From: JBraico@aol.com Date: March 8, 2008 6:59:35 PM EST To: sblewis@bellatlantic.net Subject: Re: Thanks...

Sandy, While I couldn't agree more that the ACOE has followed a bad paradigm for over 100 years, they had their first wakeup call with the Mississippi floods of the early 90's. Yes, getting out of the flood plain, reconnecting the stream to its flood plain & restoring an adequate riparian buffer is absolutely critical.

The Rivermede geomorphic restoration project was conceived & developed by Clearwater Consulting (Rocky Powell) at the request of Trout Unlimited following an onsite meeting of the initiating principal players in 1998 where the ACOE disallowed all work except a full geomorphic restoration. The geomorphic components are drawn directly from the seminal works of the late Luna Leopold (Alda's son) & David Rosgen (Wildland Hydrology). The plan is for full geomorphic/ecosystem restoration: river, banks, fish, invertebrates, and a 100' multistory treed riparian buffer along both banks. In 2005, the ACOE became very interested in being directly involved in a high quality "green" river project -- hence their willingness to become the managing partner and provide a 65/35 cost share.

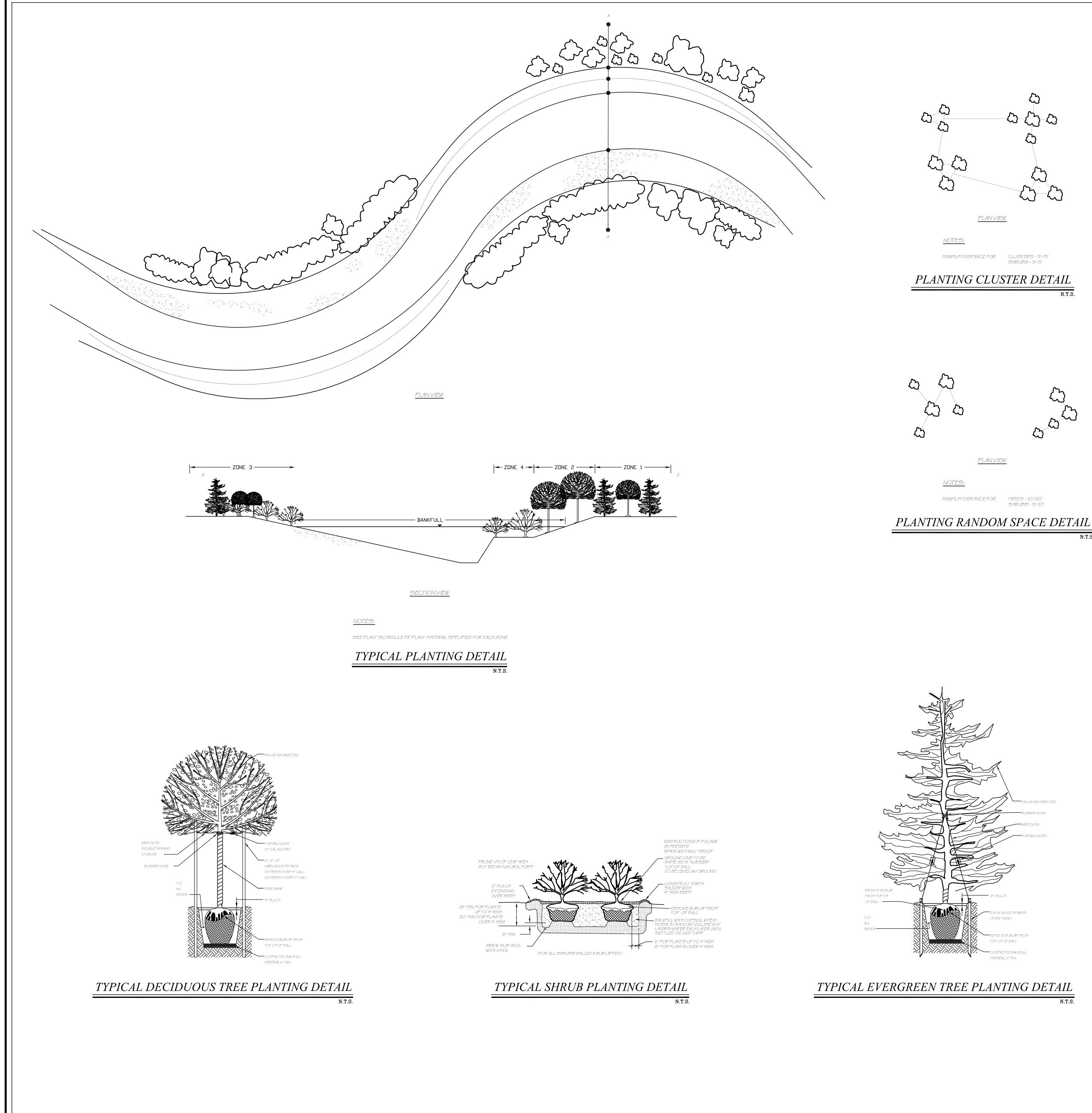
From TU's perspective, this project will be a showcase of large scale high quality geomorphic restoration in a very visible/ accessible location. It will provide recreational use for anglers, kayakers, & passive recreation; demonstrate the potentials of both the Ausable & of geomorphic work, and hopefully shift people away from destructive past practices done to "control" natural processes. In NYS over the past 12 years, projects of this nature have become increasingly recognized as valuable in reversing longstanding degredation of our streams caused by inappropriate land use & infrastructure. True, at \$1.03 million, or \$390/lineal foot, Rivermede is not an in expensive repair; however, it could have been done in 2002 at 2/3 of this cost without the ACOE, but for our funding shortfall. It does promise to provide a self maintaining 1/2 mile of river in natural balance with the adjacent landscape.

As I indicated, the \$50,000 donation you provided directly to the Adirondack Chapter of TU for this project was and is an important part of our funding. It was held in reserve until required to enable the project to proceed. Around 2003 we spent \$2500 for a preliminary archaeological survey required by NYS. Fortunately we did not have to proceed with a full scale study, allowing us to apply the balance of the funds to new topographic, aerial surveys, design update, hydraulic and hydrologic modeling and engineering review required by our new partner the ACOE. These funds have been paid out by the Adirondack Chapter of TU during 2006-8, essentially consuming the balance. While this project had a targeted start date of 7/1/08, delays in completing the updates & the ACOE signing the formal PCA appear to have moved us past the window for sending it out to bid for '08. A conference call this month will clarify its status and update the timeline. Sandy, I honestly believe that in the end, you will be pleased to have been a very important contributor to such a major effort and Trout Unlimited thanks you for your support.

The attached item shows: existing, final & construction bypass channels (latter with arrows). The final channel is uniformly 90' wide at "bankfull elevation" & is recognizable by the presence of various structures: cross vanes, j hooks, root wads. The old & construction bypass channels will be filled to floodplain elevation, then incorporated in the riparian restoration. The lower end of the construction bypass channel will be reconstructed as a natural channel for a small stream entering on west (right) end of the project.

Sincerely yours, John Braico, MD Adirondack Chapter TU Board Member & Rivermede Project Coordinator NYS Council Trout Unlimited Resource Management VP

In a message dated 3/7/2008 9:02:38 P.M. Eastern Standard Time, <u>sblewis@bellatlantic.net</u> writes: John, thanks for your call. Turns out what I said to Anita back when is right. Millions, not \$50,000... Army Corps stuff destroys and their legacy is endless cost... will be interested to see what you have, Sandy



ZONE I - RIPARIAN AREAS PLANT SCHEDULE							
NRCS AND TROUT UNLIMITED WILL INSTALL LIVE MATERIAL (OBTAINED FROM NURSERY STOCK) ON THE STREAMBANKS A ADJACENT RIPARIAN AREA AFTER CONSTRUCTION NAS BEEN COMPLETED, THE LIVE MATERIAL WILL INCLUDE;							
<u>OTY</u>	BOTANICAL NAME	COMMON NAME	SIZE	<u>C0M</u>			
TREES							
50 50 50 30 30	PINUS STOBES PINUS RESINOSA PICEA RUBENS OUERCUS RUBENS ACER SACCHARUM	WHITE PINE RED PINE RED SPRUCE NORTHERN RED OAK SUGAR MAPLE	18"-24" 10"-12" 6"-10" 6"-24"	BARI BARI BARI BARI BARI			
UNDERSTO	DRY TREES/SHRUBS						
50 50 50 30 30	BETULA POPULIFOLIA VIBURNUM LENTAGO VIBURNUM ACERIFOLIUM ACER PENSYLVANICUM PRUNUS VIRGINIANA	GRAY BIRTCH NANNYBERRY MAPLELEAF VIBERNUM STRIPED MAPLE CHOKECHERRY	24"-30" 12"-18" 18"-24" 18"-24" 12"-18"	BARI BARI BARI BARI BARI			
ZONE 2 -	STREAMBANK PLANT SCHEDULE						
<u>OTY</u>	BOTANICAL NAME	COMMON NAME	SIZE	<u>COM</u>			
TREES							
24 24 24 24	ACER RUBRUM ACER SACCHARINUM FRAXINUS NIGRA BETULA PAPYRIFOLIA	RED MAPLE SILVER MAPLE BLACK ASH PAPER BIRCH	3'-4' 2'-3' 18''-24'' 18''-24''	CON CON CON CON			
UNDERSTO	DRY TREES/SHRUBS						
24 24 24	SAMBUCUS CANADENSIS CORNUS SERICEA STOLONIFERA VIBURNUM LENTAGO	ELDERBERRY RED OSIER DOGWOOD NANNYBERRY	18'-24' 18''-24'' 18''-24''	CON CON CON			
ZONE 3 -	UPPER POINT BAR/LOWER FLOOI	DPRONE AREA PLANT SCI	1EDULE				
<u>OTY</u>	BOTANICAL NAME	COMMON NAME	SIZE	<u>COM</u>			
48 48 48 48 48	ACER RUBRUM ALNUS RUGOSA IIEX VERTICILLATA SALIX DISCOLOR SALIX LUCIDA	RED MAPLE SPECKLED ALDER WINTERBERRY PUSSY WILLOW SHINING WILLOW	3'-4' 2'-3' 18''-24'' 18''-24'' 18''-24''	CON CON CON CON			
ZONE 4 -	TOE BENCH PLANT SCHEDULE						
TRANSPLA	NTED TREES/SHRUBS						

N.T.S.

SALIX SPP,	WILLOW
ALNUS ROGOSA	SPECKLED ALDER
CORNUS STOLONIFERA	RED OSIER DOGWOOD
CORNUS AMOMM	SILKY DOGWOOD
VIBURNUM LENTAGO	NANNYBERRY
VIBURNUM TRILOBUM	HIGH DUSH CRANBERRY
ACER RUBRUM	RED MAPLE
VIBURNUM CASSINOIDES	WILD RAISIN
SPIREA TOMENTOSA	SPIREA
THE DETAILS COVERING THE	: HARVESTING AND TRANSPLANTING OF LIVE MATERIAL IN THIS PLANTING ZONE IS DESCRIBED IN
THE SPECIAL PROVISIONS (COVERING THOSE ITEMS,

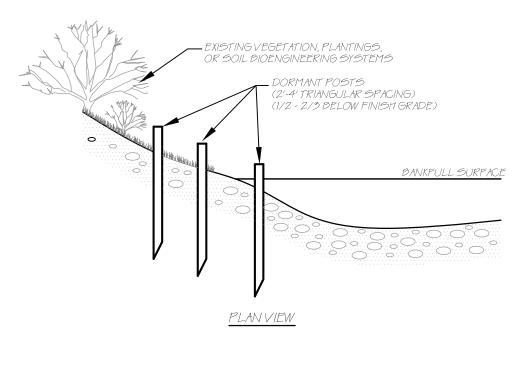
LNE STAKES/POSTS NRCS AND TROUT UNLIMITED WILL INSTALL ADDITIONAL LIVE MATERIAL ON THIS LOWER FEATURE AND THE STREAMBANKS AFTER CONSTRUCTION HAS BEEN COMPLETED, THE LIVE MATERIAL WILL INCLUDE;

THE CONTRACTOR WILL APPLY PERMANENT STABILIZATION BY APPLYING A SEED MIXTRE OF NAITNE OR NATURALIZED GRASSES AND LEGUMES, THE SEED MIXTURE AND APLICATION RATES OF NATIVE OR NATURALIZED GRASSES AND LEGUMES THAT WILL BE USED FOR PERMANENT STABILIZATION IN EACH PLANTING ZONE IS DESCRIBED IN THE SPECIAL PROVISIONS COVERING

BLACK WILLOW PURPLE OSIER (STREAMCO) WILLOW SALIX NIGRA SALIX PURPUREA

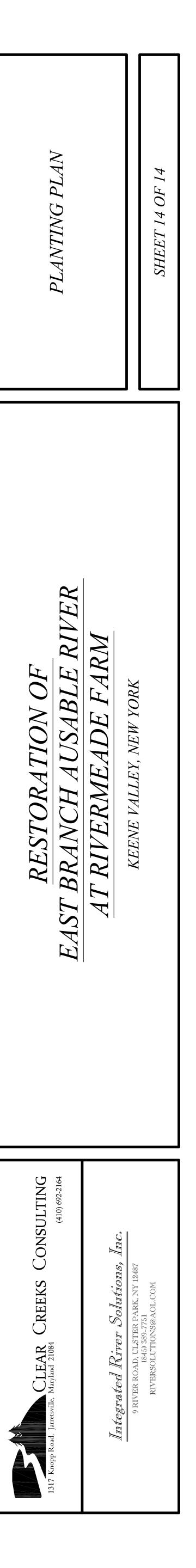
ZONE 1-4 - GROUNDCOVER

THOSE ITEMS,



LIVE STAKE/POST DETAIL N.T.S.

	REV. NO.	DESCRIPTION	DATE	REVISION BY
	1	GENERAL REVISIONS	09/08/07	CLEAR CREEKS CONSULTING LLC - R. POWELL
FINAL DRAFT	2	TOPOGRAPHIC SURVEY UPDATED	11/05/07	INTEGRATED RIVER SOLUTIONS, INC - D. DEKOSKIE
	3	GENERAL REVISIONS	12/16/07	INTEGRATED RIVER SOLUTIONS, INC - D. DEKOSKIE
FOR REVIEW ONLY	4	GENERAL REVISIONS	2/04/08	INTEGRATED RIVER SOLUTIONS, INC - D. DEKOSKIE



PHASE I

*THIS PHASE WILL BE DONE IN THREE STAGES WITH FLOW DIVERSION

STAGE 1 - INSTALL BY -PASS DIVERSION CHANNEL (STATION 5+00 TO 25+00,

I. CLEAR AND GRUB FOR PHASE I SEDIMENT AND EROSION CONTROL DEVICES. 2, INSTALL ALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN IN THE SEDIMENT AND EROSION CONTROL PLANS, 3, CONSTRUCT BY-PASS DIVERSION CHANNEL ALONG LEFT TERRACE AND FLOODPLAIN FROM STATION 5+00 TO STATION 16+00 TYING INTO EXISTING CUTOFF CHANNEL AND UNNAMED TRIBUTARY THAT ENTERS MAIN STEM AT STATION 23+75. 4. STOCKPILE ALL EXCAV ATED MATERIAL FOR USE IN BACKFILLING EXISTING CHANNEL AND CONSTRUCTING NEW STREAM BANKS AND FLOODPRONE AREAS,

STAGE 2 (THALWEG STATIONS 26+10 TO 16+50) 1. WORKING IN AN UPSTREAM DIRECTION:

- A. EXCAVATE NEW THALWEG STATION 26+10 TO 22+50 AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS BY EXCAVATING MATERIAL FROM MID-CHANNEL BAR AND POINT BAR, B, CONSTRUCT NEW LEFT BANK AND CONFLUENCE FOR UNNAMED TRIBUTARY STATION 26+10 TO 24+40 AND STATION 24+10 TO 23 + 10 BY INSTALLING A TOE BENCH ALONG THE PROPOSED LEFT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, C. BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS.
- D, PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS, E, GRADE EXISTING STREAM BANK AND FINISH NEW LEFT BANK AND TOE BENCH BY PLACING EXCAVATED BANK MATERIAL ALONG TOP
- OF BENCH, F. BEGIN CONSTRUCTING NEW RIGHT BANK BY GRADING EXISTING BANK STATION 25+50 TO 24+00 AND INSTALLING A TOE BENCH STATION 25+35 TO 23+35 ALONG THE PROPOSED RIGHT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, G, BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS,
- H, PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS, I. INSTALL CROSS VANE AT DOWNSTREAM END OF PROJECT STATION 25+50 TO 24+75 TYING INTO TOE BENCHES ALONG BOTH BANKS. J, EXCAV ATE SCOUR POOL DOWNSTREAM OF STRUCTURE AS SHOWN IN CONSTRUCTION DRAWINGS AND AS DIRECTED BY
- PROJECT MANAGER. K. CONTINUE CONSTRUCTING NEW THALWEG AND LEFT AND RIGHT BANK STATION 23+35 TO 16+50 BY EXCAVATING POINT BAR AND INSTALLING A TOE BENCH ALONG THE PROPOSED RIGHT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS.
- L, BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS, M. PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS. N, BACKFILL EXISTING CHANNEL TO CREATE UPPER PORTION OF RIGHT BANK AND FLOODPRONE AREA UTILIZING MATERIAL
- EXCAV ATED FROM POINT BAR AND SELECT BACKFILL MATERIAL TRANSPORTED FROM BORROW SITE AND TYING INTO EXISTING RIGHT BANK. O, AS TOE BENCH CONSTRUCTION PROCEEDS UPSTREAM ALONG RIGHT CHANNEL MARGIN INSTALL STRUCTURES TYING INTO TOE BENCH AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER: I, INSTALL SUBMERGED LOG VANE ALONG RIGHT BANK STATION 23+35 TO 22+90,
- ii.INSTALL ROOTWAD ALONG RIGHT BANK STATION 22+75, iii, INSTALL ROCK VANE ALONG RIGHT BANK STATION 22+65 TO 22+00.
- iv. INSTALL ROOTWAD ALONG RIGHT BANK STATION 21+25, v.INSTALL SUBMERGED LOG VANE ALONG RIGHT BANK STATION 21+10 TO 20+65.
- vi, INSTALL ROOTWAD ALONG RIGHT BANK STATION 20+50. vii, INSTALL ROCK VANE ALONG RIGHT BANK STATION 19+75 TO 20+40,
- P, EXCAVATE POOL AND GRADE NEW LEFT BANK STATION 23+00 TO 18+00 TO SHAPE AND SLOPE POINT BAR AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER, 2, RAKE ALL DISTURBED AREAS ON BOTH SIDES OF CHANNEL AND FLOODPLAIN, SEED AND MULCH, AND INSTALL EROSION CONTROL BLANKETS,

STAGE 3 (THALWEG STATIONS 16+50 TO 11+00)

CONTROL BLANKETS,

- 1. WORKING IN AN UPSTREAM DIRECTION; A. EXCAVATE NEW THALWEG STATION 16+50 TO 15+35 AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS BY EXCAVATING MATERIAL FROM MID-CHANNEL BARS AND POINT BAR, B, CONSTRUCT NEW LEFT BANK STATION 16+90 TO 15+35 BY INSTALLING ATOE BENCH ALONG THE PROPOSED LEFT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS,
- C. BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS. D. PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS.
- E. INSTALL CROSS VANE STATION 16+90 TO 17+55 TYING INTO TOE BENCH ALONG RIGHT BANK AND POINT BAR ALONG LEFT BANK. F, EXCAV ATE SCOUR POOL DOWNSTREAM OF STRUCTURE AS SHOWN IN CONSTRUCTION DRAWINGS AND AS DIRECTED BY PROJECT MANAGER,
- G. CONTINUE CONSTRUCTING NEW THALWEG AND LEFT AND RIGHT BANK STATION 15+35 TO 11+00 BY EXCAVATING MID-CHANNEL BARS AND INSTALLING A TOE BENCH ALONG THE PROPOSED LEFT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION
- DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS. H, BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS,
- I, PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS, J. AS TOE BENCH CONSTRUCTION PROCEEDS UPSTREAM ALONG RIGHT CHANNEL MARGIN INSTALL STRUCTURES TYING INTO TOE BENCH AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER;
- INSTALL ROOTWAD ALONG LEFT BANK STATION 15+30, ii.INSTALL ROCK VANE ALONG LEFT BANK STATION 15+20 TO 14+55. iii, INSTALL SUBMERGED LOG VANE ALONG LEFT BANK STATION 14+20 TO 13+80.
- iv. INSTALL ROOTWAD ALONG LEFT BANK STATION 13+60. V.INSTALL ROCK VANE ALONG LEFT BANK STATION 13+50 TO 12+85.
- INGTALL POOTWAD ALONG LEFT BANK GTATION 12 160 vii, INSTALL ROCK VANE ALONG LEFT BANK STATION 12+40 TO 11+75,
- K. EXCAVATE POOL AND GRADE NEW RIGHT BANK STATION 16+00 TO 11+00 TO SHAPE AND SLOPE POINT BAR AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER, L. BACKFILL THE CUT-OFF CHANNEL THAT IS FORMING IN THE WOODED AREA ALONG THE RIGHT FLOODPLAIN FROM STATION 9+00 TO 17 + 00 UTILIZING MATERIAL EXCAVATED FROM MID-CHANNEL BARS AND SELECT BACKFILL MATERIAL TRANSPORTED FROM BORROW SITE AND AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS

2, RAKE ALL DISTURBED AREAS ON THE RIGHT SIDE OF CHANNEL AND FLOODPLAIN, SEED AND MULCH, AND INSTALL EROSION



<u>NOTES:</u>

TOPOGRAPHIC SURVEY CONDUCTED USING AERIAL PHOTOGRAMMETRIC METHODS BY AXIS GEOSPATIAL, LLC, 10 LIFT BRIDGE LANE EAST, FAIRPORT, NY 14450. DATE FLOWN APRIL 20, 2006. ADDITIONAL SITE AND STREAM CHANNELTOPOGRAPHY CONDUCTED BY KEVIN A. HALL, LAND SURVEYOR, ELIZABETHTOWN, NY 12932. COMPLETED ON 11/05/07.

PHASE II

STAGE I (THALWEG STATIONS 11+00 TO 5+00

- 3. WORKING IN AN UPSTREAM DIRECTION: CONSTRUCTION SPECIFICATIONS BY EXCAVATING MATERIAL FROM POINT BAR.
- MANAGER.
- PROJECT MANAGER:
- vi. INSTALL ROOTWAD ALONG RIGHT BANK STATION 5+05.
- CHANNEL
- ACROSS OPEN WATER FORCING FLOW INTO NEW CHANNEL,
- BLANKETS,
- STAGE 3 (UNNAMED TRIBUTARY)

BLANKETS.

*THIS PHASE WILL BE DONE IN THREE STAGES WITH FLOW DIVERSION

I. CLEAR AND GRUB FOR ALL PHASE II SEDIMENT AND EROSION CONTROL DEVICES. 2. INSTALL ALL PHASE II SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN IN THE SEDIMENT AND EROSION CONTROL PLANS, A. EXCAVATE NEW THALWEG STATION 11+00 TO 7+55 AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE

B. CONSTRUCT NEW RIGHT AND LEFT BANKS STATION 11+00 TO 7+55 BY INSTALLING TOE BENCHES ALONG BOTH PROPOSED CHANNEL MARGINS AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, C, BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS,

D, PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS, E. BEGIN BACKFILLING EXISTING CHANNEL TO CREATE UPPER PORTION OF RIGHT BANK AND FLOODPRONE AREA UTILIZING MATERIAL EXCAVATED FROM POINT BAR AND SELECT BACKFILL MATERIAL TRANSPORTED FROM BORROW SITE. F. INSTALL CROSS VANE AT STATION 8+65 TO 9+35 TYING INTO TOE BENCHES ALONG BOTH BANKS. G. EXCAV ATE SCOUR POOL DOWNSTREAM OF STRUCTURE AS SHOWN IN CONSTRUCTION DRAWINGS AND AS DIRECTED BY PROJECT

H, CONTINUE CONSTRUCTING NEW THALWEG AND LEFT AND RIGHT BANK STATION 7+55 TO 5+00 BY EXCAVATING POINT BAR AND INSTALLING A TOE BENCH ALONG THE PROPOSED RIGHT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, I, BEGIN TOE BENCH BY PLACING SHOT ROCK BASES ALONG PROPOSED CHANNEL MARGINS,

J. PLACE THE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS, K. CONTINUE BACKFILLING EXISTING CHANNEL TO CREATE UPPER PORTION OF RIGHT BANK AND FLOODPRONE AREA UTILIZING MATERIAL EXCAVATED FROM POINT BAR AND SELECT BACKFILL MATERIAL TRANSPORTED FROM BORROW SITE.

L, AS TOE BENCH CONSTRUCTION PROCEEDS UPSTREAM ALONG RIGHT CHANNEL MARGIN INSTALL STRUCTURES TVING INTO TOE BENCH AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY

INSTALL ROOTWAD ALONG RIGHT BANK STATION 7+70. II. INSTALL ROCK VANE ALONG RIGHT BANK STATION 7+60 TO 6+95. iii, INSTALL SUBMERGED LOG VANE ALONG RIGHT BANK STATION 6+60 TO 6+20.

INSTALL ROOTWAD ALONG RIGHT BANK STATION 5+84. v.INSTALL SUBMERGED LOG VANE ALONG RIGHT BANK STATION 5+60 TO 5+20,

4, RAKE ALL DISTURBED AREAS ON BOTH SIDES OF CHANNEL AND FLOODPLAIN, SEED AND MULCH, AND INSTALL EROSION CONTROL

vii. INSTALL ROCK VANE ALONG RIGHT BANK STATION 4+95 TO 4+30.

STAGE 2 - BY-PASS DIVERSION CHANNEL SHUTDOWN AND BACKFILL

I, CONSTRUCT A TOE BENCH ACROSS UPSTREAM END OF THE BY-PASS DIVERSION CHANNEL TO DIVERT STREAM FLOW INTO THE NEW 2. BEGIN TOE BENCH BY PLACING SHOT ROCK BASE ACROSS UPSTREAM END OF DIVERSION CHANNEL WORKING FROM LEFT TO RIGHT

3. PLACE EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASES TO FILL VOIDS.

4. BACKFILL DIVERSION CHANNEL TO CREATE POINT BAR AND UPPER PORTION OF LEFT BANK AND FLOODPRONE AREA STATIONS 5+00 16+50 UTILIZING MATERIAL EXCAVATED FROM POINT BAR AND SELECT BACKFILL MATERIAL TRANSPORTED FROM BORROW SITE, 5. RAKE ALL DISTURBED AREAS ALONG LEFT SIDE OF CHANNEL AND FLOODPLAIN, SEED AND MULCH, AND INSTALL EROSION CONTROL

I. INSTALL PUMP DVERSION SYSTEM TO ROUTE TRIBUTARY FLOW AROUND WORK AREA AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER.

2. RECONSTRUCT UNNAMED TRIBUTARY AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER. 3. REMOVE PUMP DIVERSION FROM TRIBUTARY WORK AREA.

> MAINSTEM BY-PASS DNERSION CHANNEL -

PHASE 3

ARFA

PHASE III *THIS PHASE WILL BE DONE IN ONE STAGE WITHOUT FLOW DIVERSION

CONSTRUCTION

ACCESS

STOCKPILE

ARFA

1. CLEAR AND GRUB FOR ALL PHASE 111 SEDIMENT AND EROSION CONTROL DEVICES.

- 3. WORKING IN AN UPSTREAM DIRECTION: A. EXCAVATE POOL AND GRADE NEW LEFT BANK STATION 10+00 TO 4+00 TO SHAPE AND SLOPE POINT BAR AS SHOWN IN THE
- CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER. B, EXCAVATE NEW THALWEG STATION 5+00 TO 0+00 AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS BY EXCAVATING MATERIAL FROM MID-CHANNEL BAR.
- C. CONSTRUCT NEW LEFT BANK STATION 5+00 TO 0+00 BY INSTALLING A TOE BENCH ALONG LEFT CHANNEL MARGIN AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, D. BEGIN TOE BENCH BY PLACING SHOT ROCK BASE ALONG LEFT CHANNEL MARGIN,
- E, CONTINUE CONSTRUCTING NEW LEFT BANK AND TOE BENCH ALONG LEFT CHANNEL MARGIN BY PLACING EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASE TO FILL VOIDS.
- F, GRADE EXISTING STREAM BANK AND FINISH NEW LEFT BANK AND TOE BENCH BY PLACING EXCAVATED BANK MATERIAL ALONG TOP OF BENCH. 6. CONSTRUCT NEW RIGHT BANK 5+00 TO 3+50 BY INSTALLING A TOE BENCH ALONG RIGHT CHANNEL MARGIN AS SHOWN IN THE
- CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, H, BEGIN TOE BENCH BY PLACING SHOT ROCK BASE ALONG LEFT CHANNEL MARGIN,
- I. CONTINUE CONSTRUCTING NEW LEFT BANK AND TOE BENCH ALONG LEFT CHANNEL MARGIN BY PLACING EXCAVATED BAR MATERIAL ON TOP OF SHOT ROCK BASE TO FILL VOIDS, J, GRADE EXISTING RIGHT STREAM BANK AND FINISH NEW RIGHT BANK AND TOE BENCH BY PLACING EXCAVATED BANK MATERIAL
- ALONG TOP OF BENCH. K. INSTALL CROSS VANE (STATION 1+00 TO 1+75) AS SHOWN IN THE CONSTRUCTION DRAWINGS, OUTLINED IN THE CONSTRUCTION SPECIFICATIONS, AND AS DIRECTED BY PROJECT MANAGER. L. EXCAVATE SCOUR POOL DOWNSTREAM OF STRUCTURE AS SHOWN IN CONSTRUCTION DRAWINGS AND AS DIRECTED BY
- PROJECT MANAGER M. BACKFILL THE SIDE-CHANNELS IN THE WOODED AREA ALONG THE RIGHT EDGE OF FLOODPLAIN FROM STATION 4+00 TO A POINT 170 FEET UPSTREAM OF STATION 0+00 UTILIZING MATERIAL EXCAVATED FROM MID-CHANNEL BAR AND SELECT BACKFILL
- MATERIAL TRANSPORTED FROM BORROW SITE AND AS SHOWN IN THE CONSTRUCTION DRAWINGS AND OUTLINED IN THE CONSTRUCTION SPECIFICATIONS N. RAKE ALL DISTURBED AREAS ON BOTH SIDES OF CHANNEL AND FLOODPLAIN, SEED AND MULCH, AND INSTALL EROSION CONTROL BLANKETS,

CONSTRUCTION

PHASE 2

ACCESS

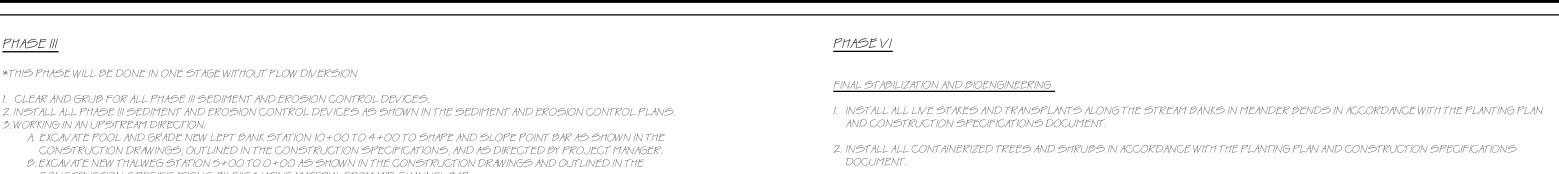
(IN FEET

GRAPHIC SCALE

CONSTRUCTION

ACCESS

1 inch = 100 ft.



3. SEED AND MULCH ALL DISTURBED AREAS OUTSIDE OF THE IMMEDIATE RESTORATION WORK AREA IN ACCORDANCE WITH THE SEED MIXTURE, APPLICATION RATES, ETC. DESCRIBED IN THE CONSTRUCTION SPECIFICATIONS DOCUMENT.

