GEOMORPHIC RECLAMATION
AND NATURAL STREAM DESIGN
AT COAL MINES
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING
April 28-30, 2009 ◆ Bristol, VA

UT TO BIG BRUSH CREEK STREAM RESTORATION

SEQUATCHIE COUNTY, TENNESSEE

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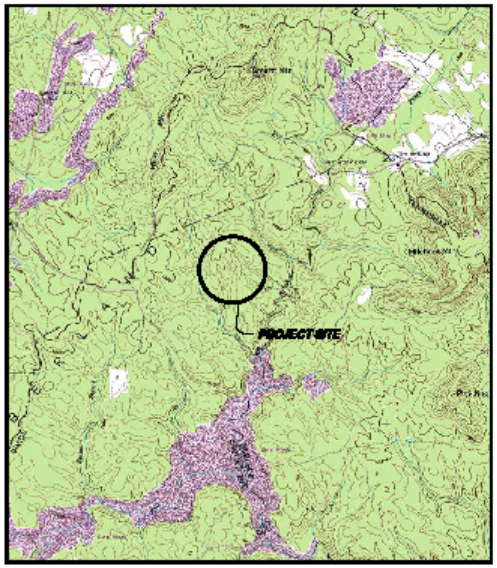
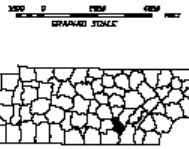


VICINITY MAP



LEGEND

12+00 PROPOSED CENTERLINE

EXISTING CONTOURS

PROPOSED CONTOURS

STEP POOLS

LOG VANE

ROOT WAD / J-HOOK

PROPOSED GCI LINER

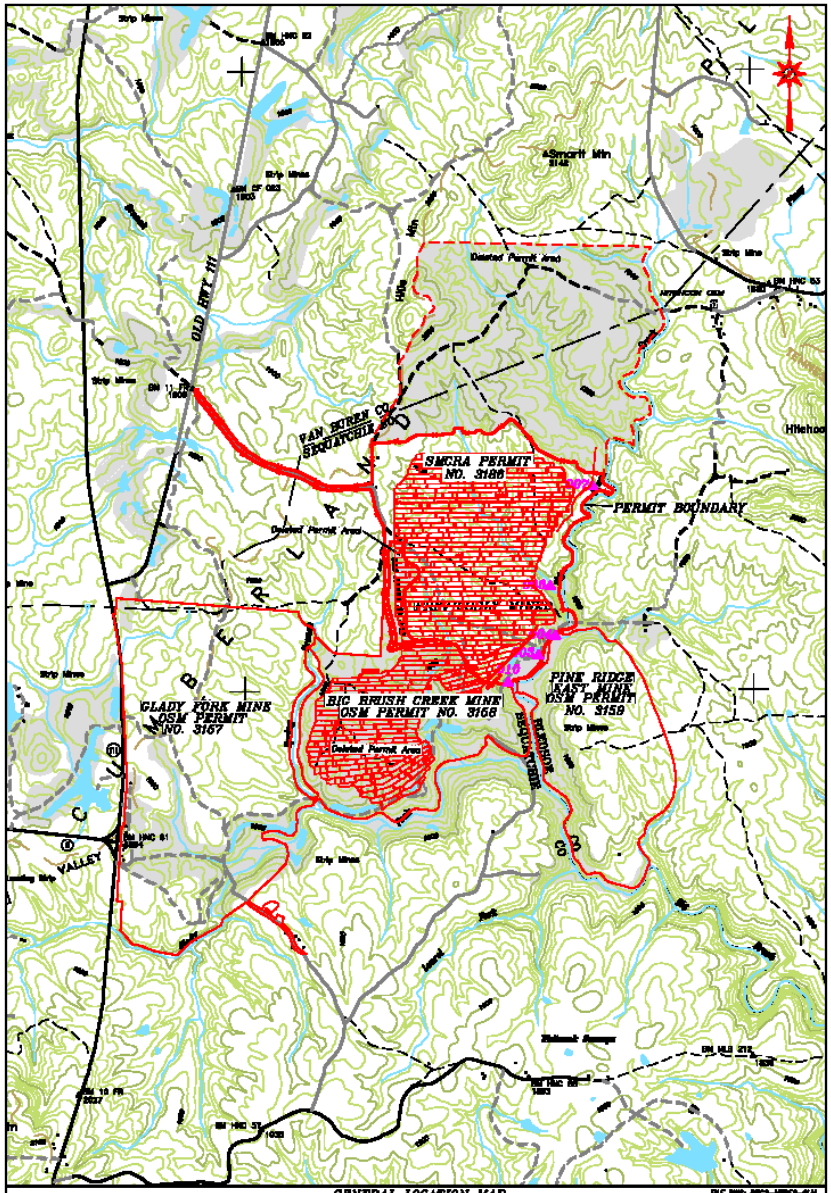
Note
Survey information shown on these plans was provided by IRTEC, Inc., Caryville, Tennessee, and is based on a Survey performed in March 2007.

HALF-SIZE PRINT **FINAL**

COVER SHEET
DRAFT DESIGN
UT TO BIG BRUSH CREEK
STREAM RESTORATION
SEQUATCHIE COUNTY, TENNESSEE

1 of 10

05.07.2008 09:32



GENERAL LOCATION MAP

SCALE: 1"=2000'
SMARTT MOUNTAIN QUAD.

LCC TENNESSEE, LLC
200 WEST VINE ST, SUITE 300
LEXINGTON, KENTUCKY 40507
NPDES Permit No. TN0054151

IRTEC

SEQUATCHIE/VAN BUREN COUNTIES
BIG BRUSH CREEK MINE #2
SMCRA NO. 3186, 558.0 Ac.

▲ DISCHARGE MONITORING POINT

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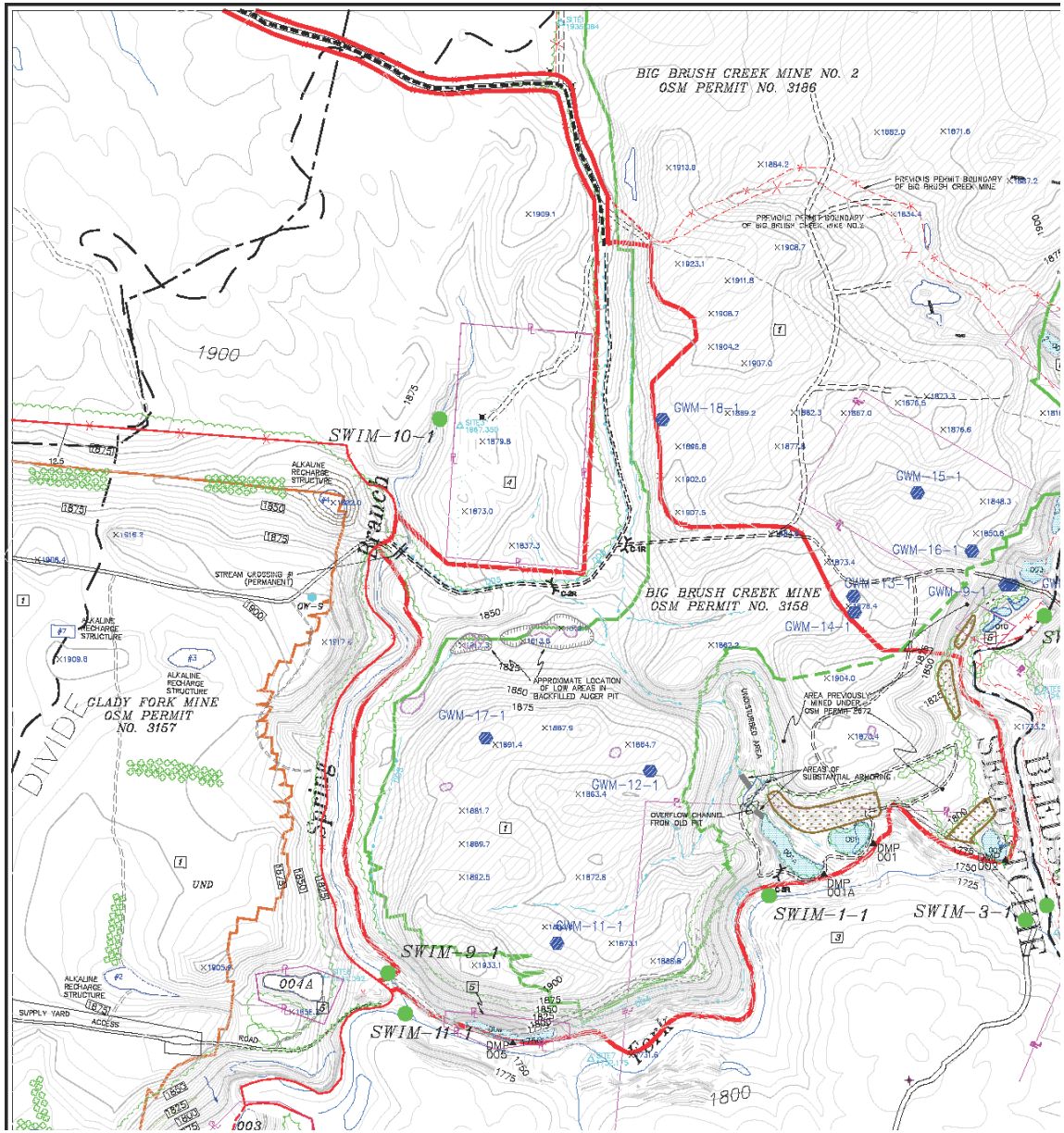
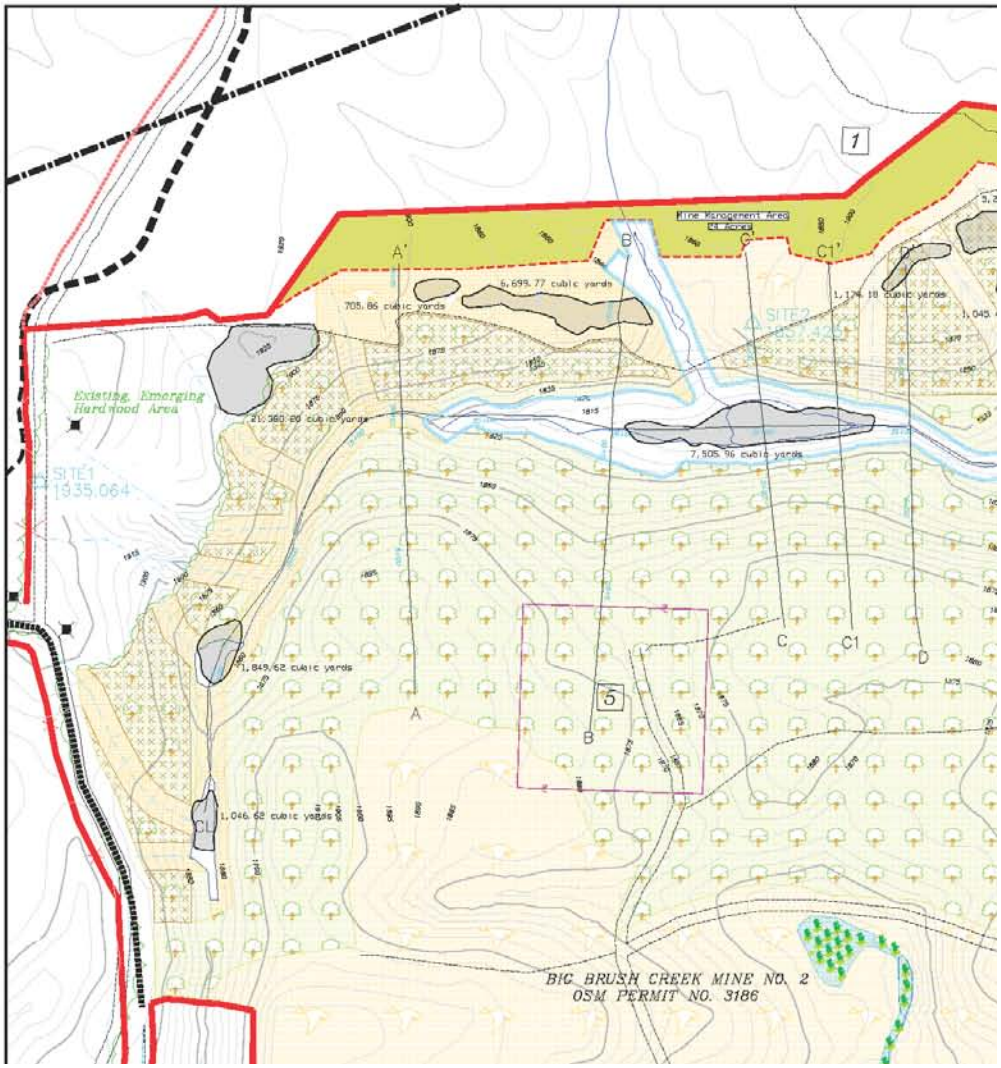
VISITORS

10 6'94

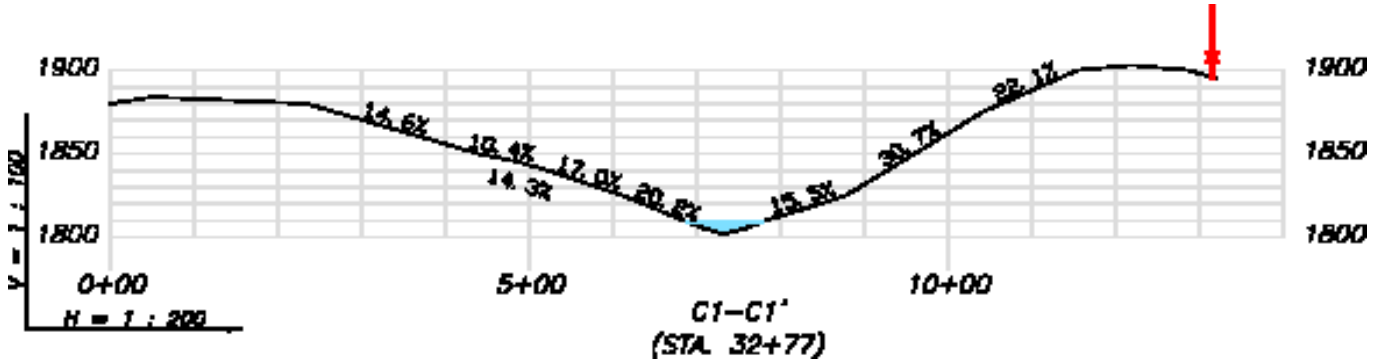
'92 11 19

9 28 '95


BIG BRUSH CREEK MINE NO. 2
OSM PERMIT NO. 3186
PREVIOUS PERMIT BOUNDARY OF BIG BRUSH CREEK MINE
PREVIOUS PERMIT BOUNDARY OF BIG BRUSH CREEK MINE NO.2
1900
SWIM-10-1
ALKALINE RECHARGE STRUCTURE
Branch
STREAM CROSSING #1 (PERMANENT)
GWM-18-1
GWM-15-1
GWM-16-1
GWM-13-1
GWM-9-1
GWM-14-1
BIG BRUSH CREEK MINE
OSM PERMIT NO. 3158
APPROXIMATE LOCATION OF LOW AREAS IN BACKFILLED AUGER PIT
GWM-17-1
GWM-12-1
GWM-11-1
AREA PREVIOUSLY MINED UNDER OSM PERMIT 2672
UNDISTURBED AREA
AREAS OF SUBSTANTIAL ARMORING
OVERFLOW CHANNEL FROM OLD PIT
DMP 001
DMP 001A
SWIM-1-1
SWIM-3-1
GLADY FORK MINE
OSM PERMIT
NO. 3157
DIVIDE
Spring
UND
SWIM-9-1
SWIM-11-1
004A
SUPPLY YARD ACCESS ROAD
Fork
1800
003


1
Mine Management Area
A'
B'
C
C1'
6,693.77 cubic yards
705.86 cubic yards
1,174.18 cubic yards
Existing Emerging
Hardwood Area
21,360.69 cubic yards
7,505.96 cubic yards
SITE1
1935.064
1,849.62 cubic yards
A
B
5
C
C1
D
1,046.62 cubic yards
BIG BRUSH CREEK MINE NO. 2
OSM PERMIT NO. 3186

MAY 12 2006


1900
1850
1800
1900
1850
1800
15.6%
18.4%
14.3%
17.0%
20.6%
15.5%
30.7%
22.1%
0+00
5+00
10+00
V = 1 : 100
H = 1 : 200
C1–C1'
(STA. 32+77)

03.22.2006 13:49

08.31.2007 11:25

0.40
0.30
WATER•MARK
0.20
0.10
.46
.44
.42
.38
.36
.34
.32
.28
.26
.24
.22
.18
.16
.14
.12
.08
.06
.04
.02

01.24.2008 11:26

05.21.2008 09:47

07.23.2008 18:26

735
10.07.2008

ORICA
TREAD
CORPORATION
TREAD
1942
1993
10.07.2008

F-350
SUPER DUTY
POWER STROKE V8
TURBO DIESEL
10.07.2008

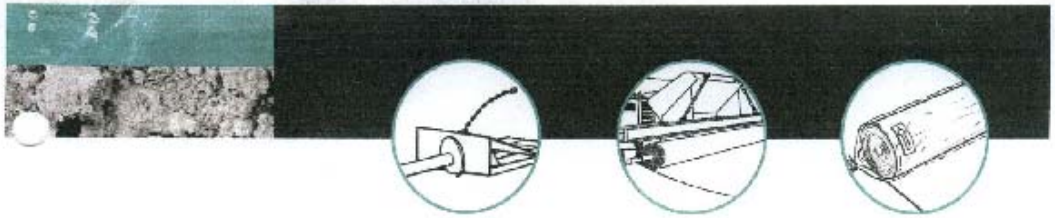
08.22.2008 14:28

10.06.2008

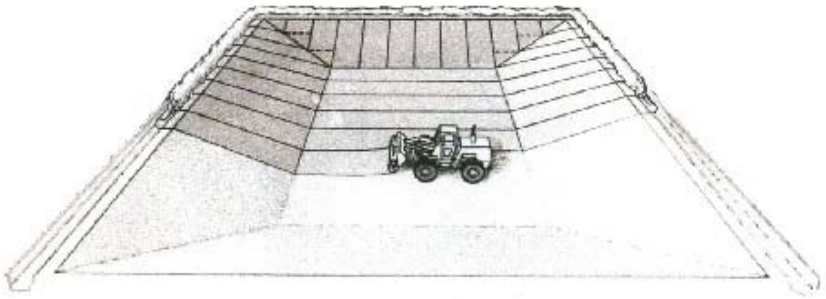
CATERPILLAR

416B

03.11.2009 17:27



Installation Guidelines



BENTOMAT®
CLAYMAX®

Geosynthetic Clay Liners

800.327.9948 www.cetco.com

NOTICE: This document is intended for use as a GENERAL GUIDELINE for the installation of CETCO's GCLs. The information and data contained herein are believed to be accurate and reliable. CETCO makes no warranty of any kind and accepts no responsibility for the results obtained through application of this information. Installation guidelines are subject to periodic changes. Please consult our CETCO Engineering Website @ www.cetco.com/LTE for the most recent version.

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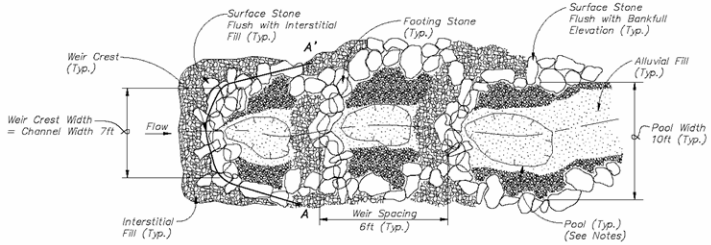
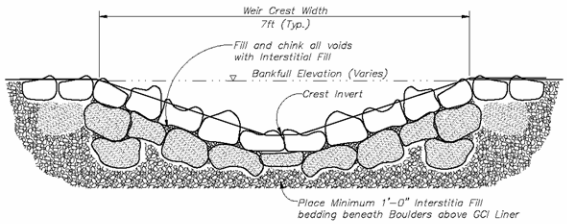
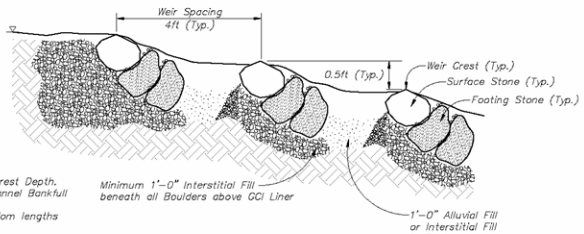
02.15.2007 17:39



PLAN



SECTION A-A'

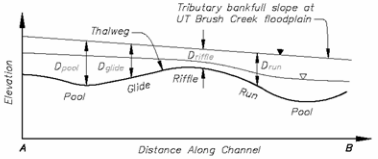


PROFILE

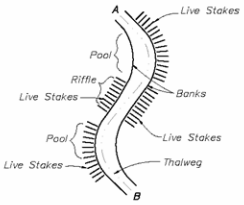
NOTES:

1. Pool Depth = 1.5 to 2.5 x Crest Depth.
2. Weir Crest Width = Local Channel Bankfull Width, refer to table.
3. Weir Spacing varies, use random lengths 1 to 4 x Weir Crest Width.
4. Not more than five consecutive pools shall have the same finished dimensions.
5. Refer to longitudinal Profile for Weir Crest elevations.

1/6 DETAIL – STEP POOL CHANNEL
NOT TO SCALE
STEP-POOL



Profile

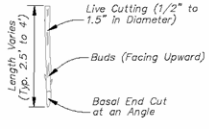


Plan

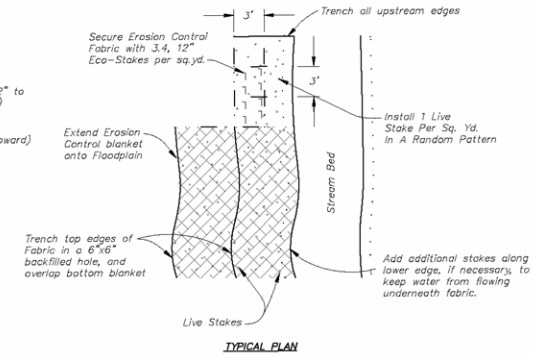
Notes

1. Install live stakes along outside of meander bend and along both banks of riffle.
2. Live stakes shall be planted in an irregular pattern.

3/6 DETAIL – TYPICAL RECONSTRUCTED MEANDER
Not To Scale
MEANDER

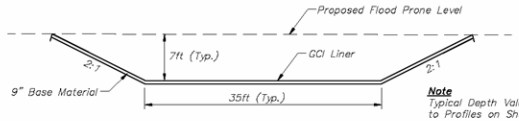


DORMANT LIVE STAKE



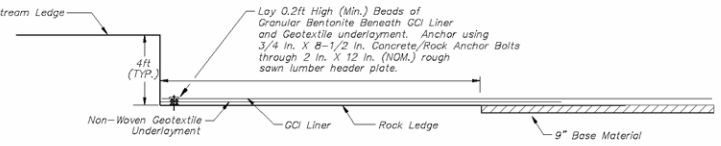
TYPICAL PLAN

4/6 DETAIL – DORMANT LIVE STAKE AND EROSION CONTROL BLANKET
Not To Scale
LIVESTAKE

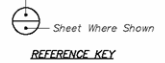


Note
Typical Depth Values According to Profiles on Sheets 2 thru 4.

2/6 TYPICAL LINER SECTION
Not To Scale



5/6 LINER ANCHOR AND SEAL DETAIL
Not To Scale



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1501 Nelson Miller Parkway, Kentucky 40223-2177
502-213-5000

FMSM ENGINEERS
LEXINGTON LOUISVILLE CINCINNATI COLUMBUS ST. LOUIS

Fuller Mossbarger Scott & May

STREAM RESTORATION DETAILS
DRAFT DESIGN
UT TO BIG BRUSH CREEK
STREAM RESTORATION
SEQUATCHIE COUNTY, TENNESSEE

PROJECT NO.	L\2007053
DATE	March 2007
DRAWN BY	RNH
CHECKED BY	NSC
CHECKED BY	JSC
SCALE	Not To Scale
REVISED	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

SHEET
6 of 9

Plotted: 11/07/2007 11:05:10 AM

07.01.2006 11:06

05.20.2008 17:38

10.24.2006 13:31