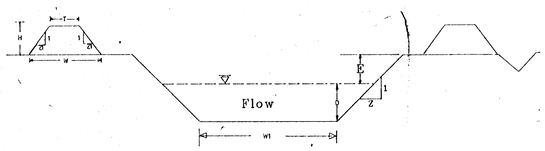
TYPICAL SECTION - UNLINED CHANNEL (TYPE A)



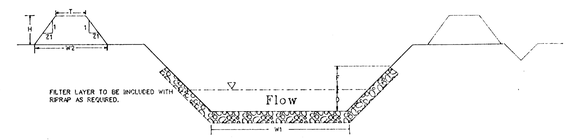
ITEM	DIM.	ELEV.-DIM.
BOTTOM WIDTH (ft)	W	21.0
TOP WIDTH (ft)	T	12.0
BERM HEIGHT (ft)	H	3.0
SIDE SLOPES (ft)	Z1	1.5
BOTTOM WIDTH (ft)	W1	15.0
FREEBOARD (ft.)	E	2.0
INFLOW RATE (cfs)		199.0
VELOCITY (fps)		6.1
CHANNEL SLOPE (Percent)		0.3
SIDE SLOPES (ft)	Z	2.0
MANNING'S NUMBER		0.03
DEPTH OF FLOW (ft.)	D	2.4

FLOW

PROFILE

1

TYPICAL SECTION - PROTECTED CHANNEL (TYPE B)



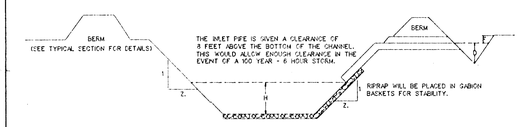
ITEM	DIM.	ELEV.-DIM
BOTTOM WIDTH (ft)	W1	15.0
CHANNEL SLOPE (percent)		(VARIANCE FX / 20)
BERM HEIGHT (ft)	H	3.0
SIDE SLOPES (ft)	Z1	1.5
BOTTOM WIDTH (ft)	W2	21.0
FREEBOARD (ft.)	F	2.0 MIN.
INFLOW RATE (cfs)		199.0
VELOCITY (fps)		8.5 / 6.6
SIDE SLOPES (ft)	Z.	2.0
RIPRAP THICKNESS(in.)		18.0
D_{50} (in.)	D	9.0
DEPTH OF FLOW (ft.)		1.3 / 1.6
MANNING'S NUMBER		0.038

FLOW

PROFILE

2

INLETS #2 AND #3 - SECTIONAL VIEW



DESIGN INFORMATION FOR INLET #3

ITEM	DIM.	ELEV.-DIM.
PIPE DIAMETER (in.)		18.0
PEAK INFLOW RATE (cfs)	Q	27.3
FLOW DEPTH (ft)	D	1.9
SIDE SLOPES (ft.)	Z	2.0
RIPRAP THICKNESS (in.)		18.0
FREEBOARD (ft)	F	1.0 MIN.
HEIGHT OF PIPE ABOVE CHANNEL BOTTOM (ft)	H	8.0

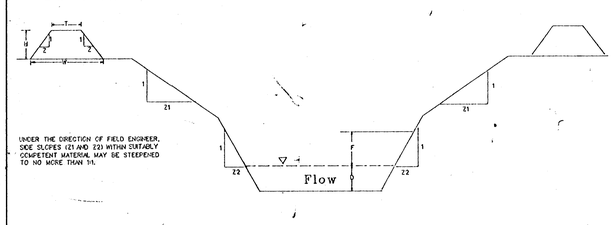
3

DESIGN INFORMATION FOR INLET #2

ITEM	DIM.	ELEV.-DIM.
PIPE DIAMETER (in.)		18.0
PEAK INFLOW RATE (cfs)	Q	7.5
SIDE SLOPES (ft)	Z	2.0
DEPTH OF FLOW (ft)	D	1.2
FREEBOARD (ft)	F	1.0 MIN.
RIPRAP THICKNESS (in.)		18.0
HEIGHT OF PIPE ABOVE CHANNEL BOTTOM (ft)	H	8.0

7

TYPICAL SECTION - UNLINED CHANNEL (TYPE B)



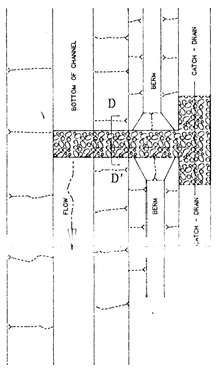
ITEM	DIM.	ELEV.-DIM.
BOTTOM WIDTH (ft)	W	21.0
FLOW DEPTH (ft)	D	2.4
BERM HEIGHT (ft)	H	3.0
SIDE SLOPES (ft)	Z	1.5
BOTTOM WIDTH (ft)	D	15.0
FREEBOARD (ft.)	F	2.0 MIN.
VELOCITY (fps)		4.1
CHANNEL SLOPE (percent)		0.3
TOP WIDTH (ft)	T	12.0
MANNING'S NUMBER		0.03

FLOW

PROFILE

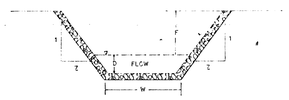
4

INLET #1 - GENERAL ARRANGEMENT



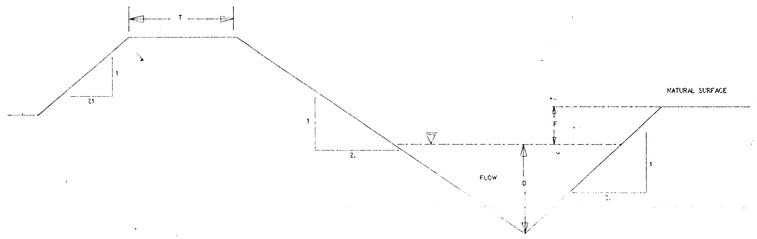
ITEM	DIM.	ELEV.-DIM.
BOTTOM WIDTH (ft)	W	4.0
PEAK INFLOW RATE (cfs)	Q	18.0
FLOW DEPTH (ft)	D	1.6
SIDE SLOPES (Z)	Z	2.0
D_{50}(in.)		9.0
FREEBOARD (ft)		1.0 MIN.
RIPRAP THICKNESS(in.)		18.0

SECTION D - D'



5

TYPICAL SECTION - SAFETY BERM AND CATCH DRAIN



ITEM	DIM.	ELEV.-DIM.
BERM WIDTH (ft)	T	12.0
PEAK INFLOW RATE (cfs)	Q	24.0
FLOW DEPTH (ft)	D	1.9
SIDE SLOPES (ft.)	Z	3.0
SIDE SLOPES (ft)	Z1	1.5
FREEBOARD (ft)	F	1.0 MIN.

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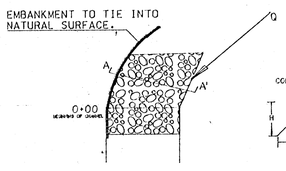
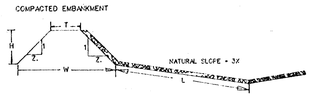
MAIN INLET (GENERAL LAYOUT)



SECTION A - A'



ITEM	DIM.	ELEV.-DIM.
EMBANKMENT WIDTH (ft)	T	12.0
PEAK INFLOW RATE (cfs)	Q	140.0
WIDTH OF INLET (ft.)	L	30.0
SIDE SLOPES (ft)	Z	2.0
EMBANKMENT HEIGHT (ft)	H	5.0
EMBANKMENT WIDTH (ft)	W	32.0
RIPRAP THICKNESS (in.)		18.0
D_{50}(in.)		9.0

8

I, RON VANVALKENBURG, HEREBY CERTIFY THAT THE DESIGN INFORMATION DISPLAYED ON THIS EXHIBIT IS ACCURATE AND MEETS THE PERFORMANCE STANDARDS FOR A TEMPORARY DIVERSION IN 30 CFR AND 780.29.

RON C. VAN VALKENBURG NEW MEXICO 9263 REGISTERED PROFESSIONAL ENGINEER 9/10/93

P.E. CERTIFICATION

RON C. VAN VALKENBURG NEW MEXICO 9263 REGISTERED PROFESSIONAL ENGINEER 9/10/93

REV. NO.	DATE	DRAFT. BY	DESCRIPTION	ENG.	E.O.	CHIEF ENG.
1	9/10/93	JG	CHANGE EXHIBIT NO. TO 11-72			

APPROVALS

BHP MINERALS INTERNATIONAL INC.

NAVAJO MINE — SAFETY PAYS

P.O. BOX 155 FRUITLAND, NEW MEXICO 87416

"AREA III LOWE DIVERSION"
GENERAL ARRANGEMENTS
MAIN AND INLET CHANNELS
AND TYPICAL SECTIONS

PREPARED BY A.K.E.	DRAWN BY A.K.E.	SCALE HORIZ. None VERT. None	
APPROVED BY	DATE 07-09-93	DRAWING LOCATION M.F.-Cla	
DRAWING NO.	EXHIBIT NO. 11-72		

/usr1/bill/drawings.dgn Jul. 27, 1993 10:31:27