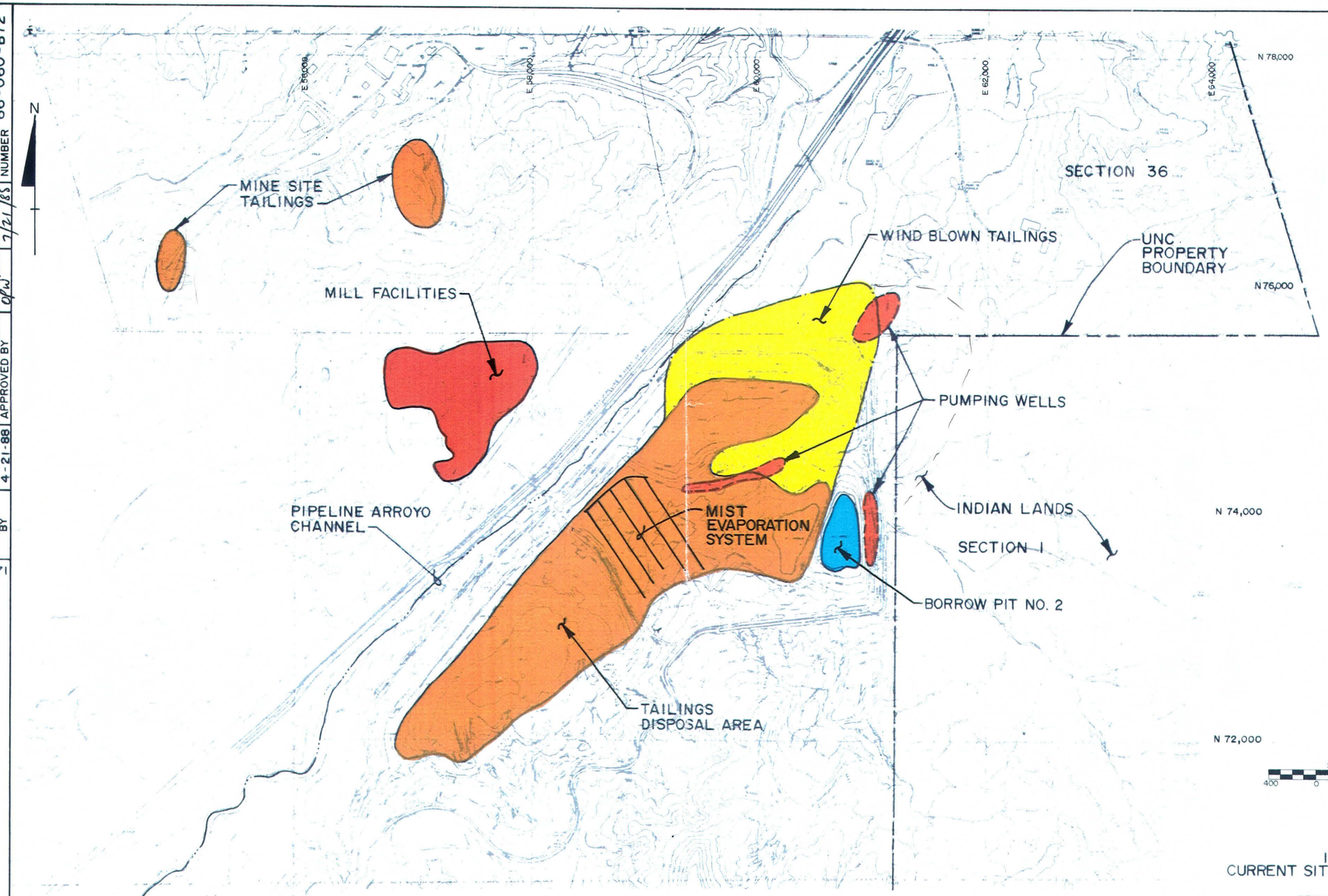
FiGURES

FIGURES



1988
CURRENT SITE CONDTIONS

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

REFERENCE:
TOPOGRAPHIC MAP OF SEC 2, T 16 N, R 16 W, N.M.P.M. & VICINITY. PROVIDED BY UNITED NUCLEAR CORPORATION, GALLUP, NEW MEXICO. DATED MAY 1, 1978. SCALE 1" = 400'

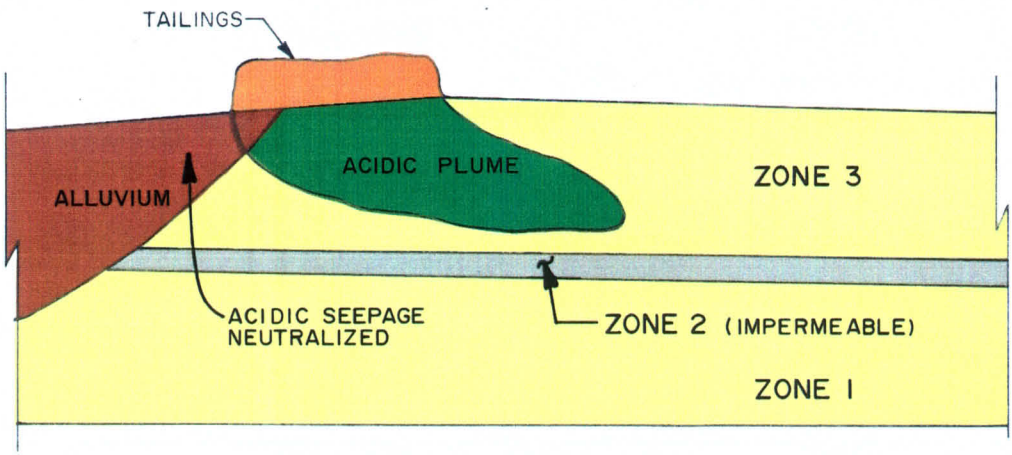
DATE: 4-21-88	FIGURE 1	DRAWING NUMBER
SCALE: AS SHOWN		86-060-B72

RM86-060-E1a
RM86-060-E1b
86-060-B71

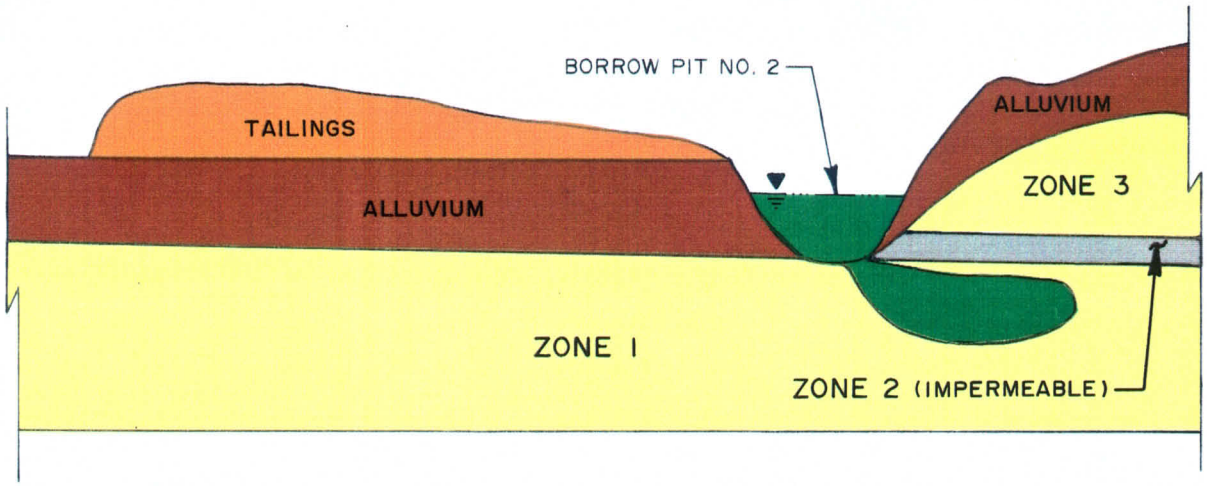
REVISIONS	NO.	DATE	DRAWN BY	T.C.	4-21-88	CHECKED BY	APPROVED BY	DRAWING NUMBER 86-060-B72
			B71					

86-060-B71

102340



ACIDIC PLUME IN ZONE 3
SOURCE IS TAILINGS IN NORTH CELL



ACIDIC PLUME IN ZONE 1
SOURCE IS TAILINGS LIQUIDS IN BORROW PIT NO. 2

SCHEMATIC HYDROGEOLOGIC CROSS SECTIONS

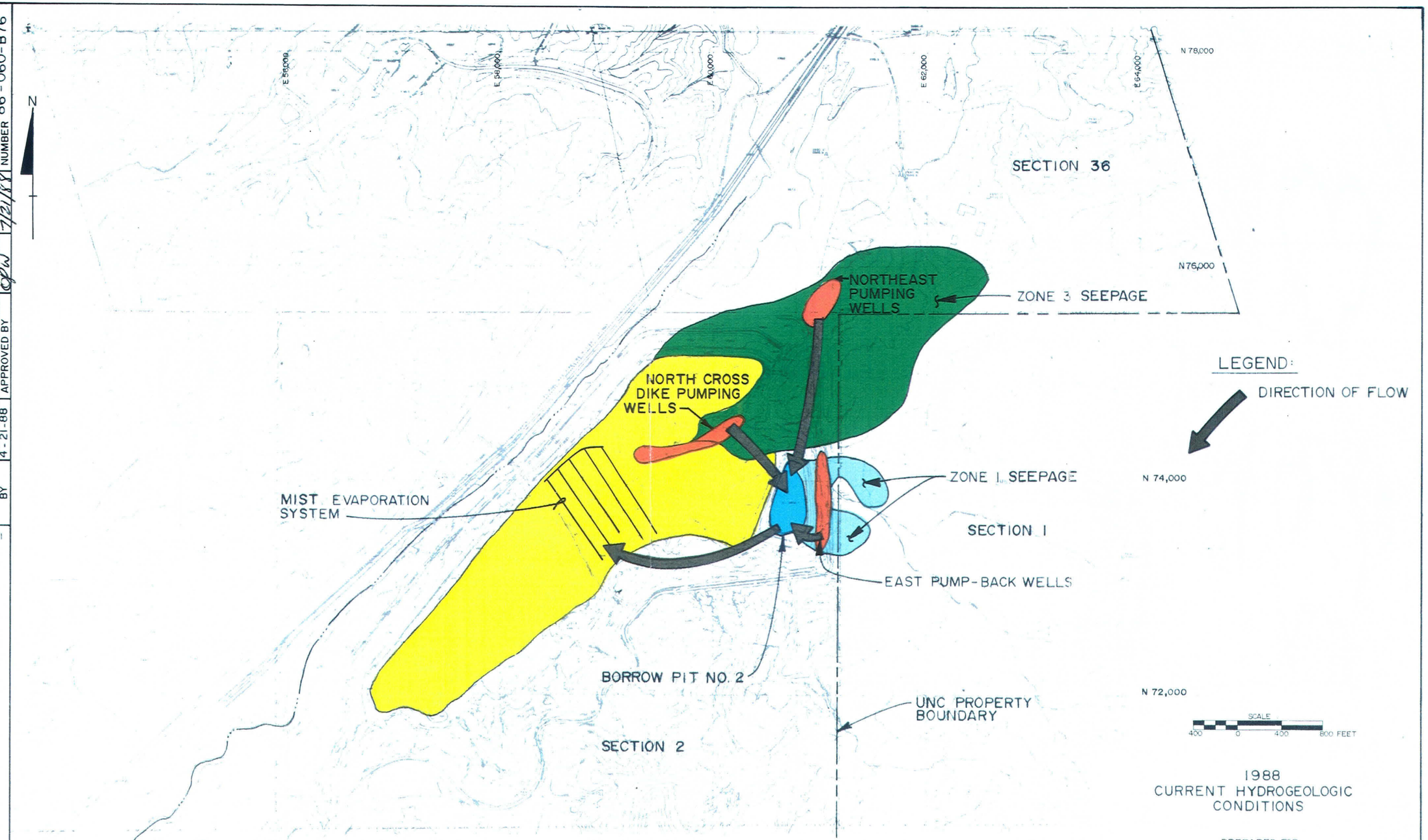
PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

DATE: 4-22-88	FIGURE 2	DRAWING NUMBER
SCALE: N.T.S.		86-060-A77

REVISIONS	NO.	DATE		
	1	7-15-88	REVISED WATER LEVEL, NORTH CELL IN UPPER TITLE, AND ACIDIC SEEPAGE NEUTRALIZED	

DRAWN BY	CHECKED BY	DRAWING NUMBER
B K H 4-22-88	S. du P. 4/22/88	86-060-A77
	APPROVED BY DSP 4/22/88	



1988
CURRENT HYDROGEOLOGIC CONDITIONS

PREPARED FOR

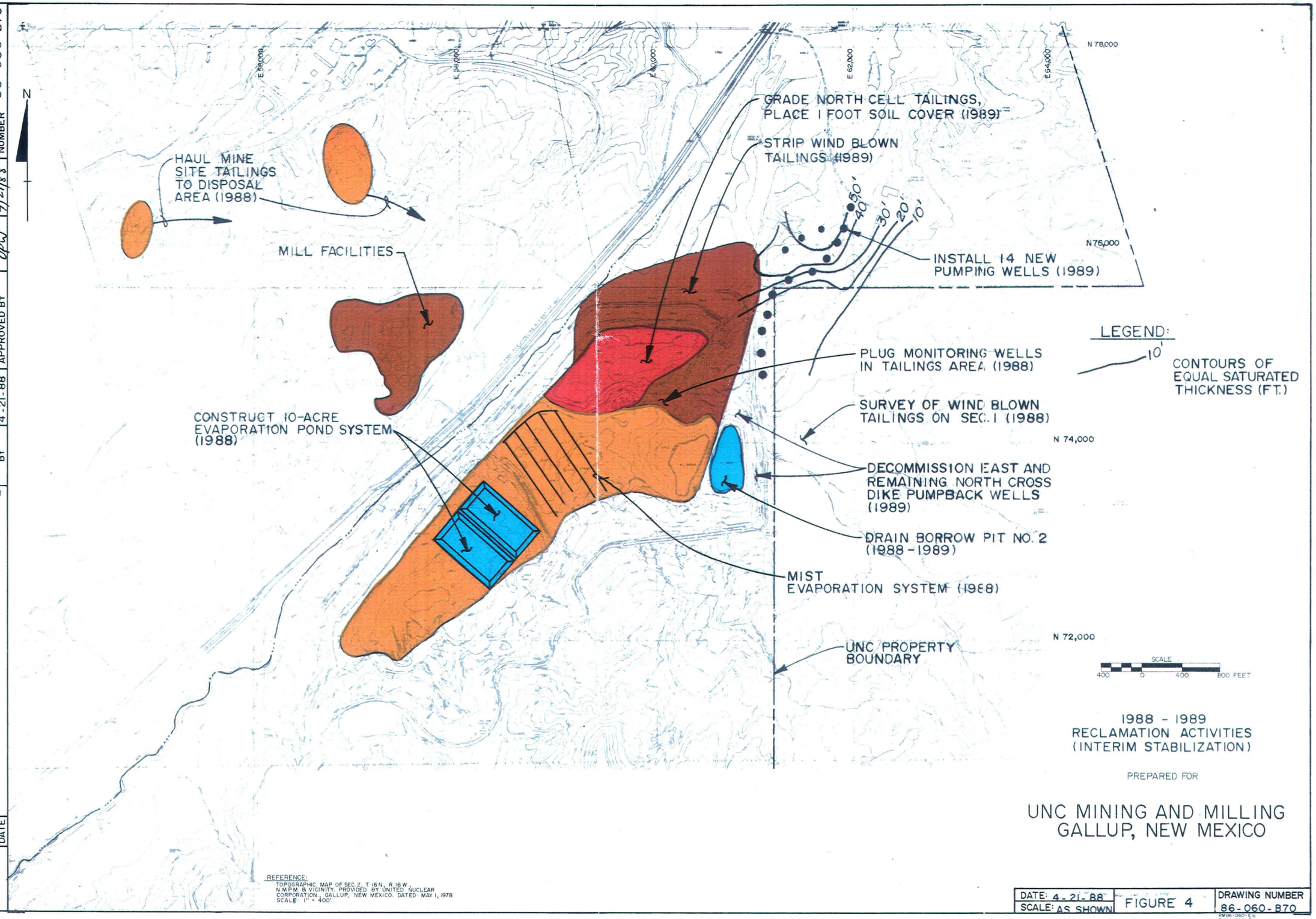
UNC MINING AND MILLING
GALLUP, NEW MEXICO

REFERENCE:
TOPOGRAPHIC MAP OF SEC 2, T 16 N, R 16 W, N.M.P.M. & VICINITY. PROVIDED BY UNITED NUCLEAR CORPORATION, GALLUP, NEW MEXICO. DATED MAY 1, 1978. SCALE: 1" = 400'.

DATE: 4-21-88	FIGURE 3	DRAWING NUMBER 86-060-B76
SCALE: AS SHOWN		

86-060-B71

DRAWING NUMBER 86-060-B76
DRAWN BY BKH 4-21-88
CHECKED BY mjy 7-21-88
APPROVED BY CPW 7/21/88
REVISIONS NO. DATE
B71



1988 - 1989
RECLAMATION ACTIVITIES
(INTERIM STABILIZATION)

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

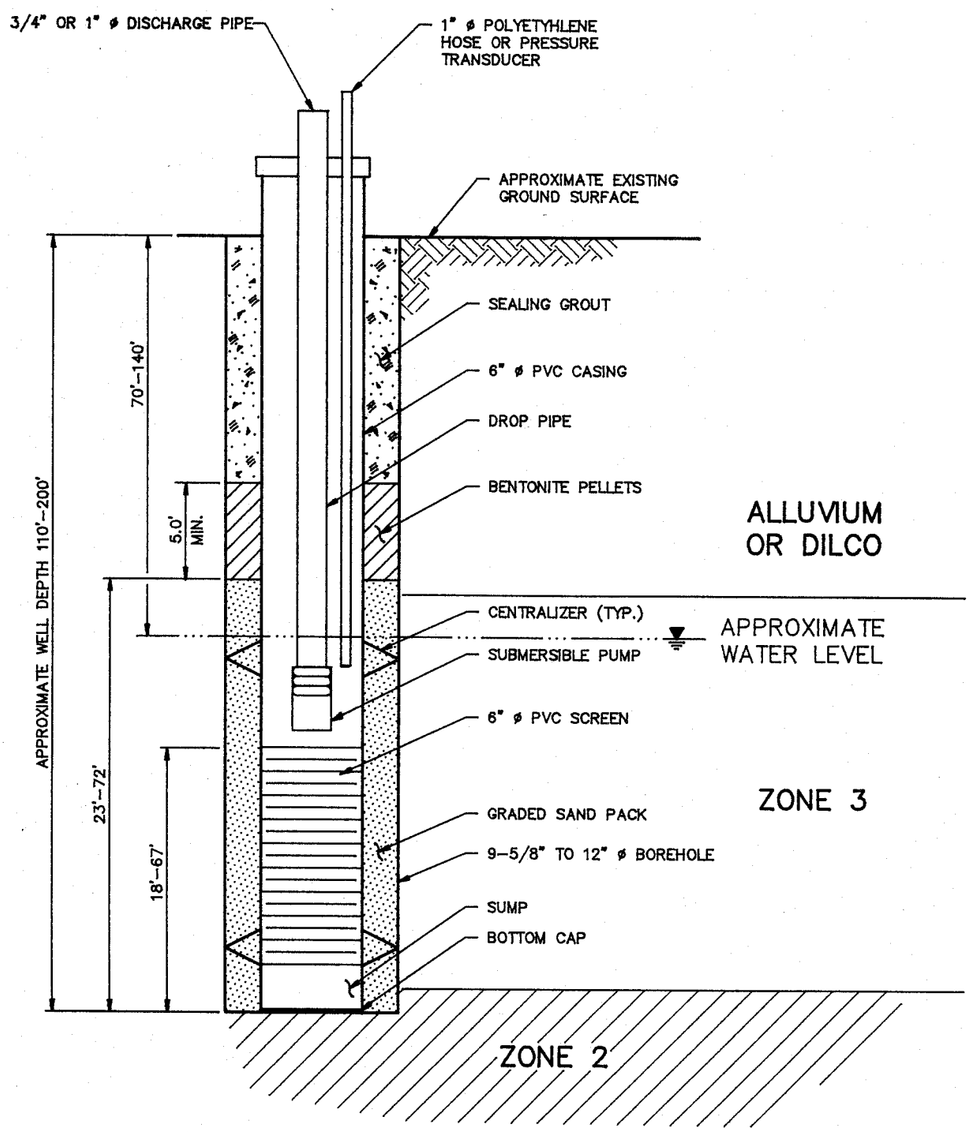
REFERENCE:
TOPOGRAPHIC MAP OF SEC. 2, T. 16 N., R. 16 W., N.M.P.M. & VICINITY. PROVIDED BY UNITED NUCLEAR CORPORATION, GALLUP, NEW MEXICO. DATED: MAY 1, 1978. SCALE: 1" = 400'.

DATE: 4-21-88	FIGURE 4	DRAWING NUMBER
SCALE: AS SHOWN		86-060-B70

RM86-060-E1b
86-060-B71

REVISIONS	NO.	DATE	DRAWN BY	B K H	4-21-88	CHECKED BY	APPROVED BY	7-21-88	7/21/88	DRAWING NUMBER	86-060-B70

B71



TYPICAL WELL COMPLETION DETAIL

PREPARED FOR

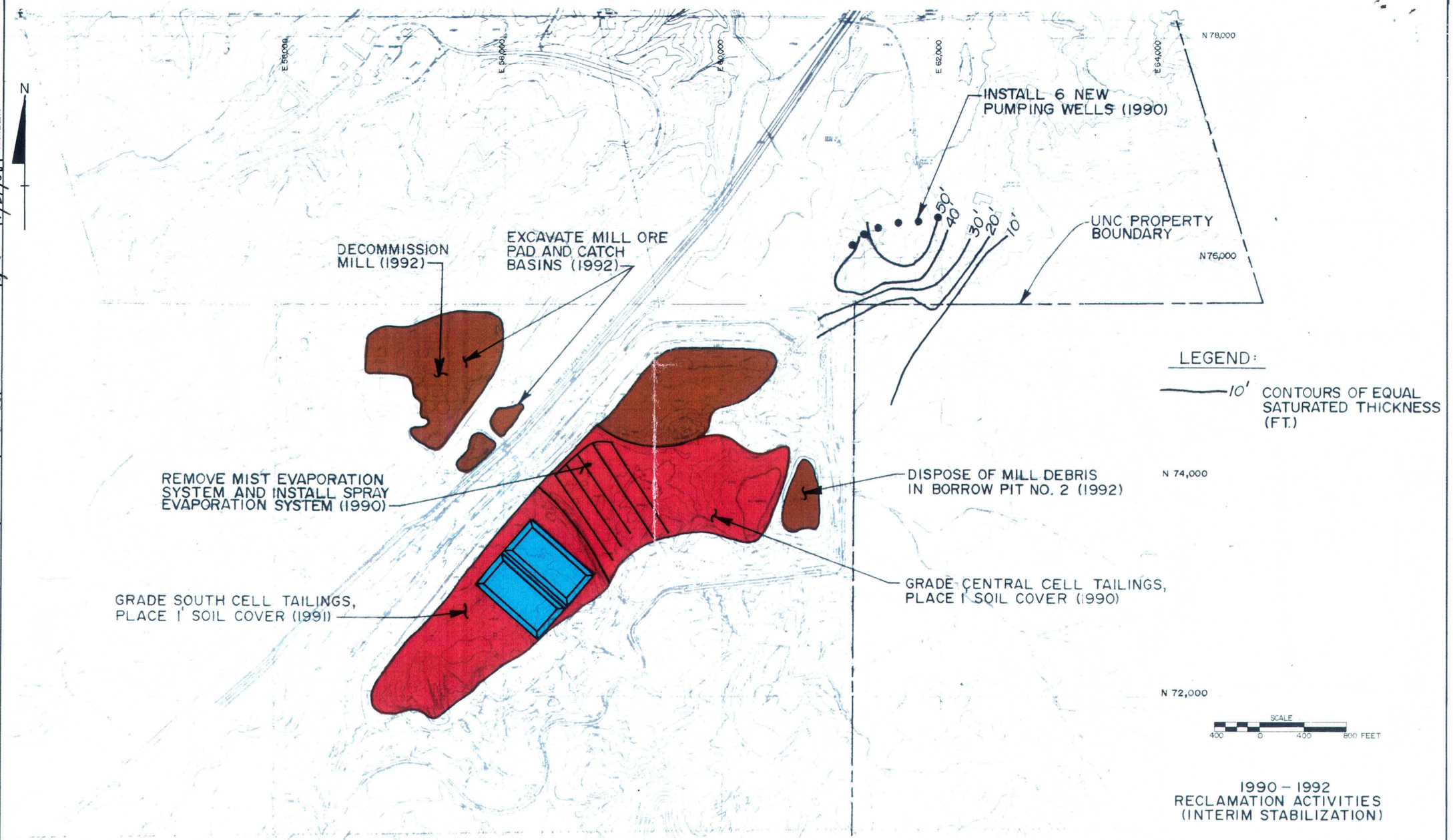
UNC MINING AND MILLING
GALLUP, NEW MEXICO

DATE: 7-12-88	FIGURE 5	DRAWING NUMBER
SCALE: NTS		86-060-A132

DRAWN BY	R.H.	CHECKED BY		DRAWING NUMBER	86-060-A132
	7-12-88	APPROVED BY			

REVISIONS

NO.	DATE



1990 – 1992
RECLAMATION ACTIVITIES
(INTERIM STABILIZATION)

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

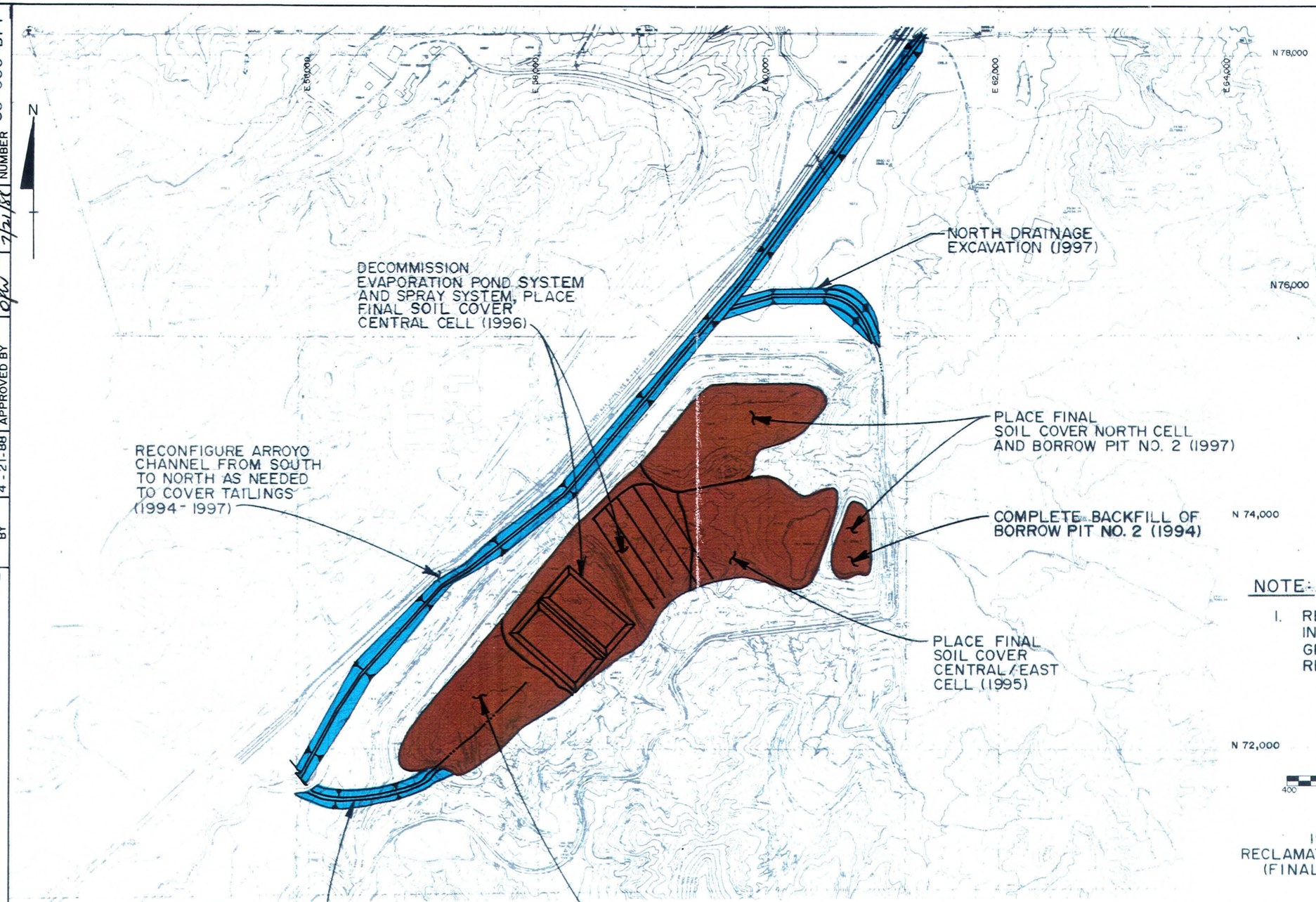
REFERENCE:
TOPOGRAPHIC MAP OF SEC. 2, T 16 N., R 16 W., N.M.P.M. & VICINITY, PROVIDED BY UNITED NUCLEAR CORPORATION, GALLUP, NEW MEXICO. DATED MAY 1, 1978 SCALE 1" = 400'.

DATE: 4-21-88	FIGURE 6	DRAWING NUMBER
SCALE: AS SHOWN		86-060-B75

RM86-060-E1a
RM86-060-E1b
86-060-B71

REVISIONS	NO.	DATE	DRAWN BY	T.C.	4-21-88	CHECKED BY	APPROVED BY	DRAWING NUMBER	86-060-B75
			B71						

86-060-B71



NOTE:

1. RECLAMATION ACTIVITIES IN 1993 CONSIST OF GROUND WATER REMEDIATION.

1993 - 1997
RECLAMATION ACTIVITIES
(FINAL RECLAMATION)

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

REFERENCE:
TOPOGRAPHIC MAP OF SEC. 2, T. 16 N., R. 16 W., N.M.P.M. & VICINITY. PROVIDED BY UNITED NUCLEAR CORPORATION, GALLUP, NEW MEXICO. DATED MAY 1, 1978 SCALE: 1" = 400'.

REVISIONS	NO.	DATE	DRAWN BY	DJR	4-21-88	CHECKED BY	APPROVED BY	DRAWING NUMBER	86-060-B74
	B71								

DATE: 4-21-88
SCALE: AS SHOWN
FIGURE 7
DRAWING NUMBER 86-060-B74

86-060-B71

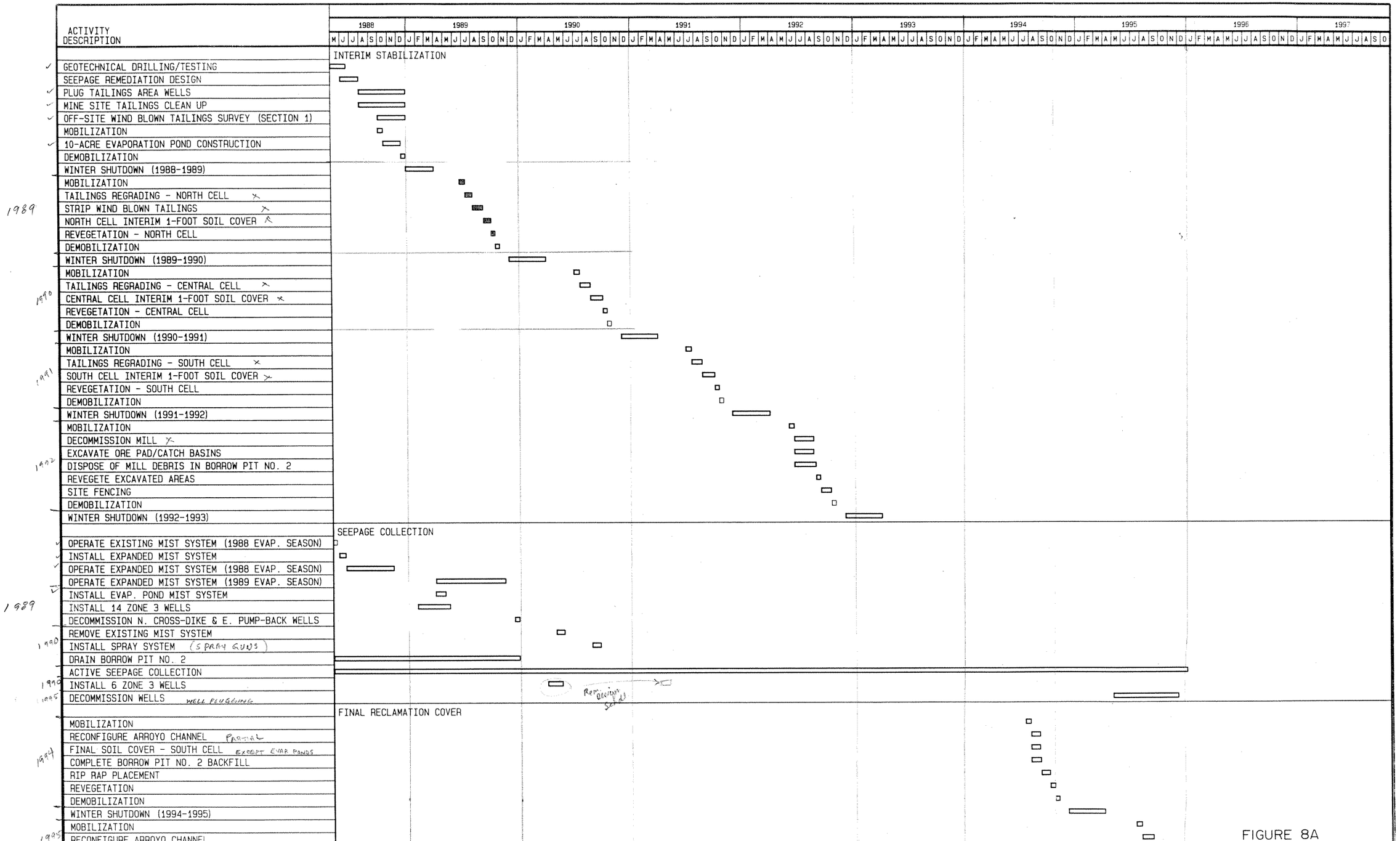


FIGURE 8A

Activity Bar/Early Dates
Critical Activity
Progress Bar

Primavera Systems, Inc. 1984, 1985, 1986, 1987

Project Start : 2MAY88
Project Finish: 1NOV97

CANONIE ENVIRONMENTAL SERVICES CORP.
UNC INT. STABILIZATION & FINAL RECL.
BAR CHART

Doesn't correlate to cash flow spreads long year
8 04/22/88

Sheet 1 of 2

Data Date: 2MAY88
Plot Date: 25JUL88

UNC CHURCH ROCK MILL TAILINGS

Date	Revision	Checked	Approved

ACTIVITY DESCRIPTION
FINAL SOIL COVER - CENTRAL/EAST CELL
RIP RAP PLACEMENT
1995 REVEGETATION
DEMOBILIZATION
WINTER SHUTDOWN (1995-1996)
MOBILIZATION
EVAPORATION POND CLOSURE
CONSTRUCT SOUTH DRAINAGE CHANNEL
RECONFIGURE ARROYO CHANNEL
1996 SOIL COVER - CENTRAL CELL
REVEGETATION
DEMOBILIZATION
WINTER SHUTDOWN (1996-1997)
MOBILIZATION
RECONFIGURE ARROYO CHANNEL
FINAL SOIL COVER - NORTH CELL
RUNOFF CONTROL DITCH
1997 RIP RAP PLACEMENT
NORTH DRAINAGE EXCAVATION
RIP RAP PLACEMENT (NORTH DRAINAGE)
REVEGETATION
SITE FENCING
DEMOBILIZATION

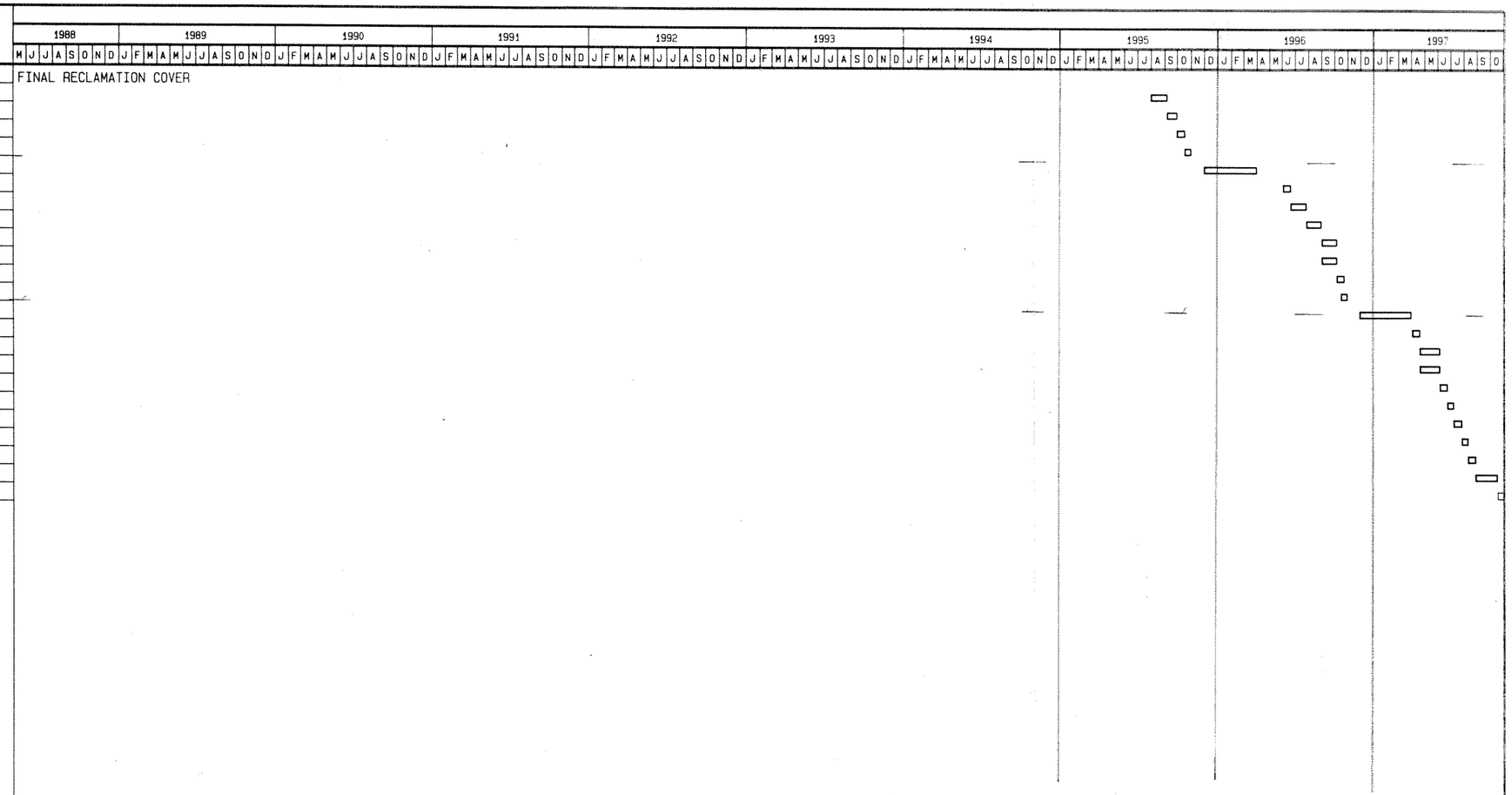


FIGURE 8B

Activity Bar/Early Dates
Critical Activity
Progress Bar

Primavera Systems, Inc. 1984, 1985, 1986, 1987

Project Start : 2MAY88
Project Finish: 1NOV97

CANONIE ENVIRONMENTAL SERVICES CORP.
UNC INT. STABILIZATION & FINAL RECL.
BAR CHART

Sheet 2 of 2

Data Date: 2MAY88
Plot Date: 25JUL88

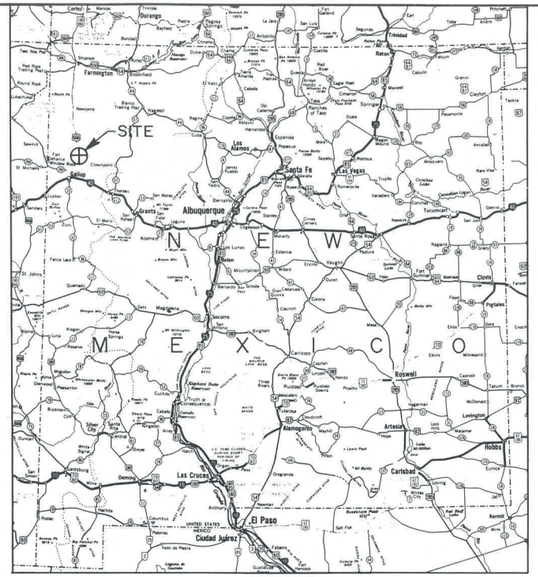
UNC CHURCH ROCK MILL TAILINGS

Date	Revision	Checked	Approved

APPENDIX A

APPENDIX A

GROUND WATER REMEDIATION SYSTEM CONSTRUCTION DRAWINGS

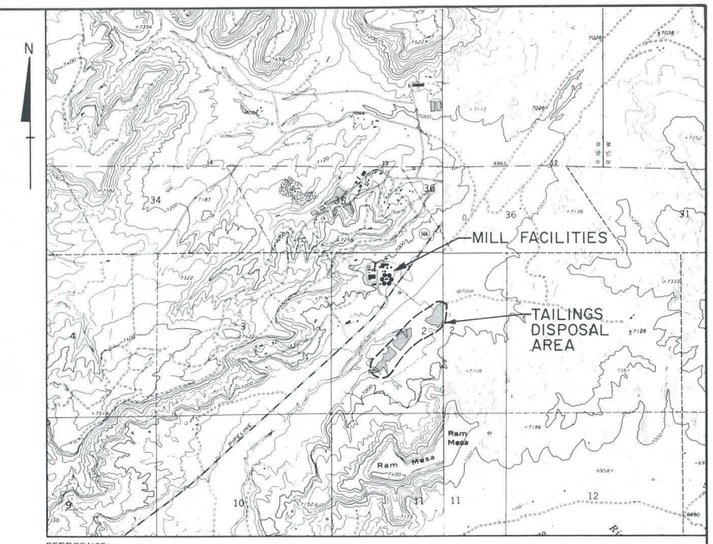


VICINITY MAP

SCALE
50 0 50 100 MILES

INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	TITLE
SHEET 1 of 6	86-060-E83	TITLE SHEET
SHEET 2 of 6	86-060-E84	PLAN VIEW - SEEPAGE REMEDIATION SYSTEM
SHEET 3 of 6	86-060-E90	PLAN VIEW-EVAPORATION POND
SHEET 4 of 6	86-060-E91	EVAPORATION POND AREA SUBSURFACE CROSS SECTIONS
SHEET 5 of 6	86-060-E95	DETAIL SHEET
SHEET 6 of 6	86-060-E94	DETAIL SHEET



REFERENCE:
- U.S.G.S. 7.5' TOPOGRAPHIC MAPS OF HARD GROUND FLATS AND OAK SPRING, NEW MEXICO. DATED: 1963. PHOTO REVISED IN 1979.

LOCATION MAP

SCALE
2000 0 2000 4000 FEET

CONSTRUCTION DRAWINGS
SEEPAGE REMEDIATION SYSTEM
MC KINLEY COUNTY, NEW MEXICO

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

TITLE SHEET

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

Canonie Environmental

DATE: 6-1-88	SHEET 1 of 6	DRAWING NUMBER
SCALE: AS SHOWN		86-060-E83

REVISIONS	NO.	DATE	ISSUED FOR CONSTRUCTION	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
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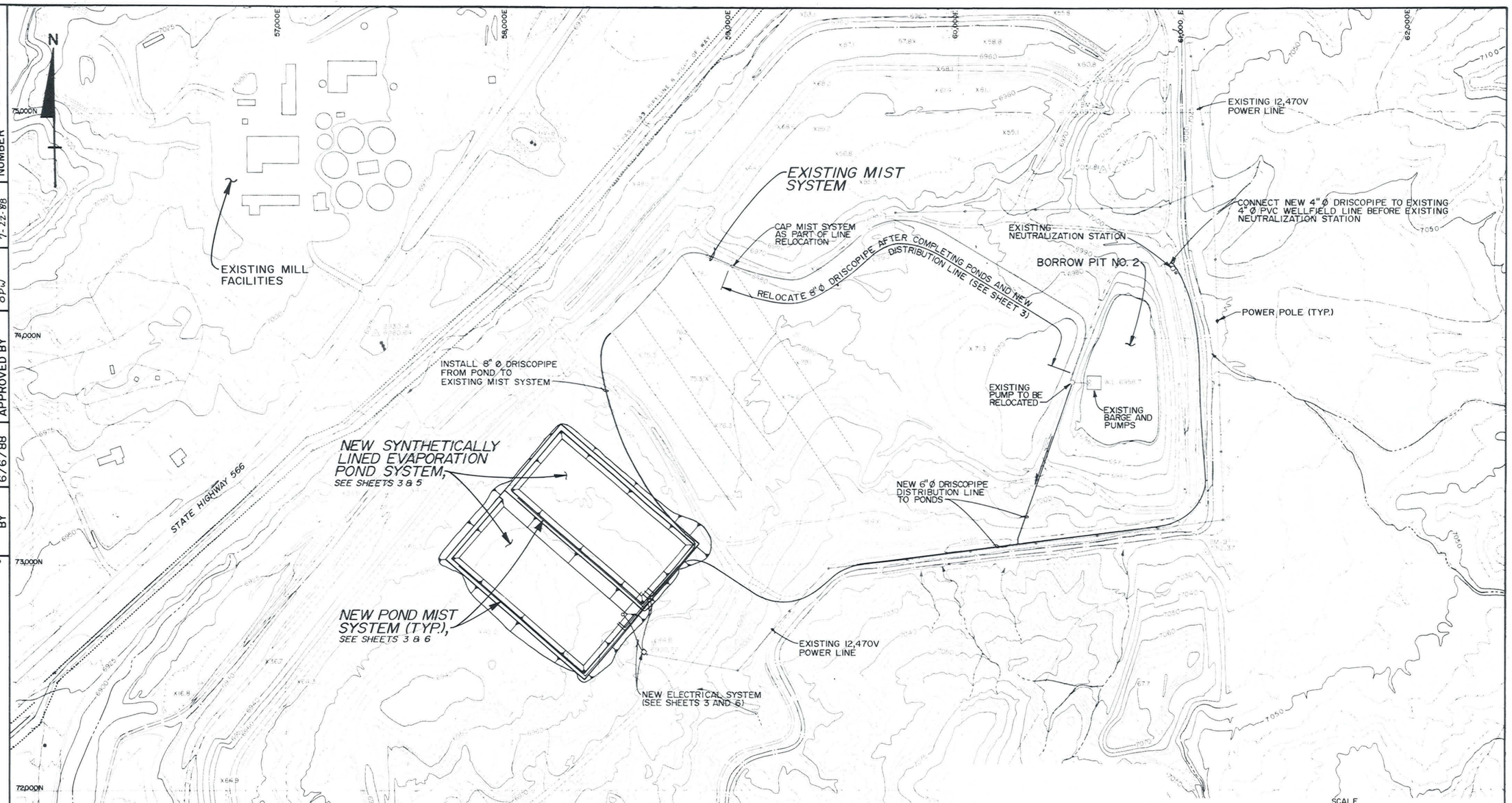


NOTES:

1. EACH POND IS DESIGNED TO HOLD 7 MILLION GALLONS AT MAXIMUM OPERATING POOL ELEVATION.
2. MINIMUM ALLOWABLE FREEBOARD IS SET AT 2 FEET ABOVE MAXIMUM OPERATING POOL ELEVATION.
3. SEE DETAILS E AND F, SHEET 5 FOR NORTH AND SOUTH POND AREA/CAPACITY CURVES.

REFERENCE

TOPOGRAPHIC MAP PROVIDED BY UNITED NUCLEAR CORPORATION. DRAWING NO. 1798-A DATED: MAY 1, 1985. SCALE: 1" = 200'.

PLAN VIEW - SEEPAGE REMEDIATION SYSTEM

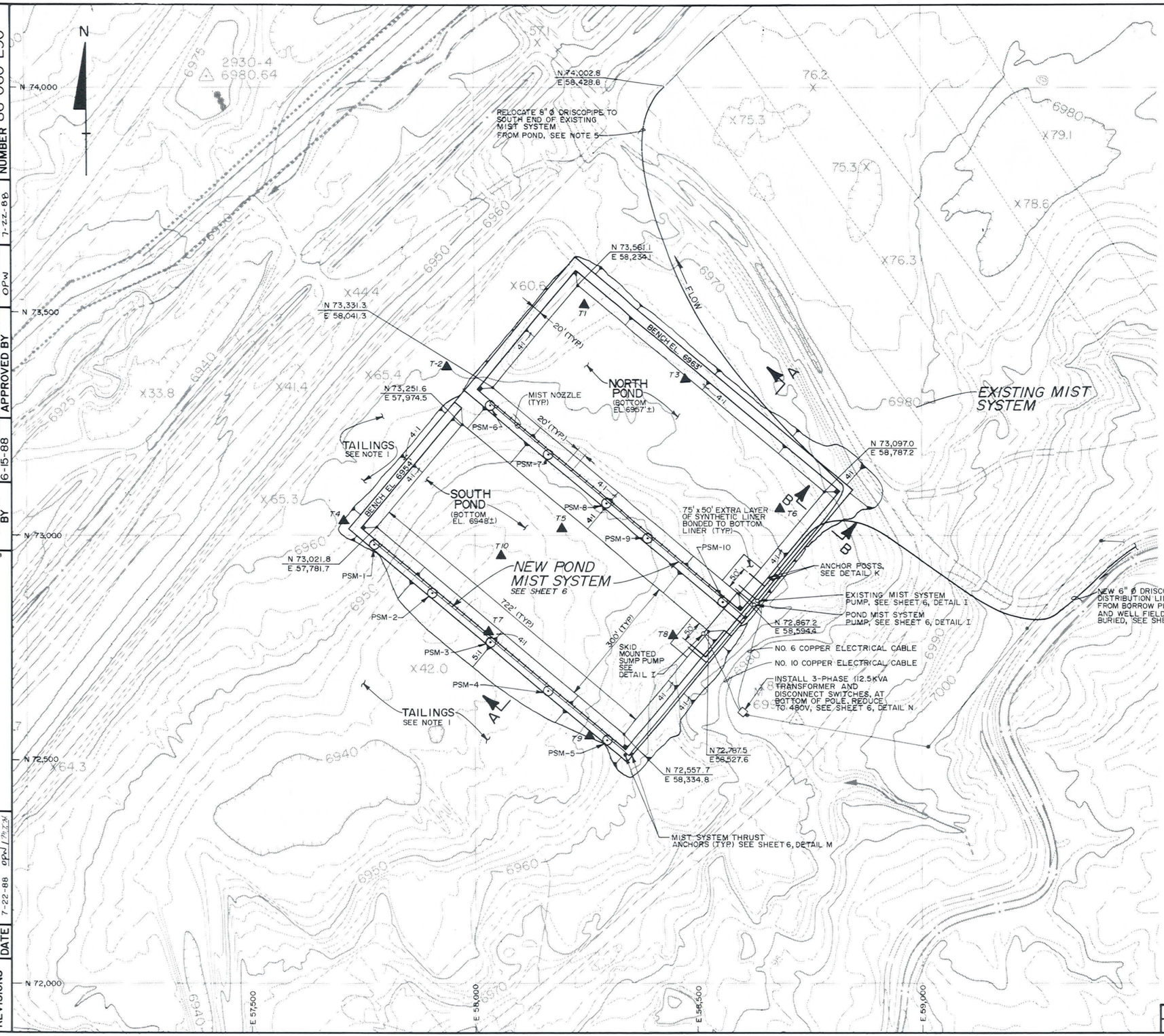
PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

Canonie Environmental

DATE: 6/6/88	SHEET 2 of 6	DRAWING NUMBER 86-060-E84
SCALE: AS SHOWN		

REVISIONS						
NO.	DATE	DRAWN BY	D.R. / T.C. 6/6/88	CHECKED BY	APPROVED BY	DRAWING NUMBER 86-060-E84
1	7-22-88					



LEGEND:

T3 ▲ TAILINGS DESIGN BORING LOCATION SEE SPECIFICATIONS FOR BORING LOGS

PSM-1 ⊙ SETTLEMENT MONUMENT LOCATION (TYP) SEE SHEET 5, DETAIL B

NOTES:

1. TAILINGS COMPRISED OF SLIMES AND SANDS. SLIMES ARE HYDRAULICALLY PLACED SILT AND CLAY SIZED PARTICLES, VERY WET AND LOW DENSITY. SANDS ARE LOW DENSITY, HYDRAULICALLY PLACED, FINE SANDS. SEE SHEET 4.
2. SEE SHEET 4 FOR SUBSURFACE CROSS SECTIONS.
3. SEE SHEET 5 FOR POND CROSS SECTIONS.
4. SEE SHEETS 5 AND 6 FOR DETAILS.
5. CONTRACTOR SHALL RELOCATE EXISTING 8" Ø DRISCOPIPE LINE WHICH CURRENTLY EXTENDS FROM BORROW PIT NO. 2 TO THE NORTH END OF THE EXISTING MIST SYSTEM. RELOCATION SHALL BE TO THE SOUTHWEST END OF THE EXISTING MIST SYSTEM CONNECTING THE MIST SYSTEM WITH THE NEW EVAPORATION POND SYSTEM AS SHOWN ON SHEET 6, DETAIL I.

PLAN VIEW
EVAPORATION POND

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

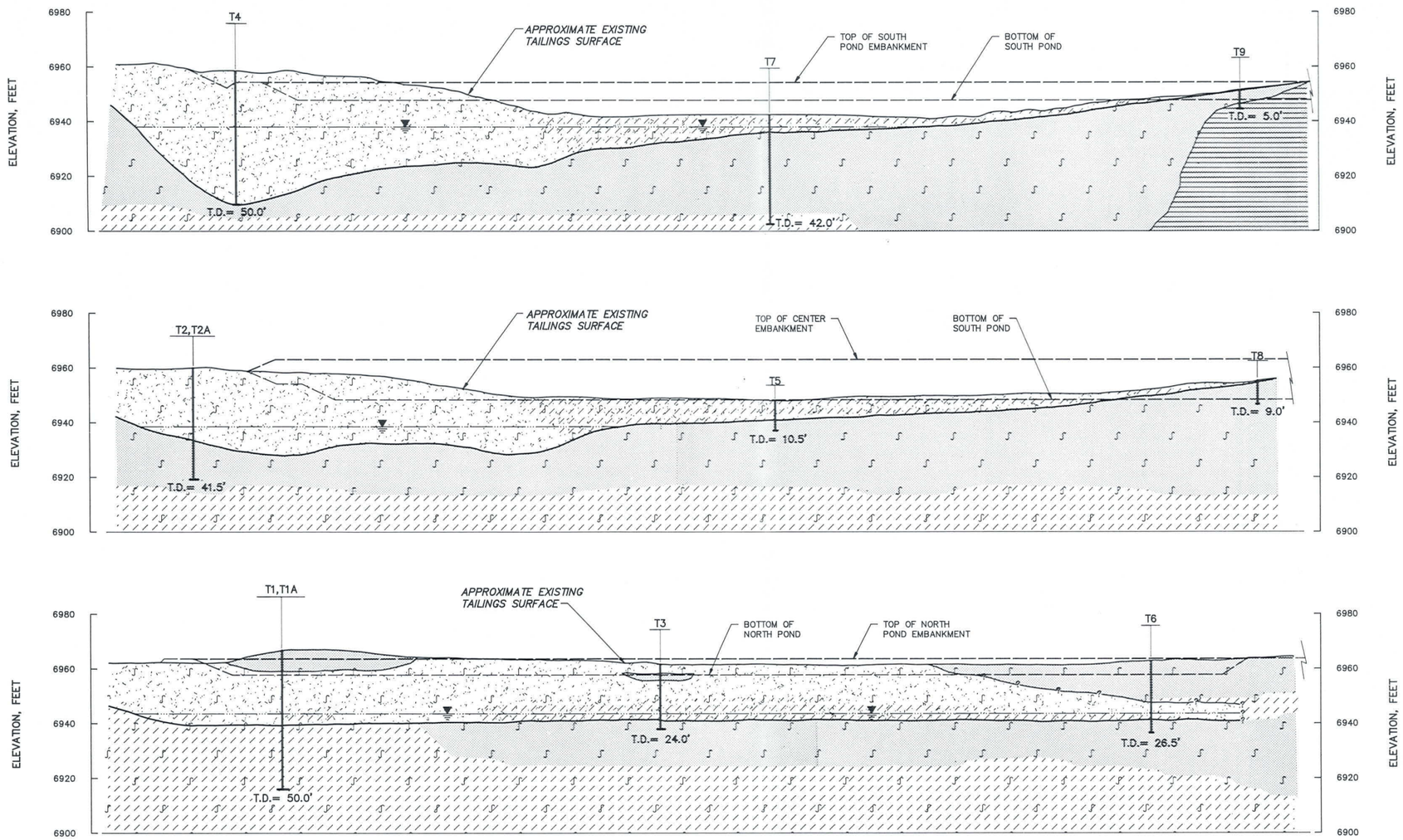
Canonie Environmental

DATE: 6-15-88	SHEET 3 of 6	DRAWING NUMBER
SCALE: AS SHOWN		86-060-E90

REVISIONS	NO.	DATE		
	1	7-22-88	ISSUED FOR CONSTRUCTION	

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
R.H. 6-15-88		OPW 7-22-88	86-060-E90

86-060-E88



NOTES:

1. SEE SHEET 3 FOR BORING LOCATIONS.
2. CROSS SECTIONS DEVELOPED FROM BORING LOGS (SEE CONSTRUCTION SPECIFICATIONS).
3. ALL BORINGS ARE PROJECTED.

LEGEND:

- CLAYEY SILT ALLUVIUM
- SILTY SAND/SANDY SILT ALLUVIUM
- SANDSTONE
- VERY LOOSE, DRY TO WET SAND/SILTY SAND/SANDY SILT TAILINGS
- VERY SOFT, WET CLAYEY SILT TAILINGS
- APPROXIMATE FREE WATER SURFACE IN TAILINGS
- T8 DESIGN BORING
- T.D. TOTAL DEPTH

SCALE
40 0 40 80 FEET

EVAPORATION POND AREA
SUBSURFACE CROSS SECTIONS
PREPARED FOR

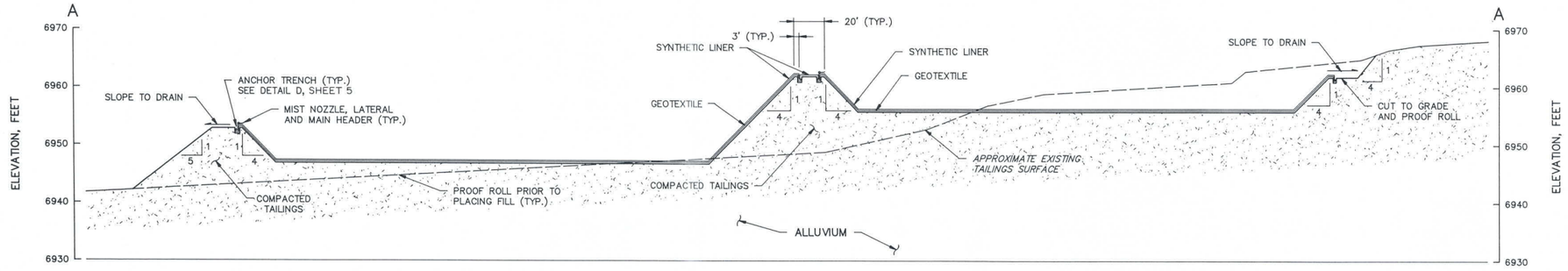
UNC MINING AND MILLING
GALLUP, NEW MEXICO

Canonie Environmental

DATE: 6-16-88	SHEET 4 of 6	DRAWING NUMBER 86-060-E91
SCALE: AS SHOWN		

REVISIONS	NO.	DATE	
	1	7-22-88	ISSUED FOR CONSTRUCTION

DRAWN BY	R.H.	6-16-88	CHECKED BY	mjy	7-22-88	DRAWING NUMBER 86-060-E91
			APPROVED BY	OPW	7-22-88	



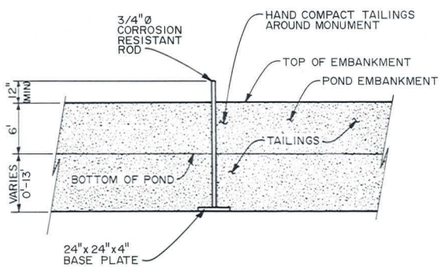
DETAIL A
SECTION A–A

VERTICAL SCALE: 10 0 10 FEET
HORIZONTAL SCALE: 40 0 40 FEET

VERTICAL EXAGGERATION = 4X

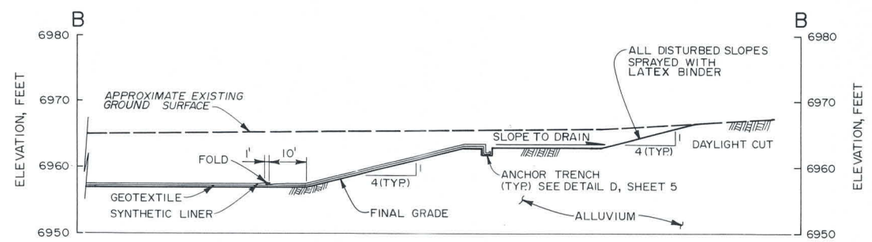
NOTE:

1. SEE SHEET 3 FOR CROSS SECTION LOCATION.
2. PERMANENT 50 LB. SAND BAGS (LINER MATERIAL) SHALL BE PLACED AT 50 FT. O.C. THROUGHOUT POND BOTTOM.



DETAIL B
SETTLEMENT MONUMENT (TYP.)

NOT TO SCALE

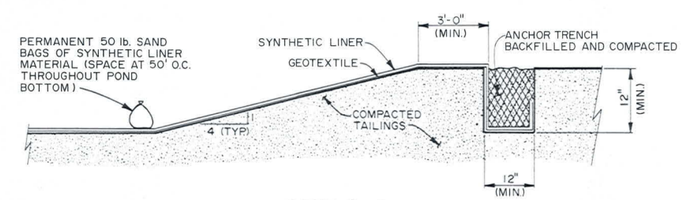


NOTE:

1. SEE SHEET 3 FOR CROSS SECTION LOCATION.

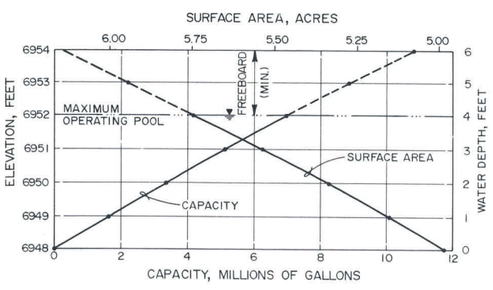
DETAIL C
SECTION B-B

SCALE: 10 0 10 20 FEET



DETAIL D
ANCHOR TRENCH DETAIL (TYP.)

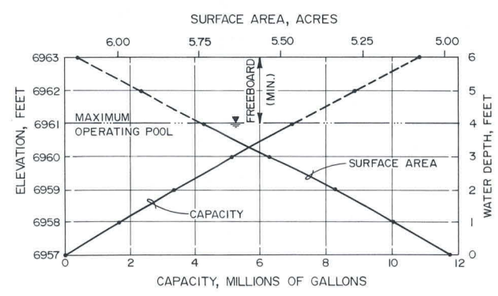
NOT TO SCALE



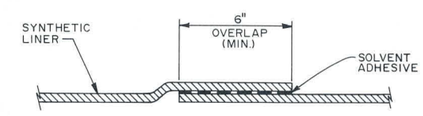
DETAIL E
AREA-CAPACITY CURVE
SOUTH POND

NOTE:

1. PMP IS 8.46 INCHES OF DIRECT RAINFALL ON POND SYSTEM.



DETAIL F
AREA-CAPACITY CURVE
NORTH POND



DETAIL G
SYNTHETIC LINER FIELD SEAM (TYP.)

NOT TO SCALE

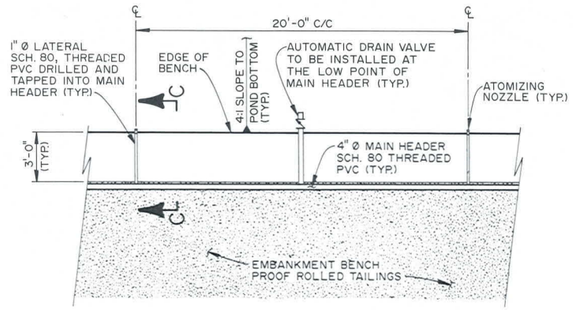
DETAIL SHEET
PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

Canonie Environmental

DATE: 6-17-88	SHEET 5 of 6	DRAWING NUMBER
SCALE: AS SHOWN		86-060-E95

REVISIONS					
NO.	DATE	DRAWN BY	CHECKED BY	DRAWING NUMBER	
		R.H.		86-060-E95	
		6-17-88			
			APPROVED BY		
			OPW		
1	7-22-88	ISSUED FOR CONSTRUCTION OPW	7-22-88		



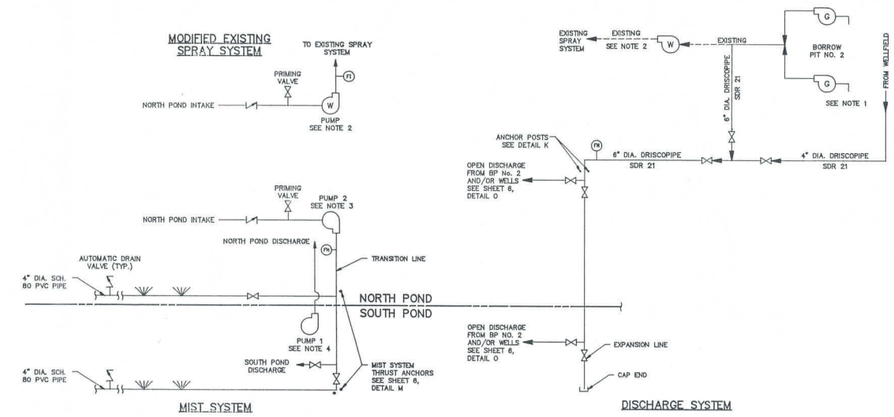
DETAIL H

PLAN VIEW OF MIST SYSTEM (TYP.)

NOT TO SCALE

NOTE:

1. SEE SHEET 5 FOR EMBANKMENT CONSTRUCTION DETAILS.



LEGEND:

- GATE VALVE
- PUMP
- TO BE RELOCATED
- TOTALIZING FLOW METER
- CHECK VALVE

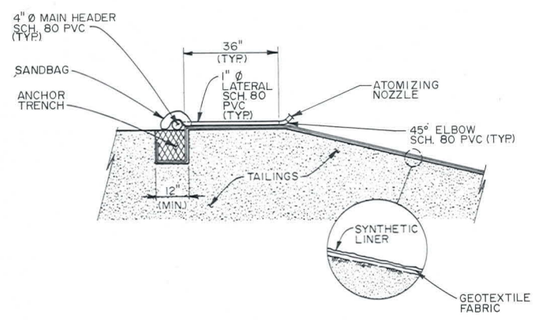
NOTES:

1. EXISTING 3-1/2" GAUGHER VERTICAL PUMPS (2).
2. EXISTING WORTHINGTON D-1000, 8x4x11A PUMP, RELOCATE TO EVAPORATION POND.
3. PUMP MUST PROVIDE 350 GPM AT 120' TDH. NPSHA IS APPROXIMATELY 22'.
4. SUMP PUMP MUST PROVIDE 200 GPM AT 25' TDH.
5. ALL PIPE IS 6" DIA. SCH. 80 PVC UNLESS OTHERWISE NOTED.
6. SYSTEMS HAVE BEEN SEPARATED FOR CLARITY. SEE SHEET 3 FOR ACTUAL LAYOUT.
7. SEE SHEET 6, DETAIL P FOR FLOW METER INSTALLATION.

DETAIL I

PIPING AND INSTRUMENTATION DIAGRAM (FINAL CONFIGURATION)

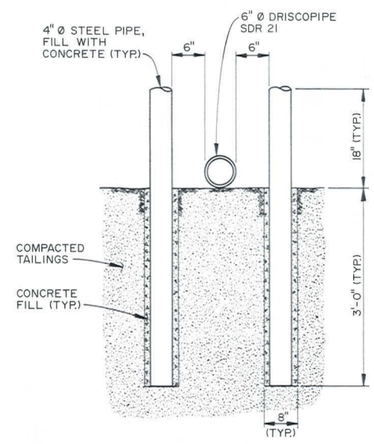
NOT TO SCALE



DETAIL J

SECTION C-C

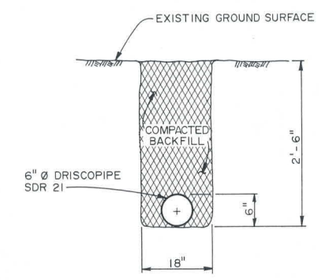
NOT TO SCALE



DETAIL K

DISCHARGE SYSTEM ANCHOR POSTS

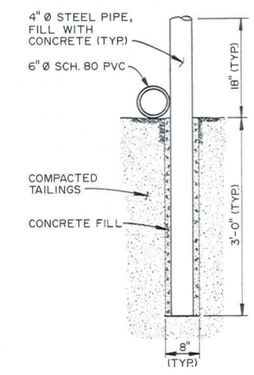
NOT TO SCALE



DETAIL L

DISTRIBUTION LINE BURIAL (TYP.)

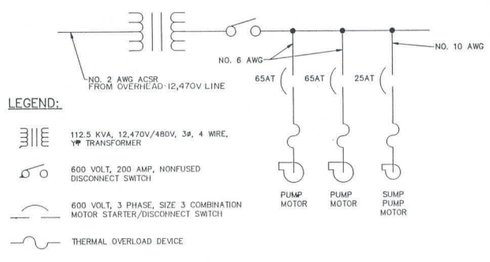
NOT TO SCALE



DETAIL M

MIST SYSTEM THRUST ANCHOR (TYP.)

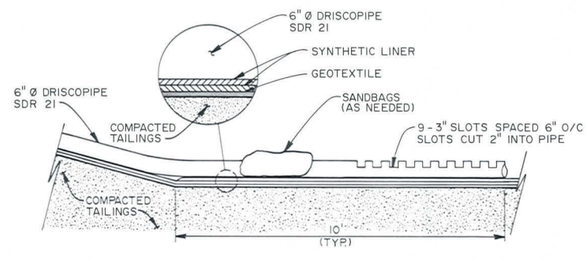
NOT TO SCALE



DETAIL N

PUMP ELECTRICAL SYSTEM SCHEMATIC

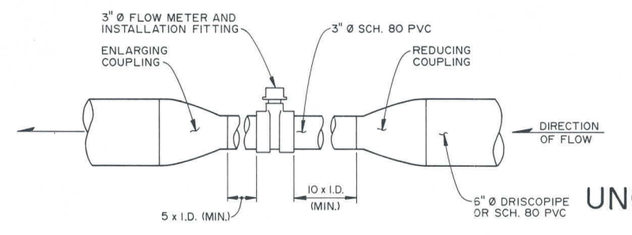
NOT TO SCALE



DETAIL O

DISCHARGE SYSTEM OUTLET (TYP.)

NOT TO SCALE



DETAIL P

FLOW METER INSTALLATION (TYP.)

NOT TO SCALE

DETAIL SHEET

PREPARED FOR

UNC MINING AND MILLING

GALLUP, NEW MEXICO

CanonieEnvironmental

DATE: 6-17-88	SHEET 6 of 6	DRAWING NUMBER
SCALE: N.T.S.		86-060-E94

REVISIONS	NO.	DATE	
	1	7-22-88	ISSUED FOR CONSTRUCTION

DRAWN BY	R.H.	6-17-88
CHECKED BY	OPW	7-22-88
APPROVED BY		
DRAWING NUMBER	86-060-E94	