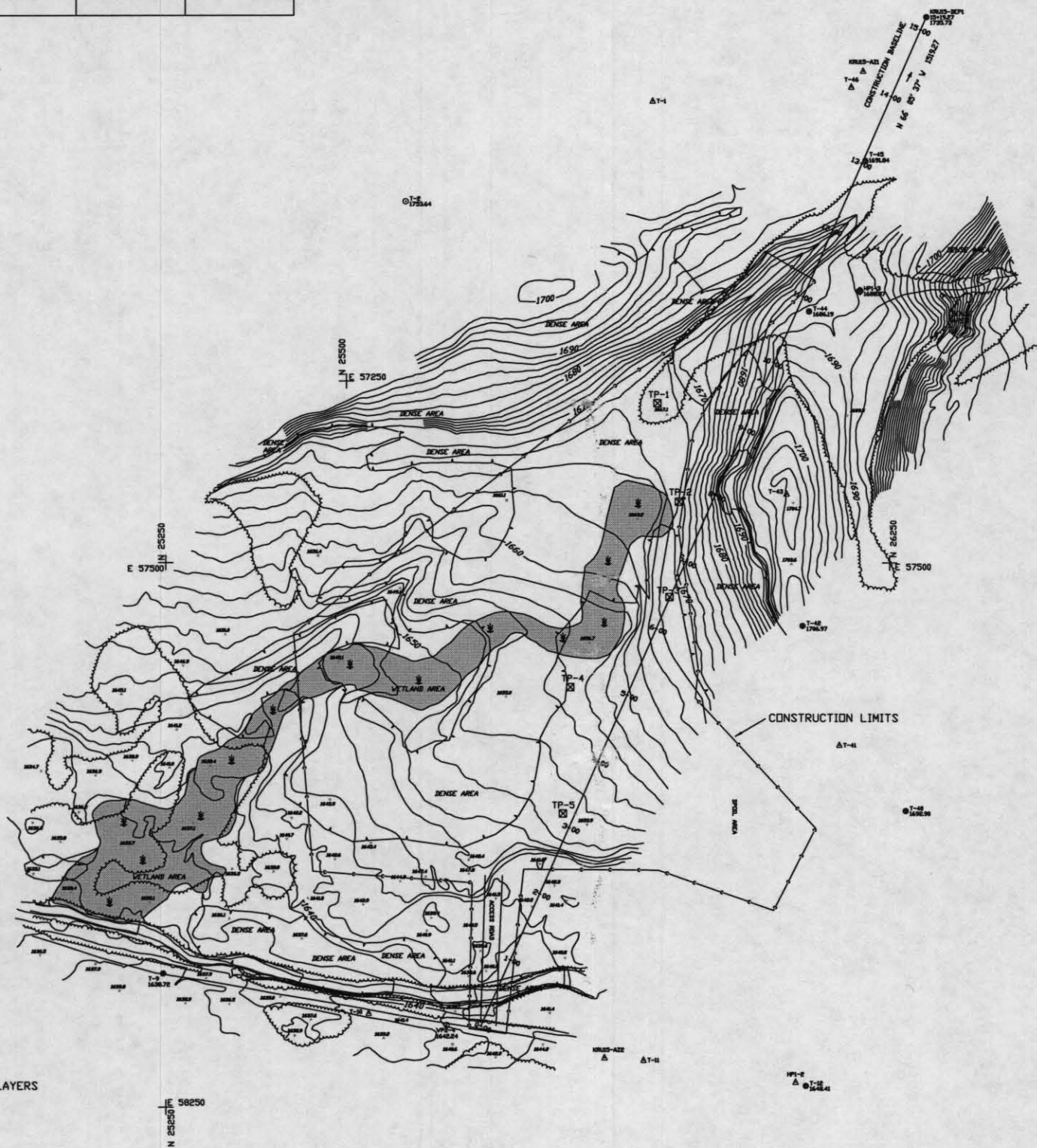
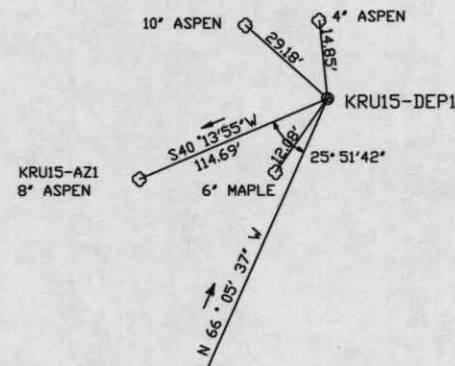


BENCH MARK DATA					
BM NO.	BASELINE STA.	ELEVATION	DESCRIPTION	N. COORDINATE	E. COORDINATE
KRU15-DEP1	15+19.27	1735.73	5/8" REBAR WITH CAP	26300.00	56750.00

CONSTRUCTION BASELINE DATA



TEST PIT INFORMATION

TEST PIT #1

- 0-2' STRIP MINE SPOIL
- 2'-3.5' ORIGINAL TOPSOIL, ORGANIC MATTER, ROOTS-GRAY, ROTTED FROM BEING COVERED
- 3.5'-7' ML, 10-20% GRAVEL - SEEPAGE AT 3.5'
- 7'-8' CL/ML, GOOD MATERIAL FOR EMBANKMENTS

TEST PIT #2

- 0-5' TOP SOIL, ORGANIC MATTER, LEAF LITTER
- .5'-4' ML/CL, PREDOMINATELY GRAY, HEAVILY MOTTLED, SEEPAGE AT 4'
- 4'-8' ML/CL, 25% GRAVEL
- 8'-11' CL, GOOD MATERIAL FOR EMBANKMENTS

TEST PIT #3

- 0-5' TOP SOIL, ORGANIC MATTER, LEAF LITTER
- .5'-1.5' ML, HEAVILY MOTTLED, SEEPAGE AT 1.0'
- 1.5'-7' ML/CL, BROWNISH-RED, 10% GRAVEL
- 7'-9' GM, USEABLE MATERIAL IF MIXED IN WITH OTHER LAYERS
- 9'-13' CL, GREY, VERY DRY

TEST PIT #4

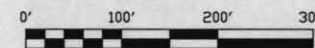
- 0-5' TOP SOIL, ORGANIC MATTER, LEAF LITTER
- .5'-2.5' ML, MOTTLED
- 2.5'-4.5' ML/CL, BROWN, 20% GRAVEL
- 4.5'-7.5' ML/CL, HEAVILY MOTTLED
- 7.5'-10.5' TIGHT, WEATHERED SHALE, SEEPAGE AT 7.5'

TEST PIT #5

- 0-5' TOP SOIL, ORGANIC MATTER
- .5'-1' ML, LIGHT BROWN
- 1'-3.5' ML, HEAVILY MOTTLED, SEEPAGE AT 3'
- 3.5'-4' ML, BROWN, THIN LAYER OF SHALE, 40-50% COURSE FRAGMENTS
- 4'-8' ML/CL, GRAY, < THAN 10% GRAVEL
- 8'-9' HARD SHALE
- 9'-11' ML, 20-30% GRAVEL, HEAVY FLOW OF WATER AT 11'

IT IS THE DUTY OF CONTRACTORS TO COMPLY WITH THE PROVISIONS OF PENNSYLVANIA ACT 187 (1996) BEFORE PERFORMING ANY EXCAVATION WORK. PA. ONE CALL SERIAL NO. 0310975 DATE: 1/31/03

AS-BUILT

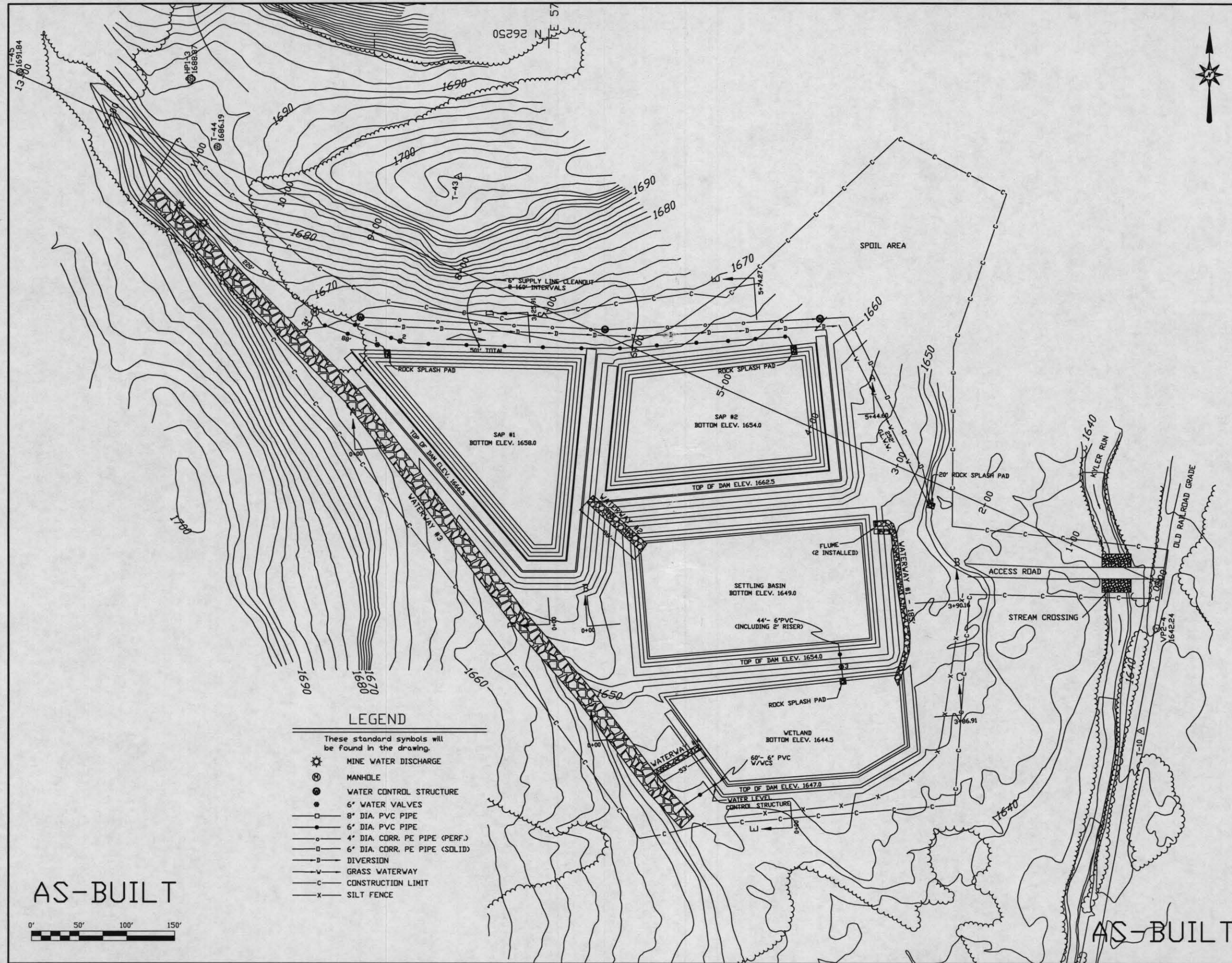


TOPOGRAPHY BY:
 THE EADS GROUP, INC.
 ALTOONA, PA 16602
 USING AERIAL PHOTOGRAPHY
 DATED 03-27-96.
 COORDINATES ARE ON A RANDOM
 DATA BASE, RELATIVE TO THIS
 SITE ONLY.
 ALL ELEVATIONS SHOWN ARE BASED
 ON U.S.G.S. DATUM
 RELATIVE ERROR OF CLOSURE FOR
 TRAVERSE.
 TRAVERSE ADJUSTMENT BY COMPASS
 RULE METHOD.
 ALL DIMENSIONS AND EXISTING
 CONDITIONS SHALL BE CHECKED
 AND VERIFIED BY CONTRACTOR
 AT THE SITE.

LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
 ELK COUNTY, PENNSYLVANIA
ORIGINAL CONTOURS



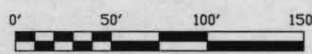
Date	By	Title
06/02	J.F.	Checked
05/09	EES	Revised
06/02	J.F.	Drawn
06/02	EES	Designed



LEGEND

- These standard symbols will be found in the drawing.
- MINE WATER DISCHARGE
 - MANHOLE
 - WATER CONTROL STRUCTURE
 - 6" WATER VALVES
 - 8" DIA. PVC PIPE
 - 6" DIA. PVC PIPE
 - 4" DIA. CORR. PE PIPE (PERF.)
 - 6" DIA. CORR. PE PIPE (SOLID)
 - DIVERSION
 - GRASS WATERWAY
 - CONSTRUCTION LIMIT
 - SILT FENCE

AS-BUILT



Date	02/03	Approved by	
Designed	EES	Title	
Drawn	T.F.	Title	
Reviewed	EES	Title	
Checked		Title	



LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
 ELK COUNTY, PENNSYLVANIA
FINAL PLAN VIEW

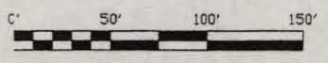
Drawing No.	FINAL PV
Sheet	3 of 13

AS-BUILT



LEGEND

- These standard symbols will be found in the drawing.
- MINE WATER DISCHARGE
 - MANHOLE
 - WATER CONTROL STRUCTURE
 - 6" WATER VALVES
 - 8" DIA. PVC PIPE
 - 6" DIA. PVC PIPE
 - 4" DIA. CORR. PE PIPE (PERF.)
 - 6" DIA. CORR. PE PIPE (SOLID)
 - DIVERSION
 - GRASS WATERWAY
 - CONSTRUCTION LIMIT
 - SILT FENCE

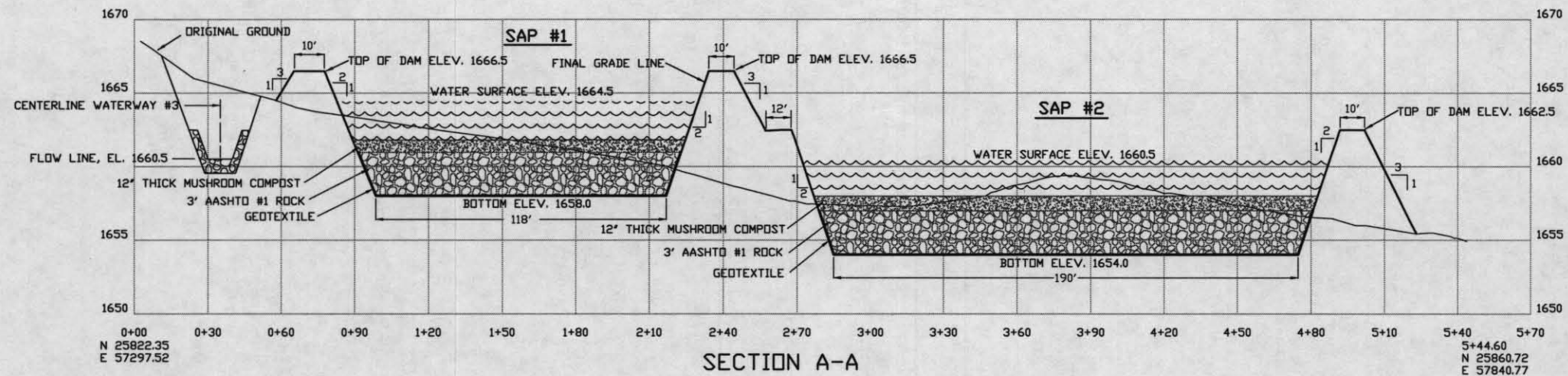
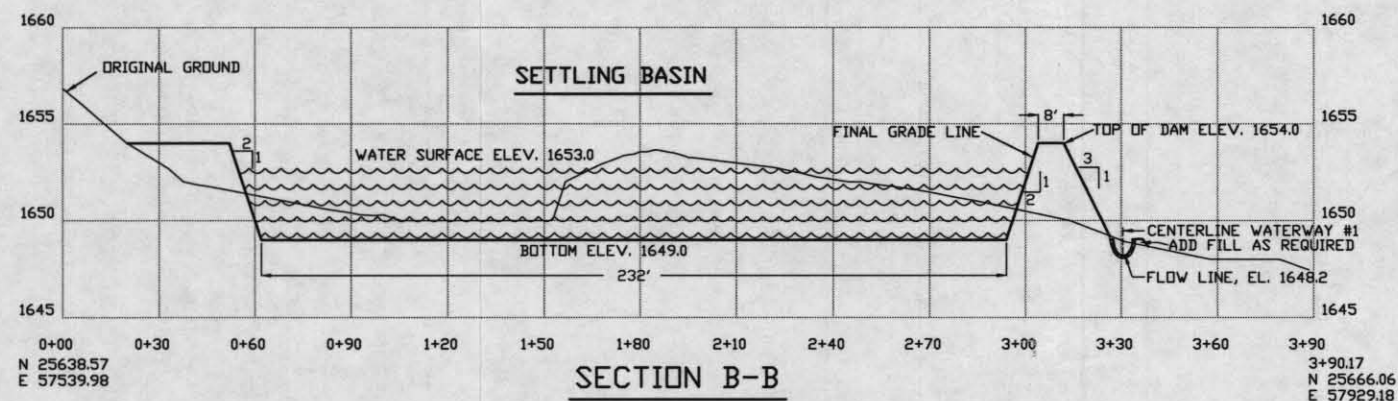
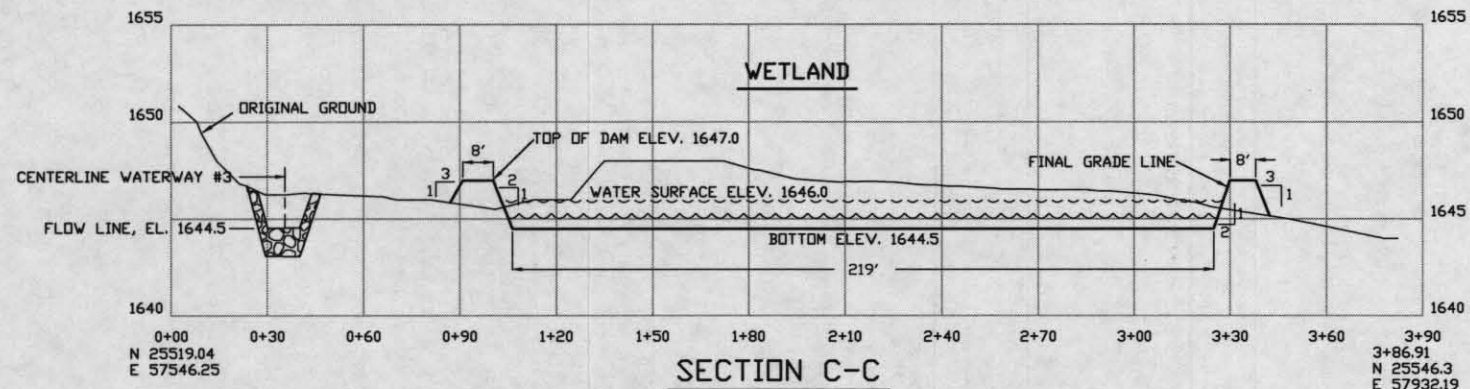


Designed	EES	02/03	Approved by		Date
Drawn	T.F.	02/03	Title		
Reviewed	EES	05/03	Title		
Checked			Title		

USDA NRCS
 Natural Resources Conservation Service

LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
 BLK COUNTY, PENNSYLVANIA
FINAL PLAN VIEW

Drawing No.	FINAL PV
Sheet	3 of 13



NOTE: SEE SHEETS 8 & 9 FOR PIPE LAYOUT IN SAPS.

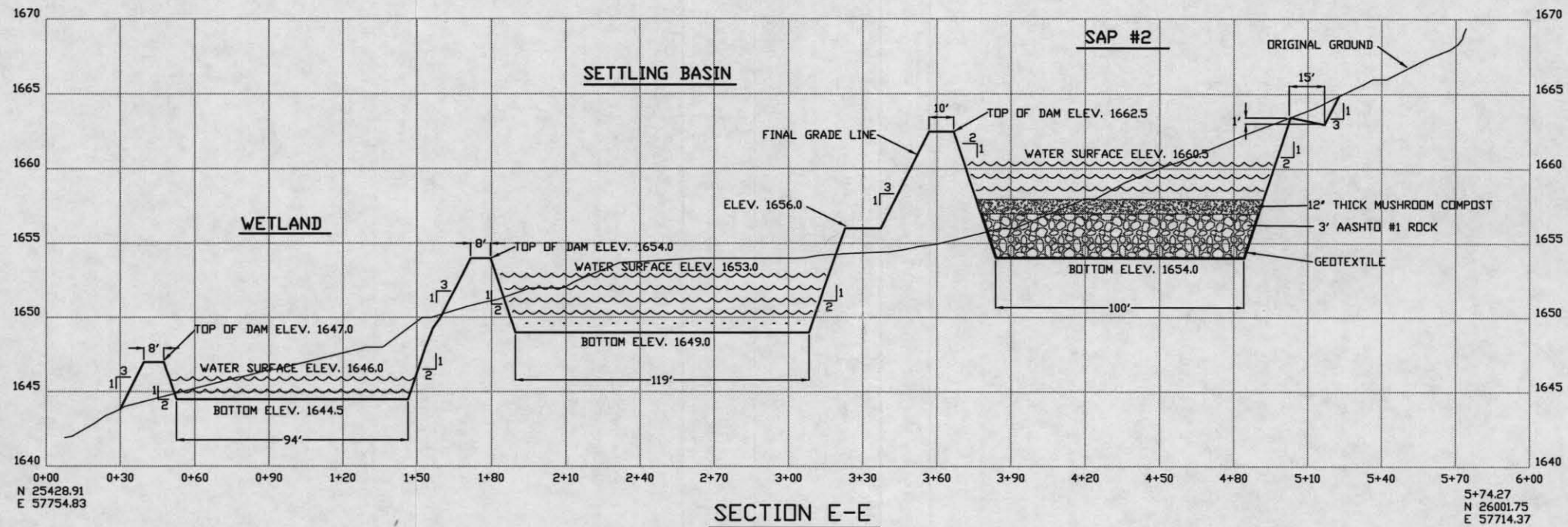
AS-BUILT

Date	06/02	06/02	05/03
Approved by			
Designed	J.E.S.	T.F.	J.E.S.
Drawn			
Reviewed			
Checked			



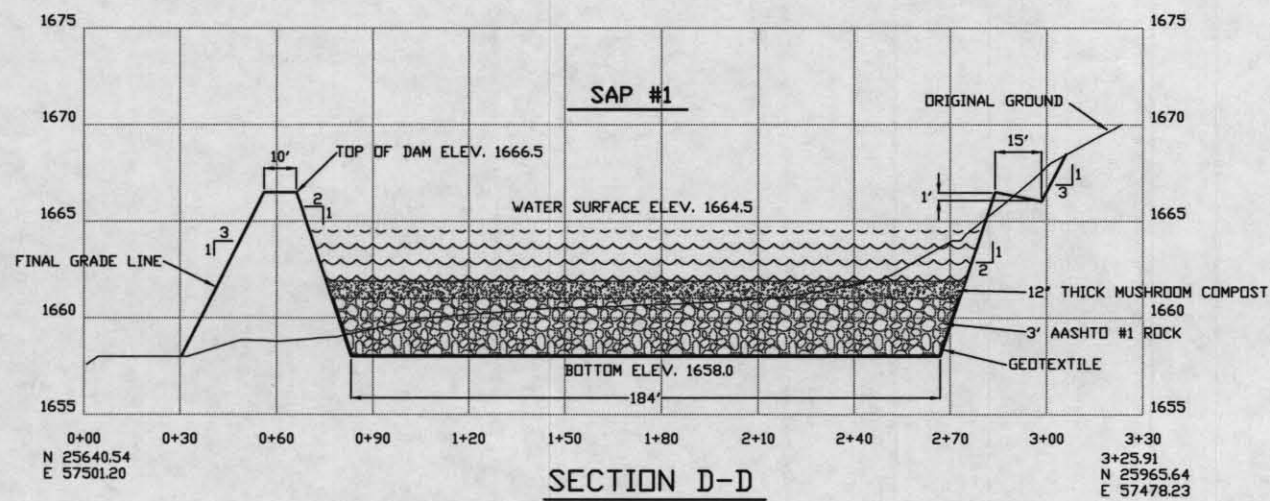
LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
ELK COUNTY, PENNSYLVANIA
SECTIONS A-A, B-B, & C-C

Drawing No.	LT-11
Sheet	4 of 13



SECTION E-E

NOTE: SEE SHEETS 8 & 9 FOR PIPE LAYOUT IN SAPS.

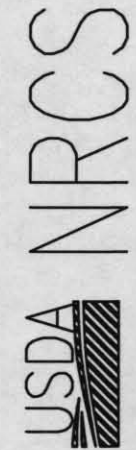


SECTION D-D

AS-BUILT

Date	Approved by	Title
6/02		
6/02		
5/03		

DESIGNED	DRAWN	REVISED	CHECKED
EES	T.P.	EES	



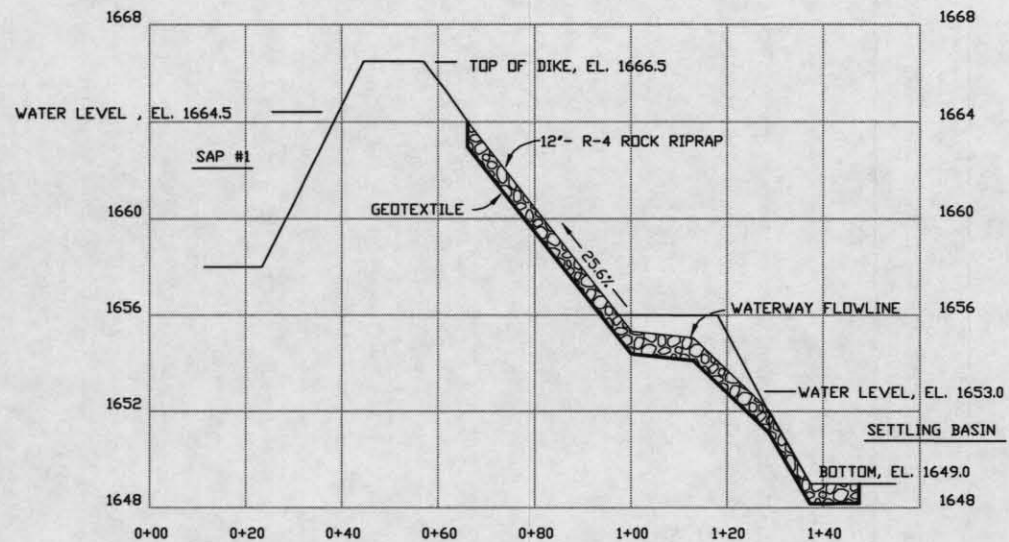
Natural Resources Conservation Service

LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT

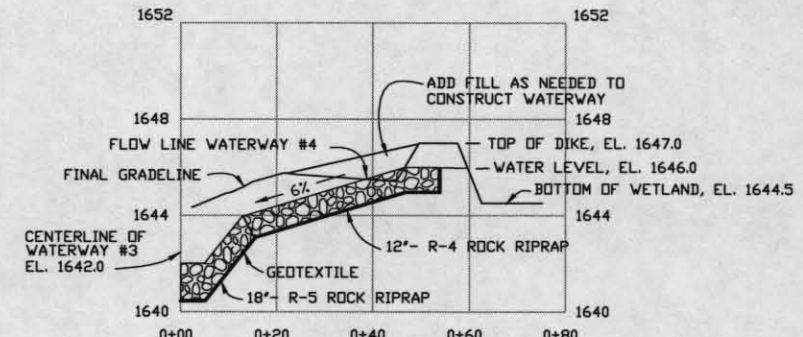
ELK COUNTY, PENNSYLVANIA

SECTIONS D-D & E-E

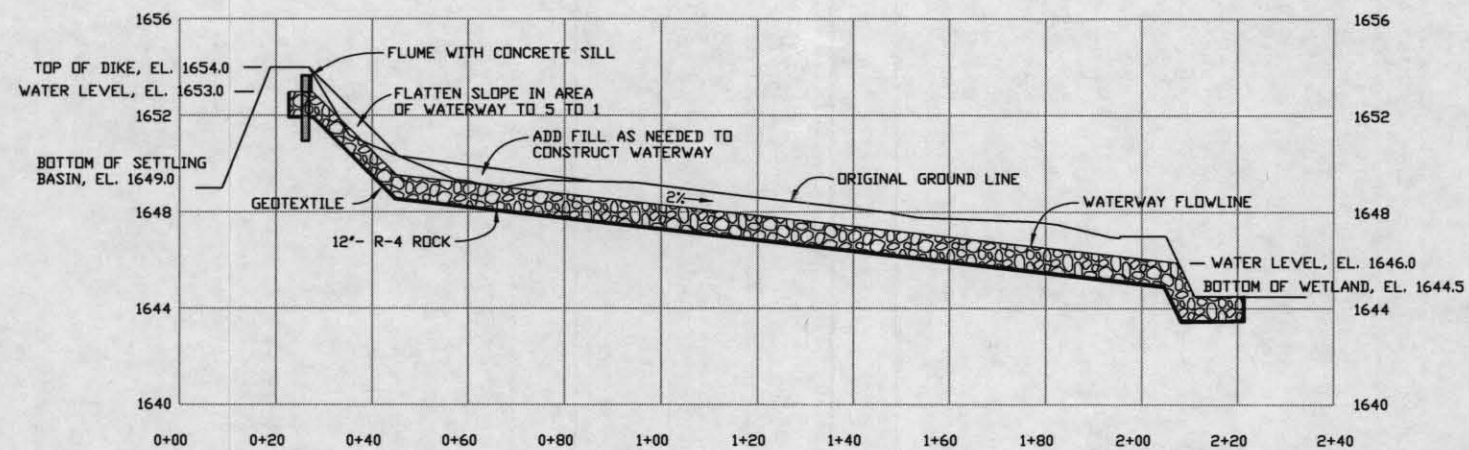
Drawing No.	17-11
Sheet No.	5 of 13



PROFILE WATERWAY #2 (BUILT 86')



PROFILE WATERWAY #4 (BUILT 53')



PROFILE WATERWAY #1 (BUILT 185')

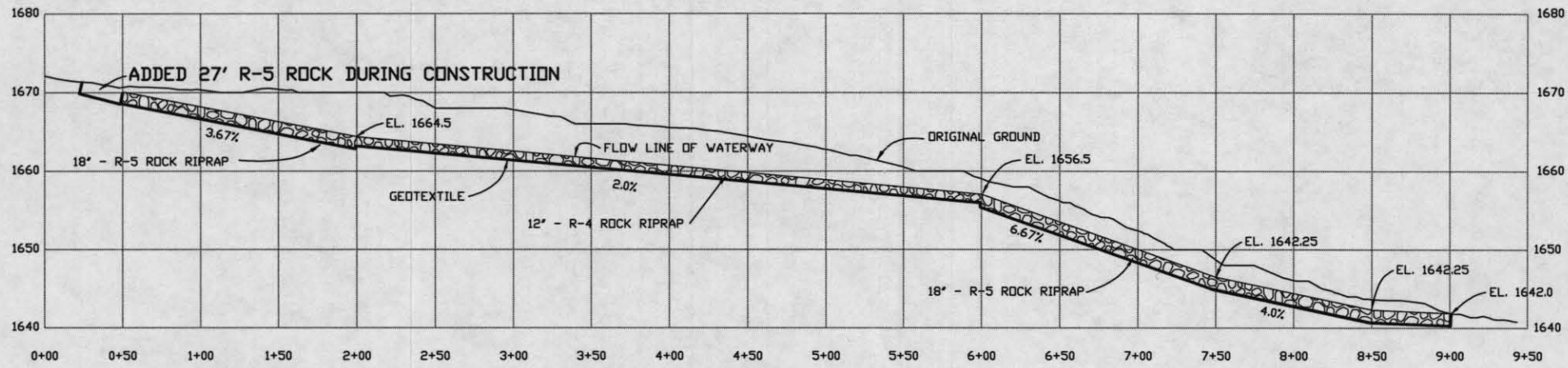
AS-BUILT

Date	Approved by	Title
02/03		

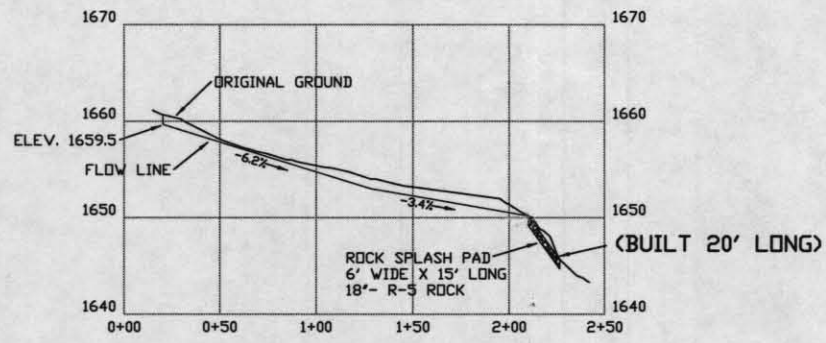
Designed	Drawn	Revised	Checked
EES	EES		



LITTLE TOBY CREEK, SITE NO. LT-11
 ABANDONED MINE DRAINAGE PROJECT
 ELK COUNTY, PENNSYLVANIA
 PROFILES WATERWAYS #1, 2 & 4



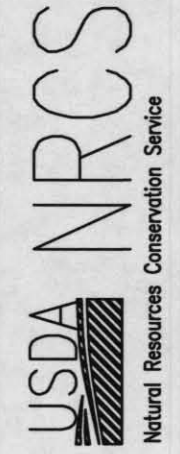
PROFILE WATERWAY #3
(BUILT 400' R-4 & 477' R-5)



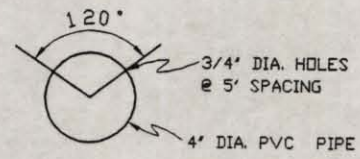
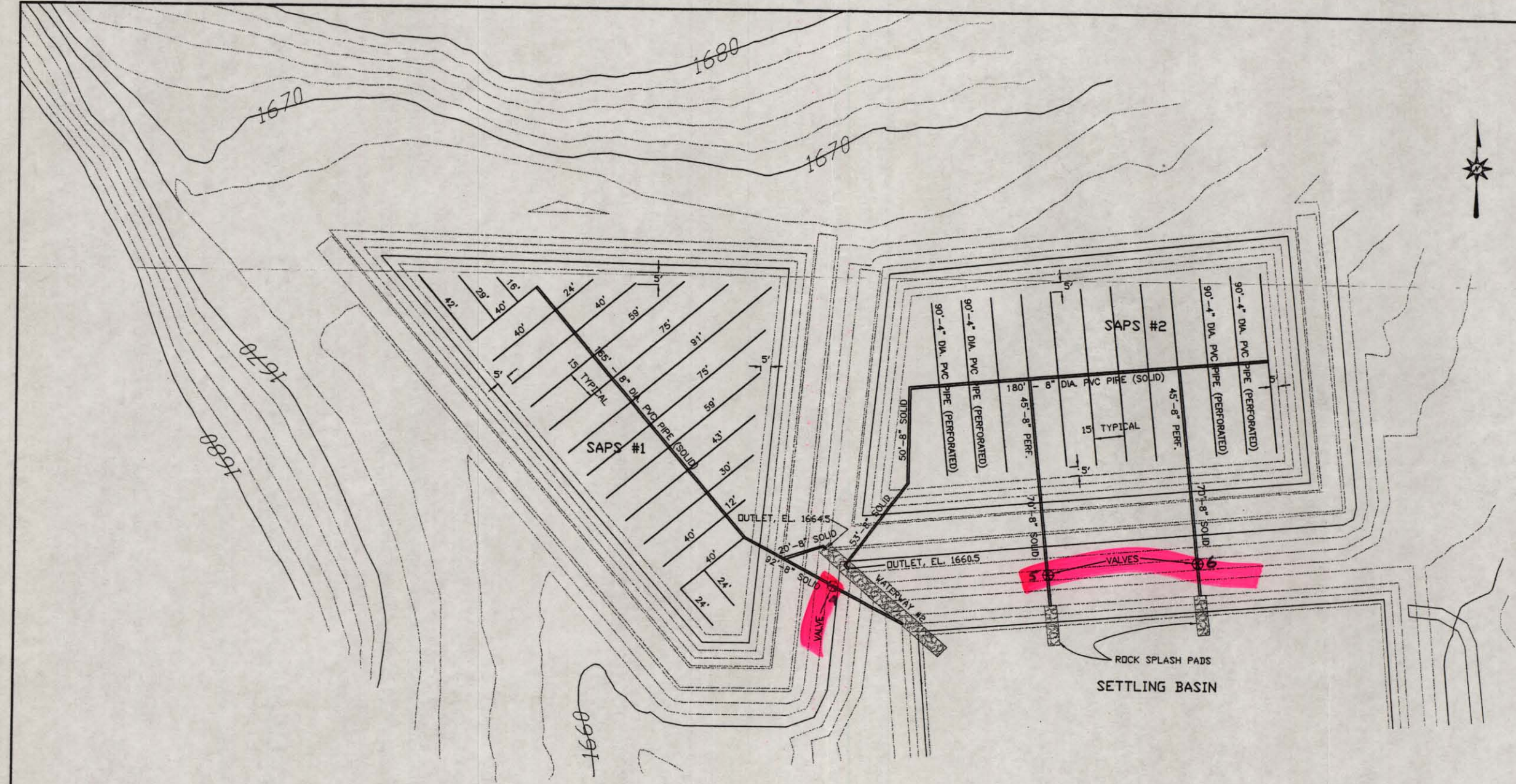
PROFILE GRASSED WATERWAY
(BUILT 252')

AS-BUILT

Date	---
Approved by	---
Date	---
Designed <i>EES</i>	---
Drawn <i>EES</i>	---
Revised <i>EES</i>	---
Checked	---
Date	02/03
Title	---
Date	02/03
Title	---
Date	5/03
Title	---

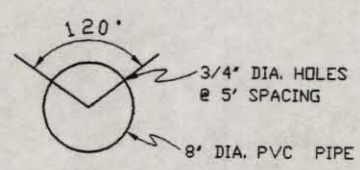


LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
ELK COUNTY, PENNSYLVANIA
PROFILE WATERWAY #3 & GRASSED WATERWAY



4" DIA. PVC PIPE PERFORATION DETAIL

NOTE: PIPE TO BE INSTALLED WITH HOLES UP.



8" DIA. PVC PIPE PERFORATION DETAIL

NOTE: PIPE TO BE INSTALLED WITH HOLES UP.

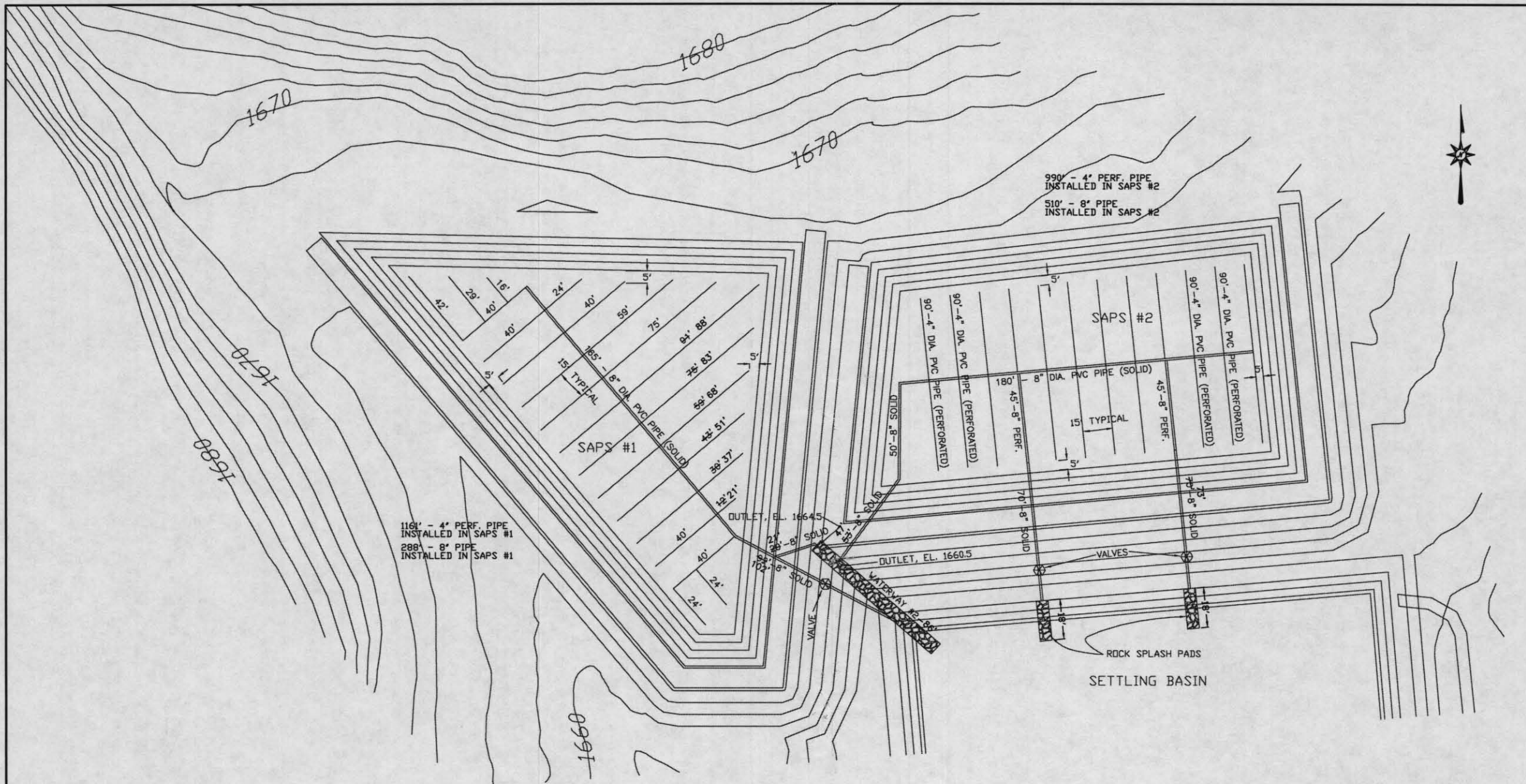


Designed	EES	Date	08/02
Drawn	EES	Approved By	
Revised	EES	Title	
Checked		Date	5/03

USDA NRCS
 Natural Resources Conservation Service

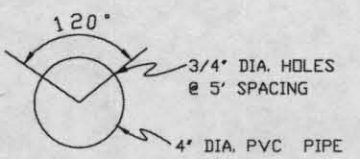
LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
 ELK COUNTY, PENNSYLVANIA
PIPING LAYOUT

Drawing No.	LT-11
Sheet No.	8 of 13



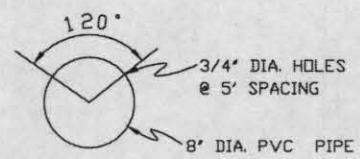
116' - 4" PERF. PIPE
INSTALLED IN SAPS #1
288' - 8" PIPE
INSTALLED IN SAPS #1

990' - 4" PERF. PIPE
INSTALLED IN SAPS #2
510' - 8" PIPE
INSTALLED IN SAPS #2



4" DIA. PVC PIPE PERFORATION DETAIL

NOTE: PIPE TO BE INSTALLED WITH HOLES UP.



8" DIA. PVC PIPE PERFORATION DETAIL

NOTE: PIPE TO BE INSTALLED WITH HOLES UP.

AS-BUILT

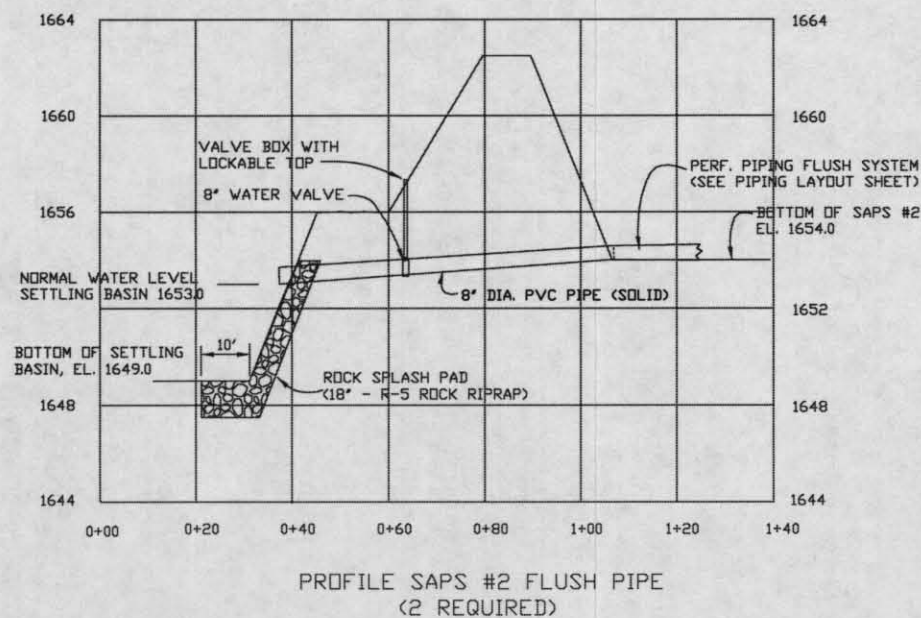
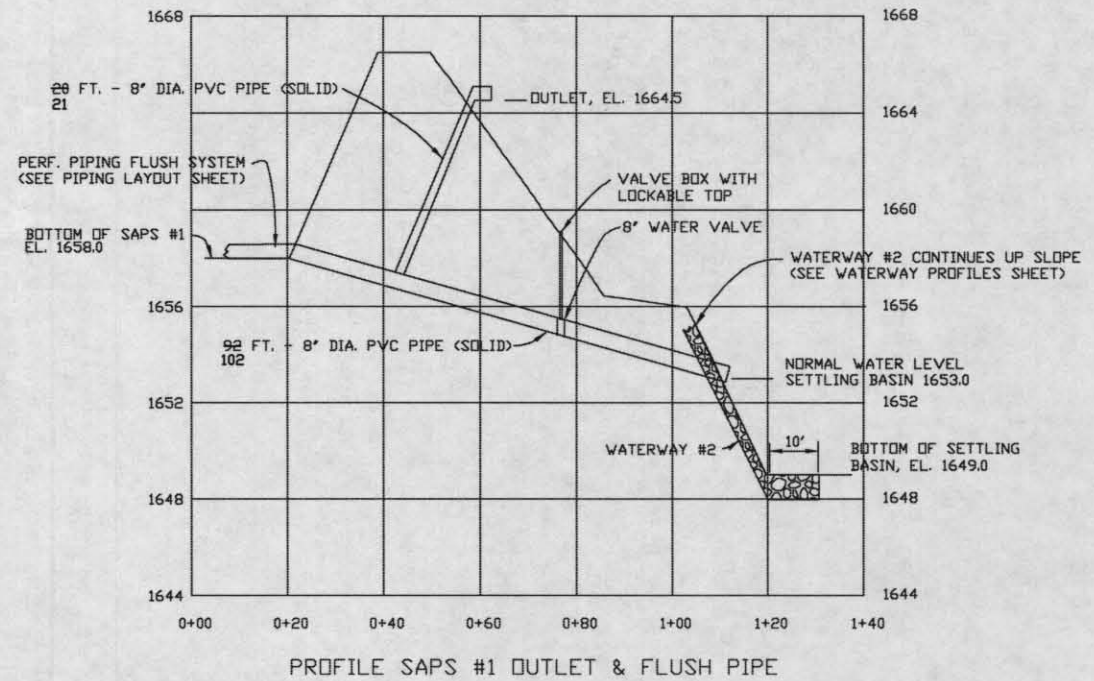
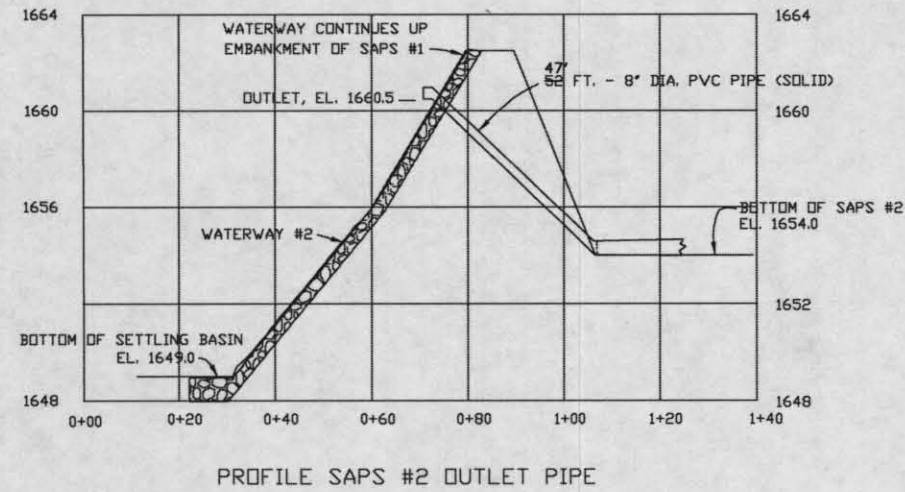
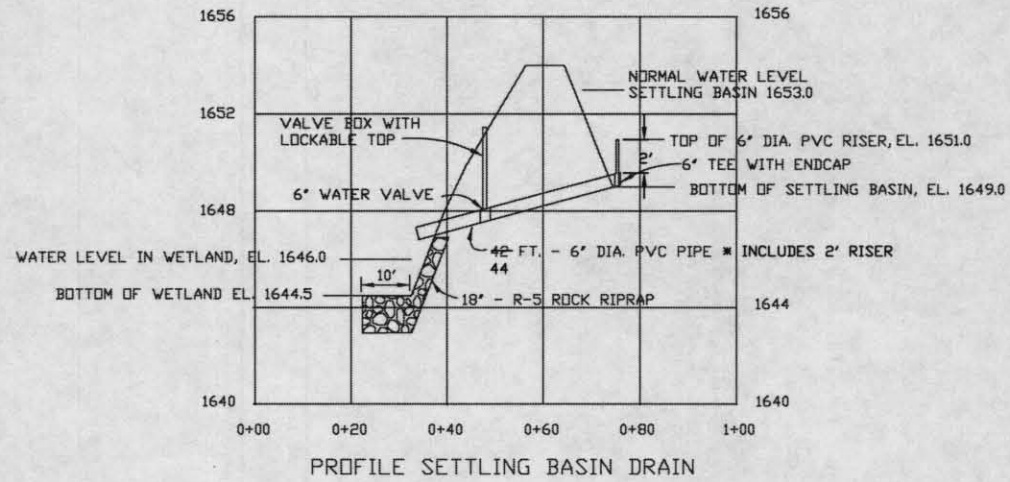
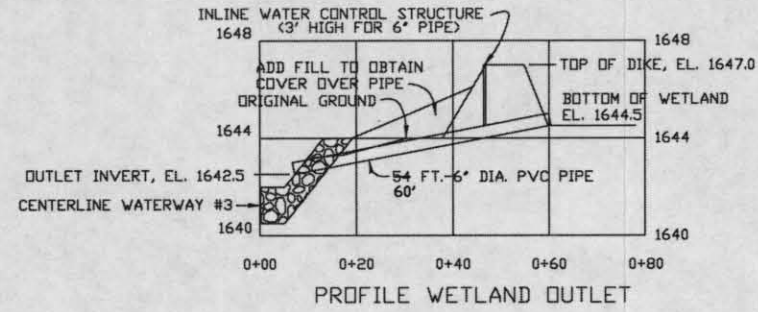


DESIGNED	EES	DATE	08/02
DRAWN	EES	DATE	08/02
REVISED	EES	DATE	5/03
CHECKED			
APPROVED BY		TITLE	
		TITLE	

USDA NRCS
Natural Resources Conservation Service

LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
ELK COUNTY, PENNSYLVANIA
PIPING LAYOUT

DRAWING NO.	LT-11
SHEET NO.	8 OF 13



#1 FLUSH PIPE = 70'
#2 FLUSH PIPE = 73'

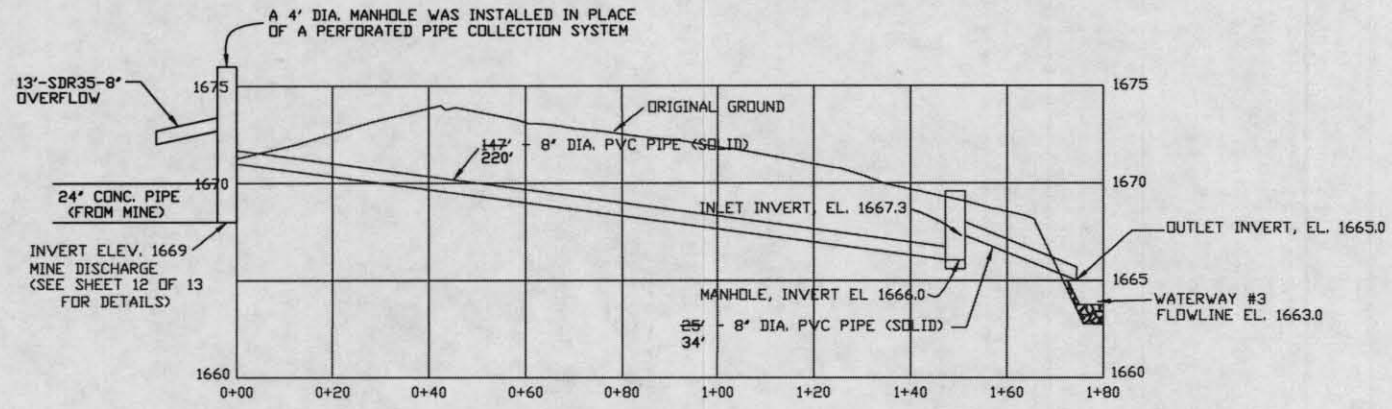
AS-BUILT

Date			
Approved by			
Date	02/03	02/03	05/03
Drawn	BES	BES	BES
Revised			
Checked			

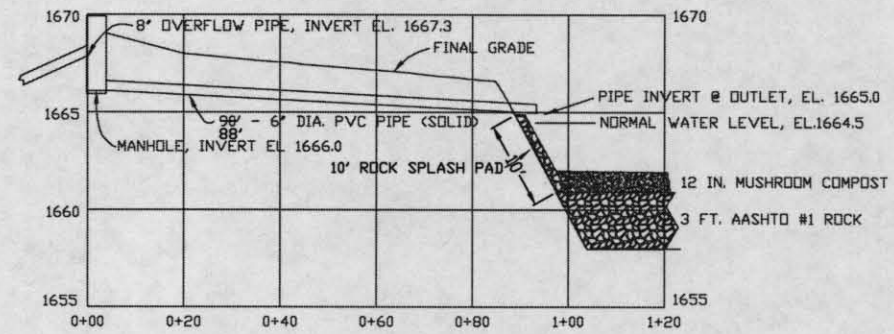


LITTLE TOBY CREEK, SITE NO. LT-11
ABANDONED MINE DRAINAGE PROJECT
ELK COUNTY, PENNSYLVANIA
OUTLET PROFILES

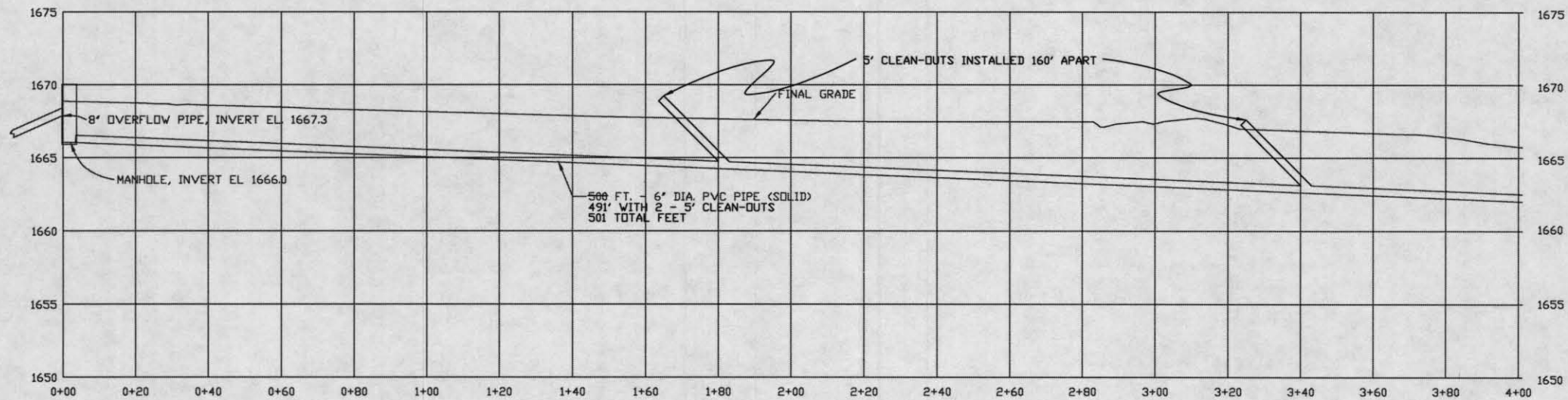
Drawing No.	OUTLETS
Sheet	9 of 13



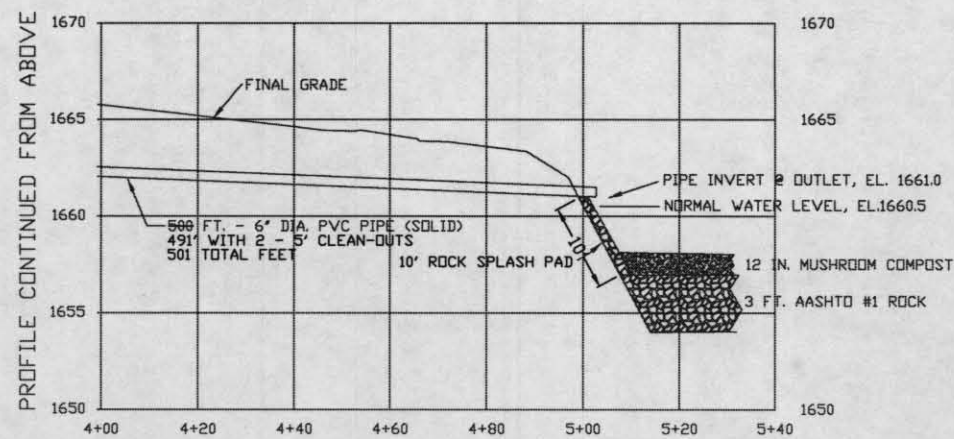
PROFILE 8' PVC PIPE, MINE OPENING TO MANHOLE & OVERFLOW



PROFILE 6' PVC PIPE, MANHOLE TO SAPS #1



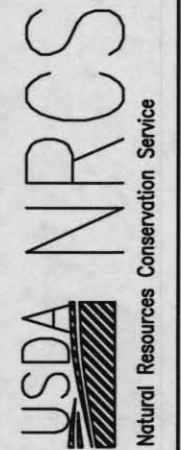
PROFILE 6' PVC PIPE, MANHOLE TO SAPS #2



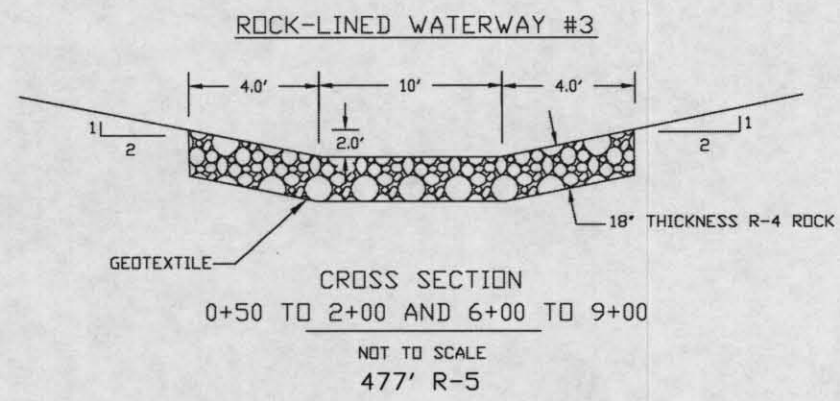
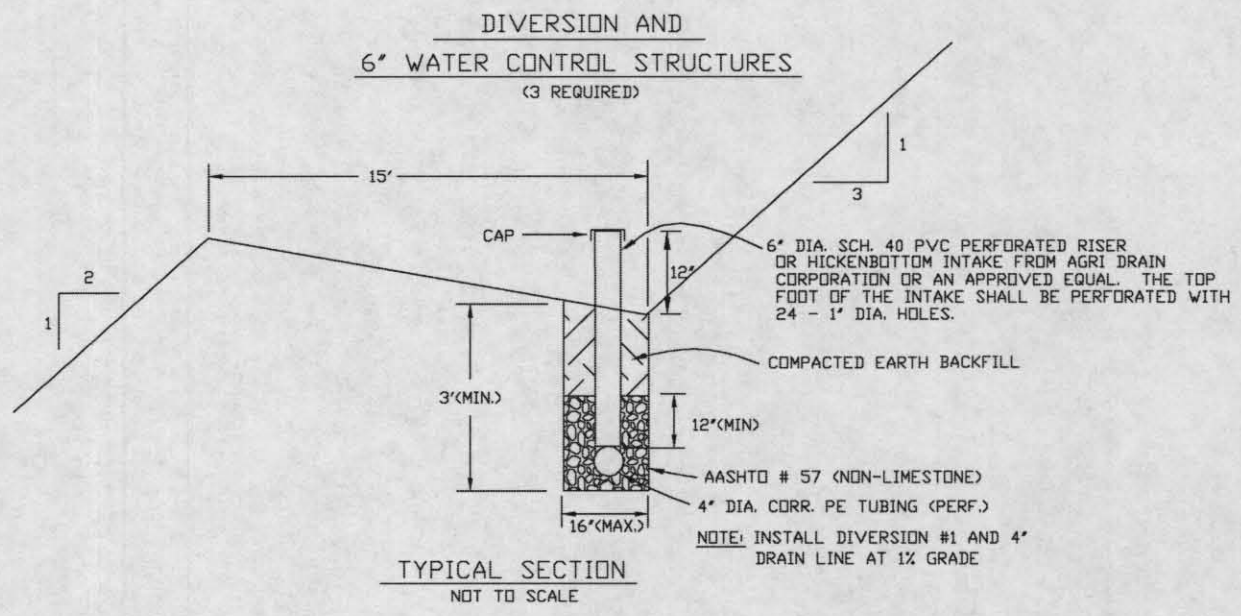
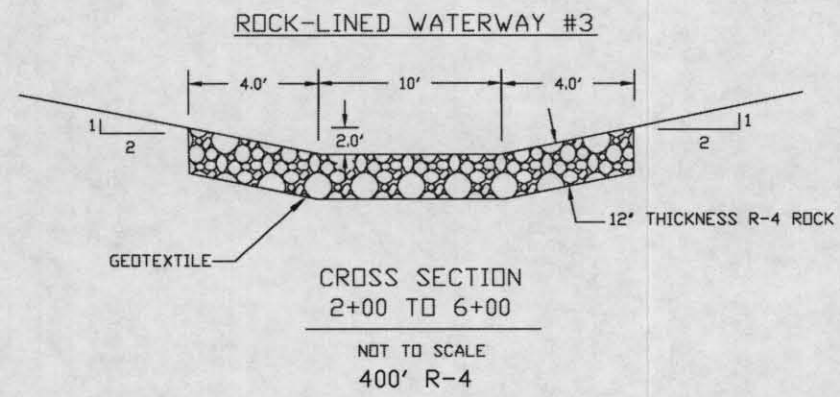
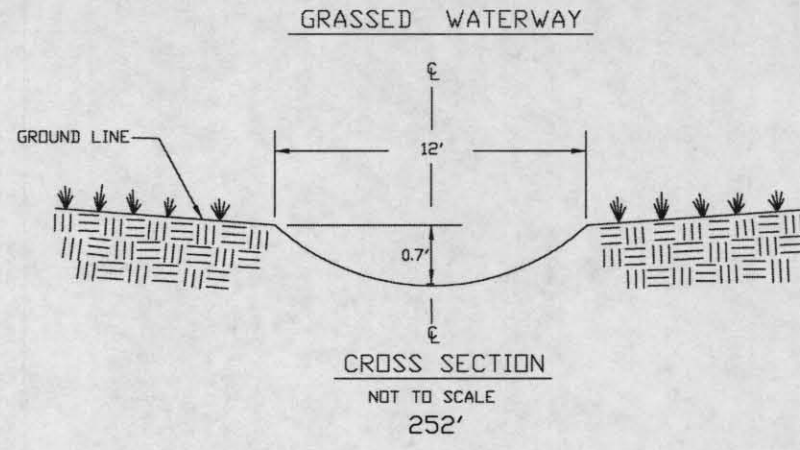
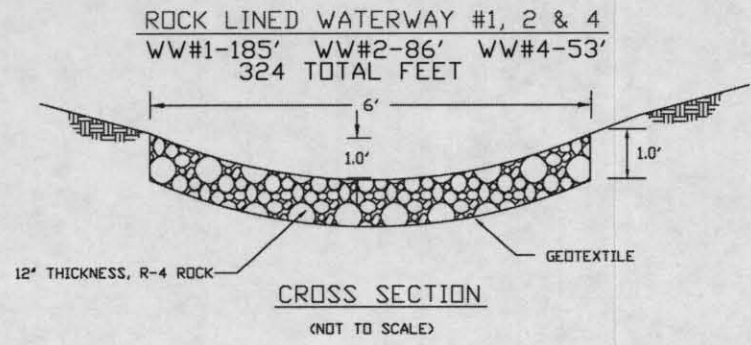
PROFILE 6' PVC PIPE, MANHOLE TO SAPS #2, CONTINUED

AS-BUILT

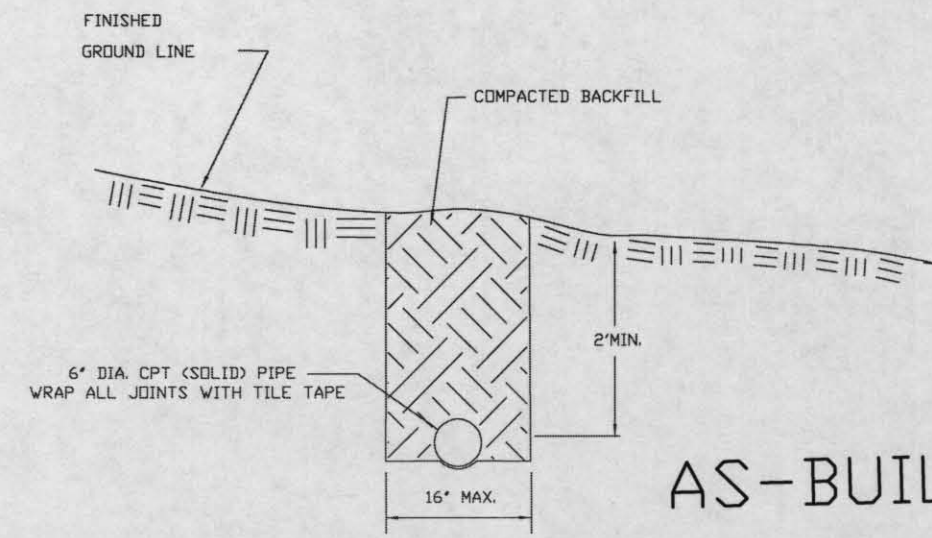
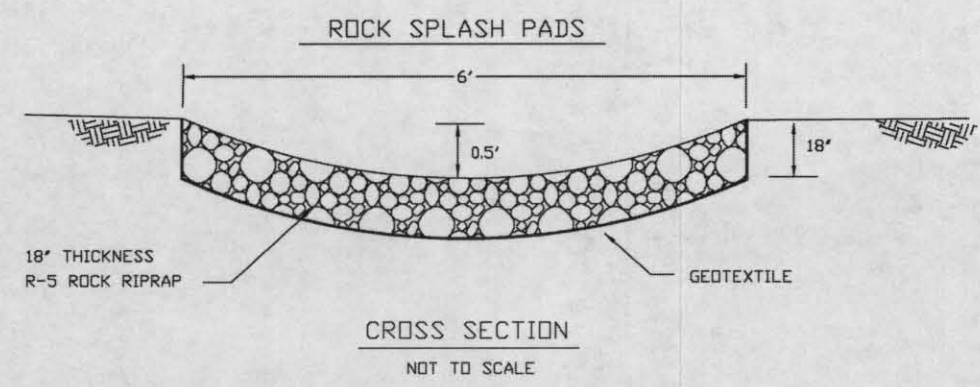
Date	02/03	Approved by	
Drawn	J.F. & E.S.	Title	
Revised	E.S.	05/08	
Checked			



LITTLE TOBY CREEK, SITE NO. LT-11
 ABANDONED MINE DRAINAGE PROJECT
 ELK COUNTY, PENNSYLVANIA
 PIPE PROFILES



6" DIA. OUTLET PIPE INSTALLATION DETAIL



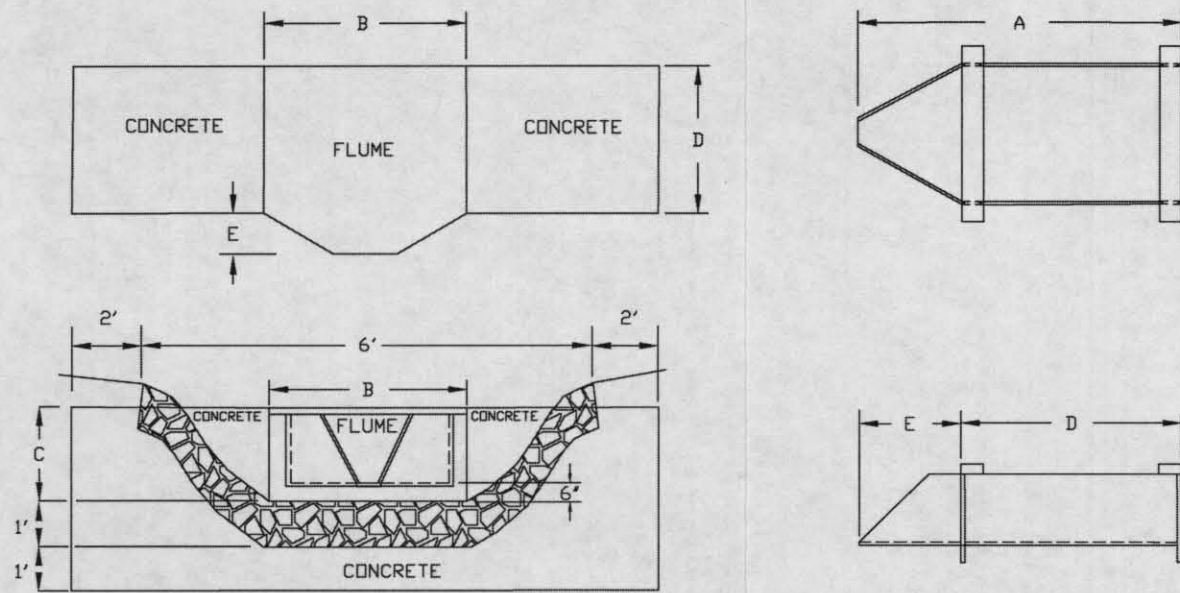
AS-BUILT

Date	---	---	---
Approved by	---	---	---
Drawn	---	---	---
Revised	---	---	---
Checked	---	---	---
Designed	RES	---	---
Drawn	RES	---	---
Revised	---	---	---
Checked	---	---	---



LITTLE TOBY CREEK WATERSHED, SITE LT-11
ABANDONED MINE DRAINAGE
 ELK COUNTY, PENNSYLVANIA
TYPICAL SECTIONS - WATERWAYS

FLUME (2 INSTALLED)



(NOT TO SCALE)

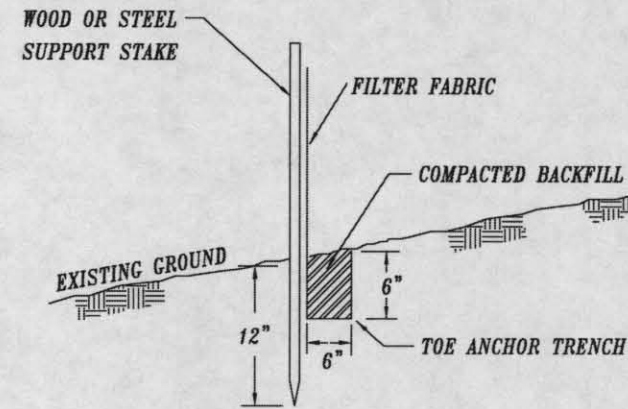
NOTE:
Recommended Model: H-Flume Model 75H (Or Equivalent)

Dimensions

MODEL	CAPACITY	A	B	C	D	E
75H	440 gpm	39 3/4	21	11 1/2	27 5/8	12 1/8

* All Dimensions are approximate

FILTER FABRIC FENCE



CROSS SECTION

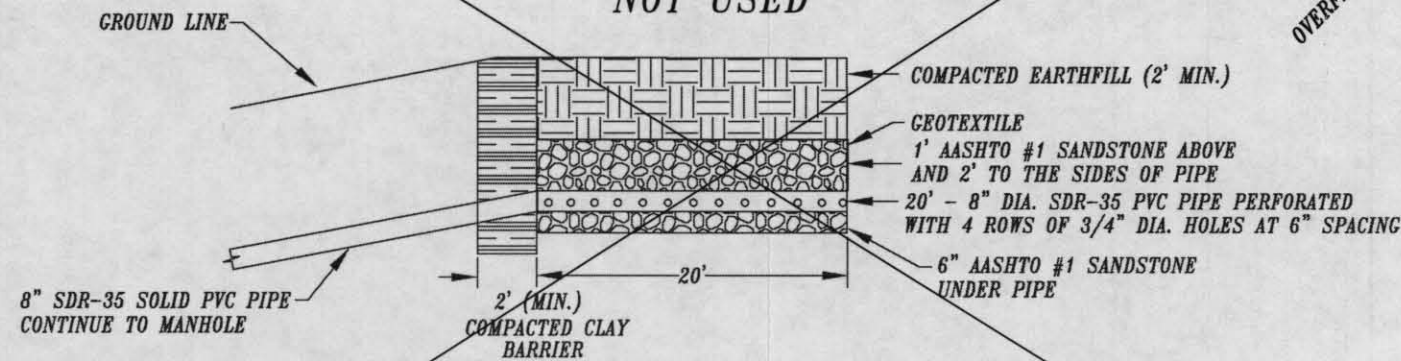
(NOT TO SCALE)

CONSTRUCTION NOTES:

1. THE SPACING OF SUPPORT STAKES SHALL BE 8' MAXIMUM.
2. THE MAXIMUM FENCE HEIGHT SHALL BE 18 INCHES.
3. THE FENCE SHALL BE PLACED ON THE CONTOUR.

**DEEP MINE DISCHARGE
WATER COLLECTION SYSTEM**

NOT USED

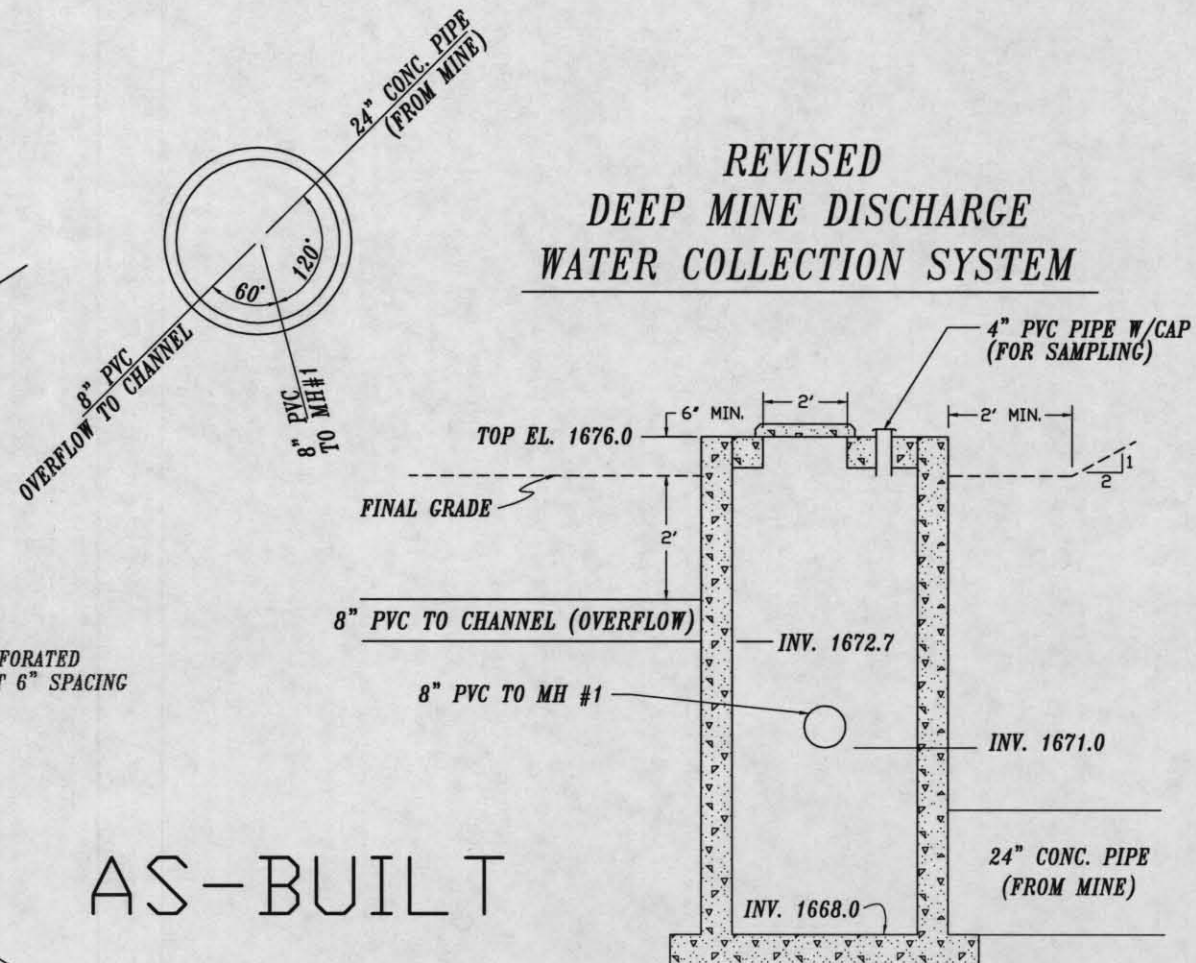


NOTES: EXTEND BOTTOM OF CLAY BARRIER TO A DEPTH OF 1' BELOW BOTTOM OF PERFORATED PIPE.
COLLECTION DITCH TO BE 4' WIDE.

PROFILE

(NOT TO SCALE)

**REVISED
DEEP MINE DISCHARGE
WATER COLLECTION SYSTEM**



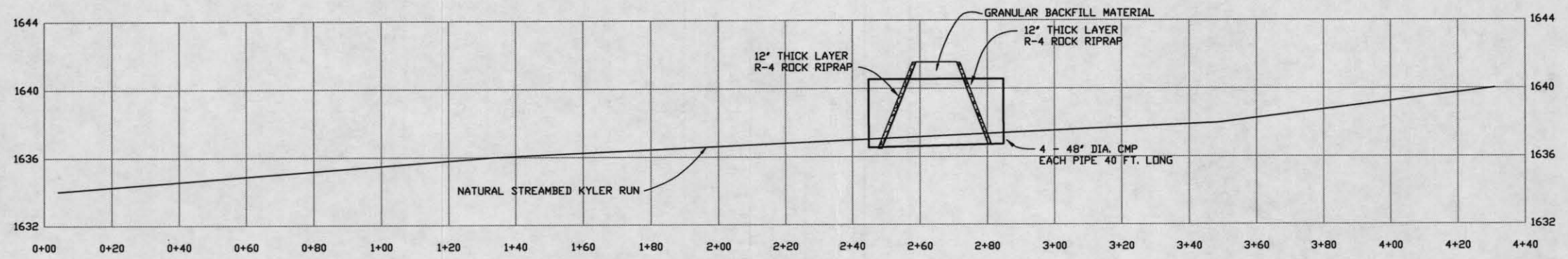
AS-BUILT

Date	Approved By	Title
02/08		
02/08		
03/03		

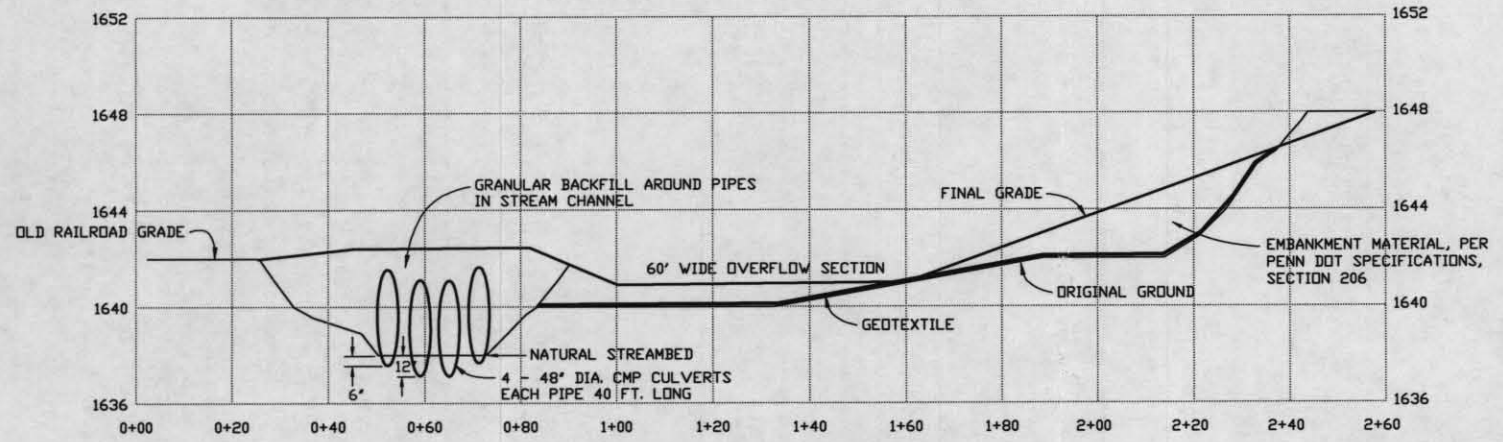
USDA NRCS
Natural Resources Conservation Service

**LITTLE TOBY CREEK WATERSHED
AND SITE LT-36**
ELK COUNTY, PENNSYLVANIA

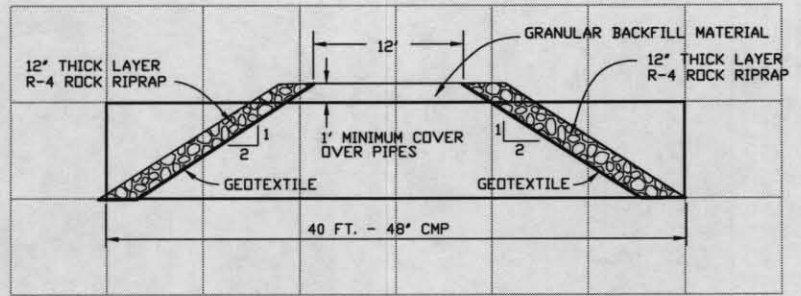
DETAILS



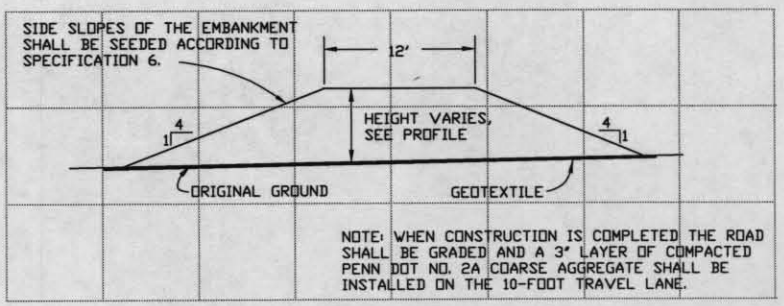
PROFILE KYLER RUN AT STREAM CROSSING



PROFILE ACCESS ROAD AND STREAM CROSSING



CROSS SECTION - STREAM CROSSING
(NOT TO SCALE)



CROSS SECTION - ACCESS ROAD
(NOT TO SCALE)

AS-BUILT

Designed	EES	Date	02/08
Drawn	EES	Approved by	
Reviewed	EES	Title	
Checked		Title	



LITTLE TOBY CREEK, SITE LT-11
 ABANDONED MINE DRAINAGE PROJECT
 ELK COUNTY, PENNSYLVANIA
 ACCESS ROAD & STREAM CROSSING

Drawing No.	ACCESS
Sheet No.	13 of 13