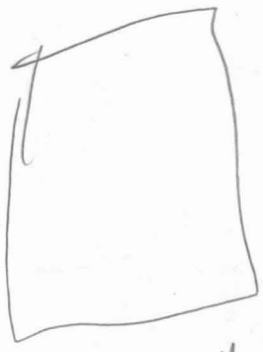


001438

MINEHT	DFT WID	PILLAR/ ROOM L	ROOM W	SF	DIP	BSTR
20	16	50	20	1.5		
20	18	30	"	1.5		
		40		1.5		

$$\text{PillarWidth} + \cancel{\text{Pad}} = \frac{(\text{PillarLen} * \text{PillarWidth})^{1.5}}{\text{PillarLen} + \text{PillarWidth}} * \frac{RST}{SEM * SF * PH * (\text{PillarLen} + DFTWID)} + 1$$

$$\frac{\text{PillarWidth}^2 + \text{PillarWidth} * \text{PillarLen}}{(\text{PillarLen} * \text{PillarWidth})^{1.5}}$$

TEST. @ CHOOSE (AC8, AX8, AY8, AZ8 etc. ⇒ AX8: +PILWID/2, +PILWID/4 etc

@IF ((SF$_1$ - BA:8) * (SF$_2$ - BA:8) < 0, ⇒ BA8: DESIGN S.FAC.

1.8 - 1.5 = .3
0.9 - 1.5 = -

/11 { IF ((SF$_1$ - BA:8) * (SF$_2$ - BA:8) < 0, { GOTO PILWID12 } 20 30 45

ENTER START PIL WIDTH. { FOR (RANGE) COUNTER,

/5 { IF (SF$_1$ (Q8) - BA8:) * (SF$_2$ (Q9) - BA8:) < 0 } { GOTO ADJ START. HOME }

{ FOR COUNTER, 4, 100, ADJSTART }

ADJSTART { IF (SF$_2$ (Q9) - BA8) > 0 } { BRANCH INCR. INC UP }

INCR. { LET TESTWID } { LET COUNTER, 0 }
{ FOR COUNTER, 1, 50, 0.5, CONT_INC }

CONT_INC { LET PILWID$_2$, PILWID$_1$ + (PILWID$_1$ * COUNTER) }
{ IF (SF$_1$ (Q8) - BA8) * (SF$_2$ (Q9) - BA8) < 0 } { PILWID$_1$, LET PILWID$_1$, PILWID$_2$ } { FOR BREAK }
{ LET PILWID$_1$, PILWID$_2$ }

MODIFIED. LINEAR INTERPOLATION
USING ITERATION.

- SET UP STARTING CONDITIONS.

$WIDTH_1$	$SF > 1.5$
$WIDTH_2$	$SF < 1.5$.
$WIDTH_3$	$SF < 1.5$
$WIDTH_4$	$SF > 1.5$.
$WIDTH_5$	

$$SF = \frac{PS}{PSTR}$$

$$PS = RS * \frac{WEFF^{0.5}}{PH^{0.7}}$$

$$SF = RS * \frac{WEFF^{0.5}}{PH^{0.7}}$$

$$\frac{4.5}{1}$$

$$\frac{EFF\ WID}{PILLARHT}$$

DRK. MSTR

R. MASS STR

$90 = \pi/2$

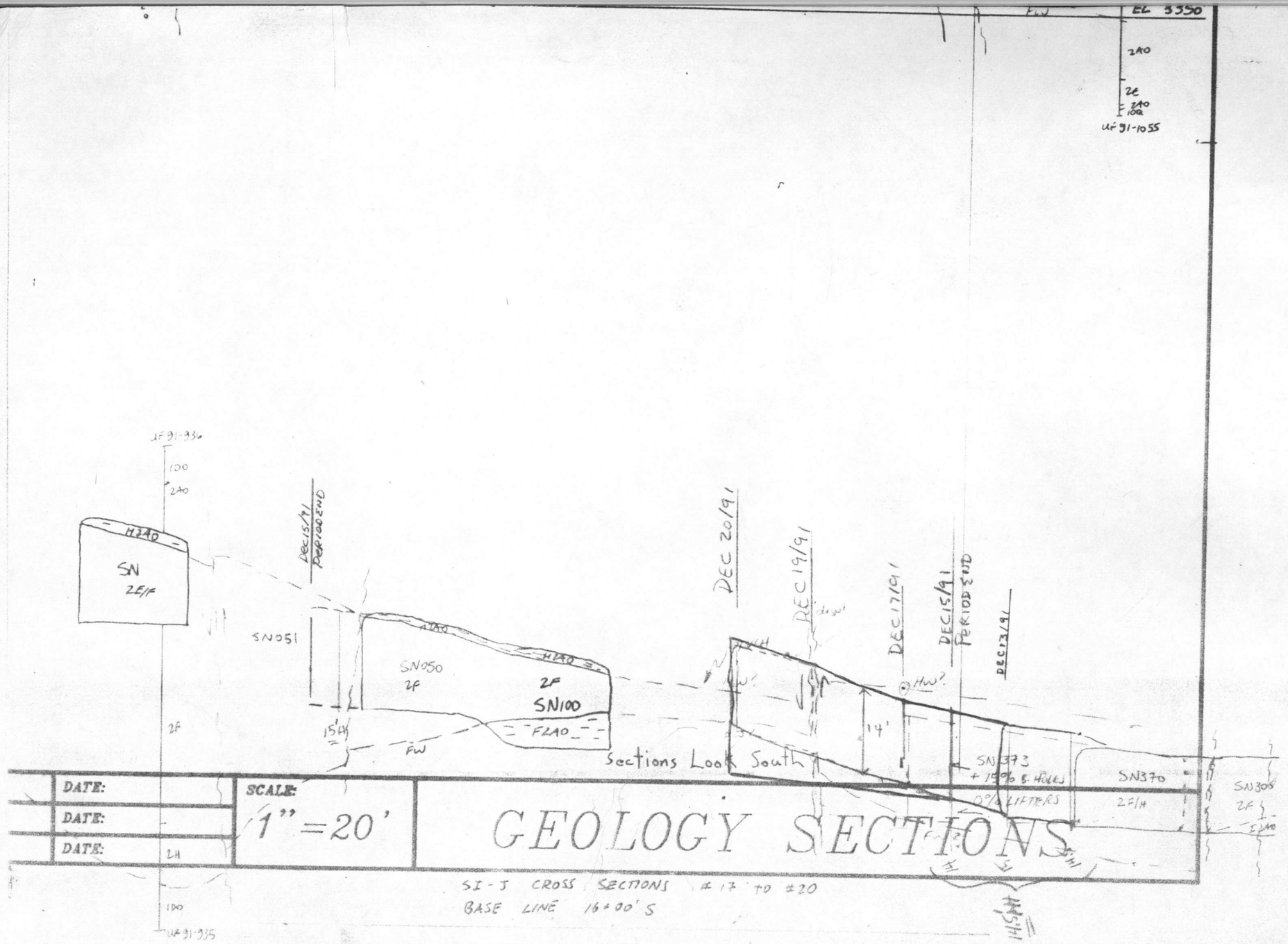
$180^\circ = \pi$

$360^\circ = 2\pi$

$* \frac{\pi}{180}$

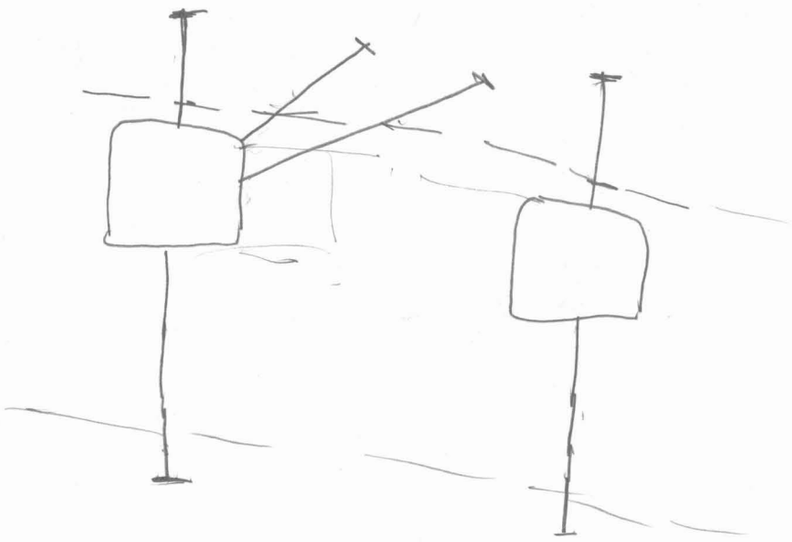
30°

20°



	DATE:	SCALE:	GEOLOGY SECTIONS
	DATE:	1" = 20'	
	DATE: 24		

SI-J CROSS SECTIONS #17 TO #20
BASE LINE 16+00'S



AREA = $L \times W$

PER = $2L + 2W$

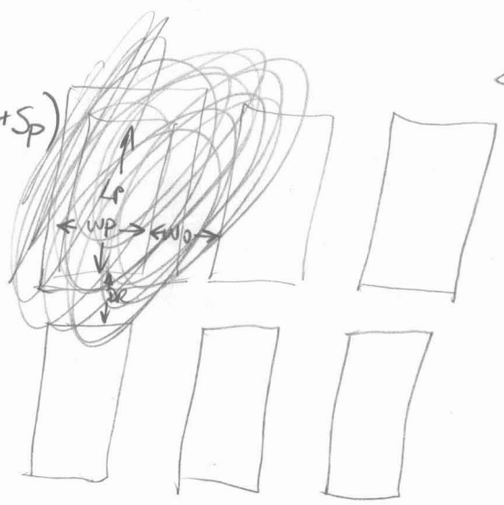
HEIGHT = H

LOAD AREA = $(L + DR)(W + S_p)$

V STRESS = γz

DIP

EXT'N = $1 - \left(\frac{AREA}{LOAD\ AREA}\right)$



54 - 0-35x
9-15 sx/30

55 -90 0-9.55x

56 +9° 0-75x5x

SLOPE 57 15° 0-17
0-3 FLOOR
0-14 sporty
0-27

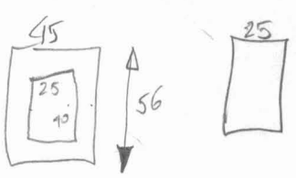
EXT'N =

AREA = $40 \times W$

PERIMETER = $2W + 80$

H = 45'

A



LOAD AREA = $56 \times W + 20$

V STRESS = 800

DIP = 15

LAYOUT FOR 25' PILLAR ⇒ 20' AFTER MINING

$$SF = \frac{\text{PILLAR STRNG}}{\text{PILLAR STRESS.}}$$

$$= \frac{\text{TOTAL ROCK STRNG} * \dfrac{\text{EFFECT. PILLAR WIDTH}^{0.5}}{\text{PILLAR HEIGHT}^{0.7}}}{\text{PILLAR STRESS}} \qquad * \text{IF. } \frac{W_{EFF}}{P_{HEIGHT}} < 4.5$$

$$= \frac{\text{TOTAL ROCK STRNG} * \dfrac{\text{EFFECT PILLAR WIDTH}^{0.5}}{\text{PILLAR HEIGHT}^{0.7}}}{\dfrac{\text{LOAD AREA}}{\text{PILLAR AREA}} * \text{INSITU LOAD (SIGMA1)}}$$

$$= \frac{\text{TOT. R. STRNG} * \text{INSITU LOAD}}{\text{PILLAR HEIGHT}^{0.7}} * \frac{\text{EFFECT PILLAR WIDTH}^{0.5} \quad \text{PILLAR AREA}}{\text{LOAD AREA.}}$$

$$\frac{\text{SFACTOR} * \text{PILLAR HEIGHT}^{0.7}}{\text{TOT. R. STRNG} * \text{INSITU LOAD.}} = \frac{\text{EFFECT. PILLAR WIDTH}^{0.5} \quad \text{PILLAR AREA}}{\text{LOAD AREA.}}$$

$$= \frac{\text{EFFECT. PILLAR WID.}^{0.5}}{}$$

$$= \frac{(4 * \text{PILLAR AREA} * \text{PILLAR PERIMETER})^{0.5} \quad \text{PILLAR AREA}}{\text{LOAD AREA}}$$

$$= \frac{\left(4 * \dfrac{\text{PILLAR LEN} * \text{PILLAR WID.}}{\text{PILLAR PERIM.}}\right)^{0.5} * \dfrac{(\text{PILLAR LEN} * \text{PILLAR WID})}{\text{PILLAR AREA}}}{\text{LOAD AREA.}}$$

$$\frac{\text{SFACTOR} * \text{PILLAR HEIGHT}^{0.7}}{\text{TOT R. STRNG} * \text{INSIT. LOAD} \quad \text{PILLAR LEN}} = \frac{\left(4 * \dfrac{\text{PILLAR LEN} * \text{PILLAR WID.}}{\text{PILLAR PERIM.}}\right)^{0.5} * \text{PILLAR WID}}{\text{LOAD AREA.}}$$

$$\frac{\text{SFACTOR} \times \text{PIL. HT}^{0.7}}{\text{TOT R. STRN} \times \text{INSIT. LD} \times \text{PIL. LEN}} = \frac{\left(4 \times \dfrac{\text{PILLAR LEN} \times \text{PIL. WID.}}{\text{PIL. PERIM.}}\right)^{0.5} \times \text{PIL WID}}{\text{LOAD. AREA.}}$$

$$\text{PillarWidth} + \cancel{\text{Panel}} = \frac{(\text{PillarLen} * \text{PillarWidth})^{1.5}}{\text{PillarLen} + \text{PillarWidth}} * \frac{RST}{SEM * SF * PH * (\text{PillarLen} + DFT\ WID)} + 1$$

$$\frac{\text{PillarWidth}^2 + \text{PillarWidth} * \text{PillarLen}}{(\text{PillarLen} * \text{PillarWidth})^{1.5}}$$

$$\text{PILLAR WIDTH} = \frac{\text{LOAD AREA}}{(\text{PILL. LEN}_c + \text{DFT WIDTH}_c)} - \text{PANEL WIDTH}_c$$

$$\text{LOAD AREA} = PA * \text{RATIO}$$
$$= PA * \frac{P_{STR}}{SEM}$$

$$= \frac{PA}{SEM} * P_{STR} = \frac{PA}{SEM} * \frac{PS}{SF_c}$$

5x

$$= \frac{PA}{SEM} * \frac{RS_{TC}}{RS_{TC}} *$$

$$= \frac{PA}{SEM} * \frac{RS_{TC}}{SF_c} * \frac{W_{EFF}^{0.5}}{PH_c^{0.7}}$$

$$= \frac{PA * W_{EFF}^{0.5}}{SEM} * \frac{RS_{TC}}{SF_c * PH_c}$$

$$= \frac{PA * (4 * PA)^{0.5}}{SEM * PP} * \left(\quad " \quad " \quad \right)$$

$PA = \text{PILLAR LEN} * \text{PILLAR WIDTH}.$

$$\therefore \text{LOAD AREA} = \frac{2 * (\text{PILLAR LEN} * \text{PILLAR WIDTH}.)^{1.5}}{SEM * 2 * (\text{PILLAR LEN} + \text{PILLAR WIDTH})} * \left(" " \right)$$

$$= \frac{(\text{PILLAR LEN}_c * \text{PILLAR WIDTH}.)^{1.5}}{SEM * (\text{PILLAR LEN}_c + \text{PILLAR WID})} * \left(" " \right)$$

$\text{PILLAR WIDTH} + \text{PANEL WIDTH} =$

$$54\,mA \times \frac{145\,psi}{mA} = 7830\,psi$$

$$SF = \frac{\dfrac{7830\,(W_{eff})^{0.5}}{H^{0.7}}}{\dfrac{1.1\,D\cos^2\alpha + 1.1D \times 2\sin^2\alpha}{1-e}}$$

$e = \frac{\%\,ext}{100}$ 2.

$e = \frac{E}{100}$ 2.

$E = 1 - \frac{A_p}{L.A.}$

$$1-E = \frac{L \times W}{(L+D_R)(W+S_P)}$$

$$W_{EFF} = \frac{4\,A_p}{P_{ER}} = \frac{4(L \times W)}{(2L+2W)}$$

$$SF = \frac{7830\left(\dfrac{4(L \times W)}{(2L+2W)}\right)^{0.5}}{(H)^{0.7}}$$

$$\frac{1.1D\cos^2\alpha + 1.1D\,2\sin^2\alpha}{\dfrac{L \times W}{(L+R)(W+S)}}$$

LENGTH, WIDTH, HEIGHT, RAMP WIDTH, SPAN, DEPTH, DIP ANGLE

$$F(L, W, H, R, S, D, A) = \left(\frac{\left(7830\left(\dfrac{(4(L \times W))}{(2L+2W)}\right)^{0.5}\right)}{H^{0.7}}\right) \Big/ \left(\frac{(1.1D(\cos A)^2 + 2.2D(\sin A)^2)}{\left(\dfrac{L \times W}{((L+R)(W+S))}\right)}\right)$$

40 20 95 16 20 300 20

800
120
45
2240
300
20
54

((7830 × (((4(L×W)) ÷ (2L+2W)) Y^0.5) ÷ H Y^0.7) ÷ (((1.1D(cos A)^2 + 2.2D(sin A)^2) ÷ ((L×W) ÷ ((L+R) × (W+S))))

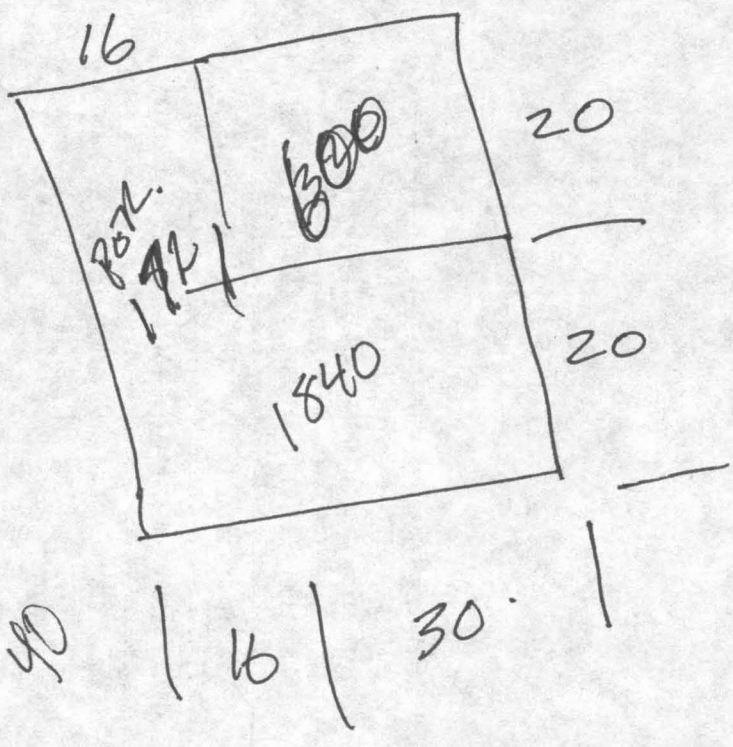
ENTRY SOURCE	VOLUME	EQUIV FTG	WASTE TONNE	ORE TONNE	EST COMB	Pb%	Zn%	Ag	HWT	FW T's	ORE T's	DILUTION HW%	DILUTION FW%
TARG VAL	301412.6	1507.1	2508.0	30679.3	10.77	4.2605	7.1659	68.6	1015.9	1452.9	28210.5	3.6	5.2
ORIG VAL	273221.0	1366.1	2289.3	27827.6	10.81	4.2820	7.1650	69.2	866.4	1166.5	25794.8	3.4	4.5
CORR. FAC	28191.6	141.0	218.8	2851.7	10.44	4.0510	7.1745	62.518	149.5	286.4	2415.7	6.2	11.9

INPUT PER ADVANCE					
	WST FTG>>>	0.0	TARGET ADV	WASTE>>>>	ERR
	ORE FTG>>>	0.0	CORRECTION	ORE>>>>>>	ERR

MONTH ADV:JANP2VSM
NOTES:

AREA = PL * PW.

PERIM = 2PL + 2PW



800'
25-1
54

3.2808

46

3778 SF

1 - PAREA / AREA

= .5 = 600 / 1840

F29 * 49/99 * LD AREA / PI AREA

F29 * LD ARE / PI AREA.

$$(x) = \frac{b^2 \pm \sqrt{4ac - 2b}}{2a}$$

$b^2 \pm \sqrt{\quad}$

$\frac{10}{10}$

500.
25

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$ax^2 + bx + c = 0$$

$$PL^2 - \frac{PER}{2} * PL + AREA = 0$$

$$a \neq 0$$

$$x = \frac{+\frac{PER}{2} \pm \sqrt{\left(\frac{PER}{2}\right)^2 - 4\,AREA}}{2}$$

$$b = -\frac{PER}{2} = 39.05$$

$$C = 392.3$$

27.812

AREA = PL * PW.

AREA = PL * PW.

PER. = 2PL + 2PW.

$PW = \frac{PER - 2PL}{2}$

$AREA = \frac{PL * PER}{2} - PL^2.$

$PL^2 - \frac{PER}{2} PL + AREA.$

$a = 1$

$b = -\frac{PER}{2} = -39.05$

$c = AREA.$

14.1 * 27.8

CURRAGH RESOURCES INC.
file: PAGELAUB
****

ITERATION NUMBER	V STRESS (MPa)	ORE DIP (deg)	PAN WID (ft)	DFT WID (ft)	PAN LEN (ft)	PIL HT (ft)	PIL WID (ft)	INSITU LD	LD AREA (sq ft)	PIL AREA (sq ft)	PIL STRES (MPa)	EFF WID (ft)	PIL STR (MPa)	SAFE FACT	EXTRACT (%)	DIP (RAD)	INSITU LD (MPa)	LD AREA (sq m)	PIL AREA (sq m)	PIL PERIM (ft)	PIL PERIM (m)	PIL HT (ft)	R MASS ST (MPa)	WIDTH TEST	d WID (ft)
START	14.9	20.0	20.0	16.0	40.0	20.0	25.0	16.68	28800	1000	3.31	30.8	46.66	14.08	96.5%	0.3491	0.1150	2675.61	92.90	130.0	39.62	6.10	54.0	OK	25.00
CONDITIONS	14.9	20.0	20.0	16.0	40.0	20.0	12.5	16.68	20800	500	4.79	19.0	36.71	7.67	97.6%	0.3491	0.1150	1932.39	46.45	105.0	32.00	6.10	54.0	OK	-12.50
	14.9	20.0	20.0	16.0	40.0	20.0	6.3	16.68	16800	250	7.73	10.8	27.66	3.58	98.5%	0.3491	0.1150	1560.77	23.23	92.5	28.19	6.10	54.0	OK	-6.25
	14.9	20.0	20.0	16.0	40.0	20.0	3.1	16.68	14800	125	13.62	5.8	20.25	1.49	99.2%	0.3491	0.1150	1374.97	11.61	86.3	26.29	6.10	54.0	OK	-3.13
	14.9	20.0	20.0	16.0	40.0	20.0	4.7	16.68	15800	188	9.69	8.4	24.37	2.51	98.8%	0.3491	0.1150	1467.87	17.42	89.4	27.24	6.10	54.0	OK	1.56
	14.9	20.0	20.0	16.0	40.0	20.0	3.9	16.68	15300	156	11.27	7.1	22.44	1.99	99.0%	0.3491	0.1150	1421.42	14.52	87.8	26.77	6.10	54.0	OK	-2.34
	14.9	20.0	20.0	16.0	40.0	20.0	2.7	16.68	14550	109	15.30	5.1	19.03	1.24	99.2%	0.3491	0.1150	1351.74	10.16	85.5	26.05	6.10	54.0	OK	-1.95
	14.9	20.0	20.0	16.0	40.0	20.0	3.7	16.68	15175	148	11.76	6.8	21.92	1.86	99.0%	0.3491	0.1150	1409.80	13.79	87.4	26.65	6.10	54.0	OK	1.37

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD

file: FEBDAYUP

UNDERGROUND PRODUCTION PLAN vs SCHEDULE vs ACTUAL
FEBRUARY 1992

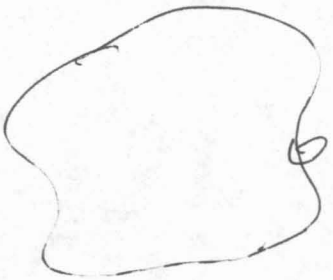
	1992 BUDGET							MONTHLY FORECAST							ACTUAL												
	WASTE		ORE					WASTE		ORE					WASTE		ORE					DILUTION			tonne/MANSHIFT			
DATE	ADV	TONNE	ADV	TONNE	Pb%	Zn%	Ag	ADV	TONNE	ADV	TONNE	Pb%	Zn%	Ag	ADV	TONNE	ADV	TONNE	Pb%	Zn%	Ag	HW%	FW%	TOT %	FACE	HAUL	CREW	Comments
1	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	77	1729	4.37	6.67	73	0.0%	0.0%	0	75	192	31	SF110,SCL008 FW UP;SN940,SN913 INSIT WASTE
2	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	9	155	67	1583	4.69	7.76	70	1.6%	1.0%	3	76	193	32	SN940,SH003 HW DN;SF400BNC FW UP
3	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	11	179	86	1968	4.04	6.47	63	2.0%	7.5%	9	93	239	39	SH001 HW DN;SF400BNC,SI310BNC FW UP
4	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	113	2594	4.50	6.87	76	1.6%	10.7%	12	113	288	47	SF107,SF400,SH003 FW UP;SN940XC,SH806 HW DN
5	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	14	222	95	2216	4.67	6.67	83	0.8%	4.0%	5	106	271	44	SI310,SIRAMP,SH003,SH001,SN960,SF400 FW UP
6	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	14	235	82	1924	3.91	6.78	59	0.4%	2.8%	3	94	240	39	SF110,SLRAMP,SH003,SF400 FW UP;SH1006 HW DN
7	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	12	221	89	1956	4.43	7.21	65	3.9%	5.2%	9	95	242	40	T
8	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	9	158	91	1995	4.43	7.21	65	3.9%	5.2%	9	94	239	39	***PROJECTED***
9	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	12	221	83	1835	4.43	7.21	65	3.9%	5.2%	9	89	228	37	***PROJECTED***
10	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	19	349	78	1725	4.43	7.21	65	3.9%	5.2%	9	90	230	38	***PROJECTED***
11	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	83	1828	4.43	7.21	65	3.9%	5.2%	9	79	203	33	***PROJECTED***
12	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	14	243	68	1505	4.43	7.21	65	3.9%	5.2%	9	76	194	32	***PROJECTED***
13	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	11	192	86	1901	4.43	7.21	65	3.9%	5.2%	9	91	233	38	***PROJECTED***
14	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	89	1960	4.43	7.21	65	3.9%	5.2%	9	85	218	36	***PROJECTED***
15	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	91	2009	4.43	7.21	65	3.9%	5.2%	9	87	223	37	***PROJECTED***VOL & ASSAY ADJUST. TO ENTER
16	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	98	2150	4.43	7.21	65	2.8%	5.0%	8	93	239	39	***PROJECTED***
17	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	108	2369	4.43	7.21	65	2.7%	5.0%	8	103	263	43	***PROJECTED***
18	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65	0	0	108	2376	4.43	7.21	65	2.7%	5.0%	8	103	264	43	***PROJECTED***
19	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
20	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
21	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
22	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
23	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
24	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
25	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
26	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
27	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
28	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
29	2	42	35	1326	4.67	6.99	62	4	79	70	1925	4.43	7.21	65										0	0	0	0	
30																								0	0	0	0	
31																								0	0	0	0	
MTD	33	760	637	23,875	4.67	6.99	62	68	1,420	1,267	34,659	4.43	7.21	65	125.3	2,177	1593.0	35,622	4.41	7.09	67	2.7	5.0	7.7	91	233	38	ASSAYS ENTERED TO FEB 6/92 19-Feb-92
YTD	97	2,238	2,022	74,141	4.72	6.94	63	313	6,210	3,123	91,544	4.36	7.20	70	297	4,935	4,245	94,993	4.41	7.08	70	4.2	6.2	10.3	66	<<<<	39	
PTD	97	21,559	2,022	1,193,827	4.30	6.78	59	2,832	58,508	45,685	1,253,139	4.45	6.79	64	3,856	65,261	55,428	1,255,635	4.56	7.06	67	5.1	6.8	11.8				
SMT	53	1,224	1,026	38,465	4.67	6.99	62	110	2,287	2,042	55,839	4.43	7.21	65														
DLY	2	42	35	1,326	4.67	6.99	62	4	79	70	1,925	4.43	7.21	65														

MTD AVERAGE ADVANCE /DAY = 95.5
YTD ADV /DAY = 16.1
PTD ADV /DAY (FROM/INCL 01/06/90) = 89.8

SMT=SCHEDULE MONTHLY TOTAL
DLY = DAILY SCHEDULED TOTAL

$AREA = PL * PW$

$PPER. = 2PL + 2PW$.



$2PW = \frac{PPER - 2PL}{2}$

$AREA = PL * \left(\frac{PPER - 2PL}{2}\right)$.

$AREA = \frac{1}{2} PPER * PL - PL^2$.

$PL^2 - \frac{1}{2} PPER * PL + AREA = 0$.

$a = 1$ b c

$$SF = \frac{\text{Pillar String}}{\text{Pillar Stress}}$$

$$= \frac{\text{Total Rock String} * \dfrac{\text{Effect. Pillar Width}^{0.5}}{\text{Pillar Height}^{0.7}}}{\text{Pillar Stress}} \quad * \text{IF } \frac{\text{Width}}{\text{P Height}} < 4.5$$

$$= \frac{\text{Total Rock String} * \dfrac{\text{Effect Pillar Width}^{0.5}}{\text{Pillar Height}^{0.7}}}{\dfrac{\text{Load Area}}{\text{Pillar Area}} * \text{Insitu Load (Sigma 1)}}$$

$$= \frac{\text{Tot. R. String} * \text{Insitu Load}}{\text{Pillar Height}^{0.7}} * \frac{\text{Effect Pillar Width}^{0.5} \quad \text{Pillar Area}}{\text{Load Area}}$$

$$\frac{SF * \text{Pillar Height}^{0.7}}{\text{Tot. R. String} * \text{Insitu Load}} = \frac{\text{Effect. Pillar Width}^{0.5} \quad \text{Pillar Area}}{\text{Load Area}}$$

$$= \frac{\text{Effect Pillar Width}^{0.5}}{}$$

$$= \frac{(4 * \text{Pillar Area} * \text{Pillar Perimeter})^{0.5} \quad \text{Pillar Area}}{\text{Load Area}}$$

$$= \frac{\left(4 * \dfrac{\text{Pillar Len} * \text{Pillar Wid.}}{\text{Pillar Perim.}}\right)^{0.5} * \dfrac{(\text{Pillar Len} * \text{Pillar Wid})}{\text{Pillar Area}}}{\text{Load Area}}$$

$$\frac{SF * \text{Pillar Height}^{0.7}}{\text{Tot R. String} * \text{Insit. Load} \quad \text{Pillar Len}} = \frac{\left(4 * \dfrac{\text{Pillar Len} * \text{Pillar Wid.}}{\text{Pillar Perim.}}\right)^{0.5} * \text{Pillar Wid}}{\text{Load Area}}$$

$$\frac{SF * \text{Pil. Ht}^{0.7}}{\text{Tot R. Stn} * \text{Insit. Ld} * \text{Pil. Len}} = \frac{\left(4 * \dfrac{\text{Pillar Len} * \text{Pil. W.D.}}{\text{Pil. Perim.}}\right)^{0.5} * \text{Pil Wid}}{\text{Load. Area}}$$

Safety Factor Program Break Down

Relative Dip

① RDIP = DIP / 57.2958

Insitu Load - Assome Horiz. Stress = 2 * Vert. Stress.

Insitu Load (σ_d) = $\sigma_V * \cos^2(RDIP) + \sigma_H * \sin^2(RDIP)$.

② SE = $[\cos^2(RDIP) + 2 * \sin^2(RDIP)] * V.\ STRESS$. = Insit. Load

Convert to MPa. (Insitu Load) SE ⇒ SEM.

③ SEM = SE / 145

Convert Load Area (Sq') to Sq. M. (LA(F) ⇒ LA)

④ LA = LA(F) / 10.758

Convert Pillar Area to Sq. M (PA(F) ⇒ PA)

⑤ PA = PA(F) / 10.758

Ratio of Pillar Area to Load Area

⑥ Ratio = LA / PA

Pillar Stress = Ratio * Insitu Load.

⑦ PSTR = Ratio * SEM

Convert Pillar Perimeter to Meters. (PP(F) ⇒ PP)

PP = PP(F) / 3.28

Convert Pillar Height to Meters (PH(F) ⇒ PH)

⑧ PH = PH(F) / 3.28

Calculate Effective Pillar Width. (Avg)

⑨ W_{EFF} = 4 * PA / PP

Pillar Strength (mPa) *Condition* $W_{EFF}/PH < 4.5$ ⇒ TEST ***.

⑩ PS = Total Rock Strength (RS_T) * $\frac{W_{EFF}^{0.5}}{PH^{0.7}}$

$$\text{Pillar Width} = \frac{\text{Load Area}}{(\text{Pill. Len}_c + \text{Dft Width}_c)} - \text{Panel Width}_c$$

$$\text{Load Area} = PA * \text{RATIO}$$
$$= PA * \frac{PSTR}{SEM}$$

$$= \frac{PA}{SEM} * PSTR = \frac{PA}{SEM} * \frac{PS}{SF_c}$$

5\

$$\frac{PA}{SEM} * \frac{RS}{RS_{Tc}} *$$

$$= \frac{PA}{SEM} * \frac{RS_{Tc}}{SF_c} * \frac{W_{EFF}^{0.5}}{PH_c^{0.7}}$$

$$= \frac{PA * W_{EFF}^{0.5}}{SEM} * \frac{RS_{Tc}}{SF_c * PH_c}$$

$$= \frac{PA * (4 * PA)^{0.5}}{SEM * PP} * (\quad " \quad ")$$

$PA = \text{Pillar Len} * \text{Pillar Width}.$

$$\text{Load Area} = \frac{2 * (\text{Pillar Len} * \text{Pillar Width})^{1.5}}{SEM * 2 * (\text{Pillar Len} + \text{Pillar Width})} * (" \quad ")$$

$$= \frac{(\text{Pillar Len}_c * \text{Pillar Width})^{1.5}}{SEM * (\text{Pillar Len}_c + \text{Pillar Wid})} * (" \quad ")$$

Pillar Width + Panel Width =