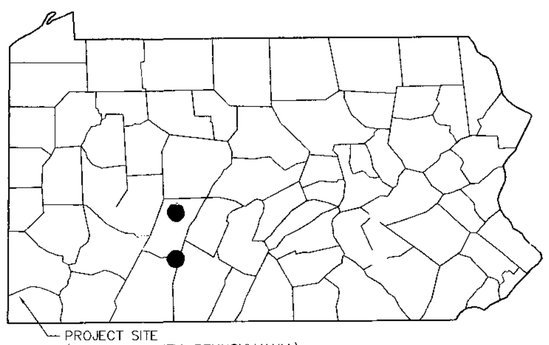
CONSOL PENNSYLVANIA COAL COMPANY
BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4

OCTOBER, 2002

Baker

MICHAEL BAKER JR., INC.
CONSULTING ENGINEERS
CORAOPOLIS, PENNSYLVANIA



PROJECT SITE
(GREENE COUNTY, PENNSYLVANIA)

VICINITY MAP

N.T.S.

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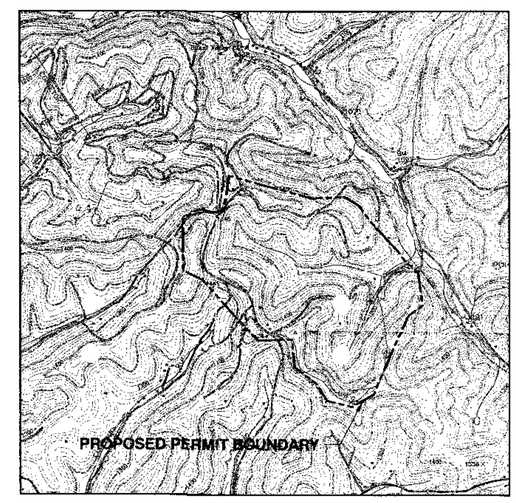

LOCATION MAP

2000 1000 0 2000
SCALE IN FEET

Engineering Certification:

MICHELE STEWART

Michele Stewart
PE-029157-E

I, Michele Stewart do hereby certify pursuant to the penalties of 18 Pa. C.S.A. Sec. 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications, and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.

MICHELE STEWART
ENGINEER
PE-029157-E

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COVER SHEET

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	GEC	GAH	3/02	AS SHOWN

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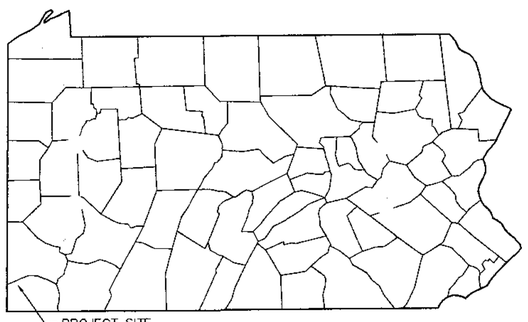
DRAWING NO. 1

CONSOL PENNSYLVANIA COAL COMPANY
BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4

MARCH, 2002

Baker

MICHAEL BAKER JR., INC.
CONSULTING ENGINEERS
CORAOPOLIS, PENNSYLVANIA



PROJECT SITE
(GREENE COUNTY, PENNSYLVANIA)

VICINITY MAP

N.T.S.

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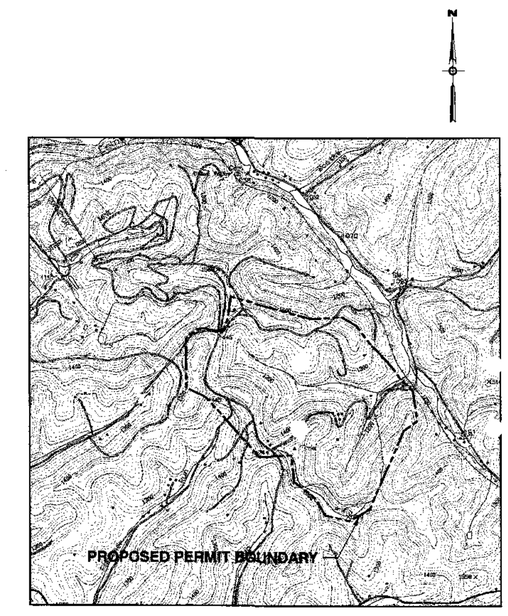

LOCATION MAP

3000 1000 0 3000
SCALE IN FEET

Engineering Certification: I Michele Stewart do hereby certify pursuant to the penalties of 18 Pa. C.S.A. Sec. 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications, and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHELE STEWART
ENGINEER
PE-029157-E

Michele Stewart
PE-029157-E

Baker MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbcleweorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COVER SHEET

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	GEC	GAH	3/02	AS SHOWN

FILE: COVER SHEET
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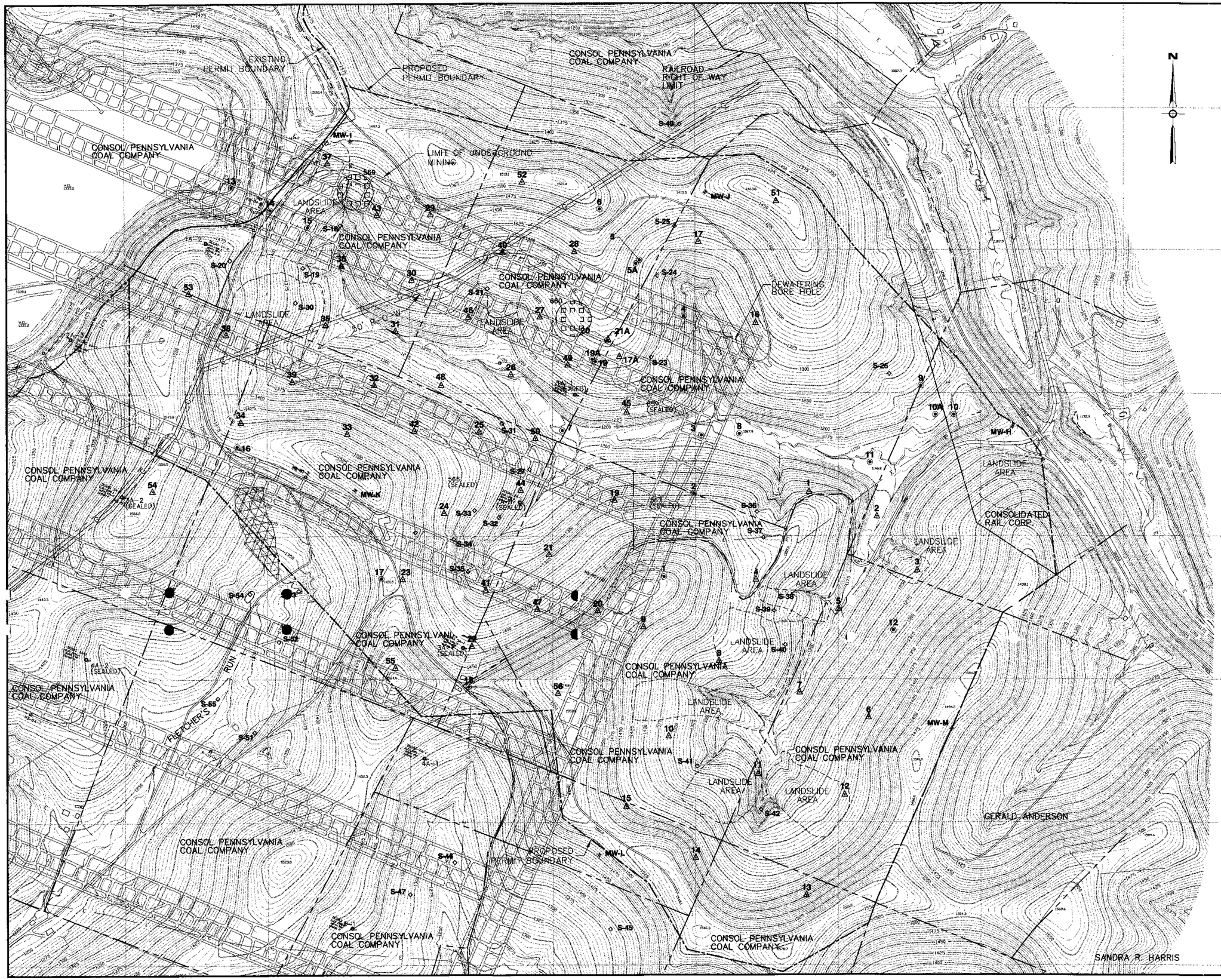

LEGEND

- Stream
- Groundwater Monitoring Well Location — MW-L
- Spring Sampling & Inventory Location — S-25
- Degas Borehole — 4A-1
- Soil Borings — 4
- Test Pits — 16
- Gas Well — 660
- Oil Well
- Gasline and 50' Right-of-Way
- Property Boundary
- Limit of Underground Mining
- Electric Line — E
- Permit Boundary
- Underground Mine Workings
- 125' Gas Well Barrier Area (Until Gas Wells Are Abandoned And Sealed In Accordance With Oil & Gas Act)
- 100' Stream Variance/ Barrier Area

Notes:

The existing 6" gas line and existing overhead electric lines will be relocated by others prior to construction. Locations of the existing and relocated gas and electric lines shown are approximate. The Contractor shall be responsible to verify the location and depths of all utilities prior to the start of construction. The contractor must comply with the Pennsylvania underground utilities act and shall contact PA one call at 1-800-242-1776 prior to construction.

Landslide areas shown were identified during a November 2001 site reconnaissance performed by Michael Baker Jr. personnel. There may be additional landslide or unstable areas other than those shown

MICHELE STEWART
ENGINEER
PE-029157-E

300 150 0 300
SCALE IN FEET

REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

EXISTING CONDITIONS

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

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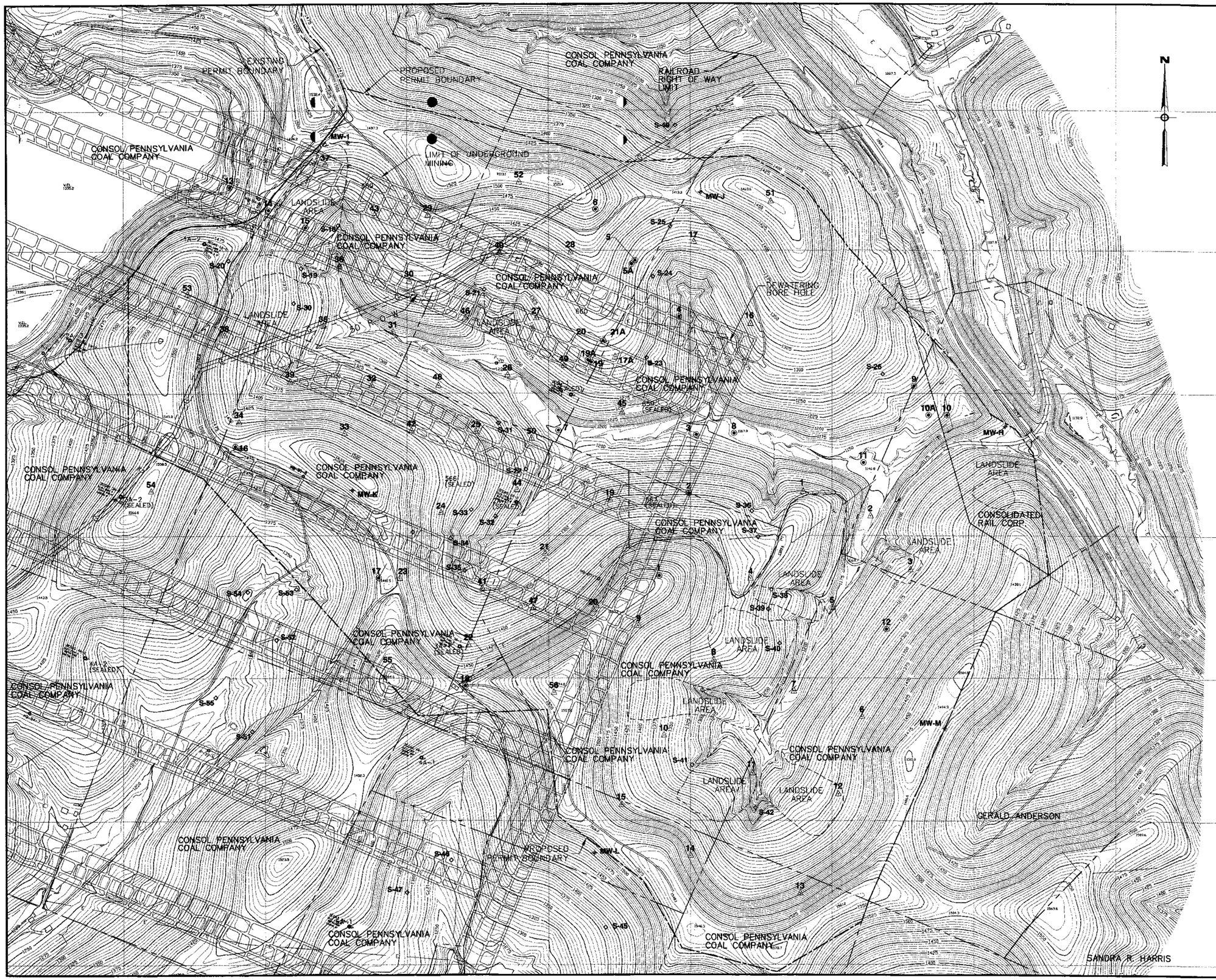

LEGEND

- Stream
- Groundwater Monitoring Well Location — MW-L
- Spring Sampling & Inventory Location — S-25
- Degas Borehole — 4A-1
- Soil Borings — 4
- Test Pits — 16
- Gas Well — 660
- Oil Well
- Gasline and 50' Right-of-Way — G
- Property Boundary
- Limit of Underground Mining
- Electric Line — E
- Permit Boundary
- Underground Mine Workings

Notes:

The existing 6" gas line and existing overhead electric lines will be relocated by others prior to construction. Locations of the existing and relocated gas and electric lines shown are approximate. The Contractor shall be responsible to verify the location and depths of all utilities prior to the start of construction. The contractor must comply with the Pennsylvania underground utilities act and shall contact PA one call at 1-800-242-1776 prior to construction.

Landslide areas shown were identified during a November 2001 site reconnaissance performed by Michael Baker Jr. personnel. There may be additional landslide or unstable areas other than those shown

COMMONWEALTH OF PENNSYLVANIA
MICHELE STEWART
ENGINEER
PE-075157-E

300 150 0 300
SCALE IN FEET

Baker

MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

EXISTING CONDITIONS

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

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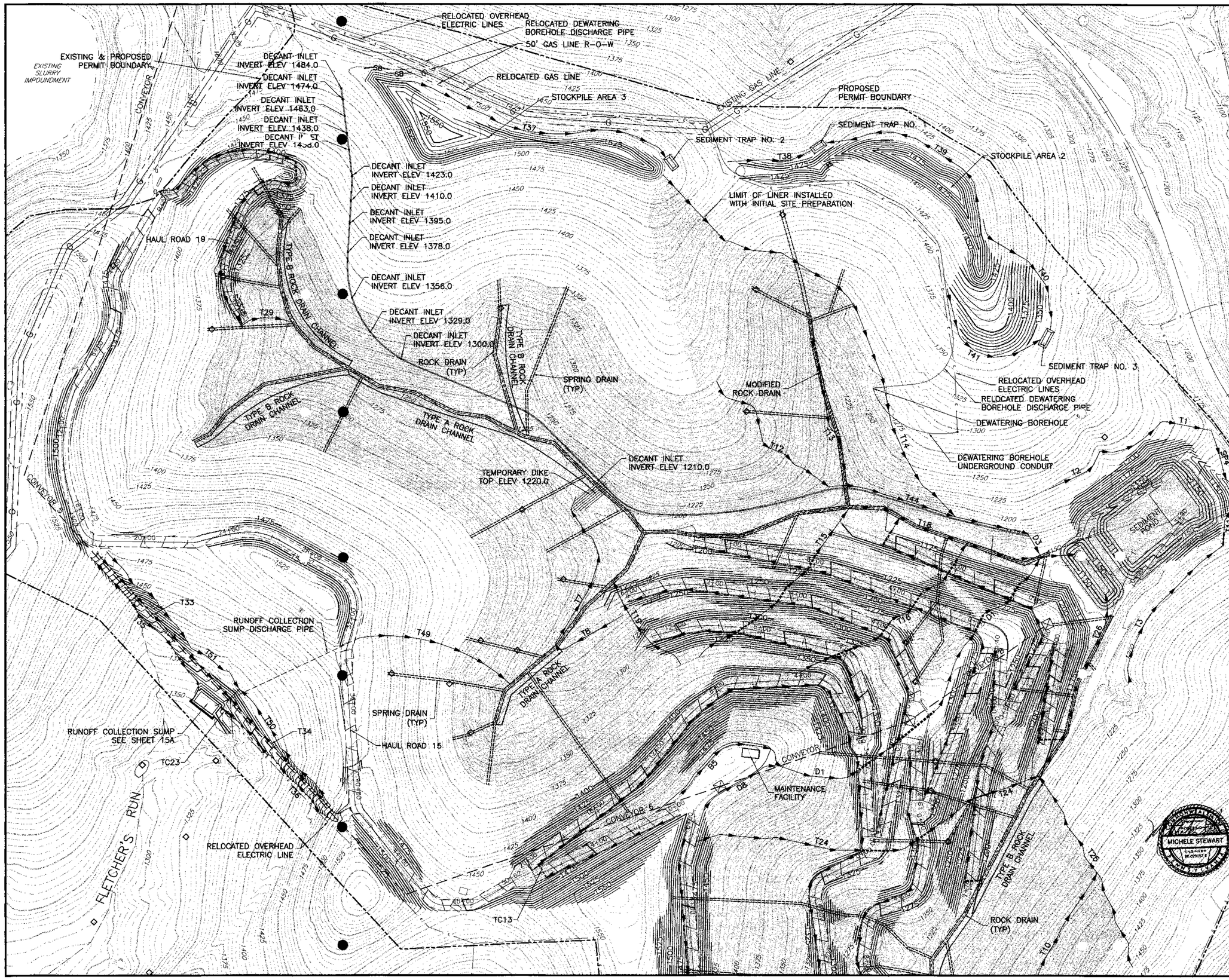

N

LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE
- SOIL LINER

Notes:

Construct sedimentation pond prior to beginning any site preparation work. The sequence for sedimentation pond construction is provided on Sheets 29 and 29A. The sequence for subsequent work is provided on sheets 41 through 55.

Borrow operations for liner and soil cover material must be conducted prior to grading and liner installation. Information on the approximate borrow material locations, depths, and thicknesses is provided on Sheet 40. Stockpile Area 1 is shown on Sheet 39.

The final liner grades are not shown. Grades to be determined in field after borrow operations. Maximum slope for liner placement is 2H:1V.

All soil material under Saddle Dam A and Haul Road 19 must be removed to rock prior to any fill placement. The grading for Haul Road 19 may be adjusted to tie into adjusted grades in this area.

In addition to the liner areas shown, liner shall also be constructed under the entire length of the decant pipe.

Add spring drains in addition to those shown as required to intercept and collect springs/seeps encountered during liner construction.

200 100 0 200
SCALE IN FEET

REVISED SEPTEMBER 2003
REVISED APRIL 2003
REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

MICHELE STEWART

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COAL REFUSE DISPOSAL AREA NO. 3 (SLURRY IMPOUNDMENT) INITIAL SITE PREPARATION

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02	AS SHOWN

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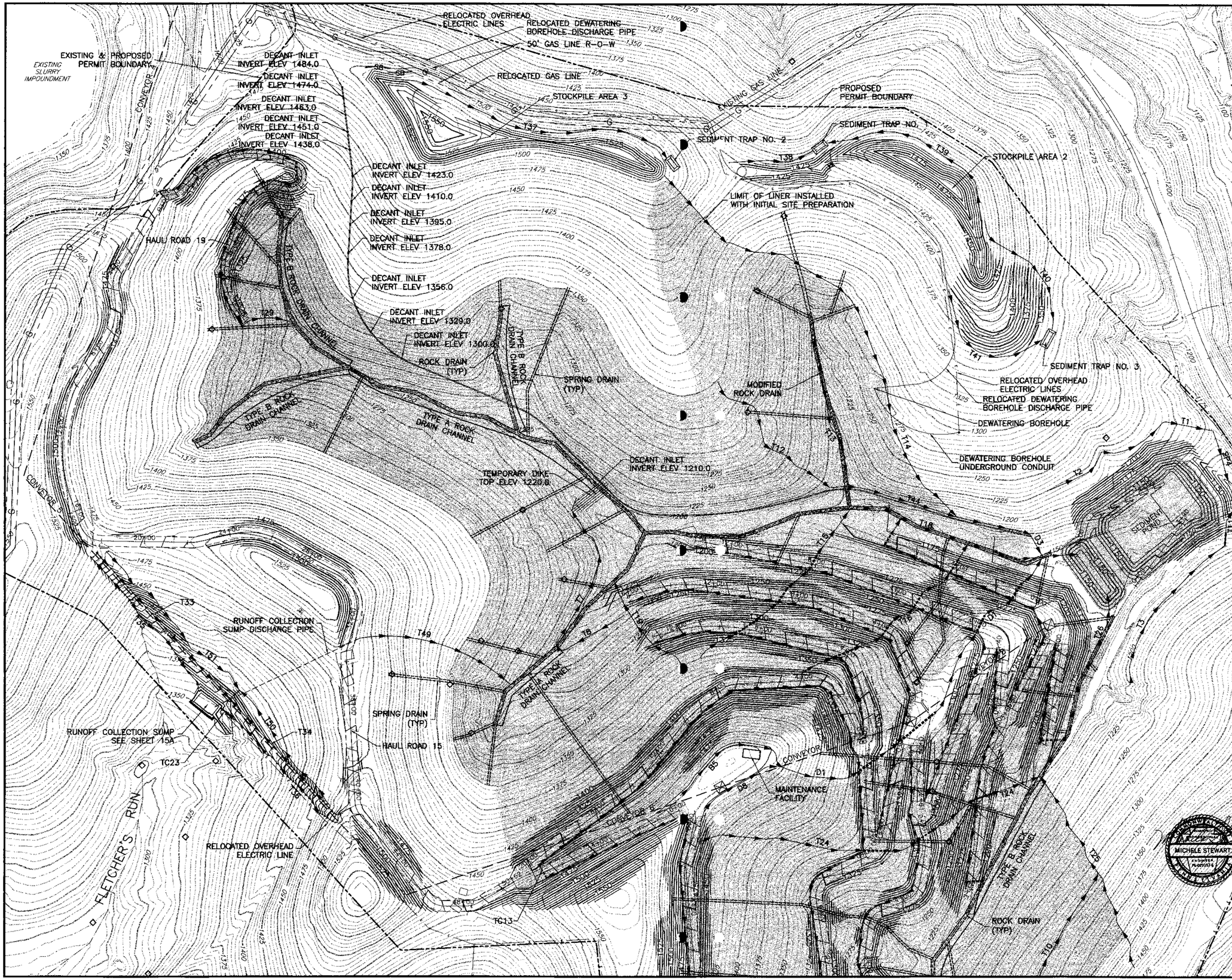

N

LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE
- SOIL LINER

Notes;

Construct sedimentation pond prior to beginning any site preparation work. The sequence for sedimentation pond construction is provided on Sheets 29 and 29A. The sequence for subsequent work is provided on sheets 41 through 55.

Borrow operations for liner and soil cover material must be conducted prior to grading and liner installation. Information on the approximate borrow material locations, depths, and thicknesses is provided on Sheet 40. Stockpile Area 1 is shown on Sheet 39.

The final liner grades are not shown. Grades to be determined in field after borrow operations. Maximum slope for liner placement is 2H:1V.

All soil material under Saddle Dam A and Haul Road 19 must be removed to rock prior to any fill placement. The grading for Haul Road 19 may be adjusted to tie into adjusted grades in this area.

In addition to the liner areas shown, liner shall also be constructed under the entire length of the decant pipe.

Add spring drains in addition to those shown as required to intercept and collect springs/seeps encountered during liner construction.

200 100 0 200
SCALE IN FEET

REVISED SEPTEMBER 2003
REVISED APRIL 2003
REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

MICHELE STEWART

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL CONPANY

COAL REFUSE DISPOSAL AREA NO. 3 (SLURRY IMPOUNDMENT) INITIAL SITE PREPARATION

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02 Rev 3/5	AS SHOWN

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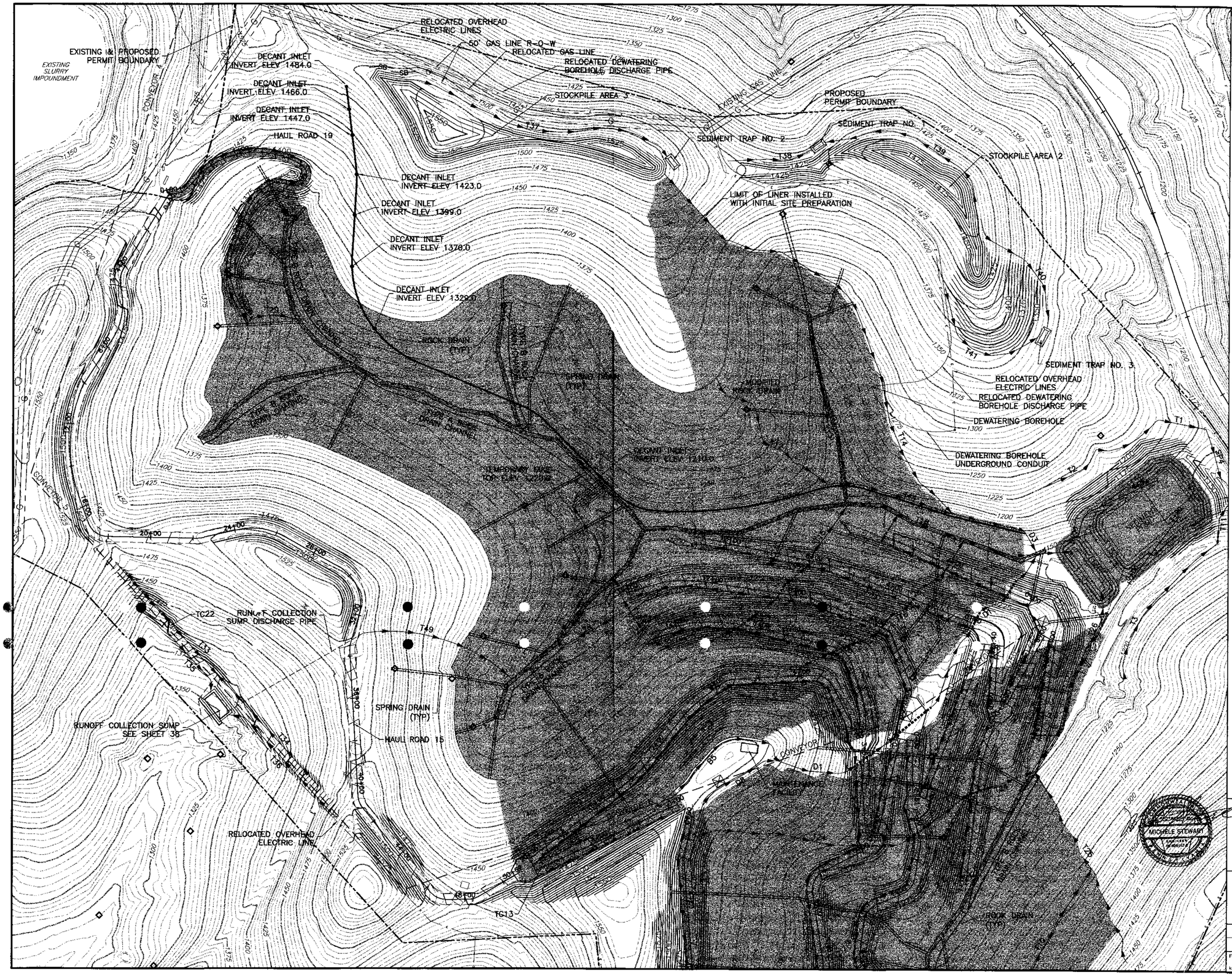

N

LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE
- SOIL LINER

Notes:

Construct sedimentation pond prior to beginning any site preparation work. The sequence for sedimentation pond construction is provided on Sheets 29 and 29A. The sequence for subsequent work is provided on sheets 41 through 55.

Borrow operations for liner and soil cover material must be conducted prior to grading and liner installation. Information on the approximate borrow material locations, depths, and thicknesses is provided on Sheet 40. Stockpile Area 1 is shown on Sheet 39.

The final liner grades are not shown. Grades to be determined in field after borrow operations. Maximum slope for liner placement is 2H:1V.

All soil material under Saddle Dam A and Haul Road 19 must be removed to rock prior to any fill placement. The grading for Haul Road 19 may be adjusted to tie into adjusted grades in this area.

In addition to the liner areas shown, liner shall also be constructed under the entire length of the decant pipe.

Add spring drains in addition to those shown as required to intercept and collect springs/seeps encountered during liner construction.

200 100 0 200
SCALE IN FEET

REVISED OCTOBER 2002

Baker

MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COAL REFUSE DISPOSAL AREA NO. 3 (SLURRY IMPOUNDMENT) INITIAL SITE PREPARATION

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02	AS SHOWN

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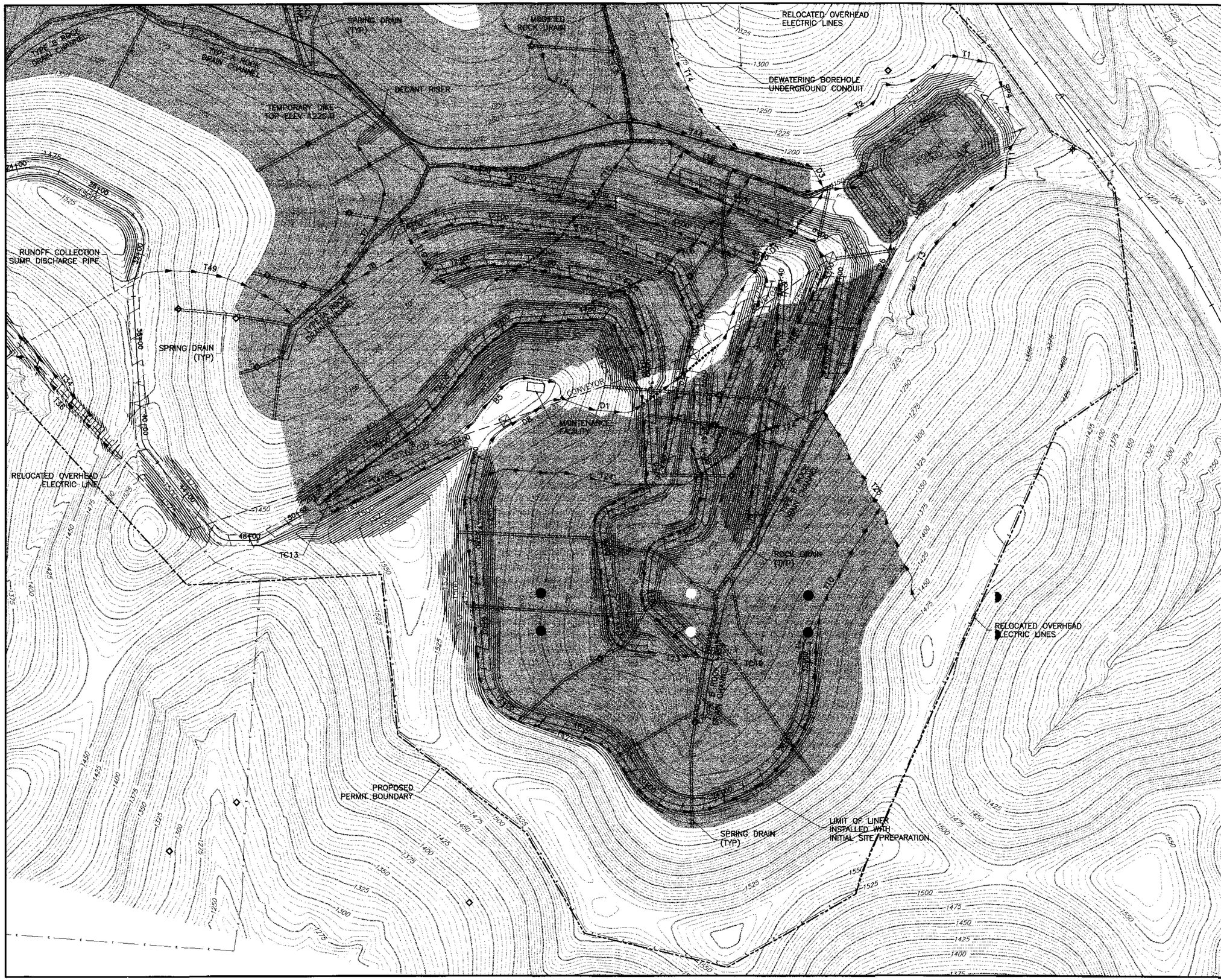

N

LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE
- SOIL LINER

Notes:

Construct sedimentation pond prior to beginning any site preparation work. The sequence for sedimentation pond construction is provided on Sheets 29 and 29A. The sequence for subsequent work is provided on sheets 41 through 55.

Borrow operations for liner and soil cover material must be conducted prior to grading and liner installation. Information on the approximate borrow material locations, depths, and thicknesses is provided on Sheet 40. Stockpile Area 1 is shown on Sheet 39.

The final liner grades are not shown. Grades to be determined in field after borrow operations. Maximum slope for liner placement is 2H:1V.

Add spring drains in addition to those shown as required to intercept and collect springs/seeps encountered during liner construction.

COMMONWEALTH OF PENNSYLVANIA
MICHELE STEWART
ENGINEER
PE-029157-E

200 0 200
SCALE IN FEET

REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COAL REFUSE DISPOSAL AREA NO. 4 (COARSE COAL REFUSE AREA) INITIAL SITE PREPARATION

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02	AS SHOWN

FILE: CONSOL PLANS 200 (SITE PREP SOUTH)
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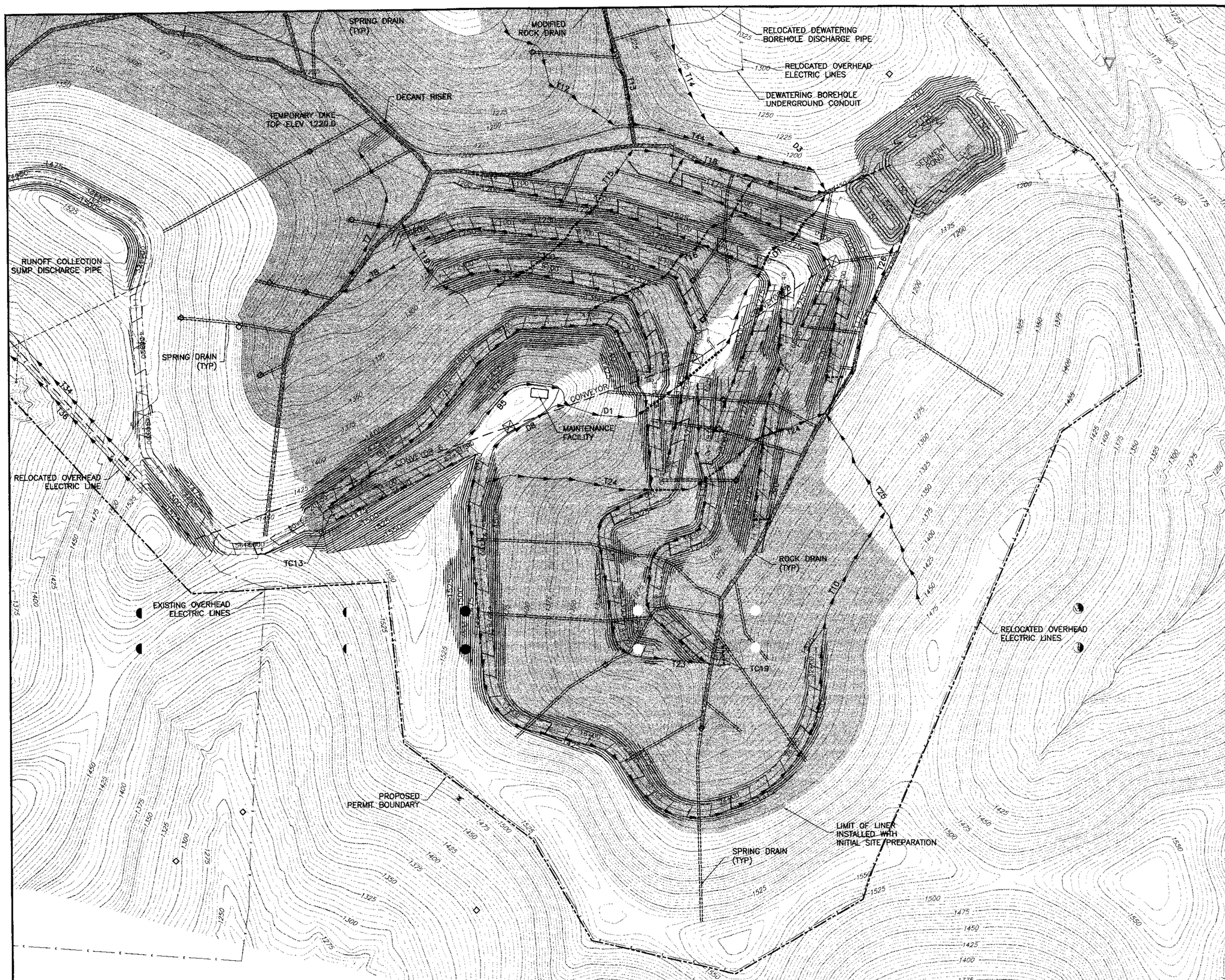

N

LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE

Notes:

Construct sedimentation pond prior to beginning any site preparation work. The sequence for sedimentation pond construction is provided on Sheet 29.

Borrow operations for liner and soil cover material must be conducted prior to grading and liner installation. Information on the approximate borrow material locations, depths, and thicknesses is provided on Sheet 38. Stockpile Area 1 is shown on Sheet 37.

. . final liner grades are no' :hown. Grades to be determined in field after borrow operations. Maximum slope for liner placement is 2H:1V.

MICHELE STEWART
ENGINEER
PE-029157-E

200 100 0 200
SCALE IN FEET

Baker

MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412. 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COAL REFUSE DISPOSAL AREA NO. 4 (COARSE COAL REFUSE AREA) INITIAL SITE PREPARATION

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02	AS SHOWN

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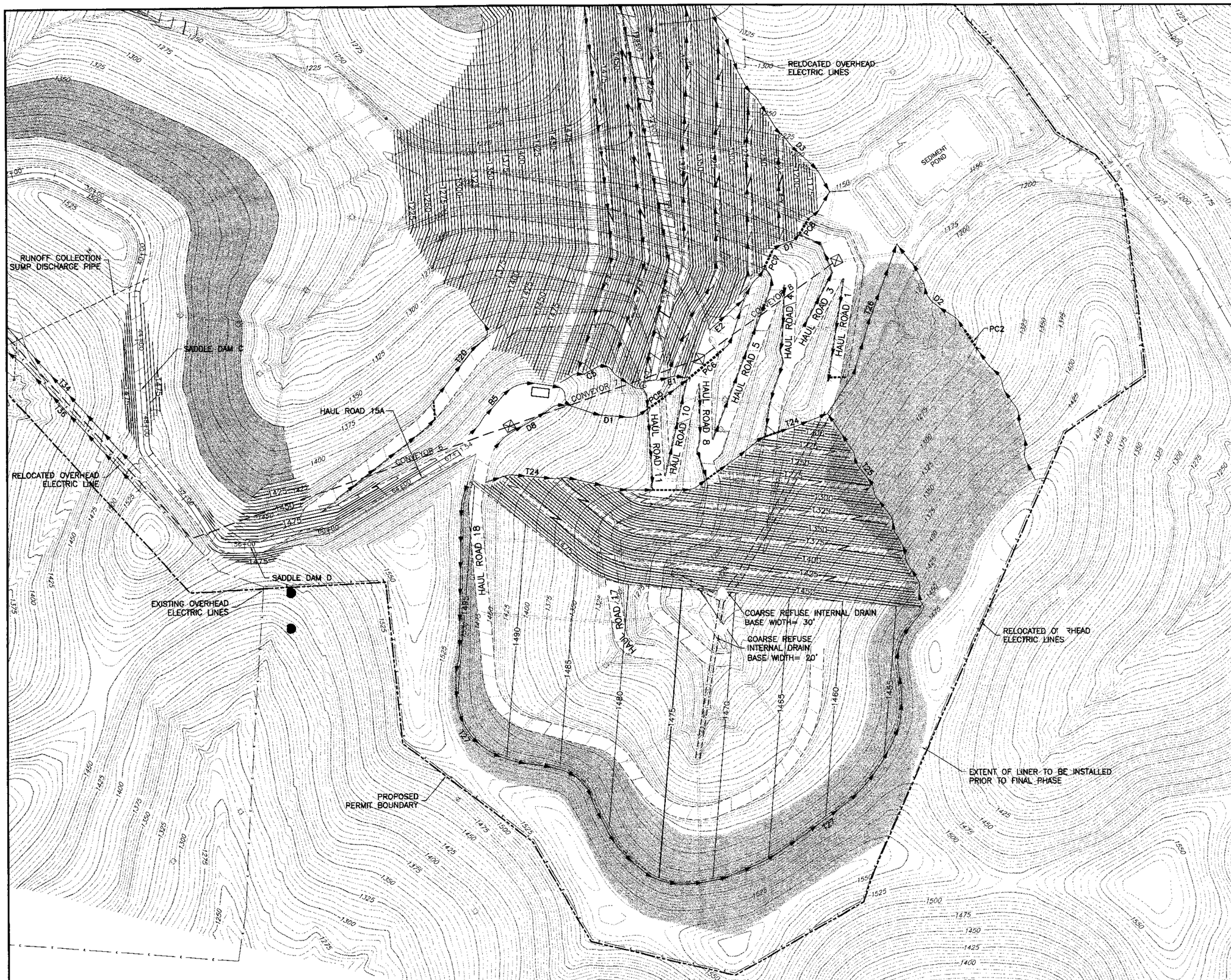

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LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE

Notes:

Borrow operations for liner and soil cover material must be conducted prior to fill and liner installation. Information on the approximate borrow material locations, depths, and thicknesses is provided on Sheet 38. Stockpile Area 1 is shown on Sheet 37.

The final liner grades are not shown. Grades to be determined in field after borrow operations. Maximum slope for liner placement is 2H:1V. Liner to be installed incrementally in the coarse coal refuse area ahead of refuse disposal.

MICHELE STEWART
ENGINEER
PE-029157-E

200 100 0 200
SCALE IN FEET

Baker

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Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COAL REFUSE DISPOSAL AREA NO. 4 (COARSE COAL REFUSE AREA) STAGE 1

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02	AS SHOWN

FILE: CONSOL PLANS 200 (REFUSE STAGE 1)
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S.O. No.: 24379-000-0000

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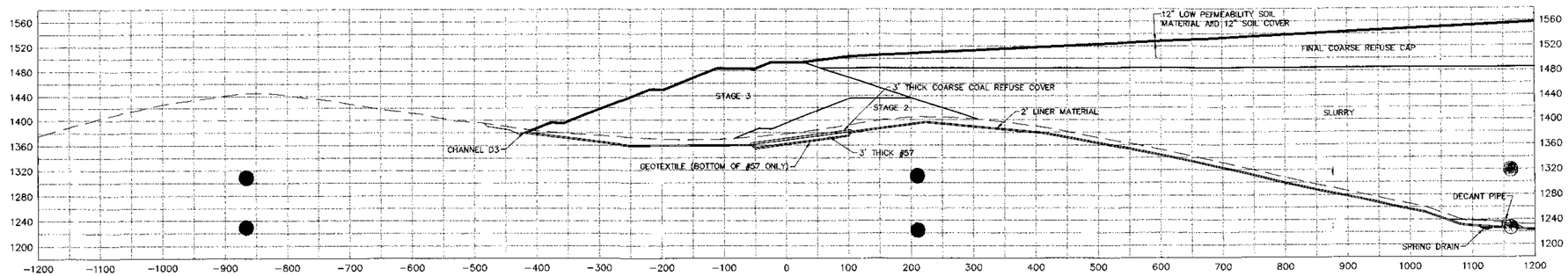

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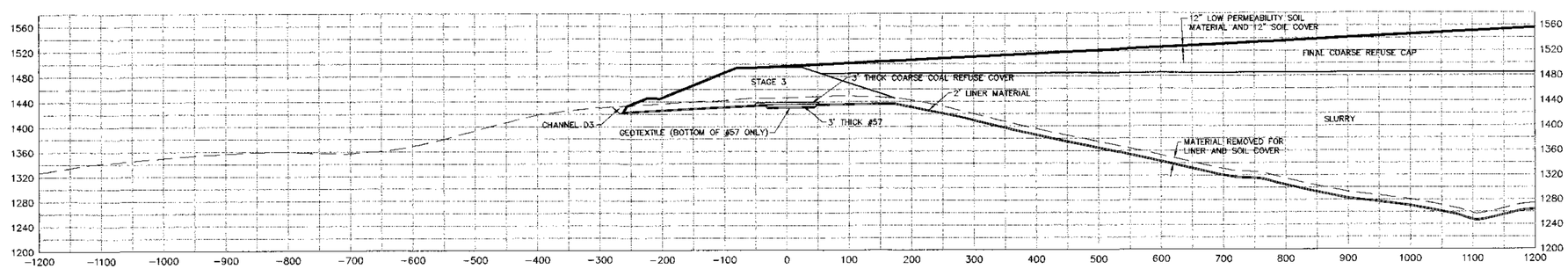

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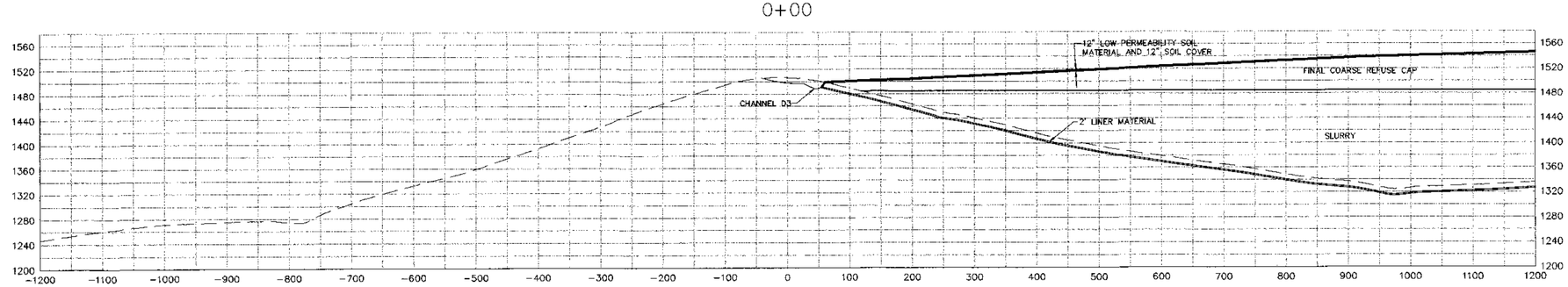

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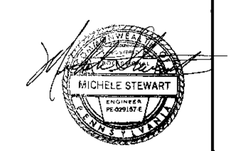
SCALE IN FEET (VERTICAL)



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BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

MAIN DAM CROSS SECTIONS SHEET 1 OF 5

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
SDZ	GEC	JMB	3/02	AS SHOWN

FILE: DAM X-SECS
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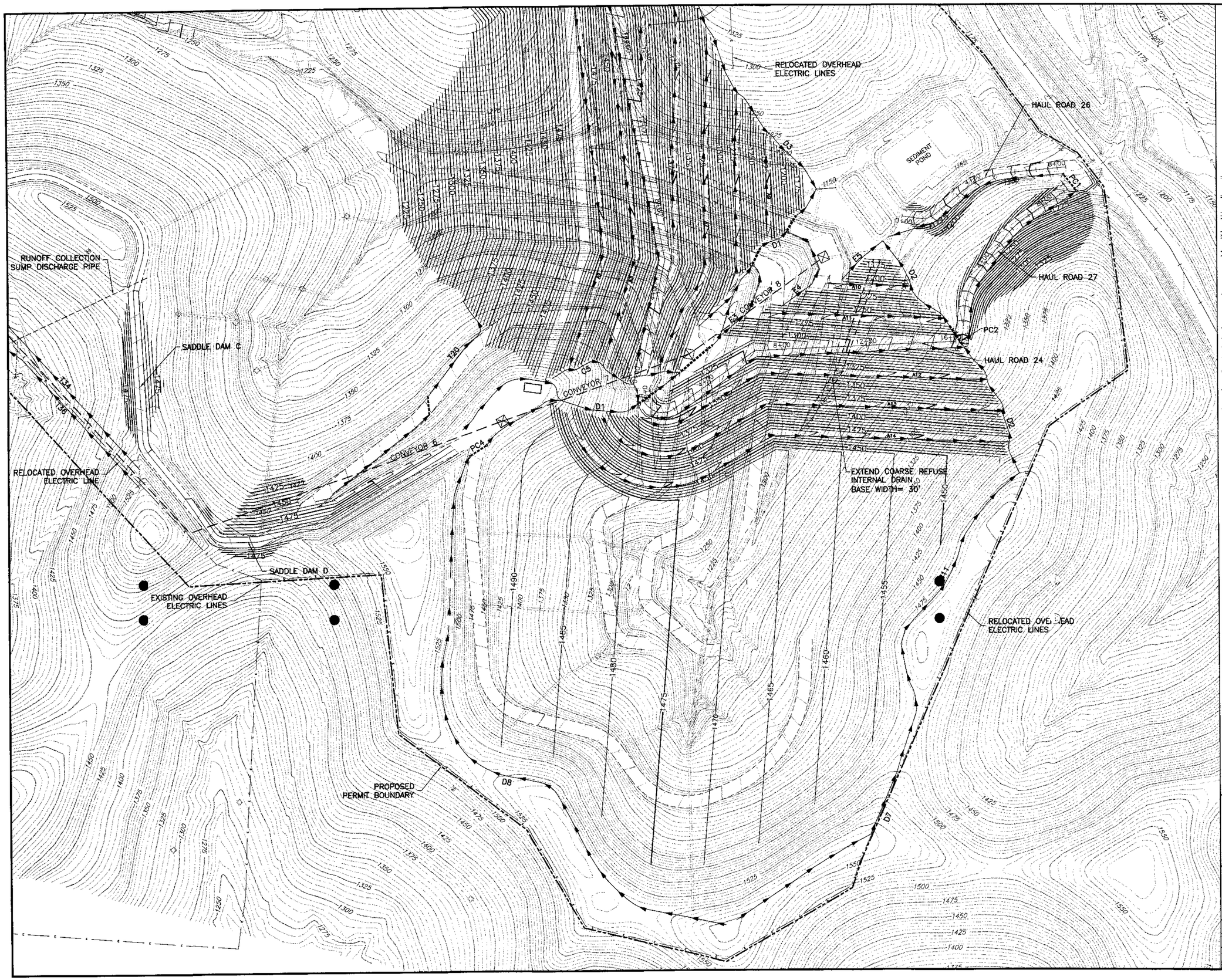

N

LEGEND

- DECANT RISER
- DECANT
- ROCK DRAIN
- MODIFIED ROCK DRAIN
- SPRING DRAIN
- SPRING LOCATION
- CHANNEL
- PROPOSED CONVEYOR & BIN
- GAS LINE & 50' ROW
- EDGE OF PROPOSED ROAD
- CULVERT
- PERMIT BOUNDARY
- COARSE REFUSE INTERNAL DRAIN
- OVERHEAD ELECTRIC LINE

MICHELE STEWART
ENGINEER
PE-029157-E

200 100 0 200
SCALE IN FEET

Baker

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Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

COAL REFUSE DISPOSAL AREA NO. 4 (COARSE COAL REFUSE AREA) STAGE 2

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	3/02	AS SHOWN

FILE: CONSOL PLANS 200 (REFUSE STAGE 2)
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S.O. No.: 24379-000-0000

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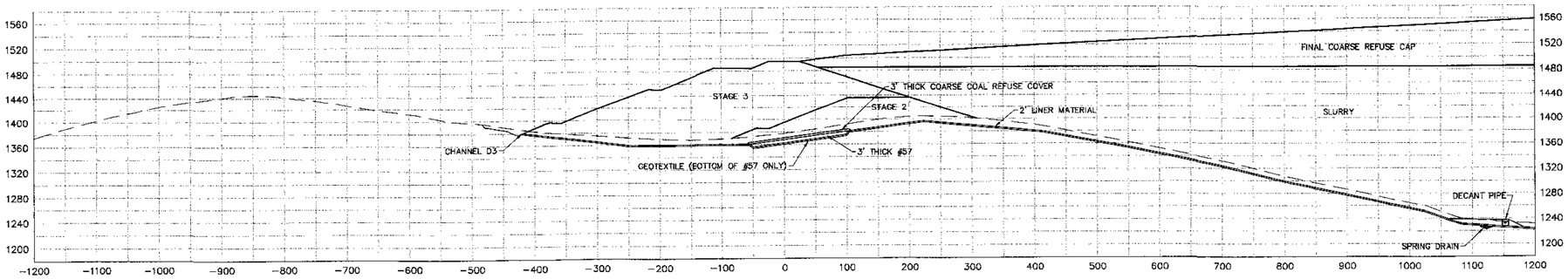

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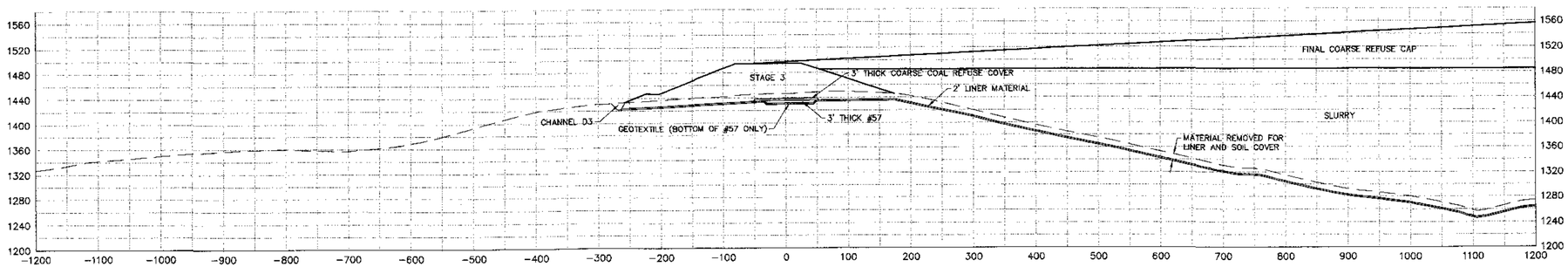

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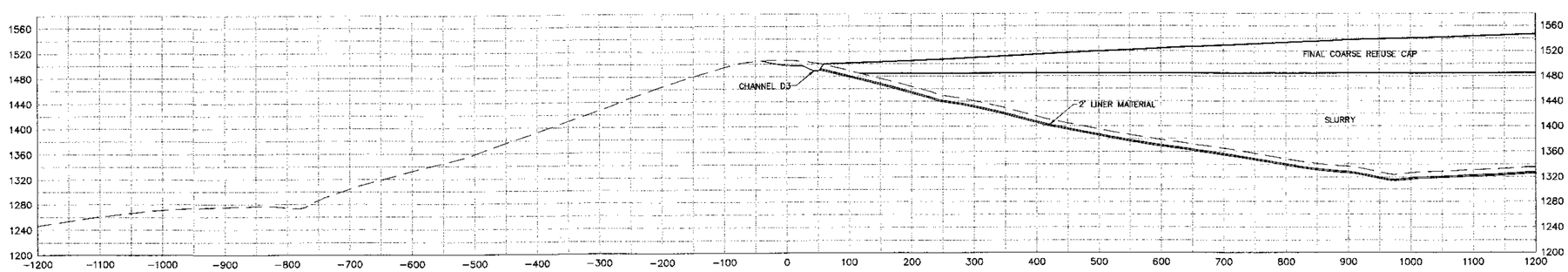

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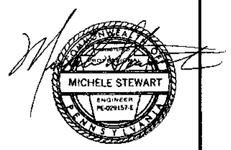
SCALE IN FEET (VERTICAL)



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Coraopolis, Pennsylvania
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BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

MAIN DAM CROSS SECTIONS SHEET 1 OF 5

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
SDZ	GEC	JMB	3/02	AS SHOWN

FILE: DAM X-SECS
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DRAWING NO. 17

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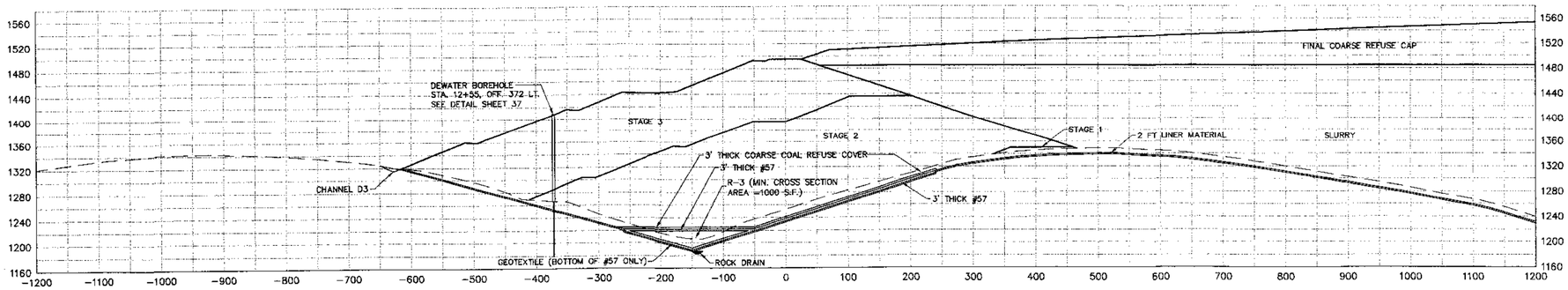

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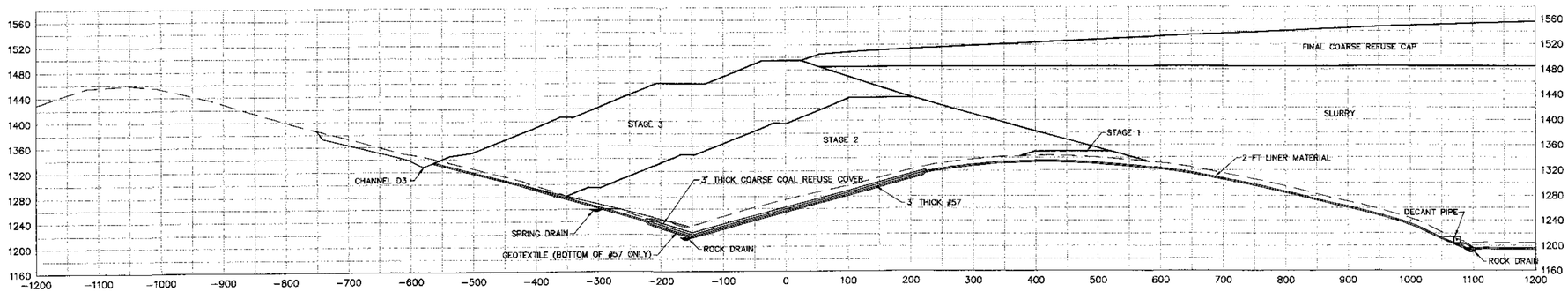

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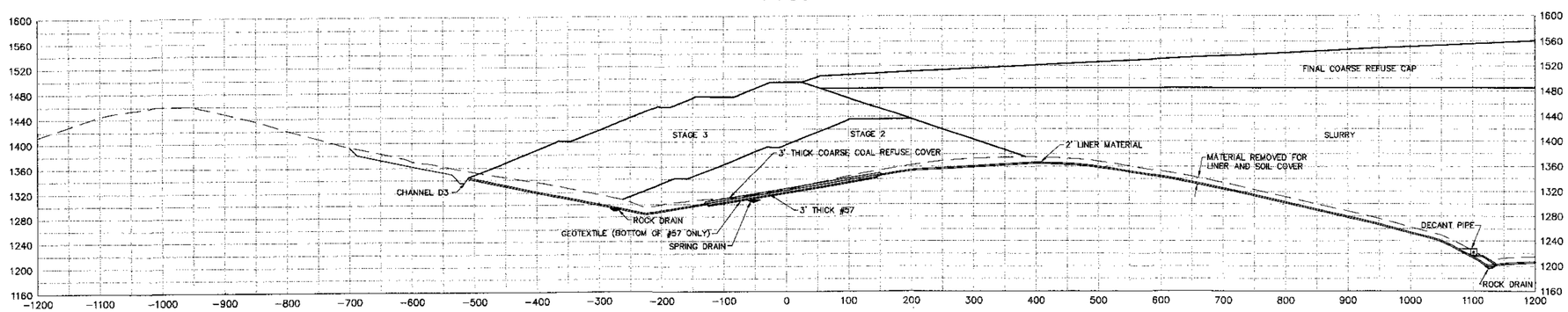

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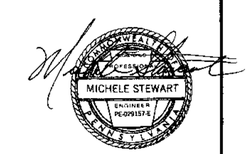

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Coraopolis, Pennsylvania
412 269-6000 mbakerdorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

MAIN DAM CROSS SECTIONS SHEET 2 OF 5

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
SDZ	GEC	JMB	3/02	AS SHOWN

FILE: DAM X-SECS
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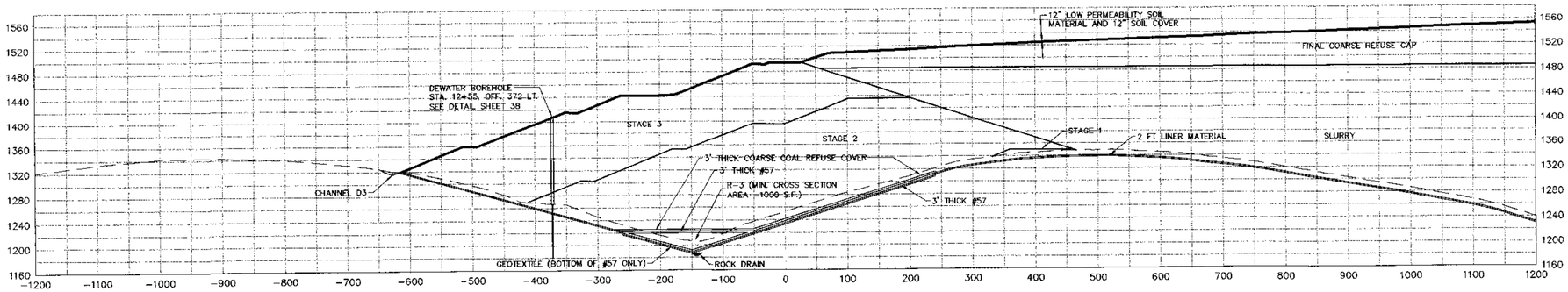

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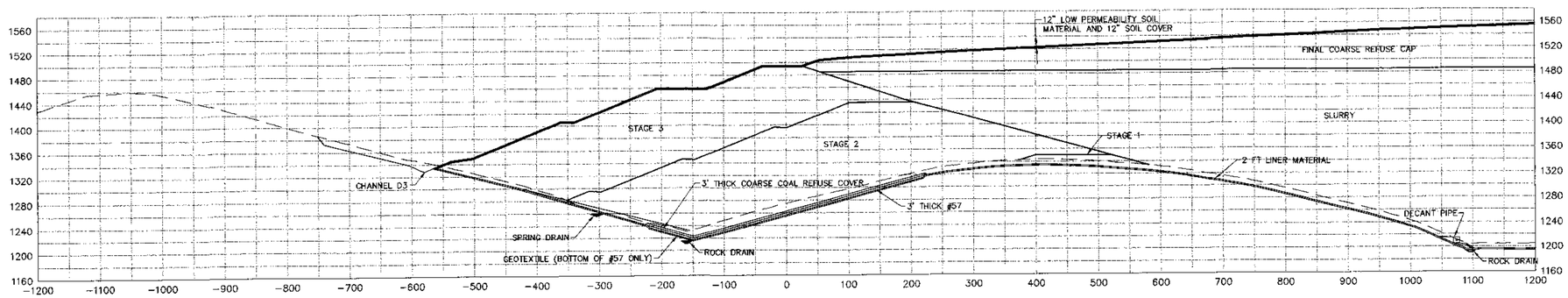

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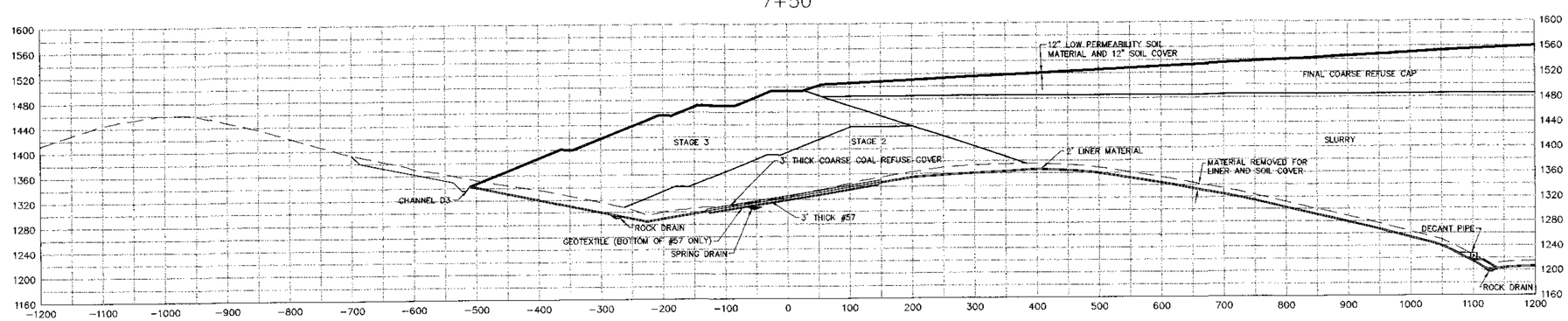

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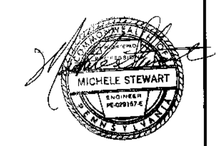

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Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

MAIN DAM CROSS SECTIONS SHEET 2 OF 5

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
SDZ	GEC	JMB	3/02	AS SHOWN

FILE: DAM X-SECS
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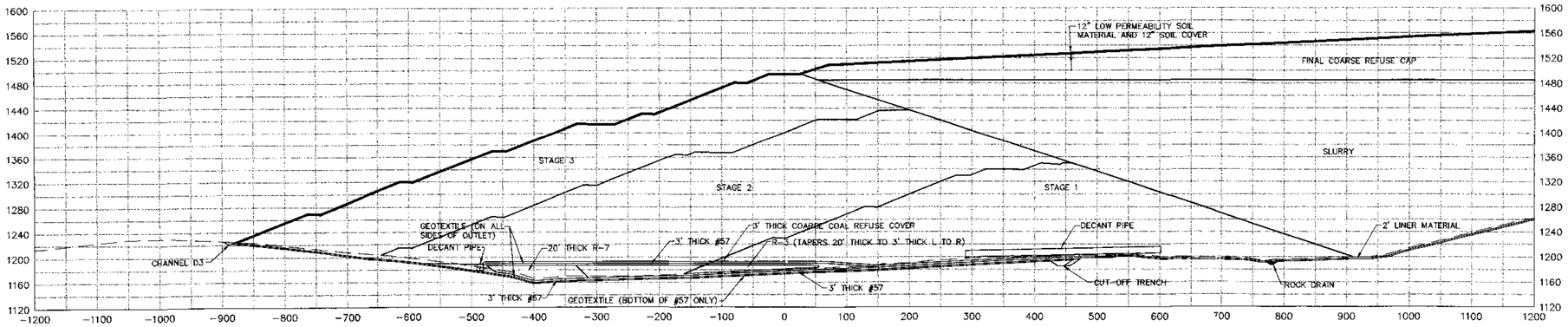

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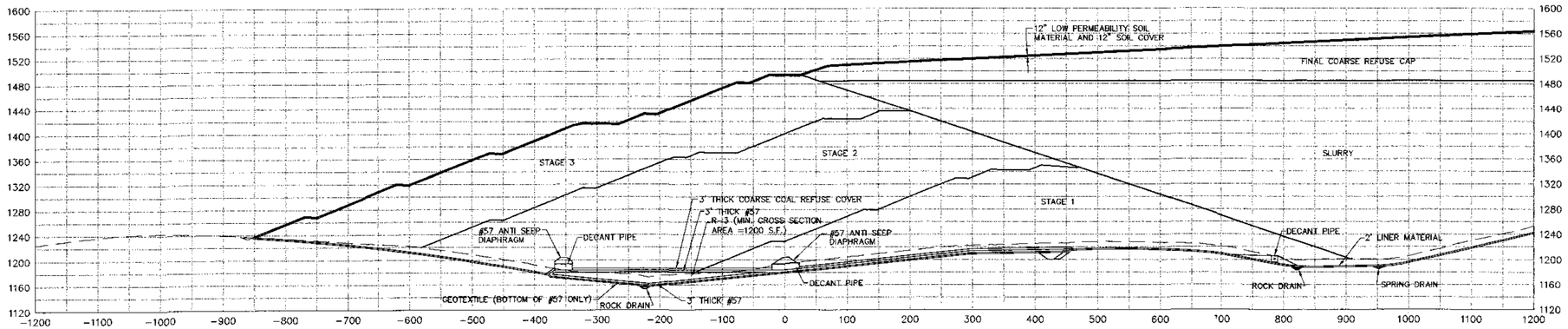

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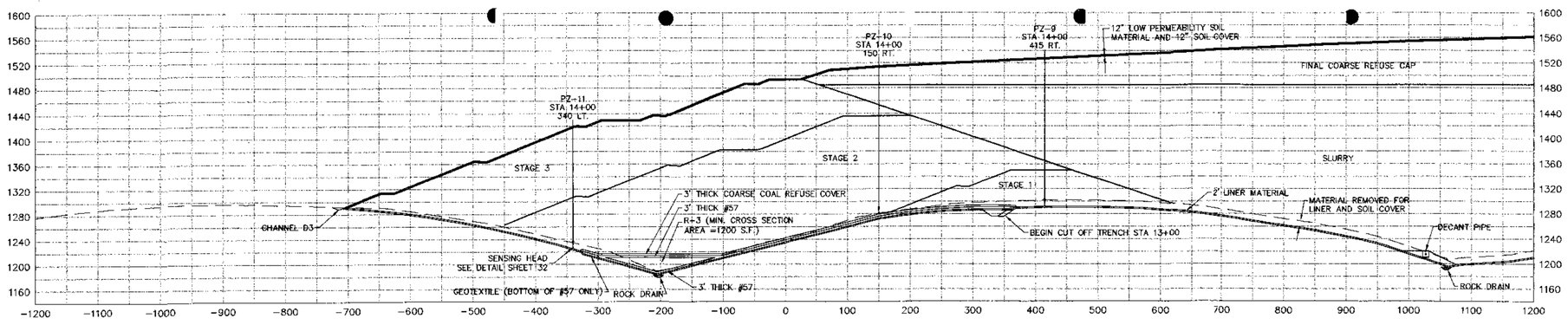

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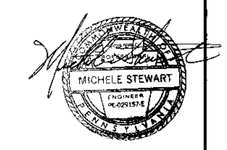
SCALE IN FEET (VERTICAL)



REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakerjrcorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

MAIN DAM CROSS SECTIONS SHEET 3 OF 5

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
SDZ	GEC	JMB	3/02	AS SHOWN

FILE: DAM X-SECS
k:_consol\24379\drawings\final\

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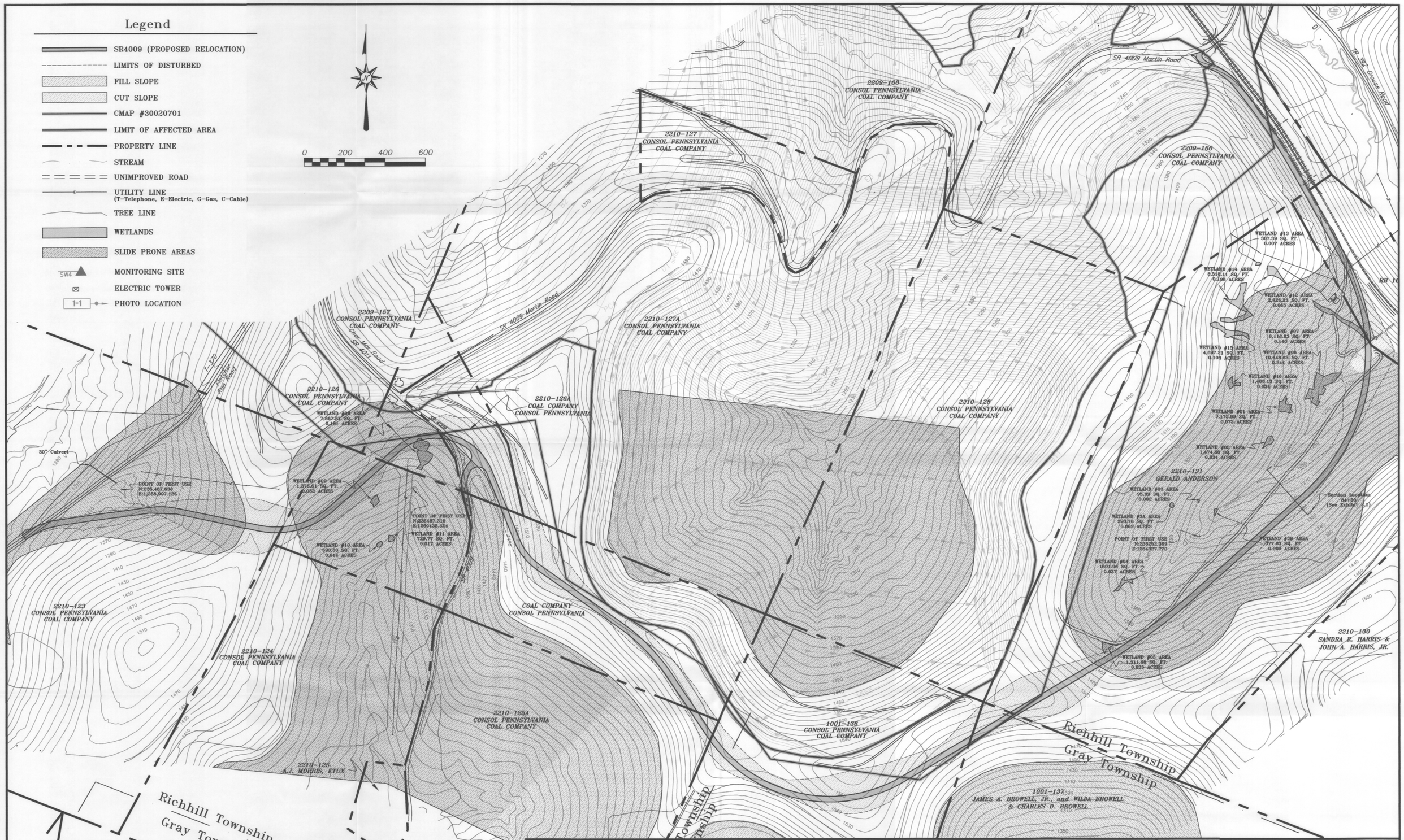

REVISIONS			
No.	By	Date	Description

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Checked By:	MRT
Date:	5/07/2004
Scale:	1" = 200'
Project No.:	357-01
File Name:	BASEMAP-5-06-04
Drawing:	7 of 7

CME
ENGINEERING
Civil Mining Environmental Engineering, Inc.
165 E. Union St., Suite 100, Somerset, PA 15501
814-443-3344 FAX: 814-444-0365 E-MAIL: info@cmeeinc.com

Seal

EXHIBIT 2.3: ALTERNATIVE 4A SITE PLAN

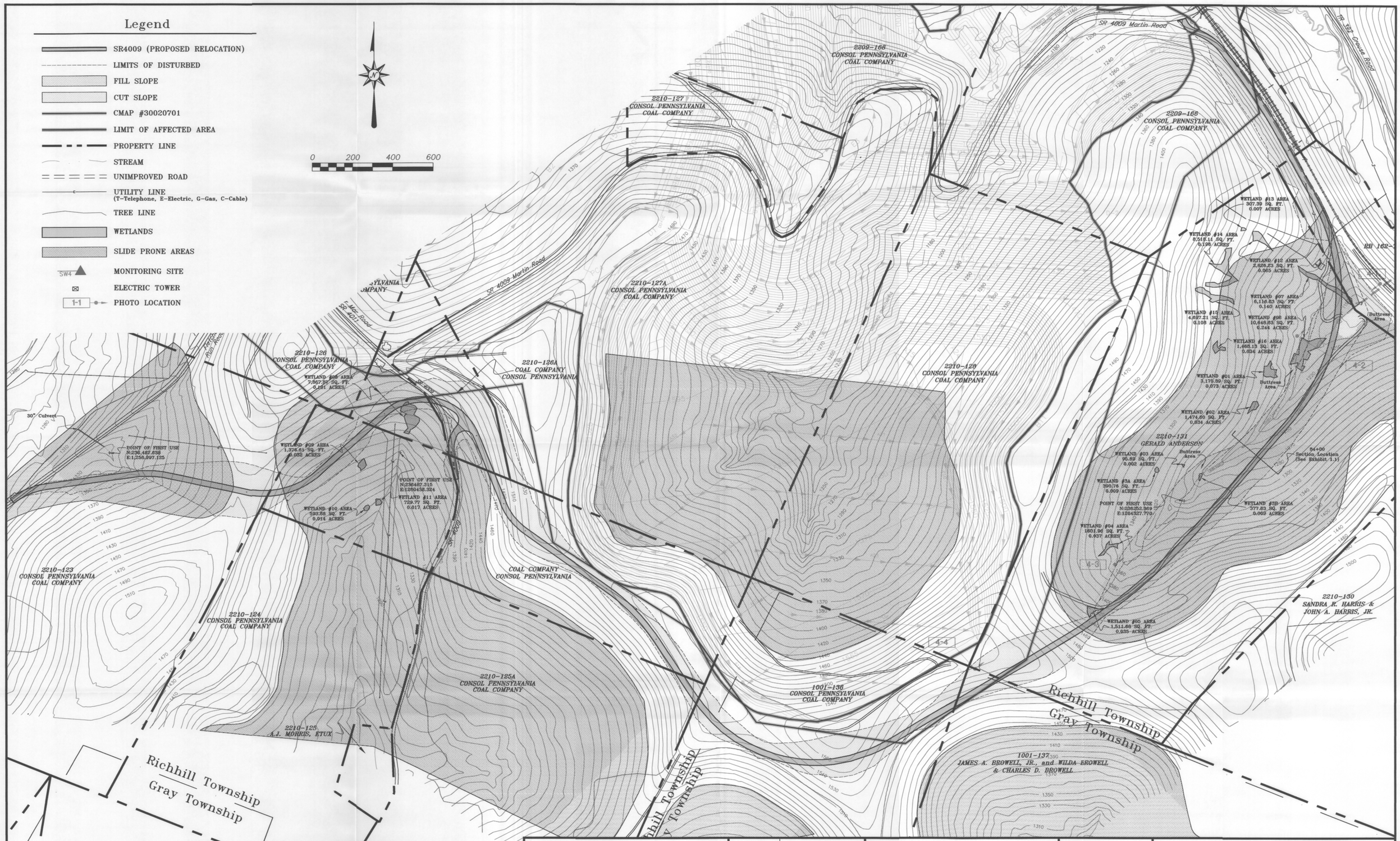
for

CONSOL PA COAL CO.

RELOCATION OF SR 4009

RICHHILL AND GRAY TOWNSHIP

GREENE COUNTY, PENNSYLVANIA



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No.	By	Date	Description
1	DJW	3/15/04	Revised
2	DJW	5/7/04	Revised

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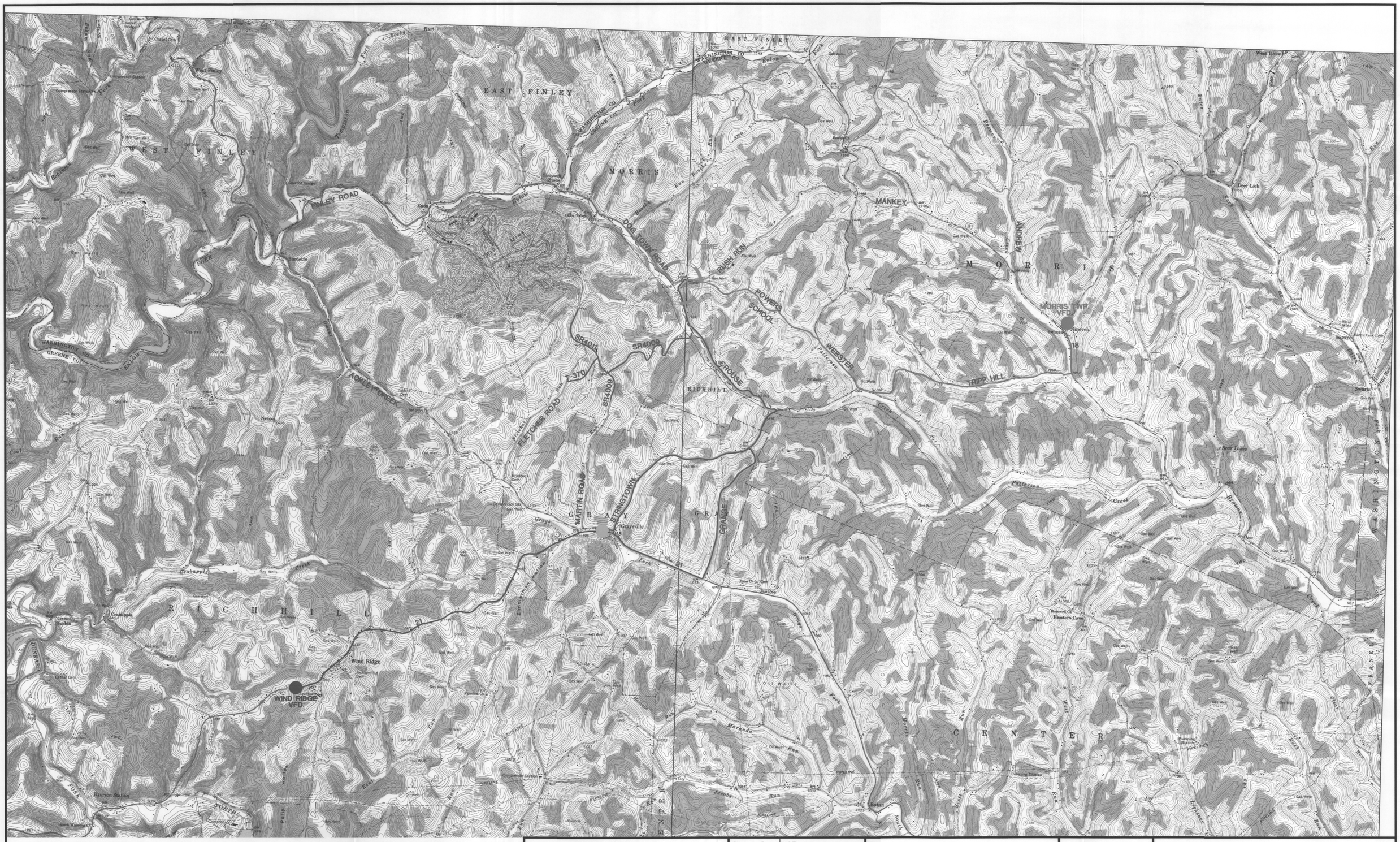
Checked By:	MRT
Date:	12/12/2003
Scale:	1" = 200'
Project No.:	357-01
File Name:	BASEMAP-5-06-04
Drawing:	6 of 7

CME
ENGINEERING
Civil Mining Environmental Engineering, Inc.
165 E. Union St., Suite 100, Somerset, PA 15501
814-443-3344 FAX: 814-444-0365 E-MAIL: info@cmeeinc.com

Seal

EXHIBIT 2.2: ALTERNATIVE 4 SITE PLAN
for
CONSOL PA COAL CO.
RELOCATION OF SR 4009
RICHHILL AND GRAY TOWNSHIP
GREENE COUNTY, PENNSYLVANIA



WEST FINLEY VFD. — EXISTING TRAVELWAYS TO TIME

WIND RIDGE VFD. — EXISTING TRAVELWAYS TO TIME

GRAYSVILLE VFD. — EXISTING TRAVELWAYS TO TIME

MORRIS TWP. VFD. — EXISTING TRAVELWAYS TO TIME

ROADS TO BE CLOSED

REVISIONS

No.	By	Date	Description

Drawn By:	AGZ
Checked By:	MRT
Date:	12/10/2003
Scale:	1" = 2000'
Project No.:	357-02
File Name:	ROAD-RELOCATION.DWG
Drawing:	2 of 2

CME
ENGINEERING
Civil Mining Environmental Engineering, Inc.
165 E. Union St., Suite 100, Somerset, PA 15501
814-443-3344 FAX: 814-444-0365 E-MAIL: info@cmeeinc.com

Seal

EXHIBIT 3.0: PROPOSED EMERGENCY RESPONSE ROUTES
for
CONSOL PA COAL CO.
RICHHILL, MORRIS, GRAY, AND WEST FINLEY TOWNSHIP
GREENE AND WASHINGTON COUNTY, PENNSYLVANIA

WEST FINLEY VFD.	EXISTING TRAVELWAYS TO TIME	
WIND RIDGE VFD.	EXISTING TRAVELWAYS TO TIME	
GRAYSVILLE VFD.	EXISTING TRAVELWAYS TO TIME	
MORRIS TWP. VFD.	EXISTING TRAVELWAYS TO TIME	

REVISIONS

No.	By	Date	Description

Drawn By:	AGZ
Checked By:	MRT
Date:	12/10/2003
Scale:	1" = 2000'
Project No.:	357-02
File Name:	ROAD-RELOCATION.DWG
Drawing:	1 of 2

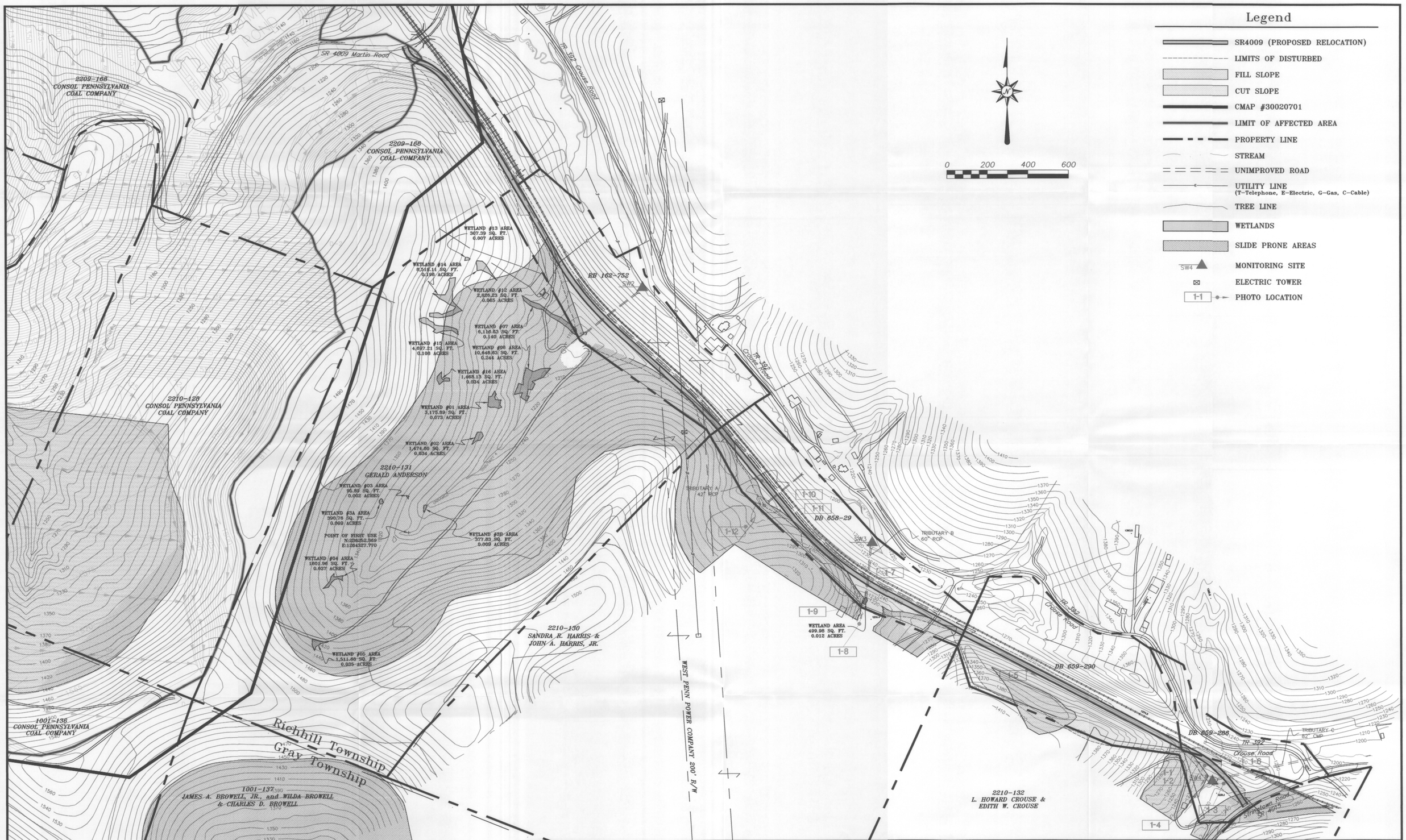
CME
ENGINEERING
Civil Mining Environmental Engineering, Inc.
165 E. Union St., Suite 100, Somerset, PA 15501
814-443-3344 FAX: 814-444-0365 E-MAIL: info@cmeeinc.com

Seal

EXHIBIT 2.0: EXISTING EMERGENCY RESPONSE ROUTES
for

CONSOL PA COAL CO.

RICHHILL, MORRIS, GRAY, AND WEST FINLEY TOWNSHIP
GREENE AND WASHINGTON COUNTY, PENNSYLVANIA



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No.	By	Date	Description
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Drawn By:	DJW
Checked By:	MRT
Date:	12/12/2003
Scale:	1" = 200'
Project No.:	357-01
File Name:	BASEMAP-5-06-04
Drawing:	5 of 7

CME ENGINEERING
Civil Mining Environmental Engineering, Inc.
165 E. Union St., Suite 100, Somerset, PA 15501
814-443-3344 FAX: 814-444-0365 E-MAIL: info@cmeeinc.com

Seal

EXHIBIT 2.1: ALTERNATIVE 1 SITE PLAN

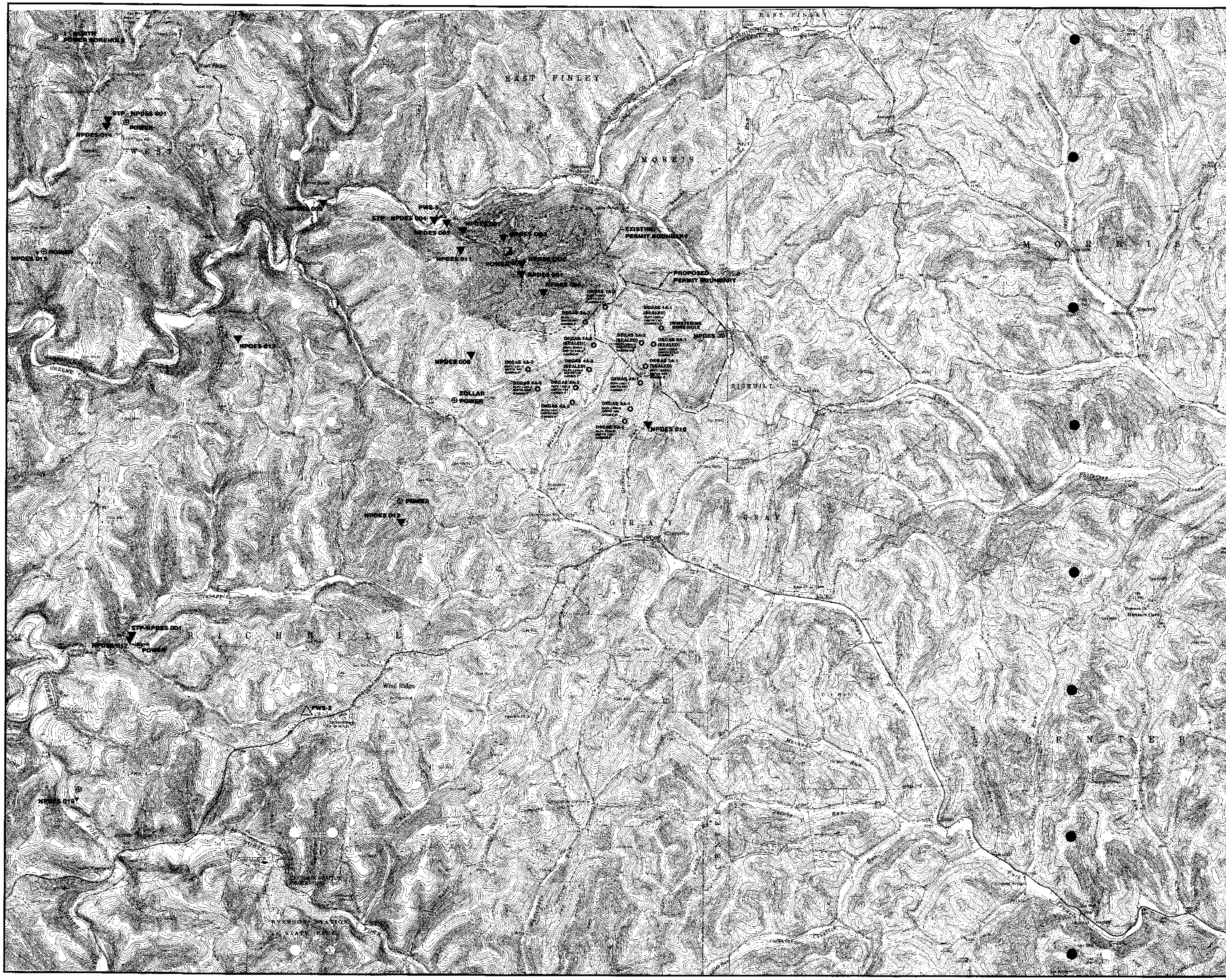
for

CONSOL PA COAL CO.

RELOCATION OF SR 4009

RICHHILL AND GRAY TOWNSHIP

GREENE COUNTY, PENNSYLVANIA



LEGEND

Proposed Surface Permit Area Boundaries

Existing Surface Permit Area Boundaries

NPDES Outlet (Existing) — NPDES 008

NPDES Outlet (Proposed) — NPDES 301

Airshaft

Degas Borehole

N

2000 1000 0 2000
SCALE IN FEET

REVISED SEPTEMBER 2003
REVISED OCTOBER 2002

Baker MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

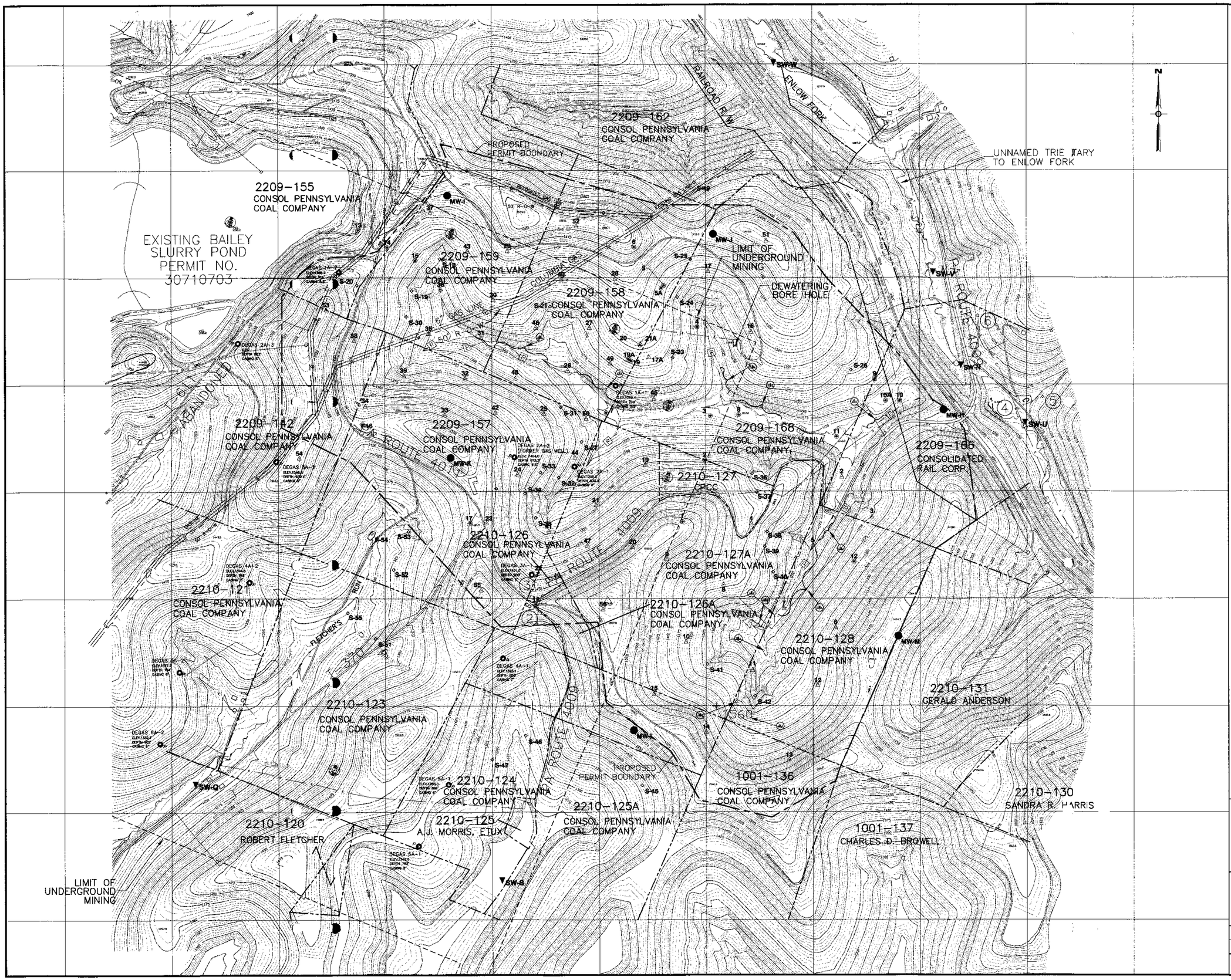
EXHIBIT 6.1
LOCATION MAP

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

FILE: EXHIBIT 6.1
k:_consol\24379\drawings\final\

EXHIBIT 6-1

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL GREGORY A... ENGINEER No. 043740-E



LEGEND

- Proposed Surface Permit Area Boundaries
- Property Line
- Perennial Stream
- Intermittent Stream
- Pond
- Groundwater Monitoring Well Location — MW-J
- Surfacewater Monitoring Location — SW-V
- Spring Sampling & Inventory Location — S-25
- Spring Location (No Sample)
- Degas Borehole
- Soil Borings
- Test Pits
- Gas Well
- Existing Wetlands
- Gasline and 50' Right-of-Way
- Electric Line
- Structure Identified In Structure Inventory Attachment 5.4 — 2

SOURCES OF INFORMATION

ALTERNATIVE ANALYSIS – BAILEY MINE COMPLEX APPROVED AUGUST 1, 2001. PADEP

WIND RIDGE AND ROGERSVILLE 7-1/2 MINUTE U.S.G.S. QUADRANGLES

MICHELE STEWART
ENGINEER
PE-029157-E

400 200 0 400
SCALE IN FEET

REVISED APRIL 2003
REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

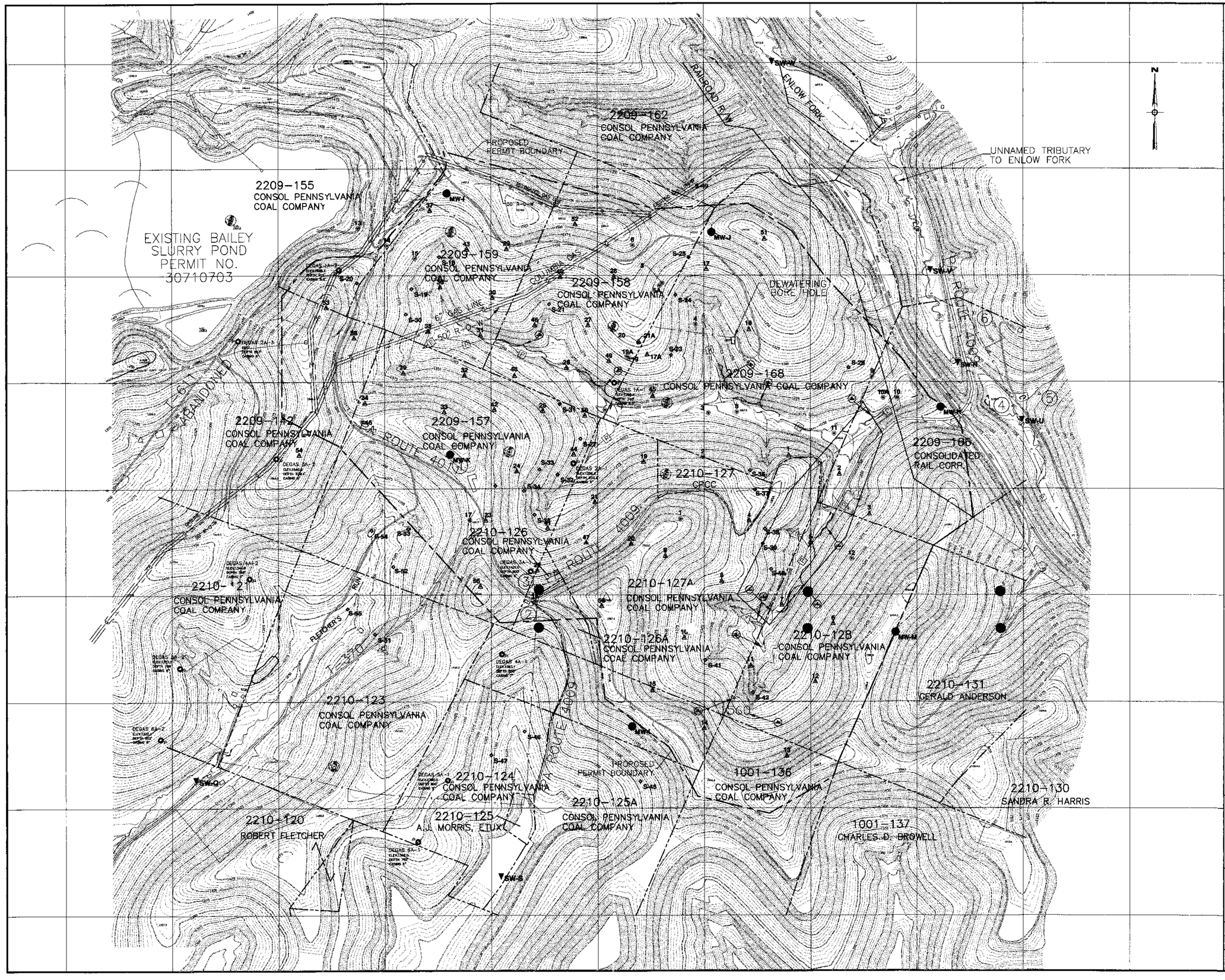
BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

EXHIBIT 6.2 ENVIRONMENTAL RESOURCE MAP

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

FILE: MODULE 6.2
K:_consol\74378\drawings\ring\

EXHIBIT 6.2



LEGEND

- Proposed Surface Permit Area Boundaries
- Property Line
- Perennial Stream
- Intermittent Stream
- Pond
- Groundwater Monitoring Well Location — MW-J
- Surfacewater Monitoring Location — SW-V
- Spring Sampling & Inventory Location — S-25
- Spring Location (No Sample)
- Degas Borehole
- Soil Borings
- Test Pits
- Gas Well
- Existing Wetlands
- Gasline and 50' Right-of-Way
- Electric Line
- Structure Identified In Structure Inventory Attachment 5.4 — 2

SOURCES OF INFORMATION

ALTERNATIVE ANALYSIS – BAILEY MINE COMPLEX APPROVED AUGUST 1, 2001. PADEP

WIND RIDGE AND ROGERSVILLE 7-1/2 MINUTE U.S.G.S. QUADRANGLES

COMMONWEALTH OF PENNSYLVANIA
MICHELE STEWART
ENGINEER
PE-029157-E

400 200 0 400
SCALE IN FEET

REVISED OCTOBER 2002

Baker
MICHAEL BAKER JR., INC.
Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

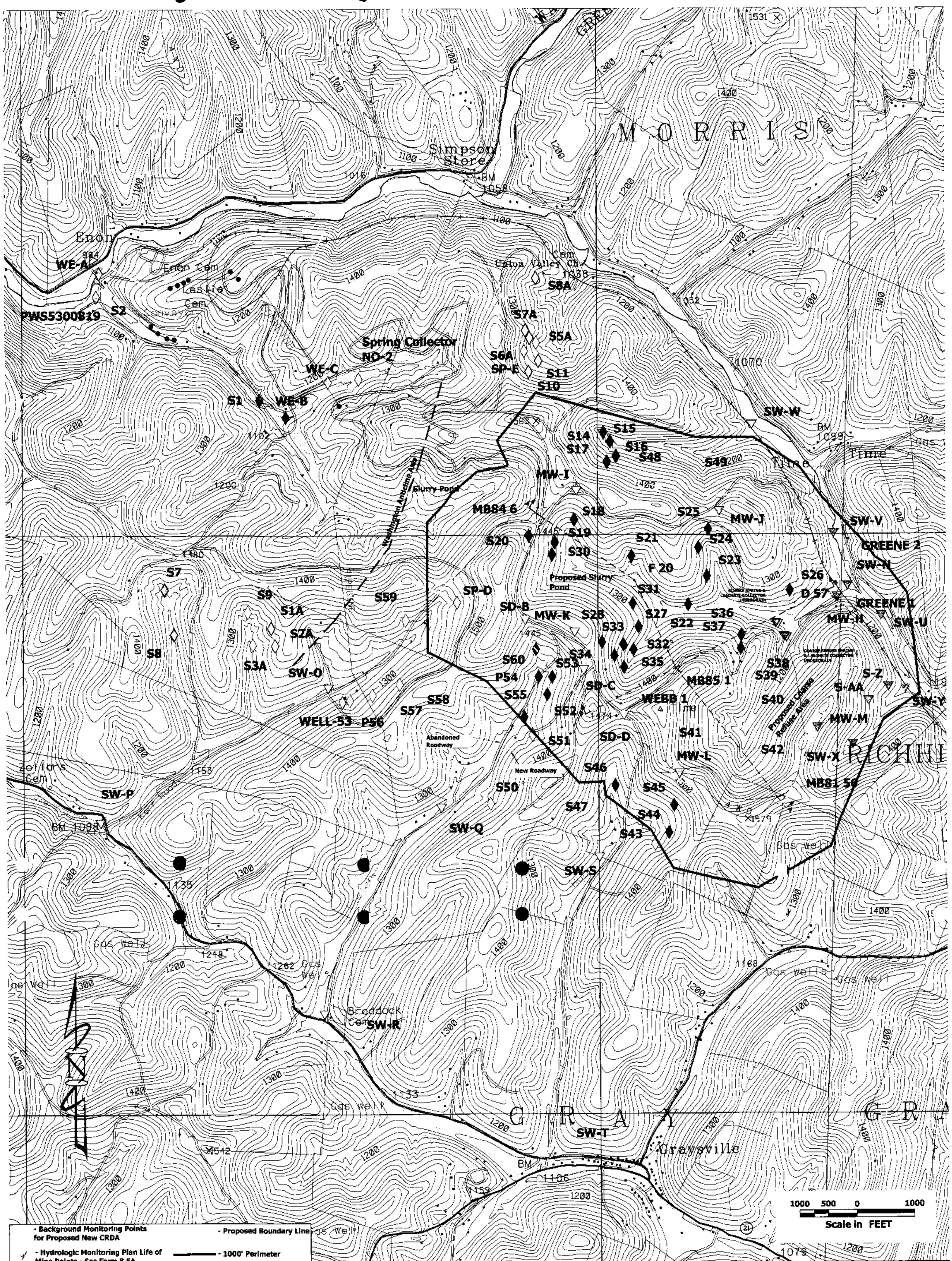
BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

EXHIBIT 6.2 ENVIRONMENTAL RESOURCE MAP

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

FILE: MODULE 6.2
k:_consol\24379\drawings\final\

DRAWING NO.



- Background Monitoring Points for Proposed New CRDA
- Hydrologic Monitoring Plan Life of Mine Points - See Form 8.5A
- Monitoring Points outside 1000 foot Perimeter of Proposed New CRDA
- Monitoring Points inside 1000 foot Perimeter of Proposed New CRDA
- Existing CRDA Monitoring Points
- Proposed Boundary Line
- 1000' Perimeter
- Existing CRDA Permit Boundary
- PWS
- MB81 56 - Corehole Locations
- PWS5300819 - Public Water Supply

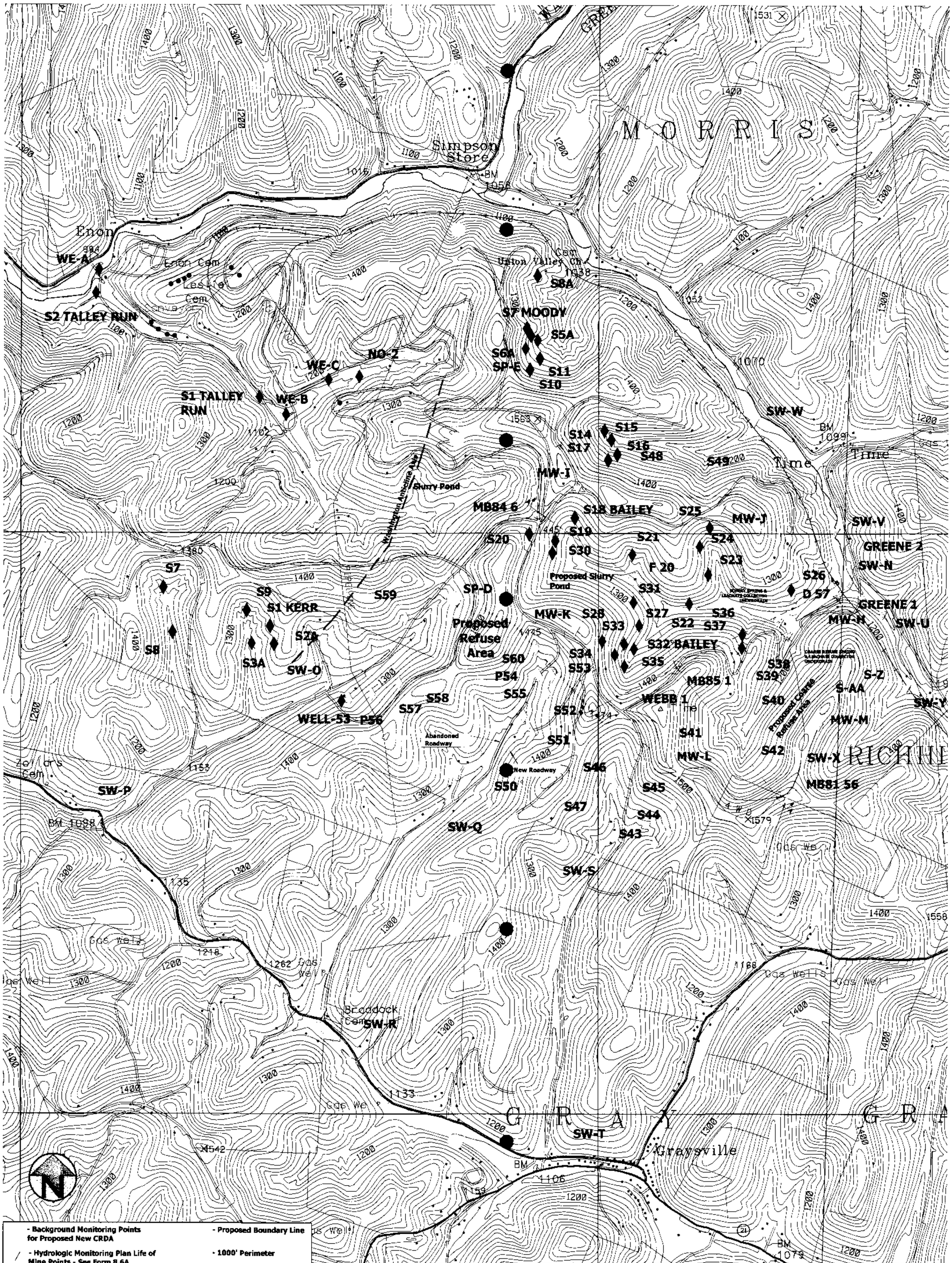
From ROGERSVILLE AND WIND RIDGE, PA USGS 7.5 Minute Quadrangle Map

EXHIBIT 8.2A - HYDROLOGICAL DATA MAP
CONSOL PENNSYLVANIA COAL COMPANY
PROPOSED BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL FACILITY

RICHHILL TOWNSHIP, GREENE COUNTY, PA

SCALE: 1" = 1000'
DRAWN BY: ERJ
DATE: January 29, 2002
Revised: October 30, 2002
Revised: April 12, 2003

Moody and associates inc.



- Background Monitoring Points for Proposed New CRDA
- Hydrologic Monitoring Plan Life of Mine Points - See Form 8.6A
- Additional Monitoring Points in Stream Valleys more than 1000 feet outside of Proposed New CRDA
- Monitoring Points - Evaluation of Existing CRDA - See Module 8, Attachment 1
- Proposed Boundary Line
- 1000' Perimeter
- PWS
- MB81 56 - Corehole Locations

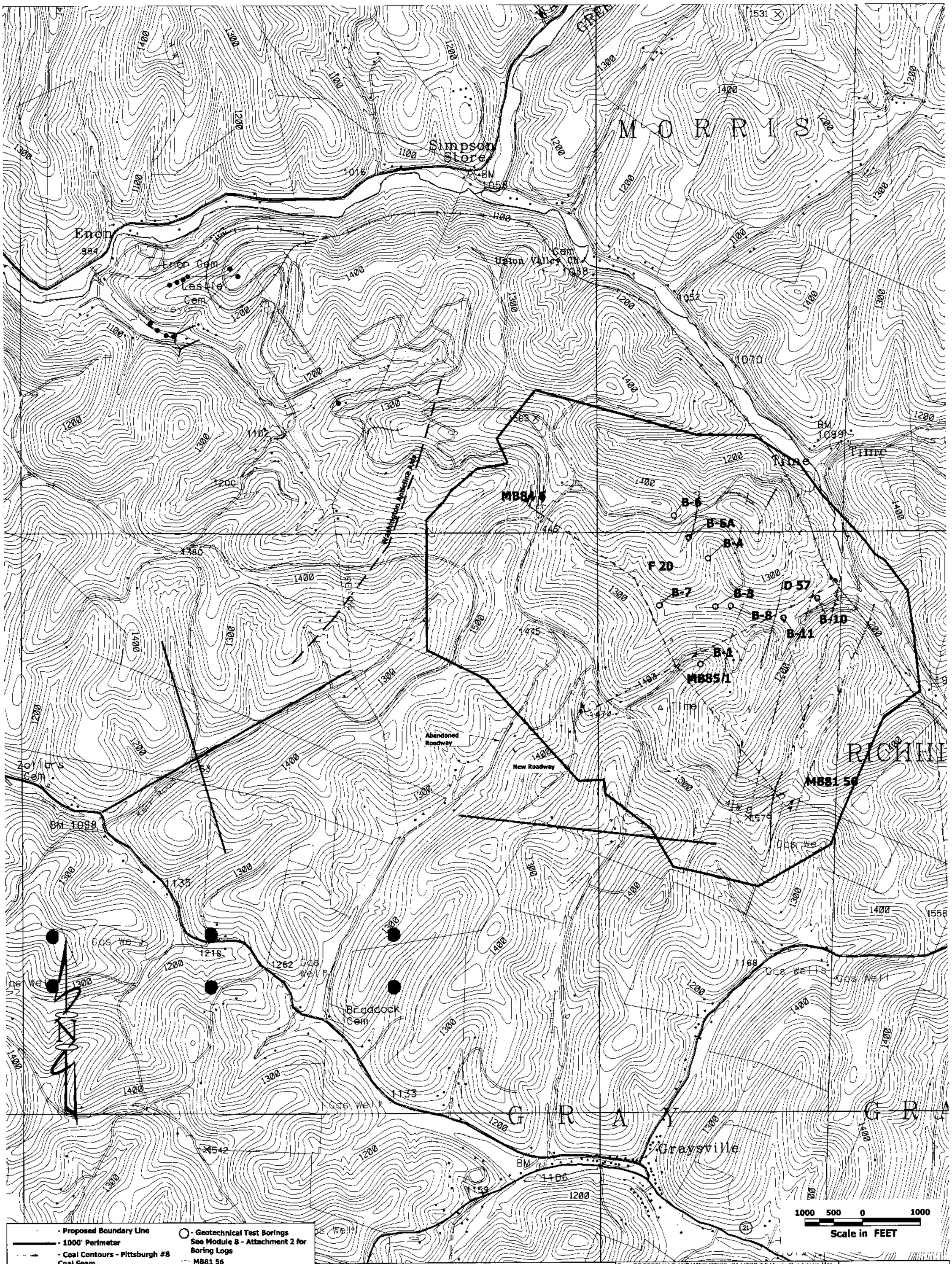
From ROGERSVILLE AND WIND RIDGE, PA USGS 7.5 Minute Quadrangle Map

EXHIBIT 8.2A - HYDROLOGICAL DATA MAP
CONSOL PENNSYLVANIA COAL COMPANY
PROPOSED BAIL[illegible] CENTRA[illegible]INE COMPLEX
COAL REFUSE DISPOSAL FACILITY

RICHHILL TOWNSHIP, GREENE COUNTY, PA

SCALE: 1" = 1000'
DRAWN BY: ERJ
DATE: January 29, 2002
Revised: October 30, 2002

Prepared by:
Moody and Associates Inc.



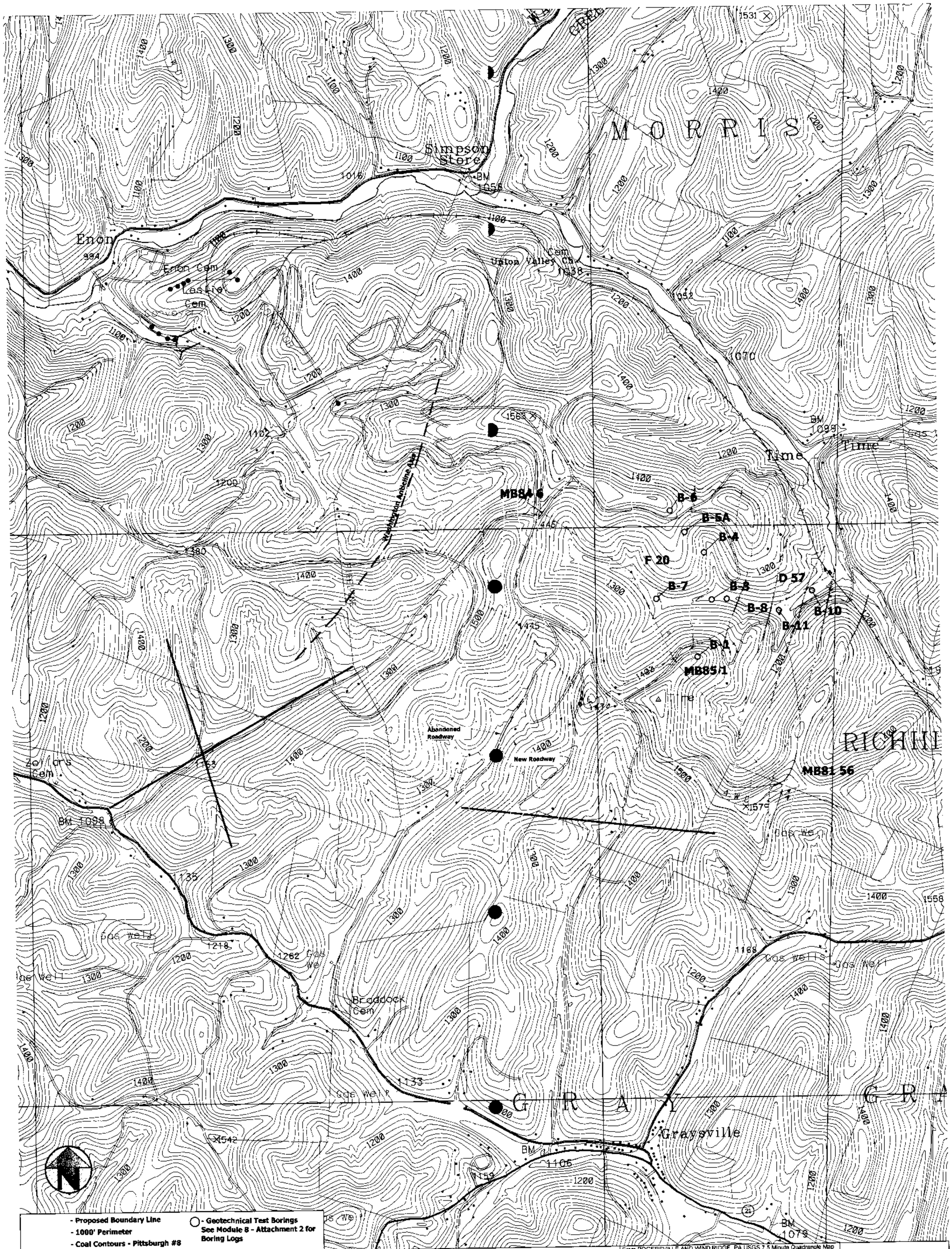
- Proposed Boundary Line
- 1000' Perimeter
- Coal Contours - Pittsburgh #8 Coal Seam
- Existing CRDA Permit Boundary
- Lines of Cross Section
- Fracture Traces
- Mine Openings
- Geotechnical Test Borings See Module 8 - Attachment 2 for Boring Logs
- MB81 56 - Corehole Locations

EXHIBIT 8.2B - HYDROLOGICAL DATA MAP
CONSOL PENNSYLVANIA COAL COMPANY
PROPOSED BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL FACILITY

RICHHILL TOWNSHIP, GREENE COUNTY, PA

SCALE: 1" = 1000'
DRAWN BY: ERJ
DATE: January 29, 2002
REVISED: October 30, 2002
REVISED: April 12, 2003

Moody and associates inc.



- Proposed Boundary Line
- 1000' Perimeter
- Coal Contours - Pittsburgh #8 Coal Seam
- Mine Openings
- Lines of Cross Section
- Fracture Traces
- MB81 56 - Corehole Locations
- Geotechnical Test Borings See Module 8 - Attachment 2 for Boring Logs

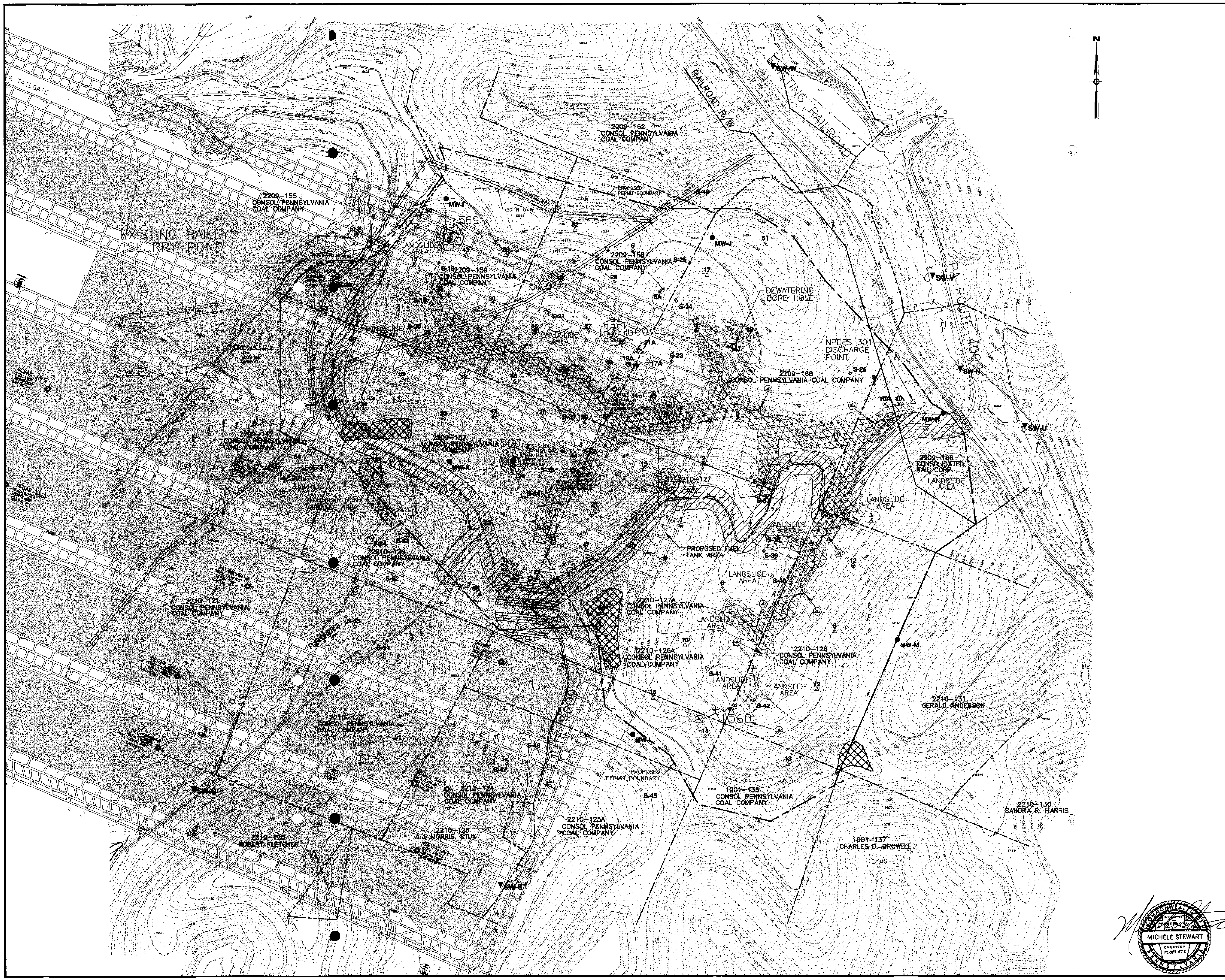
From ROGERSVILLE AND WIND RIDGE, PA USGS 7.5 Minute Quadrangle Map

EXHIBIT 8.2B - HYDROLOGICAL DATA MAP
CONSOL PENNSYLVANIA COAL COMPANY
PROPOSED BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL FACILITY

RICHHILL TOWNSHIP, GREENE COUNTY, PA

SCALE: 1" = 1000'
DRAWN BY: ERJ
DATE: January 29, 2002
REVISED: October 30, 2002

Prepared by: Moody and Associates Inc.



LEGEND

Proposed Surface Permit Area Boundaries	
Property Line	
Surface Areas Affected By Subsidence (30° Angle of Draw)	
Perennial Stream	
Intermittent Stream	
Pond	
Groundwater Monitoring Well Location	MW-J
Surfacewater Monitoring Location	SW-V
Spring Sampling & Inventory Location	S-25
Spring Location (No Sample)	
Degas Borehole	
Soil Borings	
Test Pits	
Gas Well	
Electric Line	
Existing Wetlands	
Gasline and 50' Right-of-Way	
300' Dwelling Variance Area	
100' Road Variance Area	
125' Gas Well Variance Area (Wells Are Abandoned And Sealed)	
CAB Prime Farmland Soil Location	
100' Stream Variance/Barrier Area	
100' Road Barrier Area	
Landslide Area	LANDSLIDE AREA
Existing Mine Workings	
125' Gas Well Barrier Area (Until Gas Wells Are Abandoned And Sealed In Accordance With Oil & Gas Act)	

SOURCES OF INFORMATION

ALTERNATIVE ANALYSIS – BAILEY MINE COMPLEX APPROVED AUGUST 1, 2001. PADEP

USDA NATURAL RESOURCE CONSERVATION SERVICE

WIND RIDGE AND ROGERSVILLE 7-1/2 MINUTE U.S.G.S. QUADRANGLES

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Coraopolis, Pennsylvania
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BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

EXHIBIT 9.1
OPERATIONS MAP

MICHELE STEWART
ENGINEER
PE-029157-E

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

FILE: MODULE 9-1
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EXHIBIT 9-1

LEGEND

- Proposed Surface Permit Area Boundaries
- Property Line
- Perennial Stream
- Intermittent Stream
- Pond
- Groundwater Monitoring Well Location — MW-J
- Gas Well
- Existing Wetlands
- Gasline and 50' Right-of-Way
- Electric Line
- 300' Dwelling Variance
- 125' Gas Well Variance Area (Wells Are Abandoned And Sealed)
- CROSS SECTION LINE
- 125' Gas Well Barrier Area (Until Gas Wells Are Abandoned And Sealed In Accordance With Oil & Gas Act)

NOTE:
ALL AFFECTED EXISTING FORESTLAND AREAS OUTSIDE THE FOOTPRINT OF DISPOSAL AREAS 3 AND 4 WILL BE RETURNED TO FORESTLAND. ALL AFFECTED AREAS WITHIN THE FOOTPRINT OF DISPOSAL AREAS 3 AND 4 WILL BE RETURNED TO UNMANAGED NATURAL HABITAT. REFER TO ITEM 18.5 OF MODULE 18 FOR VEGETATIVE COVER TYPES.

ALL HAUL ROADS AND ACCESS ROADS THAT ARE NOT NEEDED FOR FINAL ACCESS AND MAINTENANCE SHALL BE RECLAIMED PRIOR TO FINAL ABANDONMENT.

COMMONWEALTH OF PENNSYLVANIA
MICHELE STEWART
ENGINEER
PE-029157-E

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SCALE IN FEET

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Coraopolis, Pennsylvania
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BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

EXHIBIT 18.1
LAND USE/RECLAMATION MAP

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
KLK	GEC	MMS	3/02	AS SHOWN

FILE: MODULE 18.1
k:_consol\24379\drawings\final\

EXHIBIT 18.1

LEGEND

FINAL COAL REFUSE DISPOSAL AREA

MICHELE STEWART
ENGINEER
PE-029157-E

300 150 0 300
SCALE IN FEET

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Coraopolis, Pennsylvania
412 269-6000 mbakercorp.com

BAILEY CENTRAL MINE COMPLEX
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

BONDING SITE LAYOUT PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
JMB	JMB	GAH	09/09	1" = 300'

FILE: BOND-PLAN
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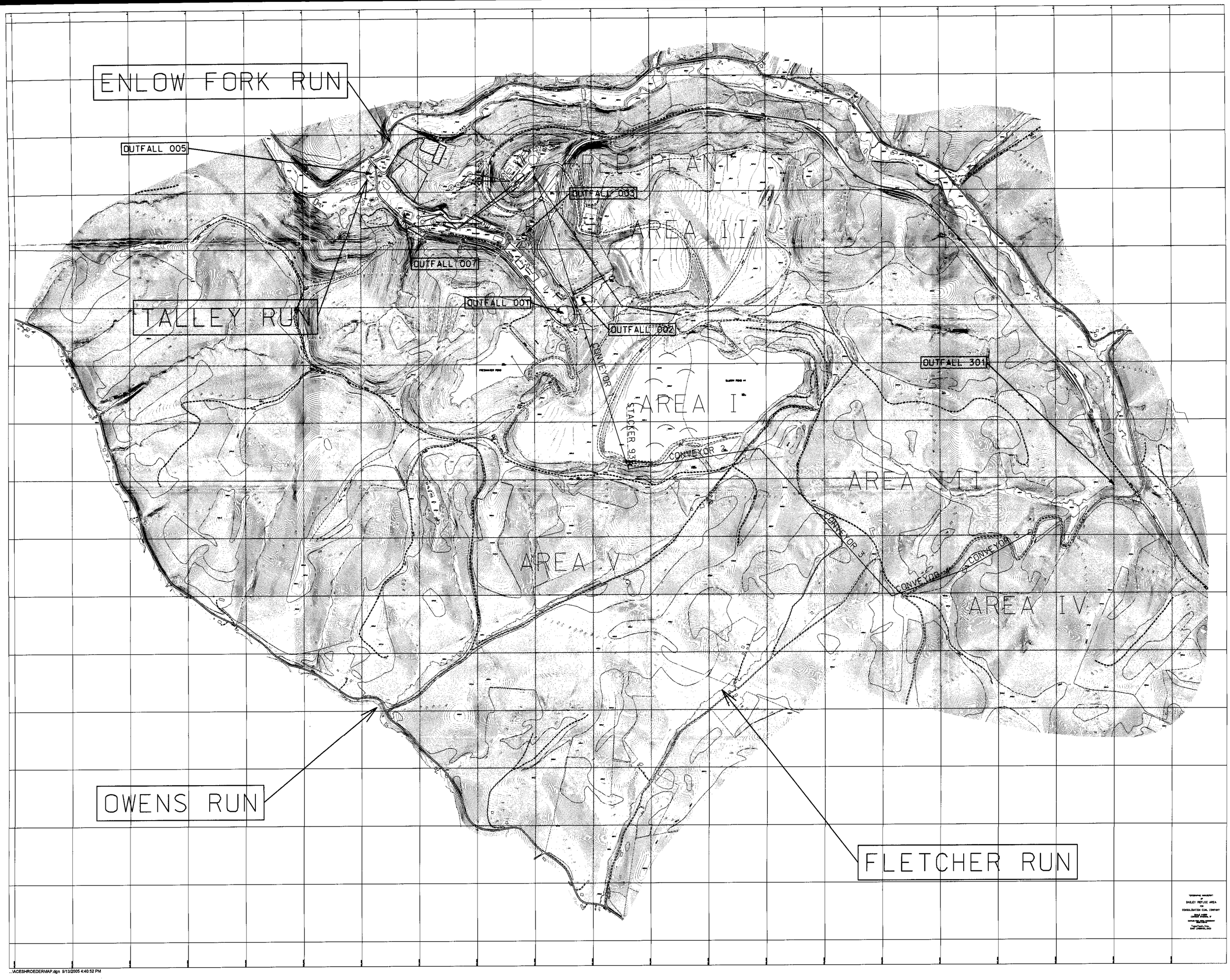
EXHIBIT 19.1



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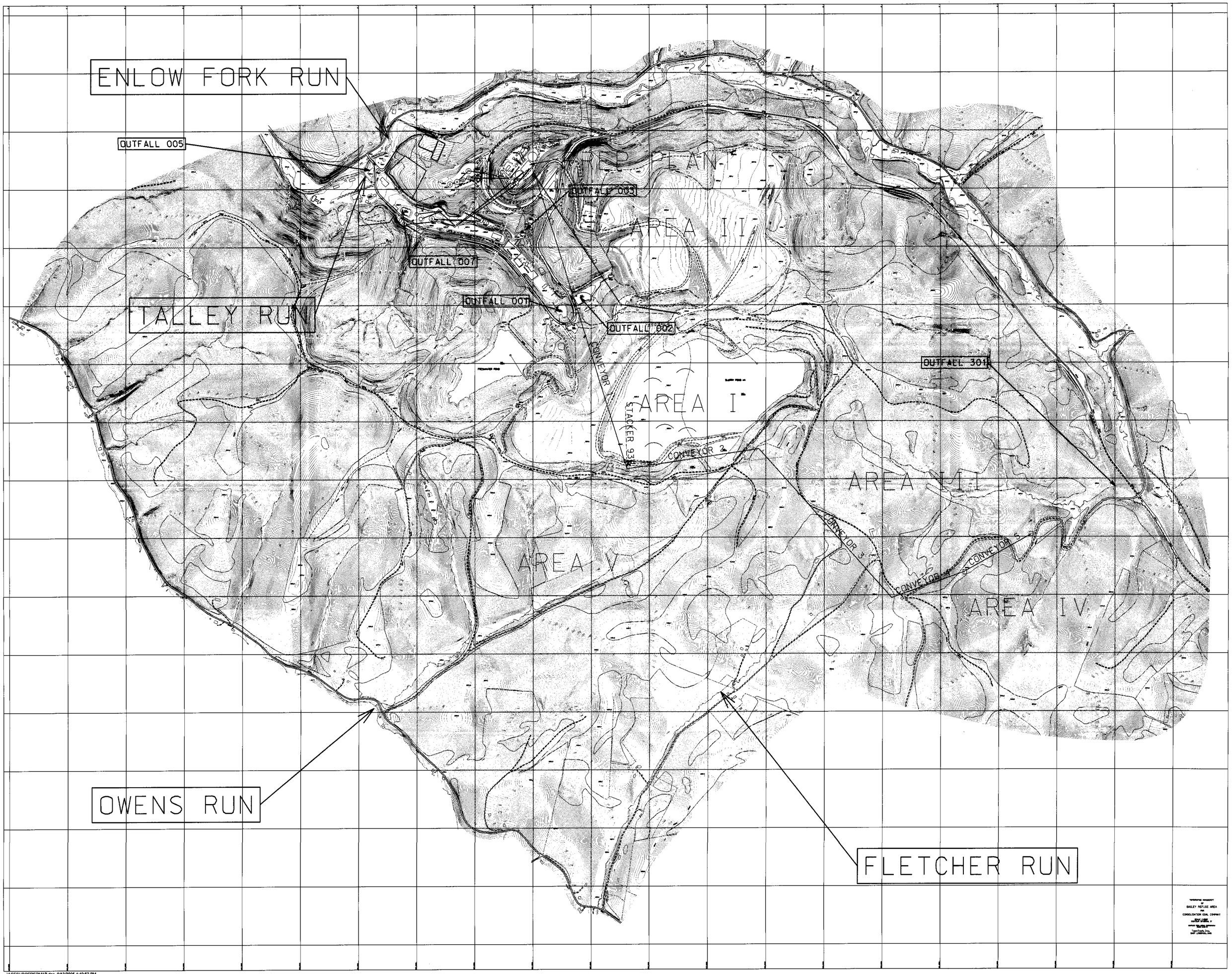

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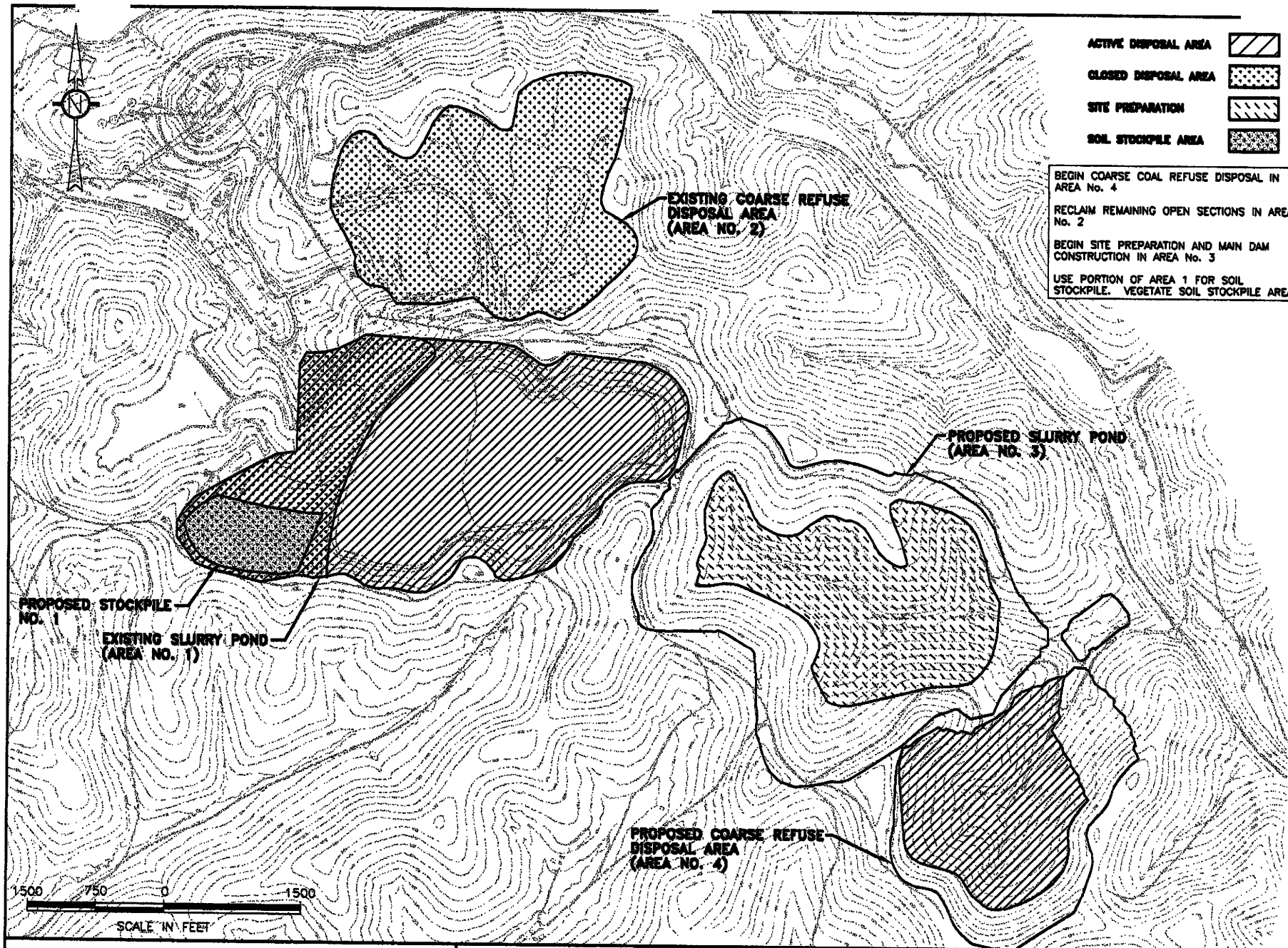

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Baker Environmental, Inc.

MICHAEL BAKER JR., INC.
CORAOPOLIS, PENNSYLVANIA
412 269-6000
MBAKERCORP.COM

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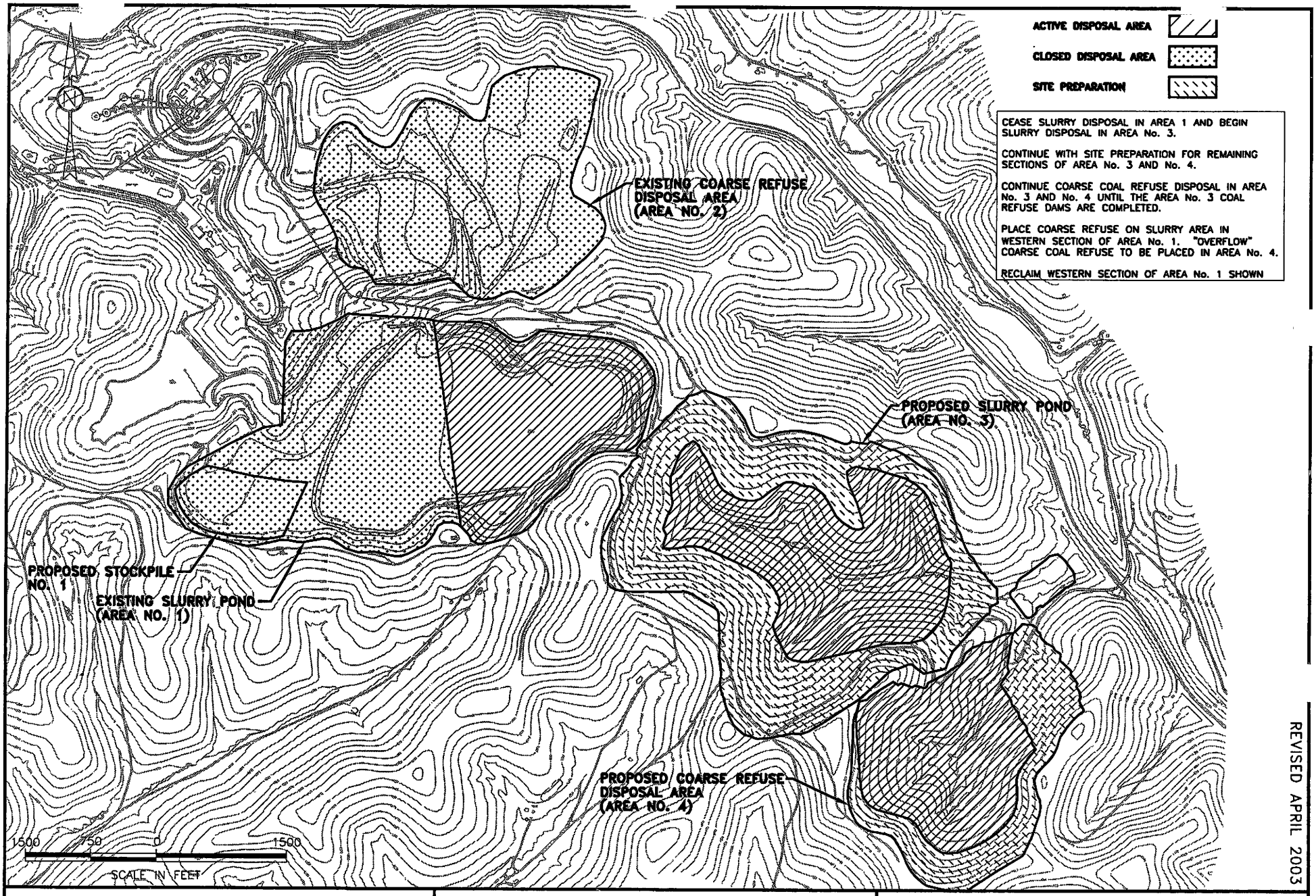
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

ATTACHMENT 10.3
FACILITY SEQUENCE DRAWINGS
STAGE 3



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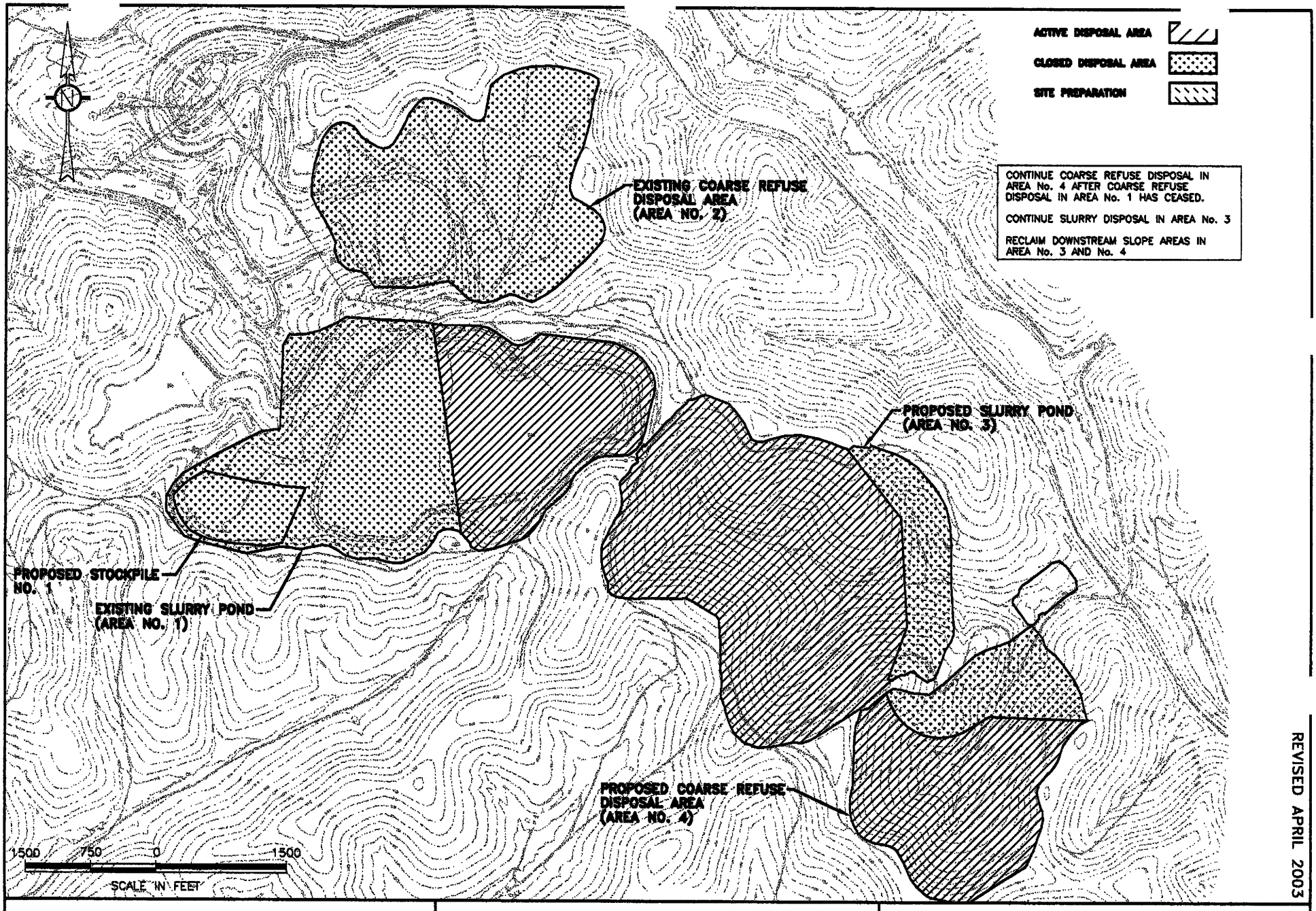
COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

ATTACHMENT 10.3
FACILITY SEQUENCE DRAWINGS
STAGE 4



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COAL REFUSE DISPOSAL AREAS NO. 3 AND NO. 4
CONSOL PENNSYLVANIA COAL COMPANY

ATTACHMENT 10.3
FACILITY SEQUENCE DRAWINGS
STAGE 5

4.2 COAL REFUSE PRODUCTION AND VOLUMES [CFR, Title 30, Part 77.216-2(a)(9)]

Coal refuse production for Disposal Areas No. 3 and No. 4 have been based on current mine/preparation plant operating conditions and coal production rates projected by CPCC. Raw and clean coal production rates are tabulated in the layout/staging calculations presented in Appendix G.

As indicated in those calculations, 75% of the raw coal from the mine (by weight) is assumed to be recovered as clean coal. The 25% reject from processing the coal includes two major components: fine coal refuse which accounts for 16% (by weight) of the total reject, and Coarse coal refuse which accounts for the remaining 84% of the total reject. The coarse coal refuse includes material from the rotary breaker (less than 6% of the coarse refuse by weight). Projected annual generation rates for coarse coal refuse (including breaker rock) and fine coal refuse are included in the facility layout/staging calculations presented in Appendix G. Facility design has been based on these waste production rates.

Coal refuse disposal volumes have been based on the following dry unit weights:

Material	Dry Unit Weight (pcf)
Compacted Coarse Refuse (average including breaker rock and unsuitable placement)	115
Fine Refuse (based on soundings of the existing pond)	40

4.3 FACILITY STAGING

4.3.1 Coal Refuse Disposal Area No. 3 [CFR, Title 30, Part 7.216-2(a)(6 & 9)]

Coal Refuse Disposal Area No. 3 will be constructed in three stages. Proposed development for each stage, including site preparation is presented on Sheets 3 through 8 of Appendix A. Each stage will involve construction of two impounding structures from suitable coarse coal refuse - one dam at the downstream end of the facility (Main Dam) and a smaller dam across the upstream end to increase site capacity (Saddle Dam A). Fine coal refuse slurry disposal will begin when Stage 1 of dam construction is complete. The coarse coal refuse embankments will be developed using downstream construction techniques. The final facility stage is the capping stage when the pool will be covered. It will be accomplished in 6 substages as indicated on Sheet 12 of Appendix A.

Initial development of the Stage 1 Main Dam will involve construction of a small 15-foot high temporary dike at the upstream toe to intercept stream flow and runoff. This temporary dike may be constructed with embankment material meeting the requirements of Section 5 of the

specifications presented in Appendix B. The outlet section of decant pipe located on the valley bottom will be used to pass flow intercepted by the dike.
Site preparation for final stages of slurry placement will require construction of three additional small earthen saddle dams to raise low areas in the ridgeline to elevation 1495 feet. These dams are referred to as Saddle Dams B, C, and D.

Facility cross sections depicting proposed Area No. 3 staging are presented on Sheet 13 of Appendix A. A staging diagram is presented as Sheet 15 of Appendix A. Curves depicting impoundment storage volume and embankment volume versus elevation are presented on this diagram and the following key operating elevations are shown throughout all stages of facility development:

- Embankment crest elevation at the beginning and end of the stage.
- The expected duration of each stage.
- Operating pool elevation (decant inlet elevation).
- Maximum expected storm pool elevation.
- Anticipated average fine refuse elevation in the pool area.
- Refuse disposition

Collectively the curves presented on this graph indicate the sequence of facility development; that is, when disposal of a waste stream in a particular area of the disposal facility will begin and end. The curves also indicate when site preparation for a particular stage must be completed.

As indicated on Sheet 15, the Area No. 3 facility is expected to begin receiving coarse coal refuse in 2005. Unsuitable coarse material and breaker rock will be disposed in Area No. 4 at locations designated as non structural. Suitable coarse refuse that can not be efficiently placed in Area No. 3 due to space and hauling limitations will be placed in the designated structural areas of Area No. 4. Fine coal refuse will continue to be disposed in Area No. 1 until the Area No. 3 Stage 1 embankment is complete. At that time, near the end of 2006, fine coal refuse will be diverted from Area No. 1 to Area No. 3.

4.3.2 Coal Refuse Disposal Area No. 4 [CFR, Title 30, Part 7.215-2(b)(3 & 4)]

Coal Refuse Disposal Area No. 4 will be constructed in three stages. The first stage will be development of a head of hollow fill to a maximum elevation of approximately 1495 feet as shown on Sheet 9 of Appendix A. Stage 1 development is expected to be initiated during Area No. 3 dam construction activities when coarse coal refuse not suitable for dam construction will be disposed in Area No. 4. During Stage 2 of Area No. 4 development, the embankment will be expanded downstream to the final proposed footprint limit. As indicated on Sheet 10 of Appendix A, the top of the Stage 2 Area No. 4 embankment will be maintained at the level established during Stage 1. Stage 2 can not be developed until Stage 3 of the Area No. 3 Main Dam is completed and vegetated. Once started, Stage 2 of Area 4 can be developed concurrently with Stage 1 but can never exceed the developed elevation of Stage 1 to maintain drainage.

Stage 3 development for Coal Refuse Disposal Area No. 4 will consist of raising the top of the embankment to the final configuration depicted on Sheet 11 of Appendix A.

Facility cross sections depicting proposed staging are presented on Sheet 14 of Appendix A.

4.3.3 Sedimentation Pond [CFR, Title 30, Part 7.216-2(a)(6 & 9)]

The sedimentation pond will be constructed in one stage during initial site preparation. The impounding structure will be constructed with embankment material meeting the requirements of Section 7 of the specifications presented in Appendix B. It will include an internal drain and anti-seep diaphragm constructed of clean aggregate. Refer to pond construction drawings presented as Sheets 27-30 of Appendix A.

4.4 LAYOUT AND DIMENSIONS [CFR, Title 30, Parts 77.215-2(b)(4,6 & 7) and 77.216-2(a)(7)]

4.4.1 Coal Refuse Disposal Areas No. 3 and No. 4

Proposed footprints for Coal Refuse Disposal Area No. 3 and Area No. 4 are shown on Sheets 6 through 12 in Appendix A. Cross sections showing proposed construction are presented on Sheets 13 and 14. As indicated by these drawings, the selected footprint maximizes area available for disposal. The Area No. 3 facility will be developed within the footprint to a maximum crest elevation of 1495. Final closure of Area 3 will mound up the top to elevation 1570. Area No. 4 will be developed to a maximum elevation of 1720 feet.

All stages of coarse coal refuse embankment development have been provided with a 3H:1V inside (i.e., facing the impoundment) slope. Outside slopes shown for the various stages are 2.5H:1V with 20-foot wide benches at approximately 50-foot vertical intervals. Haul roads also have been incorporated into the Main Dam and Area No. 4 outside slopes. The overall outside slope for coal refuse embankment areas is 3H:1V or flatter. Benches slope into the embankment on a 5% grade to a collection ditch and are sloped longitudinally across the face of the embankment at a minimum slope of 1% to promote drainage.

Saddle Dams B, C, and D to be constructed in Coal Refuse Disposal Area No. 3 will have maximum heights ranging from approximately 13 to 22 feet (measured at the centerline). The lengths of these dams range from 450 to 725 feet. They will be constructed with inside and outside slope ratios of 3H:1V and 2H:1V, respectively.

All of the Area No. 3 impounding structures will be provided with an internal drain to control seepage. The upstream face of Saddle Dams B, C, and D will be covered with a geomembrane liner, therefore, internal drains for these dams have been provided solely as a backup for safety purposes in the event the geomembrane leaks.

2.2 Fine Coal Refuse Placement

Fine coal refuse will be placed within the impoundment area of Coal Refuse Disposal Area No. 3 by water slurry techniques. Slurry will be discharged along the upstream face of the Main Dam.

Water that accumulates in the impoundment typically will be pumped to the existing Bailey slurry impoundment. The pipe decant system will drain storm water that may accumulate above the normal operating pool level and is not needed for plant operations to the sedimentation pond.

Presented on Sheet 33 of the facility design drawings are details of the decant system, including inlet construction details and details for sealing the inlets before they are covered with fine coal refuse. Each inlet will be equipped with a cover which will be replaced with a trash rack and anti-vortex device before it is activated. This device will be removed when the inlet is sealed. The cover installed over the highest inlet at elevation 1464 feet will be vented to maintain atmospheric pressure within the pipe. The decant system will be completely installed during initial site preparation.

As the slurry level rises, inlets which are no longer needed to maintain the operating pool level will be taken out of service. The trash rack and anti-vortex device will be removed and a 1.5-inch thick by 36 inch square steel plate will be bolted to the flange. Silicon coating will be applied to the inlet and all exposed metal surfaces to provide a watertight seal and protect the surface from corrosion. The inlet then will be buried with a minimum of three feet of compacted clay as indicated on Sheet 33 of the facility design drawings.

2.3 Coarse Coal Refuse Handling and Placement

Placement of coarse coal refuse and breaker rock will be conducted in accordance with applicable State and Federal regulations pertinent to coal refuse disposal facilities. Breaker rock will be handled and placed in the same general manner as coarse coal refuse except that its placement will be limited to non-structural embankment areas.

Coarse coal refuse will be transported to the disposal facility by belt conveyor. The conveyor will discharge into one of three proposed bins. Coal refuse will be hauled from the bins to the disposal facility by either a scraper or off-highway truck. Appended to this report are schematic plans showing haul roads that will be used for developing each stage of the three sites of coarse coal refuse placement (Main Dam and Saddle Dam A of Coal Refuse Disposal Area No. 3, and Coal Refuse Disposal Area No. 4). Roads available at the start of each stage are shown. Each plan depicts haul road sections to be covered with coal refuse during development of the stage represented.

After placement at the working face, coarse coal refuse will be spread and compacted using the haulage equipment, a self-propelled sheepsfoot roller, and/or a smooth-wheel vibratory roller. The coarse coal refuse in impounding structures, the final cap of Area 3 above elevation 1495, and in structural areas of Area No. 4 will be spread into lifts not more than one (1) foot in thickness before being compacted to at least ninety-five (95) percent of the maximum dry density