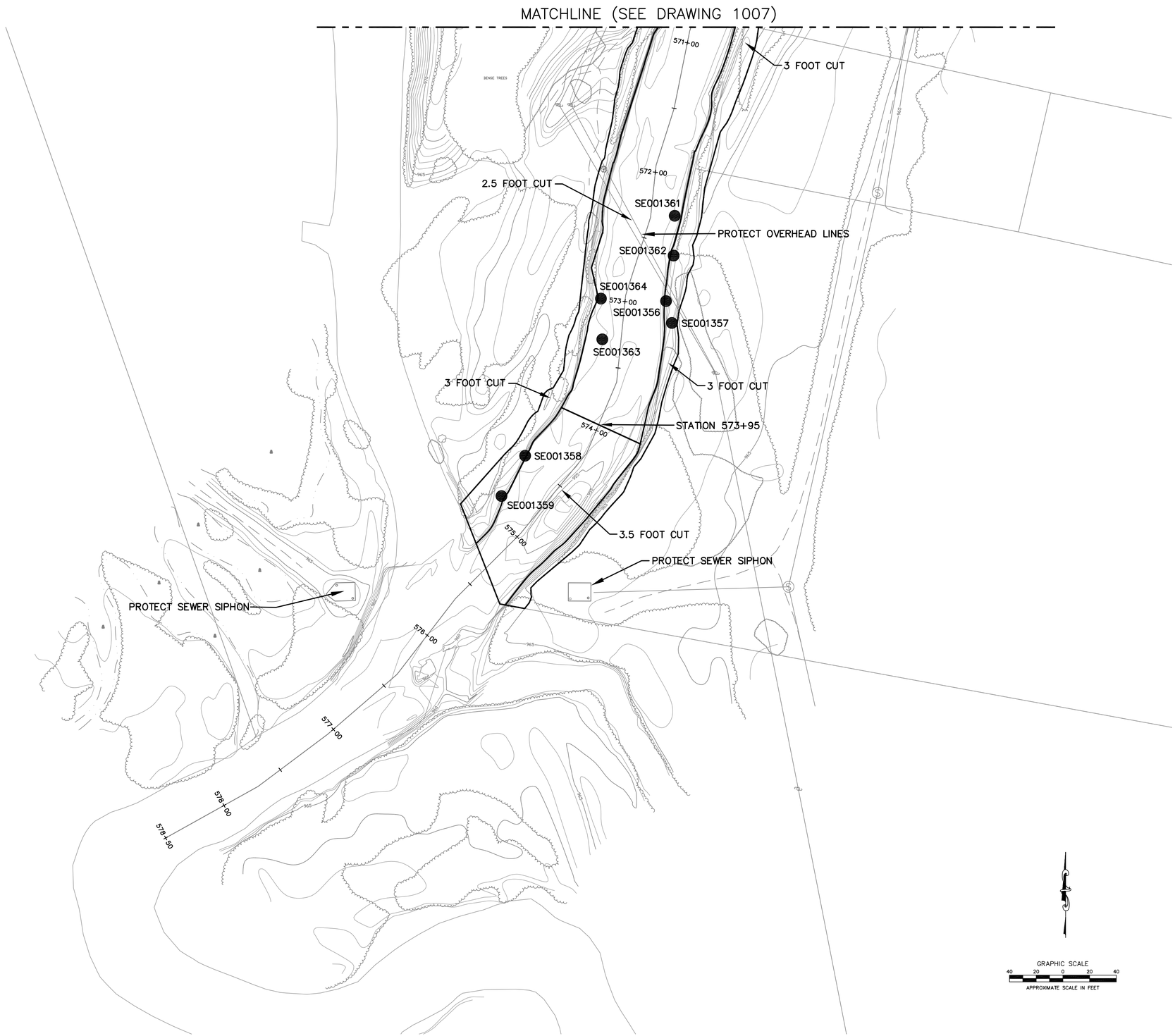
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

REMOVAL AREAS
3 OF 4

Sheet reference number:
1007
8 OF 45



FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1005-1008.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

REMOVAL AREAS
4 OF 4

Sheet reference number:
1008
9 OF 45

NOTES:

1. ALL AREAS SHALL BE EXCAVATED AS NON-TSCA MATERIAL EXCEPT WHERE NOTED AS TSCA MATERIAL.
2. FOR SEDIMENTS ONLY, MATERIALS EXCAVATED FROM DEPTHS BELOW THOSE SHOWN ON THIS DRAWING SHALL BE CLASSIFIED (TSCA OR NON-TSCA) THE SAME AS THE DEEPEST OVERLYING LAYER.
3. MATERIALS EXCAVATED FROM AREAS BEYOND THE LIMIT OF REMEDIATION SHALL BE SEGREGATED FOR CHARACTERIZATION, AS DIRECTED BY THE ENGINEER. SEE CROSS-SECTIONS FOR THESE LOCATIONS (SHEETS 2007-2014).
4. ELECTRONIC CAD FILES AND/OR CONTROL POINTS SHALL BE PROVIDED TO THE EXCAVATION SUBCONTRACTOR AND SURVEYOR AS NECESSARY TO DEFINE THE LIMIT OF REMEDIATION AND LIMITS OF TSCA EXCAVATION IN THE FIELD.

MATCHLINE (SEE DRAWING 1010)

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05					
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
B	FINAL DESIGN	10/2/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1009-1012.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
TSCA REMOVAL AREAS
0 TO 3 FOOT DEPTH INTERVAL
1 OF 4

Sheet reference number:
1009
10 OF 45

M:\Design\DWC\ACOE\SSERC\2nd_0-3m\Design Drawings - Phase III\1009-1012.dwg, 1009, 2/8/2005 11:23:29 AM, glenndeb, 1:1

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1009-1012.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

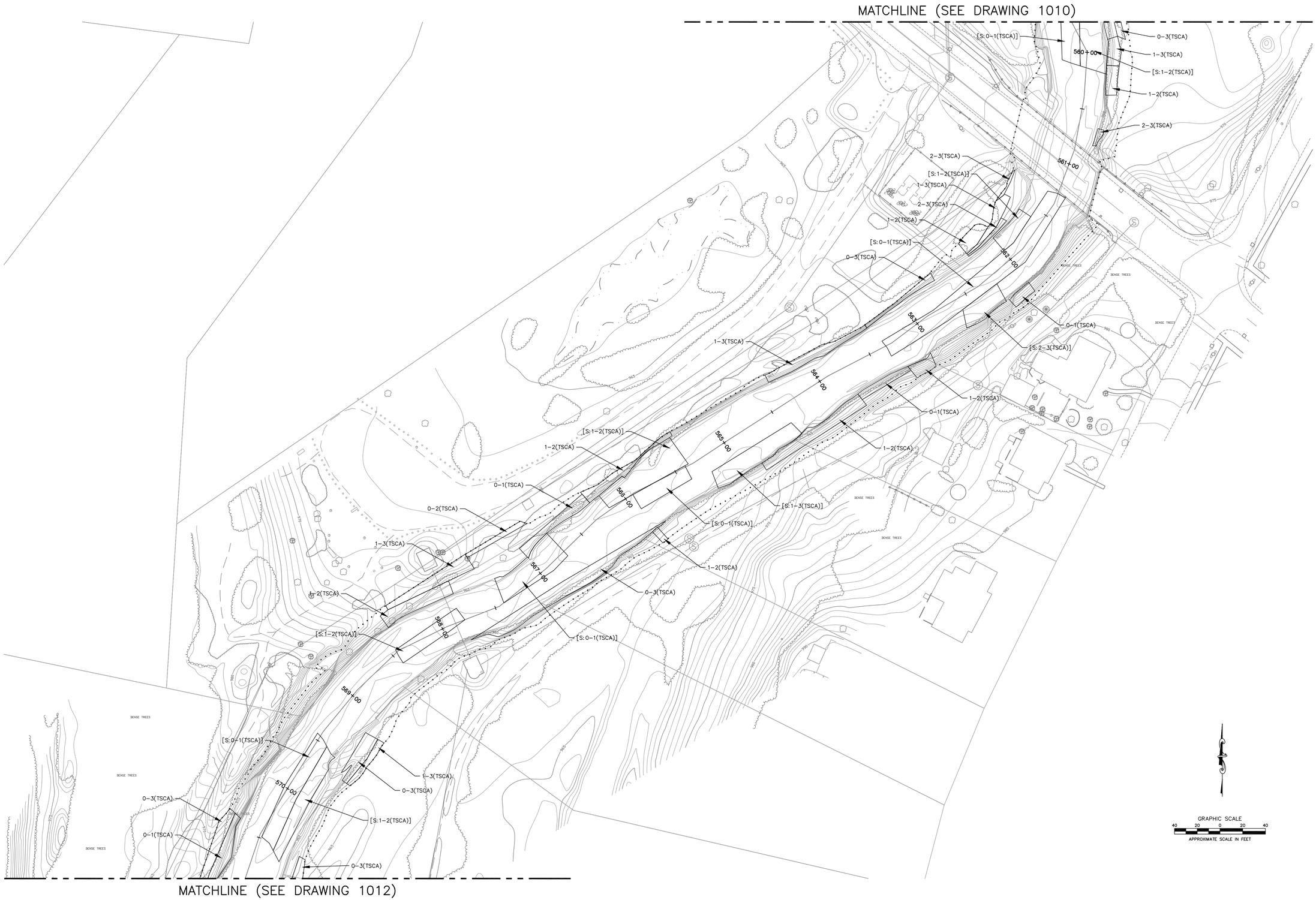
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

TSCA REMOVAL AREAS
0 TO 3 FOOT DEPTH INTERVAL
2 OF 4

Sheet reference number:
1010
11 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0-3m\Design Drawings - Phase III\1009-1012.dwg, 1010, 2/8/2005 11:24:44 AM, glendels, 1:1



FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1009-1012.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

TSCA REMOVAL AREAS
0 TO 3 FOOT DEPTH INTERVAL
3 OF 4

Sheet reference number:
1011
12 OF 45

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1008-1012.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

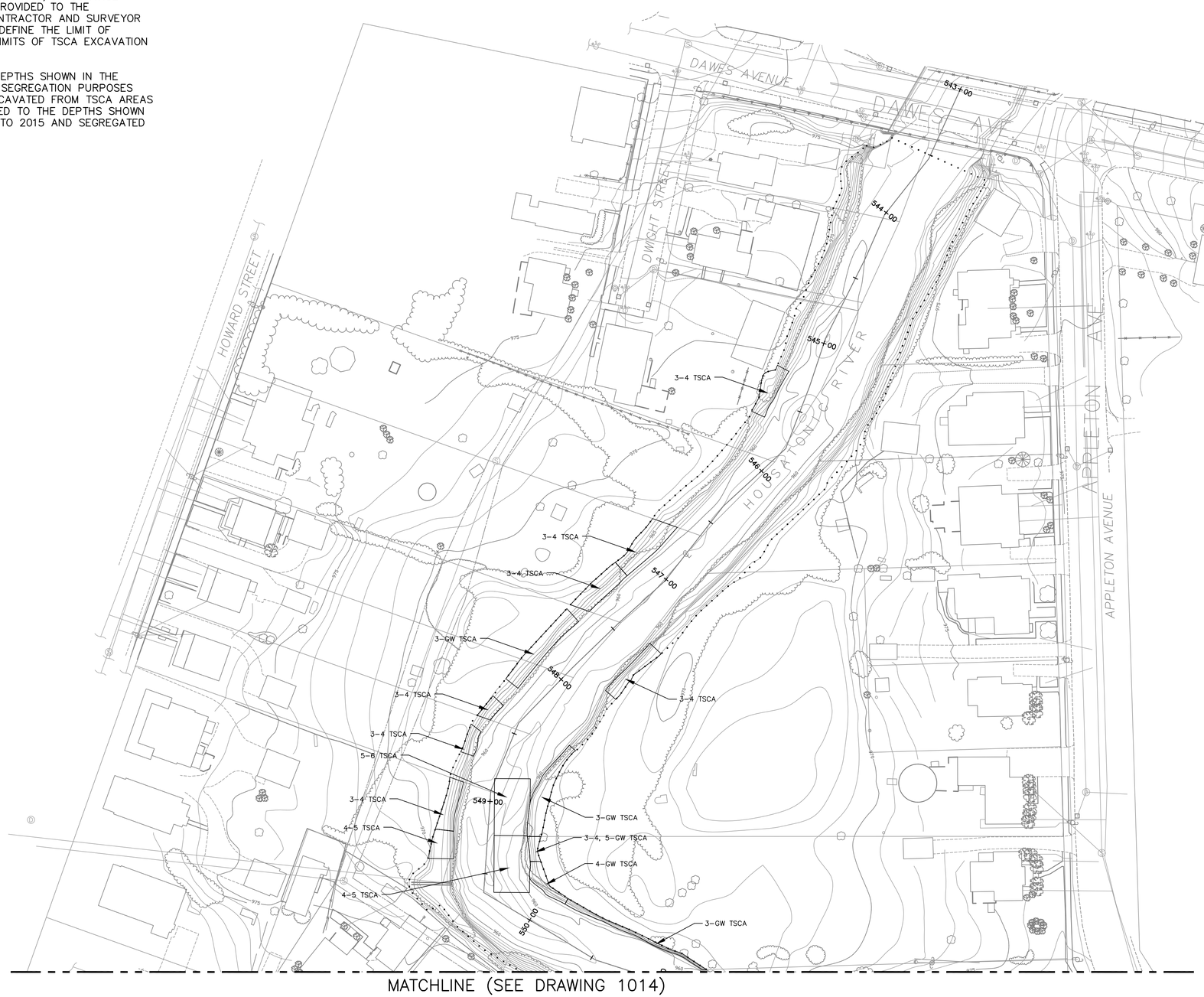
TSCA REMOVAL AREAS
0 TO 3 FOOT DEPTH INTERVAL
4 OF 4

Sheet reference number:
1012
13 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0-3m\Design Drawings - Phase III\1009-1012.dwg, 1012, 2/8/2005 11:26:52 AM, glenndeb, 1:1

NOTES:

1. ALL AREAS SHALL BE EXCAVATED AS NON-TSCA MATERIAL EXCEPT WHERE NOTED AS TSCA MATERIAL.
2. MATERIALS EXCAVATED FROM AREAS BEYOND THE LIMIT OF REMEDIATION SHALL BE SEGREGATED FOR CHARACTERIZATION, AS DIRECTED BY THE ENGINEER. SEE CROSS-SECTIONS FOR THESE LOCATIONS (SHEETS 2007-2014).
3. ELECTRONIC CAD FILES AND/OR CONTROL POINTS SHALL BE PROVIDED TO THE EXCAVATION SUBCONTRACTOR AND SURVEYOR AS NECESSARY TO DEFINE THE LIMIT OF REMEDIATION AND LIMITS OF TSCA EXCAVATION IN THE FIELD.
4. TSCA AREAS AND DEPTHS SHOWN IN THE RIVERBED ARE FOR SEGREGATION PURPOSES ONLY. MATERIAL EXCAVATED FROM TSCA AREAS SHALL BE EXCAVATED TO THE DEPTHS SHOWN IN DRAWINGS 2007 TO 2015 AND SEGREGATED AS TSCA MATERIAL.



GRAPHIC SCALE
40 20 0 20 40
APPROXIMATE SCALE IN FEET

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05					
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
B	FINAL DESIGN	10/8/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev: D
Design file no:
SPEC. No.:
File name: 1013-1016.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ENVIRONMENTAL INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
TSCA REMOVAL AREAS
GREATER THAN 3 FOOT DEPTH INTERVAL
1 OF 4

Sheet reference number:
1013
14 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_3.5m\Design Drawings - Phase III\1013-1016.dwg, 1013, 2/8/2005 11:28:21 AM, gjoradeb, 1:1

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1013-1016.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

TSCA REMOVAL AREAS
GREATER THAN 3 FOOT DEPTH INTERVAL
2 OF 4

Sheet reference number:
1014
15 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1013-1016.dwg, 1014, 2/8/2005 11:29:25 AM, glorndeb, 1:1

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1013-1016.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

TSCA REMOVAL AREAS
GREATER THAN 3 FOOT DEPTH INTERVAL
3 OF 4

Sheet reference number:
1015
16 OF 45

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1013-1016.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

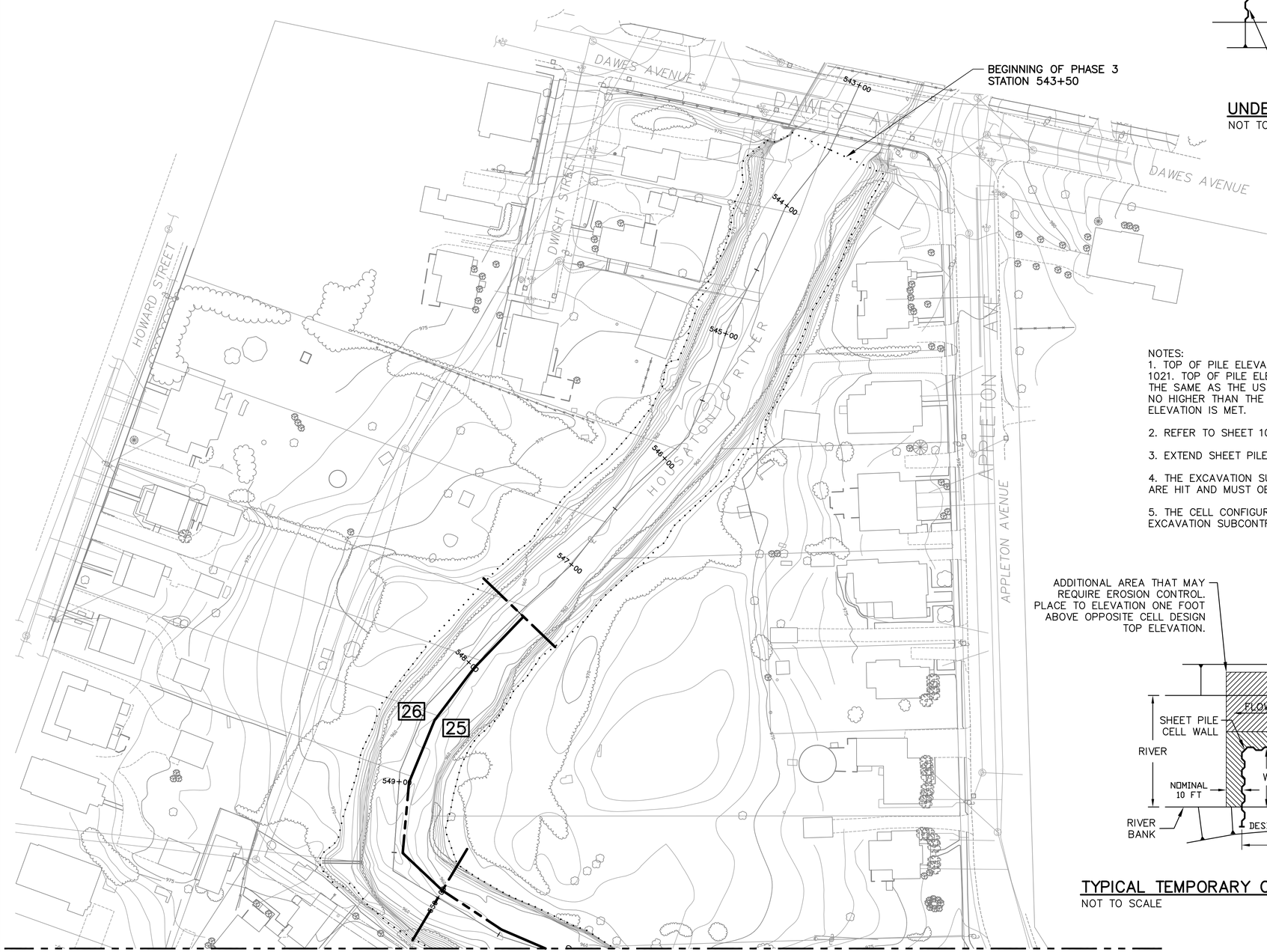
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

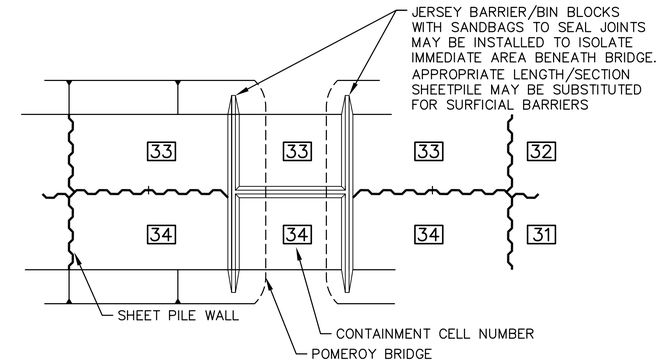
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
TSCA REMOVAL AREAS
GREATER THAN 3 FOOT DEPTH INTERVAL
4 OF 4

Sheet reference number:
1016
17 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1013-1016.dwg, 1016, 2/8/2005 11:31:47 AM, glenndeb, 1:1





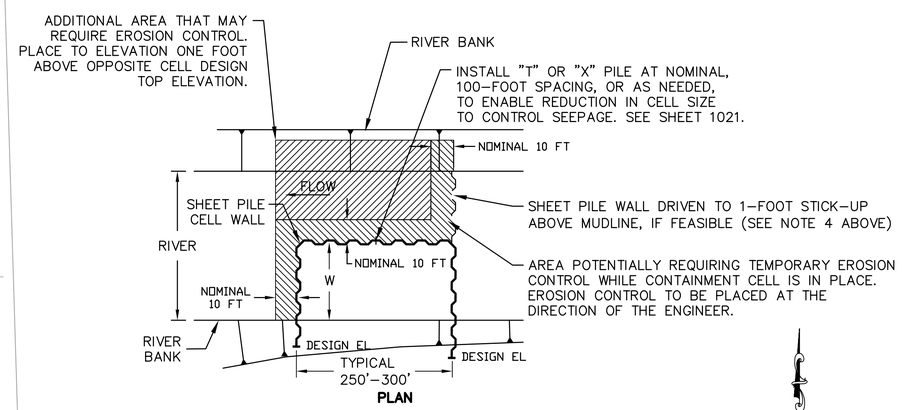
UNDER POMEROY AVENUE BRIDGE DETAIL

NOT TO SCALE

NOTE:
EXCAVATION SUBCONTRACTOR MAY PROPOSE ALTERNATE METHOD TO DIVERT RIVER BENEATH POMEROY AVENUE, SUBJECT TO THE APPROVAL OF THE ENGINEER.

NOTES:

1. TOP OF PILE ELEVATION ON THE US SIDE SHALL BE AS INDICATED ON TABLE 1 OF DRAWING 1021. TOP OF PILE ELEVATION ALONG THE CENTER OF THE RIVER AND THE DS SIDE SHALL BE THE SAME AS THE US SIDE. AT THE US END OF EACH CELL, A MINIMUM OF 2 SHEETS MUST BE NO HIGHER THAN THE DESIGN ELEVATION FOR PURPOSES OF OVERFLOW, ASSUMING TOE ELEVATION IS MET.
2. REFER TO SHEET 1021.
3. EXTEND SHEET PILES UPLAND SUFFICIENTLY TO CONTROL SEEPAGE.
4. THE EXCAVATION SUBCONTRACTOR SHALL VERIFY DRIVING PROCEDURES WHEN OBSTRUCTIONS ARE HIT AND MUST OBTAIN APPROVAL FROM THE ENGINEER TO PROCEED FURTHER.
5. THE CELL CONFIGURATION SHOWN ON THESE DRAWINGS MAY BE ALTERED BY THE EXCAVATION SUBCONTRACTOR, SUBJECT TO THE APPROVAL OF THE ENGINEER.



TYPICAL TEMPORARY CONTAINMENT CELL CONFIGURATION

NOT TO SCALE

GRAPHIC SCALE
40 20 0 20 40
APPROXIMATE SCALE IN FEET

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1017-1020.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

SHEET PILE CONTAINMENT CELL LAYOUT
1 OF 4

Sheet reference number:
1017
18 OF 45

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1017-1020.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

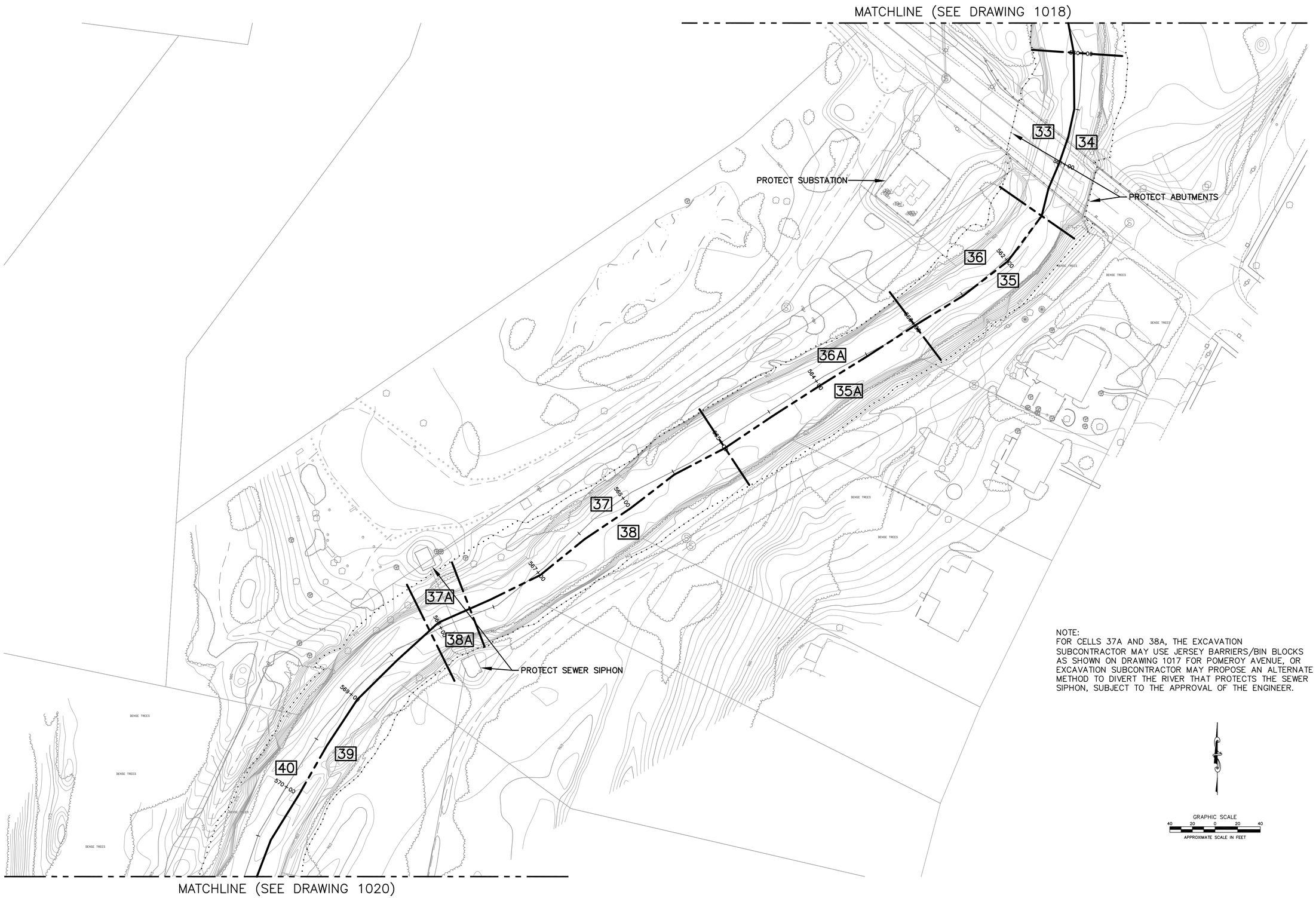
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

SHEET PILE CONTAINMENT CELL LAYOUT
2 OF 4

Sheet reference number:
1018
19 OF 45

m:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\1017-1020.dwg, 1018, 2/8/2005 11:34:06 AM, glandab, 1:1



NOTE:
FOR CELLS 37A AND 38A, THE EXCAVATION SUBCONTRACTOR MAY USE JERSEY BARRIERS/BIN BLOCKS AS SHOWN ON DRAWING 1017 FOR POMEROY AVENUE, OR EXCAVATION SUBCONTRACTOR MAY PROPOSE AN ALTERNATE METHOD TO DIVERT THE RIVER THAT PROTECTS THE SEWER SIPHON, SUBJECT TO THE APPROVAL OF THE ENGINEER.

GRAPHIC SCALE
40 20 0 20 40
APPROXIMATE SCALE IN FEET

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr.

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1017-1020.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

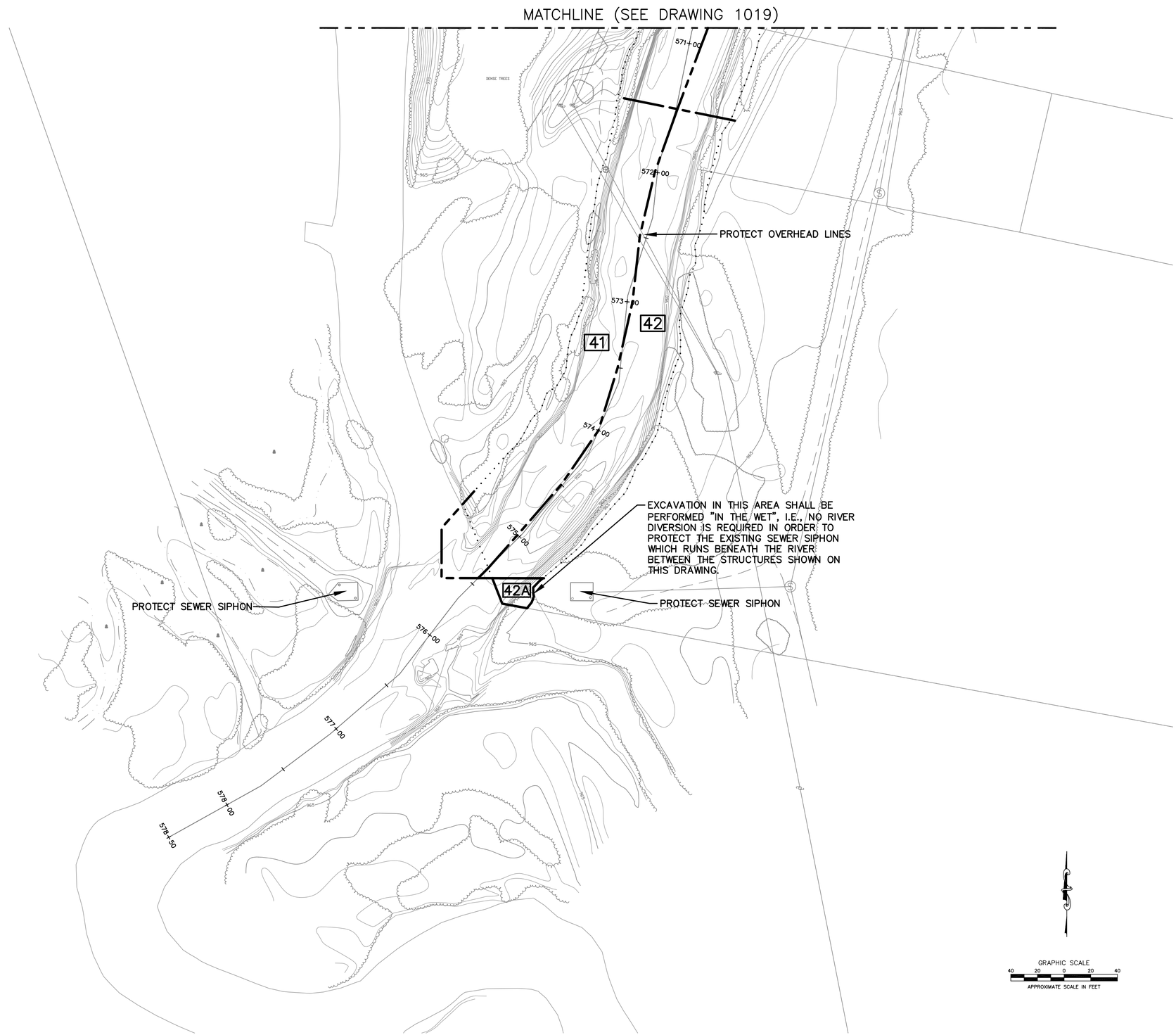
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 563+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

SHEET PILE CONTAINMENT CELL LAYOUT
3 OF 4

Sheet reference number:
1019
20 OF 45

M:\Design\PWO\WOOD\SSERC\2ra4_0.5m\Design Drawings - Phase III\1017-1020.dwg, 1019, 2/8/2005 11:35:00 AM, glorndab, 1:1



FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr.

Designed by: TD/RJ
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1017-1020.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

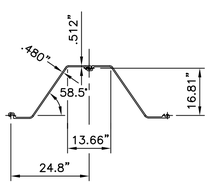
SHEET PILE CONTAINMENT CELL LAYOUT
4 OF 4

Sheet reference number:
1020
21 OF 45

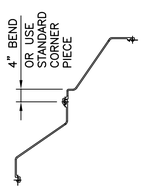
M:\Design\DWG\MCGE\SSERC\3rd_D.Sm\Design Drawings - Phase III\1017-1020.dwg, 1020, 2/8/2005 11:36:04 AM, glenndb, 1:1

NOTES:

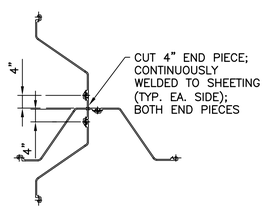
1. MINIMUM REQUIRED SECTION MODULUS IS BASED ON THE CALCULATED BENDING MOMENT, IT DOES NOT TAKE INTO CONSIDERATION INSTALLATION. BASED ON PREVIOUSLY COMPLETED WORK IN PHASE 1 AND 2, THE USE OF A SHEET PILE SECTION WITH A SECTION MODULUS OF AT LEAST 48 IN3/FT IS RECOMMENDED.
2. SHEET PILE MUST BE EMBEDDED IN DENSE TO VERY DENSE SOILS. INSTALLATION OF SHEET PILING MUST BE MONITORED TO CONFIRM DRIVING CONDITIONS. IF EMBEDMENT INTO DENSE SOILS IS NOT ACHIEVED, THE STICKUP HEIGHT MUST BE REDUCED TO PREVENT SHEETPILE FAILURES DUE TO EXCESSIVE WATER HEIGHT.
3. EXCAVATION SUBCONTRACTOR SHALL FIRST USE SHEETPILE CURRENTLY ON-SITE BEFORE PURCHASING NEW SHEETPILE TO THE EXTENT PRACTICABLE. CURRENT INVENTORY IS 3,20' PAIRS, 152,30' PAIRS, AND 20,30' CORNERS, ALL AZ-26 SECTION.
4. DESIGN ELEVATION SUBJECT TO CHANGE BASED ON FINDINGS OF TEST DRIVING ACTIVITIES.
5. DESIGN ELEVATIONS ARE BASED ON MINIMUM CHANNEL ELEVATIONS WITHIN THE CELL AREA TO ACCOUNT FOR THE ALLOWABLE WATER DEPTHS. THESE ELEVATIONS MAY BE INCREASED WITH APPROVAL OF THE ENGINEER IF WORK IN THE VICINITY OF THE MINIMUM CHANNEL ELEVATION AREAS DOES NOT OCCUR DURING HIGH WATER CONDITIONS.
6. SHEETPILE INSTALLATION SHALL BE TERMINATED IF EXCESSIVE VIBRATION AND/OR REFUSAL IS ENCOUNTERED. FURTHER ATTEMPTS TO DRIVE SHEETPILE SHALL BE PERFORMED AT THE DIRECTION OF THE ENGINEER.



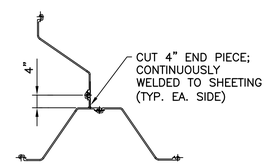
SHEET PILE "ARBED AZ26"



TYP. CORNER DETAIL



TYP. INTERSECTION DETAIL



TYP. TEE INTERSECTION

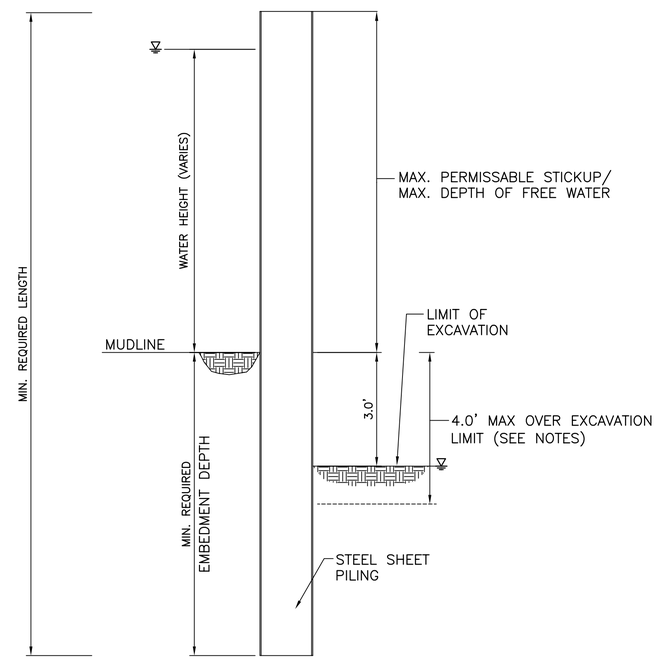
STRUCTURAL DETAILS

NOT TO SCALE

ARBED AZ26 SHOWN; ACTUAL SHEET PILING MAY DIFFER (SEE NOTES)

MATERIAL REQUIREMENTS

1. ALL STEEL SHEET PILING SHALL CONSIST OF Z-SECTIONS WITH A MINIMUM SECTION MODULUS AND A MINIMUM LENGTH AS INDICATED IN TABLE 1 BELOW. HOT-ROLLED "WATERTIGHT" INTERLOCKS ARE REQUIRED.
2. ALL STEEL SHEET PILING SHALL BE MANUFACTURED FROM ASTM A572, GRADE 50 STEEL. USED SHEETS ARE ACCEPTABLE.
3. CONTRACTOR SHALL PROVIDE JUNCTION CONNECTIONS AS REQUIRED TO CONSTRUCT CELLS



TYPICAL SHEET PILE SECTION

NOT TO SCALE

EXCAVATION REQUIREMENTS

DURING EXCAVATION ACTIVITIES THE FOLLOWING CRITERIA MUST BE SATISFIED:

A. THE EXCAVATION DEPTH SHALL BE LIMITED TO THE DEPTHS AND CONDITIONS SHOWN IN THE TABLE ABOVE.

B. IF EXCAVATION IS REQUIRED BELOW THE DEPTHS SHOWN IN THE TABLE ABOVE, IT WILL BE PERFORMED AT THE DIRECTION OF THE ENGINEER. THE ENGINEER MAY REQUIRE LIMITS AND CONDITIONS ON HOW AND WHEN THE EXCAVATION CAN BE SAFELY PERFORMED.

C. EXCAVATION LIMITATIONS SHOWN ON THE TABLE ARE SUBJECT TO CHANGE BASED ON THE DEPTH OF EMBEDMENT ACHIEVED AND ACTUAL FIELD CONDITIONS.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr.

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 1021.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

SHEETPILE INSTALLATION DETAILS

Sheet reference number:
1021
22 OF 45

M:\Design\DWG\WCOR\SSERC\2ra4_0.5m\Design Drawings - Phase III\1021.dwg, 1021, 2/8/2005 11:37:50 AM, gradeb, 1:1

LEGEND

- 2H:1V
- 1.5H:1V OR FLATTER
- 1.75H:1V OR FLATTER
- MATCH EXISTING GRADE (NO STEEPER THAN 2H:IV)

GRAPHIC SCALE
40 20 0 20 40
APPROXIMATE SCALE IN FEET

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
B	FINAL DESIGN	10/21/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by:
Dwn by: E.DIFATTA
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name:
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

GRADING PLAN
SHEET 1 OF 4

Sheet reference number:
2000
23 OF 45

LEGEND

- 2H:1V
- 1.5H:1V OR FLATTER
- 1.75H:1V OR FLATTER
- MATCH EXISTING GRADE (NO STEEPER THAN 2H:IV)

GRAPHIC SCALE

40 20 0 20 40

APPROXIMATE SCALE IN FEET

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by:
Dwn by: E.DIFATTA
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Section

Date:
Rev. C
Design file no:
SPEC. No.:
File name:
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

GRADING PLAN
SHEET 2 OF 4

Sheet reference number:
2001
24 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\2001-2003.dwg, 2001, 2/8/2005 11:41:51 AM, gjoradek, 1:1

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by:
Dwn by: E.DIFATTA
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name:
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

GRADING PLAN
SHEET 3 OF 4

Sheet reference number:
2002
25 OF 45

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by:
Dwn by: E.DIFATTA
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name:
Plot date: 1-21-05
Plot scale: AS SHOWN

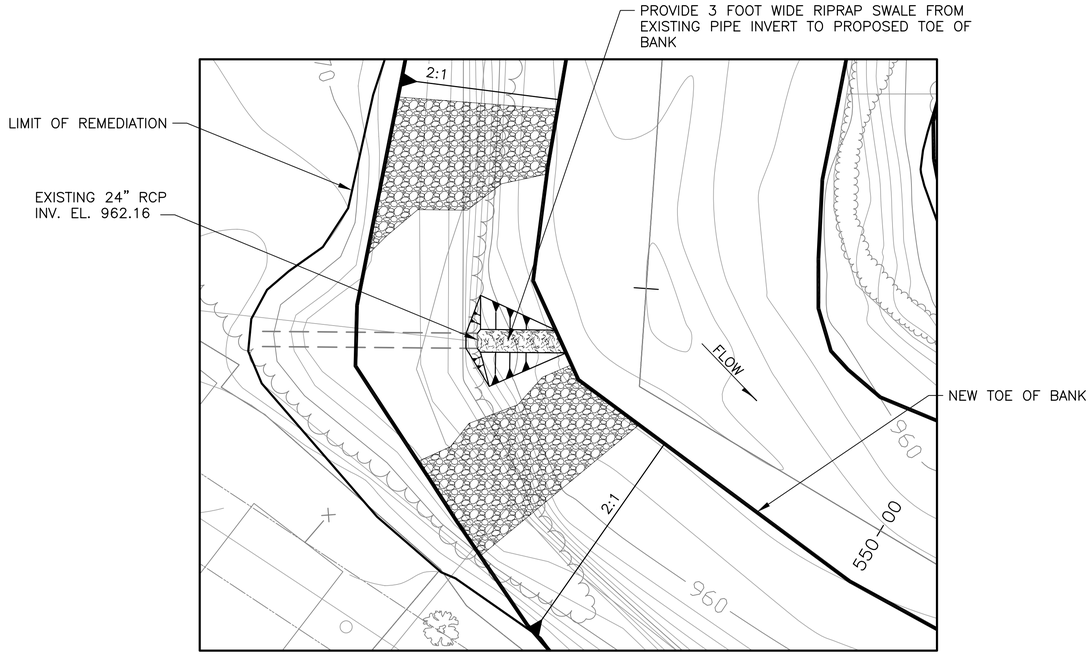
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

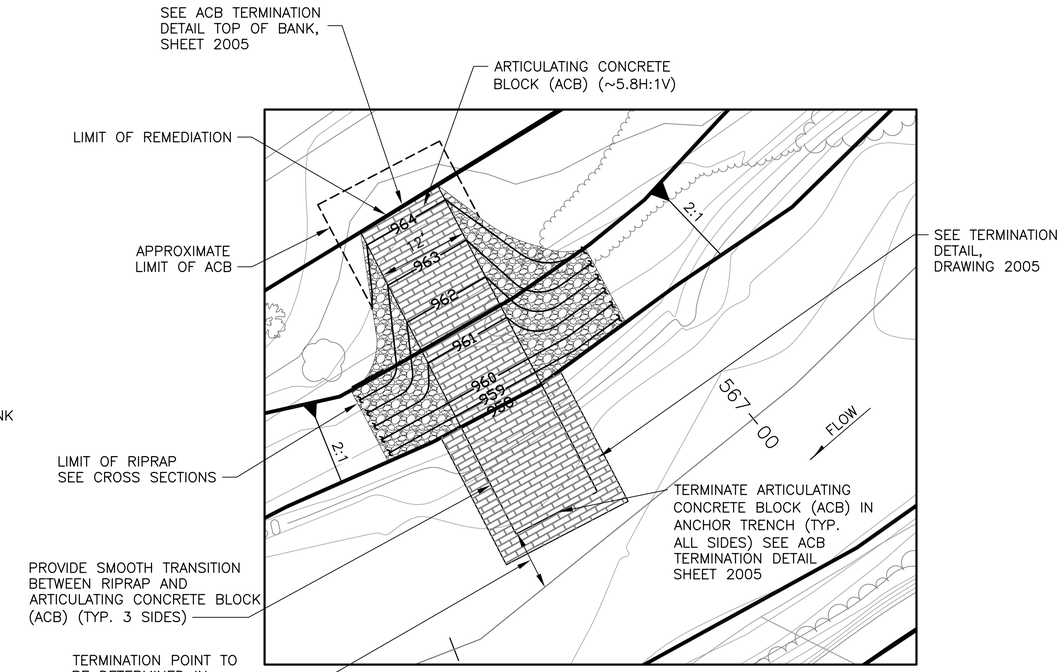
1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

GRADING PLAN
SHEET 4 OF 4

Sheet reference number:
2003
26 OF 45

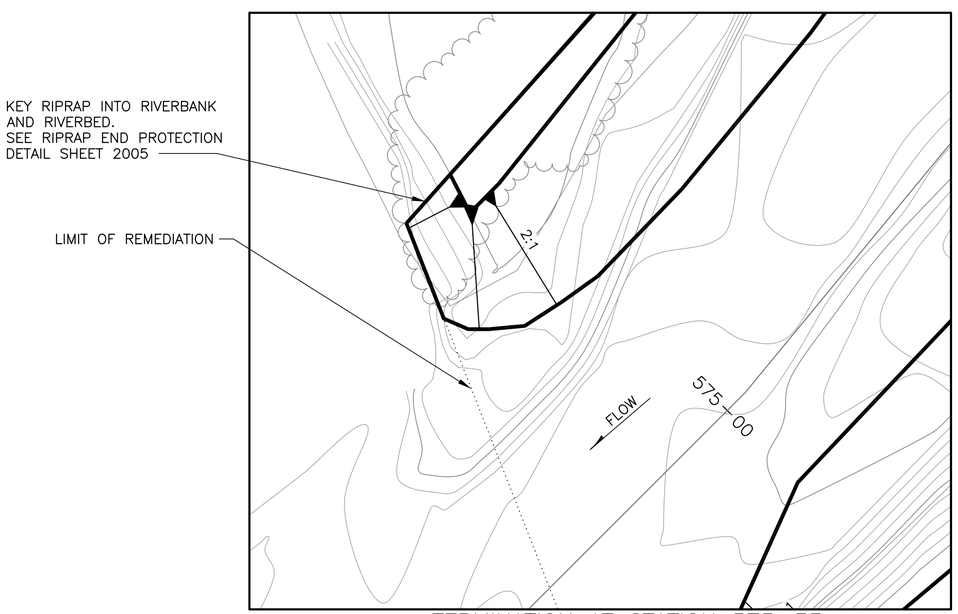


ARMORING PLAN AT STATION 549+50

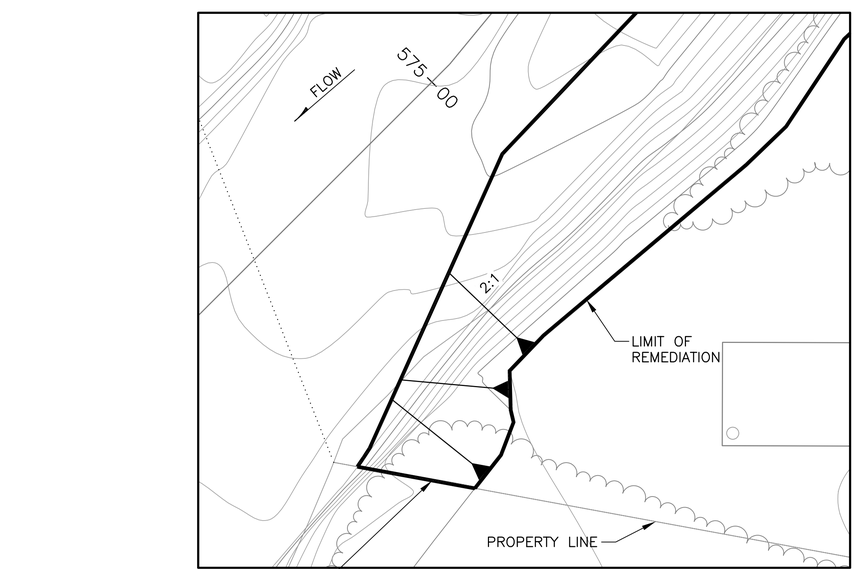


CANOE LAUNCH PLAN AT STATION 567+29
(FRED GARNER PARK)

NOTE:
EXCAVATION SUBCONTRACTOR MAY PROPOSE AN ALTERNATE METHOD OR MATERIALS TO CONSTRUCT CANOE LAUNCH, SUBJECT TO THE APPROVAL OF THE ENGINEER.



TERMINATION AT STATION 575+33
RIGHT (WEST SIDE)



TERMINATION AT STATION 575+33
LEFT (EAST SIDE)

10' 0 10' 20'
SCALE: 1"=10'-0"

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
C	FINAL DESIGN (COMPLETE PACKAGE)	10/7/04	
B	FINAL DESIGN	10/7/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by:
Dwn by: E.DIFATTA
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name:
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

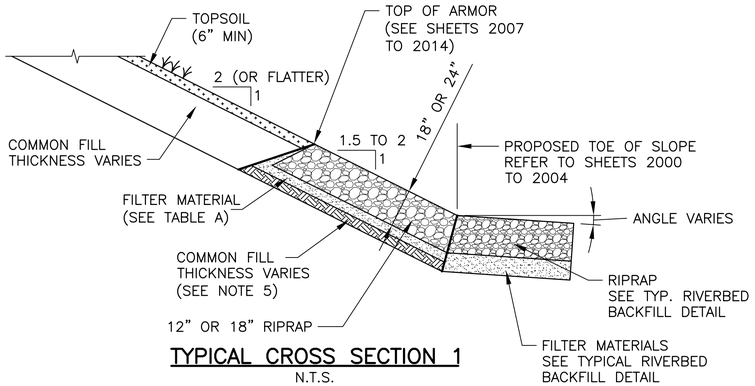
WESTON SOLUTIONS
WOODLOT ENVIRONMENTAL INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

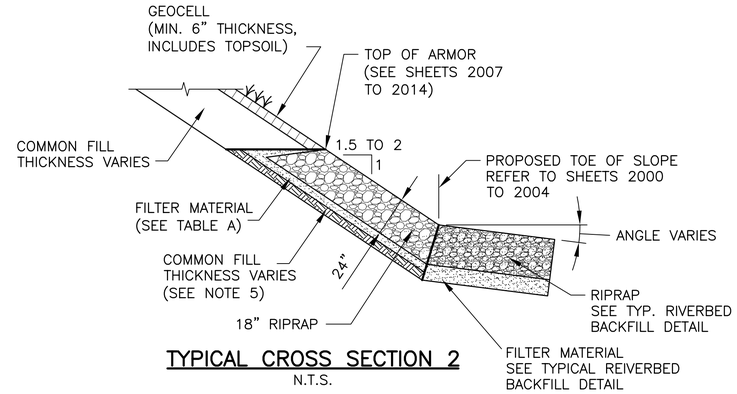
ENLARGED GRADING PLAN

Sheet reference number:
2004
27 OF 45

M:\Design\DWG\AGE\SSERC\2nd_0.5mi\Design Drawings - Phase III\2004.dwg, Layout1, 2/8/2005 12:38:30 PM, gjoneleb, 1:1



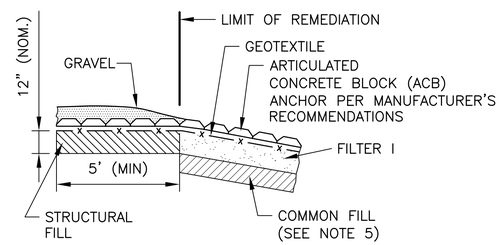
TYPICAL CROSS SECTION 1
N.T.S.



TYPICAL CROSS SECTION 2
N.T.S.

NOTES:

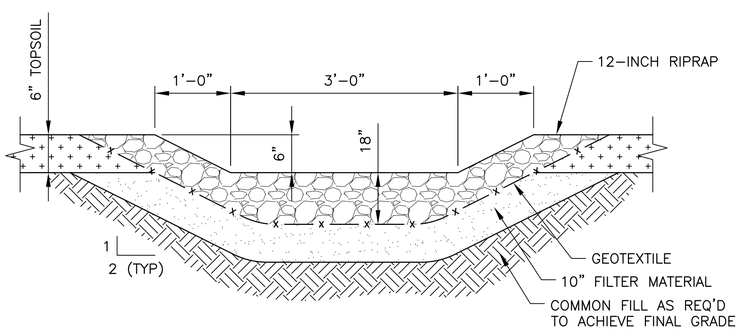
1. FINAL GRADES ARE HORIZONTAL TO VERTICAL (H:V).
2. SEE SPECIFICATION 02300 FOR RIPRAP AND FILTER LAYER MATERIAL REQUIREMENTS.
3. RIPRAP SHALL BE CONTINUOUS ACROSS RIVERBED UNLESS ROCK OUTCROPS ARE ENCOUNTERED IN WHICH CASE RIPRAP SHALL BE TRANSITIONED SMOOTHLY INTO BEDROCK OUTCROP.
4. FILTER MATERIAL THICKNESS BENEATH RIVERBANK RIP RAP SHALL BE AS INDICATED IN TABLE A.
5. AT EXCAVATION SUBCONTRACTOR'S OPTION AND SUBJECT TO THE APPROVAL OT THE ENGINEER, COMMON FILL PLACED BENEATH FILTER MATERIAL MAY BE ELIMINATED AND REPLACED WITH FILTER MATERIAL TO ELIMINATE THE NEED FOR PLACEMENT OF THIN LAYER OF COMMON FILL. (I.E., LESS THAN OR EQUAL TO 5 INCHES). FILTER MATERIAL PLACED IN THIS MANNER WILL BE PAID AS COMMON FILL.
6. COMMON FILL THICKNESS BENEATH TOP SOIL SHALL BE AS REQUIRED TO ACHIEVE FINAL GRADE.
7. THE MINIMUM TOP OF RIPRAP ARMOR ELEVATIONS WHICH MUST BE ACHIEVED ON THE RIVERBANK AT EACH STATION ARE SHOWN ON THE CROSS SECTIONS. EXCAVATION SUBCONTRACTOR TO MAKE AS SMOOTH A TRANSITION AS PRACTICAL IN TOP OF RIVERBANK RIPRAP ELEVATION BETWEEN STATIONS.
8. WITHIN BRIDGE OPENING PLACE RIPRAP TO EXISTING GRADE (+0,−6")
9. STRUCTURAL FILL MUST BE UTILIZED TO BACKFILL AREAS OF OVER EXCAVATION ON RIVERBANKS. STRUCTURAL FILL MUST BE PLACED AND COMPACTED PER THE REQUIREMENTS OUTLINED IN SPECIFICATION SECTION 02300, EARTHWORK.



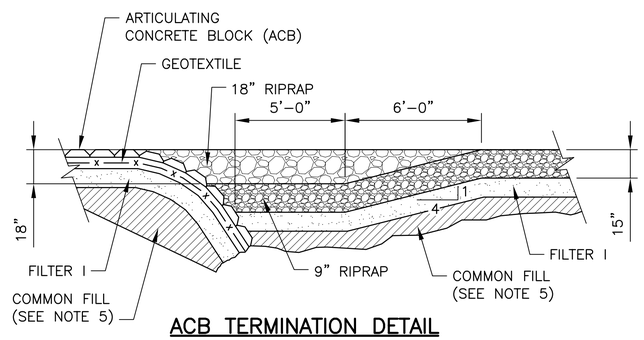
ACB TERMINATION DETAIL
TOP OF BANK
N.T.S.

TABLE A: RIVERBANK BACKFILL REQUIREMENTS

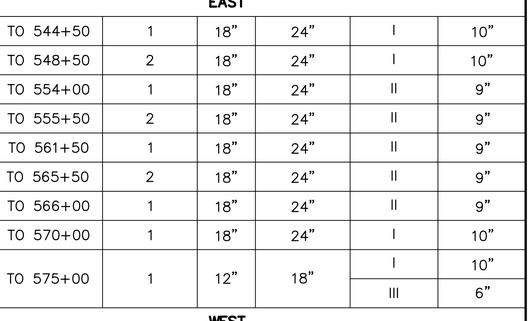
STATION	CROSS SECTION	RIPRAP		FILTER TYPE	FILTER THICKNESS (MIN)
		SIZE	THICKNESS		
EAST					
543+50 TO 544+50	1	18"	24"	I	10"
544+50 TO 548+50	2	18"	24"	I	10"
548+50 TO 554+00	1	18"	24"	II	9"
554+00 TO 555+50	2	18"	24"	II	9"
555+50 TO 561+50	1	18"	24"	II	9"
561+50 TO 565+50	2	18"	24"	II	9"
565+50 TO 566+00	1	18"	24"	II	9"
566+00 TO 570+00	1	18"	24"	I	10"
570+00 TO 575+00	1	12"	18"	I	10"
				III	6"
WEST					
543+50 TO 544+50	1	18"	24"	I	10"
544+50 TO 546+00	2	18"	24"	I	10"
546+00 TO 548+50	1	18"	24"	I	10"
548+50 TO 557+50	1	18"	24"	II	9"
557+50 TO 560+00	2	18"	24"	II	9"
560+00 TO 564+50	1	18"	24"	II	9"
564+50 TO 566+00	2	18"	24"	II	9"
566+00 TO 566+50	2	18"	24"	I	10"
566+50 TO 570+00	1	18"	24"	I	10"
570+00 TO 575+00	1	12"	18"	I	10"
				III	6"



RIPRAP SWALE DETAIL
N.T.S.

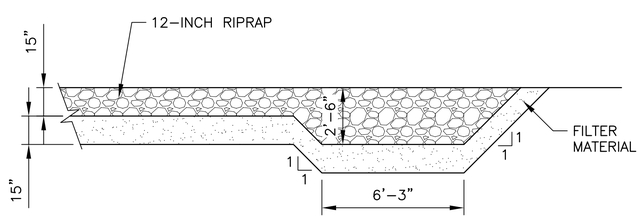


ACB TERMINATION DETAIL
(TYP. 3 SIDES)
N.T.S.



TYPICAL TERMINATION AT TOP OF BANK
N.T.S.

NOTE:
1. ELIMINATE 9" RIPRAP ON BANKS. PLACE 18" RIPRAP AS SPECIFIED IN TABLE A, ADJACENT TO ACB.



RIPRAP END PROTECTION
N.T.S.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	10/1/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: AH
Dwn by: E.DIFATTA
Ckd by: RWM
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2005-2006.DWG
Plot date: 1-21-05
Plot scale:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

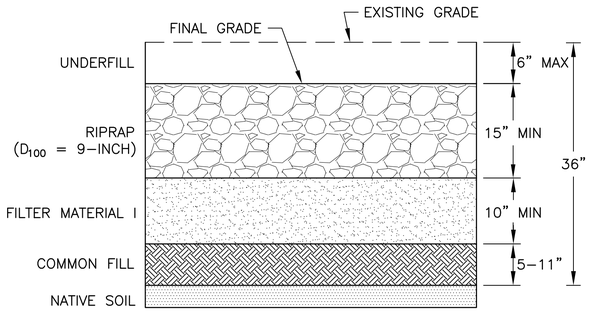
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA. 543+50 TO 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

RIVERBANK
ARMORING DETAILS

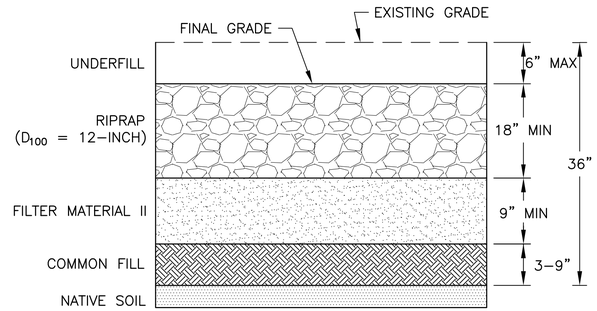
Sheet reference number:
2005
28 OF 45

M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\2005-2006.dwg, 2005-BANK, 1/8/2005 12:39:34 PM, glarsdeb, 1:1



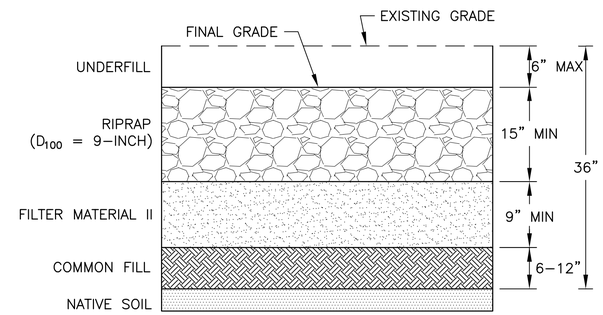
TYPICAL RIVERBED BACKFILL STA 543+50 TO 548+50

N.T.S.



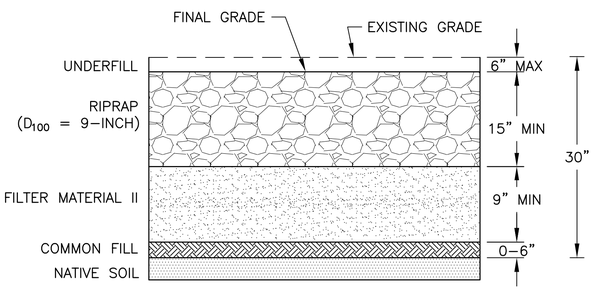
TYPICAL RIVERBED BACKFILL STA 548+50 TO 553+00

N.T.S.



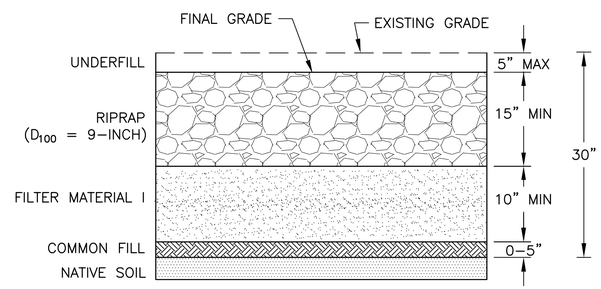
TYPICAL RIVERBED BACKFILL STA 553+00 TO 560+60

N.T.S.



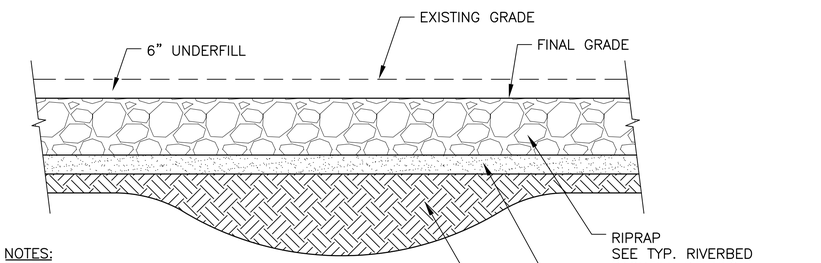
TYPICAL RIVERBED BACKFILL STA 560+60 TO 566+00

N.T.S.



TYPICAL RIVERBED BACKFILL STA 566+00 TO 570+00

N.T.S.

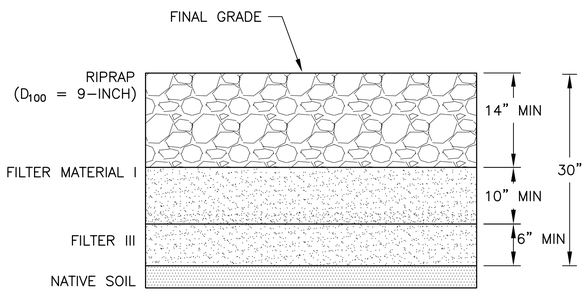


NOTES:

1. IF AND WHEN OVER–EXCAVATION IS REQUIRED, I.E. EXCAVATION GREATER THAN THE CUT DEPTH IDENTIFIED IN TABLE B BELOW, THE EXCAVATION SHALL BE BACKFILLED AS INDICATED ABOVE.
2. IF BEDROCK IS ENCOUNTERED WITHIN 2.5 FEET OF THE RIVERBED SURFACE, BACKFILL AREA WITH 9–INCH RIPRAP OR AS OTHERWISE DIRECTED BY THE ENGINEER.

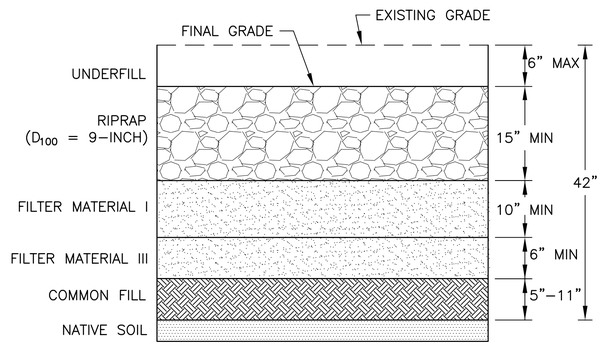
RESTORATION OF ISOLATED OVER–EXCAVATION DETAIL

N.T.S.



TYPICAL RIVERBED BACKFILL STA 570+00 TO 573+95

N.T.S.



TYPICAL RIVERBED BACKFILL STA 573+95 TO 575+33

N.T.S.

NOTES:

1. IF BEDROCK IS ENCOUNTERED WITHIN 2.5 FEET OF THE EXISTING RIVERBED SURFACE, BACKFILLING IS NOT REQUIRED, UNLESS DIRECTED BY THE ENGINEER.

TABLE B:

STATION	CUT (IN)	FILL THICKNESS (IN.)						
		COMMON FILL		FILTER MATERIAL			9" RIPRAP	MAX UNDERFILL
		MIN	MAX	F I	F II	F III		INCHES
543+50 TO 548+50	36	5	11	10	0	0	15	6
548+50 TO 553+00	36	3	9	0	9	0	18*	6
553+00 TO 560+60	36	6	12	0	9	0	15	6
560+60 TO 566+00	30	0	6	0	9	0	15	6
566+00 TO 570+00	30	0	5	10	0	0	15	5
570+00 TO 573+95	30	0	0	10	0	6	14	0
573+95 TO 575+33	42	5	11	10	0	6	15	6

* DENOTES THE USE OF 12" RIPRAP

NOTES:

1. AT THE EXCAVATION SUBCONTRACTOR'S OPTION COMMON FILL THICKNESS LESS THAN 5" MAY BE SUBSTITUTED WITH APPROPRIATE FILTER MATERIAL TO ACHIEVE DESIRED UNDERFILL, SUBJECT TO THE APPROVAL OF THE ENGINEER. FILTER MATERIAL PLACED IN THIS MANNER WILL BE PAID AS COMMON FILL.
2. MINIMUM THICKNESS FOR FILTER MATERIALS ARE AS FOLLOWS:
   FILTER I = 10"
   FILTER II = 9"
   FILTER III = 6"
3. WITHIN THE RIVERBED AT LEAST 5 FEET BEYOND THE TOE OF SLOPE, AREAS THAT ARE OVER EXCAVATED MAY BE BACKFILLED WITH COMMON FILL, STRUCTURAL FILL, OR OTHER ENGINEER APPROVED MATERIAL THAT CAN BE COMPACTED TO DENSE, STABLE, AND UNYIELDING CONDITION.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	12/7/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	10/7/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: AH
Dwn by: E.DIFATTA
Ckd by: RWM
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2005-2006.DWG
Plot date: 1-21-05
Plot scale:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

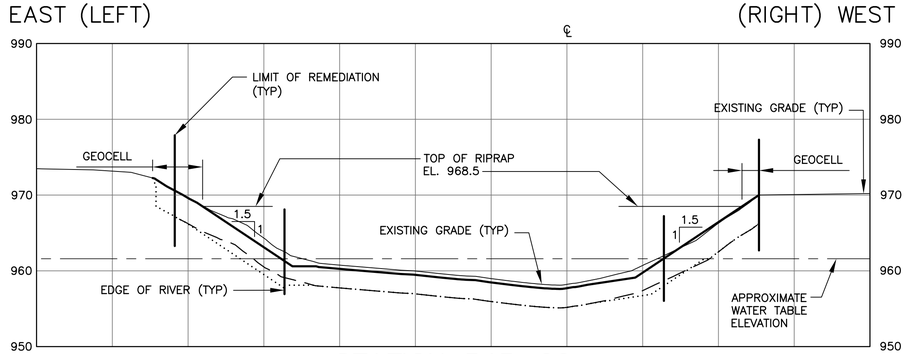
WESTON SOLUTIONS
WOODLOT ENVIRONMENTAL INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

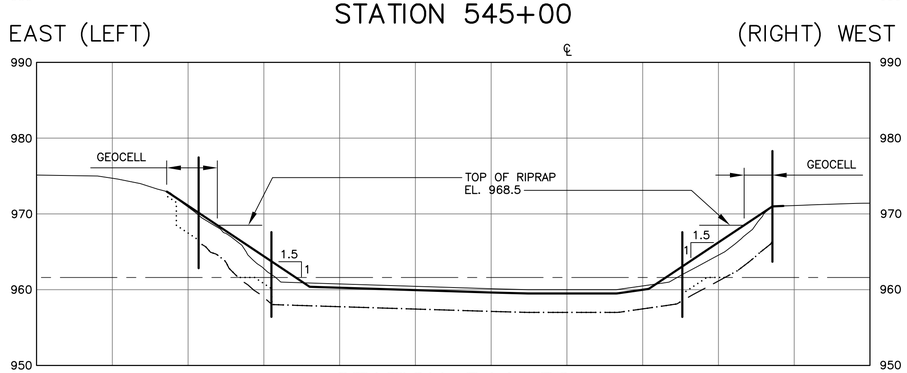
RIVERBED
ARMORING DETAILS

Sheet reference number:
2006
29 OF 45

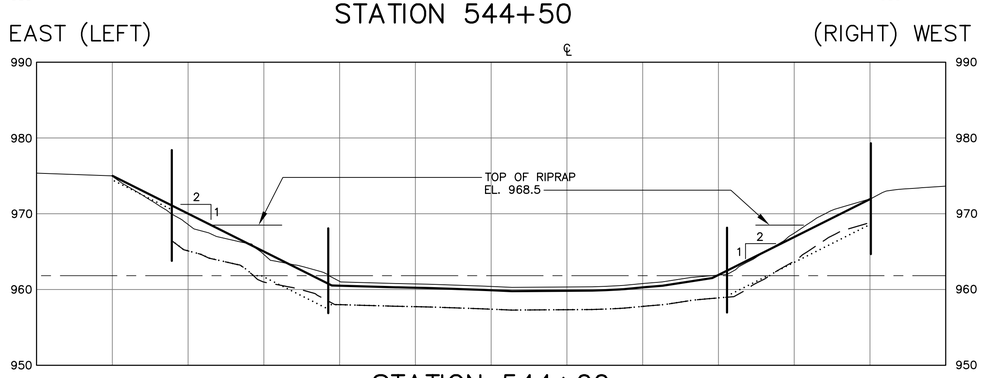
M:\Design\PWO\ACOE\SSERC\2nd_0.5m\Design Drawings – Phase III\2005-2006.dwg, 2006-RED, 2/8/2005 12:40:40 PM, gindeb, 1:1



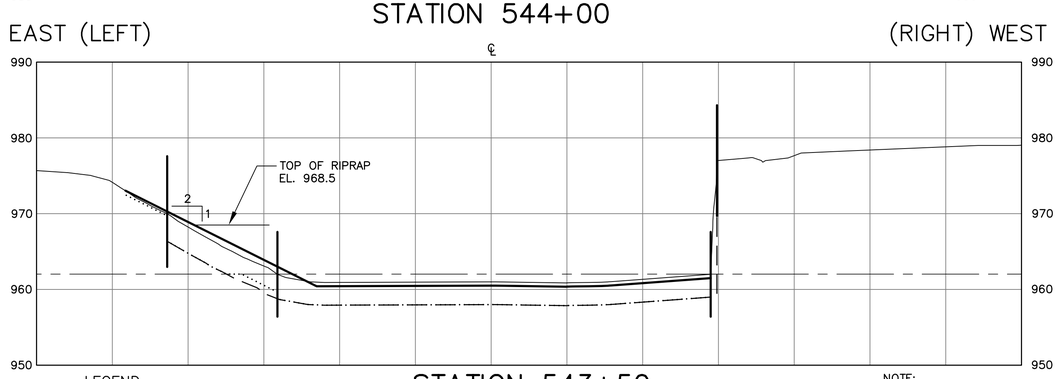
STATION 545+00



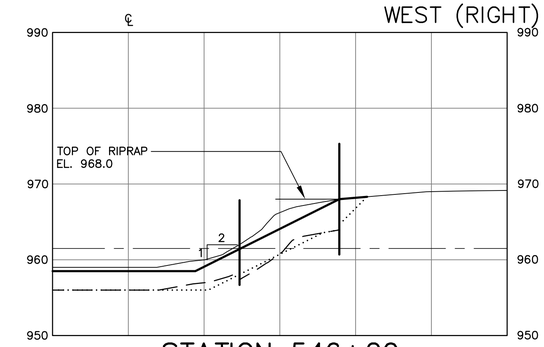
STATION 544+50



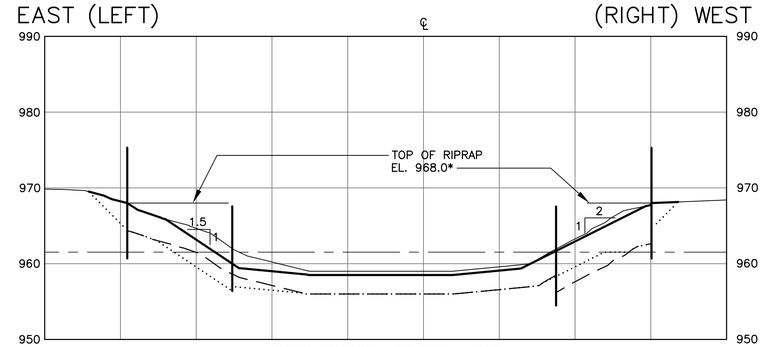
STATION 544+00



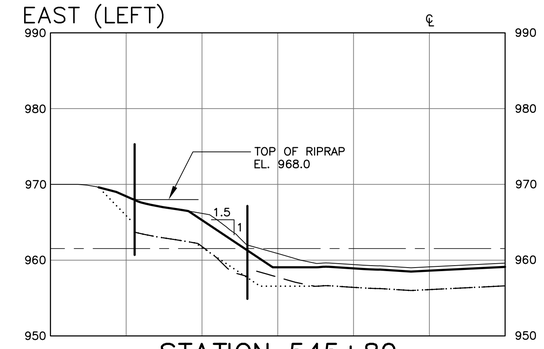
STATION 543+50



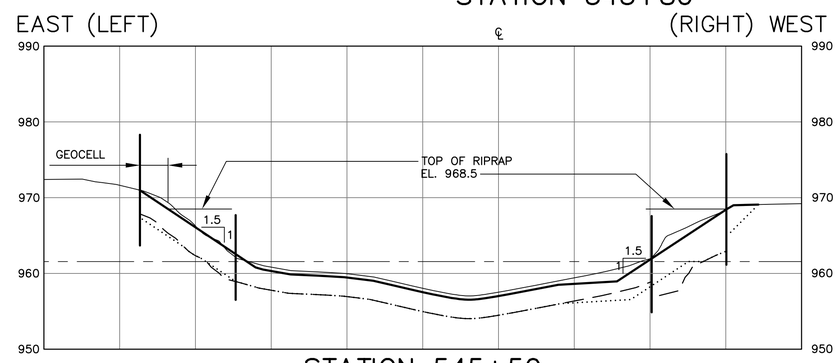
STATION 546+20



STATION 546+00



STATION 545+80



STATION 545+50

LEGEND

- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△3 DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:

1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
B	FINAL DESIGN	10/7/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

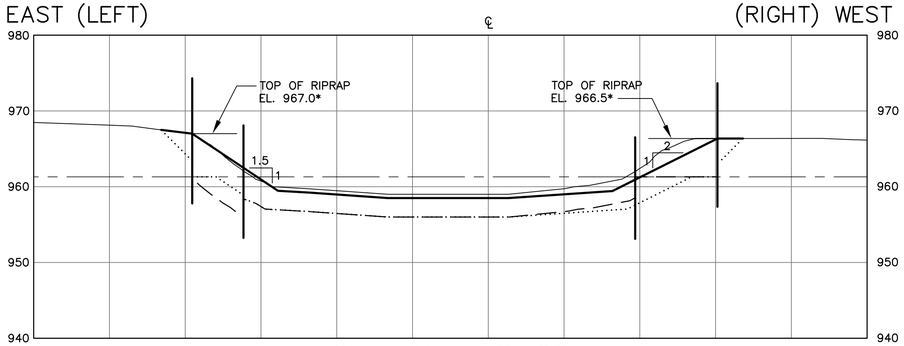
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

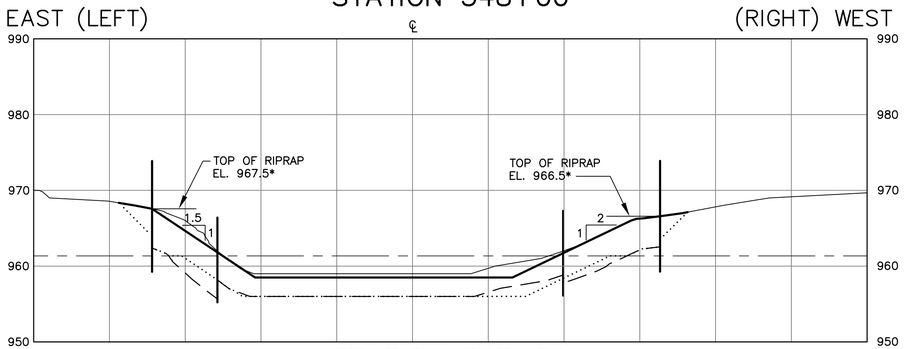
CROSS-SECTIONS
SHEET 1 OF 9

Sheet reference number:
2007
30 OF 45

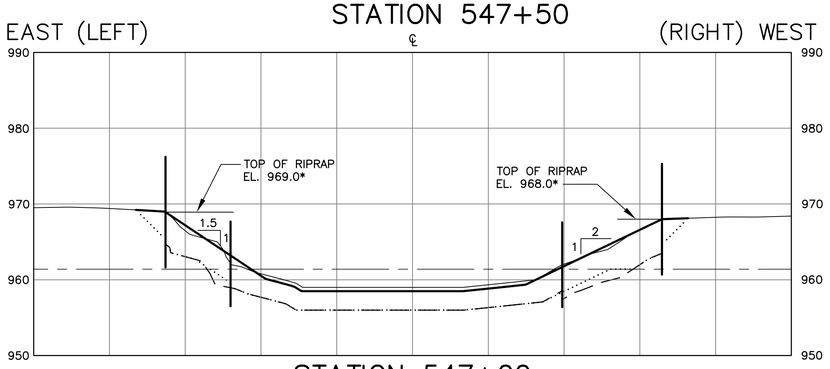
M:\Design\DWG\ACOE\SSERC\2nd_0.5m\Design Drawings - Phase III\2007-2015.dwg, 2007, 2/8/2005 12:43:04 PM, gilardelo, 1:1



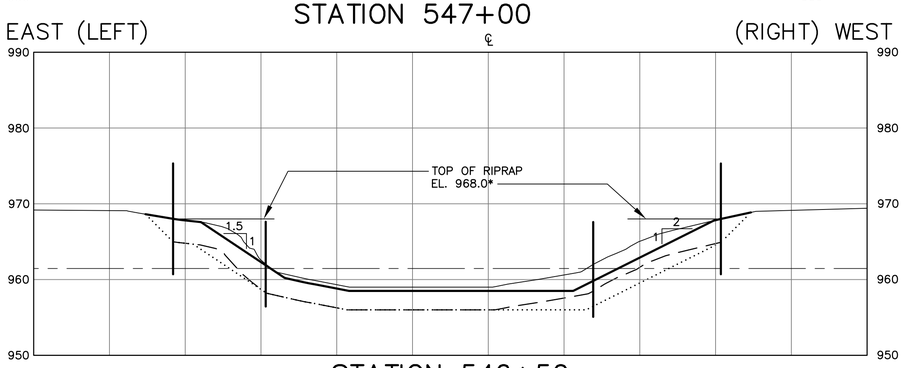
STATION 548+00



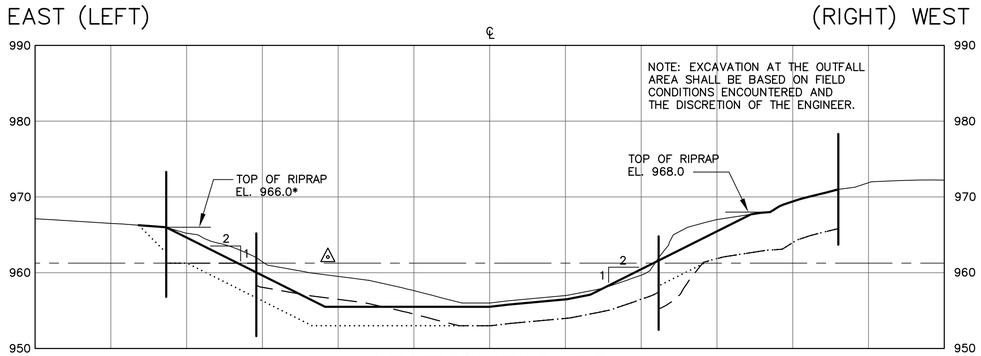
STATION 547+50



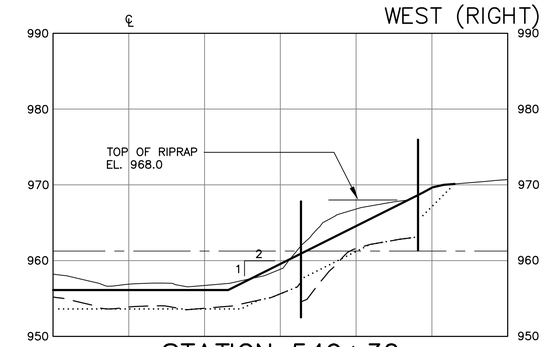
STATION 547+00



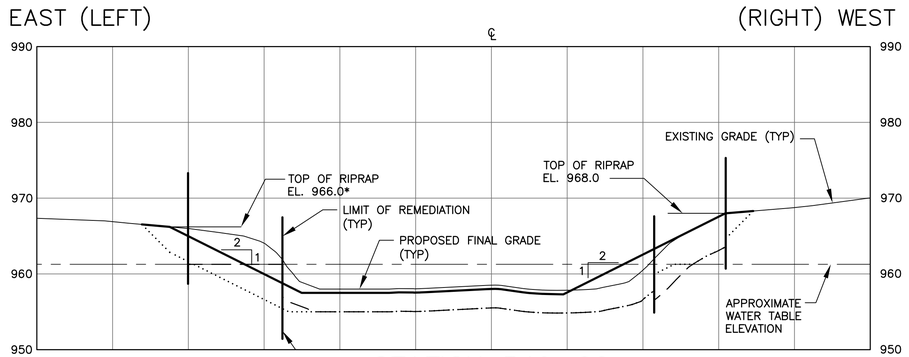
STATION 546+50



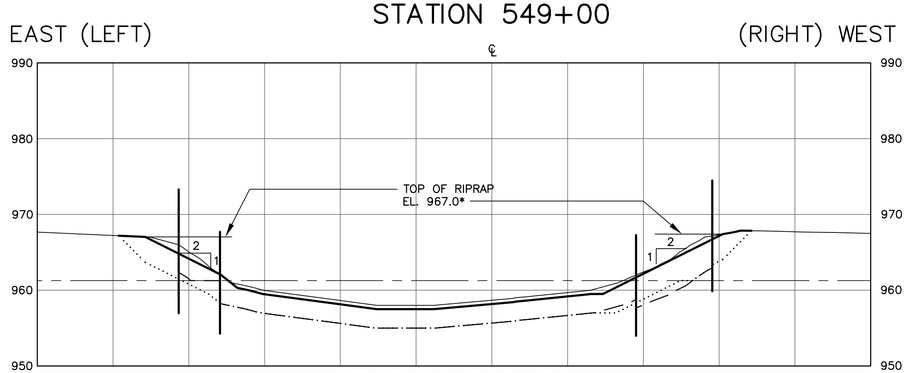
STATION 549+50



STATION 549+30



STATION 549+00



STATION 548+50

LEGEND

- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△3 DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
D	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
B	FINAL DESIGN	10/7/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

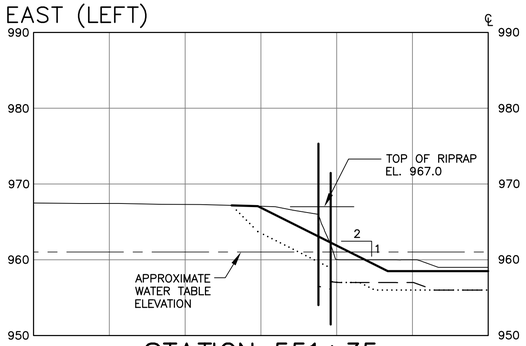
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

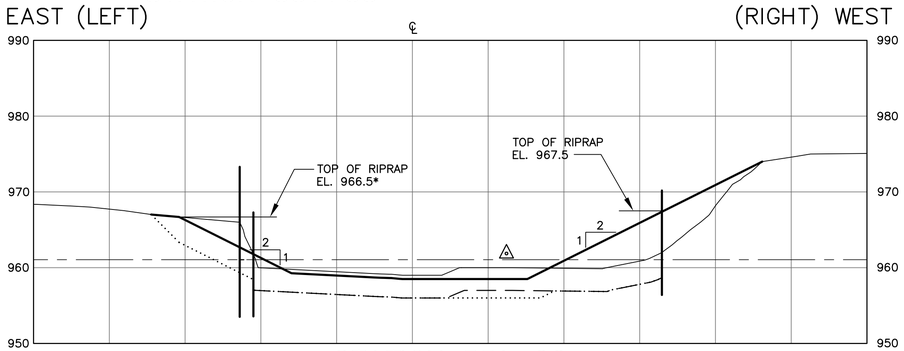
1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
CROSS-SECTIONS
2 OF 9

Sheet reference number:
2008
31 OF 45

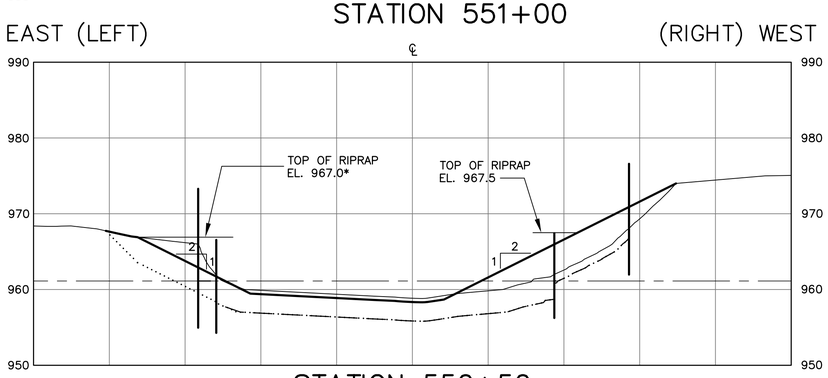
M:\Design\DWG\MCDE\SSERC\3rd_0.5m\Design Drawings - Phase III\2007-2015.dwg, 2008, 2/8/2005 12:43:45 PM, gilardelo, 1:1



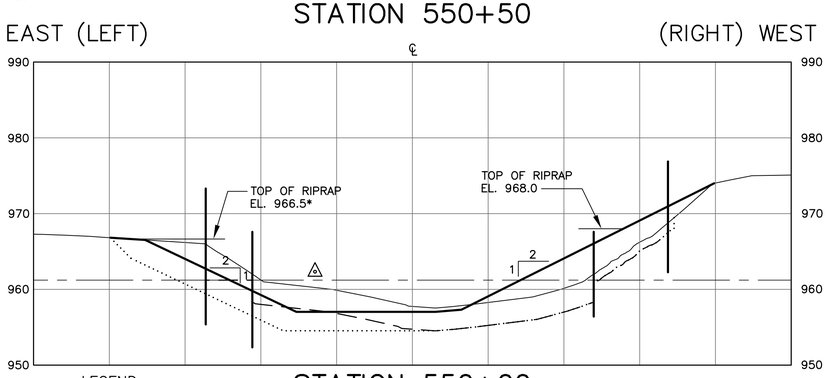
STATION 551+35



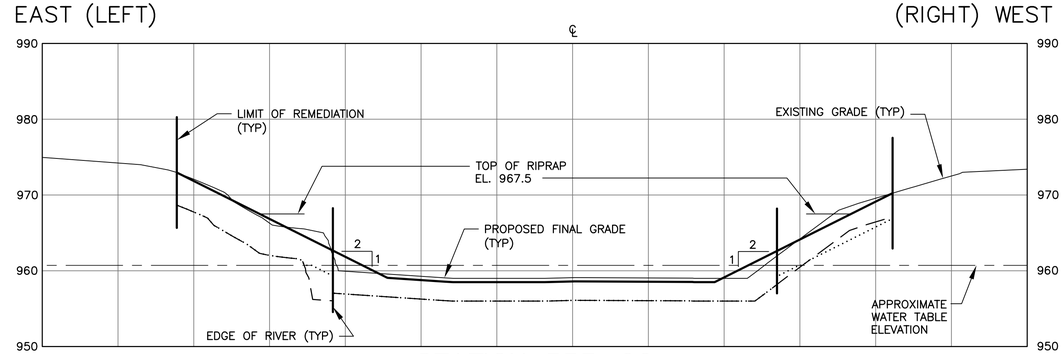
STATION 551+00



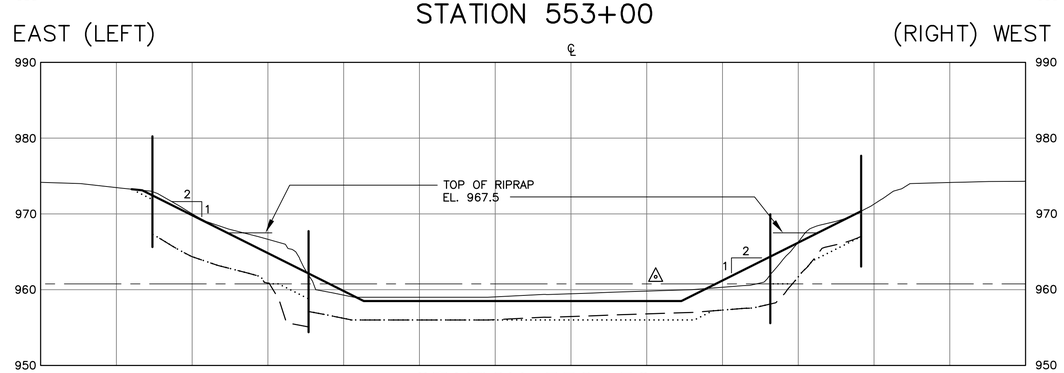
STATION 550+50



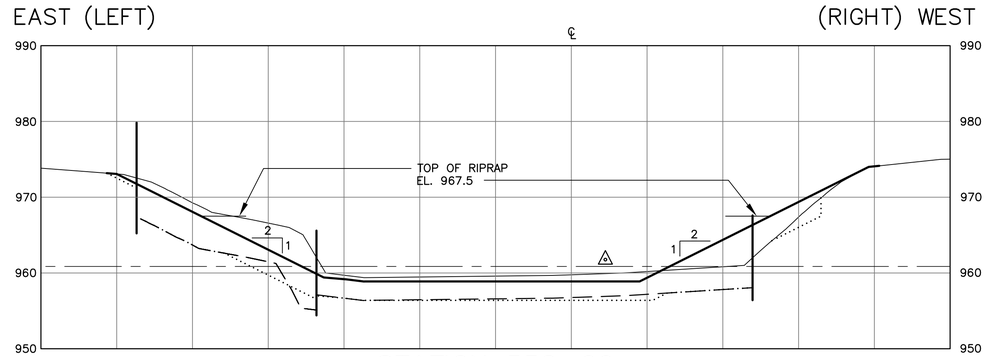
STATION 550+00



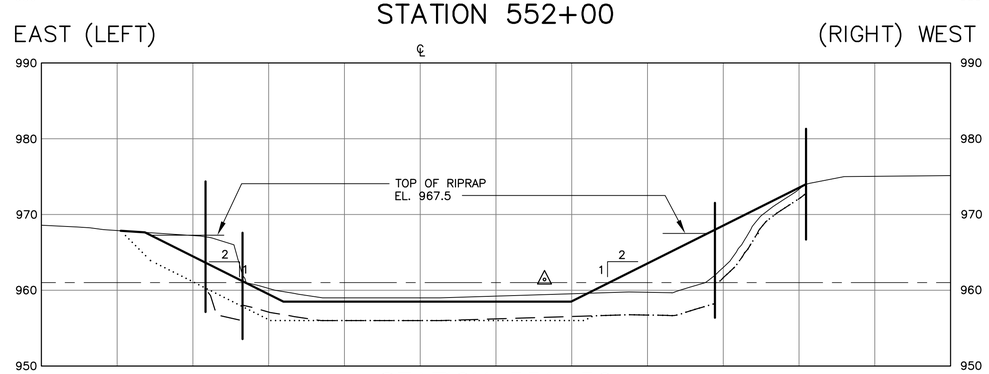
STATION 553+00



STATION 552+50



STATION 552+00



STATION 551+50

LEGEND

- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

(A) DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05					
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

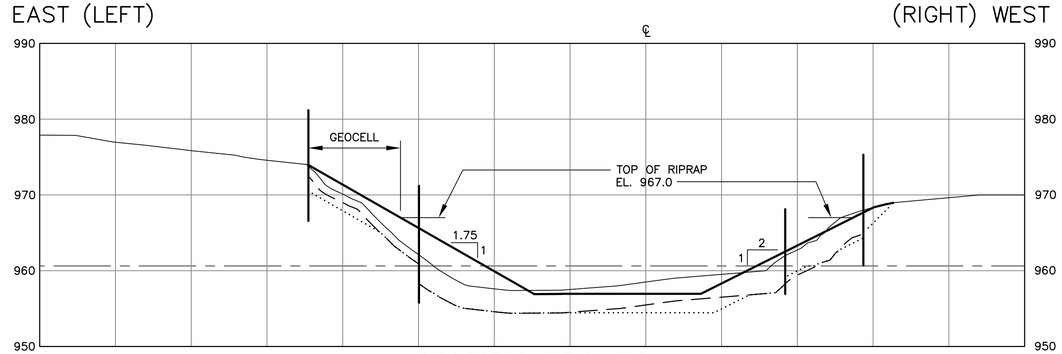
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

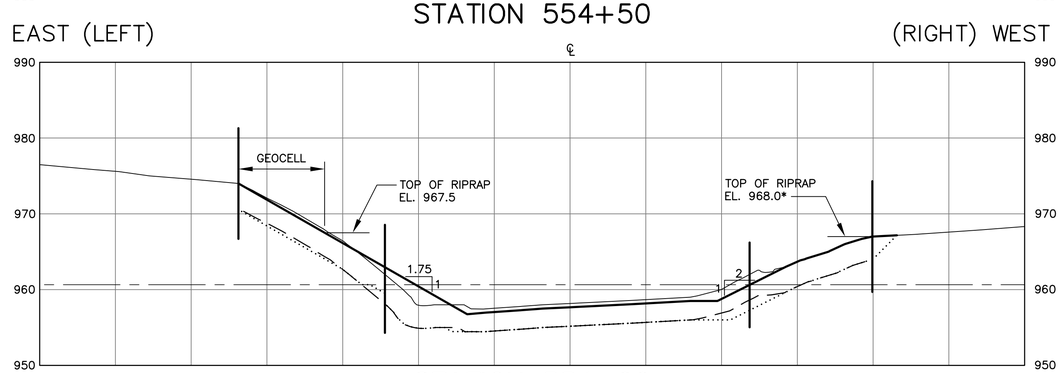
1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
CROSS-SECTIONS
3 OF 9

Sheet reference number:
2009
32 OF 45

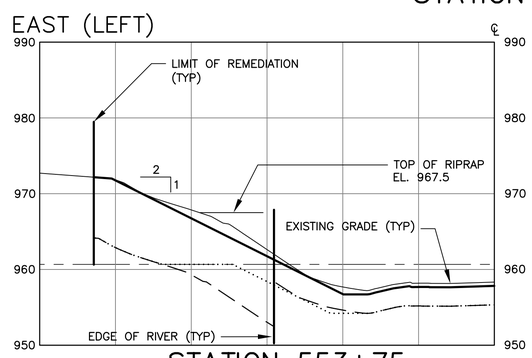
M:\Design\DWG\ACOE\SSERC\32nd_0.3m\Design Drawings - Phase III\2007-2015.dwg, 2009, 2/8/2005 12:44:15 PM, gilardelo, 1:1



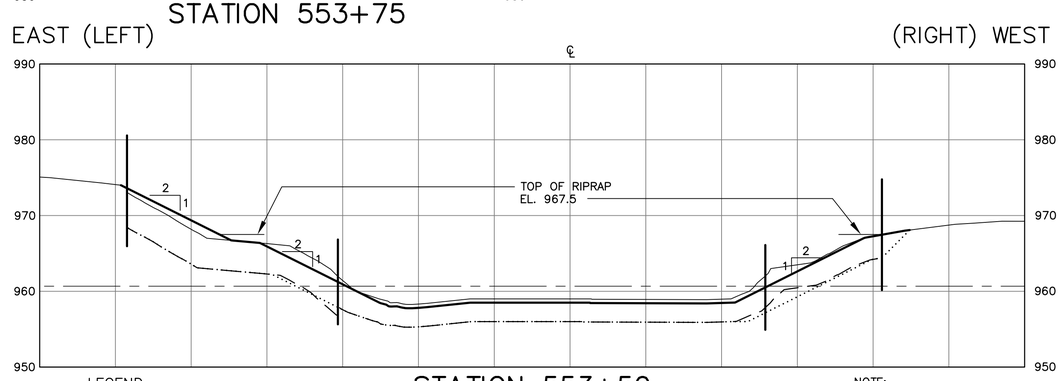
STATION 554+50



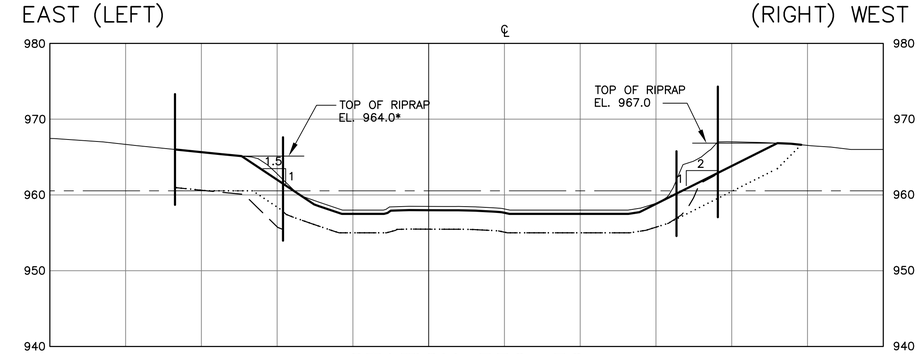
STATION 554+00



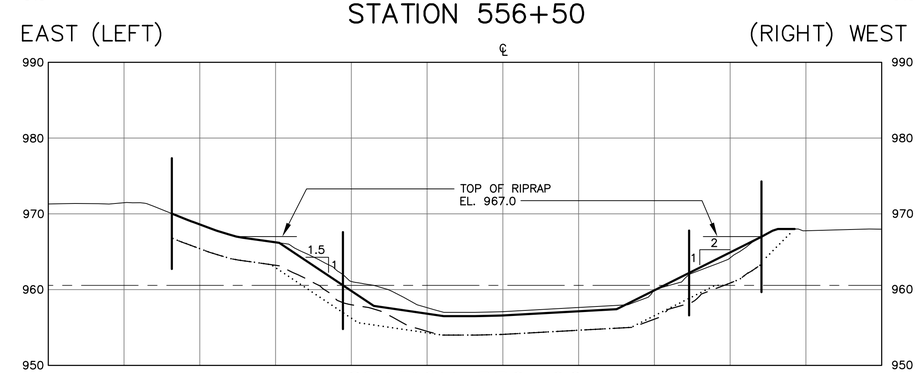
STATION 553+75



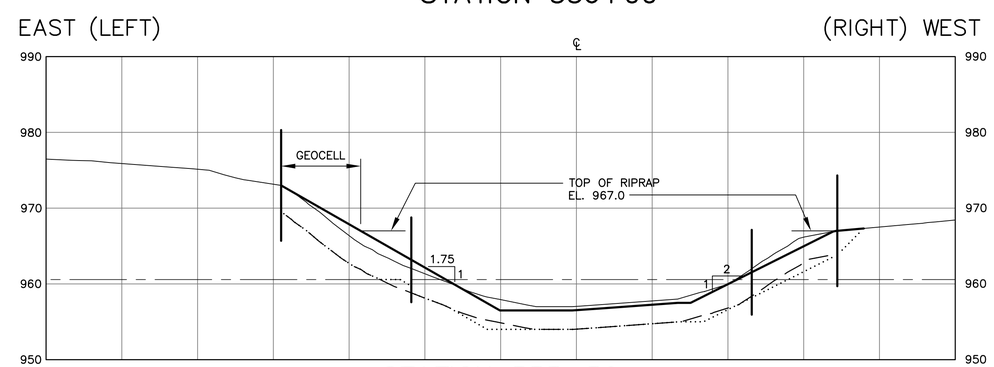
STATION 553+50



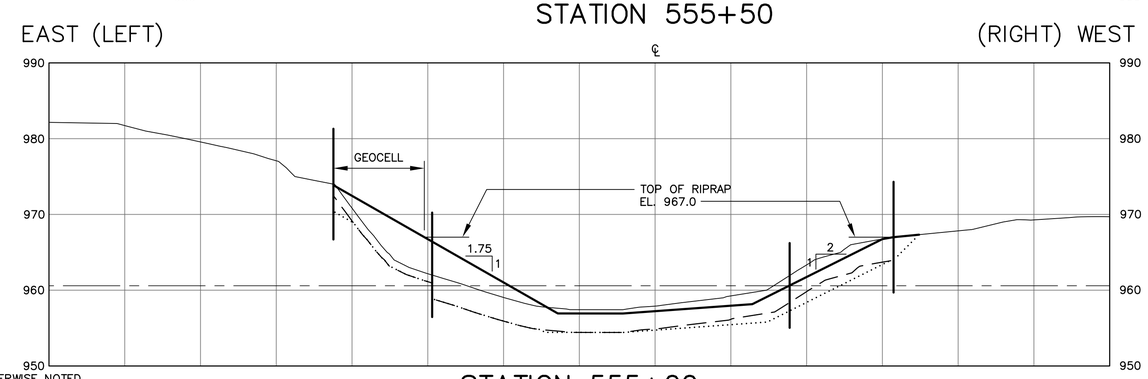
STATION 556+50



STATION 556+00



STATION 555+50



STATION 555+00

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

LEGEND

- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△3 DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	12/7/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

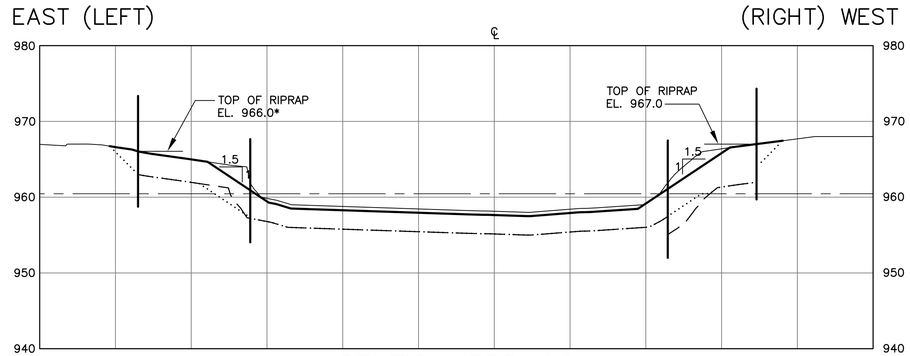
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

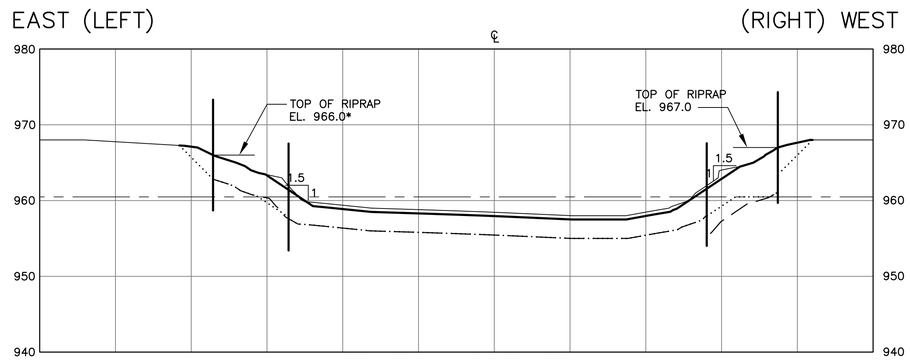
1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
CROSS-SECTIONS
4 OF 9

Sheet reference number:
2010
33 OF 45

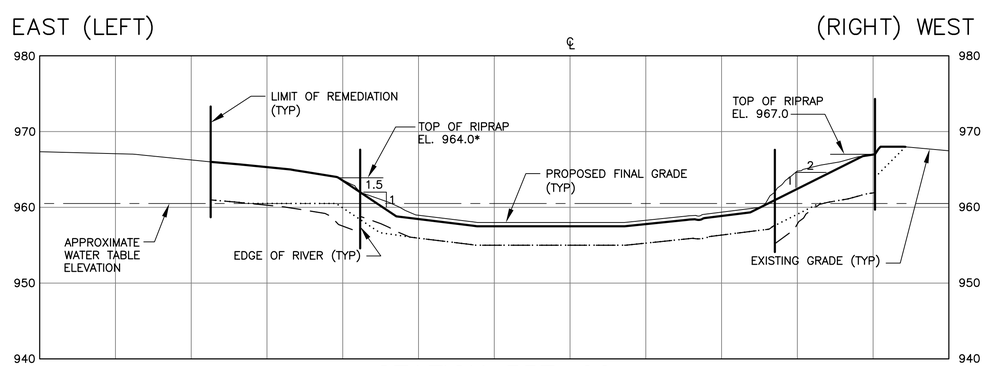
M:\Design\DWG\ACOE\SSERC\3rd_0.5m\Design Drawings - Phase III\2007-2015.dwg, 2010, 2/8/2005 12:44:47 PM, gilardelo, 1:1



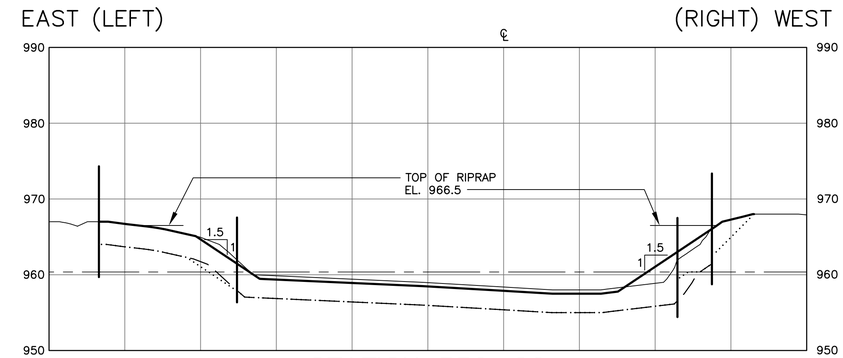
STATION 558+00



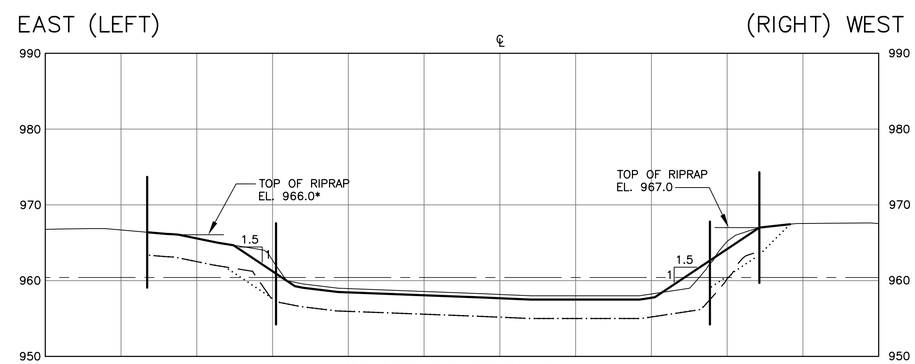
STATION 557+50



STATION 557+00



STATION 559+00



STATION 558+50

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

LEGEND
- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△ DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

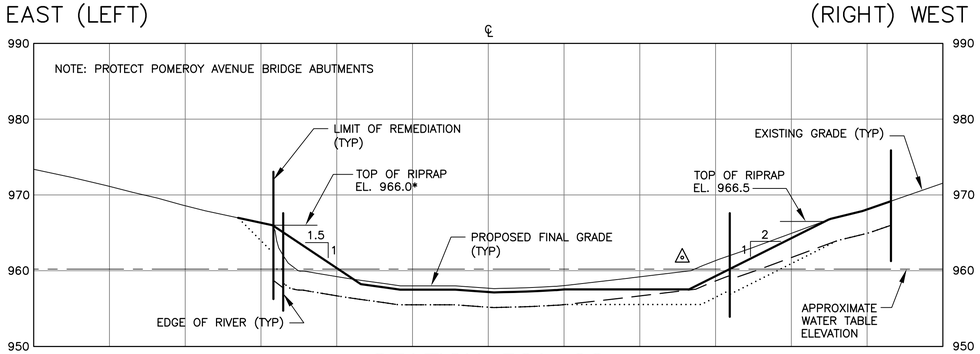
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

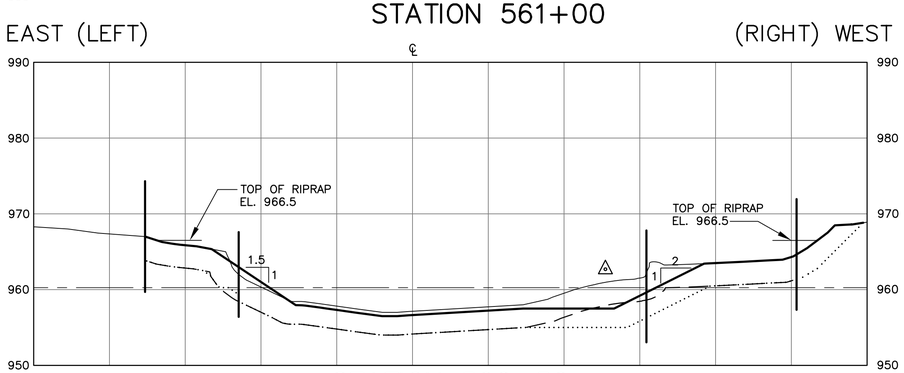
1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

CROSS-SECTIONS
5 OF 9

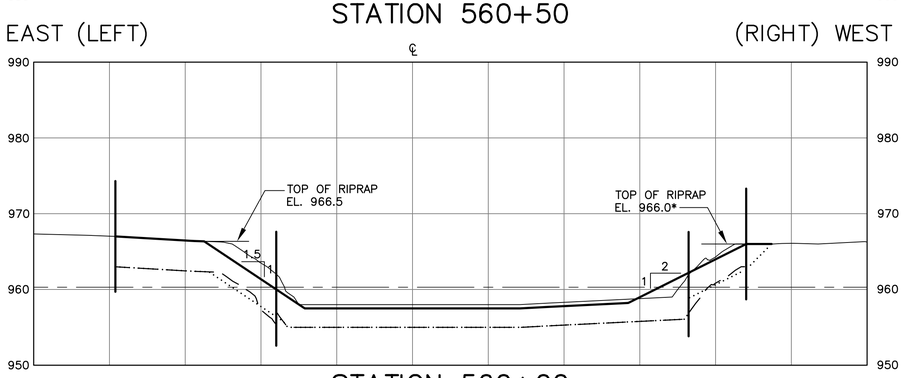
Sheet reference number:
2011
34 OF 45



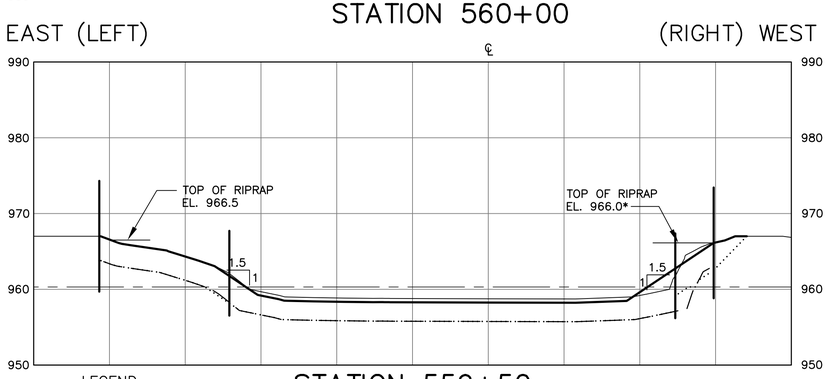
STATION 561+00



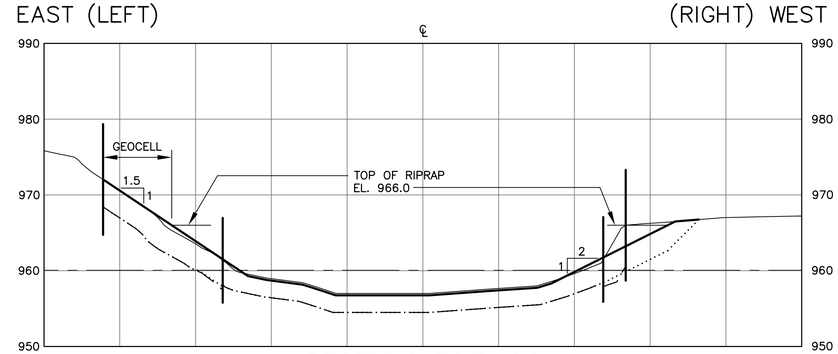
STATION 560+50



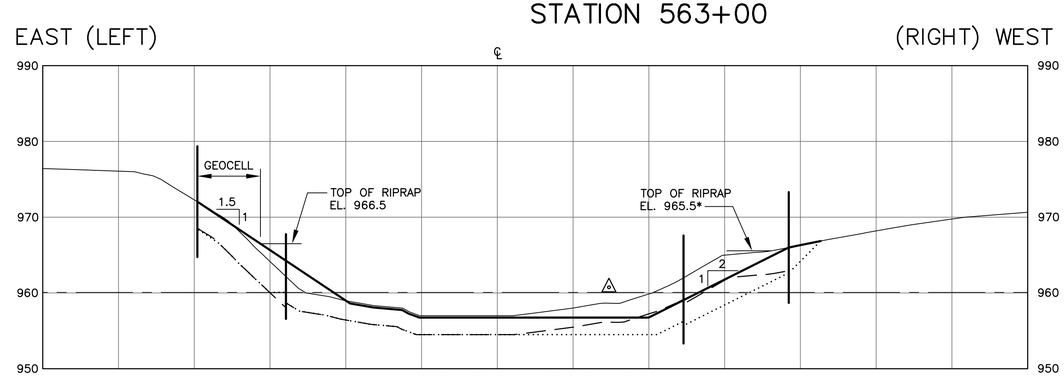
STATION 560+00



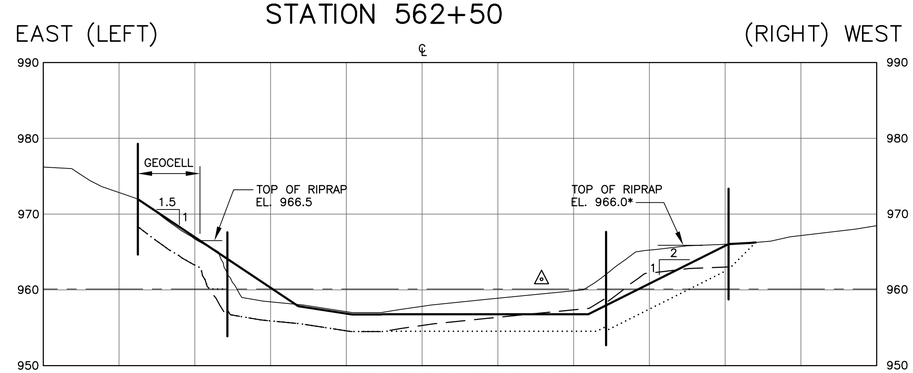
STATION 559+50



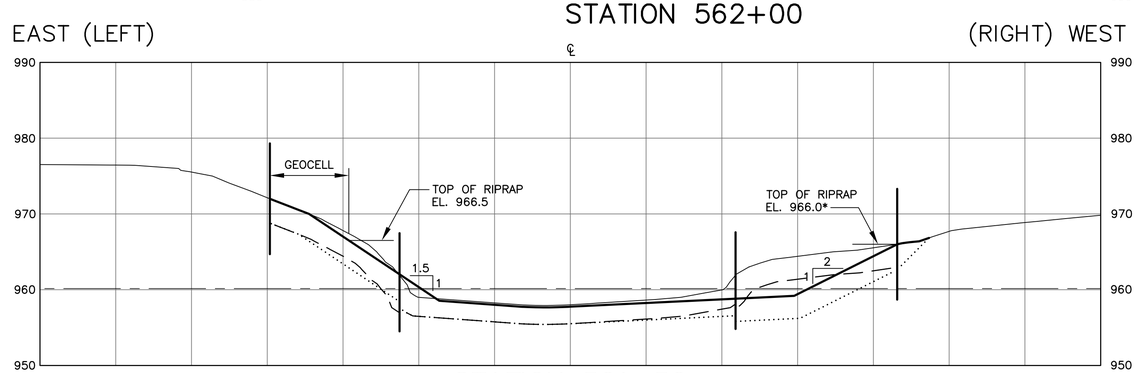
STATION 563+00



STATION 562+50



STATION 562+00



STATION 561+50

LEGEND

- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△ DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	12/7/05					
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

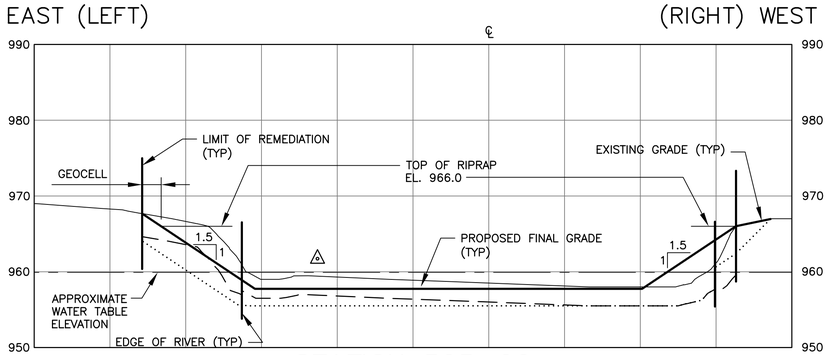
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

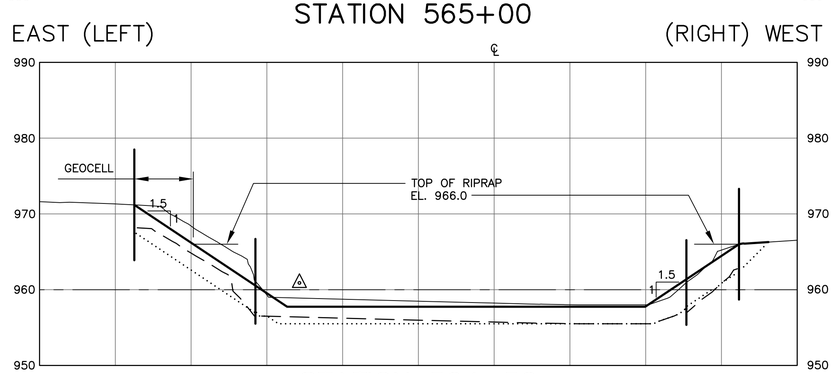
CROSS-SECTIONS
6 OF 9

Sheet reference number:
2012
35 OF 45

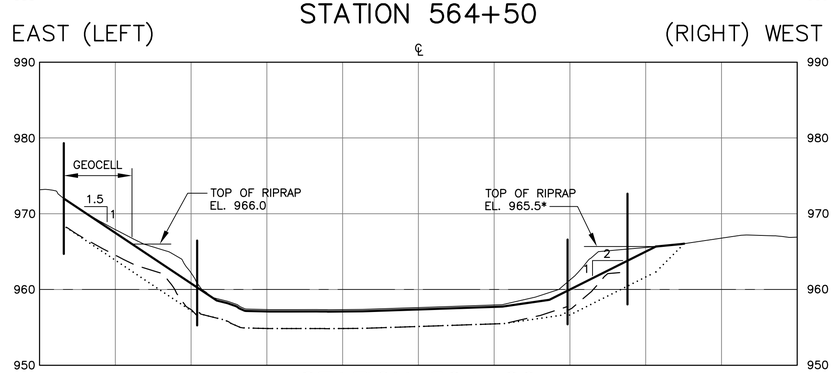
M:\Design\DWG\ACOE\SSERC\3rd_0.5m\Design Drawings - Phase III\2007-2015.dwg, 2012, 2/8/2005 12:45:57 PM, gilardelo, 1:1



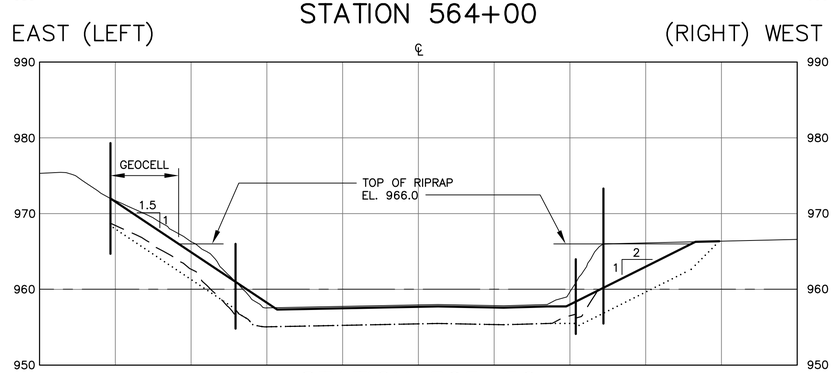
STATION 565+00



STATION 564+50



STATION 564+00



STATION 563+50

LEGEND

- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

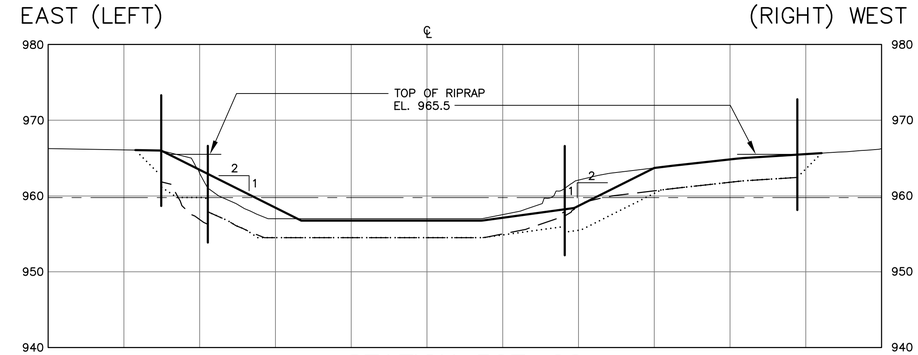
* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△A DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

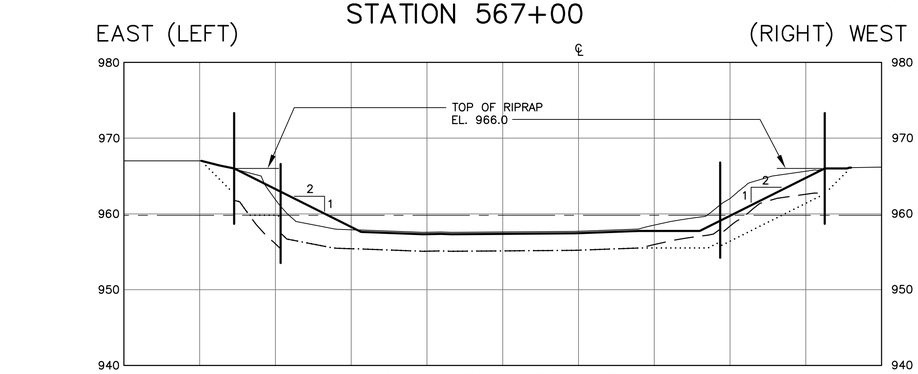
GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:

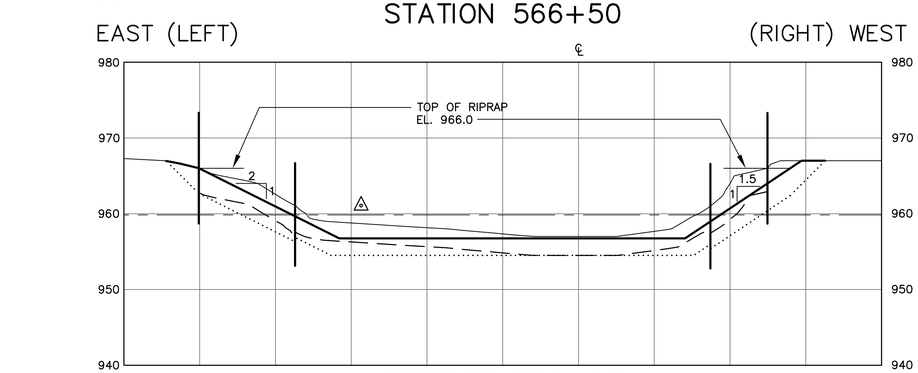
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.



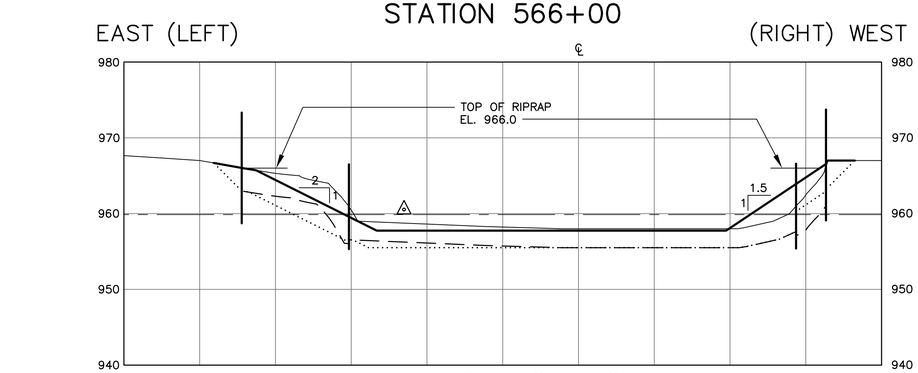
STATION 567+00



STATION 566+50



STATION 566+00



STATION 565+50

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	12/7/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

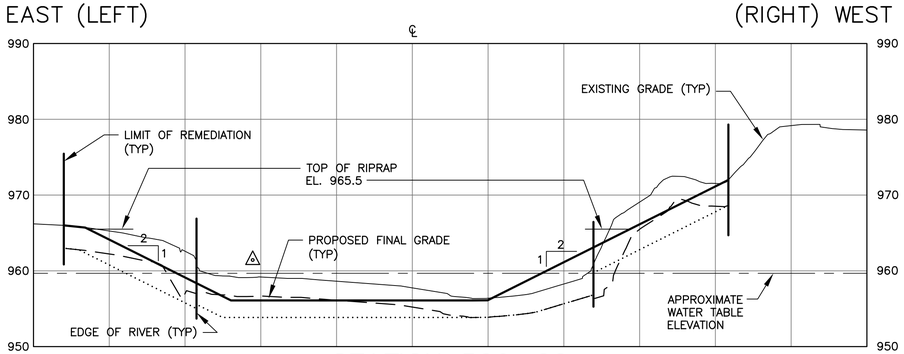
WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

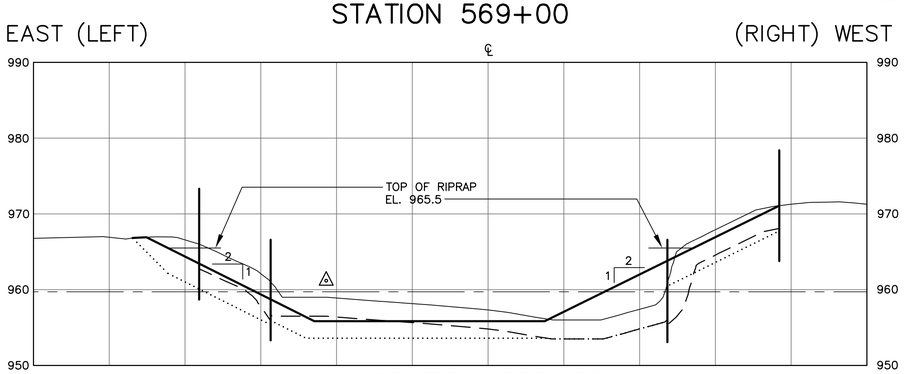
CROSS-SECTIONS
7 OF 9

Sheet reference number:
2013
36 OF 45

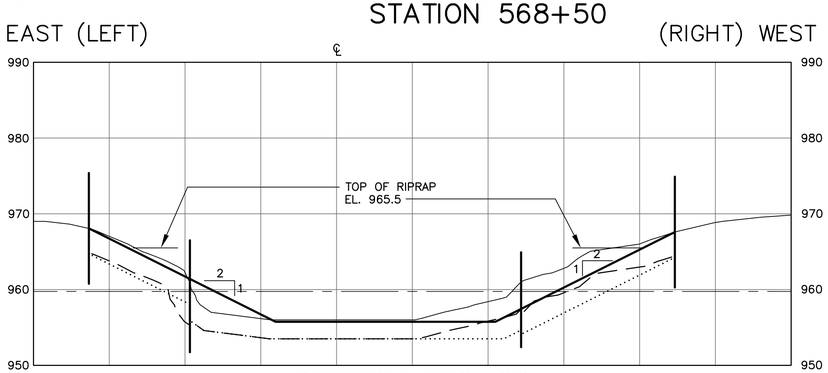
M:\Design\DWG\WCGE\SSERC\3rd_0.5m\Design Drawings - Phase III\2007-2015.dwg, 2013, 2/8/2005 12:46:55 PM, gineddb, 1:1



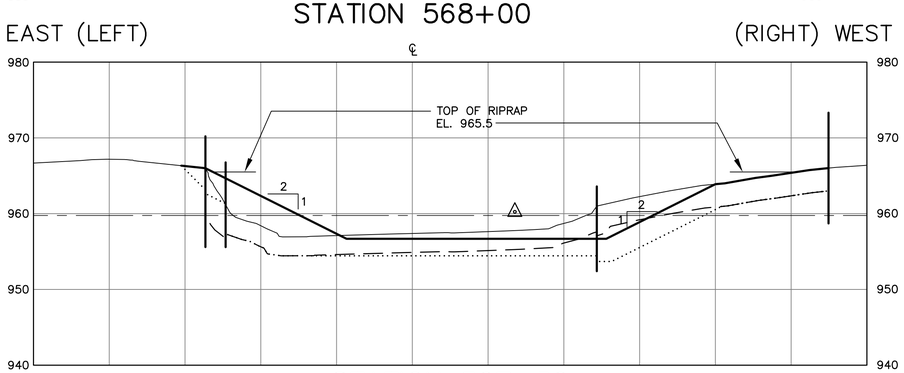
STATION 569+00



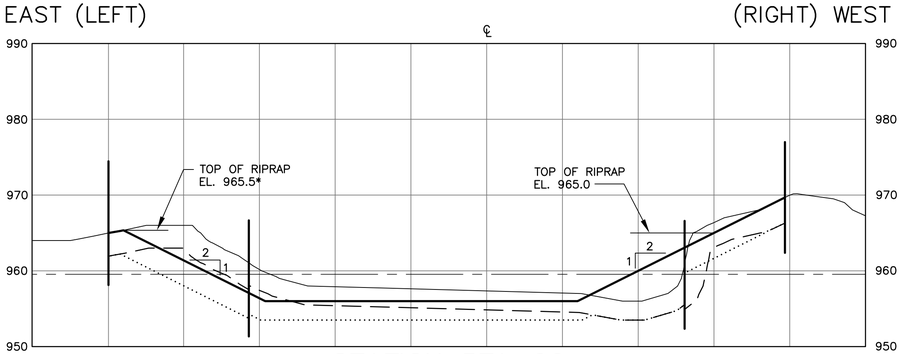
STATION 568+50



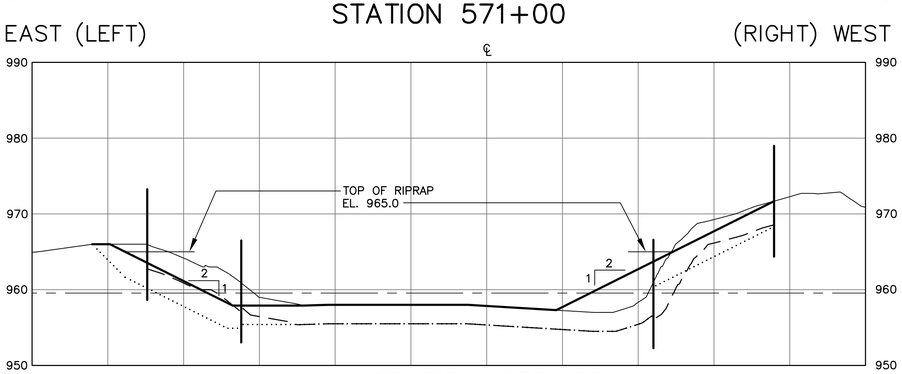
STATION 568+00



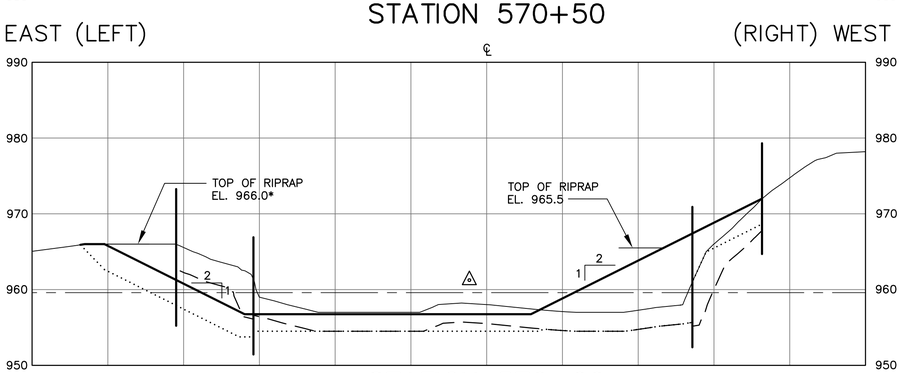
STATION 567+50



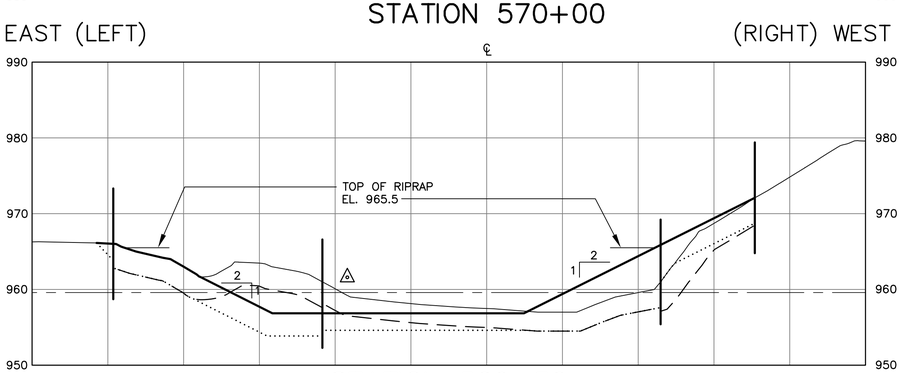
STATION 571+00



STATION 570+50



STATION 570+00



STATION 569+50

LEGEND
- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△ DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

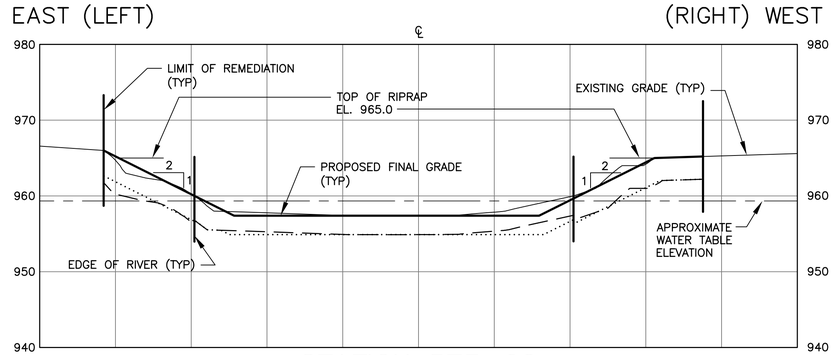
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

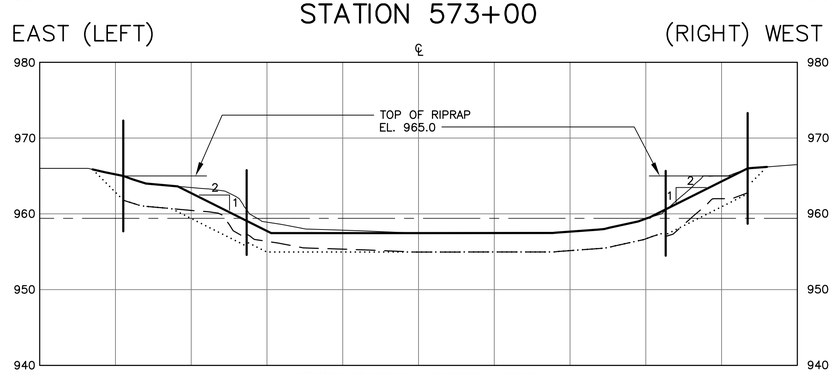
1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
CROSS-SECTIONS
8 OF 9

Sheet reference number:
2014
37 OF 45

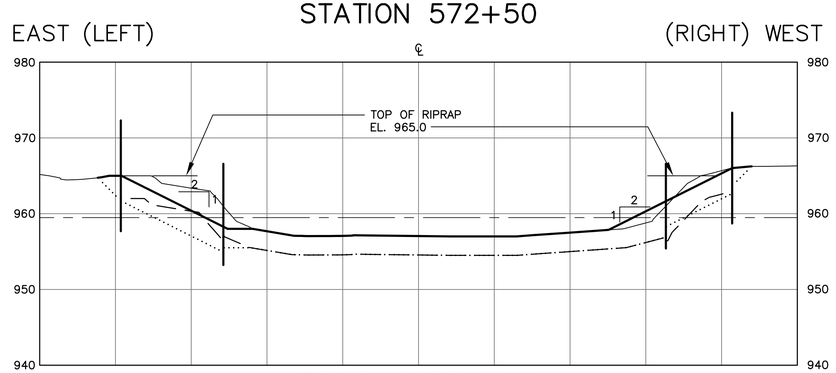
M:\Design\DWG\MCGE\SSERC\3rd_0.5in\Design Drawings - Phase III\2007-2015.dwg, 2014, 2/8/2005 12:48:47 PM, gineddb, 1:1



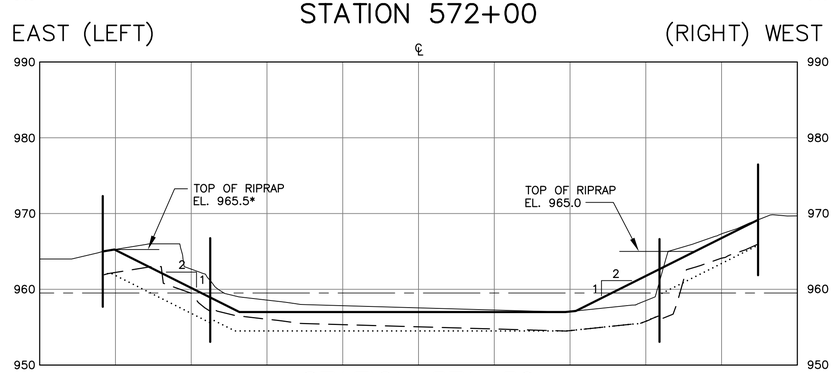
STATION 573+00



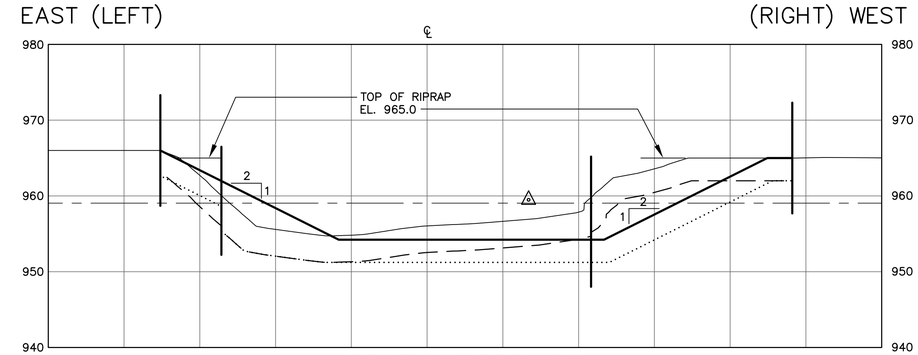
STATION 572+50



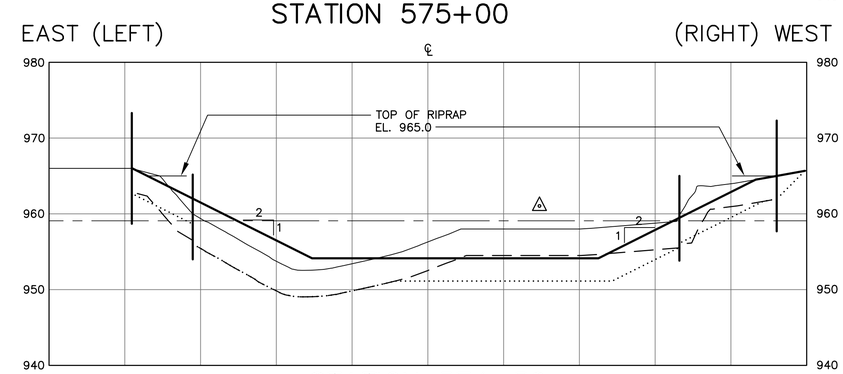
STATION 572+00



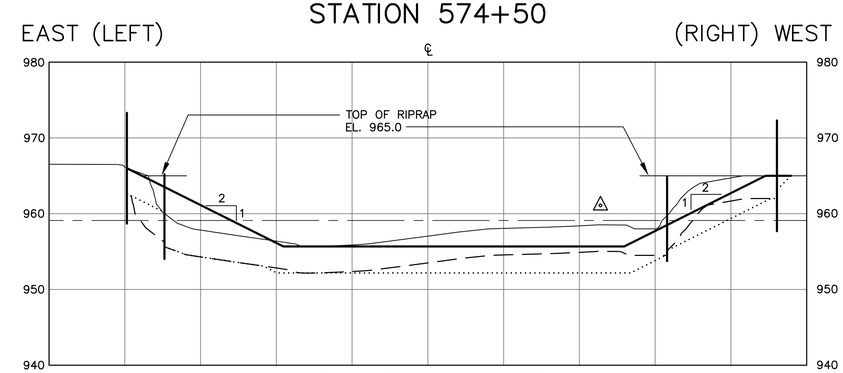
STATION 571+50



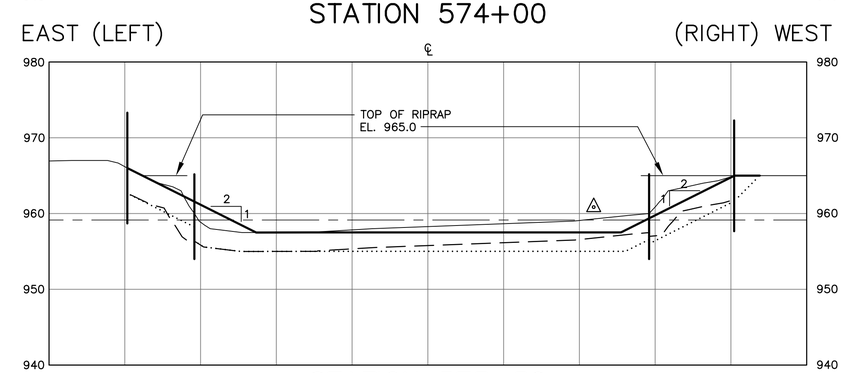
STATION 575+00



STATION 574+50



STATION 574+00



STATION 573+50

LEGEND
- EXISTING GRADE
- FINAL GRADE
- DEPTH OF CONTAMINATION
- EXCAVATION CUT LINE
- APPROXIMATE WATER TABLE ELEVATION

* DENOTES RIPRAP ELEVATION ADJUSTED TO COINCIDE WITH TOP OF BANK AND/OR LIMIT OF REMEDIATION.

△ DENOTES ADDITIONAL EXCAVATION IDENTIFIED FOR AGGRADING BARS AND TERRACES AS IDENTIFIED IN THE EE/CA ADDENDUM. ACTUAL LOCATIONS TO BE VERIFIED IN THE FIELD AT TIME OF EXCAVATION.

GRAPHIC SCALE
HORIZONTAL AND VERTICAL
10 5 0 5 10
APPROXIMATE SCALE IN FEET

NOTE:
1. MATCH EXISTING GRADE UNLESS OTHERWISE NOTED.
2. MAXIMUM ALLOWABLE SLOPE IS 1.5H:1V
3. SLOPE INCLINATION FOR GEOCELL SHALL NOT EXCEED 1.5:1.
4. RIPRAP SHALL BE PLACED TO THE ELEVATION OF THE BREAK IN SLOPE WHEN THE SLOPE CHANGES FROM 1.5:1 BELOW THE BREAK TO 2:1 ABOVE THE BREAK. IF THERE IS NO BREAK IN SLOPE, RIPRAP SHALL EXTEND UP THE RIVER BANK TO THE MINIMUM ELEVATION AS INDICATED AT EACH SECTION.
5. OVER-EXCAVATION OF AREAS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02330-3.1.5. THE EXCAVATION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL TEMPORARY SLOPES AND FOR SAFETY OF ALL PERSONNEL IN CLOSE PROXIMITY TO THE OVER-EXCAVATED AREA.
6. REMOVAL AND RESTORATION BEYOND THE LIMIT OF REMEDIATION TO BE COMPLETED IN COOPERATION WITH GE.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	12/7/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: TD
Dwn by: BEG
Ckd by: TD
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2007-2015
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

CROSS-SECTIONS
9 OF 9

Sheet reference number:
2015
38 OF 45

M:\Design\DWG\MCGE\SSERC\3rd_0.5in\Design Drawings - Phase III\2007-2015.dwg, 2015, 2/8/2005 12:49:50 PM, gineddb, 1:1

LEGEND

- EXISTING CONTOURS
- RIVER EDGE
- TOE OF SLOPE/TOP OF SLOPE
- LIMIT OF REMEDIATION

STABILIZATION KEY

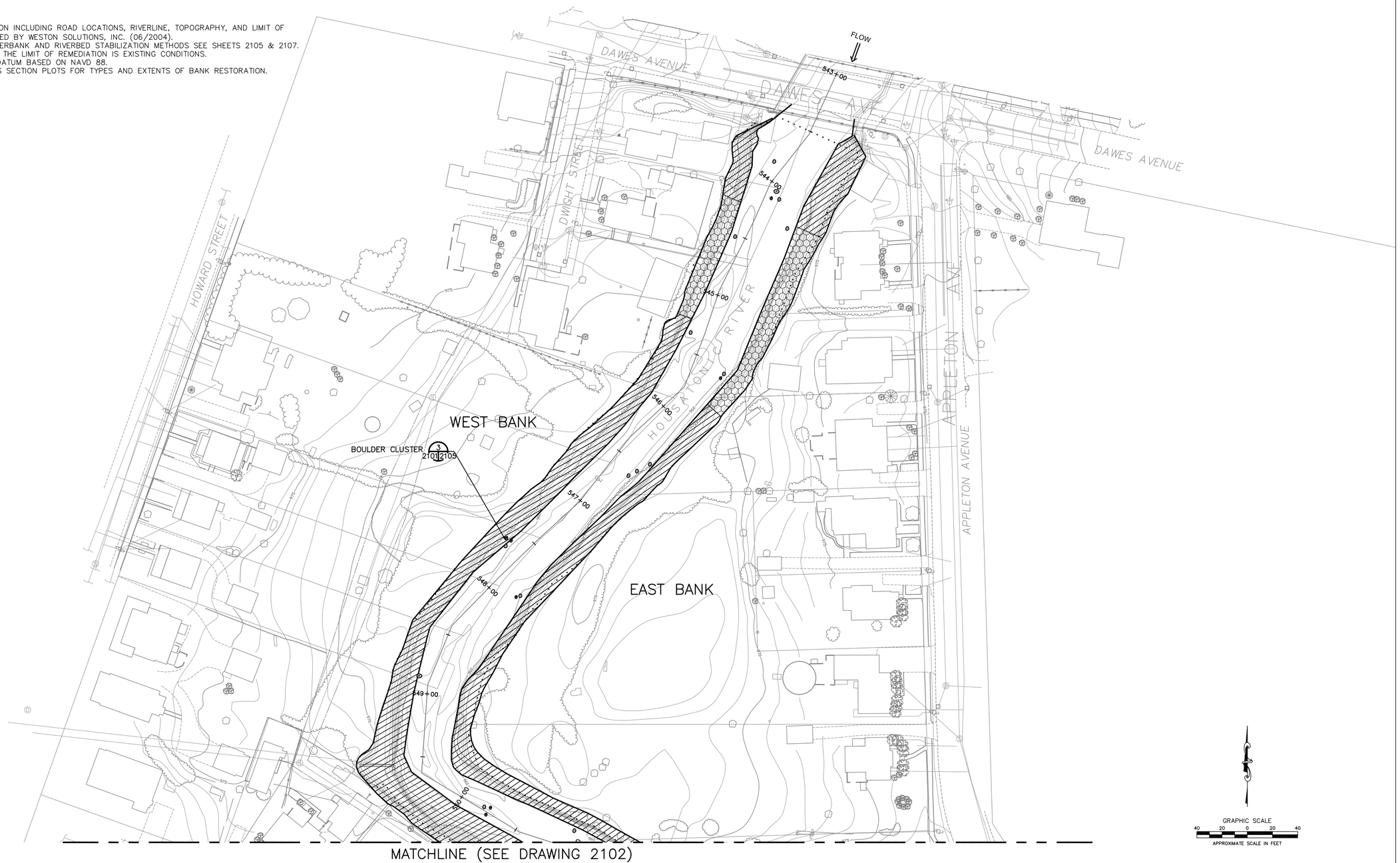
- RIPRAP/REVEGETATION
- RIPRAP/GEOCELL/REVEGETATION

INSTREAM STRUCTURES

- WING DEFLECTOR
- 2' BOULDER
- 3' BOULDER
- 4' BOULDER

PLAN NOTES:

1) BASEMAP INFORMATION INCLUDING ROAD LOCATIONS, RIVERLINE, TOPOGRAPHY, AND LIMIT OF REMEDIATION PROVIDED BY WESTON SOLUTIONS, INC. (06/2004).
2) FOR DETAILS ON RIVERBANK AND RIVERBED STABILIZATION METHODS SEE SHEETS 2105 & 2107.
3) TOPOGRAPHY WITHIN THE LIMIT OF REMEDIATION IS EXISTING CONDITIONS.
4) PROJECT VERTICAL DATUM BASED ON NAVD 88.
5) SEE DETAILED CROSS SECTION PLOTS FOR TYPES AND EXTENTS OF BANK RESTORATION.



MATCHLINE (SEE DRAWING 2102)

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr	Symbol	Description	Date	Appr
D	FINAL DESIGN (REVISED PACKAGE)	1/27/05					
C	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04					
B	FINAL DESIGN	10/21/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: WRS
Dwn by: KWH
Ckd by: MRC
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. D
Design file no:
SPEC. No.:
File name: 2101-2104.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

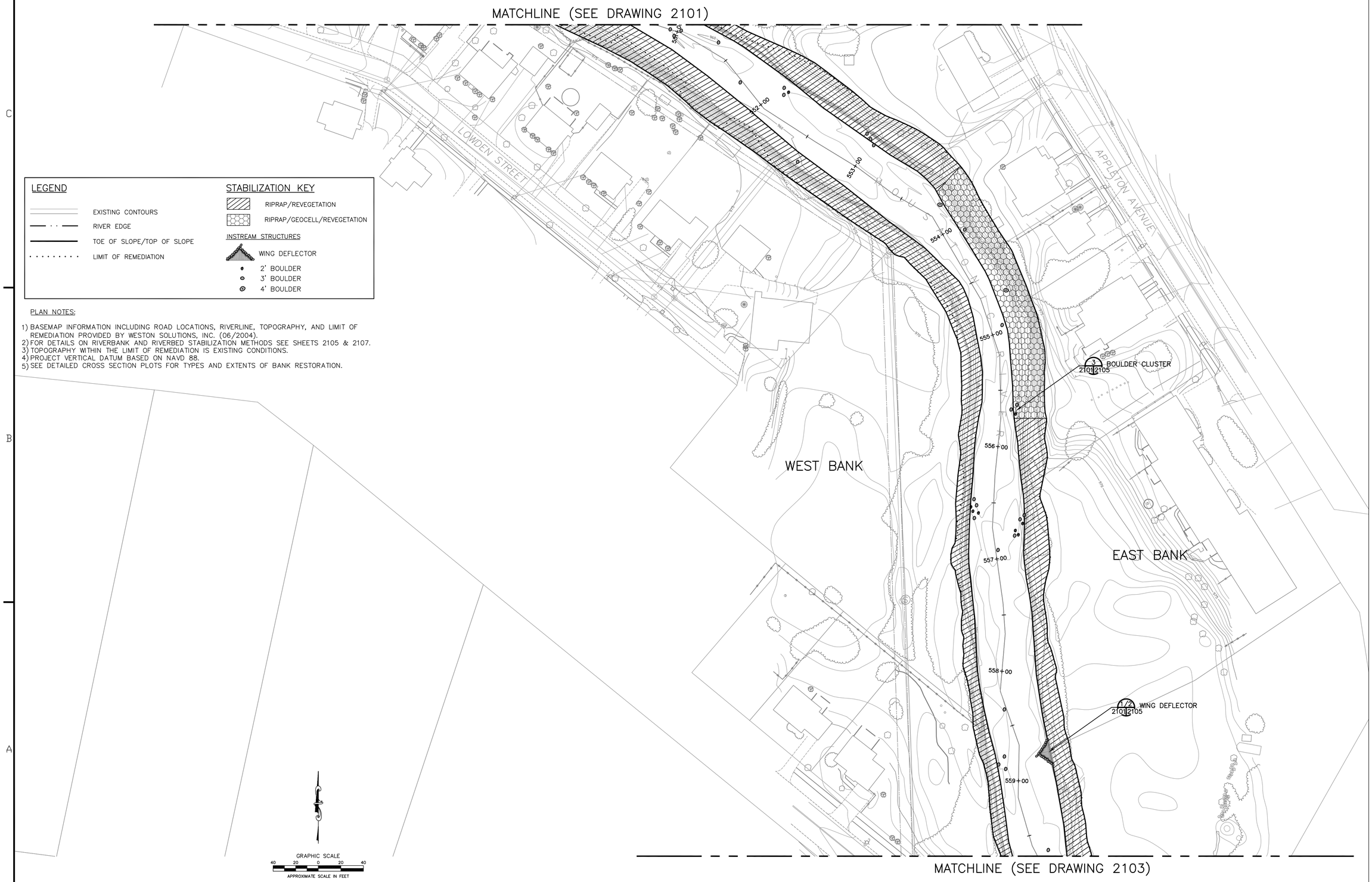
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

RIVERBED AND RIVERBANK RESTORATION
1 OF 4

Sheet reference number:
2101
39 OF 45



LEGEND

- EXISTING CONTOURS
- RIVER EDGE
- TOE OF SLOPE/TOP OF SLOPE
- LIMIT OF REMEDIATION

STABILIZATION KEY

- RIPRAP/REVEGETATION
- RIPRAP/GEOCELL/REVEGETATION

INSTREAM STRUCTURES

- WING DEFLECTOR
- 2' BOULDER
- 3' BOULDER
- 4' BOULDER

PLAN NOTES:

1) BASEMAP INFORMATION INCLUDING ROAD LOCATIONS, RIVERLINE, TOPOGRAPHY, AND LIMIT OF REMEDIATION PROVIDED BY WESTON SOLUTIONS, INC. (06/2004).
2) FOR DETAILS ON RIVERBANK AND RIVERBED STABILIZATION METHODS SEE SHEETS 2105 & 2107.
3) TOPOGRAPHY WITHIN THE LIMIT OF REMEDIATION IS EXISTING CONDITIONS.
4) PROJECT VERTICAL DATUM BASED ON NAVD 88.
5) SEE DETAILED CROSS SECTION PLOTS FOR TYPES AND EXTENTS OF BANK RESTORATION.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: WRS
Dwn by: KWH
Ckd by: MRC
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2101-2104.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

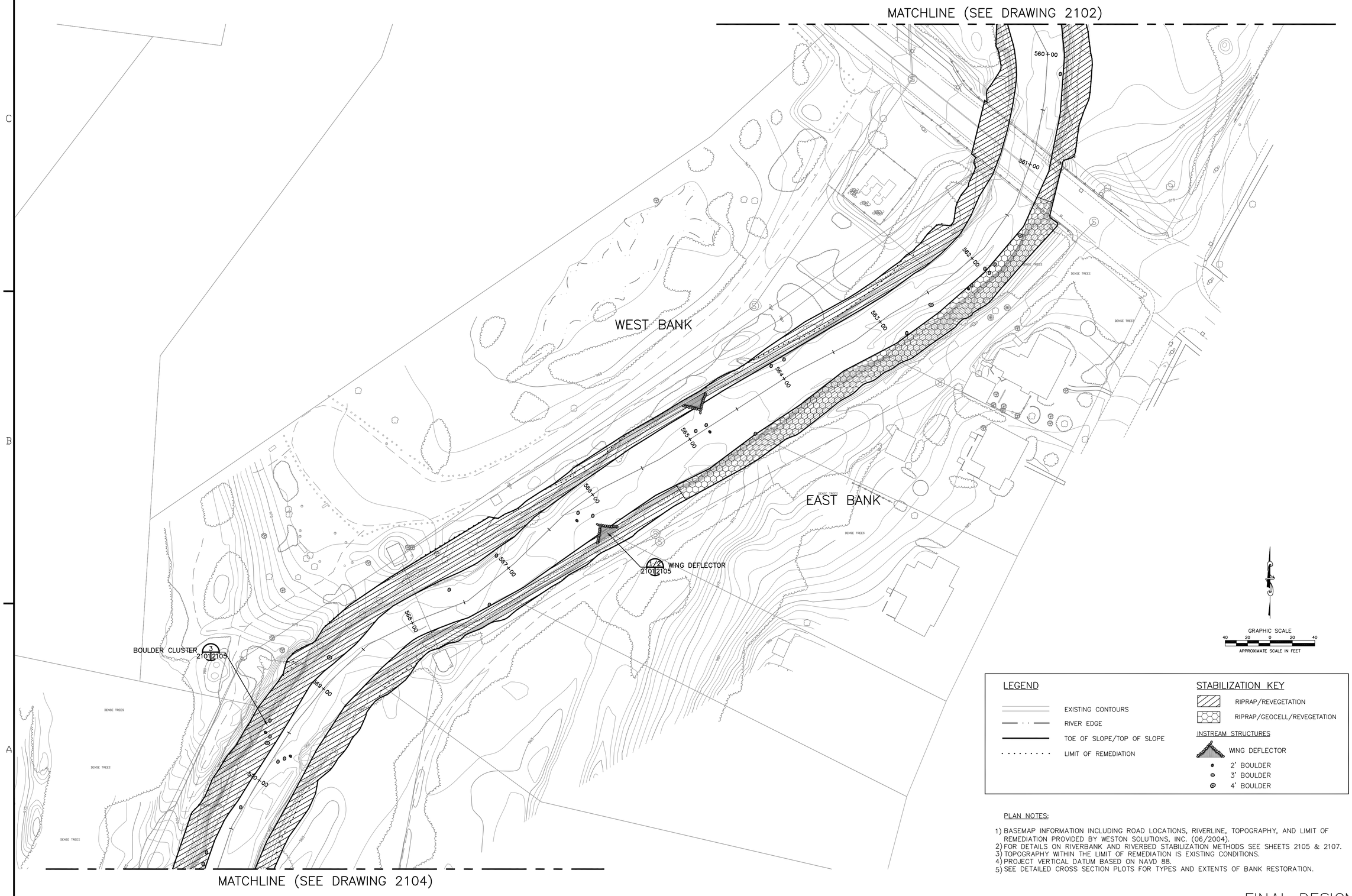
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

RIVERBED AND RIVERBANK RESTORATION
2 OF 4

Sheet reference number:
2102
40 OF 45



LEGEND

- EXISTING CONTOURS
- RIVER EDGE
- TOE OF SLOPE/TOP OF SLOPE
- LIMIT OF REMEDIATION

STABILIZATION KEY

- RIPRAP/REVEGETATION
- RIPRAP/GEOCELL/REVEGETATION

INSTREAM STRUCTURES

- WING DEFLECTOR
- 2' BOULDER
- 3' BOULDER
- 4' BOULDER

PLAN NOTES:

1) BASEMAP INFORMATION INCLUDING ROAD LOCATIONS, RIVERLINE, TOPOGRAPHY, AND LIMIT OF REMEDIATION PROVIDED BY WESTON SOLUTIONS, INC. (06/2004).
2) FOR DETAILS ON RIVERBANK AND RIVERBED STABILIZATION METHODS SEE SHEETS 2105 & 2107.
3) TOPOGRAPHY WITHIN THE LIMIT OF REMEDIATION IS EXISTING CONDITIONS.
4) PROJECT VERTICAL DATUM BASED ON NAVD 88.
5) SEE DETAILED CROSS SECTION PLOTS FOR TYPES AND EXTENTS OF BANK RESTORATION.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/21/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: WRS
Dwn by: KWH
Ckd by: MRC
Reviewed by:
Submitted by: Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2101-2104.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

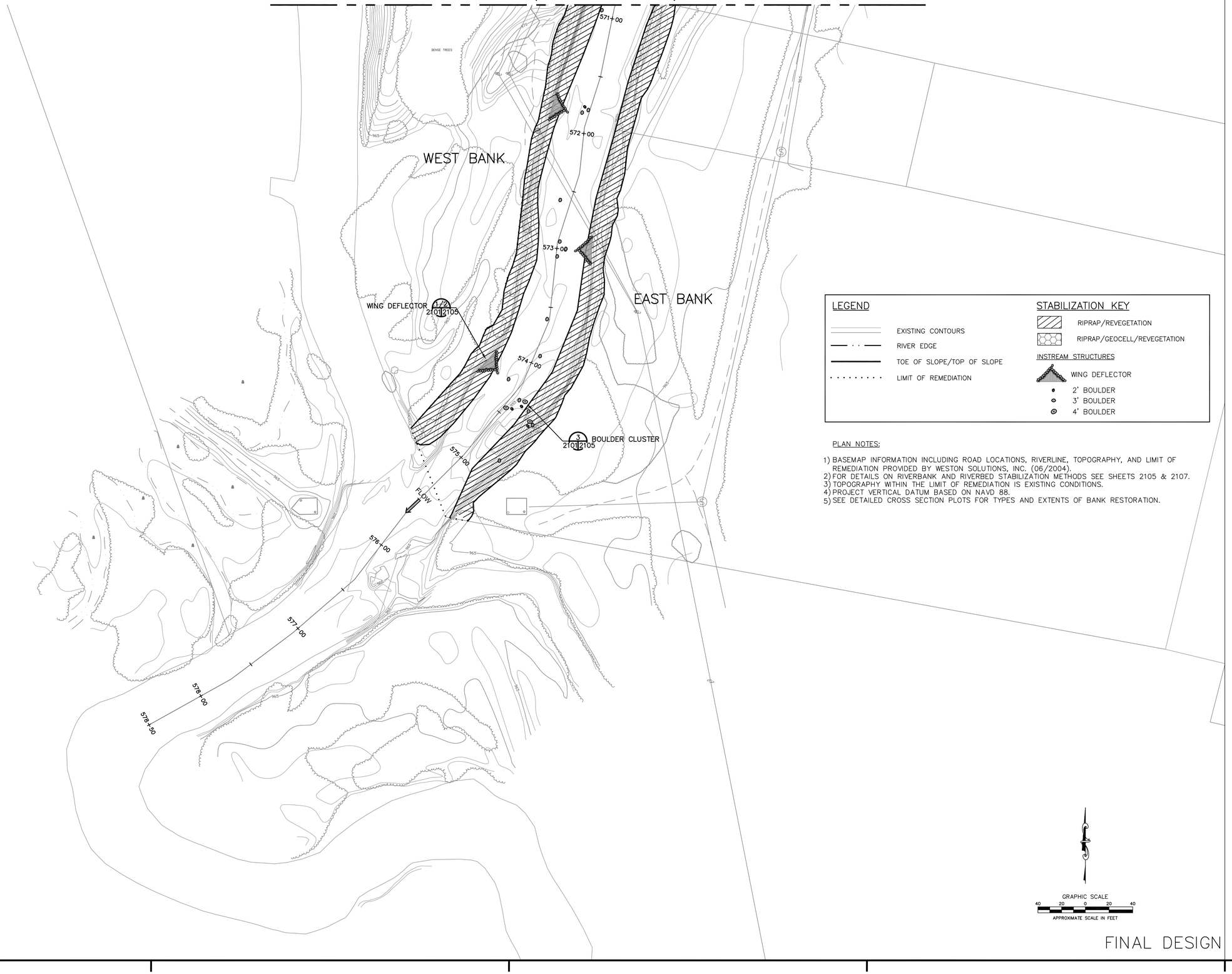
WESTON SOLUTIONS
WOODLOT ENVIRONMENTAL INC.

1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

RIVERBED AND RIVERBANK RESTORATION
3 OF 4

Sheet reference number:
2103
41 OF 45

M:\Design\DWG\FOR\SSERC\2nd_0.5mm\Design Drawings - Phase III\2101-2104.dwg, 2103, 2/8/2005 12:35:15 PM, gjoradeb, 1:1



LEGEND

- EXISTING CONTOURS
- RIVER EDGE
- TOE OF SLOPE/TOP OF SLOPE
- LIMIT OF REMEDIATION

STABILIZATION KEY

- RIPRAP/REVEGETATION
- RIPRAP/GEOCELL/REVEGETATION

INSTREAM STRUCTURES

- WING DEFLECTOR
- 2' BOULDER
- 3' BOULDER
- 4' BOULDER

PLAN NOTES:

1) BASEMAP INFORMATION INCLUDING ROAD LOCATIONS, RIVERLINE, TOPOGRAPHY, AND LIMIT OF REMEDIATION PROVIDED BY WESTON SOLUTIONS, INC. (06/2004).
2) FOR DETAILS ON RIVERBANK AND RIVERBED STABILIZATION METHODS SEE SHEETS 2105 & 2107.
3) TOPOGRAPHY WITHIN THE LIMIT OF REMEDIATION IS EXISTING CONDITIONS.
4) PROJECT VERTICAL DATUM BASED ON NAVD 88.
5) SEE DETAILED CROSS SECTION PLOTS FOR TYPES AND EXTENTS OF BANK RESTORATION.

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: WRS
Dwn by: KWH
Ckd by: MRC
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2101-2104.DWG
Plot date: 1-21-05
Plot scale: AS SHOWN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

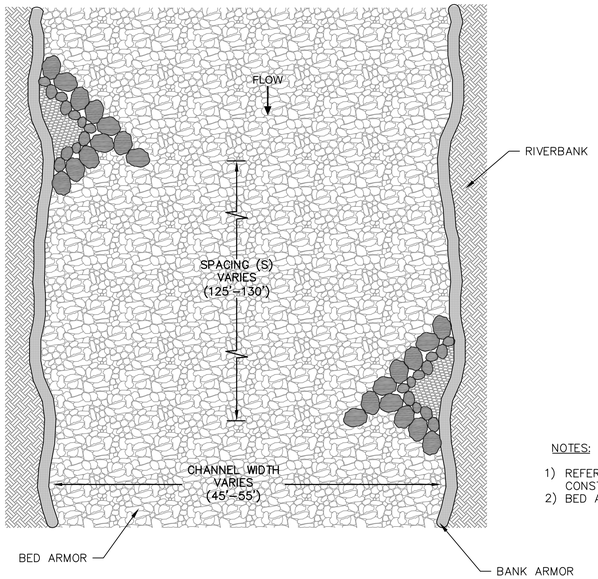
1.5 MILE REMOVAL ACTION - PHASE 3 - STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

RIVERBED AND RIVERBANK RESTORATION
4 OF 4

Sheet reference number:
2104
42 OF 45

SINGLE WING DEFLECTOR SPACING (TYP.) 1

NOT TO SCALE

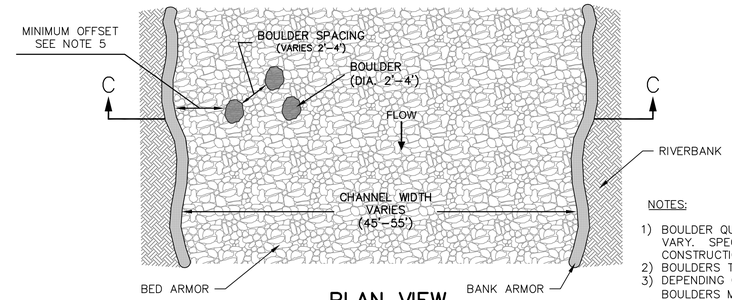


NOTES:

1) REFER TO SINGLE WING DEFLECTOR, DETAIL 2, FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS.
2) BED AND BANK ARMOR SIZE AND THICKNESS VARIES.

BOULDER CLUSTER (TYP.) 3

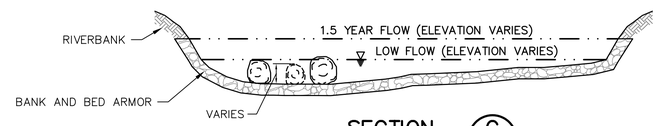
NOT TO SCALE



PLAN VIEW

NOTES:

1) BOULDER QUANTITIES, LOCATIONS, SPACINGS, AND ORIENTATIONS VARY. SPECIFIC BOULDER PLACEMENT TO BE DETERMINED DURING CONSTRUCTION UNDER THE DIRECTION OF THE ENGINEER.
2) BOULDERS TO BE PLACED ON TOP OF BED ARMOR LAYER.
3) DEPENDING ON RIVERBED MORPHOLOGY AND BOULDER SHAPE, SOME BOULDERS MAY EXTEND VERTICALLY ABOVE LOW FLOW ELEVATION (MAX. 1')
4) BED AND BANK ARMOR SIZE AND THICKNESS VARIES.
5) MINIMUM BOULDER OFFSET FROM ADJACENT BANK TO BE ONE BOULDER DIAMETER.

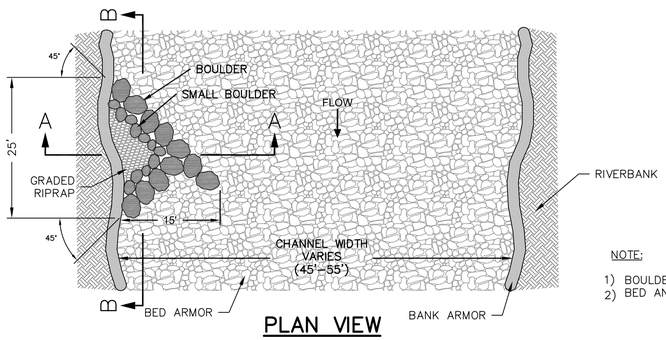


SECTION C

NOT TO SCALE

SINGLE WING DEFLECTOR (TYP.) 2

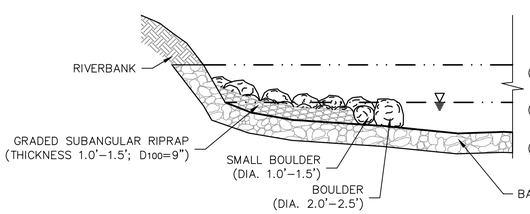
NOT TO SCALE



PLAN VIEW

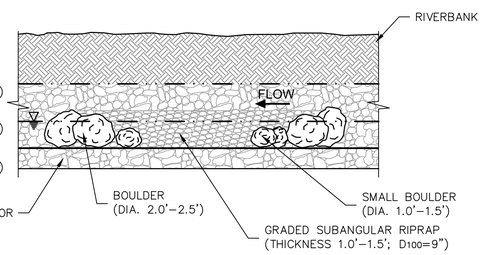
NOTE:

1) BOULDERS TO BE PLACED ON TOP OF BED ARMOR.
2) BED AND BANK ARMOR SIZE AND THICKNESS VARIES.



SECTION A

NOT TO SCALE



SECTION B

NOT TO SCALE

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Symbol	Description	Date	Appr.

Designed by: WRS
Dwn by: KWH
Ckd by: MRC
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2105.DWG
Plot date: 1-21-05
Plot scale:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA. 543+50 TO STA. 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

AQUATIC HABITAT STRUCTURE DETAILS

Sheet reference number:
2105
43 OF 45

M:\Design\DWG\AGE\SSERC\2nd_0.5m\Design Drawings - Phase III\2105.dwg, Model, 2/8/2005 1:29:58 PM, girardeh, 1:10

TABLE 1: HERBACEOUS SEED MIX SPECIFICATION

SPECIES	COMMON NAME	PERCENT BY WEIGHT
Elymus riparius	stream bank wild rye	25
Elymus canadensis	Canada wild rye	15
Panicum clandestinum	deer–tongue	15
Poa palustris	fowl bluegrass	10
Agrostis stolonifera	creeping bentgrass	10
Desmodium canadense	showy tick–trefoil	6
Polygonum pensylvanicum	Pennsylvania smartweed	6
Asclepias syriaca	common milkweed	2
Solidago canadensis	Canada goldenrod	2
Solidago gigantea	smooth goldenrod	2
Solidago rugosa var. rugosa	wrinkled goldenrod	2
Aster puniceus	bristly aster	2
Aster lateriflorus	calico or golden aster	1
Aster macrophyllus	big–leaved aster	1
Verbena hastata	blue vervain	1

TABLE 2: PLANT DISTRIBUTION

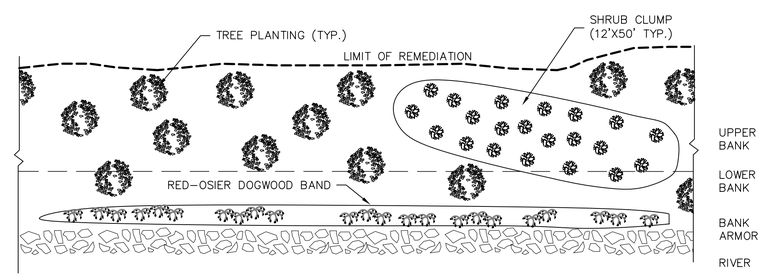
TREE SPECIES		PLANT LOCATION AND DISTRIBUTION	
SCIENTIFIC NAME	COMMON NAME	UPPER BANK	LOWER BANK
Salix nigra	black willow	75%	25%
Acer saccharinum	silver maple		
Populus deltoides	eastern cottonwood	25%	75%
Acer negundo	box elder		

PLANTING NOTES:

1) TREES TO BE CONTAINERIZED NURSERY STOCK 4' TO 6' HIGH. TREES TO BE PLANTED AT A DENSITY OF 700 PER ACRE (APPROXIMATELY 8' ON CENTER), UNEVENLY SPACED, IN SINUOUS ROWS ROUGHLY PARALLEL TO RIVER. TREE SPECIES AND SPATIAL DISTRIBUTION ARE GIVEN IN TABLE 2
2) THE TRANSITION BETWEEN THE UPPER AND LOWER BANK PLANTING AREAS WILL BE DETERMINED IN THE FIELD PRIOR TO THE INSTALLATION OF PLANTS.
3) SHRUBS TO BE CONTAINERIZED NURSERY STOCK 2' TO 3' HIGH. SHRUBS TO BE PLANTED AT A DENSITY OF 730 PER ACRE. SHRUBS TO BE DISTRIBUTED IN CLUMPS OR IN SINGLE BANDS AS FOLLOWS:
   A) CLUMPS– SHRUBS TO BE SPACED 4' O.C. WITHIN 12'X50' OBLONG CLUMPS. THE CLUMPS TO BE SPACED MORE THAN 40' APART COMPRISED OF THE FOLLOWING SPECIES EVENLY DISTRIBUTED WITHIN THE CLUMP:
      SILKY DOGWOOD (Cornus amomum)
      NORTHERN ARROWWOOD (Viburnum dentatum)
      WINTERBERRY (Ilex verticillata)
      CHOKE CHERRY (Prunus virginiana)
   B) RED–OSIER DOGWOOD (Cornus sericea) BAND–THE BAND TO BE INSTALLED IN THE LOWER BANK WITHIN 2' OF THE TOP OF BANK ARMOR. PLANTS TO BE SPACED 8' O.C.
4) THE HERBACEOUS SEED MIX SPECIFIED IN TABLE 1 WILL BE APPLIED ON ALL REVEGETATION AREAS AT A RATE OF 1 lb/1000 SQUARE FEET (S.F.).
5) FINAL PLANT MIX TO BE MODIFIED BASED ON DISCUSSIONS WITH PROPERTY OWNERS.

PLANTING LAYOUT FOR REVEGETATION AREAS DETAIL

NOT TO SCALE



FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr
C	FINAL DESIGN (REVISED PACKAGE)	1/27/05	
B	FINAL DESIGN (COMPLETE PACKAGE)	12/3/04	
A	DRAFT FINAL DESIGN	8/6/04	

Designed by: | Date: | Rev. C
Dwn by: KWH | Ckd by: MRC | Design file no:
Reviewed by: | SPEC. No.:
Submitted by: | File name: 2106.DWG | Plot date: 1-21-05
Chief, Arch. Section | Plot scale:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

TABLES AND NOTES

Sheet reference number:
2106
44 OF 45

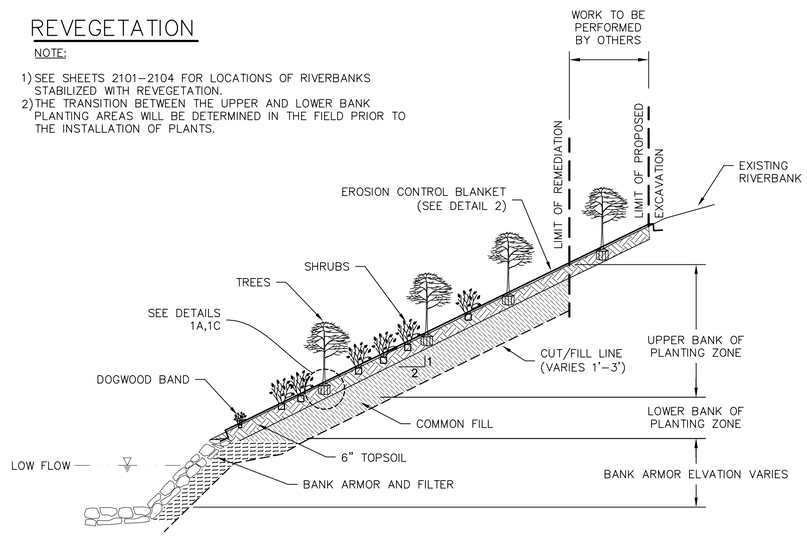
BANK REVEGETATION (TYP.) 1

NOT TO SCALE (SLOPE GRADE AND LENGTH VARY)

REVEGETATION

NOTE:

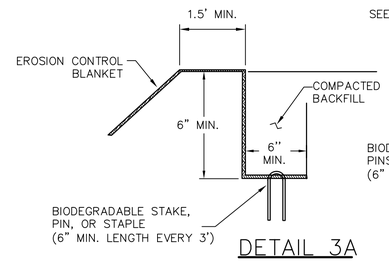
1) SEE SHEETS 2101–2104 FOR LOCATIONS OF RIVERBANKS STABILIZED WITH REVEGETATION.
2) THE TRANSITION BETWEEN THE UPPER AND LOWER BANK PLANTING AREAS WILL BE DETERMINED IN THE FIELD PRIOR TO THE INSTALLATION OF PLANTS.



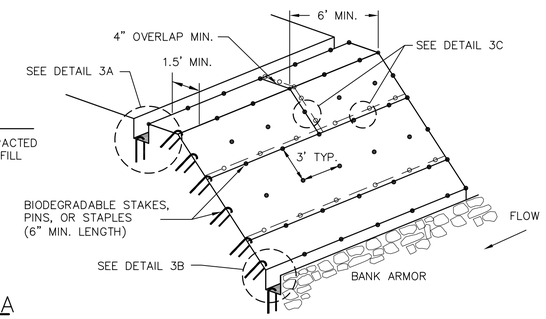
EROSION CONTROL BLANKET (TYP.) 2

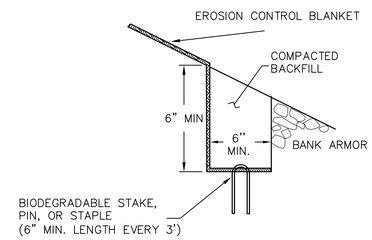
NOT TO SCALE

ISOMETRIC

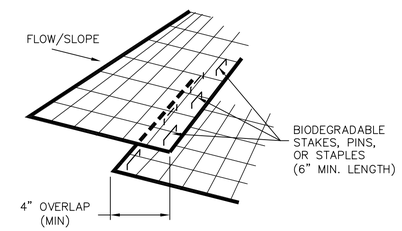


DETAIL 3A

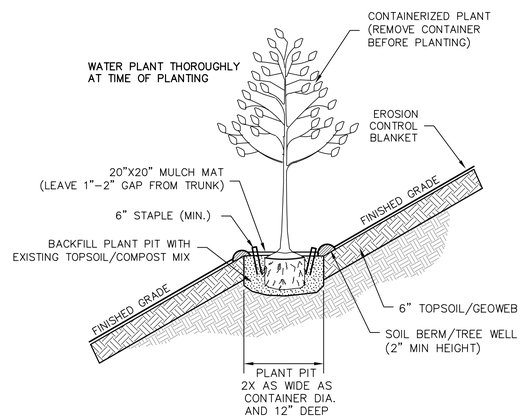




DETAIL 3B



DETAIL 3C

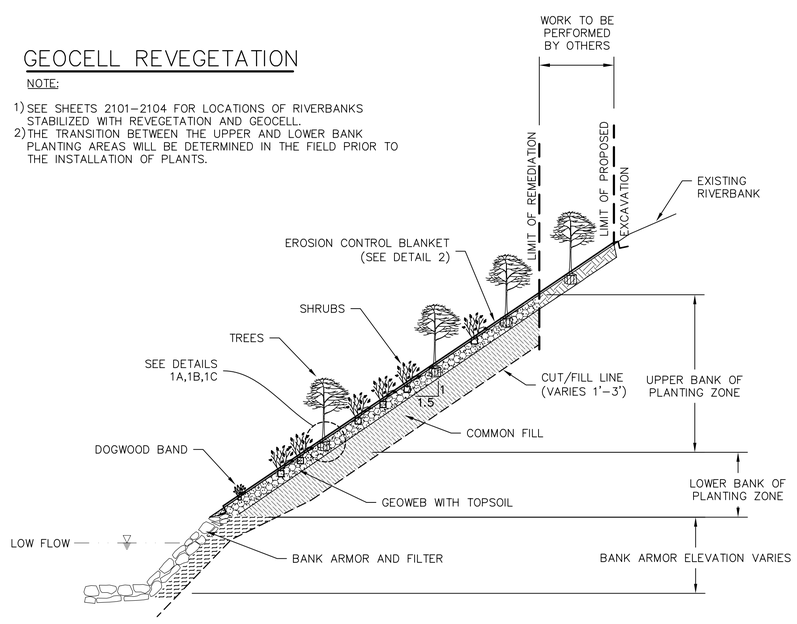


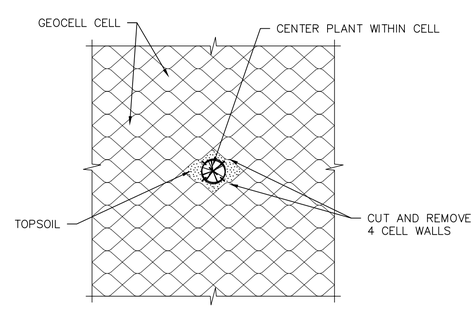
DETAIL 1A–TREE PLANTING

GEOCELL REVEGETATION

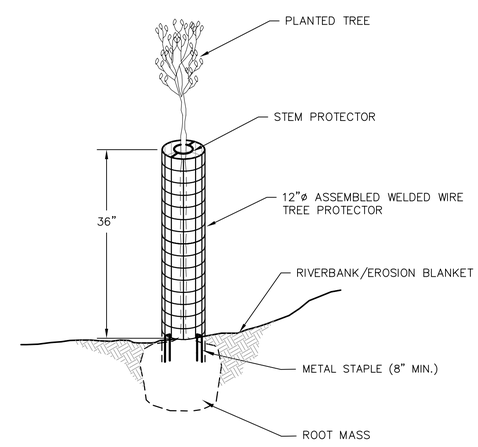
NOTE:

1) SEE SHEETS 2101–2104 FOR LOCATIONS OF RIVERBANKS STABILIZED WITH REVEGETATION AND GEOCELL.
2) THE TRANSITION BETWEEN THE UPPER AND LOWER BANK PLANTING AREAS WILL BE DETERMINED IN THE FIELD PRIOR TO THE INSTALLATION OF PLANTS.





DETAIL 1B–GEOCELL PLANTING



DETAIL 1C–TREE PROTECTOR

FINAL DESIGN

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.
C	FINAL DESIGN (REVISED PACKAGE)	12/7/05					
B	FINAL DESIGN (COMPLETE PACKAGE)	11/3/04					
A	DRAFT FINAL DESIGN	8/6/04					

Designed by: WRS
Dwn by: KWH
Ckd by: MRC
Reviewed by:
Submitted by:
Chief, Arch. Section
Date:
Rev. C
Design file no:
SPEC. No.:
File name: 2107.DWG
Plot date: 1-21-05
Plot scale: NOT TO SCALE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WESTON SOLUTIONS
WOODLOT ALTERNATIVES, INC.

1.5 MILE REMOVAL ACTION – PHASE 3 – STA 543+50 TO STA 575+33
ENVIRONMENTAL REMEDIATION CONTRACT (SSERC)
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS
REVEGETATION DETAILS

Sheet reference number:
2107
45 OF 45

M:\Design\DWG\MCGE\SSERC\3rd_0.5m\Design Drawings - Phase III\2107.dwg, Model, 2/8/2005 1:33:51 PM, glordeb, 1:10