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86-060-20

TECHNICAL SUPPORT FOR PROPOSED
MODIFICATION TO THE CHURCH ROCK SITE
TAILINGS RECLAMATION PLAN
NRC LICENSE SUA-1475

Prepared for:

United Nuclear Corporation

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| 1 | 86-060-E1030 | Proposed Amendments to Final Reclamation Plan South End |

TECHNICAL SUPPORT FOR PROPOSED MODIFICATION TO THE CHURCH ROCK SITE TAILINGS RECLAMATION PLAN NRC LICENSE SUA-1475

1.0 INTRODUCTION

United Nuclear Corporation (United Nuclear) is requesting a modification to the Church Rock Site Tailings Reclamation Plan as Approved by NRC March 1, 1991, License No. SUA-1475 (Reclamation Plan). This modification request is based on discussions between United Nuclear and the Nuclear Regulatory Commission (NRC) during a site visit. This document provides a discussion of the proposed modification as well as a revised figure which is enclosed for insertion into the approved Reclamation Plan dated March 1, 1991. The modification request summarized below is discussed in detail in Section 2.

It is proposed that recontouring plans for the area south of the buried jetty and west of the South Tailings Cell be altered. Instead of recontouring the entire area between the South Cell and the Pipeline Arroyo, recontouring will be concentrated in the areas necessary to ensure positive drainage away from the tailings cell and buried jetty. Natural contours will be allowed to remain in place in the areas that will not sacrifice the surface drainage characteristics required by the Reclamation Plan.

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2.0 REGRADING SOUTH OF THE BURIED JETTY

2.1 Introduction

This proposed modification addresses regrading of the area shown on Figure 1, which is located west of the reclaimed tailings disposal area and south of Station 65 + 00. The engineered contours require that a large volume of soil must be moved at substantial cost. These contours were developed to promote positive drainage away from the tailings area. However, review of the existing contours indicates that less extensive contouring to smooth out irregularities in the existing surface will provide comparable drainage characteristics.

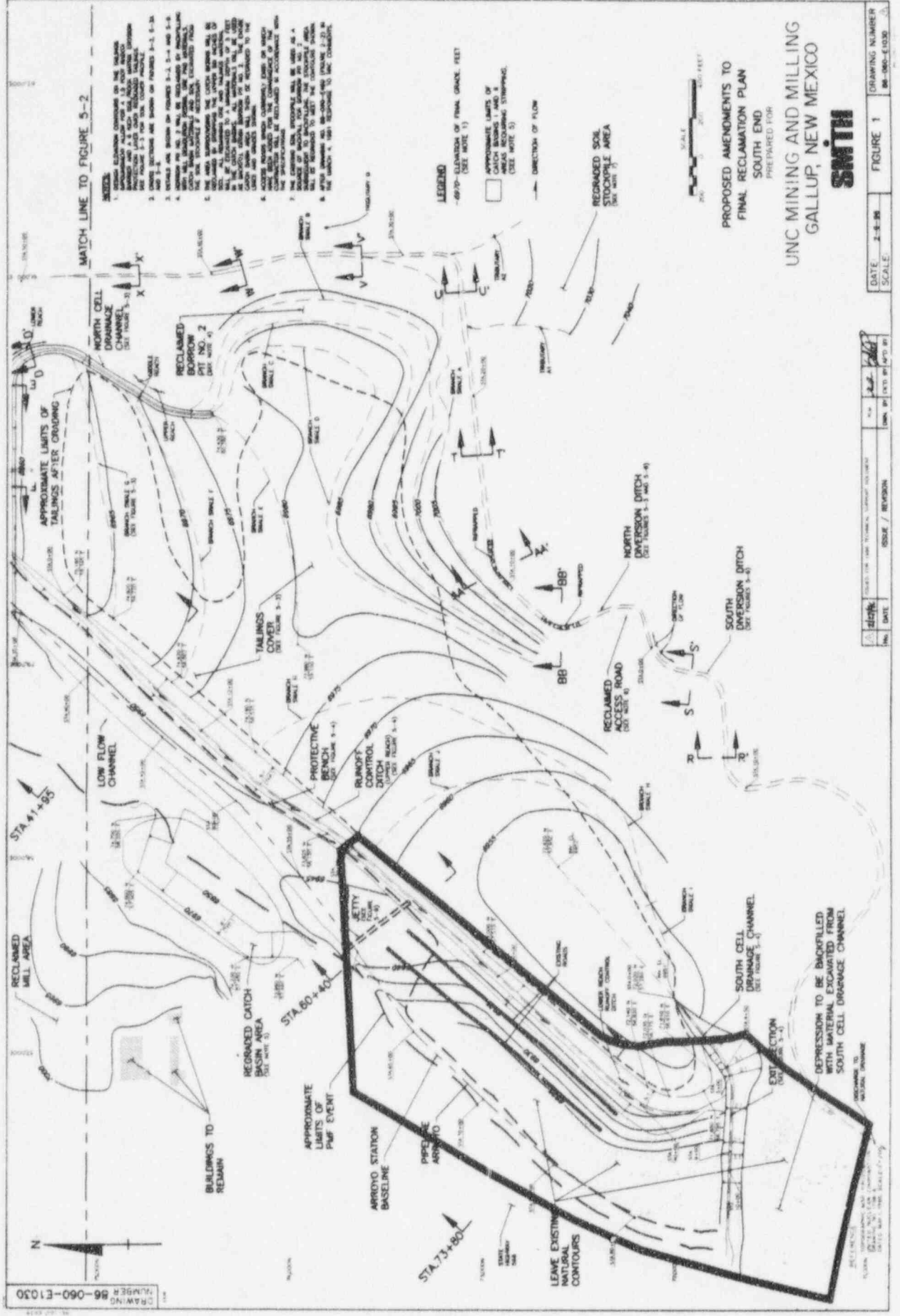
2.2 Discussion

Figure 1 shows that the engineered contours result in a slope to the west and southwest allowing runoff to drain from the tailings to the arroyo. The engineered slope ranges between 1V:10H and 1V:40H in these areas. The existing natural contours produce the same general effect as the engineered contours with the exception that runoff drains to the south-southwest.

Removal of the existing roadways located at the base of the recontoured tailings embankment (highlighted on Figure 1) will smooth out the surface irregularities and allow for a smooth transition for surface drainage from the tailings embankment to the natural surface drainage in this area. Also, the depression located south of the South Cell Drainage Channel (SCDC) will be backfilled with material excavated from the SCDC. The backfill will be contoured to maintain the natural drainage towards the SCDC and the Arroyo. This approach reduces the amount of required earthwork without sacrificing the surface drainage characteristics of the Reclamation Plan.

2.3 Revised Pages

A revised Figure 5-1, showing the approximate final contours for this area is included as an attachment.



UNC MINING AND MILLING
GALLUP, NEW MEXICO

PROPOSED AMENDMENTS TO
FINAL RECLAMATION PLAN
SOUTH END
PREPARED FOR
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ATTACHMENT

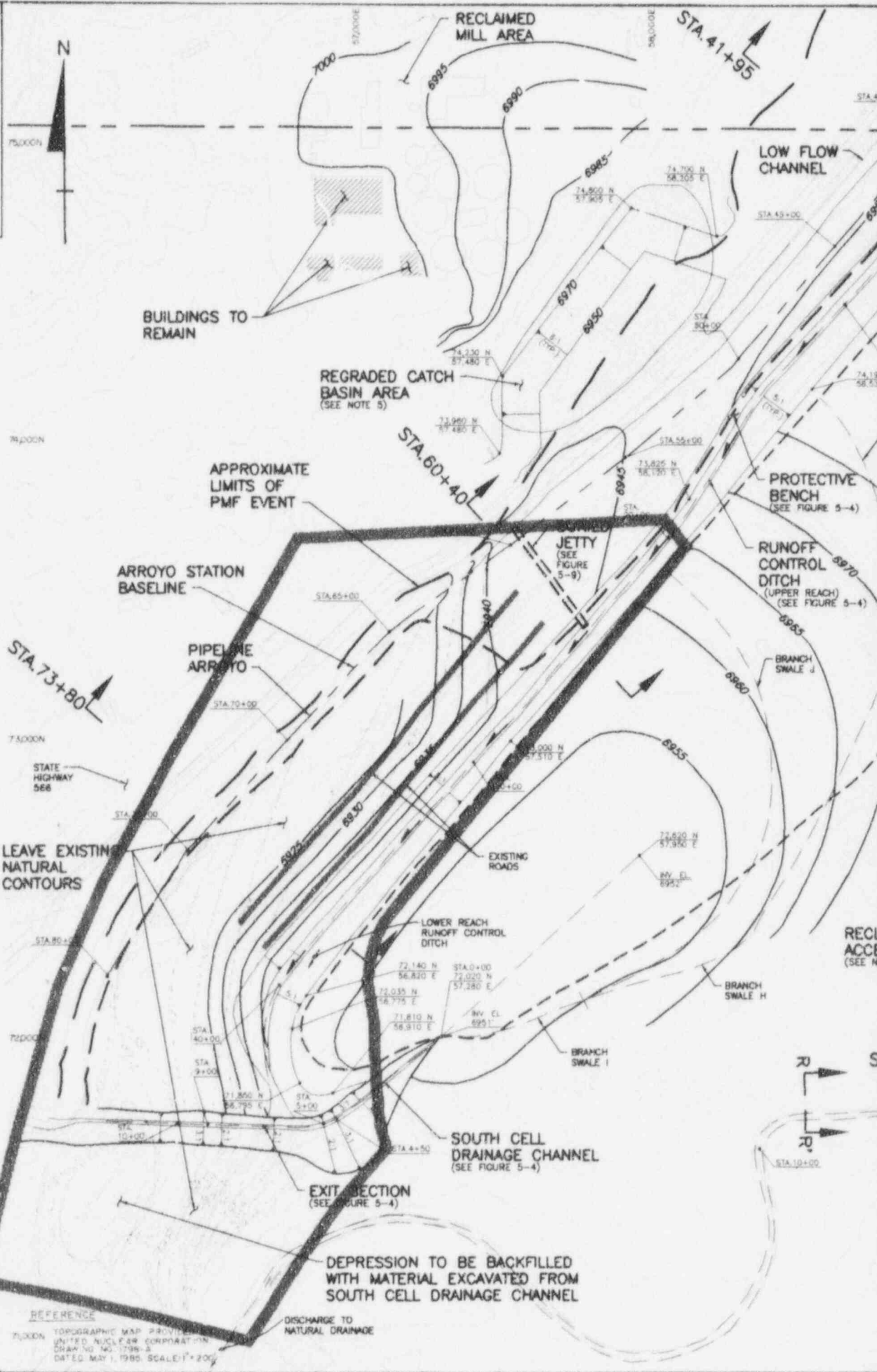


TAILINGS RECLAMATION PLAN

REVISION CONTROL SHEET

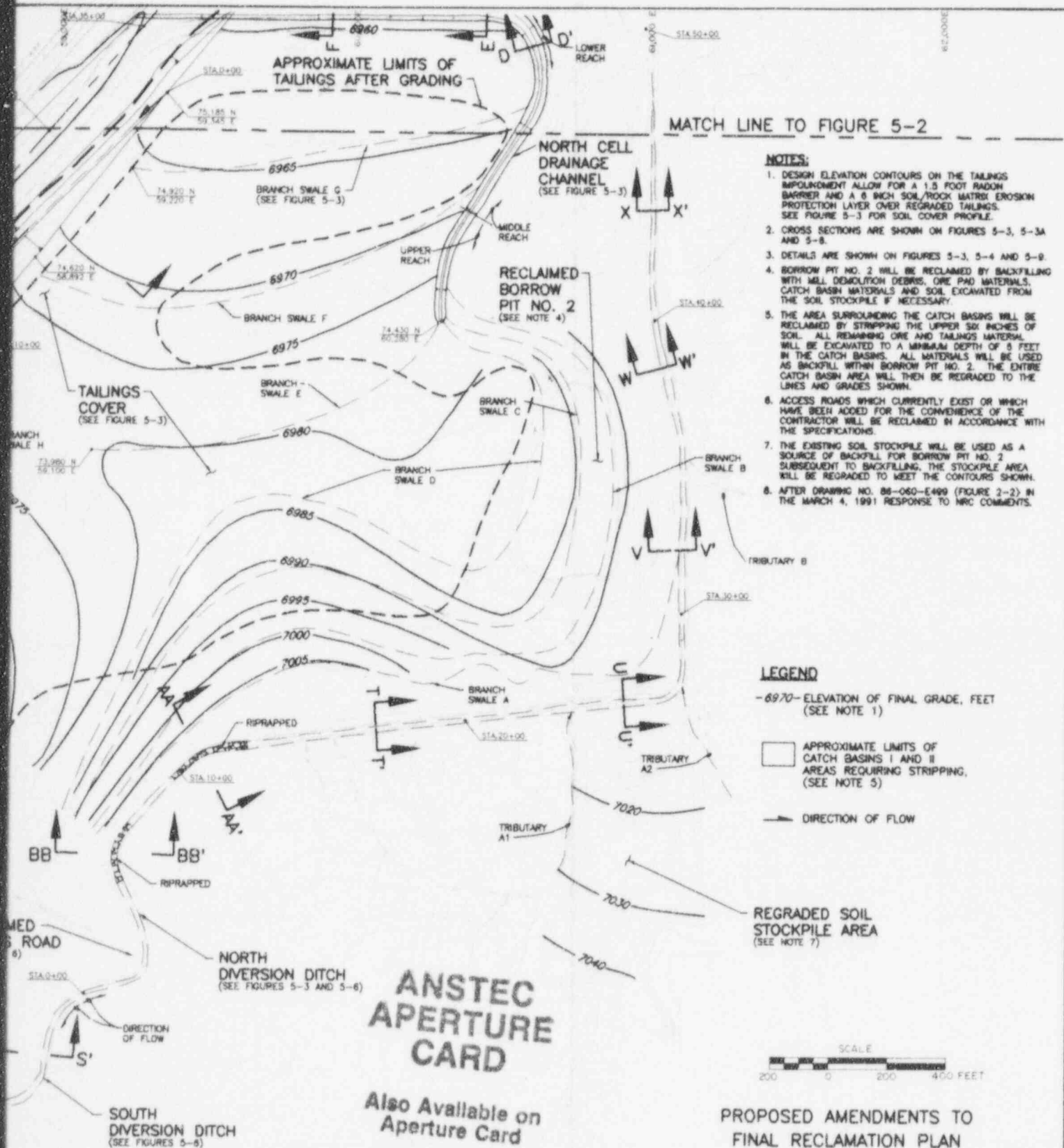
| Chapter/Section | Revision | Pages | Effective Date |
|-----------------|----------|-------|----------------|
| Figure 5-1 | 1.0 | NA | |

DRAWING NUMBER 86-060-E1030



REFERENCE

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



NOTES:

- DESIGN ELEVATION CONTOURS ON THE TAILINGS IMPOUNDMENT ALLOW FOR A 1.5 FOOT RADON BARRIER AND A 6 INCH SOIL/ROCK MATRIX EROSION PROTECTION LAYER OVER REGRADED TAILINGS. SEE FIGURE 5-3 FOR SOIL COVER PROFILE.
- CROSS SECTIONS ARE SHOWN ON FIGURES 5-3, 5-3A AND 5-8.
- DETAILS ARE SHOWN ON FIGURES 5-3, 5-4 AND 5-9.
- BORROW PIT NO. 2 WILL BE RECLAIMED BY BACKFILLING WITH MILL DEMOLITION DEBRIS, ORE PAD MATERIALS, CATCH BASIN MATERIALS AND SOIL EXCAVATED FROM THE SOIL STOCKPILE IF NECESSARY.
- THE AREA SURROUNDING THE CATCH BASINS WILL BE RECLAIMED BY STRIPPING THE UPPER 50 INCHES OF SOIL. ALL REMAINING ORE AND TAILINGS MATERIALS WILL BE EXCAVATED TO A MINIMUM DEPTH OF 5 FEET IN THE CATCH BASINS. ALL MATERIALS WILL BE USED AS BACKFILL WITHIN BORROW PIT NO. 2. THE ENTIRE CATCH BASIN AREA WILL THEN BE REGRADED TO THE LINES AND GRADES SHOWN.
- ACCESS ROADS WHICH CURRENTLY EXIST OR WHICH HAVE BEEN ADDED FOR THE CONVENIENCE OF THE CONTRACTOR WILL BE RECLAIMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- THE EXISTING SOIL STOCKPILE WILL BE USED AS A SOURCE OF BACKFILL FOR BORROW PIT NO. 2 SUBSEQUENT TO BACKFILLING. THE STOCKPILE AREA WILL BE REGRADED TO MEET THE CONTOURS SHOWN.
- AFTER DRAWING NO. 86-060-E499 (FIGURE 2-2) IN THE MARCH 4, 1991 RESPONSE TO NRC COMMENTS.

LEGEND

-6970- ELEVATION OF FINAL GRADE, FEET
(SEE NOTE 1)

APPROXIMATE LIMITS OF
CATCH BASINS I AND II
AREAS REQUIRING STRIPPING,
(SEE NOTE 5)

DIRECTION OF FLOW

REGRADED SOIL
STOCKPILE AREA
(SEE NOTE 7)

SCALE
200 0 200 400 FEET

PROPOSED AMENDMENTS TO
FINAL RECLAMATION PLAN
SOUTH END
PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

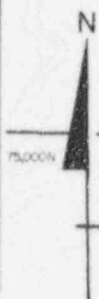
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9605090020-01

| 1/17/96 | ISSUED FOR 1996 TECHNICAL SUPPORT DOCUMENT | RLM | 2/2/96 |
|---------|--------------------------------------------|------------------|-------------------------|
| No. | DATE | ISSUE / REVISION | OWN. BY CK'D BY AP'D BY |

| | | |
|--------------|----------|----------------|
| DATE: 2-9-96 | FIGURE 1 | DRAWING NUMBER |
| SCALE: | | 86-060-E1030 |

0000-0000-0000-0000



REGRADED CATCH
BASIN AREA
(SEE NOTE 5)

STA. 60+4

PIPELINE
ARROYO -

STA. 73+80

STATE —
HIGHWAY
568

BURIED
JETTY
(SEE
FIGURE
5-9)

PROTECTIVE
BENCH
(SEE FIGURE 5-4)

63-70
RUNOFF
CONTROL
DITCH
(UPPER REACH)
(SEE FIGURE 5-4)

BRANCH
SWALE J

✓ LOWER REACH
RUNOFF CONTROL

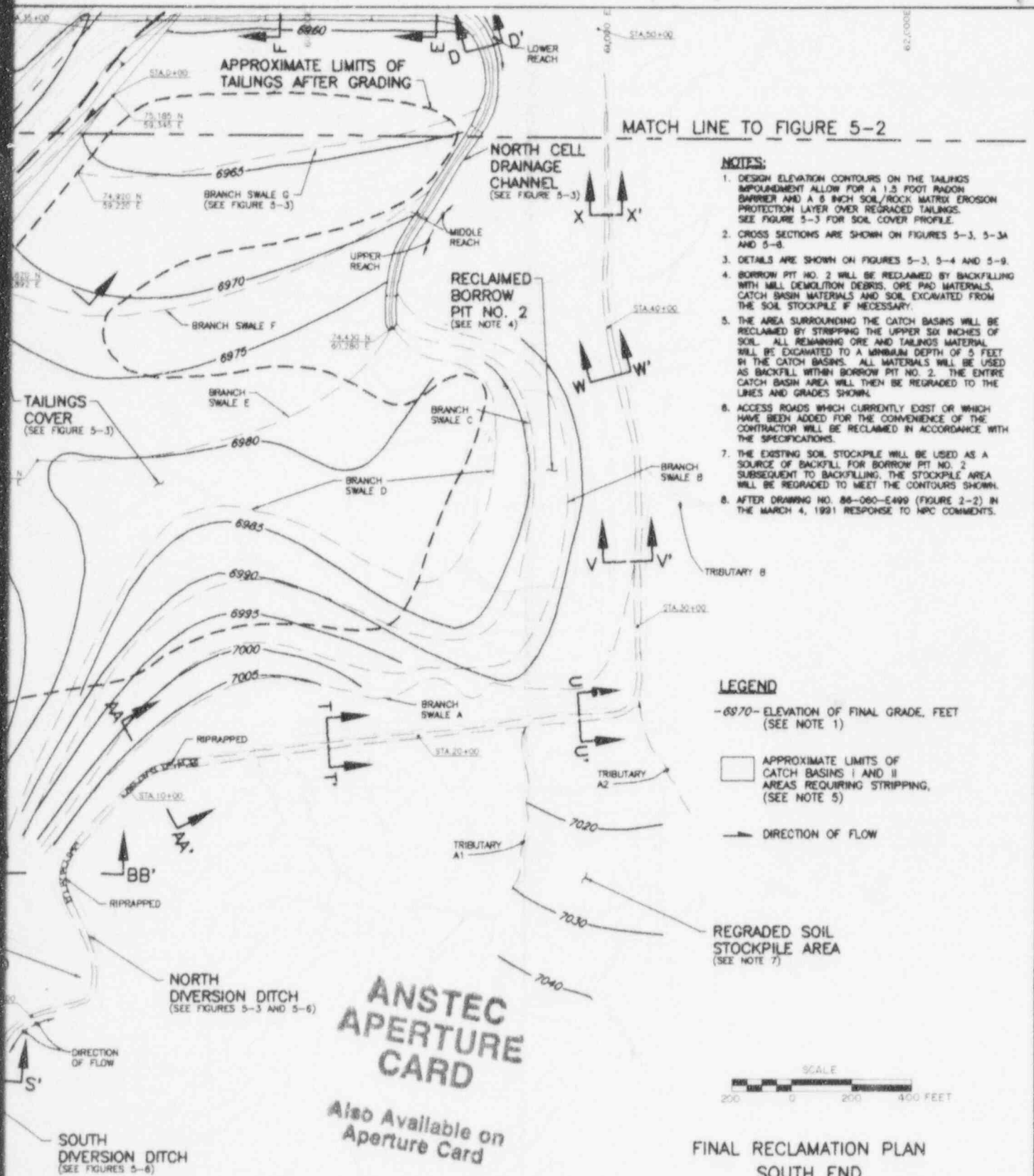
SOUTH CELL
DRAINAGE CHANNEL
(SEE FIGURE 5-4)

EXIT SECTION
(SEE FIGURE 5-4)

REFERENCE

FLOOD. TOPOGRAPHIC MAP PROVIDED BY
UNITED NUCLEAR CORPORATION
DRAWING NO. 798-A
DATED MAY 1, 1965. SCALE: 1"=200'

DISCHARGE TO
NATURAL DRAINAGE



NOTES:

- DESIGN ELEVATION CONTOURS ON THE TAILINGS IMPOUNDMENT ALLOW FOR A 1.5 FOOT RADON BARRIER AND A 6 INCH SOIL/ROCK MATRIX EROSION PROTECTION LAYER OVER REGRADED TAILINGS. SEE FIGURE 5-3 FOR SOIL COVER PROFILE.
- CROSS SECTIONS ARE SHOWN ON FIGURES 5-3, 5-3A AND 5-6.
- DETAILS ARE SHOWN ON FIGURES 5-3, 5-4 AND 5-9.
- BORROW PIT NO. 2 WILL BE RECLAIMED BY BACKFILLING WITH MILL DEMOLITION DEBRIS, ORE PAD MATERIALS, CATCH BASIN MATERIALS AND SOIL EXCAVATED FROM THE SOIL STOCKPILE IF NECESSARY.
- THE AREA SURROUNDING THE CATCH BASINS WILL BE RECLAIMED BY STRIPPING THE UPPER SIX INCHES OF SOIL. ALL REMAINING ORE AND TAILINGS MATERIAL WILL BE EXCAVATED TO A MINIMUM DEPTH OF 5 FEET IN THE CATCH BASINS. ALL MATERIALS WILL BE USED AS BACKFILL WITHIN BORROW PIT NO. 2. THE ENTIRE CATCH BASIN AREA WILL THEN BE REGRADED TO THE LINES AND GRADES SHOWN.
- ACCESS ROADS WHICH CURRENTLY EXIST OR WHICH HAVE BEEN ADDED FOR THE CONVENIENCE OF THE CONTRACTOR WILL BE RECLAIMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- THE EXISTING SOIL STOCKPILE WILL BE USED AS A SOURCE OF BACKFILL FOR BORROW PIT NO. 2. SUBSEQUENT TO BACKFILLING, THE STOCKPILE AREA WILL BE REGRADED TO MEET THE CONTOURS SHOWN.
- AFTER DRAWING NO. 86-060-E409 (FIGURE 2-2) IN THE MARCH 4, 1991 RESPONSE TO NPC COMMENTS.

LEGEND

- 6970- ELEVATION OF FINAL GRADE, FEET (SEE NOTE 1)
- APPROXIMATE LIMITS OF CATCH BASINS I AND II AREAS REQUIRING STRIPPING, (SEE NOTE 5)
- DIRECTION OF FLOW



FINAL RECLAMATION PLAN SOUTH END

PREPARED FOR

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GALLUP, NEW MEXICO

CanonieEnvironmental

| 4/17/91 | REVISED FOR 1991 RECLAMATION PLAN AMENDMENT | RLM | WR | SAB |
|---------|---------------------------------------------|------------------|----------|---------|
| 9-8-92 | ISSUED TO CORRECT CATCH BASIN COORDINATES | MTH | DNK | DNK |
| 5-24-93 | ISSUED FOR 1991 RECLAMATION PLAN | MTH | DNK | DNK |
| No. | DATE | ISSUE / REVISION | | |
| | | OWN. BY | CHK'D BY | AP'D BY |

| | | |
|--------------|------------|----------------|
| DATE: 6-7-91 | FIGURE 5-1 | DRAWING NUMBER |
| SCALE: | | 86-060-E544 |

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