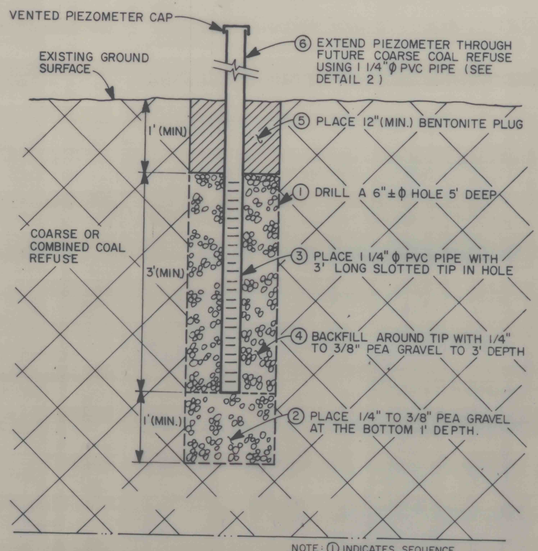
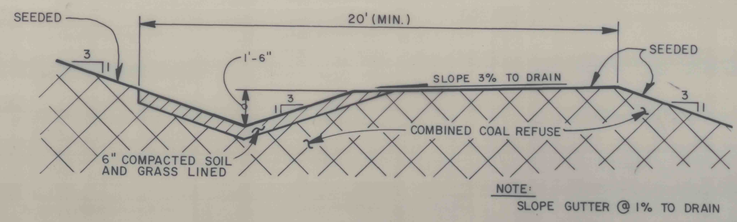
DRAWN BY	RW	CHECKED BY		DRAWING NUMBER B77-801-E8 ⚠
	1-20-81	APPROVED BY		



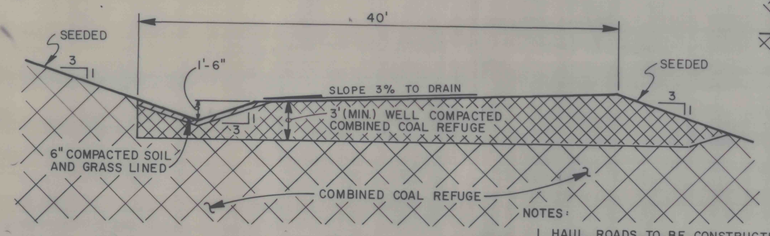
DETAIL 1
NEW PIEZOMETER INSTALLATION
N.T.S.

DETAIL 2
PIEZOMETER EXTENSION PROCEDURE
N.T.S.

DETAIL 3
CAST-IN-PLACE SURVEY MONUMENT
N.T.S.



DETAIL 4
BENCH AND BENCH GUTTER
SCALE: 1"=3'



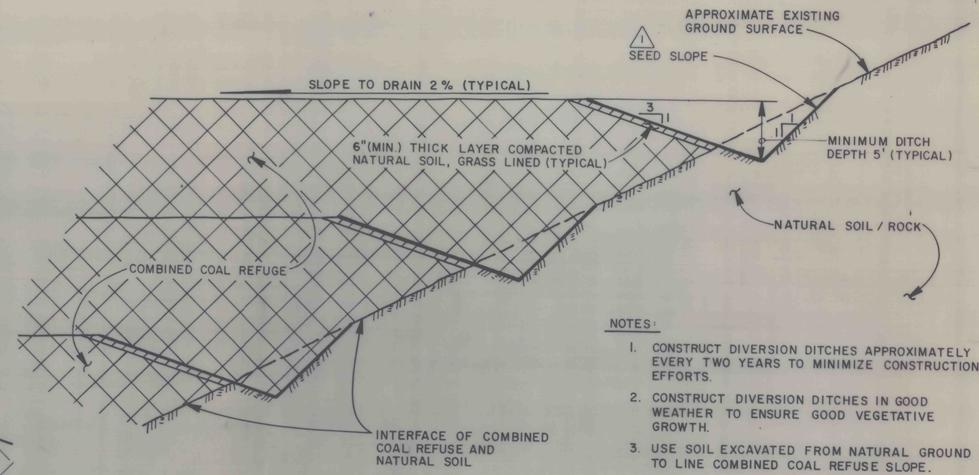
DETAIL 5
HAUL ROAD AND GUTTER
SCALE: 1"=6'

DETAIL 6
PERIMETER DITCH P1, P2, P3 AND P4
SCALE: 1"=2'

DETAIL 7
DIVERSION DITCH D2
SCALE: 1"=6'

CHANNEL TYPE	CHANNEL DESIGNATION	MANNINGS "n"	PEAK DISCHARGE (CFS)	MAXIMUM SLOPE (%)	MAXIMUM FLOW DEPTH (FEET)	MAXIMUM VELOCITY (FPS)	DESIGN FLOW DEPTH (FEET)	EROSION PROTECTION
DIVERSION DITCH	D1	0.033	170	50	1.8	26.0	4	18-INCH-THICK LAYER OF 3- TO 9-INCH ϕ GROUTED RIPRAP OR A 30-INCH LAYER OF 12- TO 18-INCH ϕ RIPRAP
DIVERSION DITCH	D2	0.035	170	1	3.8	6.0	5	6-INCH-THICK LAYER COMPACTED NATURAL SOIL, GRASS LINED
DIVERSION DITCH	D3	0.035	170	1	3.8	6.0	5	6-INCH-THICK LAYER COMPACTED NATURAL SOIL, GRASS LINED
PERIMETER DITCH	P1	0.033	23	11	1.1	10.4	3	18-INCH-THICK LAYER OF 3- TO 9-INCH ϕ GROUTED RIPRAP OR A 30-INCH LAYER OF 12- TO 18-INCH ϕ RIPRAP
PERIMETER DITCH	P2	0.033	23	15	1.0	11.7	3	18-INCH-THICK LAYER OF 3- TO 9-INCH ϕ GROUTED RIPRAP OR A 30-INCH LAYER OF 12- TO 18-INCH ϕ RIPRAP
PERIMETER DITCH	P3	0.033	48	15	1.4	12.5	3	18-INCH-THICK LAYER OF 3- TO 9-INCH ϕ GROUTED RIPRAP OR A 30-INCH LAYER OF 12- TO 18-INCH ϕ RIPRAP
PERIMETER DITCH	P4	0.033	170	9	2.4	14.3	4	18-INCH-THICK LAYER OF 3- TO 9-INCH ϕ GROUTED RIPRAP OR A 30-INCH LAYER OF 12- TO 18-INCH ϕ RIPRAP
BENCH GUTTER	B	0.035	9	1	1.2	2.9	1.5	6-INCH-THICK LAYER COMPACTED NATURAL SOIL, GRASS LINED
HAUL ROAD GUTTER	HR	0.035	13.4	8	1.0	7.0	1.5	6-INCH-THICK LAYER COMPACTED NATURAL SOIL, GRASS LINED

HYDRAULIC DESIGN PARAMETERS TABLE



DETAIL 8
TEMPORARY DIVERSION DITCH D3
SCALE: 1"=6'

RECOMMENDED CUT SLOPES	
MATERIAL	X
SOIL	1.5
SHALE	1.0
COMPETENT SANDSTONE	0.5

NOTES:
1. IF FILTER CLOTH IS NOT USED, 6" (MIN.) OF THE 18" LAYER SHOULD BE STONE HAVING A GRADATION BETWEEN No. 4 SIEVE AND 3/4" (ASTM D448 No. 68)
2. RUBBER LINERS, "FABRI FORM", OR EQUIVALENT COULD BE USED IN PLACE OF THE GROUTED RIPRAP TO LINE THE PERIMETER OR DIVERSION DITCHES.

⚠1 DETAIL 9
DIVERSION DITCH D1
SCALE: 1"=3'

REVISION
⚠1 REVISED DETAIL 9 ADDED NOTES TO DETAILS 6, 7, & 8, AND REVISED HYDRAULIC DESIGN PARAMETERS TABLE.

DRAWING NO.	SHEET NO.	FIGURE NO.
B77-801-E8	7 of 12	11

DETAILS
SHEET 1 OF 2
COAL REFUSE DISPOSAL FACILITY
MINE NO. 81
BETHLEHEM MINES CORPORATION
DRENNEN, WEST VIRGINIA
PREPARED FOR
BETHLEHEM MINES CORPORATION
NICHOLAS DIVISION
CHARLESTON, WEST VIRGINIA

D'APPOLONIA

⚠1

12-4-7

19 1253 HERCULENE, A&B SMITH CO., PGH. PA. LT1530-1078