

July
2000

Los Alamos

NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: July 27, 2000

In Reply Refer To: ESH-18/WQ&H:00-0252

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Ms. Sandy Spon
Surface Water Quality Bureau
N.M. Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Mr. Jim Wood
Regulatory Branch
Albuquerque District Corps of Engineers
4191 Jefferson Plaza NE
Albuquerque, NM 87109

**SUBJECT: SUPPLEMENTAL INFORMATION-EMERGENCY CONTROL MEASURES
TO REDUCE POTENTIAL FLOODING AND SOIL EROSION ON LANL
PROPERTY DUE TO THE CERRO GRANDE WILDFIRE**

Dear Ms. Spon and Mr. Wood:

On June 8, 2000, a copy of the 404/401 application for the Los Alamos National Laboratory's "Emergency Control Measures To Reduce The Potential For Flooding And Soil Erosion On LANL Property Due To The Cerro Grande Wildfire Project" was submitted to your agencies. The projects identified in the application are necessary to control sediment transport from storm events, to help reduce flooding, and to reduce further fire threats. On June 23, 2000, Andrew Rosenau, U. S. Corps of Engineers (COE), assigned Action No. 2000-00420 to this activity and authorized the work under Nationwide Permit (NWP) No. 37. The New Mexico Environment Department assigned File #2000-42 to this activity in their conditional 401 certification of NWP No. 37. On July 7, 2000, the Laboratory submitted supplemental information to the original application. The supplemental information documented activities recommended by the United States Forest Services's Burned Area Emergency Rehabilitation (BAER) Team, COE projects, and other dredge and fill activities conducted by the Laboratory. Based on my telephone conversations on July 15, 17, and 20, 2000, with COE representatives, it is my understanding that additional permit reviews and certifications may be required. The following supplemental information is provided to assist you in your review:

- 1) **Enclosure 1:** Chronology of the Laboratory's 404/401 submittals and associated documentation.
- 2) **Enclosure 2:** Corps of Engineer's Dredge and Fill Activities at Los Alamos National Laboratory. List of all COE dredge and fill activities at the Laboratory, to date.
- 3) **Enclosure 3:** Dredge and Fill Activities by Canyons at Los Alamos National Laboratory. Proposed, on-going, and completed dredge and fill activities categorized by canyon, to date. The list of activities includes COE projects, LANL dredge and fill activities, and corrective actions recommended by the BAER Team.



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HSWA LANL G/M/CGF 2000 Cerro Grande File

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- 4) **Enclosure 4:** Dredge and Fill Projects Categorized by Work Activity at Los Alamos National Laboratory. Proposed, on-going, and completed dredge and fill projects categorized by general work activity, to date. This is the same list of activities found in Enclosure 3, except that the activities are sorted by general work activities and not by the canyon in which they are located. This enclosure has the most updated information regarding the dredge and fill projects. Enclosure 4 also includes site maps for each project.
- 5) **Enclosure 5:** Canyon Work Schematic. Schematic identifies all the major earth moving projects (i.e. retention structures, low head weirs, channelization, etc.) by canyon.
- 6) **Enclosure 6:** Fire Severity and Utility Composite map. Identifies locations of all dredge and fill projects by Technical Areas and canyons.

If you have any questions or need additional information, please contact me at (505) 665-6085 or Marc Bailey at (505) 665-8135.

Sincerely,



Mike Saladen

NPDES Team Leader

Water Quality and Hydrology Group

MS/tml

Enclosures: a/s

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R. Burick, DLDOPS, w/o enc., MS A100
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D. Erickson, ESH-DO, w/o enc., MS K497
S. Rae, ESH-18, w/o enc., MS K497
M. Alexander, ESH-18, w/o enc., MS K497
M. Bailey, ESH-18, w/enc., MS K497
D. Nochumson, ESH-18, w/o enc., MS K497
J. Covey, FWO-DO, w/o enc., MS
J. Kelly, FWO-DO, w/o enc., MS
D. Woitte, LC-GL, w/o enc., MS A187
WQ&H File, w/enc., MS K497
CIC-10, w/enc., MS A150



ENCLOSURE 1

CHRONOLOGY OF LABORATORY DOCUMENTATION FOR 404 PROJECTS AT LOS ALAMOS NATIONAL LABORATORY JULY 27, 2000

1. Excavation Permit 00X-0317, Emergency Erosion Control-Approved June 5, 2000.
2. Excavation Permit 00X-0320, MDA-R Fire Suppression Activity-Approved June 6, 2000.
3. Laboratory's dredge and fill application submitted to Army Corps of Engineers and the New Mexico Environment Department-June 8, 2000.
4. Excavation Permit 00X-0329, Culvert Maintenance Labwide-Approved June 8, 2000.
5. Excavation Permit 00X-0331, Environmental Remediation in Upper Canada del Buey-Approved June 8, 2000
6. Excavation Permit 00X-0328, Road Grading in Los Alamos Canyon-Approved June 9, 2000.
7. Excavation Permit 00X-0343, Upper Mortandad Canyon and Surrounding Mesa Top-Approved June 12, 2000.
8. Excavation Permit 00X-0344, Fire Rehab Canada del Buey, Northeast of TA-46-Approved June 12, 2000.
9. Excavation Permit 00X-0338, Shielding Block Installation-In review.
10. Excavation Permit 00X-0341, Fire Rehab Canada del Buey, North Rim (TA-35 to TA-3)-Approved June 13, 2000.
11. Excavation Permit 00X-0345, Install Gate at TA-41/TA-2-Approved June 14, 2000.
12. Excavation Permit 00X-0371, TA-18 Flood Sheet Piling and Core Drilling-Approved June 14, 2000.
13. Excavation Permit 00X-0332, Replace Fire Damaged Erosion Control BMPs at TA-49-Approved June 15, 2000.
14. Excavation Permit 00X-0375, TA-36 Pajarito Canyon Hand Auguring-Approved June 15, 2000.
15. Excavation Permit 00X-0357, Twomile Canyon Rehabilitation-Approved June 16, 2000.
16. Army Corps of Engineers assigns Action No. 2000-00412 to the COE's dredge and fill projects on June 19, 2000.
17. Excavation Permit 00X-0356, Access Road to Drainage Culvert for Repairs-Approved June 20, 2000.
18. Excavation Permit 00X-0383, Access Road to TA-41-56-Approved June 20, 2000.
19. Excavation Permit 00X-0388, Core Drilling in Highway 501 Borrow Pit-Approved June 20, 2000.
20. Excavation Permit 00X-0391, Core Drilling and Armoring of Los Alamos Reservoir-Approved June 21, 2000.
21. Excavation Permit 00X-0367, BMP Installation at TA-6, TA-22, and TA-40-Approved June 22, 2000.
22. Excavation Permit 00X-0376, Install Gabions or Concrete Blocks by Bridge for Flood Control-Approved June 22, 2000.

23. Excavation Permit 00X-0393, Twomile Canyon/Anchor Ranch Road Test Pits- Approved June 22, 2000.
24. Excavation Permit 00X-0401, Install Stilling Well-Approved June 22, 2000.
25. Army Corps of Engineers assigned Action No. 2000-00420 to the Laboratory's 404 projects and authorized the work under Nationwide Permit (NWP) No. 37 on June 23, 2000.
26. NMED conditionally certifies the Laboratory's 404 projects pursuant to Section 401 of the Clean Water Act on June 23, 2000.
27. Excavation Permit 00X-0358, TA-5 Rehabilitation-Approved June 23, 2000.
28. Excavation Permit 00X-0373, Survey Activities in Pajarito Canyon and Portillo Canyon-On hold.
29. Excavation Permit 00X-0374, TA-2 D&D Cooling Tower and Surrounding Structure- Approved June 23, 2000.
30. Excavation Permit 00X-0392 Remove Contaminated Soil From LA-2 East (Fire Rehab)-Approved June 23, 2000.
31. Excavation Permit 00X-0400, Grade Haul Road up Pajarito Canyon-Approved June 23, 2000.
32. Excavation Permit 00X-0403, TA-18 Streambed in Pajarito Canyon (Phase 1)- Approved June 23, 2000.
33. Excavation Permit 00X-0404, Harden the Pajarito Drain Adjacent to TA-18 Water Well-Approved June 23, 2000.
34. Excavation Permit 00X-0402, Coring on 501 Landbridge at Pajarito Canyon- Approved June 26, 2000.
35. Excavation Permit 00X-0389, Repair the TA-60 Access Road into Mortandad and Sandia Canyons-Approved June 27, 2000.
36. Excavation Permit 00X-0414, Construction at Twomile Canyon/Anchor Ranch Road- Approved June 27, 2000.
37. Excavation Permit 00X-0415, TA-18 Flood Control Work-Approved June 27, 2000.
38. Excavation Permit 00X-0416, Core Drilling In Pajarito Canyon-Approved June 27, 2000.
39. Excavation Permit 00X-0427, Excavation of Sediments from Mortandad Sediment Traps-Approved June 29, 2000.
40. Excavation Permit 00X-0433, TA-66 Access Road-Approved June 29, 2000.
41. Excavation Permit 00X-0435, TA-18 Harden Utilities-Approved June 29, 2000.
42. Excavation Permit 00X-0441, Clean Culverts-Approved July 3, 2000.
43. Excavation Permit 00X-0442, Low Head Weirs In Los Alamos Canyon-Approved July 3, 2000.
44. Excavation Permit 00X-0444, Low Head Weirs in Pueblo Canyon-Approved July 3, 2000.
45. Excavation Permit 00X-0446, Erosion Improvements at Highway 501, Twomile Canyon-Approved July 5, 2000.
46. Excavation Permit 00X-0448, Erosion Improvements at Highway 501, Canon De Valle-Approved July 5, 2000.
47. Excavation Permit 00X-0450, Erosion Improvements at Highway 501, Anchor Ranch Road-Approved July 5, 2000.

48. Excavation Permit 00X-0445, TA-18 Widen Streambed in Pajarito Canyon (Phase 2)-Approved July 6, 2000.
49. Excavation Permit 00X-0447, Erosion Improvements at Highway 501, Pajarito Canyon-Approved July 6, 2000.
50. Excavation Permit 00X-0449, Erosion Improvements at Highway 501, Water Canyon-Approved July 6, 2000.
51. Excavation Permit 00X-0452, Sandia Canyon Rehabilitation-Approved July 6, 2000.
52. Excavation Permit 00X-0453, Replace Damaged Fence Posts-Approved July 6, 2000.
53. Laboratory faxes copy of "Modified 404/401 Application for Emergency Control Measures to Reduce Potential Flooding and Soil Erosion on LANL Property Due to the Cerro Grande Wildfire" to EOE and NMED on July 7, 2000.
54. Laboratory faxes copies of Pueblo and Los Alamos Low Head Weir Projects Site Maps/Schematics to COE and NMED on July 7, 2000.
55. Laboratory submits supplemental information to the original 404 application to COE and NMED on July 7, 2000.
56. Excavation Permit 00X-0454, Replace Fence Posts-Approved July 7, 2000.
57. Excavation Permit 00X-0460, Remove Power Poles/Lighting Poles-Approved July 7, 2000.
58. Laboratory submits "Modified 404/401 Application for Emergency Control Measures to Reduce Potential Flooding and Soil Erosion on LANL Property Due to the Cerro Grande Wildfire" to COE and NMED on July 10, 2000.
59. Laboratory faxes copy of "Contaminants in Pueblo Canyon in Vicinity of Proposed Low Head Weir" to COE and NMED on July 12, 2000.
60. Excavation Permit 00X-0472, Installation of a Trash Rack-Approved July 12, 2000.
61. Excavation Permit 00X-0473, Installation of a Trash Rack at TA-41-Approved July 12, 2000.
62. Excavation Permit 00X-0469, Fire Rehab TA-11-Approved July 13, 2000.
63. Excavation Permit 00X-0491, Erosion Improvements at Highway 501 Pajarito Canyon (Phase 2)-Approved July 13, 2000.
64. Excavation Permit 00X-0504, TA-61 Utility Hardening-Approved July 14, 2000.
65. Excavation Permit 00X-0505, TA-53 and TA-73 Utility Hardening-Approved July 14, 2000.
66. Laboratory faxes separate application for the Pajarito Canyon Flood Retention Structure to COE and NMED on July 17, 2000.
67. Laboratory submits separate application for the Pajarito Canyon Flood Retention Structure to COE and NMED on July 18, 2000.
68. Army Corps of Engineers assigns Action No. 2000-00456 for the retention structure in Pajarito Canyon and authorizes work under NWP No. 43 on July 18, 2000.
69. Excavation Permit 00X-0434, Construct a Dam in Pajarito Canyon-Approved July 20, 2000.
70. Excavation Permit 00X-0490, Drill and Shot Use of Explosives in Los Alamos Canyon-Approved July 20, 2000.
71. Excavation Permit 00X-0493, Well R-9i and R-9 Well Head Completion-Approved July 20, 2000.
72. Excavation Permit 00X-0513, Repair Broken 480 Secondary Power Line-Approved July 20, 2000.

73. Laboratory submits a copy of the Wetlands Delineation Report for the Pueblo Canyon Low Head Weir to COE and NMED on July 21, 2000.
74. Laboratory faxes general map of the location for the Pueblo Canyon and Los Alamos Canyon low head weirs to COE and NMED on July 21, 2000.
75. Excavation Permit 00X-0462, Erosion Control-Approved July 24, 2000.
76. Excavation Permit 00X-0522, Access Road to Pajarito Flood Retention Structure-Approved July 25, 2000.
77. Excavation Permit 00X-0494, Well R-12 Well Head Protection-Approved July 26, 2000.
78. Excavation Permit 00X-0529, Pueblo Canyon Sediment Retention Structure-In review July 26, 2000.
79. Laboratory submits supplemental information to COE and NMED on July 27, 2000.

ENCLOSURE 2

CORPS OF ENGINEER'S DREDGE AND FILL ACTIVITIES AT LOS ALAMOS NATIONAL LABORATORY JULY 27, 2000

ACTION NO. 2000-00412:

- (1) Los Alamos Reservoir mattress on dam, Nationwide Permit (NWP) 3, Water Quality Certification needed for work below OHWM of reservoir on lake side of dam. Perennial water, temporarily drained. Activity not on DOE property.
- (2) TA-41 box culvert, Los Alamos Canyon, no permit required for jersey barriers, NWP 3 for opening culvert if any fills in waters. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (3) TA-02 gabion tie-back and pilot channel, NWP 18. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (4) Two Mile Canyon, Hwy 501, mattress on embankment, clearing, CMP riser, NWP 3. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (5) Pajarito Canyon, Hwy 501, mattress on embankment, CMP riser, NWP 3. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (6) Channel on upland from Pajarito Canyon to Canon de Valle. No permit required, project on upland. If connection to two waterways involves minor amounts of fills, NWP 18. Dry channels, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (7) Anchor Ranch Rd "land bridge" armoring, NWP 3 if in waters of U.S. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (8) Anchor Ranch Rd culvert riser, trash rack, mattress embankment. Structures=no permit required. If fills in waters, NWP 18. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (9) TA-18, sheet pile wall with backfill. Not in waters of U.S., no permit required. Activity on DOE property.
- (10) Los Alamos Canyon sediment basin. Off channel. Possible minor fills to connect waterway to off channel, NWP 18. Dry channel, use 6/7/00 Water Quality Certification. Activity on DOE Property.
- (11) Pueblo Canyon sediment basin. Off channel. Possible minor fills to connect waterway to off channel, NWP 18. Dry channel, use 6/7/00 Water Quality Certification. Activity not on DOE Property.

ADDITIONAL COE ACTIVITIES:

- (1) Installation of low-head weir in Los Alamos Canyon.
- (2) Installation of low-head weir in Pueblo Canyon.
- (3) Construction of Pajarito Flood Retention Structure.
- (4) Access Road to Pajarito Flood Retention Structure.

ENCLOSURE 3

DREDGE AND FILL ACTIVITIES BY CANYONS AT LOS ALAMOS NATIONAL LABORATORY

July 27, 2000

Pueblo Canyon:

1. Installation of low-head weir in Pueblo Canyon. See Fire Severity and Utility Composite Map, Site 33.
2. Landfill culvert improvement. See Fire Severity and Utility Composite Map, Site 61.

Los Alamos Canyon:

1. Re-grade existing road that has been washed out in Los Alamos Canyon. See Fire Severity and Utility Composite Map, Site 2 and 52.
2. Diversion structures to protect sanitary lift station below TA-41, production well sites, and TA-2/41 facilities. See Fire Severity and Utility Composite Map, Site 3 and 42.
3. Install gate at entrance of the TA-2/41 access road. See Fire Severity and Utility Composite Map, Site 62.
4. TA-2 D&D cooling tower and surrounding structures. See Fire Severity and Utility Composite Map, Site 42.
5. Build new road between the TA-41 east fence and the TA-41-56 lift station. See Fire Severity and Utility Composite Map, Site 53.
6. Core drilling and armoring of the existing embankment for Los Alamos Reservoir. Build access road downstream of the dam. See Fire Severity and Utility Composite Map, Site 75, 54, and 18.
7. Remove approximately 700 cubic meters of contaminated soil from Los Alamos Canyon. See Fire Severity and Utility Composite Map, Site 65.
8. Installation of low-head weir in Los Alamos Canyon. See Fire Severity and Utility Composite Map, Site 34.
9. TA-2 gabion tie-back and pilot channel. See Fire Severity and Utility Composite Map, Site 39.
10. Los Alamos Canyon sediment basin. Off channel. See Fire Severity and Utility Composite Map, Site 37.
11. Remove silt from 8' x 15' concrete box culvert at TA-41. See Fire Severity and Utility Composite Map, Site 11 and 66.
12. Construct diversion structures and install BMPs to prevent erosion of material around the RLW cross-country line. No work planned at this time. See Fire Severity and Utility Composite Map, Site 10 and 19.
13. Re-channelization of Los Alamos Canyon around TA-2/41 to protect buildings. See Fire Severity and Utility Composite Map, Site 39.
14. Erosion control in Los Alamos Canyon. See Fire Severity and Utility Composite Map, Site 20.

15. Installation of trash rack below Los Alamos Reservoir. See Fire Severity and Utility Composite Map, Site 31.
16. Installation of trash rack at TA-41. See Fire Severity and Utility Composite Map, Site 32.
17. Drill and shot use of explosives in Los Alamos Canyon. See Fire Severity and Utility Composite Map, Site Misc.
18. Wellhead protection at wells R-9i and R-9. See Fire Severity and Utility Composite Map, Site 27.
19. Utility hardening of the existing 12" gas line at TA-53, and TA-73. See Fire Severity and Utility Composite Map, Site 21.

Sandia Canyon:

1. Construct diversion structures and install BMPs to prevent erosion of material around the RLW cross-country line. See Fire Severity and Utility Composite Map, Site 9 and 23.
2. Repair the TA-60 access road into Sandia Canyon. See Fire Severity and Utility Composite Map, Site 55.
3. Well head protection at well R-12. See Fire Severity and Utility Composite Map, Site 28.
4. Utility hardening of the existing power line at TA-41, TA-43 and TA-61. See Fire Severity and Utility Composite Map, Site 22.

Mortandad Canyon:

1. Fire rehab in upper Mortandad Canyon. See Fire Severity and Utility Composite Map, Site 44.
2. TA-5 Rehabilitation. See Fire Severity and Utility Composite Map, Site 45.
3. Repair the TA-60 access road into Mortandad Canyon. See Fire Severity and Utility Composite Map, Site 55.
4. Excavation of sediments (100-300 cubic yards) from Mortandad Canyon sediment traps. See Fire Severity and Utility Composite Map, Site 8 and 67.

Canada Del Buey:

1. Runoff mitigation in upper Canada Del Buey. See Fire Severity and Utility Composite Map, Site 46.
2. Environmental remediation in upper Canada Del Buey. See Fire Severity and Utility Composite Map, Site 47.
3. Fire rehab in Canada Del Buey northeast of TA-46. See Fire Severity and Utility Composite Map, Site 46.

Twomile Canyon:

1. Twomile Canyon rehabilitation. See Fire Severity and Utility Composite Map, Site 48.
2. Twomile Canyon/Anchor Ranch Road test pit. See Fire Severity and Utility Composite Map, Site 72.

3. Construction at Twomile Canyon/Anchor Ranch Road. See Fire Severity and Utility Composite Map, Site 12.
4. Erosion improvements at Highway 501 and Twomile Canyon. See Fire Severity and Utility Composite Map, Site 13.

Pajarito Canyon:

1. Fire rehab on north rim of Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 49.
2. Coring on 501 Land Bridge at Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 70.
3. Core drilling in Pajarito Canyon approximately 1.8 miles above TA-18. See Fire Severity and Utility Composite Map, Site 71.
4. BMP Installation at TA-6, TA-22 and TA-40. See Fire Severity and Utility Composite Map, Site 50.
5. Hand auguring at TA-36 in Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 73.
6. Installation of concrete blocks and gabions or concrete blocks by bridge for flood control at TA-18. See Fire Severity and Utility Composite Map, Site 43.
7. Grade haul road up Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 56.
8. Install 24" corrugated metal pipe vertically in stream as a stilling well to record flow. See Fire Severity and Utility Composite Map, Site 74.
9. Coring on 501 land bridge at Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 70.
10. Straightening and widening existing stream bed located south of Kiva #1 at TA-18. See Fire Severity and Utility Composite Map, Site 1A and 40.
11. Harden the Pajarito drain and power pole adjacent to TA-18 water well. See Fire Severity and Utility Composite Map, Site 24.
12. Core drilling in Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 71.
13. Construct TA-66 access road (25 foot wide) to staging area used for the Pajarito flood retention structure. See Fire Severity and Utility Composite Map, Site 57.
14. Construct a flow retention structure in Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 36.
15. TA-18 harden utilities. See Fire Severity and Utility Composite Map, Site 25.
16. Culvert cleaning at West Jemez Road and Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 58.
17. TA-18 widen streambed in Pajarito Canyon (Phase II). See Fire Severity and Utility Composite Map, Site 41.
18. Harden Highway 501 at Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 14.
19. Harden Anchor Ranch Road at Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 15.
20. Channel on upland from Pajarito Canyon to Canon de Valle. Project on hold.
21. TA-18 sheet pile wall with backfill. See Fire Severity and Utility Composite Map, Site 76.

22. Construct detention ponds and install CMPs at TA-18. See Fire Severity and Utility Composite Map, Site 1A.
23. Construct two 300 foot wide detention basins. See Fire Severity and Utility Composite Map, Site 1A.
24. Construct check dam across upper Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 6.
25. Pajarito wetlands upgrade. See Fire Severity and Utility Composite Map, Site 7.
26. Erosion improvements at Highway 501 in Pajarito Canyon (Phase II). See Fire Severity and Utility Composite Map, Site 68.
27. Repair broken 480V secondary power line. See Fire Severity and Utility Composite Map, Site 26.
28. Construct access road using existing excavated soil which is located west of the Pajarito flood retention structure in Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 64.
29. Replace fence posts. See Fire Severity and Utility Composite Map, Site 30.
30. Move power poles/lighting poles. See Fire Severity and Utility Composite Map, Site 29.

Three Mile Canyon:

1. Dig diversion trench in watercourse adjacent to Kiva 2 in Three Mile Canyon just above confluence with Pajarito Canyon. See Fire Severity and Utility Composite Map, Site 1B.

Canon De Valle:

1. MDA-R emergency erosion control. Diversion of runoff and temporary dam construction. See Fire Severity and Utility Composite Map, Site 4 and 35.
2. MDA-R fire suppression activities. See Fire Severity and Utility Composite Map, Site 69.
3. Construct access road into canyon on the west side of anchor ranch to clear out culvert drainage. See Fire Severity and Utility Composite Map, Site 59.
4. Construct detention pond at borrow pit where Canon de Valle crosses Highway 501. See Fire Severity and Utility Composite Map, Site 5 and 38.
5. Culvert cleaning at West Jemez Road and Canon De Valle. See Fire Severity and Utility Composite Map, Site 60.
6. Armoring at Highway 501. Removal of 4" ACM and geomat as required. See Fire Severity and Utility Composite Map, Site 16.

Water Canyon:

1. Replace fire damaged erosion control BMPs at TA-49. See Fire Severity and Utility Composite Map, Site 51.
2. Culvert cleaning at West Jemez Road and Water Canyon. See Fire Severity and Utility Composite Map, Site 60.
3. Emergency embankment hardening at Highway 501 and Water Canyon. See Fire Severity and Utility Composite Map, Site 17.

Misc. Activities In Canyons:

1. Culvert maintenance labwide. Installation, replacement, and cleaning of culverts. See Fire Severity and Utility Composite Map, Site 63.
2. Re-placement of burnt power poles.
3. Re-placement of burnt fence posts.
4. Fire roads and fire breaks were constructed to help extinguish and control the Cerro Grande Wildfire. Road cutting/grading to improve access for rehabilitation activities and evacuation purposes.
5. Place rock and log check dams in drainages to slow flow/drop sediment. Construct additional detention ponds, retention ponds, and earthen dams as identified.
6. Contour raking, mulching and re-seeding/aerial seeding for erosion control.
7. Remove miscellaneous debris, fallen trees from centerline area of drainage, dredge silt after storm events.
8. Evaluate, upgrade, repair and install BMPs at Solid Waste Management Units (SWMUs) and Potential Release Sites (PRSs).
9. Perform soil sampling and characterization to monitor sediment transport.

ENCLOSURE 4

DREDGE AND FILL PROJECTS CATEGORIZED BY WORK ACTIVITY AT LOS ALAMOS NATIONAL LABORATORY July 27, 2000

Armoring of Roads:

1. Construction located at land bridge at Twomile Canyon and Anchor Ranch Road (ephemeral reach). From 50' before upstream toe, up the upstream face, over the road, down the downstream face, and 50' below the toe. Tree removal, moving large rock at the upstream toe, dressing up slopes, installing articulated concrete mat. See map 00X-0414.
2. Erosion improvements at Highway 501 and Twomile Canyon (ephemeral reach). Removal of 4" ACM and geomat as required. Tree removal, clearing and grubbing of highway embankment slopes. Regrading of highway embankment slopes. Excavation of toe trenches at both embankment toes. Installation of soil nails. Installation of shotcrete or rock mattresses. See map 00X-0446.
3. Harden Highway 501 at Pajarito Canyon (ephemeral reach). Removal of 4" ACM and geomat as required. Tree removal, clearing and grubbing of highway embankment slopes. Regrading of highway embankment slopes. Excavation of toe trenches at both embankment toes. Installation of soil nails. Installation of shotcrete or rock mattresses. Extend the existing 48" CMP approximately 50 feet. Importing approximately 200 cubic yards of fill material for compacting outside embankments. See map 00X-0447.
4. Harden Anchor Ranch Road at Pajarito Canyon (ephemeral reach). Removal of 4" ACM and geomat as required. Tree removal, clearing and grubbing of highway embankment slopes. Regrading of highway embankment slopes. Excavation of toe trenches at both embankment toes. Installation of soil nails. Installation of shotcrete or rock mattresses. See map 00X-0450.
5. Armoring at Highway 501 at Canon de Valle (ephemeral reach). Removal of 4" ACM and geomat as required. Tree removal, clearing and grubbing of highway embankment slopes. Regrading of highway embankment slopes. Excavation of toe trenches at both embankment toes. Installation of soil nails. Installation of shotcrete or rock mattresses. See map 00X-0448.
6. Emergency embankment hardening at Highway 501 and Water Canyon (perennial reach). Removal of 4" ACM and geomat as required. Tree removal, clearing and grubbing of highway embankment slopes. Regrading of highway embankment slopes. Excavation of toe trenches at both embankment toes. Installation of soil nails. Installation of shotcrete or rock mattresses. See map 00X-0449.

Armoring of Dam:

1. Installation of articulated mat (ARC) over the upstream face top and downstream embankment of the dam. Core drilling and armoring of the existing embankment for

Los Alamos Reservoir. Perennial water upstream of dam. Dam temporarily drained. See map 00X-0391.

Hardening\Repair Utilities:

1. Construct diversion structures and install BMPs to prevent erosion of material around the RLW cross-country line in Los Alamos Canyon (ephemeral reach). No work planned at this time. Work would be similar to work in Sandia Canyon.
2. Erosion control in Los Alamos Canyon. Install a system of articulated concrete mats to protect the existing utilities (gas and electrical) that are located in the ephemeral portions of canyon floor. Maximum dimensions of excavation 400' (L) x 10' (W) x 3' (D). See map 00X-0462.
3. Utility hardening of the existing 12" gas line at TA-53, and TA-73. The hardening will involve excavating both sides of the line 3 to 4 feet and installing gabions to protect the line from flood/erosion damage. The line will be hardened for approximately 1/4 mile. Excavation may impact ephemeral portions of Los Alamos Canyon. See map 00X-0505.
4. Utility hardening of the existing power line at TA-41, TA-43 and TA-61. The hardening will involve excavating both sides of the line 3 to 4 feet and installing gabions to protect the line from flood/erosion damage. Maximum dimension of trenching is 80' (L) x 4' (W) x 4' (D). Excavation may impact Sandia Canyon. Sandia Canyon is effluent dominant from the TA-46 Sanitary Wastewater System (SWS) (NPDES Outfall 13S) and TA-3 Power Plant (NPDES Outfall 001) discharges. See map 00X-0504.
5. Construct diversion structures and install BMPs to prevent erosion of material around the radioactive liquid wastewater (RLW) cross-country line (approximately 300') in Sandia Canyon. Install gabions, re-establish water flow lines and re-vegetate with seed and shrubs. Sandia Canyon is effluent dominant from the TA-46 SWS (NPDES Outfall 13S) and TA-3 Power Plant (NPDES Outfall 001) discharges. See map 00X-0452.
6. Harden the Pajarito drain and power pole adjacent to TA-18 water well with gabions. Located at turn off to TA-18 from Pajarito road. The channel needs to be hardened to protect Pajarito Well #2. Impacted area 120' (L) x 6' (W) x 3' (D). Pajarito is ephemeral in area impacted by construction. See map 00X-0416.
7. TA-18 harden utilities. Installation of jersey barriers and riprap around the power poles and guy wires. The power line is located below TA-18 in Pajarito Canyon, it comes off the TA-54 mesa into the canyon that runs in an easterly direction to White Rock. Grade area to level and excavate 1' to place barriers. There will be riprap (rock) placed at assemblies. Place riprap in channel. Excavate 1' down and 2' into the bank for approximately 200'. Located in wetlands area. See map 00X-00435.
8. Repair broken 480V secondary power line that supports TA-18 Kiva 2 in Pajarito Canyon (ephemeral). The excavation will take place approximately 150' east of the bridge/box culvert located southwest of Building 30. The scope of work will consist of the installation of two manholes, junction boxes, and replacement of 90 feet of secondary electrical line. The maximum trenching dimensions are 90' (L) x 2' (W) x 3' (D). See map 00X-0513.

9. Wellhead protection at wells R-9i and R-9. The scope for this phase of the on-going well installation project will include site restoration including grading, contouring, seeding, mulching, and application; well head completion and protection including concrete pad and protective vault installation; and security fence. The concrete vault will be placed over the well heads for protection from flood damage. Gabion baskets will be installed on the upstream side of the well heads to dissipate and deflect flood waters. Basecourse will be installed on the drill pads around the well heads and on the access road for all weather access. Excavation dimensions are 10' (L) x 6' (W) x 2' (D). Wells are located in ephemeral watercourse. See map 00X-0493.
10. Well head protection at well R-12 in Sandia Canyon. Installation of a concrete pad at the well head (10' x 5' x 1' thick), installation of a concrete protective vault on the well head in conjunction with the concrete pad, installation of a security fence. Sandia Canyon is an effluent dominant watercourse from the TA-46 SWS Plant (NPDES Outfall 13S) and TA-3 Power Plant (NPDES Outfall 001) discharges. Wastewater infiltrates into the ground prior to leaving DOE property. Project is not located in path of normal wastewater flow. See map 00X-0494.
11. Re-placement of power poles/lighting poles out of the flood areas in TA-18 near Building 30 in Pajarito Canyon (ephemeral reach). Excavation(s) 24" (L) x 24" (W) x 7' (D). See map 00X-0460.
12. Re-placement of burnt fence posts caused by flooding in south fork of Pajarito Canyon (Starmers Gulch) just north of perimeter fence around TA-8, Building 30. Starmers Gulch is a short perennial reach of Pajarito Canyon. Also replace fence posts in tributary to Canon de Valle (ephemeral reach) south of the perimeter fence behind TA-16, Building 210. See maps 00X-0453 and 0454.

Installation of trash racks and box culverts:

1. Installation of trash rack below Los Alamos Reservoir in Los Alamos Canyon. The project will consist of the driving 6 to 9 H beams into the ground, which will be at a depth of 30 feet. Excavation dimensions are 1' (L) x 1' (W) x 30' (D). There is intermittent flow from dam during normal operations. However, dam being drained for armoring purposes. See map 00X-0472.
2. Installation of trash rack at TA-41. The excavation will consist of the installation of a trash rack (debris collector) 560 to 600 feet west of building 30. Maximum dimensions are 40' (L) x 40' (W) x 0' (D). Project located in ephemeral portion of Los Alamos Canyon. See map 00X-0473.

Low Head Weirs, Detention Ponds, and Flood Retention Structures:

1. Installation of low-head weir in Pueblo Canyon. Maximum dimensions of excavation 500' (L) x 400' (W) x 60' (D). Located in wetlands. Excavated material may be placed in low-lying area immediately upstream of weir (600' x 500'). Project may include dewatering activities and divert flow around project area during construction. See map 00X-0444. The Laboratory is currently reviewing the following alternative projects: (1) Increase weir height to reduce excavation upstream, and reduce the use of excavation material as fill in low-lying areas. Design is currently not available;

and, (2) Install a gabion/earthen structure 12-15 feet in height and 450 feet from ridge to ridge. The gabion structure will be located within the existing wetlands. A foundation of 3-4 feet in depth will need to be excavated for the gabion structure. The earthen berm structure will be located south of the gabion structure. The earthen structure will be constructed from existing soil located in borrow area, located west of the proposed earthen structure. Approximately 7,000-10,000 cubic yards of soil will be removed from borrow area to earthen berm. An access road will be constructed along south end of wetlands and adjacent to retention structure. See map 00X-0529. All options are currently under review. Wetland delineation completed and submitted to COE and NMED.

2. Installation of low-head weir in Los Alamos Canyon. Maximum dimensions of excavation 400' (L) x 100' (W) x 60' (D). Project may include dewatering activities and divert flow around project area during construction. Project location in ephemeral reach of Los Alamos Canyon. See map 00X-0442.
3. MDA-R emergency erosion control in Canon de Valle (ephemeral reach). Diversion of runoff and temporary retention structure (300' (L) x 5' (W) x 5' (D)). Retention structure to be removed upon project completion. See map 00X-0317.
4. Pajarito flood retention structure. Designs (75% completion) provided to COE and NMED on July 18, 2000 (ESH-18/WQ&H:00-0237). See map 00X-0434. Scope change received on July 21, 2000. Scope change includes the extension of the flood retention structure 300' to the west and an additional 100' downstream.
5. Construction of sediment basins in Pueblo and Los Alamos Canyons. No designs available at this time. May be replaced by low-head weirs.
6. Construct detention pond at borrow pit where Canon de Valle crosses Highway 501. No designs available at this time.

Channelization:

1. Re-channelization of Los Alamos Canyon (ephemeral) around TA-2/41 to protect buildings.
2. Straightening and widening existing streambed located south of Kiva #1 at TA-18 in Pajarito Canyon (ephemeral). Area impacted is 1200' (L) x 15' (W) x 0' (D). See map 00X-0403.
3. TA-18 widen streambed in Pajarito Canyon (Phase II). Construct dip in the roadway to re-direct water. Work will consist of working on the south side of culvert on the access road in TA-18 that leads to Kivas 2 and 3. Impacted area 100' (L) x 30' (W) x 0' (D). Pajarito Canyon is ephemeral in this portion of canyon. See map 00X-0445.

Installation of Protection Barriers:

1. Use diversion structures (jersey barriers, large shielding blocks, and gabions) to protect sanitary lift station below TA-41, production well sites, and TA-2/41 facilities. Install approximately 22 large shielding blocks (36" (H) x 72" (W) x 120" (L)) in Los Alamos Canyon to divert runoff away from facilities. Excavate material upstream of the reactor building (approximately 15 yd³) and stockpile inside the

fenced area. Located in the ephemeral reach of Los Alamos Canyon. See map 00X-0328.

2. Installation of concrete blocks and gabions or concrete blocks by bridge for flood control at TA-18, Building 30. This will require leveling of the streambed to provide a stable footing for the blocks or gabions. Area impacted is approximately 25' (L) x 10' (W) x 2' (D). See map 00X-0376.
3. Drive sheet piling to mitigate potential flood damage to TA-18, Kiva 1 area. Approximately 1000 horizontal feet of piling will be driven. Excavation is approximately 20' deep. See map 00X-0371.

Erosion Control/Fire Rehab:

1. Fire rehab in upper Mortandad Canyon (ephemeral reach). Install check dams and wattles in shallow trenches. Build diversion berms along mesa edge. All check dams and wattles will be placed in shallow trenches 3"-6" (D) x 9" (W) x length unknown. Soil scraping for berm construction will be no deeper than 1' by 8' wide. Longest run for berm is approximately 75'. See map 00X-0343.
2. TA-5 fire rehabilitation. Clean culvert, install check dams and erosion control matting. Run-on diversion and flow dissipation within all drainages of Mortandad Canyon (ephemeral reach). See map 00X-0389.
3. Fire rehab in Canada Del Buey northeast of TA-46. Runoff mitigation in upper Canada Del Buey. Bulldozer used to re-contour storm drain outfall and for berm construction along dirt road. Placement of check dams. Installation of BMPs and protection of SWMUs. Berming of roadway for outfall drainage control. Canada Del Buey is an ephemeral watercourse. See map 00X-0344.
4. Environmental remediation in upper Canada Del Buey. Tree falling, erosion dam construction and BMP implementation. Impacted area 2500' (L) x 1250' (W) x 9" (D). Area is not in watercourse. See map 00X-0331.
5. Twomile Canyon rehabilitation (ephemeral reach). Clean culverts, place check dams and wattles in shallow trenches, log erosion barriers, hazard tree mitigation. Build diversion berms along mesa edge. All check dams and wattles will be placed in shallow trenches 3"-6" (D) x 9" (W) x length unknown. Soil scraping for berm construction will be no deeper than 1' by 8' wide. Longest run for berm is approximately 75'. See map 00X-0357.
6. Fire rehab on north rim of Pajarito Canyon (ephemeral). Check dams and wattles placement in shallow trenches. Excavation not in watercourse. See map 00X-0341.
7. BMP installations at TA-6, TA-22 and TA-40. Clean culverts and install check dams using native rock. Raking, re-seeding, and mulch are needed. Ephemeral portion of Pajarito Canyon. See map 00X-0367.
8. Replace fire damaged erosion control BMPs at TA-49 near Water Canyon (ephemeral reach). Installation of riprap BMPs in two drainages near MDA-AB. Install log velocity dissipaters, add rip-rap, replace silt fences and replace straw bale BMPs upgradient and west of MDA-AB with synthetic sediment barriers (bury barriers 6"-8"). See map 00X-0332.

Road/Maintenance Activities:

1. Re-grade existing road that has been washed out in Los Alamos Canyon. Installation of gabions and washed rock for erosion control. Maximum dimensions 20,000' (L) x 15' (W) x 2' (D). Located in ephemeral reach of Los Alamos Canyon. Project completed. See map 00X-0328.
2. Build new road between the TA-41 east fence and the TA-41-56 lift station. Place fencing at the lift station and sand bag for flood protection. Excavation 250' (L) x 20' (W) x 1' (D). Located in the ephemeral reach of Los Alamos Canyon. See map 00X-0383.
3. Build access road downstream of the Los Alamos dam. Los Alamos dam is temporarily drained. The road will not exceed 500'. See map 00X-0391.
4. Repair the TA-60 access road into Sandia Canyon and Mortandad Canyon. Maximum dimension is 3200' (L) x 20' (W) x 1' (D). Road intersects only small portion of actual streambed in Sandia and Mortandad Canyons (10' (L) x 20' (W) x 1' (D)). Mortandad is ephemeral and Sandia is effluent dominated from the TA-46 SWS (NPDES Outfall 13S) and TA-3 Power Plant (NPDES Outfall 001) discharges. See map 00X-0389.
5. Grade haul road up Pajarito Canyon (ephemeral reach) from TA-18 and log out burnt or hazardous logs which could end up at TA-18 in the event of a severe flood. A trail will be bladed to accommodate logging trucks removing trees in canyon. Maximum dimensions 10,000' (L) x 16' (W) x 1' (D). See map 00X-0400.
6. Construct TA-66 access road (25 foot wide) to staging areas used for the Pajarito FRS. Two staging areas will be implemented. Staging area 1 consists of 300' x 300' staging area and access road. Staging area 2 consists of 200' x 300' staging area and a 25' access road. See map 00X-0433.
7. Culvert cleaning at West Jemez Road and Pajarito Canyon (ephemeral). Construct access road and clean up the drainage, approximately 200 feet to the west and east. Maximum excavation dimensions 1200' (L) x 40' (W) x 1' (D). See map 00X-0441.
8. Construct access road into Canon de Valle on the west side of anchor ranch to clear out culvert drainage. Maximum dimensions 300' (L) x 20' (W) x 1' (D). See map 00X-0356.
9. Culvert cleaning at West Jemez Road and Canon De Valle, Water, and Pajarito. Construct access road and clean up the drainage, approximately 200 feet to the west and east. Drainages from the Santa Fe National Forest is clogging up the culverts. All three reaches are ephemeral. See map 00X-0441.
10. Landfill culvert improvement at Diamond Drive in Pueblo Canyon. See COE activities
11. Install gate on existing paved road at entrance of the TA-2/41 access road in Los Alamos Canyon to keep unauthorized personnel out in case of flood potential. Excavation is approximately 2' (L) x 2' (W) x 4' (D). Located in the ephemeral reach of Los Alamos Canyon. See map 00X-0345.
12. Culvert maintenance lab-wide, as needed. Installation, replacement, and cleaning of culverts. See map 00X-0329.
13. Construct access road using existing excavated soil which is located west of the Pajarito flood retention structure in Pajarito Canyon. The access road will be used to

get the aggregate material from the staging areas to the retention structure. The access road will be approximately 30' (W) x 600' (L) x 1' (D). The road is not in waters of the U. S. See map 00X-0522.

14. Maintain road from TA-52 end of pavement to Mortandad sediment traps. Maintain road by re-grading existing dirt road, approximately 2 miles from end of pavement at TA-52. Dirt road located on mesa top and in Mortandad Canyon. The dirt road does not intersect the normal watercourse. Mortandad is ephemeral. See map 00X-0529.

Sediment Removal:

1. Remove approximately 700 cubic meters of contaminated soil from Los Alamos Canyon. Soil transported and disposed of at TA-54, Area G. Location in ephemeral portion of Los Alamos Canyon. See map 00X-0392.
2. Remove silt from an existing 8' x 15' concrete box culvert at TA-41. Project is located in ephemeral reach of Los Alamos Canyon.
3. Excavation of sediments (100-300 cubic yards) from Mortandad Canyon sediment traps. Transport the low-level sediments to TA-54 Area G. This project may also include construction of three new sediment ponds. Mortandad is ephemeral watercourse. Designs for new sediment ponds are not available at this time. See map 00X-0427.
4. Erosion improvements at Highway 501 in Pajarito Canyon (Phase II). Excavate 2000 yards of fill from the borrow pit located in TA-16 to TA-08. The excavated soil will be used to dress fill the proposed work at 501 Pajarito Canyon (TA-8). This project includes the staging of the soil on 501 Pajarito Canyon (ephemeral reach), which will be located next to the work site. See map 00X-0491.
5. MDA-R fire suppression activities in Canon de Valle. Excavate buried material at MDA-R to expose and suppress fire. Excavation not in watercourse (side of canyon). Area excavated 250' (L) x 15' (W) x 15' (D). Material placed back in hole. See map 00X-0320.

Sampling/Test pits:

1. Coring on 501 Land Bridge at Pajarito Canyon. Obtaining core samples for geotechnical sampling of landbridge material (50' deep). Not in watercourse. See map 00X-0402.
2. Core drilling in Pajarito Canyon approximately 1.8 miles above TA-18. Five core drill samples will be obtained up to 30 feet deep. The center core will be in the Pajarito stream bottom and the remaining cores will be approximately 50' apart in both directions perpendicular to the canyon bottom. See map 00X-0416.
3. Twomile Canyon/Anchor Ranch Road test pit. Excavate a test pit (6'x2'x8') immediately above the inlet structure for the landfill to characterize the foundation material. Located in ephemeral reach of Twomile Canyon. See map 00X-0393.
4. Hand auguring at TA-36 in Pajarito Canyon. Estimated 25 holes at a depth of 2' to 5' (4" diameter). Activity being done for proposed installation of detention basins within canyon. See map 00X-0375.

5. Install 24" corrugated metal pipe vertically in stream as a stilling well to record flow in Pajarito Canyon. Pipe will be in approximately 3 feet of concrete and topped with instrument shelter and automatic sampler. The installation will be serviceable by metal walkway back to high bank. Work will be performed 150' below highway 501 (ephemeral). See map 00X-0401.
6. Core drilling approximately 20' deep at two locations on Los Alamos Reservoir. Sample and lab analyses of the samples. See map 00X-0391.

Misc. Activities:

1. TA-2 D&D cooling tower and surrounding structures (shed, UST, storage building, guard station). Waste transported to TA-54 for treatment and disposal. Located in the ephemeral reach of Los Alamos Canyon. See map 00X-0374.
2. Drill and shot use of explosives in Los Alamos Canyon (ephemeral reach). Several holes will be drilled through rock using high explosives (type of explosives is TBD) to blow up rock obstruction. This project supports the installation of the low-head weir project. See map 00X-0490.

Evaluation of Potential Release Site Aggregates

Chapter 5

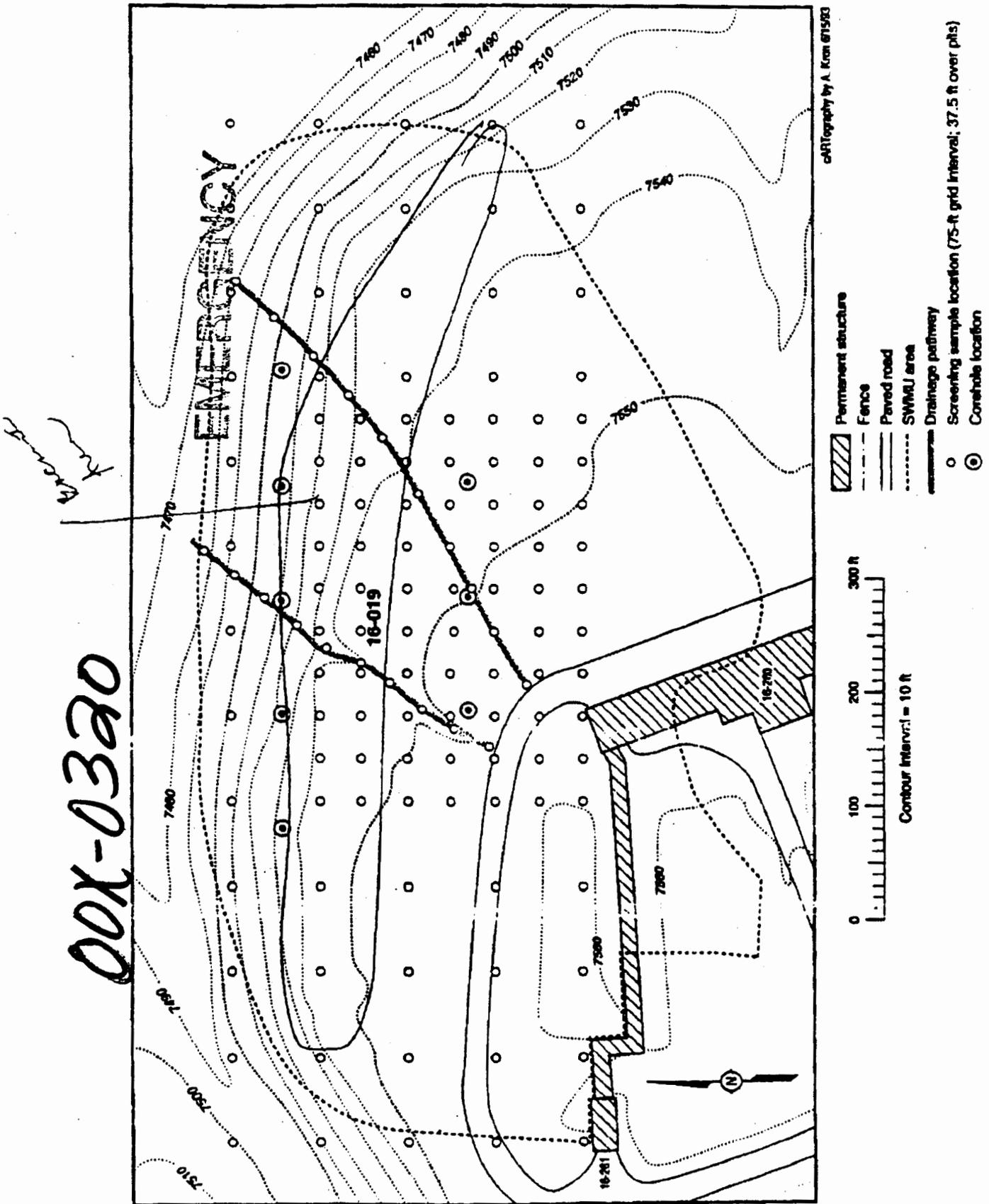
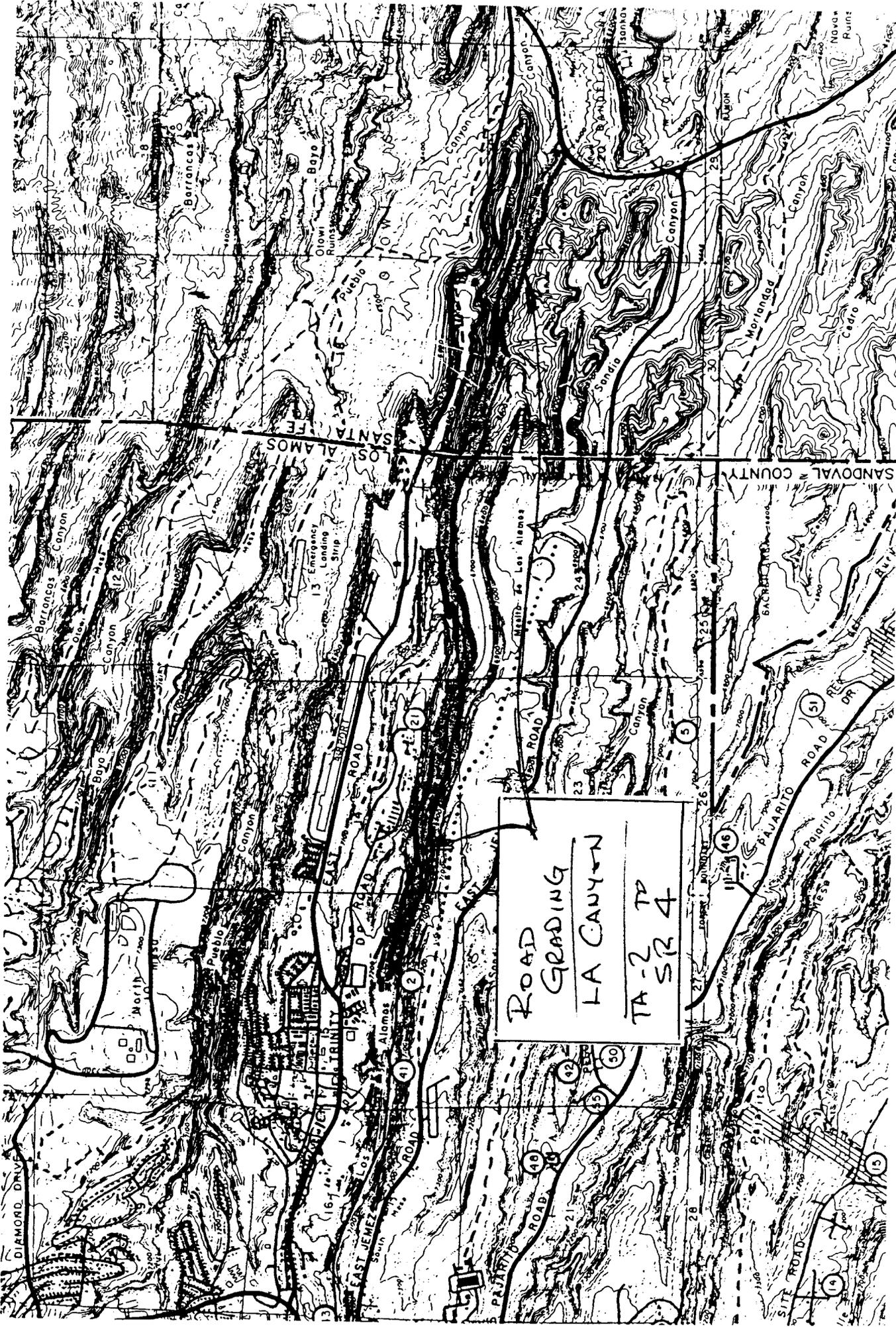


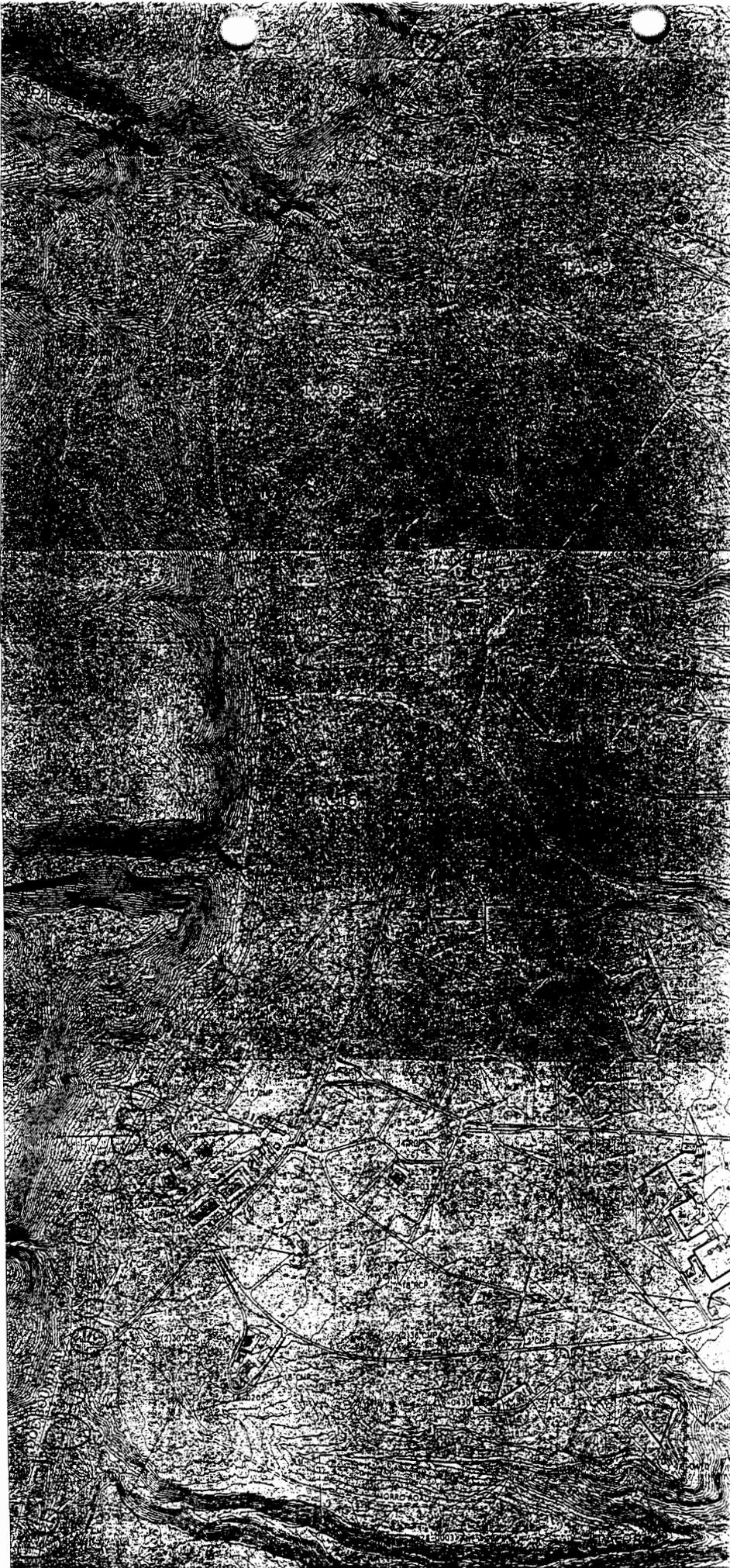
Fig. 5-41. Schematic MDA R sampling grid.



ROAD
GRADING
LA CANYON
TA-2 TO
SR 4

EMERGENCY 00X-0328

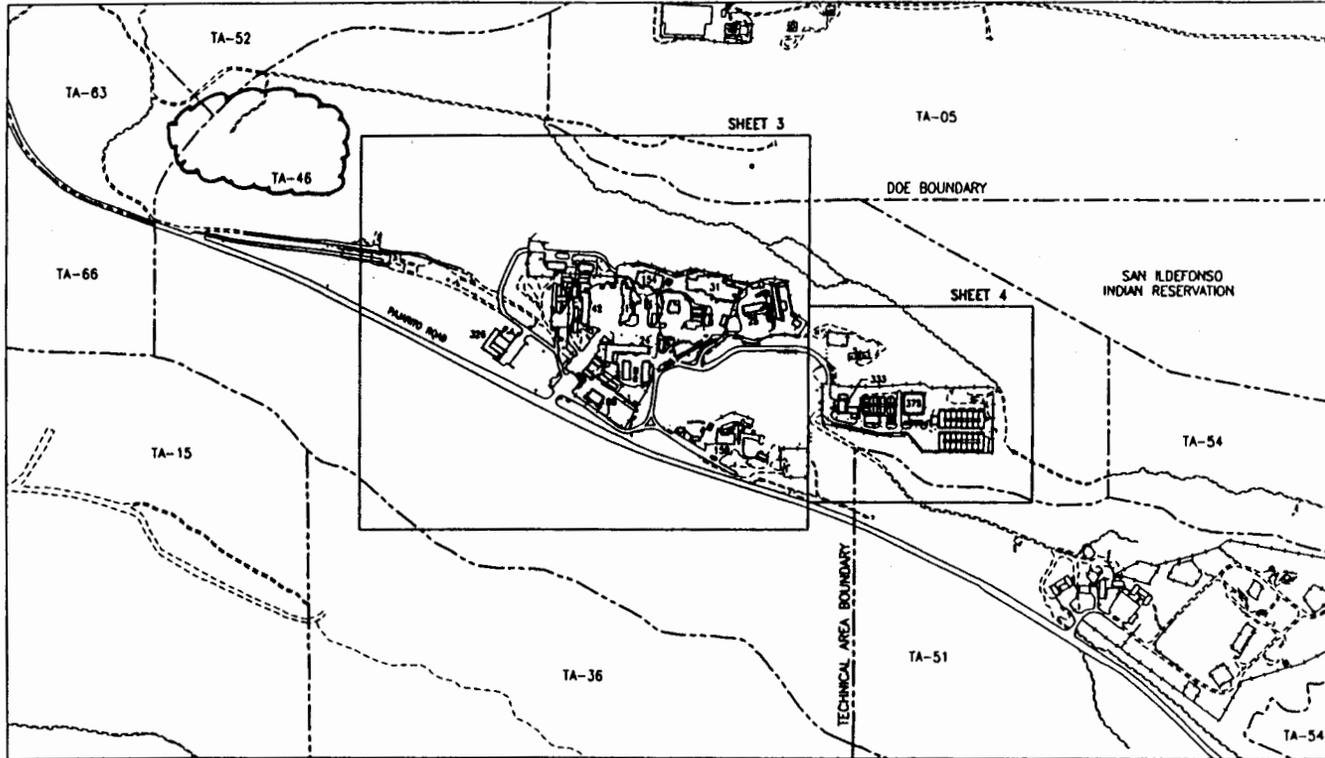
ROAD RESTORATION	
TA-2 EVACUATION ROAD	ACCESS ROAD
6/7/2000	E. Alon



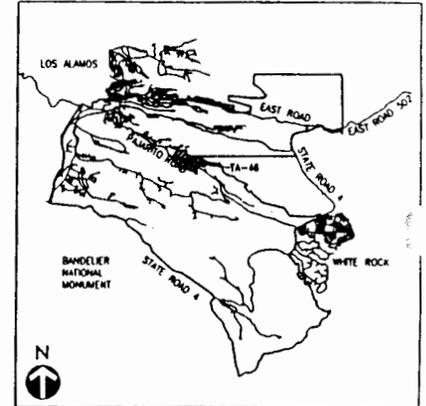
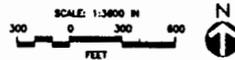
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WEST JEMEZ RD
SR 501
- CULVERT CLEANING
- X329

STRUCTURE LOCATION MAPS



TA-46 KEY MAP



LOCATION MAP

SCALE: NONE

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4	04-11-00	REVISED TO STATE OF 04-09-00	000	000	000	000	000	000
NO	DATE	CLASS	BY	DESCRIPTION	NO	NO	NO	NO

Johnson Controls

AS-BUILT STRUCTURE LOCATION MAPS

TA-46

WA-SITE

DESIGNED	APPROVED FOR CONSTRUCTION	DATE	BY
WORLD BUILDR	H.S.P.	11/11/00	H.S.P.

Los Alamos LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87545

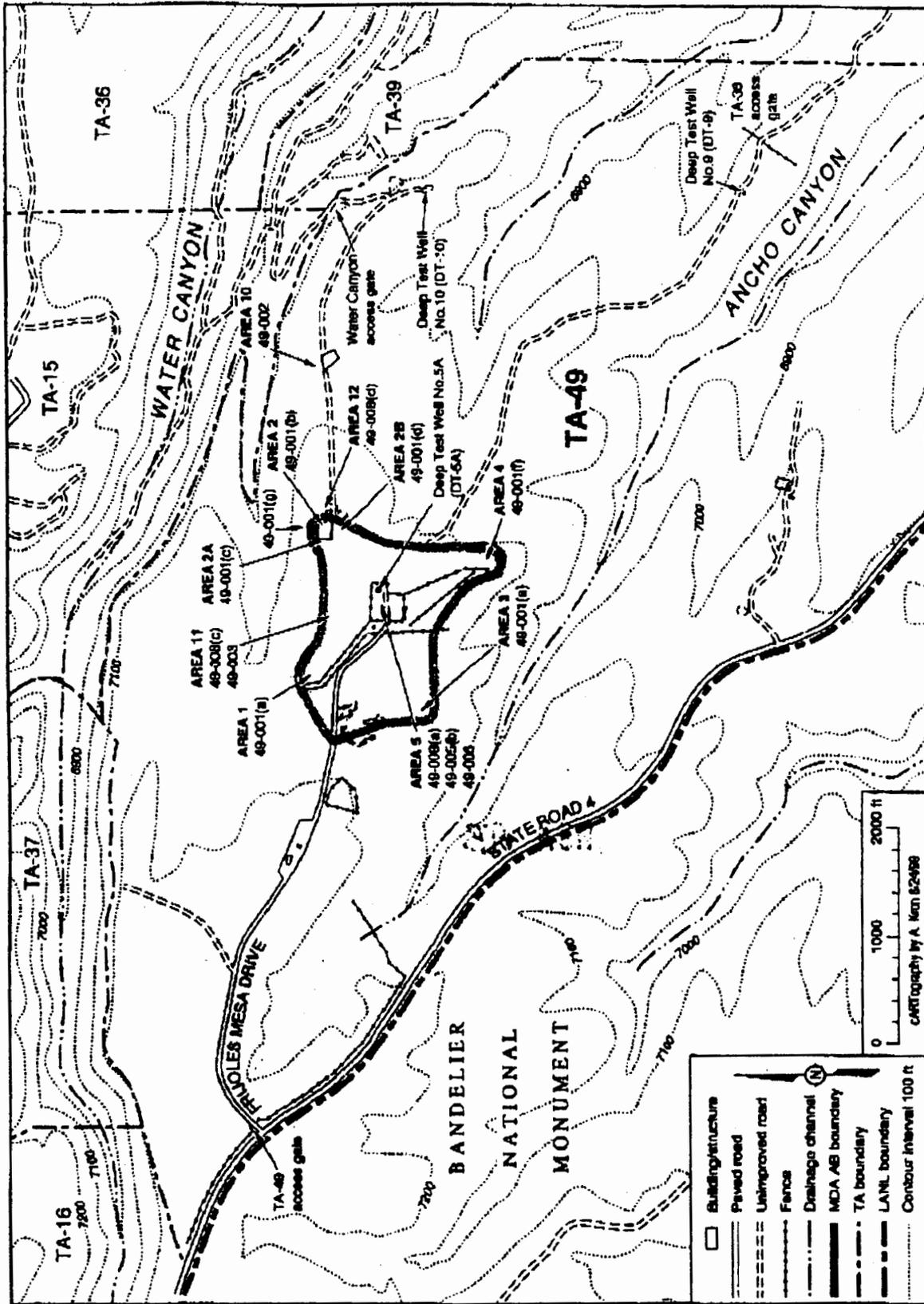
CLASSIFICATION	REVISION	DATE	BY
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PROJECT ID: 11952

AR 14

00X-0331
X-urgent

TA-49 Area 2 Data Summary Report

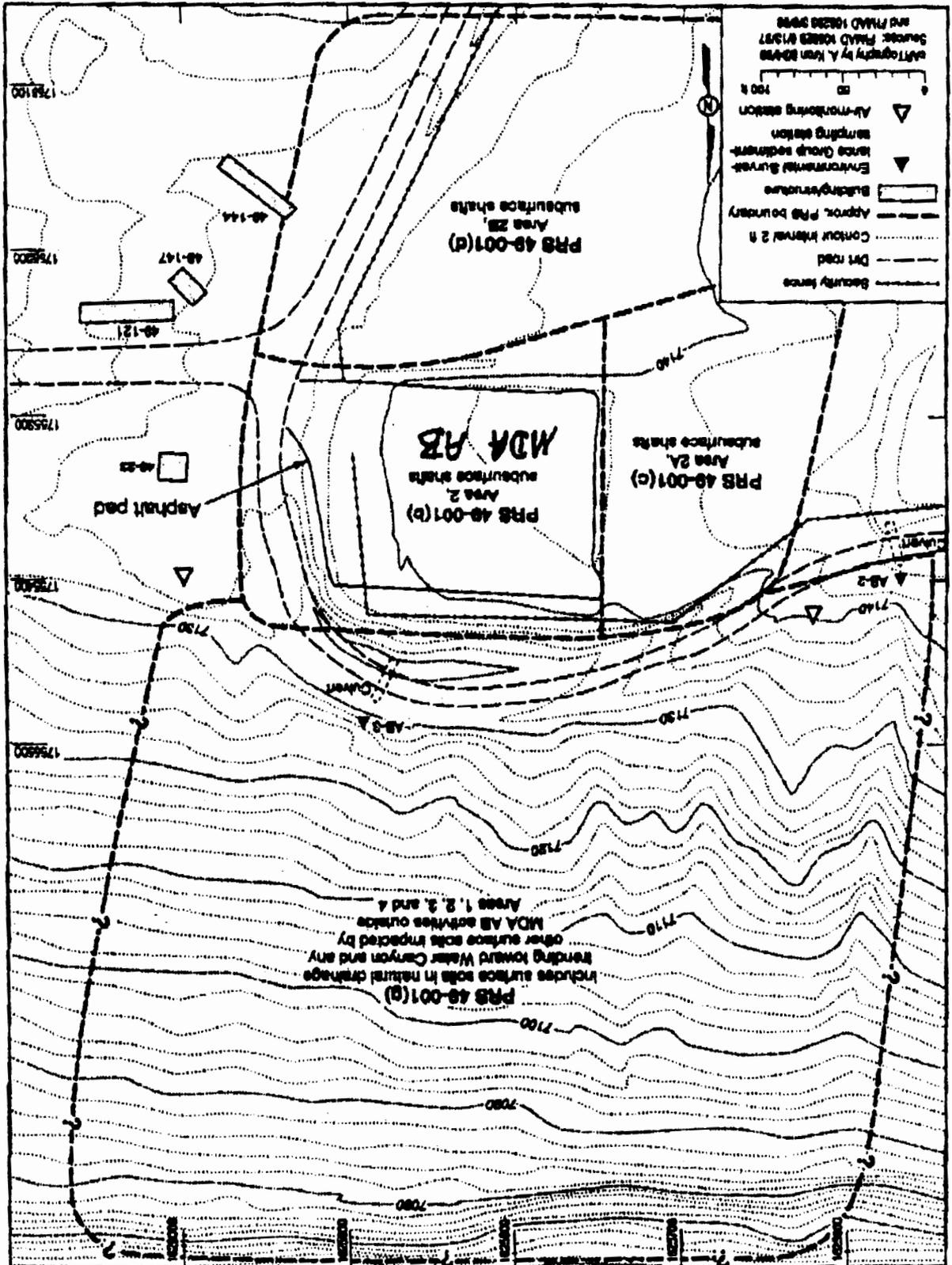


00X-0332

EMERGENCY

Figure 1.0-2. Map of TA-49

Figure 2.1-1. PRSs at Area 2, TA-49



PRS 48-001(b)
 Includes surface soils in natural drainage
 trending toward Water Canyon and any
 other surface soils impacted by
 MDA AB activities outside
 Areas 1, 2, 3, and 4

7A-2

OX-0338



N/S

EMERGENCY

Old
reactor
Building

Elevator

Boiling
Tower

leveling

TO
BE
DETERMINED
IN FIELD
BY WIA AUTHOR

NOTE: DIMENSION APPROXIMATE @ E.I. 10/6/01



TA-41

TA-02

TA-21

Los Alamos Canyon

TA-53

Sandia Canyon

Upper Mortandad Canyon

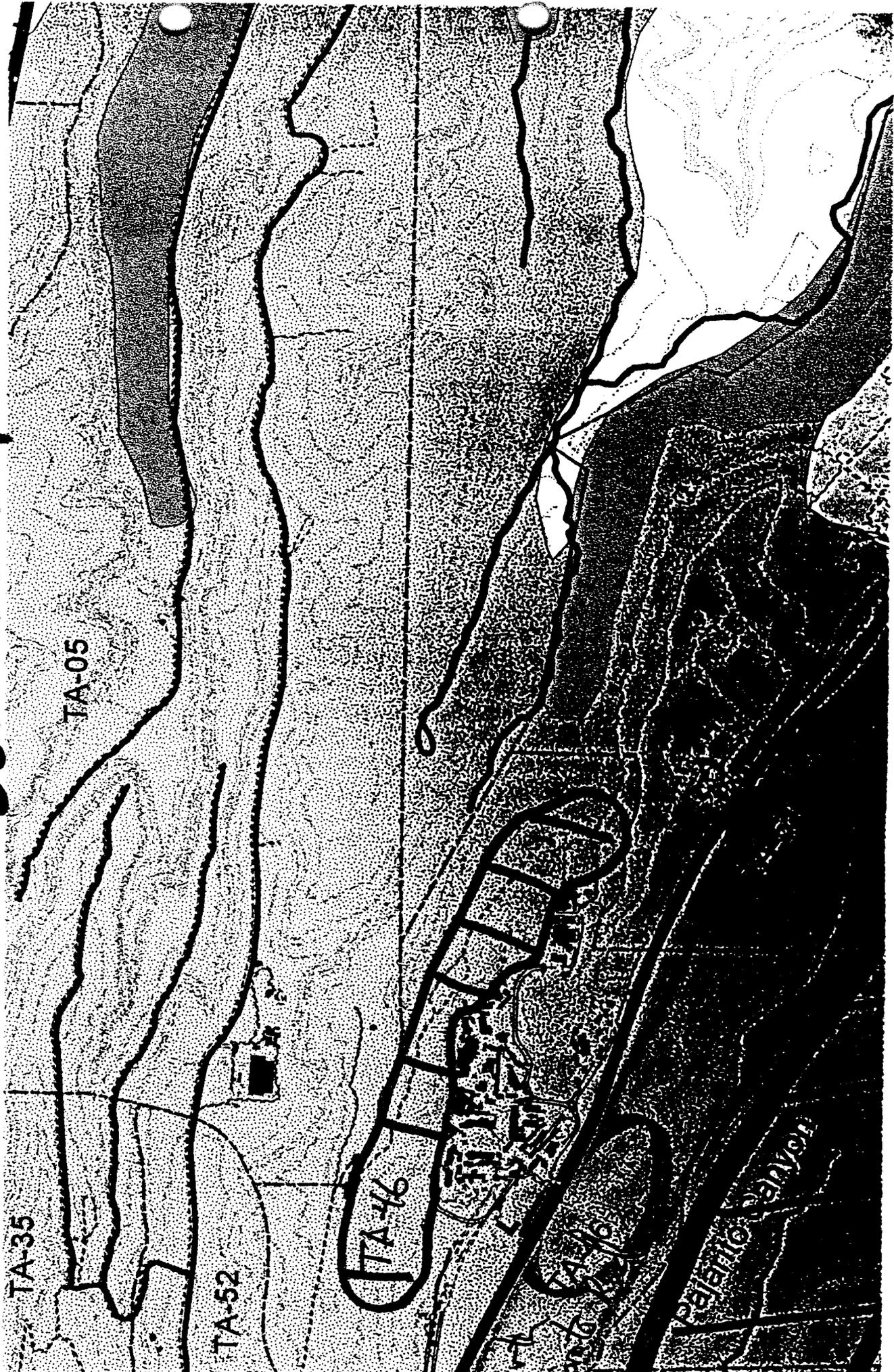
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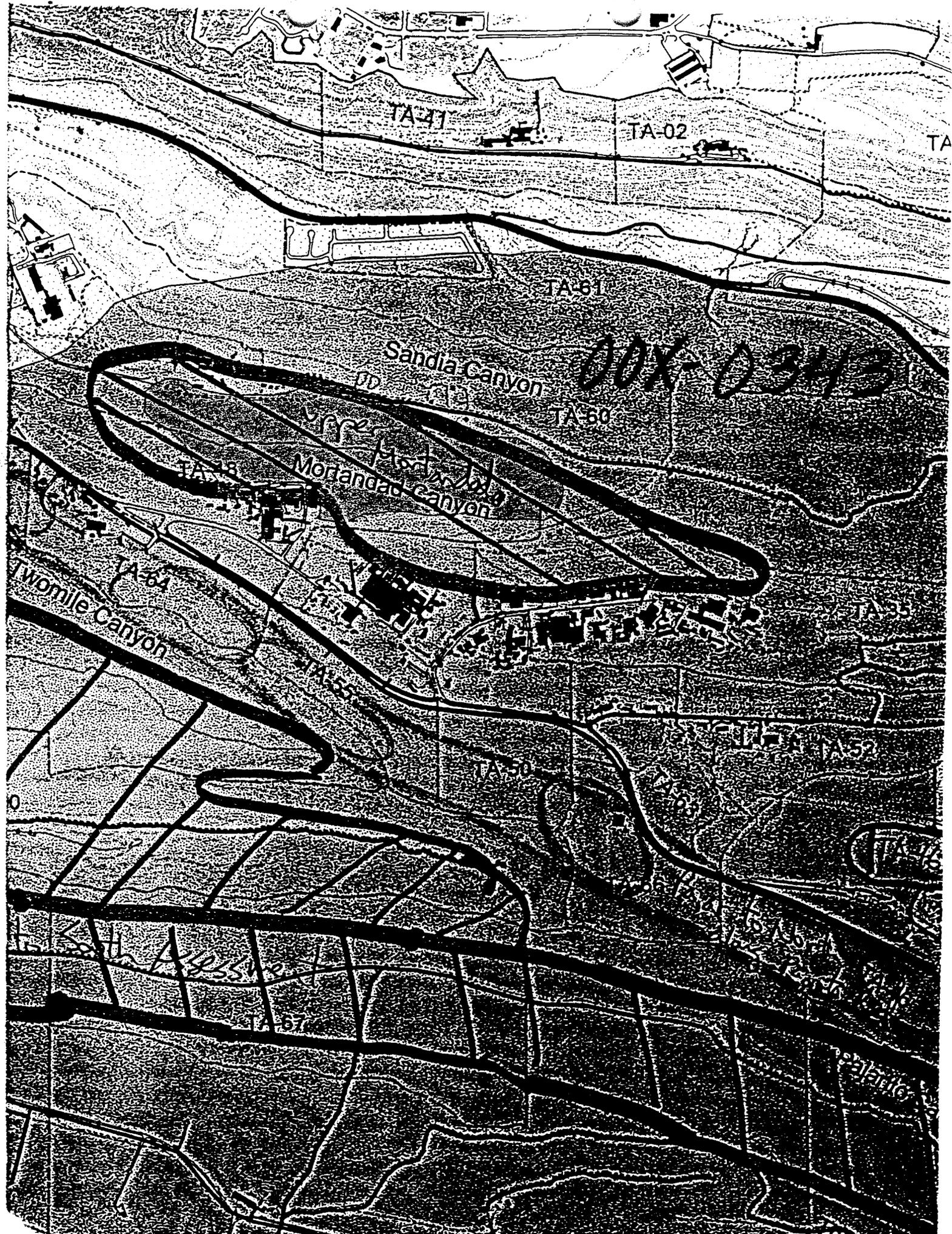
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175

TA-57

00X-0344





TA-41

TA-02

TA

TA-51

Sandia Canyon

001-0311

TA-50

Mortandao Canyon

TA-58

Twomile Canyon

TA-64

TA-55

TA-50

TA-52

TA-53

TA-54

TA-55

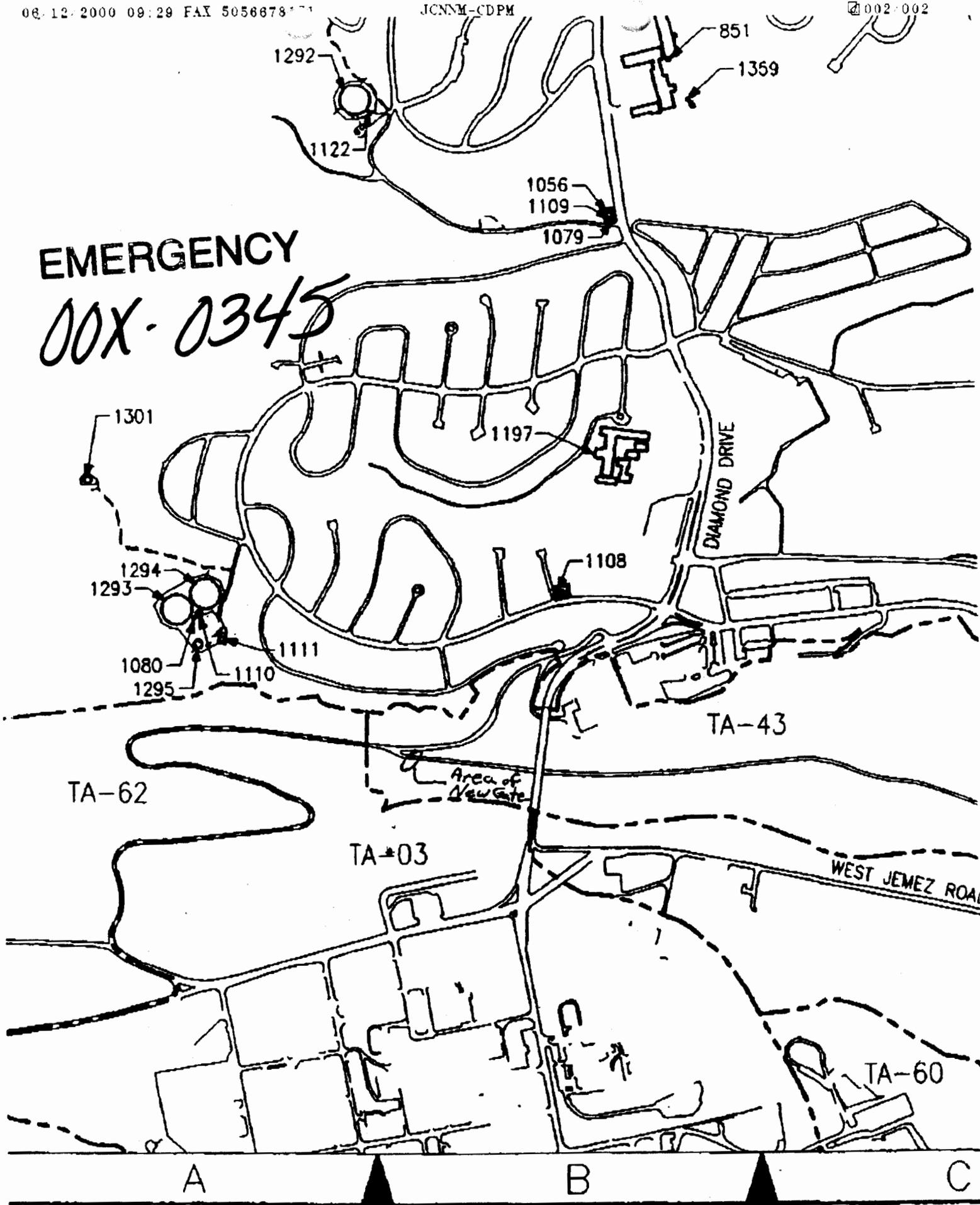
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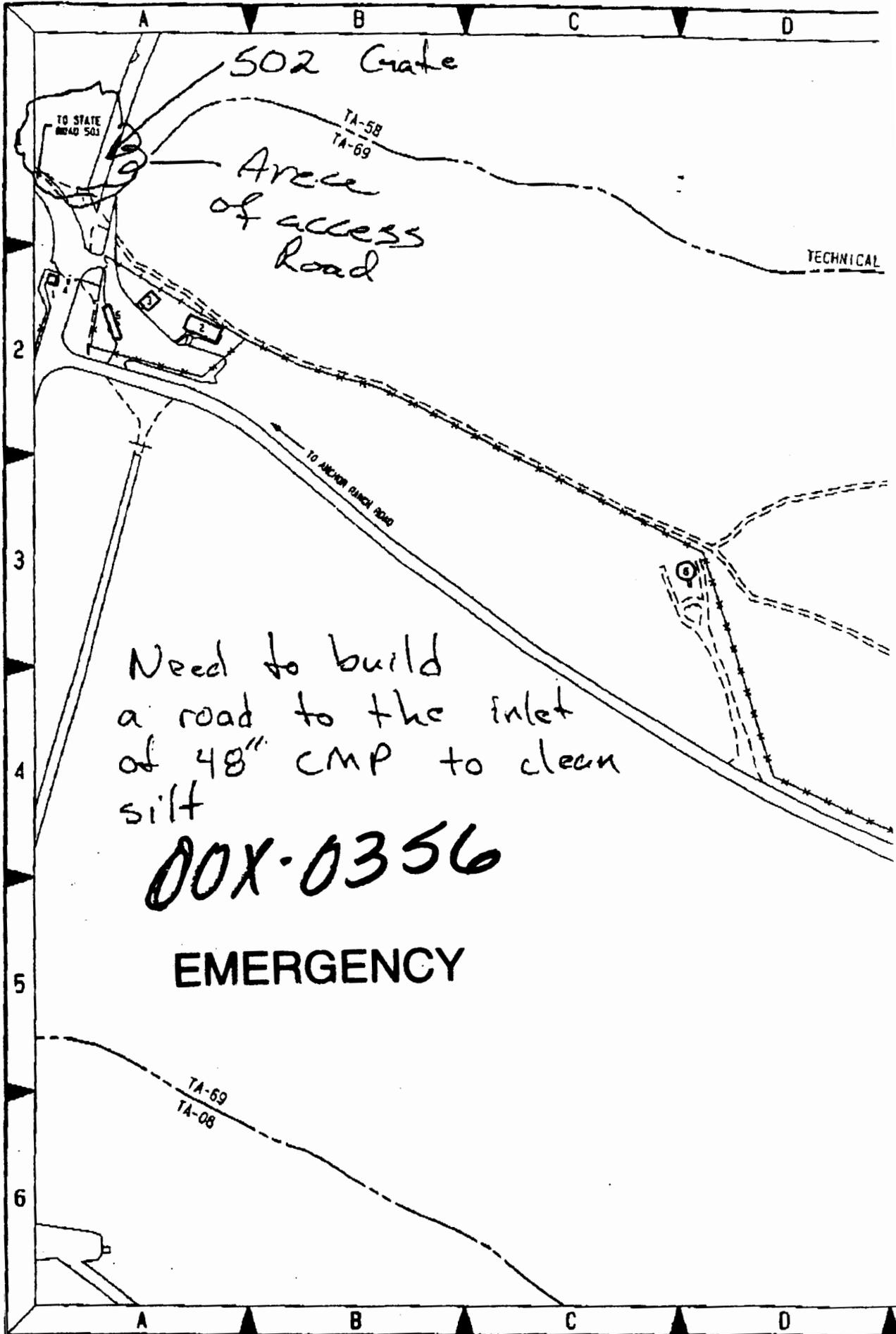
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Kath Albee

EMERGENCY

00X-0345





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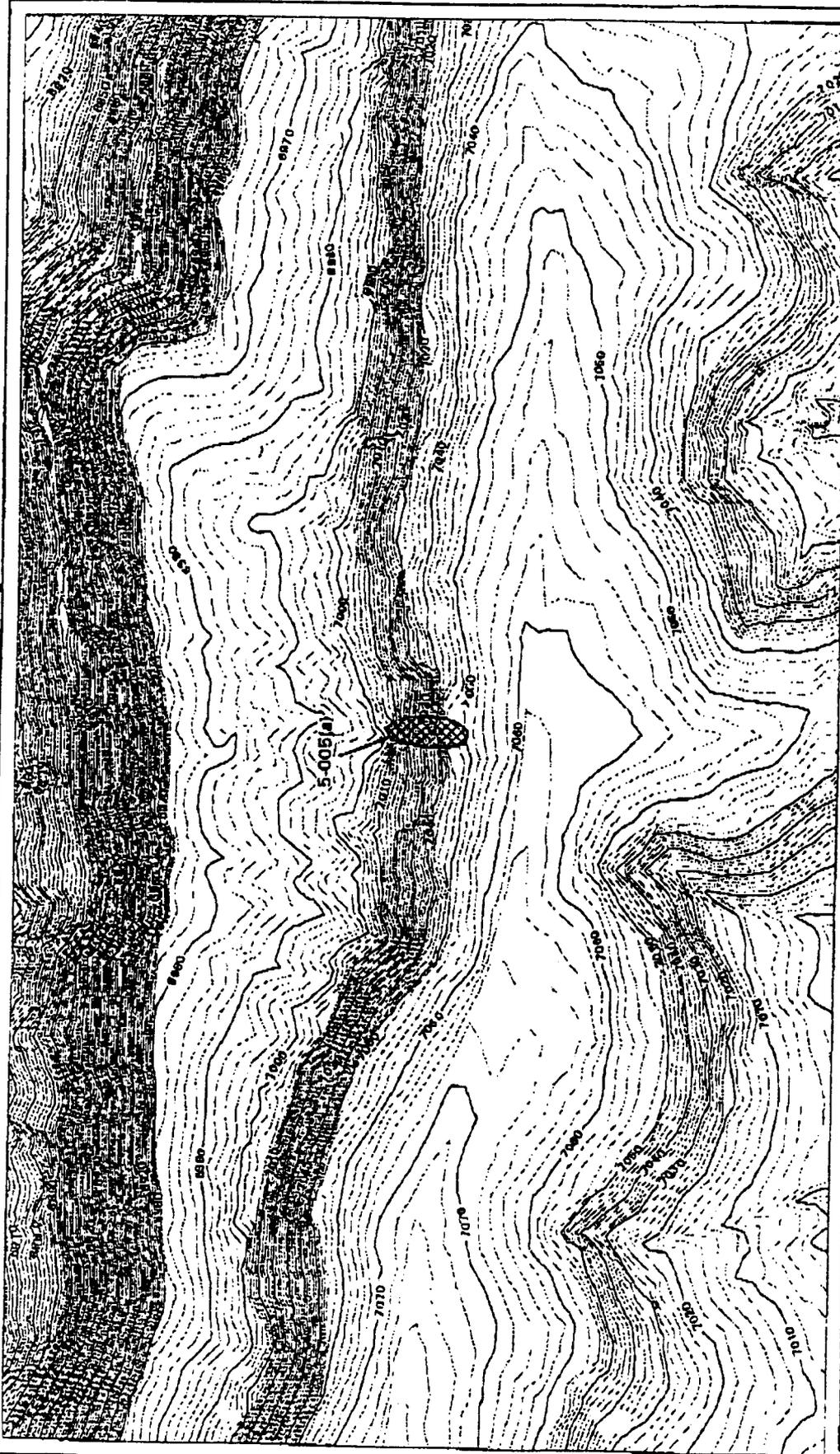
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SUBLOW



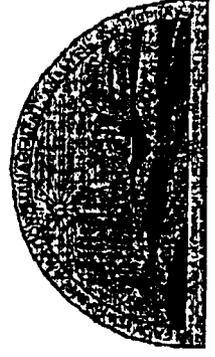
00X-0358



1983 North American Datum
Projection and Grid Ticks:
North American Datum
Central Zone (Transverse Mercator)

Notes: Information on this map is provisional
and has not been checked for accuracy.

Produced by Marjolein Jones
FILMAD G108888 19 Jun 00



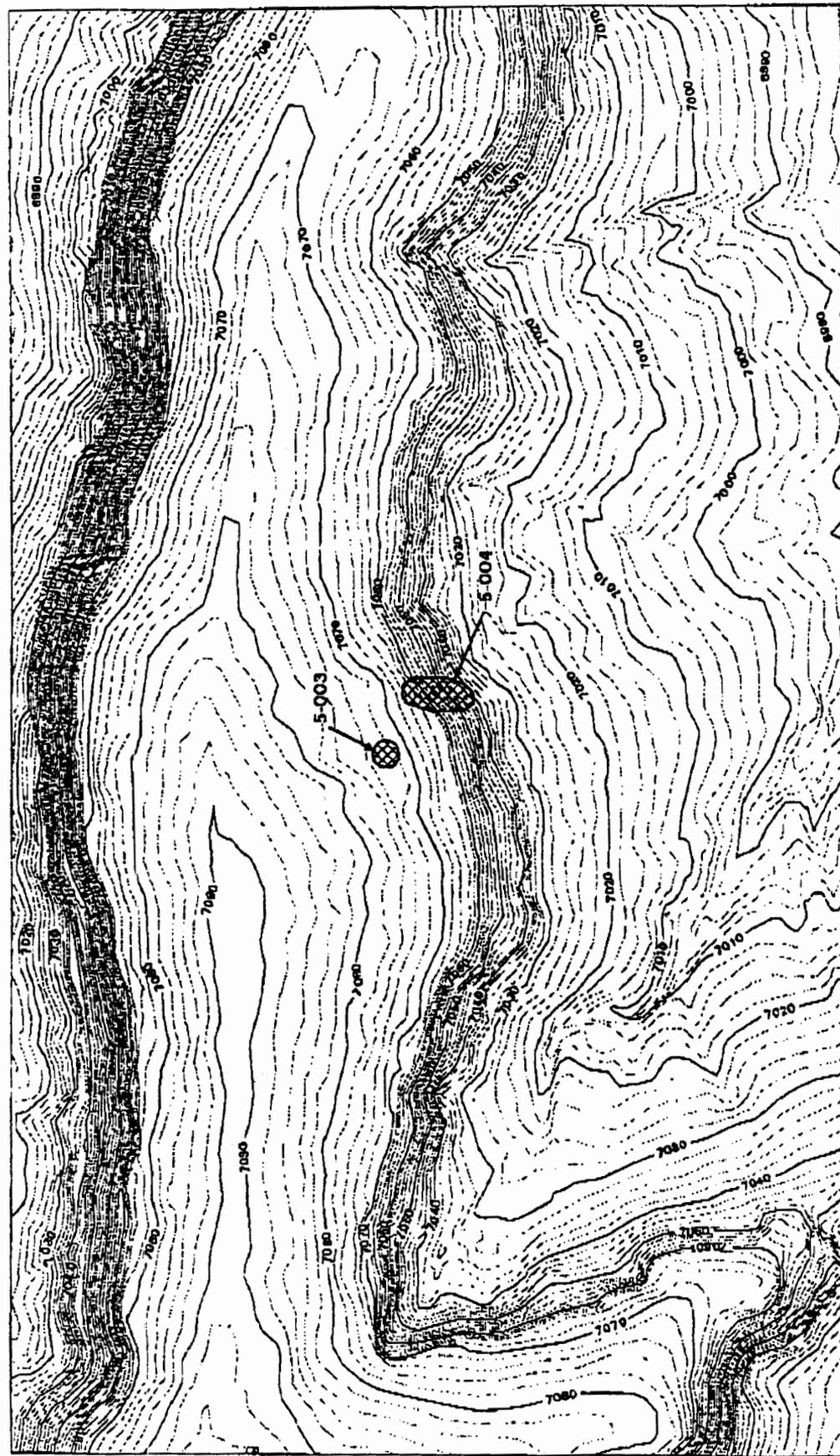
PRS 5-005(a)

Scale: 1:2400

0 200 400 FEET

- 10-ft Contour
- 2-ft Contour
- Paved Road/Parking
- PRS
- Structure

00X-0358



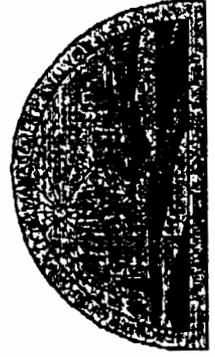
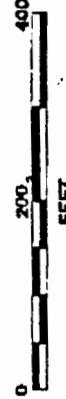
1983 North American Datum
Projection and Grid Ticks:
New Mexico State Plane Coordinate System,
Central Zone (Transverse Mercator)
Notice: Information on this map is provisional
and has not been checked for accuracy.
Prepared by Marie's Jans
FMAD G108881 19 Jun 00

PRS 5-003 and 5-004

Scale: 1:2400

0 200 400 FEET

10-ft Contour
2-ft Contour
Paved Road/Parking
PRS
Structure



00X-0358



1989 North American Datum
 Projection and Grid Ticker
 North American State Plane Coordinate System,
 Central Zone (Transverse Mercator)

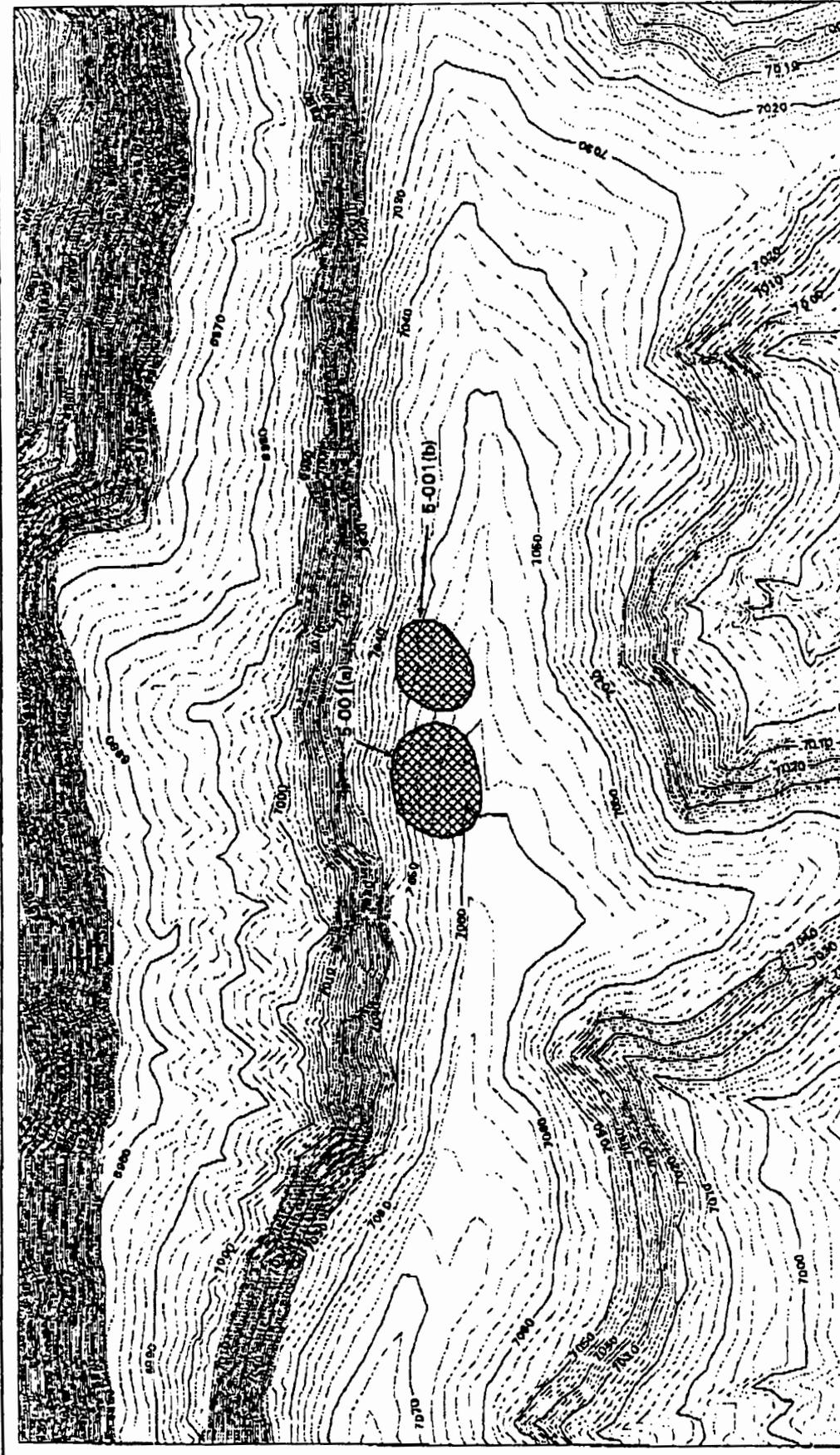
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 and has not been checked for accuracy.
 Produced by M. J. Jones
 HMAD G10889 19 JUN 00

PRS 5-006(a,e)

Scale: 1:2400

0 200 400
 FEET

00X-0358



1983 North American Datum
 Projection and Grid Ticks:
 North American State Plane Coordinate System,
 Central Zone (Transverse Mercator)

Notice: Information on this map is provisional
 and has not been checked for accuracy.

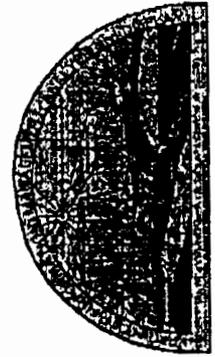
Produced by Maria Jerez
 FIMAD G108890 19 Jun 00

PRS 5-001 (a,b)

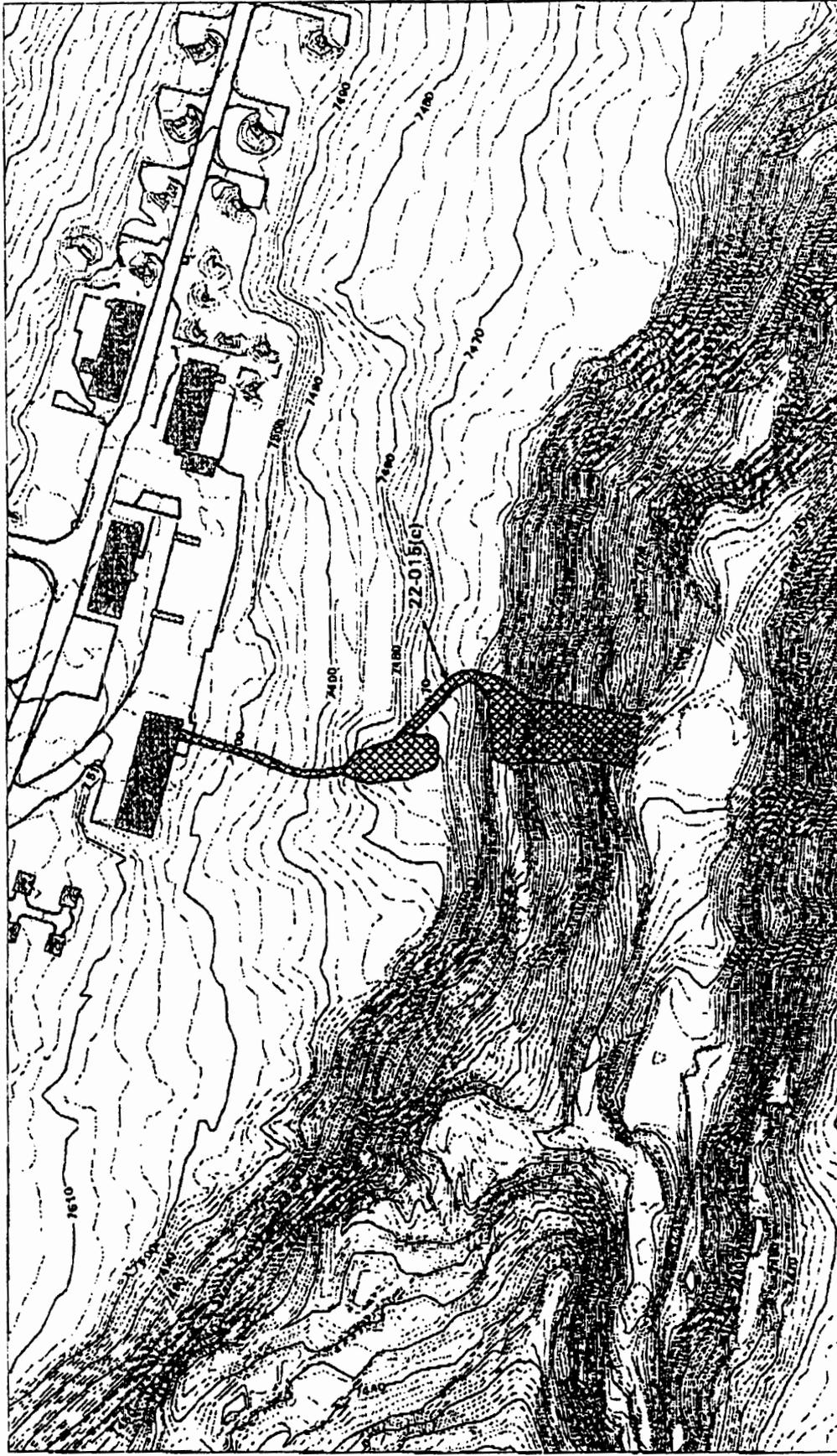
Scale: 1:2400

0 200 400
 FEET

10-ft Contour
 2-ft Contour
 Paved Road/Parking
 PRS
 Structure



AX-0367



1883 North American Datum
Projections and Grid Ticks:
New Mexico State Plane Coordinate System,
Central Zone (Transverse Mercator)
Notes: Information on this map is preliminary
and has not been checked for accuracy.
Produced by Merilee Jones
FIMAD 5108700 20 Jun 00

PRS 22-015(c)

Scale: 1:2400

0 200 400
FEET

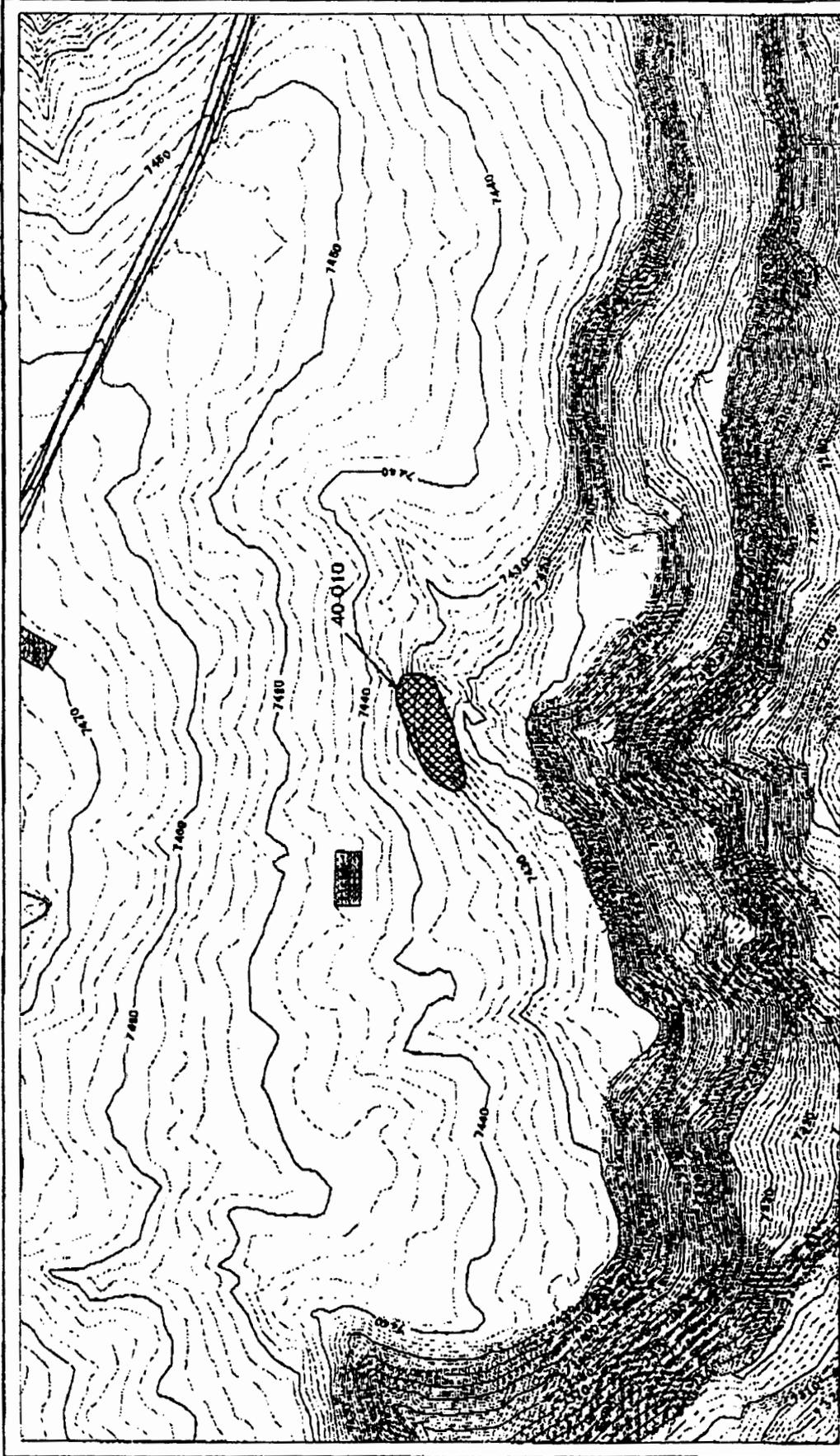
10-ft Contour
2-ft Contour
Paved Road/Parking
PRS
Structure



00X-0367



10X-1367



PRS 40-010

- 10-ft Contour
- 2-ft Contour
- Paved Road/Parking
- PRS
- Structure

Scale: 1:2400

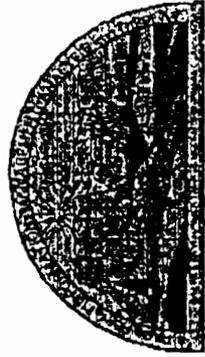
0 200 400 FEET

1983 North American Datum
 Projection and Grid Ticks:
 New Mexico State Plane Coordinate System,
 Central Zone (NAD83 Meridian)

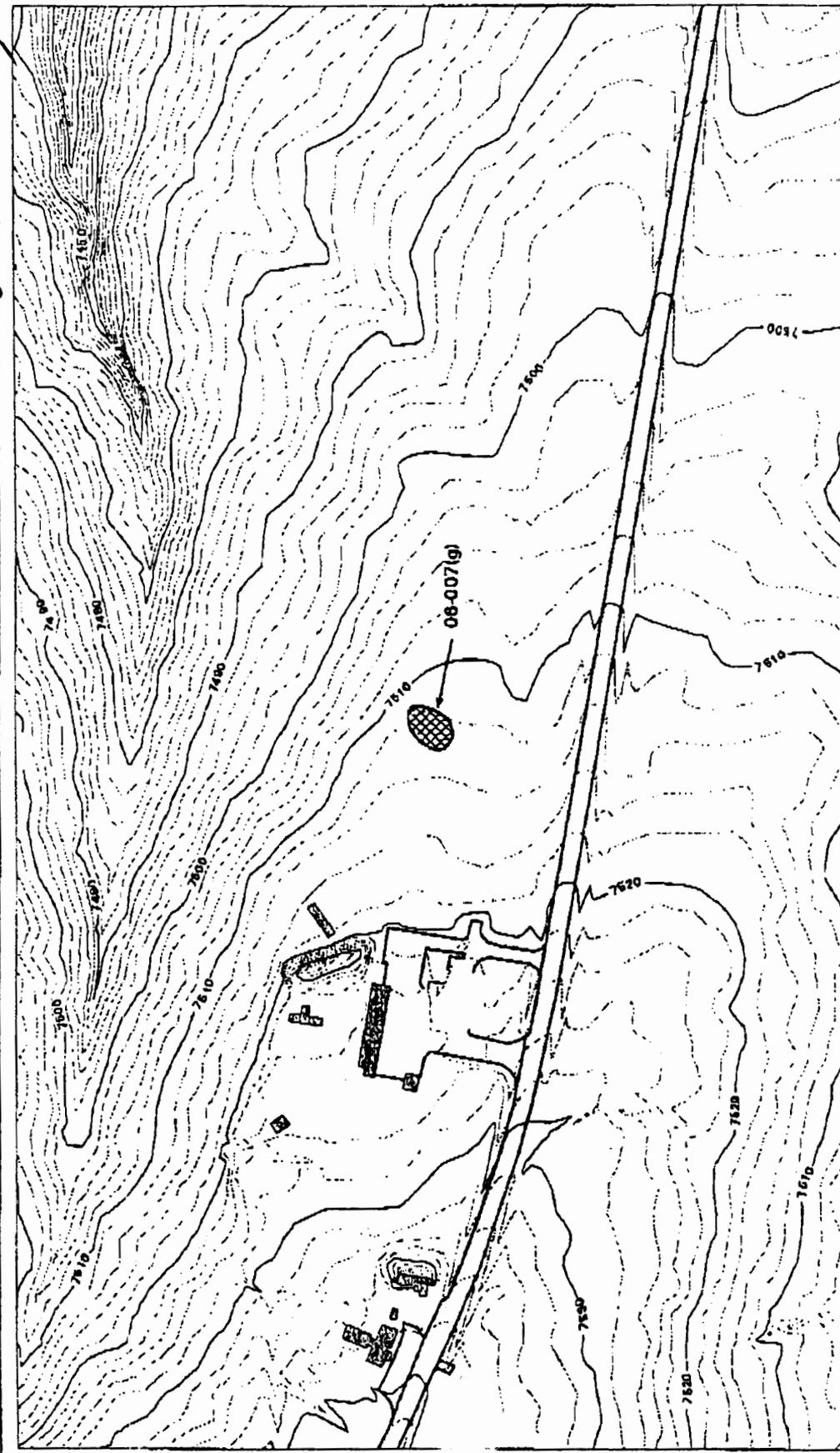
Notice: Information on this map is provisional
 and has not been checked for accuracy.

Produced by Ianis Jones

FIMAD G108716 21 Jun 00



10X-0367



1983 North American Datum
 Projection and Grid Ticks:
 New Mexico State Plane Coordinate System,
 Central Zone (Transverse Mercator)

Notice: Information on this map is provisional
 and has not been checked for accuracy.
 Produced by Maricle Jones

FINAD G108706 21 Jun 00

PRS 06-007(g)

Scale: 1:2400

0 200 400
 FEET

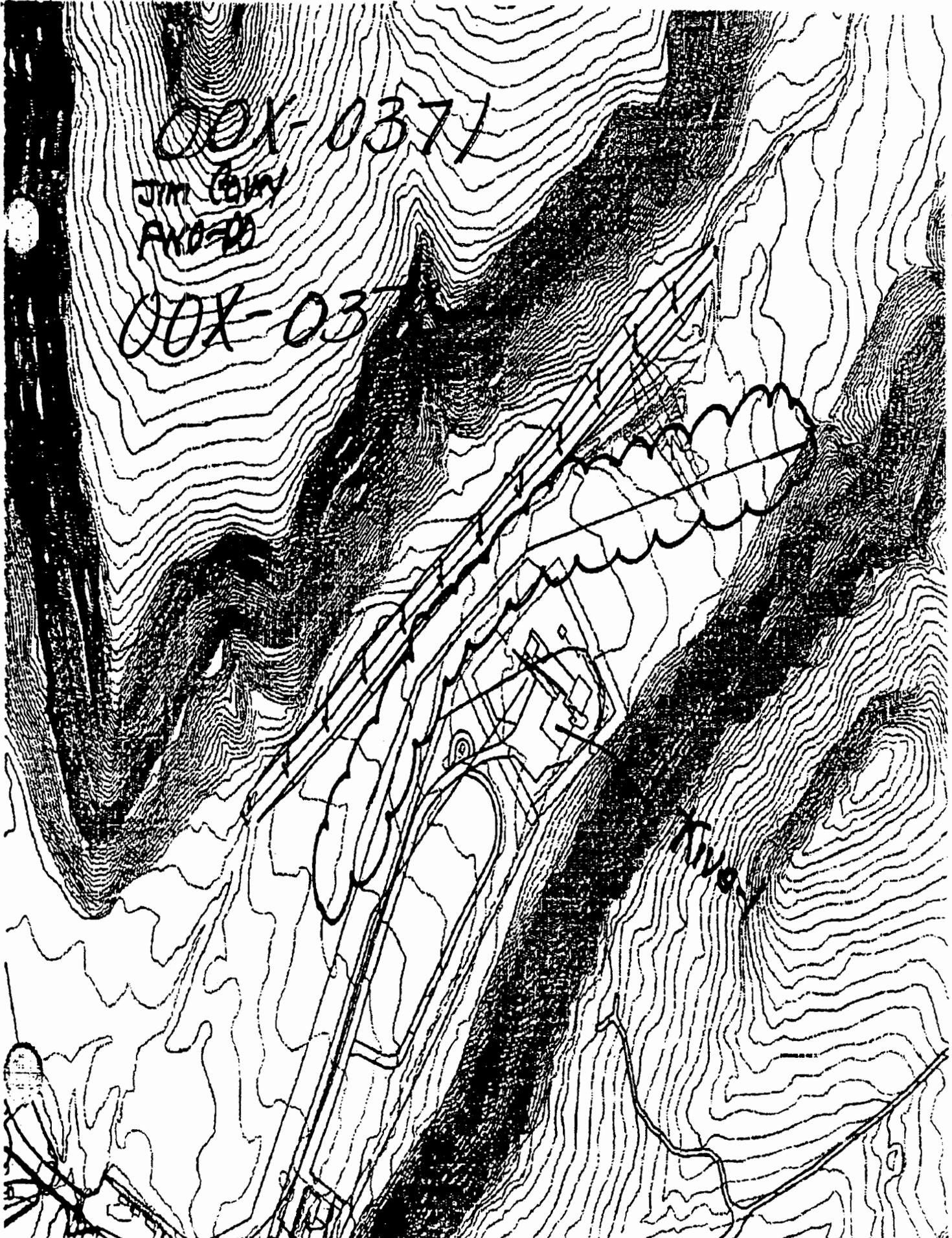
10-ft Contour
 2-ft Contour
 Paved Road/Parking
 PRS
 Structure

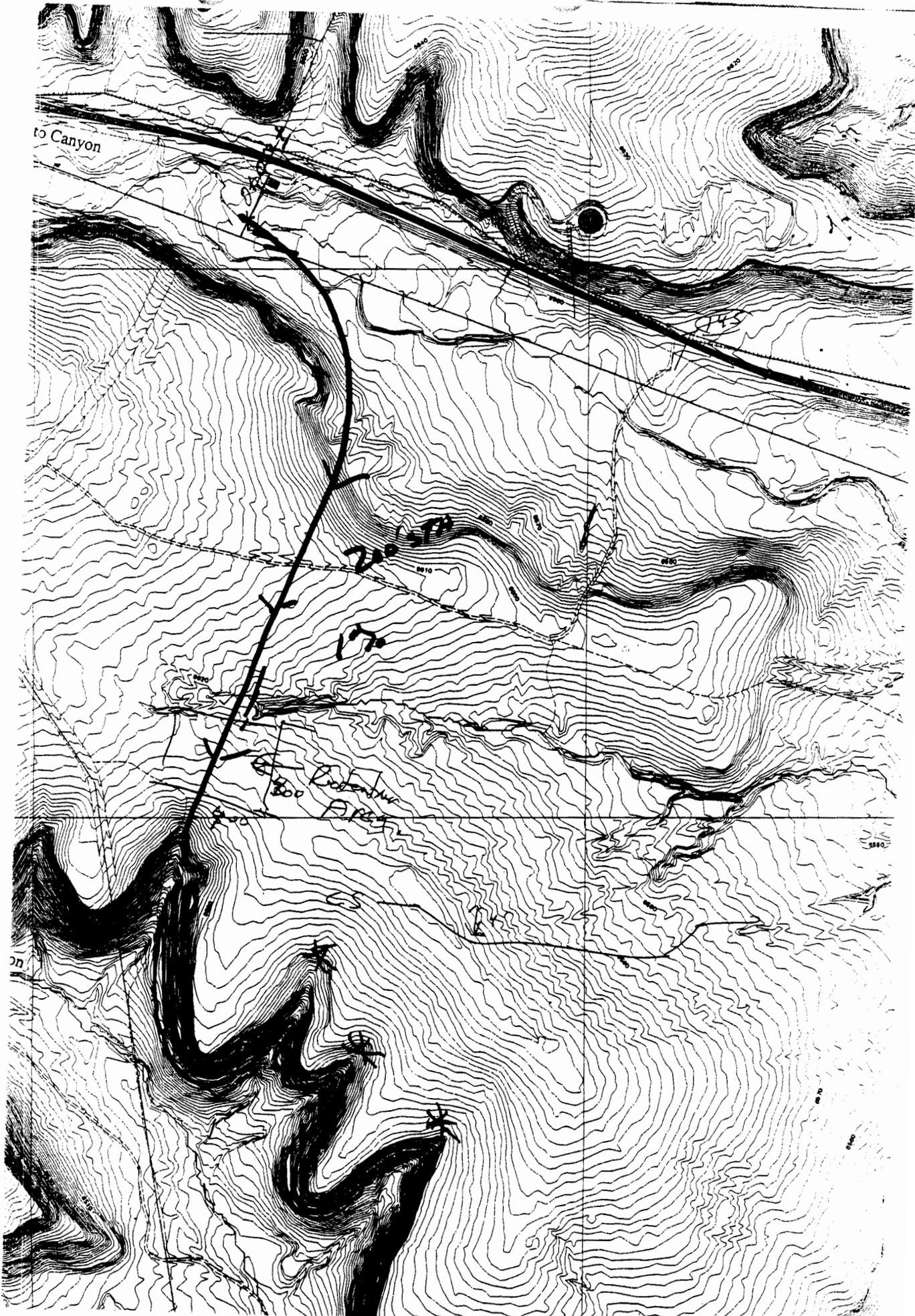


OOX-0377

JIM COOK
AN-50

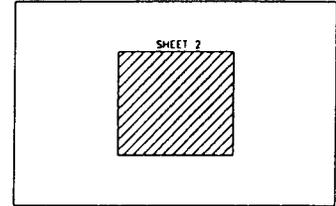
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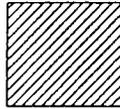


00X-0374 EMERGENCY

KEY MAP



SHEET 2



STRUCTURE LOCATION INDEX

STRUCTURE TA-#	DESIGNATION	STRUCTURE NOMENCLATURE	STRUCTURE SHEET NO.	LOCATOR MAP KEY
02-1	OMEGA-1	OMEGA WEST REACTOR	2	D-4
02-4	OMEGA-4	STORAGE BUILDING	2	B-5
02-21	OMEGA-21	WATER LINE VALVE HOUSE	2	C-3
02-44	OMEGA-44	COOLING SYSTEM BUILDING	2	B-4
02-46	02-46	SURGE TANK	2	B-4
02-49	02-49	COOLING TOWER	2	B-4
02-50	OMEGA-50	STORAGE BUILDING	2	C-5
02-51	OMEGA-51	SUBSTATION	2	C-3
02-53	OMEGA-53	TRANSFER PIT	2	B-4
02-57	OMEGA-57	VALVE HOUSE	2	B-4
02-63	OMEGA-63	BOILER HOUSE	2	E-4
02-69	02-69	GUARD STATION #316	2	A-5
02-88	02-88	STORAGE BUILDING	2	B-4
02-89	02-89	STORAGE BUILDING	2	C-4
02-90	02-90	STORAGE SHED	2	C-3



2	10-20-99	REVISED TO STATUS OF 10-20-99	AS	MS	CS	MS	MS
1	05-18-94	REVISED TO STATUS OF 05-18-94	AS	MS	CS	MS	MS
NO.	DATE	CLASS. REV.	DESCRIPTION	CHKD.	CHKD.	CHKD.	APP.

Johnson Controls
 (Northwest Division)

AS-BUILT STRUCTURE LOCATION MAPS		DESIGN	A. MORRIS
TA-02		REVIEWED	A. MORRIS
OMEGA SITE		CHECKED	H. SALAZAR
		DATE	11-08-93

SUBMITTED: HAROLD SALAZAR APPROVED FOR RELEASE: LARRY BAYS

Los Alamos		Los Alamos National Laboratory Los Alamos, New Mexico 87545	SHEET	2	2
CLASSIFICATION	U	REVIEWED	HAROLD SALAZAR	DATE	11-08-93
PROJECT #	11050	DRAWING NO.	AD17	REV.	2

00T - 0374 EXTRA MAP

RFI Work Plan for OU 1098

7.5 - 2

May 1993

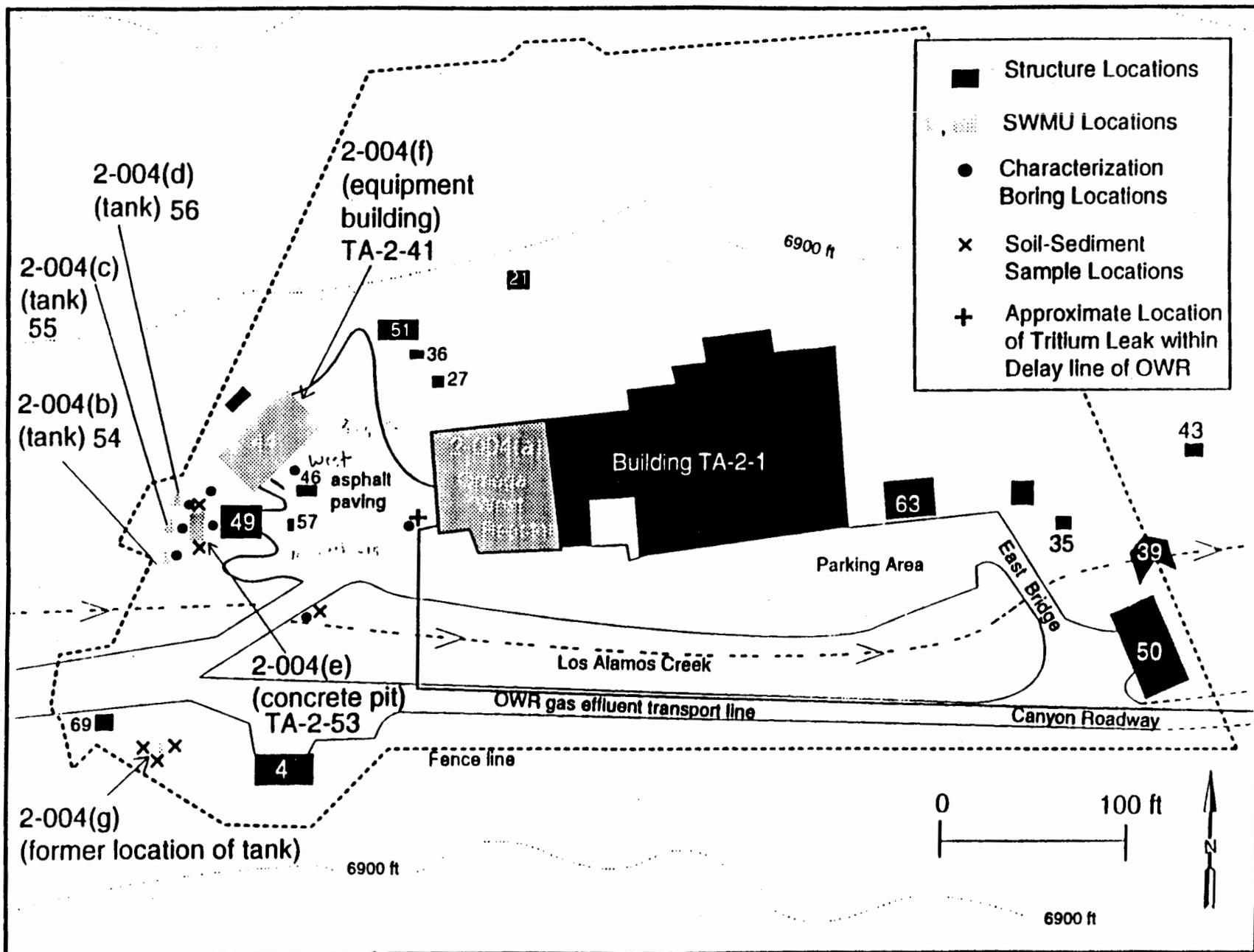
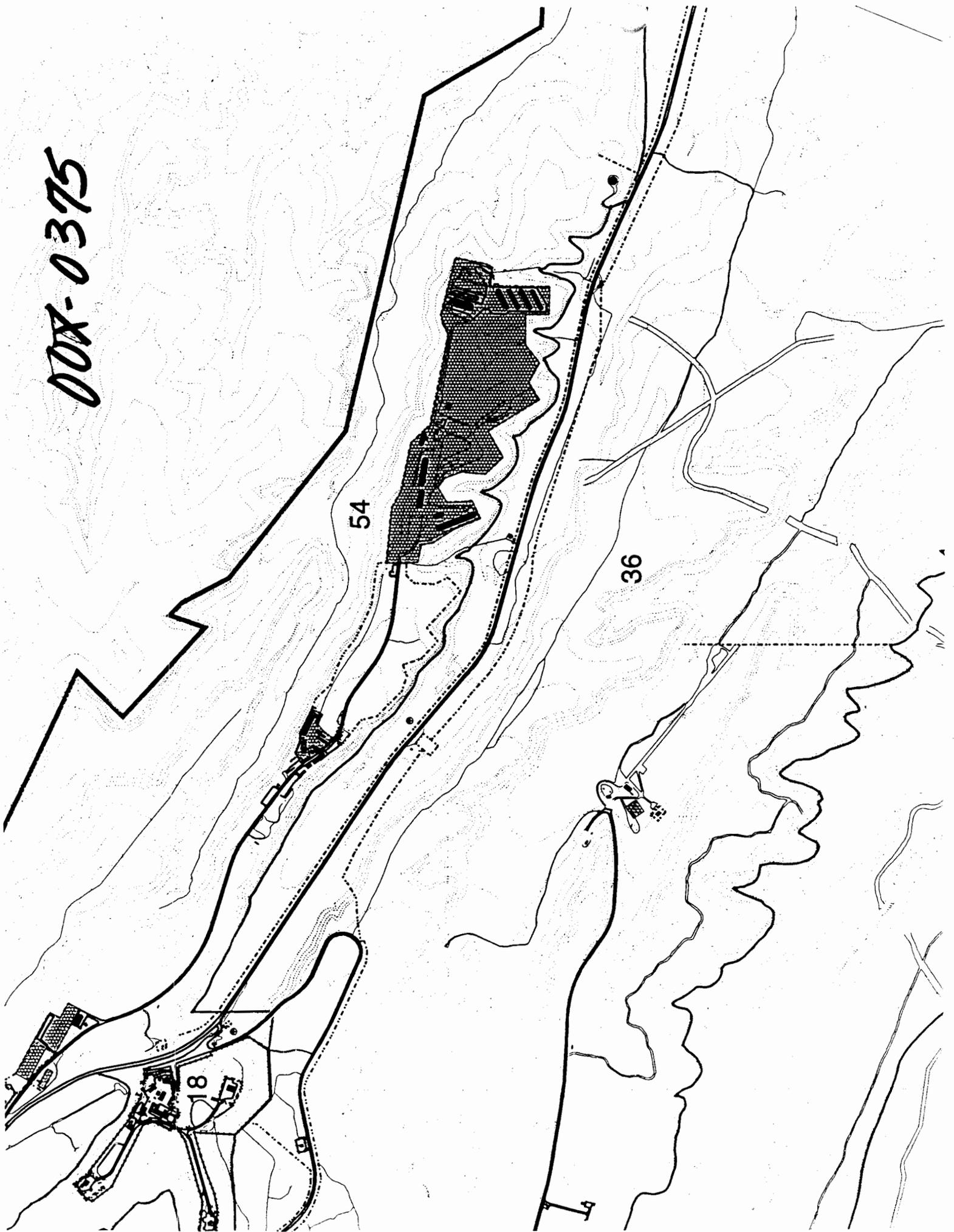


Figure 7.5-1 Proposed SWMU no. 2-004, storage pits and tanks of the Omega West Reactor, RFI boring-soil sampling locations.

00X-0375



54

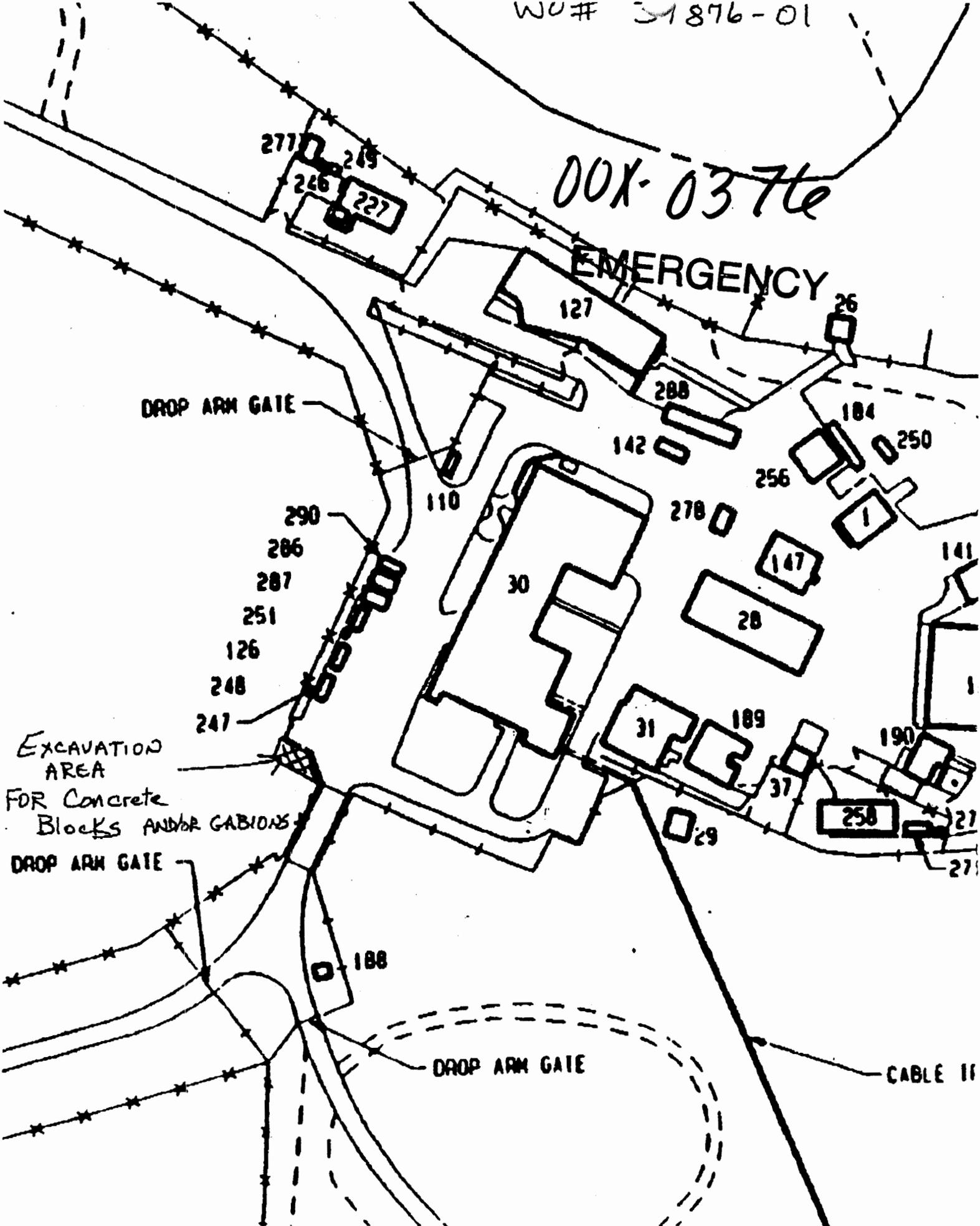
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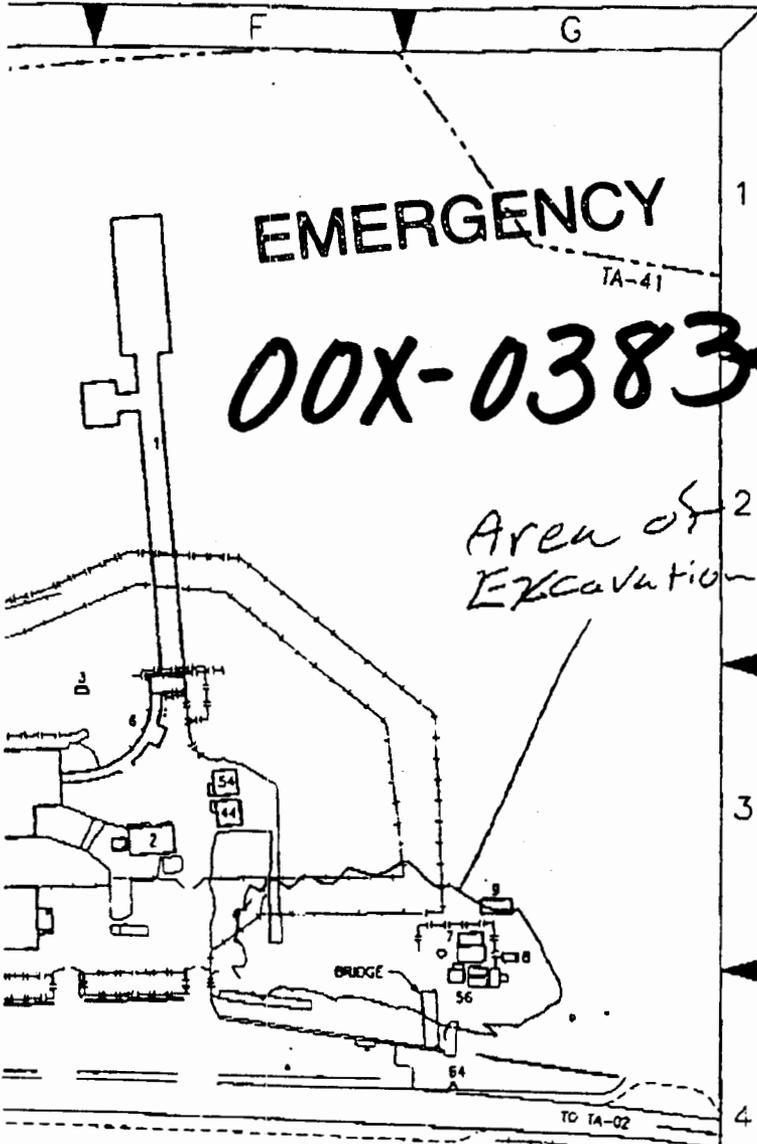
18

WU# 31876-01

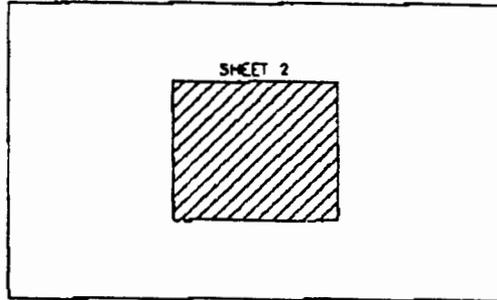
00X-0376

EMERGENCY



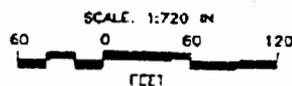


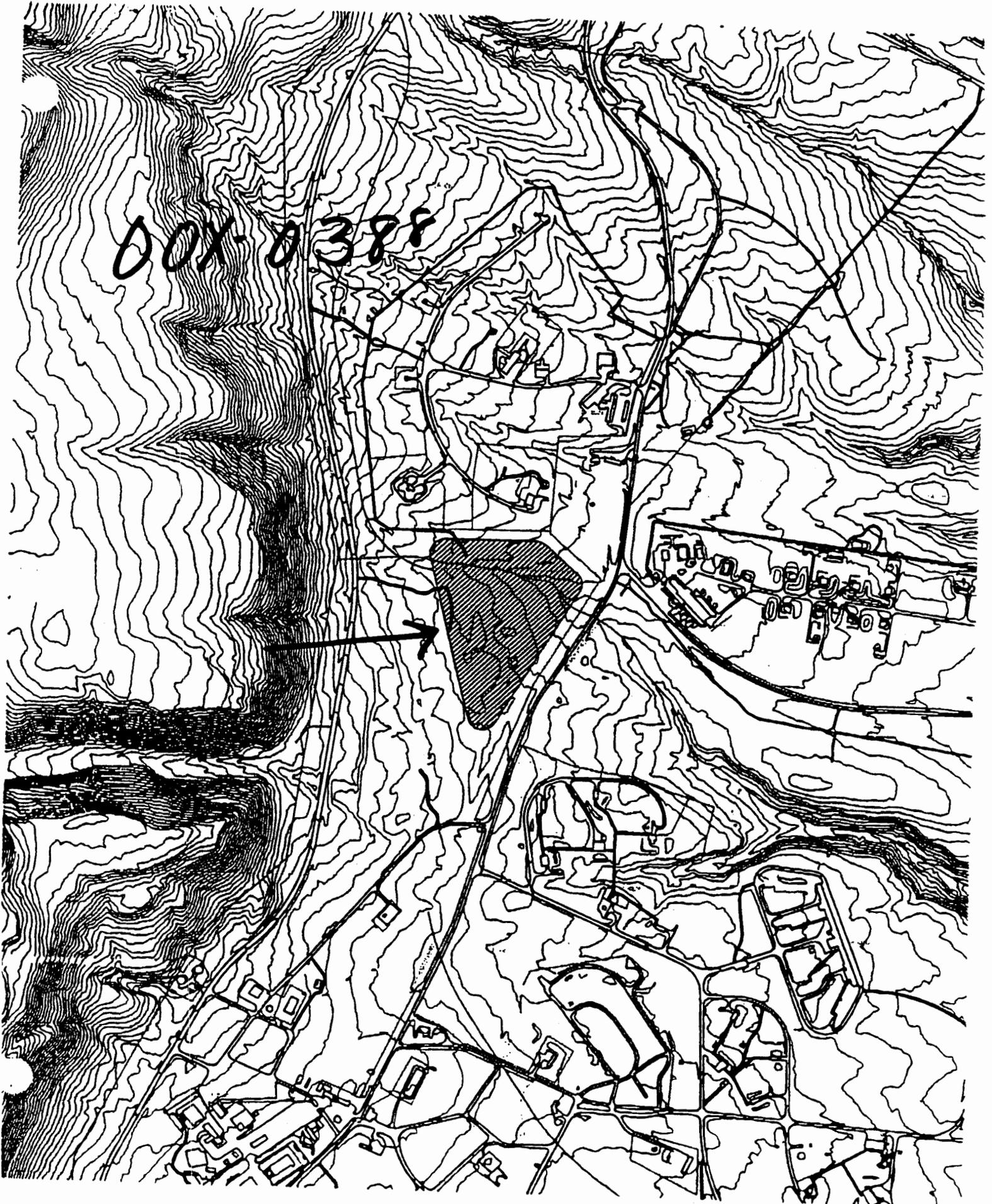
KEY MAP



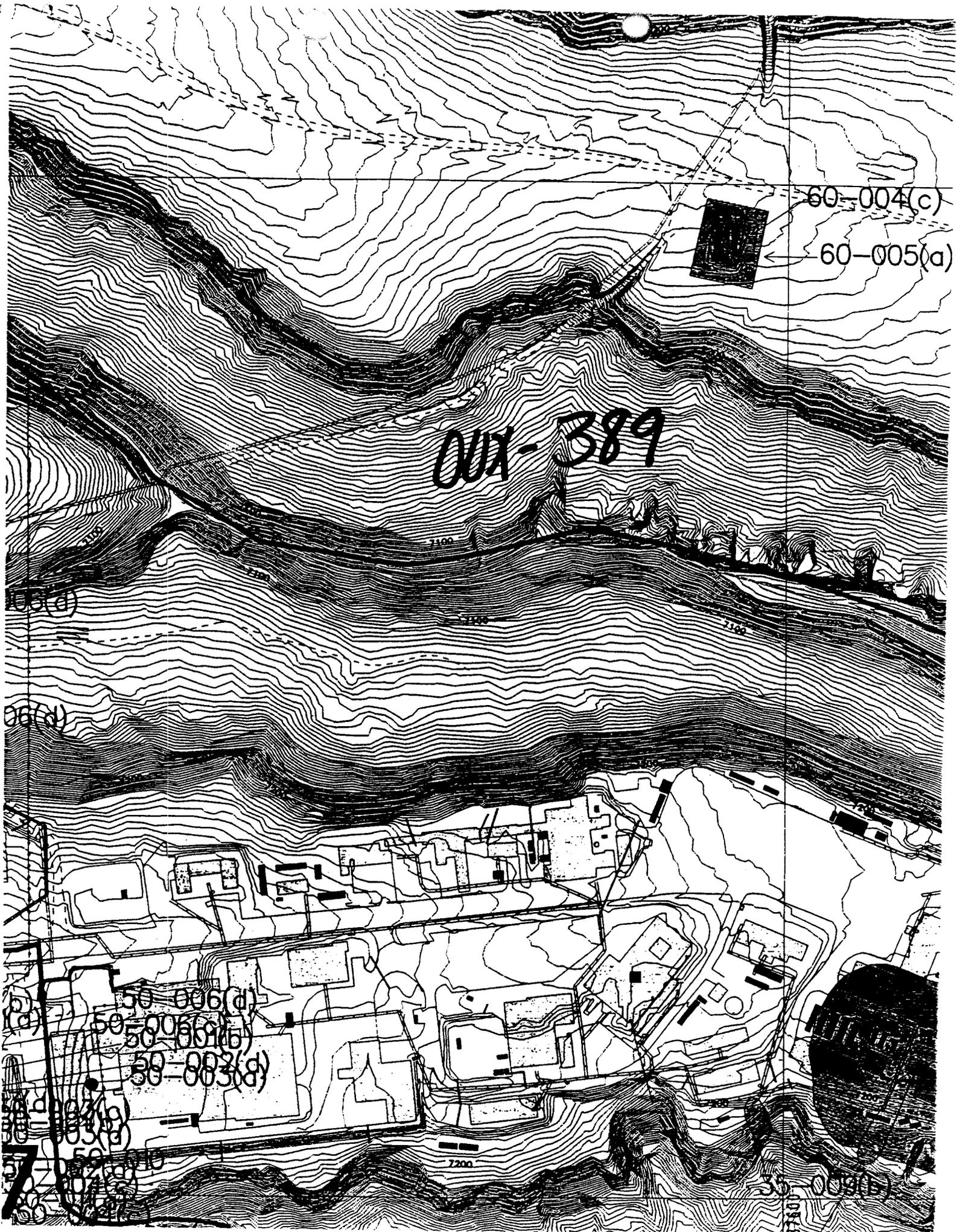
STRUCTURE LOCATION INDEX

STRUCTURE TA-#	DESIGNATION	STRUCTURE NOMENCLATURE	STRUCTURE LOCATOR SHEET NO.	MAP KEY
41-1	W-1	UNDERGROUND VAULT	2	F-2
41-2	W-2	GUARD STATION #318	2	F-3
41-3	W-3	BLOWER HOUSE	2	E-3
41-4	W-4	LABORATORY BUILDING	2	E-3
41-5	W-5	COVERED PASSAGEWAY	2	F-3
41-7	41-7	W/DOFF TANK & CHEMICAL ROOM	2	C-3
41-8	41-8	CONTACT TANK	2	G-3
41-9	41-9	DRYING BED	2	G-3
41-16	41-16	GUARD STATION #207	2	C-4
41-30	W-30	OFFICE BUILDING	2	D-3
41-44	W-44	STORAGE BUILDING	2	F-3
41-47	41-47	EXHAUST STACK	2	E-3
41-53	W-53	GUARD STATION #311	2	D-4
41-54	W-54	STORAGE BUILDING	2	F-3
41-56	41-56	LIFT STATION	2	G-4
41-64	41-64	METEOROLOGICAL TOWER	2	G-4
41-81	41-81	TRANSPORTAINER	2	C-3
41-82	41-82	TRANSPORTAINER	2	C-3
41-83	41-83	COOLER	2	D-3
41-84	41-84	LIQUID NITROGEN TANK	2	D-3





00X-038F



60-004(c)

60-005(a)

OUX-389

100(c)

200(c)

50-006(a)

50-006(b)

50-003(a)

50-003(b)

50-003(c)

50-003(d)

50-003(e)

50-003(f)

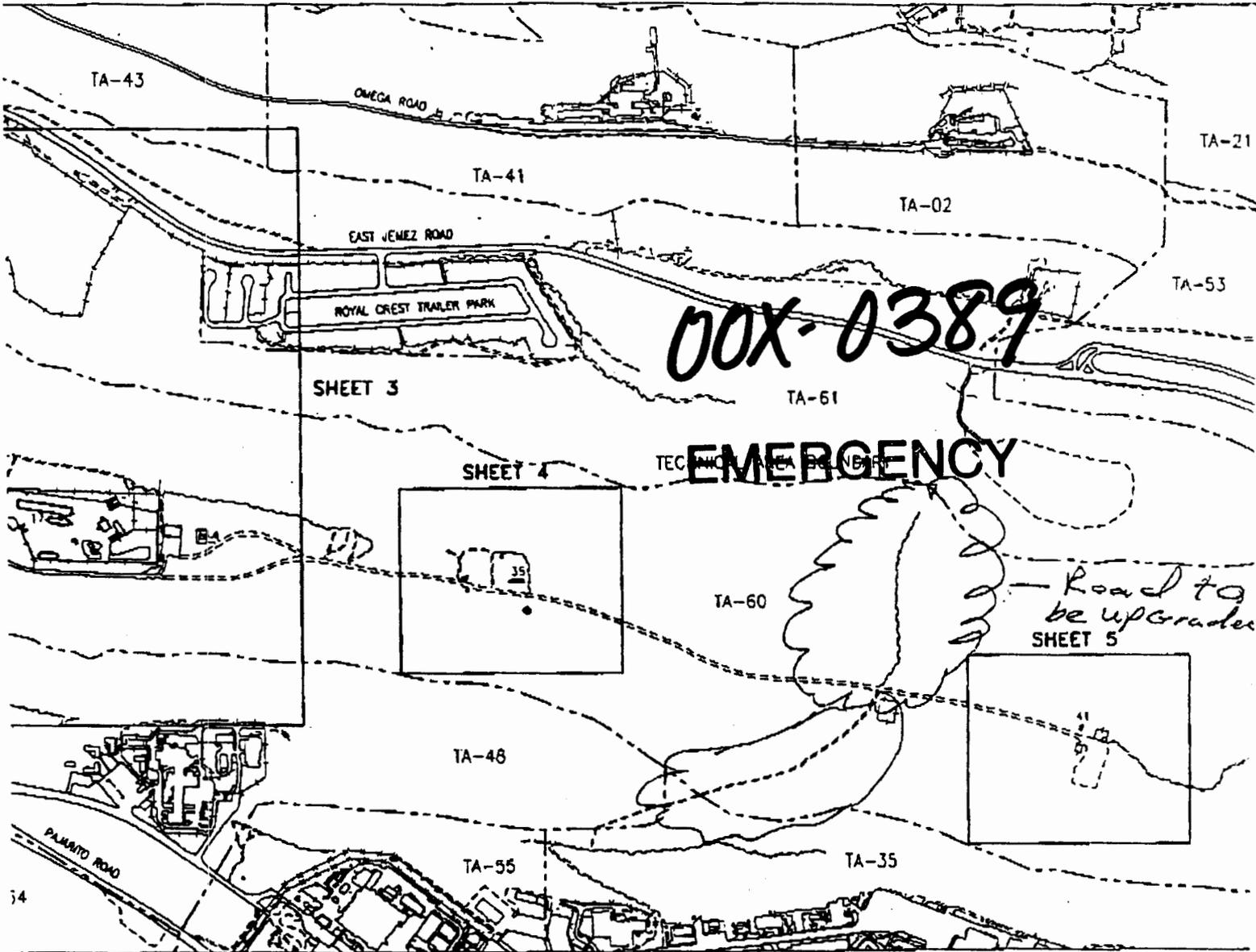
50-003(g)

50-003(h)

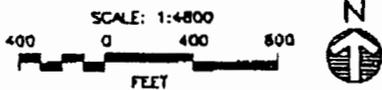
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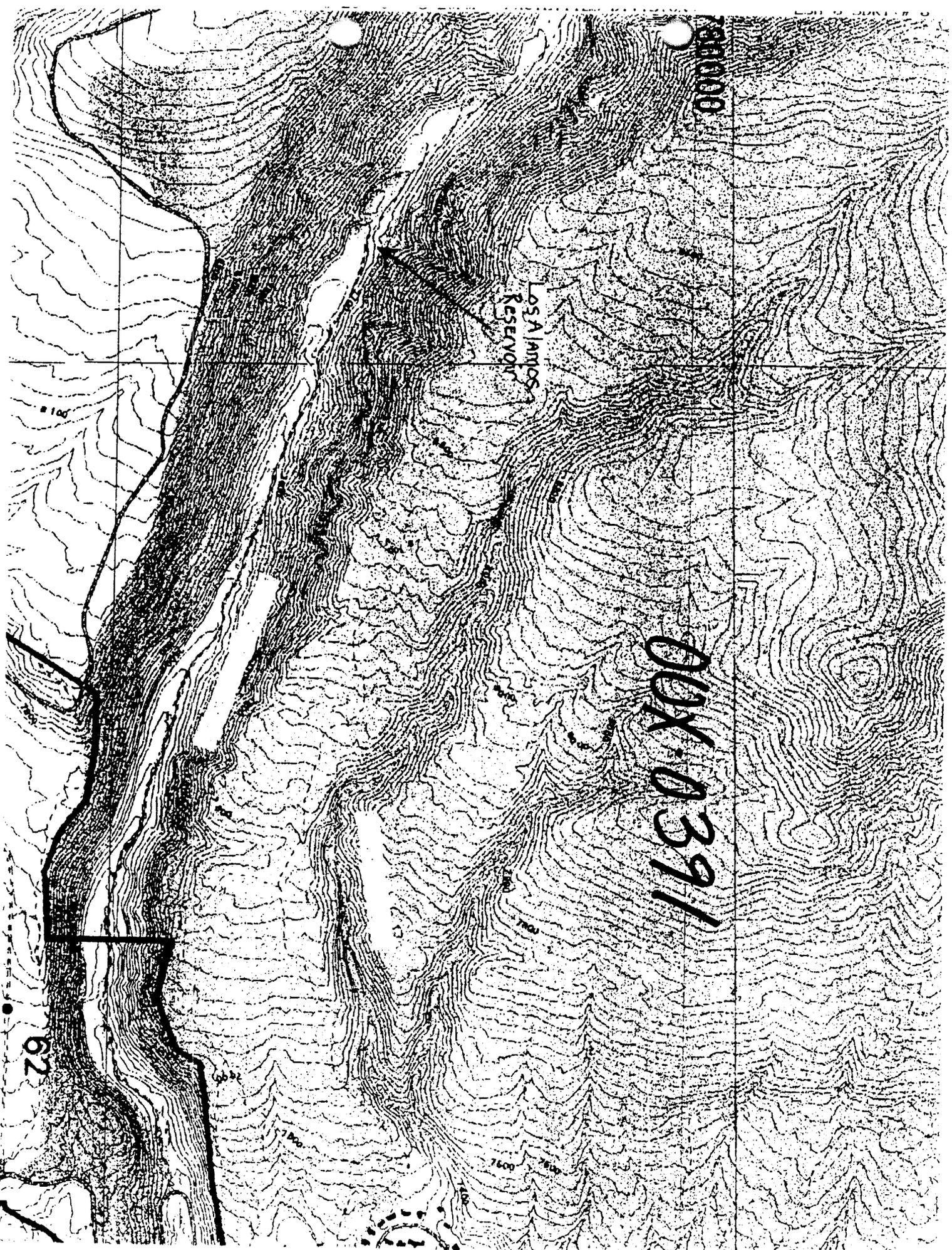
50-009(b)

STRUCTURE LOCATION MAP



TA-60 KEY MAP





78000

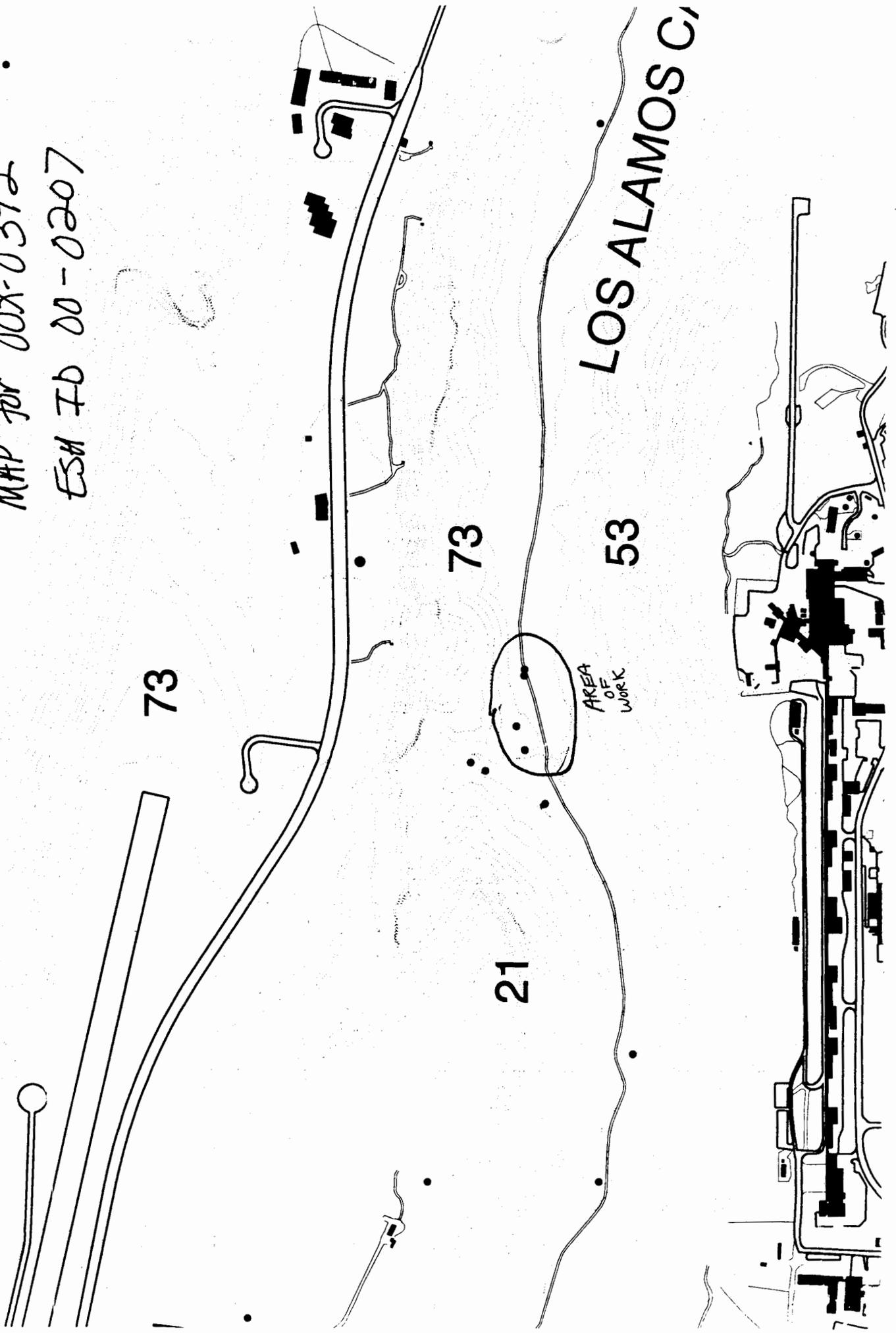
LOS ALAMOS
RESERVOIR

00X-0391

62

ANY

MAP for 00X-0392
ESM FD 00-0207



LOS ALAMOS C,

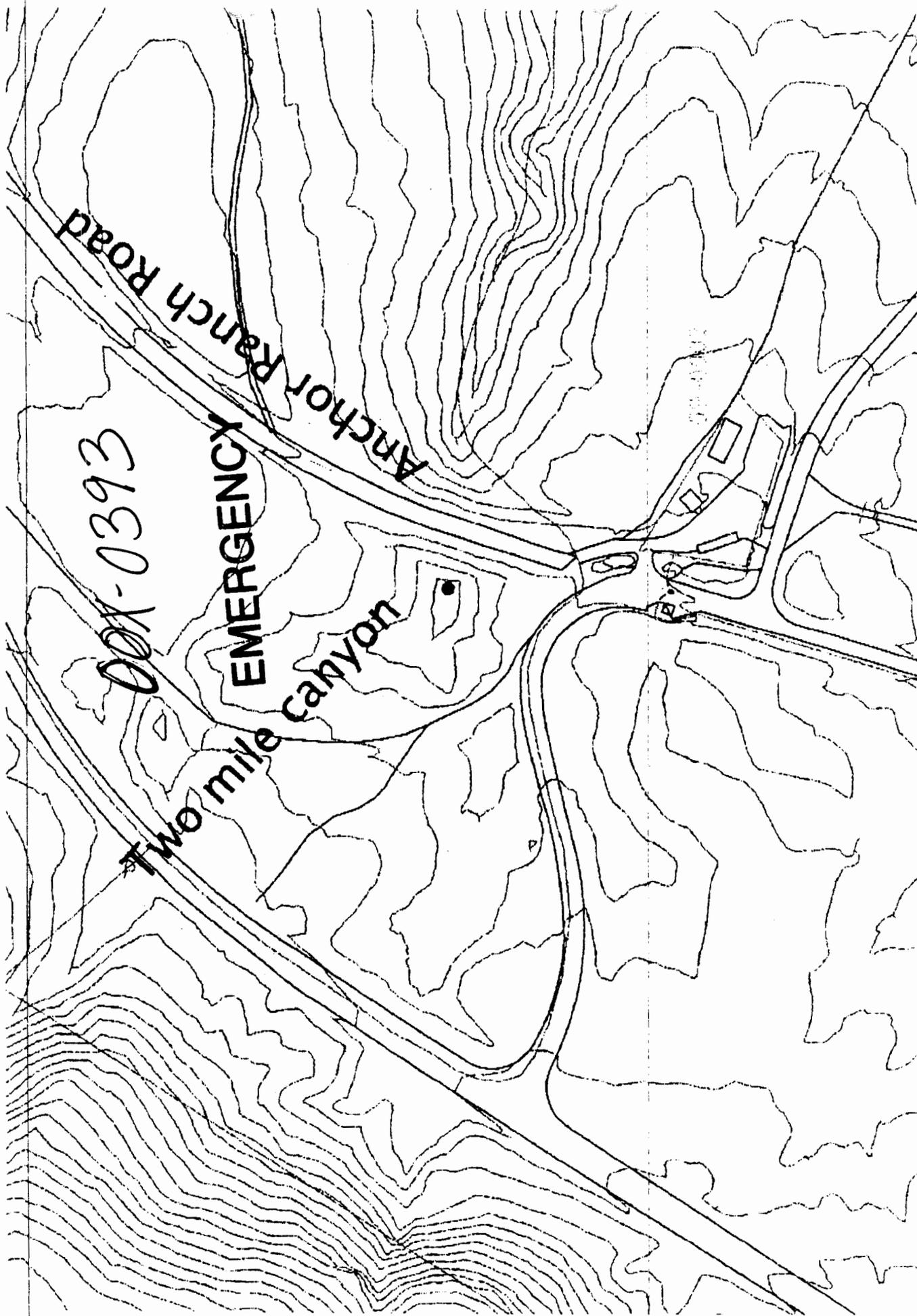
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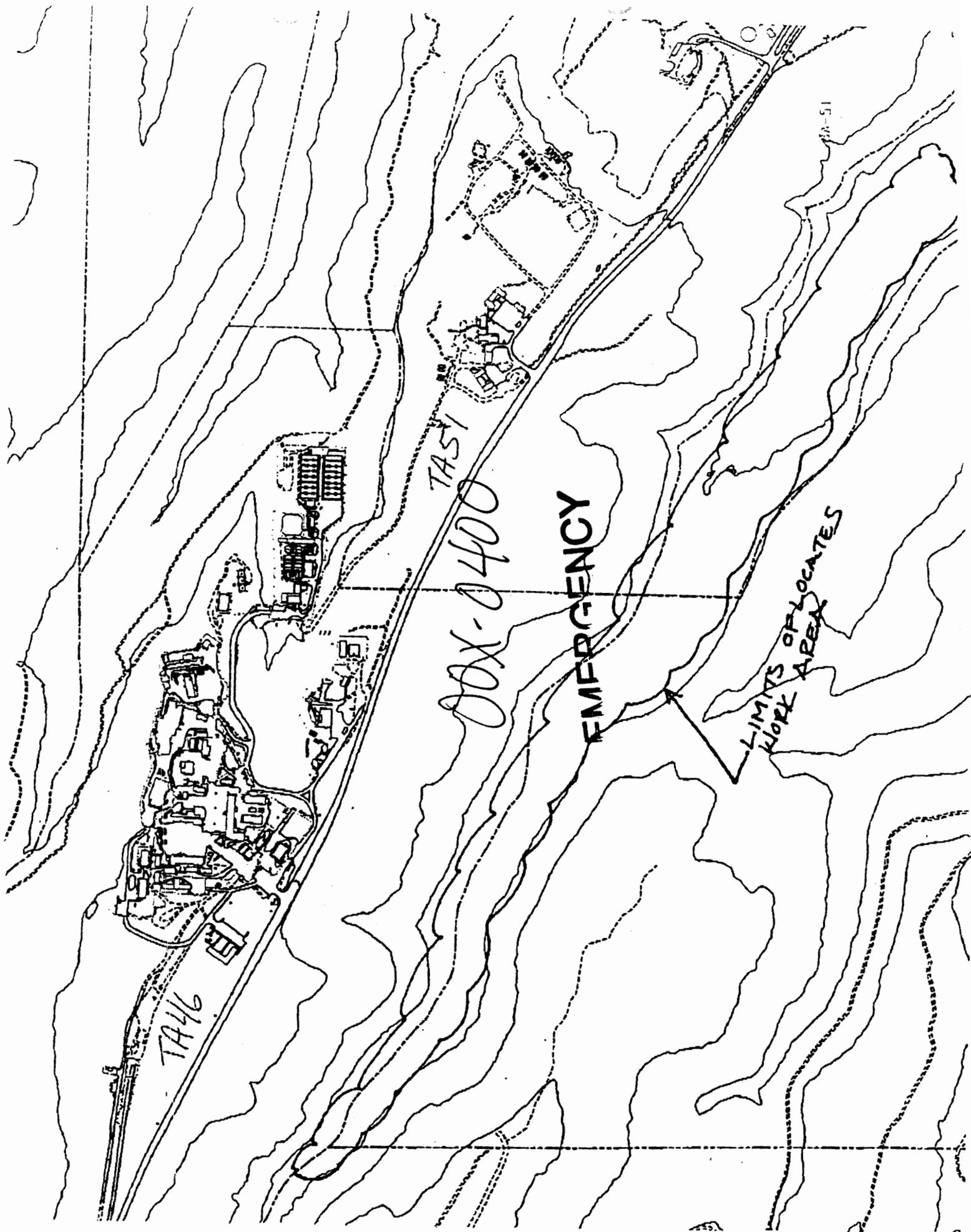
73

53

21

AREA OF WORK



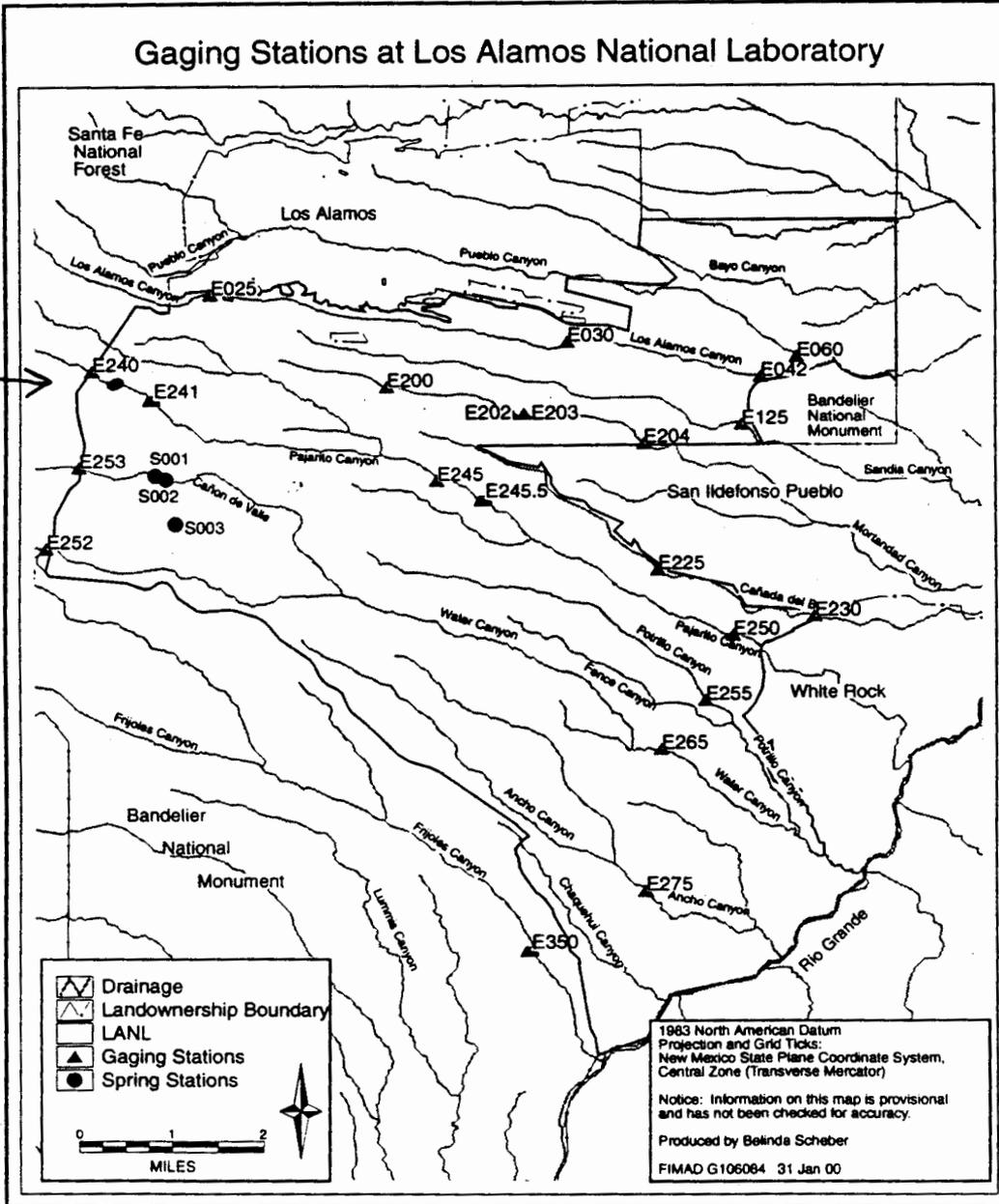


EMERGENCY

00X-0401

Gaging Stations at Los Alamos National Laboratory

Jobsite
Relocating
E240



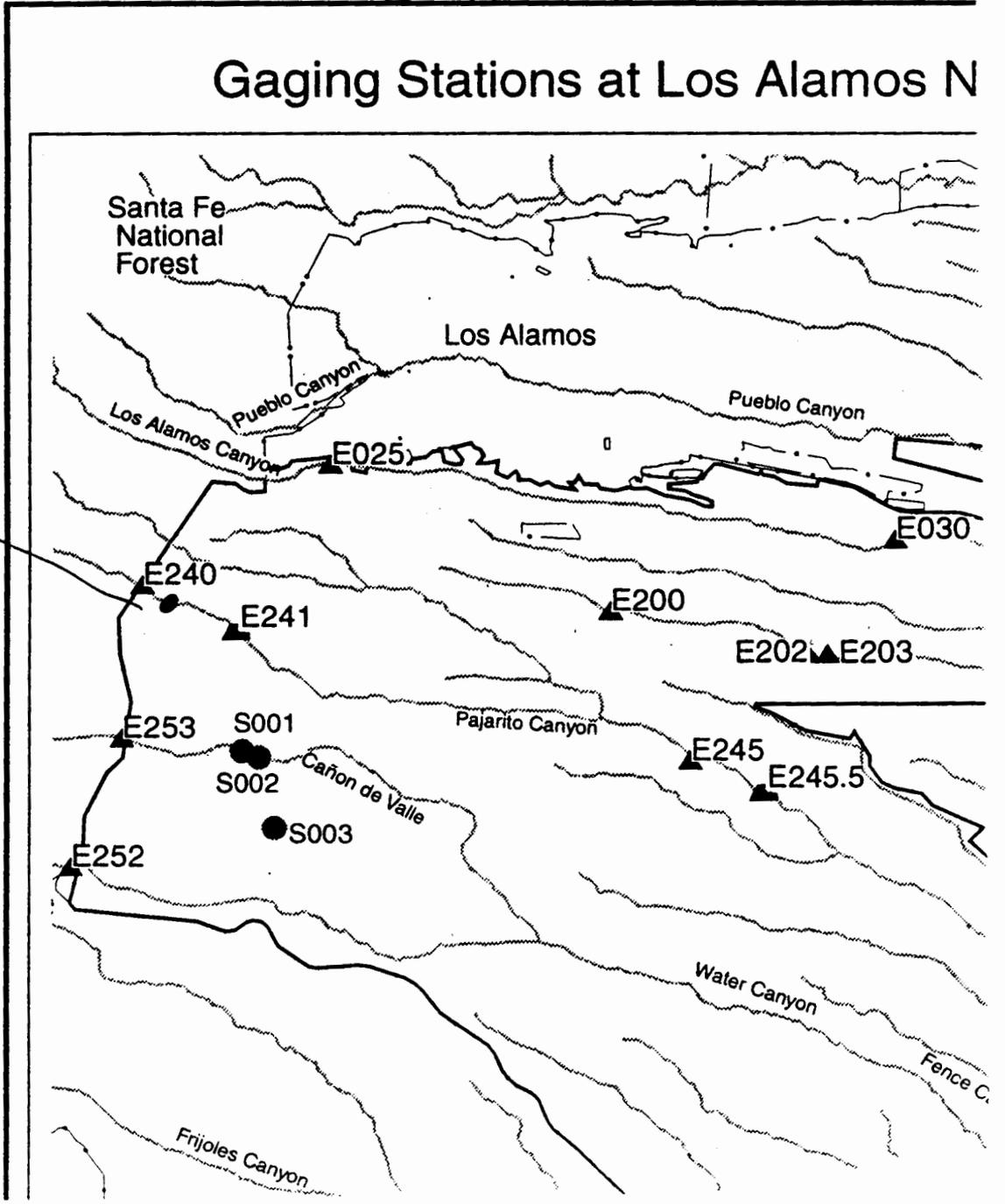
1040-X00

EMERGENCY

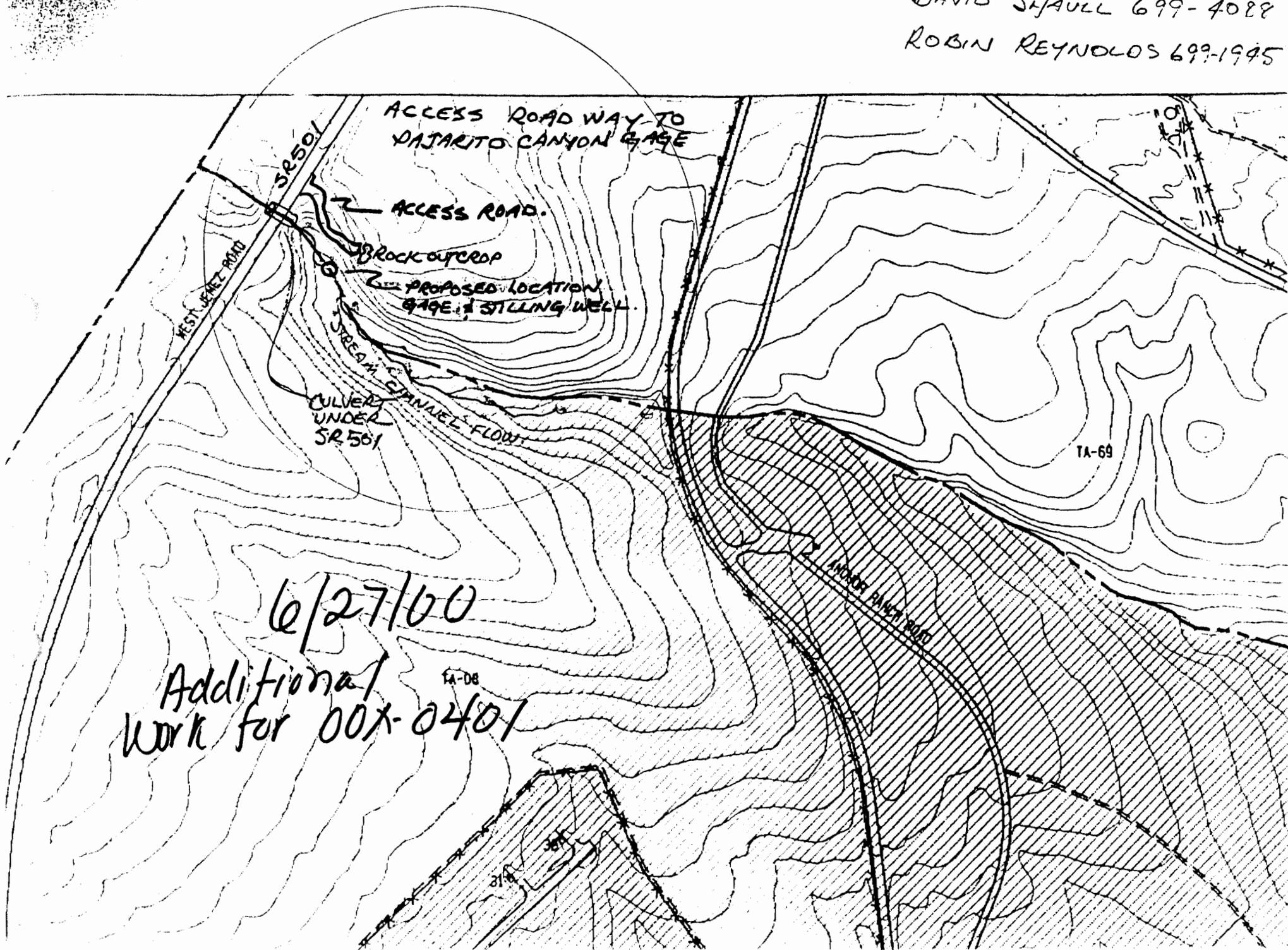
00X-0401

Gaging Stations at Los Alamos N

Jobsite
Relocating E240



DAVID SHAWLL 699-4088
ROBIN REYNOLDS 699-1995



From: Robin Reynolds, ESH-18 <robinp@lanl.gov>
To: carriea@lanl.gov, julie@lanl.gov
Subject: Scope change to ESH-ID 00-211/00X-0401
Copies to: shaulld@lanl.gov, mikea@lanl.gov
Send reply to: robinp@lanl.gov
Date sent: Tue, 27 Jun 2000 08:50:38 -0600

Carrie and Julie,
please find the attached text for a scope change to ESH ID
00-211. Betsy Cata is walking over the map in a few minutes that
will support this additional change. If you need the real fine
details, please call david shaul at 699-4088.

thanks.

robin

Attachments:
U:\Water Quality\Cerro Grande Fire\Pajarito_eshid211_just.doc

June 26, 2000
Robin Reynolds
ESH-18/699-1945
David Shaul
ESH-18/699-4088

ESH-ID 00-211 Scope Change

Justification: To facilitate safe access and expedient storm water sample retrieval from the Pajarito Canyon monitoring station, we are requesting that the following additions be made to ESH-ID 00-211:

Create 200-ft. access road for access to re-located Pajarito Canyon Storm Water Monitoring Station. This access road will be located on the east side of SR 501, at the point of existing abandoned road. (see attached drawing)

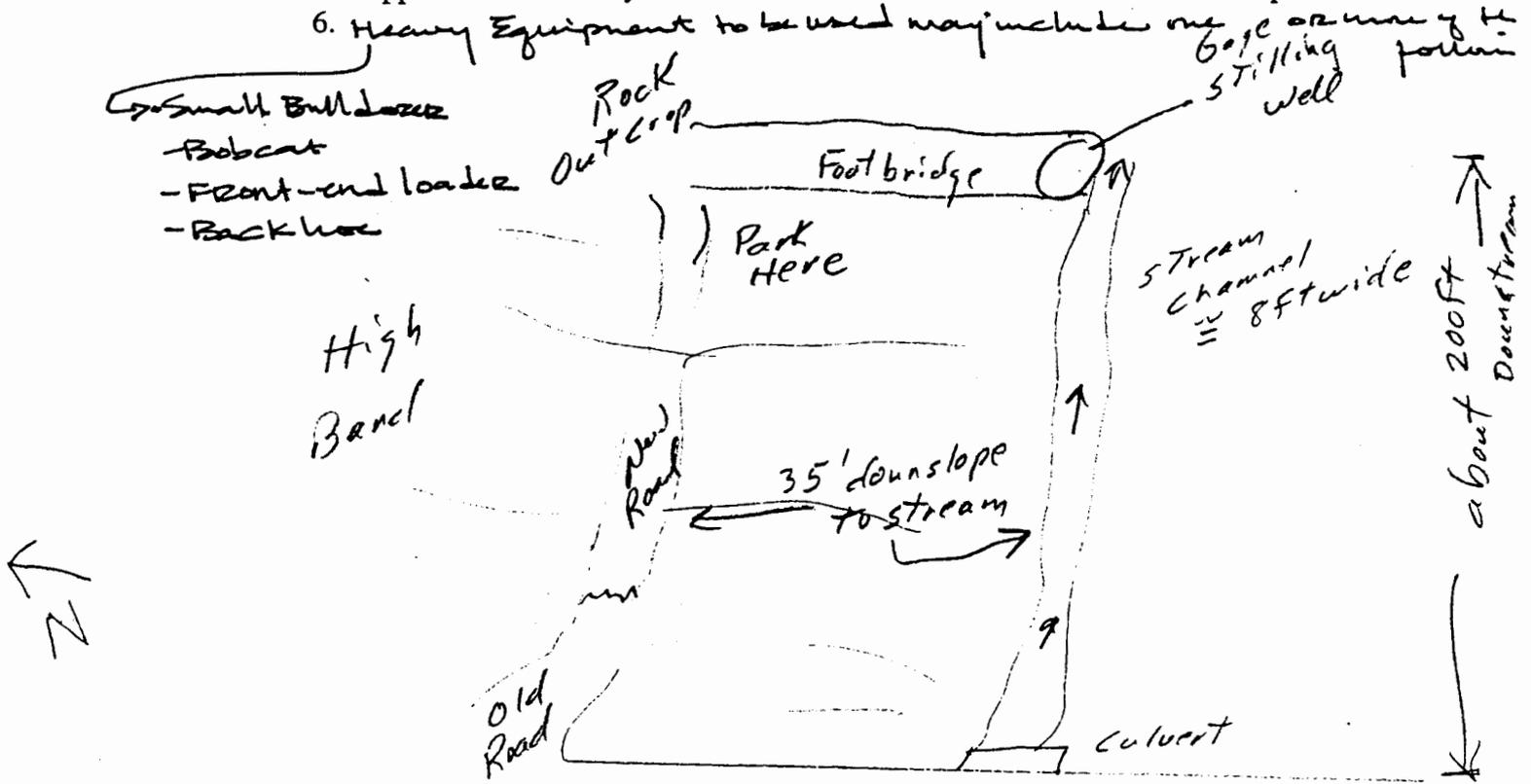
1. Develop access road just north (100 ft. north of Pajarito Canyon culvert), down to proposed Pajarito gage re-location site. This will consist of opening up old existing access road off SR501, and continuing it east 200 ft across the slope to the rock outcropping above the stream bed.
2. Roadbed will be cut eastward along the hillside contour to an end-point elevation of 40-50 ft. above streambed.
3. Access road will terminate at rock outcropping.
4. Access road width not to exceed 12ft.
5. Approx. 6 trees may have to be taken out to accommodate access road path.
6. Heavy equipment to be used may include one or more of the following:
 - a. Small bulldozer
 - b. Bobcat
 - c. Front-end loader
 - d. Back hoe
 - e. High-boy lift crane

June 26, 2000
 Robin Reynolds
 ESH-18/699-1945
 David Shaull
 ESH-18/699-4088

ESH-ID 00-211 Scope Change

To existing scope, please add the following task changes:

1. Just north of proposed gage location, open up old existing access road off SR501, and continue east 200 ft down to the rock outcropping above the stream bed.
2. Road bed will be cut eastward along the hillside contour at an elevation of 35 ft. above stream bed.
3. Access road will terminate at rock outcropping.
4. Access road width not to exceed 12ft.
5. Approx. 6-8 trees may have to be taken out to accommodate access road path.
6. Heavy Equipment to be used may include one ^{or more of the} ~~one~~ _{following}



Highway 501
 Road bed is 40-50 feet above stream bed.

Not To Scale

00X-0402

TW-1
West

PA 658

TW-1 East

PA 169

TW SW 1/4

PAS 1
West

00-007
00-008
00-009
00-010
00-011
00-012
00-013
00-014

00-015
00-016
00-017
00-018
00-019
00-020
00-021
00-022

Upper
Summer Sp.

MDA M

Harvey Sp.

Harvey Sp.

Summer Sp.

00X-04408

TW 1 West

117458

TW 1 East

117463

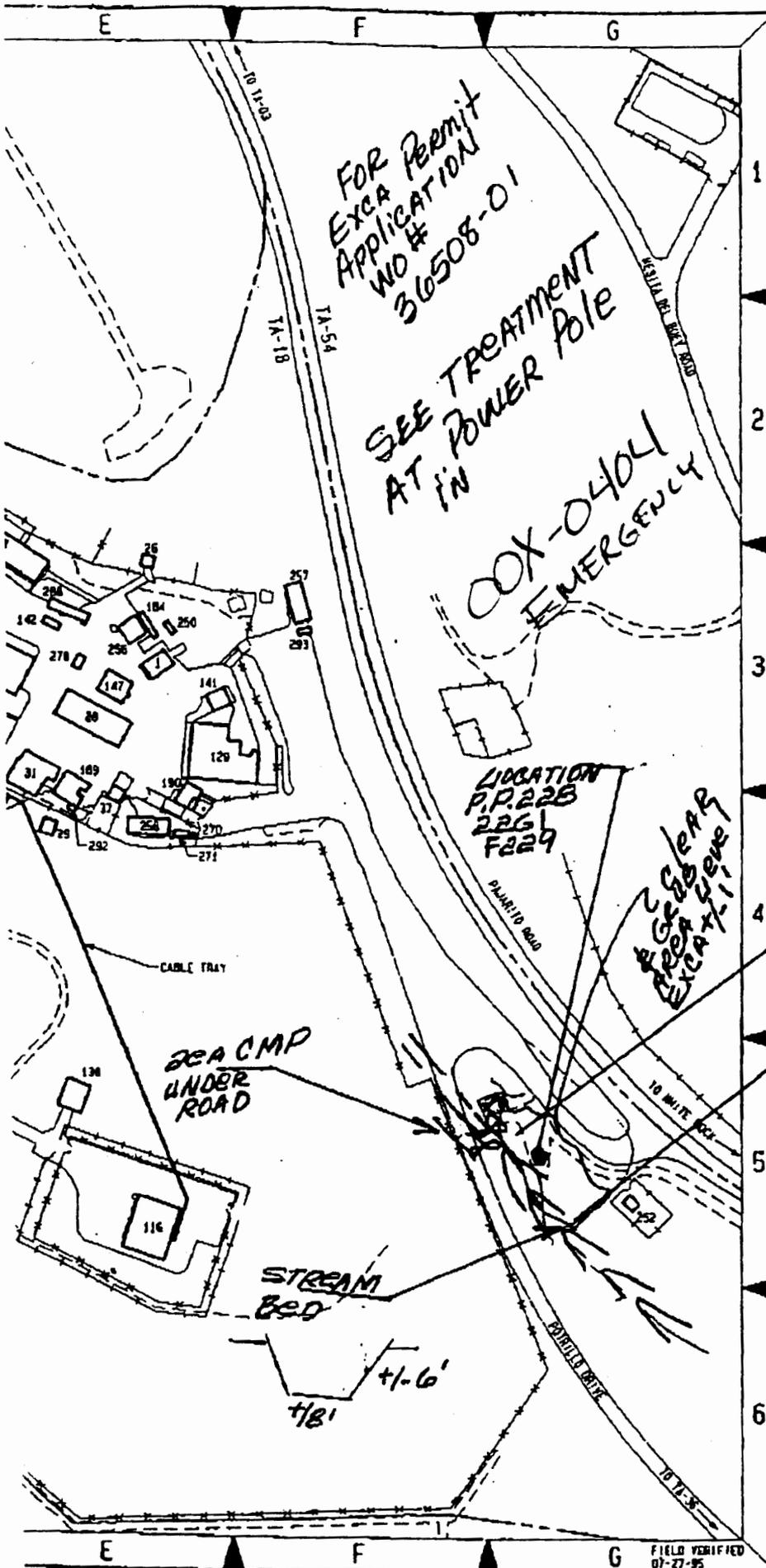
TWSW 1 West

PAS 1 West

MDA M

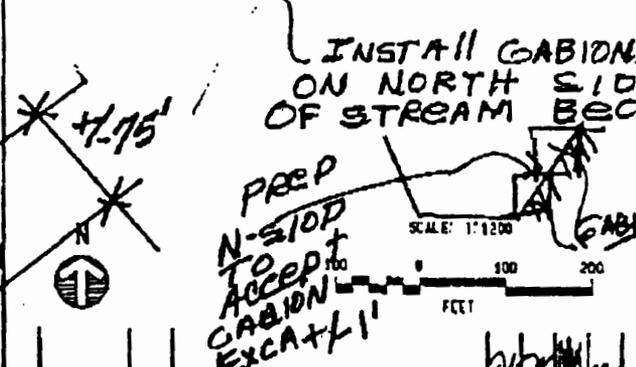
Upper
Stamer Sp.

Stamer Sp.
Jama Sp.



STRUCTURE LOCATION INDEX

TA-NUMBER	DESIGNATION	STRUCTURE NOMENCLATURE	STRUCTURE LOCATOR	
			SHEET NO.	MAP KEY
10-1	PL-1	STAGING AREA	NUN	E-3
10-2	PL-2	METAL BUILDING	NUN	B-1
10-5	PL-5	METAL BUILDING	NUN	A-5
10-23	10-23	CRITICAL ASSEMBLY BLDG. KIVA #1	NUN	B-1
10-26	10-26	HILLSIDE VAULT	NUN	E-3
10-28	PL-28	WAREHOUSE	NUN	E-3
10-29	10-29	POND CABIN	NUN	E-4
10-30	PL-30	MAIN BUILDING	NUN	D-3
10-31	PL-31	UTILITY BUILDING	NUN	E-3
10-32	PL-32	CRITICAL ASSEMBLY BLDG. KIVA #2	NUN	A-5
10-37	PL-37	GUARD STATION #205	NUN	E-4
10-110	PL-110	DRUM STORAGE PLATFORM	NUN	D-3
10-116	PL-116	CRITICAL ASSEMBLY BLDG. KIVA #3	NUN	E-5
10-119	10-119	STORAGE BUILDING	NUN	B-1
10-122	PL-122	STORAGE BUILDING	NUN	A-5
10-126	PL-126	POWER PEDESTAL	NUN	D-3
10-127	PL-127	PULSED ACCELERATOR BLDG.	NUN	E-3
10-128	10-128	ASSEMBLY COVER BUILDING	NUN	A-4
10-129	PL-129	REACTOR SMO-ASSEMBLY BLDG.	NUN	E-3
10-130	PL-130	WAREHOUSE	NUN	E-5
10-141	PL-141	ULTRA-SONIC CLEANING BLDG.	NUN	E-3
10-142	10-142	SUBSTATION	NUN	E-3
10-147	PL-147	OFFICE BUILDING	NUN	E-3
10-160	PL-160	SPERA CRITICAL BUILDING	NUN	E-3
10-164	10-164	TRAILER	NUN	E-3
10-186	PL-106	GUARD TOWER	NUN	E-4
10-187	10-187	GUARD TOWER	NUN	E-4
10-188	PL-188	GUARD TOWER	NUN	E-4
10-189	10-189	SECURITY ASSESSMENT BLDG.	NUN	E-4
10-190	PL-190	GUARD STATION #450	NUN	E-4
10-227	10-227	ACCELERATOR DEV. LAB.	NUN	E-4
10-246	10-246	TRANSPORTAINER	NUN	B-3
10-247	10-247	TRANSPORTAINER	NUN	B-3
10-248	10-248	TRANSPORTAINER	NUN	B-3
10-249	10-249	TRANSPORTAINER	NUN	B-2
10-250	10-250	TRANSPORTAINER	NUN	E-3
10-251	10-251	TRANSPORTAINER	NUN	D-3
10-252	10-252	PALMISTO WELL #2	NUN	E-5
10-256	10-256	STORAGE BLDG.	NUN	E-3
10-257	10-257	OFFICE TRAILER	NUN	E-3
10-258	10-258	OFFICE TRAILER	NUN	E-4
10-270	10-270	TEMP. GUARD STATION	NUN	E-4
10-271	10-271	TRANSPORTAINER	NUN	E-4
10-277	10-277	STORAGE BLDG.	NUN	B-2
10-278	10-278	STORAGE BLDG.	NUN	E-3
10-296	10-296	STORAGE BLDG.	NUN	D-3
10-297	10-297	STORAGE BLDG.	NUN	D-3
10-298	10-298	TRAILER	NUN	E-3
10-299	10-299	TRANSPORTAINER	NUN	E-3
10-299	10-299	TRANSPORTAINER	NUN	E-3
10-299	10-299	TRANSPORTAINER	NUN	E-3



2	07-31-95	REVISED TO STATUS OF 07-27-95	JAC	JAC	JPM	JAF
1	05-16-94	REVISED PER NEW STANDARDS AND TO STATUS BY 05-02-94	JAC	JAC	JPM	JAF

JOHNSON CONTROLS

AS-BUILT STRUCTURE LOCATION MAPS

TA-18

PAJARITO LABORATORY

ISSUED	DATE	BY
VERIFIED	DATE	BY
CHECKED	DATE	BY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

CLASSIFICATION: U REVISION: 6 SALAZAR H.B.T. DATE: 9-23-95

PROJECT ID: 11952 DRAWING NO: AB22

DATE: 07-27-95

CLASSIFIED BY: [Signature]

PLACE BOULDERS AT ALL
OUTSIDE CORNERS AS SHOWN
MIN. 12" DIA..

PLACE PRECAST CONCRETE
JERSEY BARRIER AROUND
EXISTING STRUCTURE AS
SHOWN.

EXISTING WELLHEAD
PROVIDE ENVIRONMENTAL
SEAL PRIOR TO PLACEMENT
OF STONE.

5" - 125 mm ECONO-GRIP
MFG. CHERNIE INDUSTRIES INC.
CONTACT DEBA DAYMAN EM/ER
AT 667-9021 FOR ADDITIONAL
INFORMATION.

FILL AREA WITH 4" TO 12"
COBBLE TO TOP OF
JERSEY BARRIERS

PLACE LARGE BOULDERS
OR SAND BAGS IN FRONT
OF BARRIERS TO DEFLECT
WATER FLOW.

PLACE CHAIN LINK
FENCE FABRIC AT
ALL CORNERS OF
BARRIERS TO RETAIN
ROCK, OVERLAP FABRIC
OVER TOP OF BARRIER
TO HELP KEEP FABRIC
IN POSITION WHILE ROCK
IS BEING PLACED.

SEE DETAIL
JERSEY BARRIER TIE



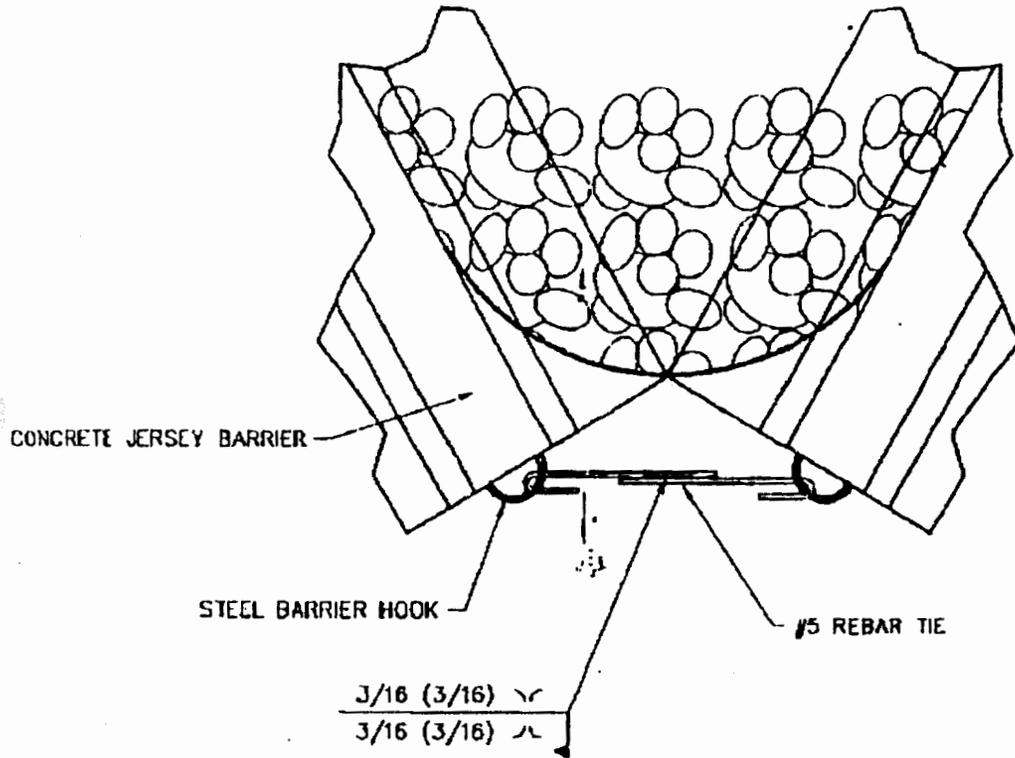
DIRECTION OF FLOW



WELLHEAD PROTECTION ALTERNATIVE #1

SCALE: NONE

PI# 100069

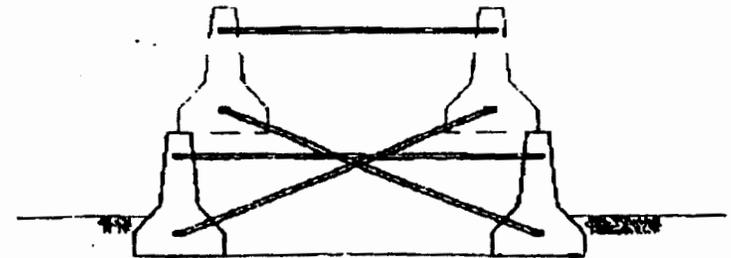


JERSEY BARRIER TIE



SCALE: NONE

NOTE: DETAIL SHOWN SHALL BE TYPICAL FOR ALL TIES, LOCATION SHOWN IS FOR EXAMPLE.

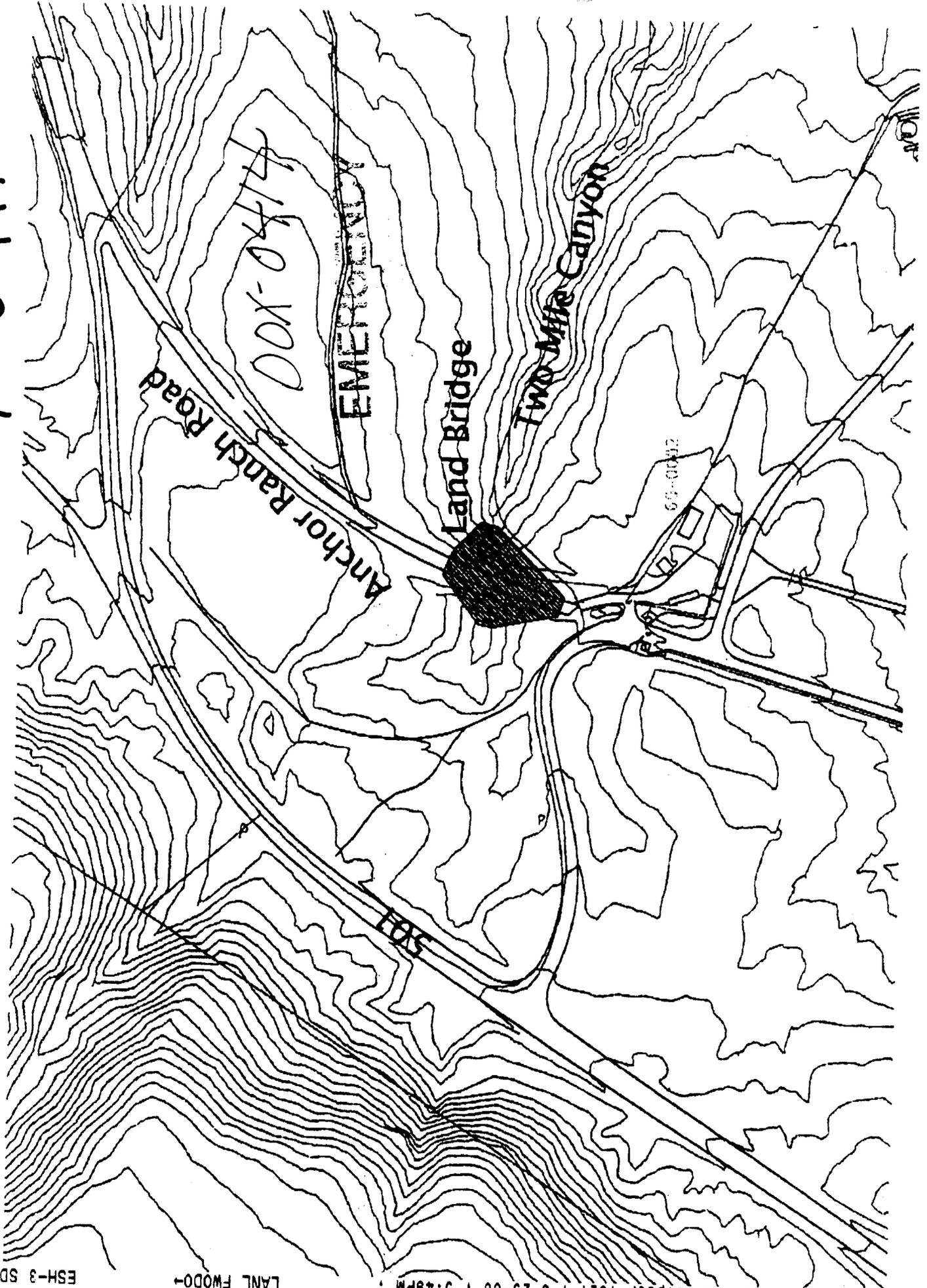


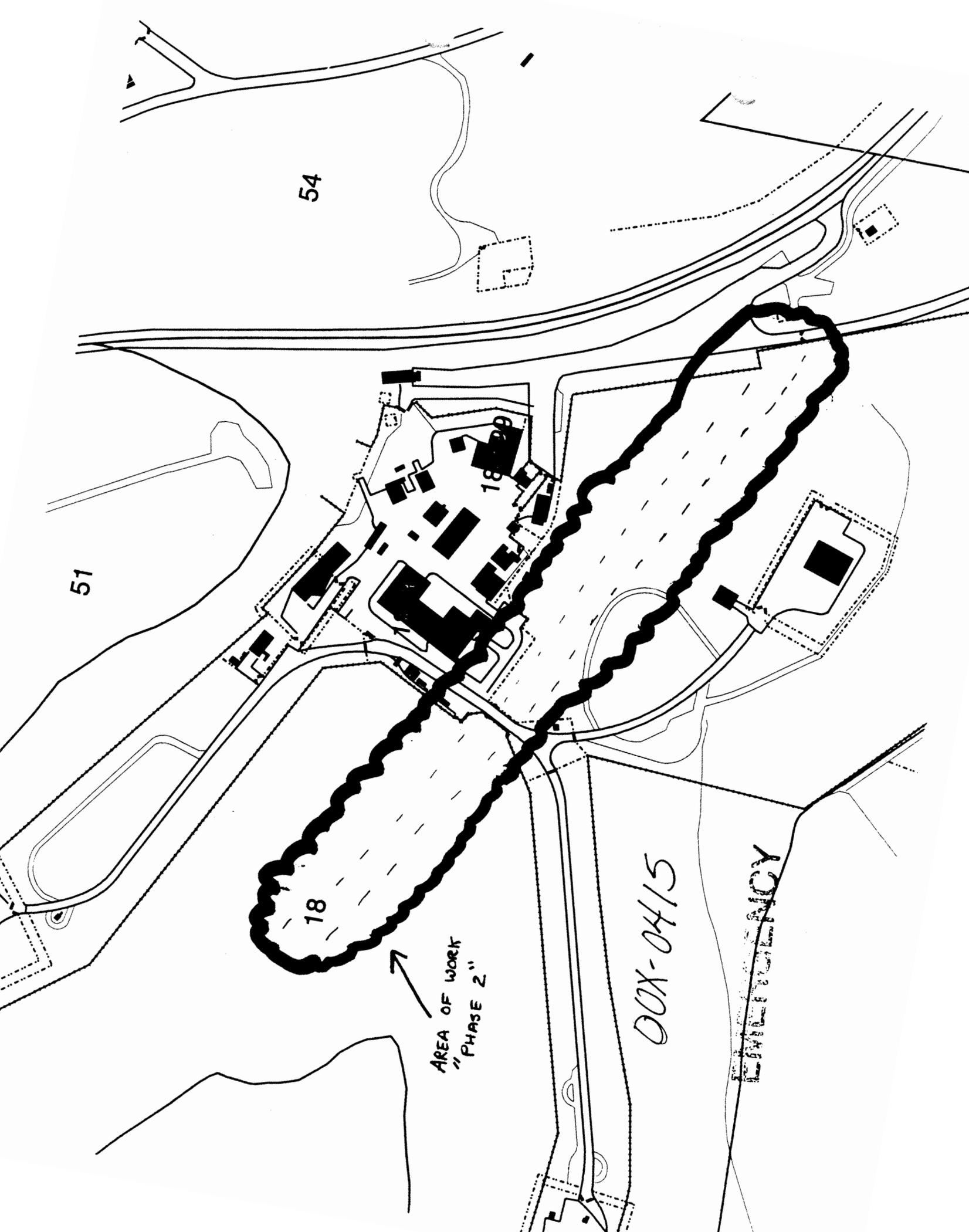
NOTE: CONFIGURATION FOR STACKED BARRIER APPLICATION.

JERSEY BARRIER TIE CONFIGURATION

SCALE: NONE

00X-0414





54

51

18

18

AREA OF WORK
"PHASE 2"

DOX-0415

EMERGENCY

OOX-0433

EMERGENCY

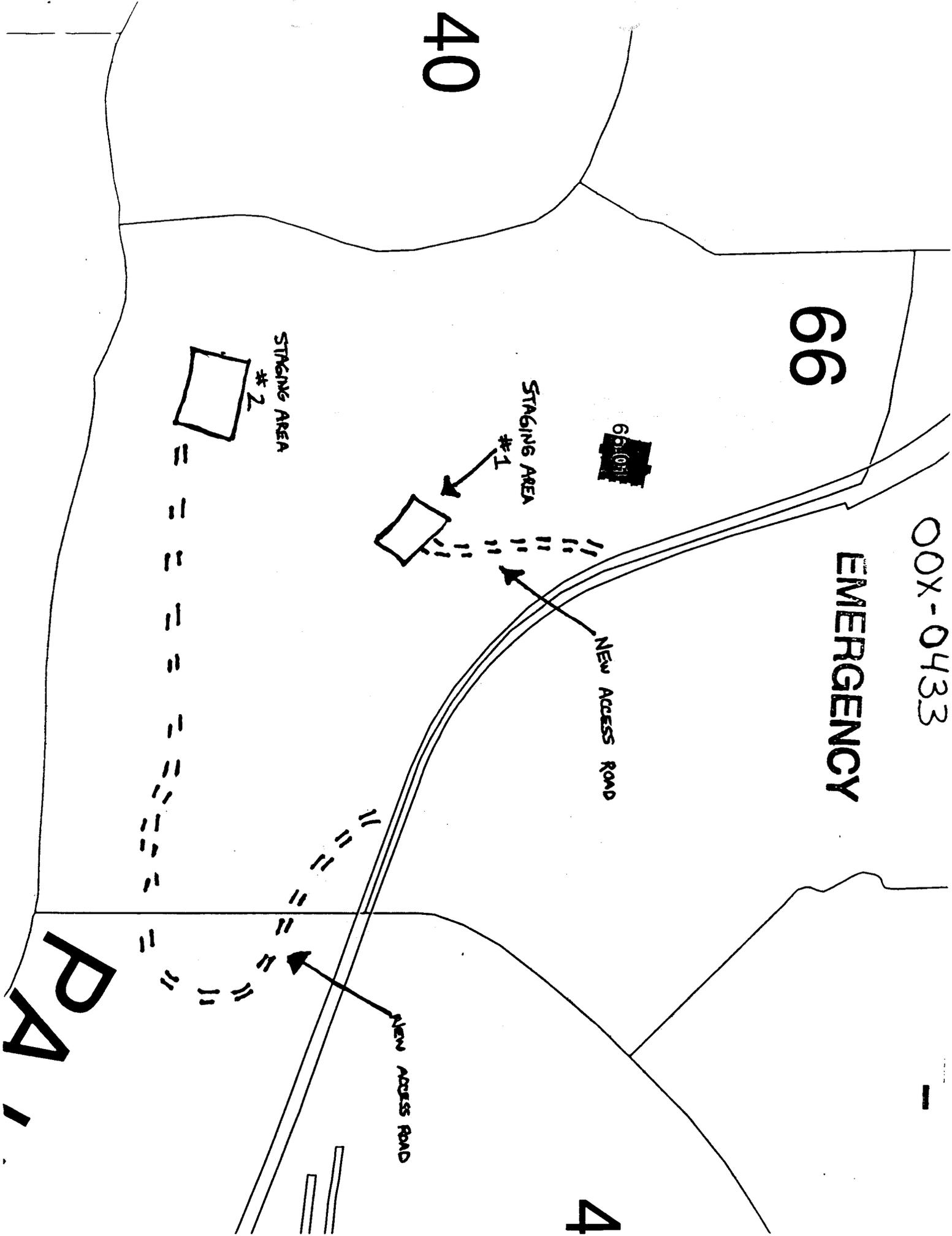
66

66(01)

40

4

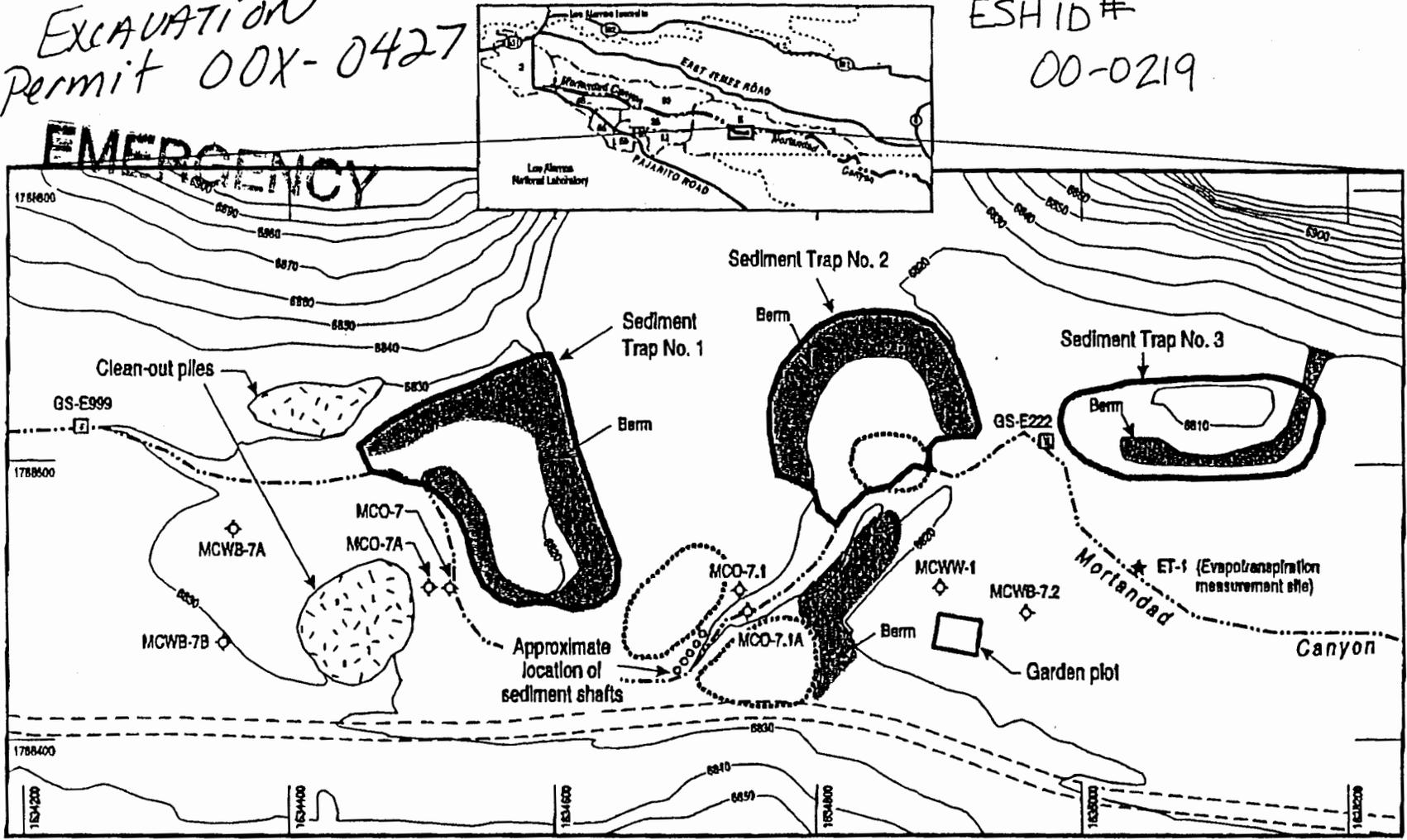
PA



ESH ID#
00-0219

EXCAVATION
Permit OOX-0427

EMERGENCY



Source: FIMAD/rek

F2.3.1-1 / MORTANDAD WP / 092297

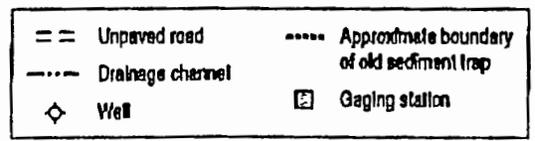
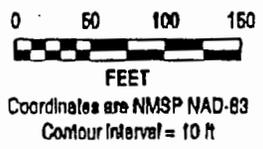


Figure 2.3.1-1. Locations of the sediment traps and sediment shafts in Mortandad Canyon.

OOX-0433

EMERGENCY

66

4

NEW ACCESS ROAD

NEW ACCESS ROAD



STAGING AREA #1

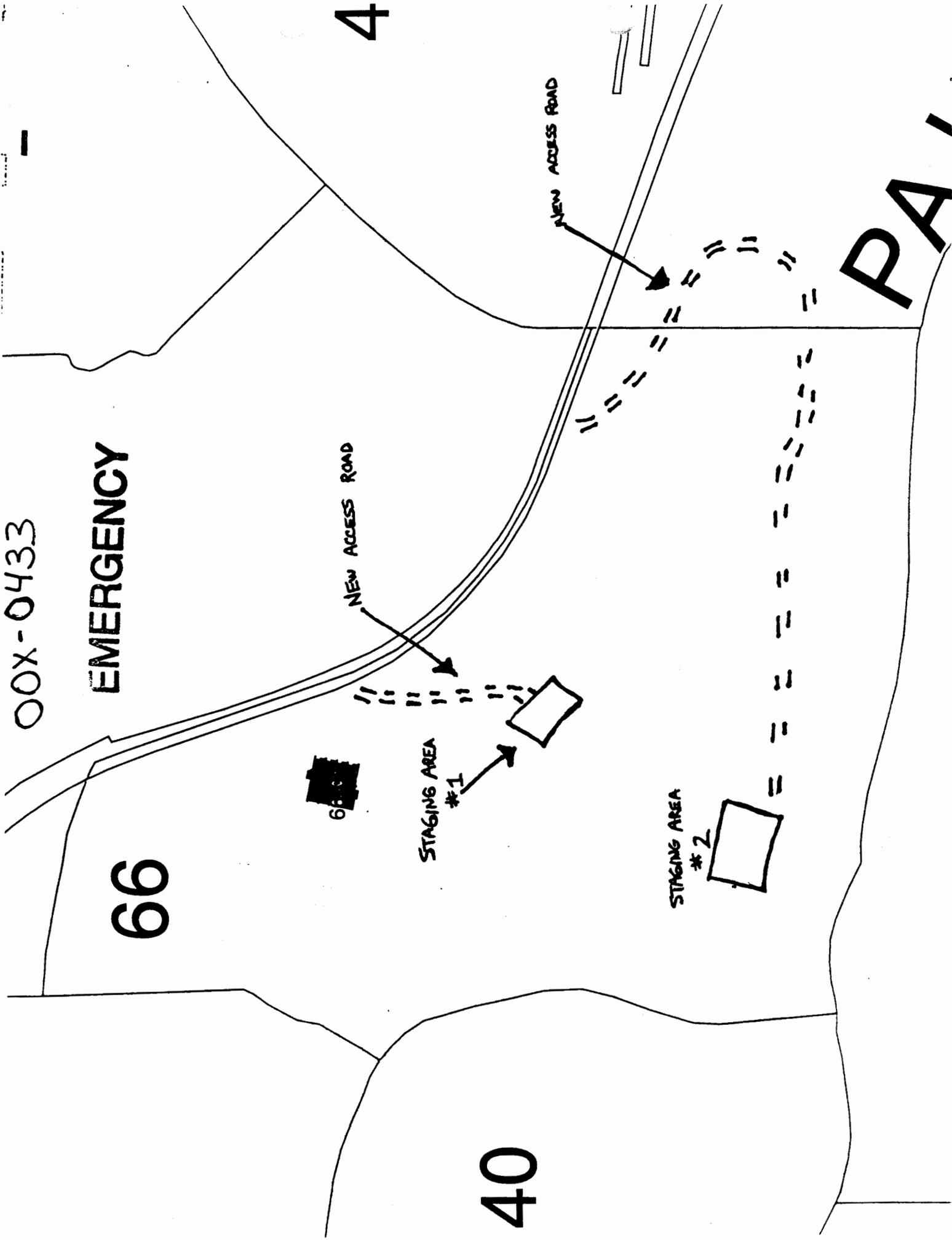


STAGING AREA #2



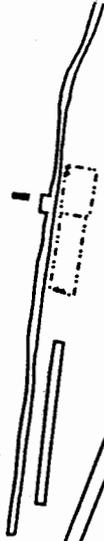
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PAI



WAD,

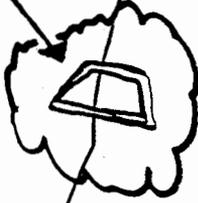
46



PAJARITO CANYON

36

PROPOSED DAM



00X - 0434

EMERGENCY

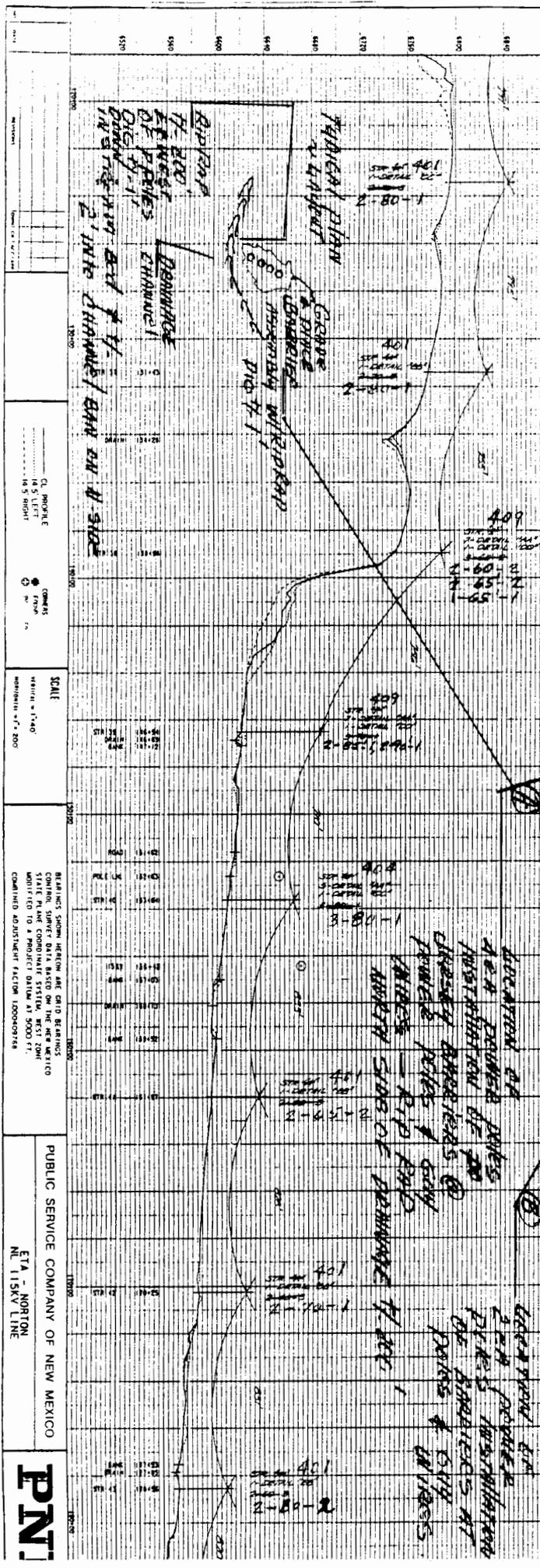
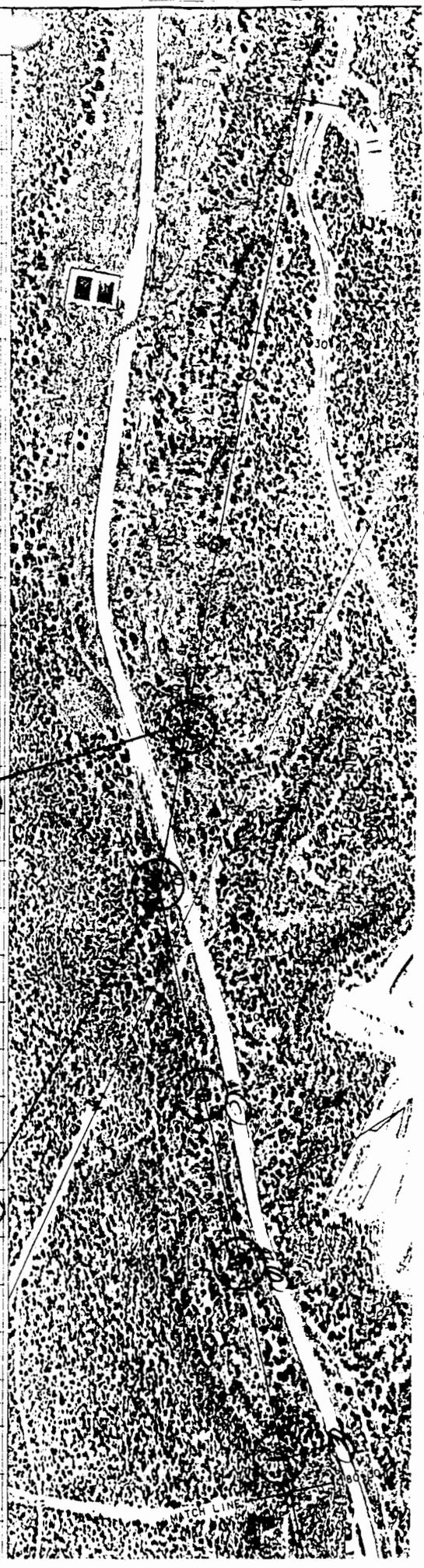
THREFFMIE CANNON

40

15

67

CAMPAIGN VAN-VT-22



CL PROFILE
 14.5' LEFT
 14.5' RIGHT

COMBES
 7/20/61
 1" = 100'

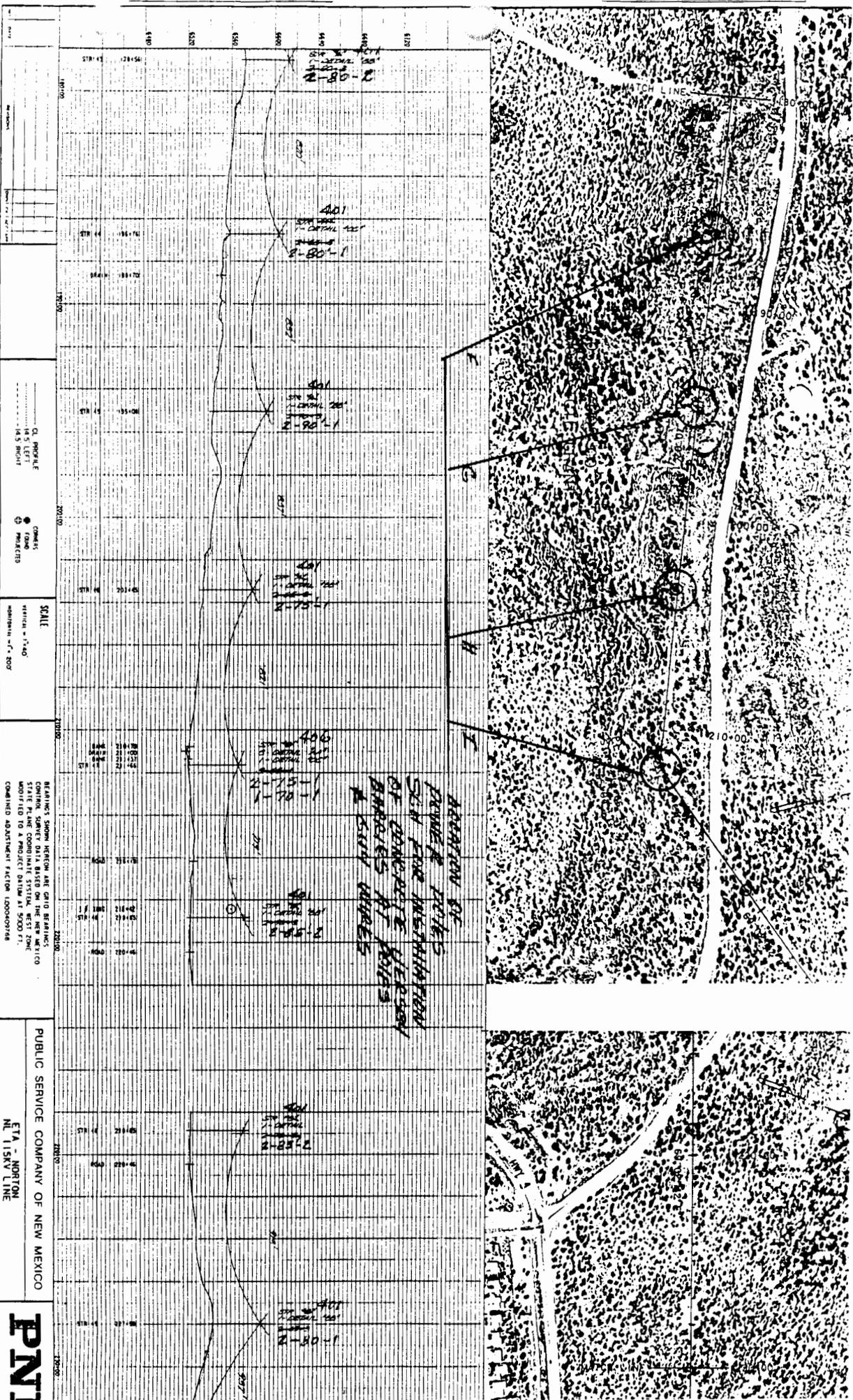
SCALE
 HORIZONTAL = 1" = 40'
 VERTICAL = 1" = 200'

RELIANT SURVEY METHOD AND GRID BEARINGS
 CONTROL SURVEY DATA BASED ON THE NEW MEXICO
 ADJUSTED TO A PROJECTION DATUM AT 2000.00
 CONTAINING ADJUSTMENT FACTOR 1.00000974

PUBLIC SERVICE COMPANY OF NEW MEXICO
 ETA - NORTON
 AT 115KV LINE

PN

SHEET NO.



ADJUSTMENT OF
 PROFILES
 WITH FOUR INTERMEDIATE
 POINTS
 BY CONCEPT OF
 BRIDGES AT POINTS
 A, B, C, D, E, F, G, H, I

STATION	ELEVATION	REMARKS
170+00	4100	
170+10	4150	
170+20	4200	
170+30	4250	
170+40	4300	
170+50	4350	
170+60	4400	
170+70	4450	
170+80	4500	
170+90	4550	
171+00	4600	
171+10	4650	
171+20	4700	
171+30	4750	
171+40	4800	
171+50	4850	
171+60	4900	
171+70	4950	
171+80	5000	
171+90	5050	
172+00	5100	
172+10	5150	
172+20	5200	
172+30	5250	
172+40	5300	
172+50	5350	
172+60	5400	
172+70	5450	
172+80	5500	
172+90	5550	
173+00	5600	
173+10	5650	
173+20	5700	
173+30	5750	
173+40	5800	
173+50	5850	
173+60	5900	
173+70	5950	
173+80	6000	
173+90	6050	
174+00	6100	

PUBLIC SERVICE COMPANY OF NEW MEXICO
 ET1A - NORTON
 NL 115KV LINE



SHEET NO

Dana 699-1317 104-5806
WO# 7596-01 WO# 7596
ATTACHMENT A

Tommy K. Korman
5/5/90
page

~~Enclosures~~

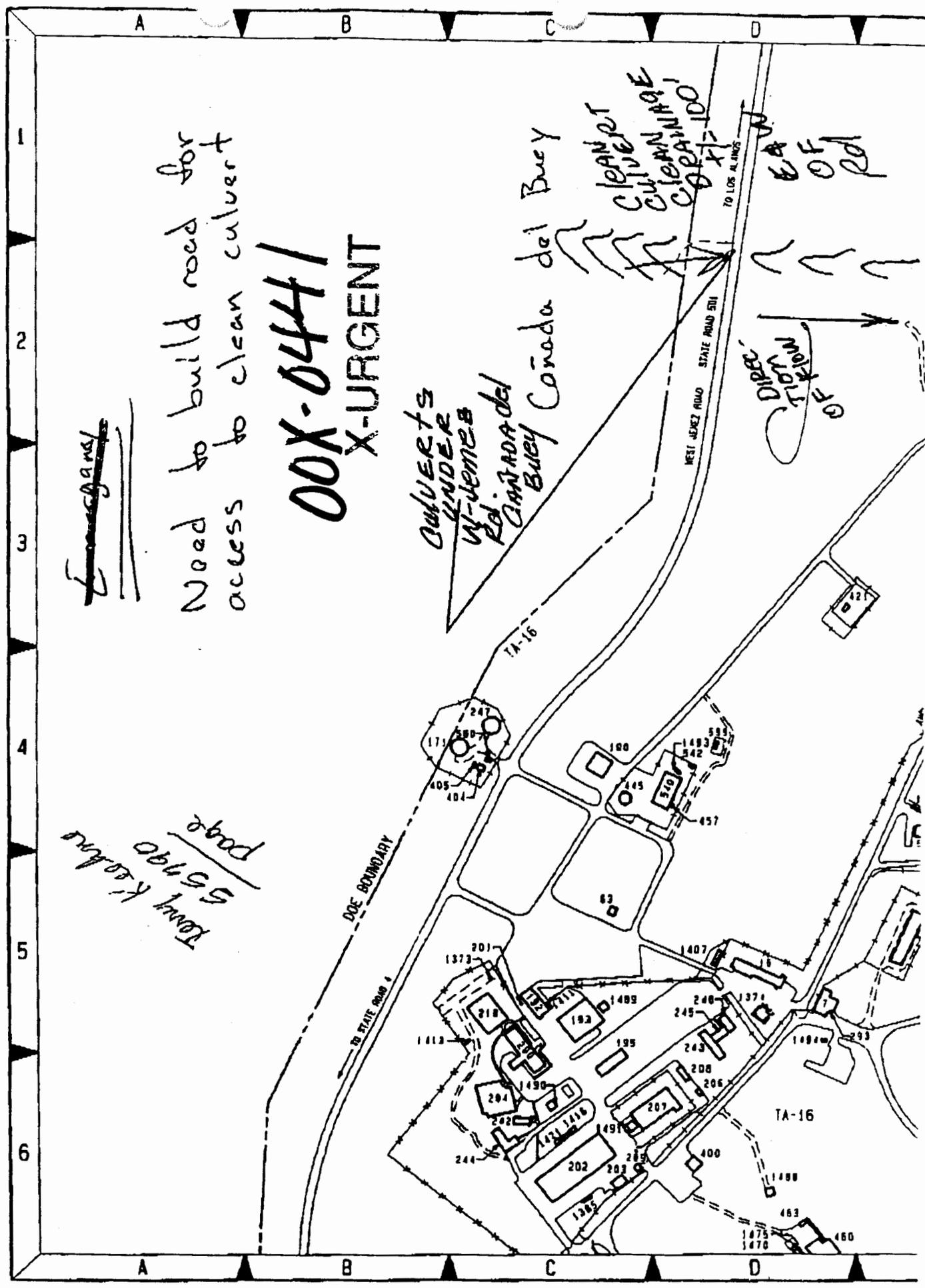
Need to build road for
access to clean culvert

00X-0441
X-URGENT

CULVERTS
UNDER
RD. CANAÑADA del
Buey Cañada del Buey

CLEANER
CLEANER
CLEANER
CLEANER

DIREC
TION
OF
RD

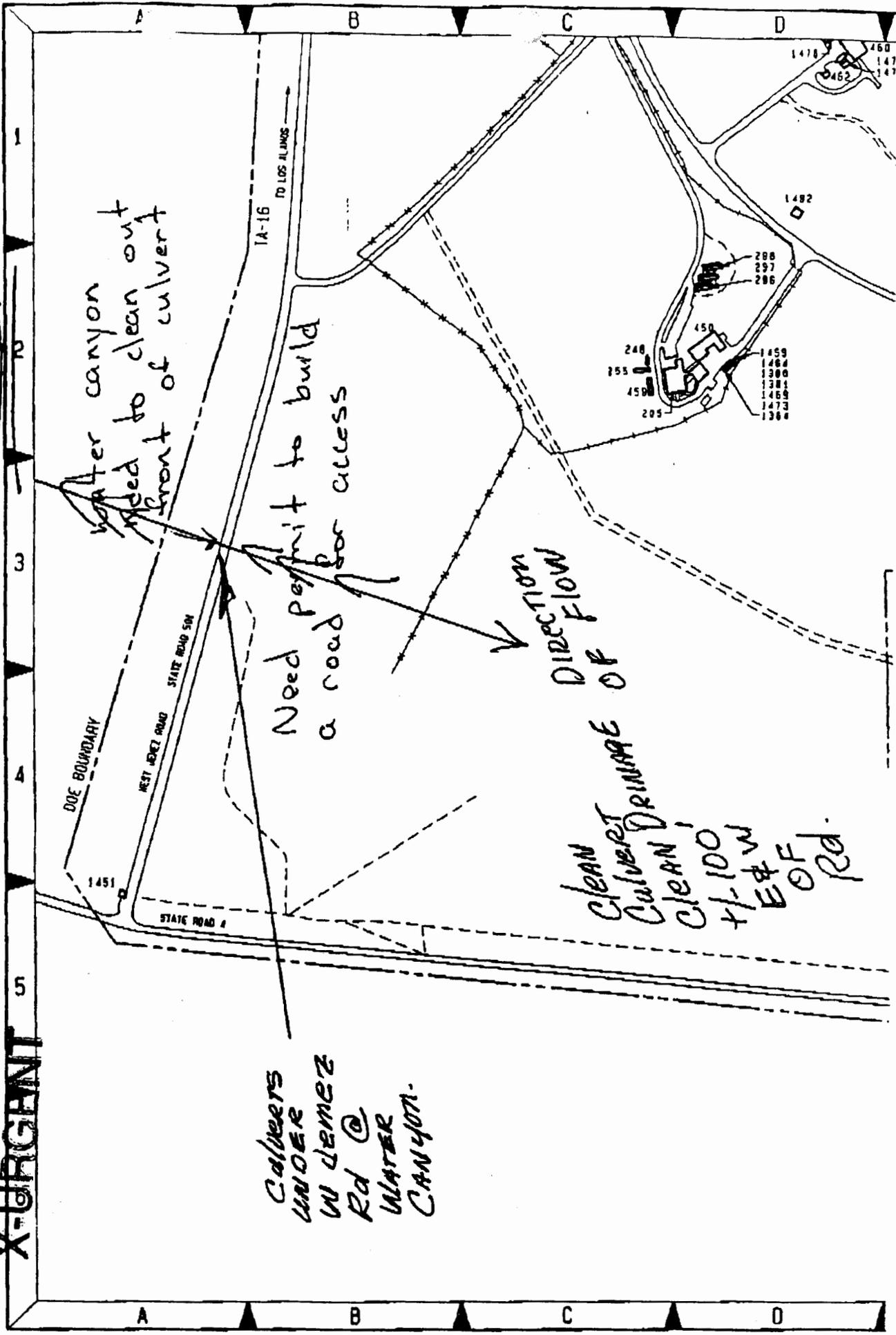


Dana 699-1317 104-5806 ATTACHMENT B

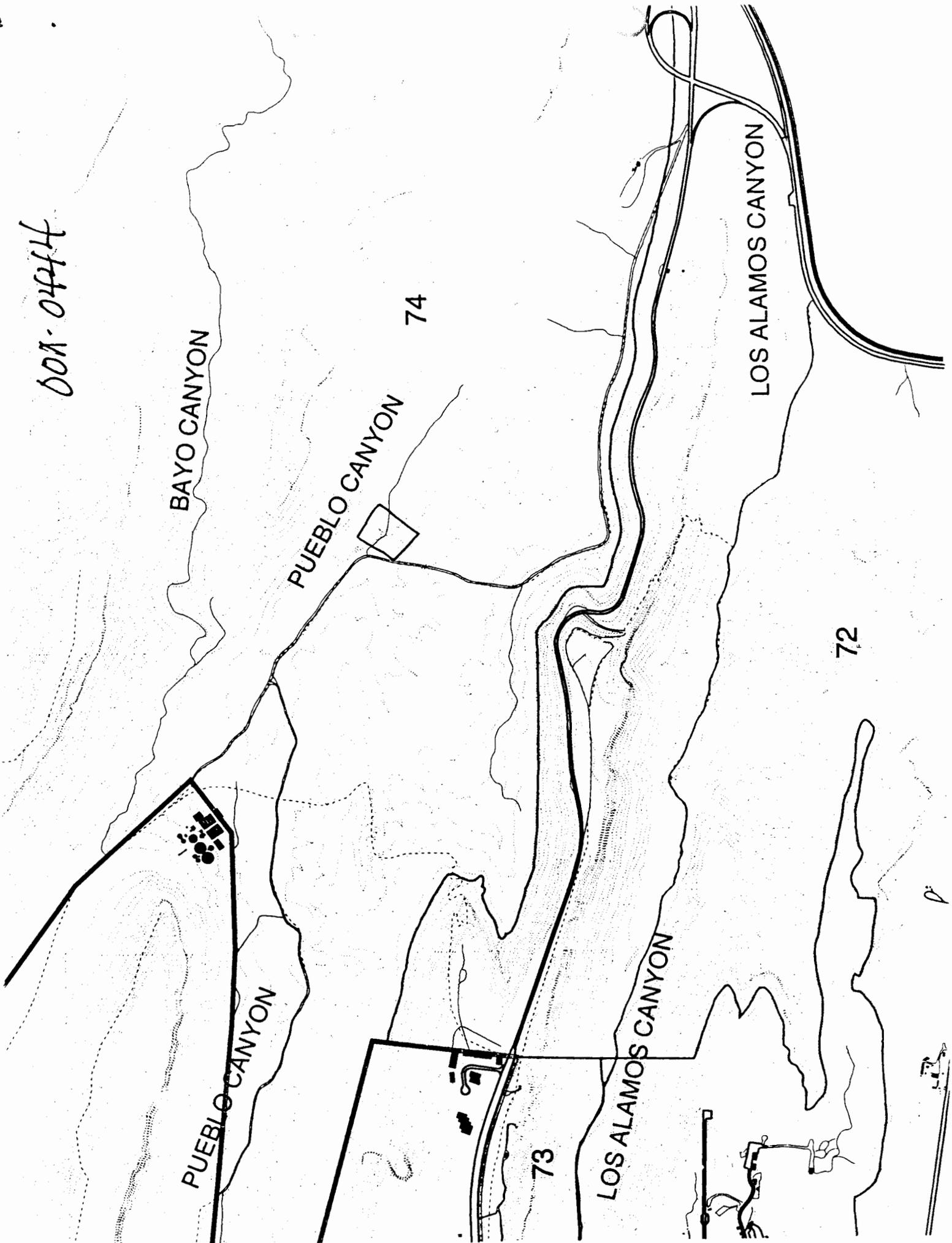
WO# 7596-01
~~Emergency~~
WO# 7596

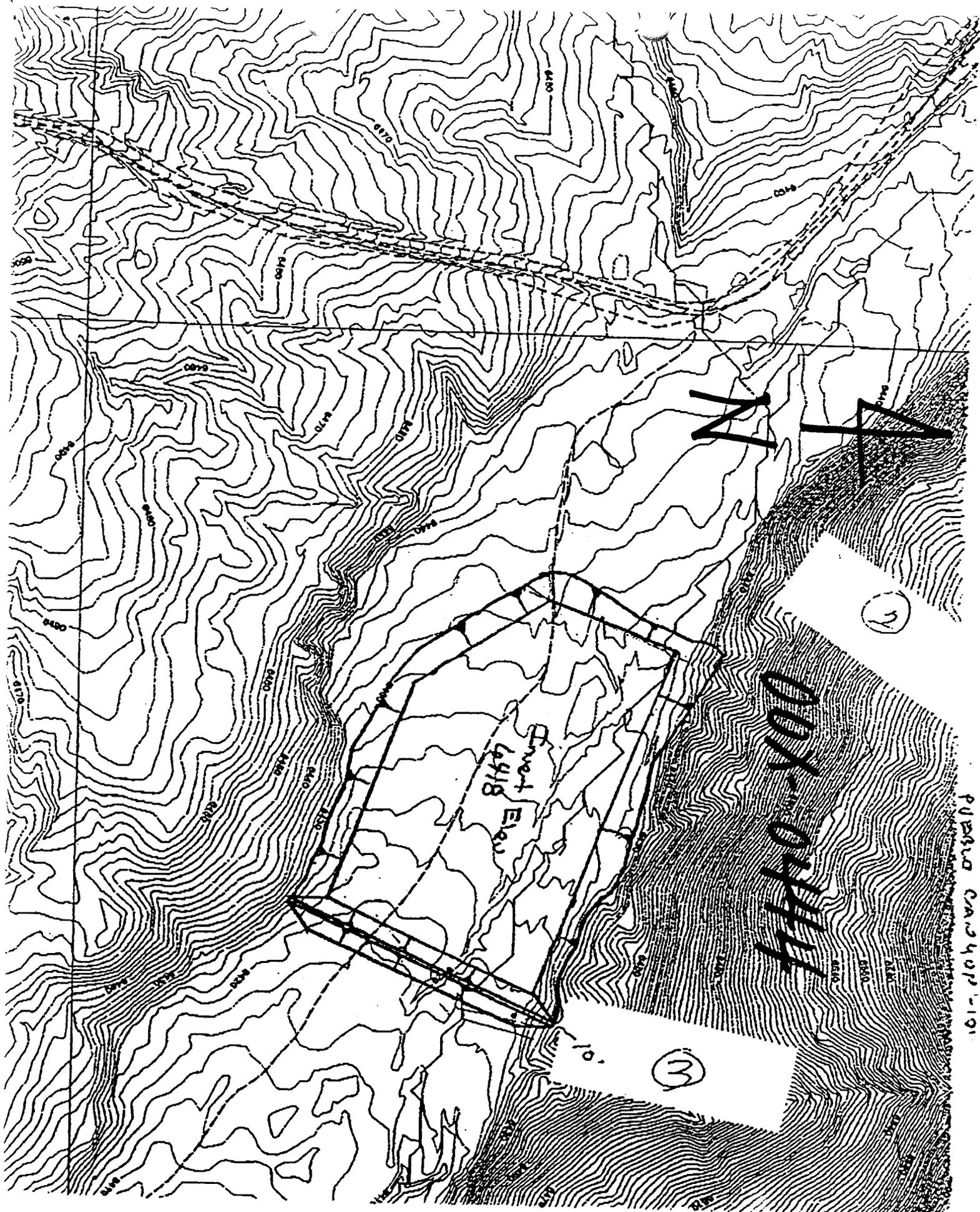
00X-0441

X-URGENT



001-0444





Forest Elev
6418

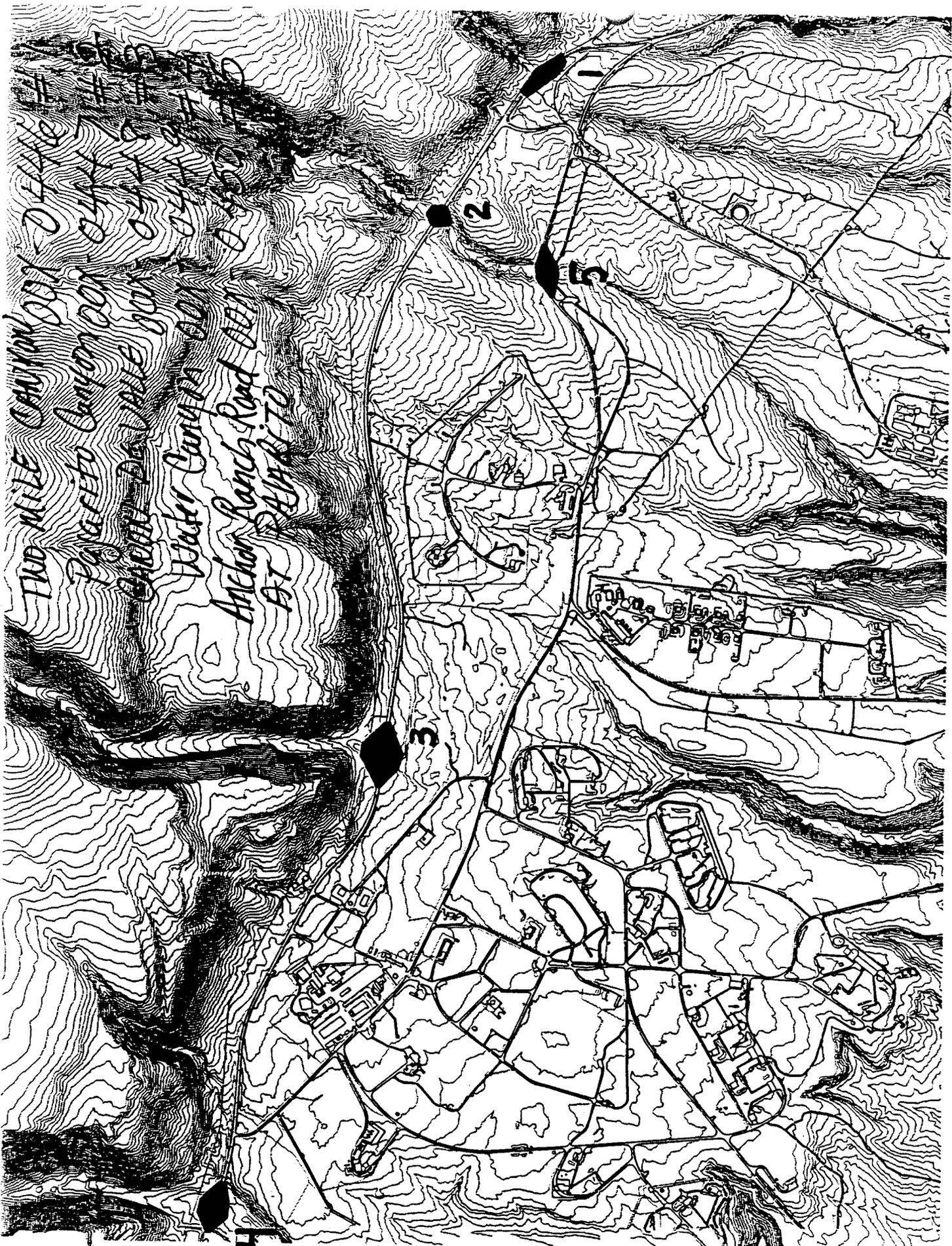
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DOWNTOWN

PUBSIA CANOPY-191

10. (2)

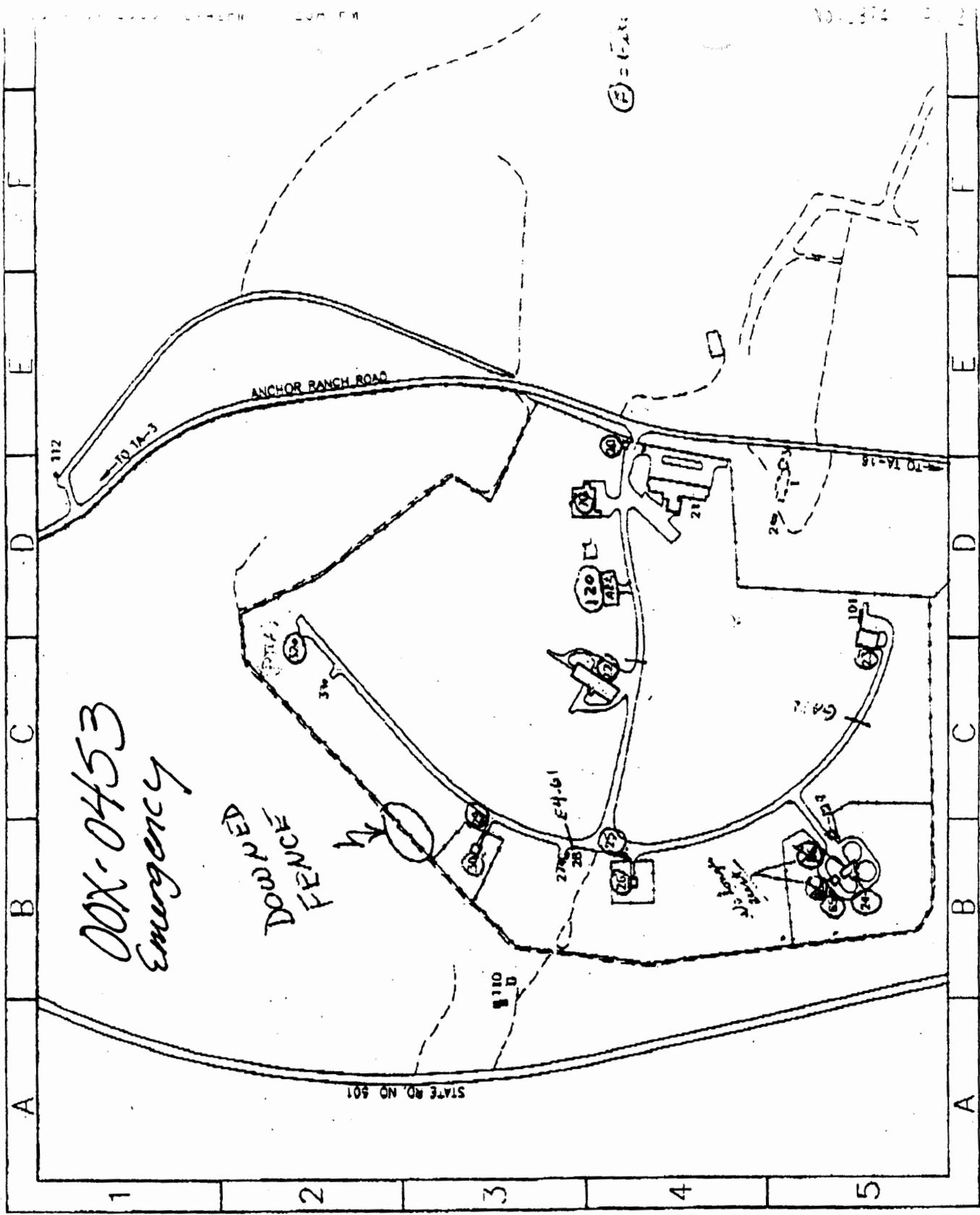
(1)



TWO MILE CANYON
PANGACETO CANYON
CAPITAL DEL VALLE
Water Canyon
Anchor Ranch Road
AT SAN ANTONIO

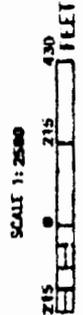
CRETA

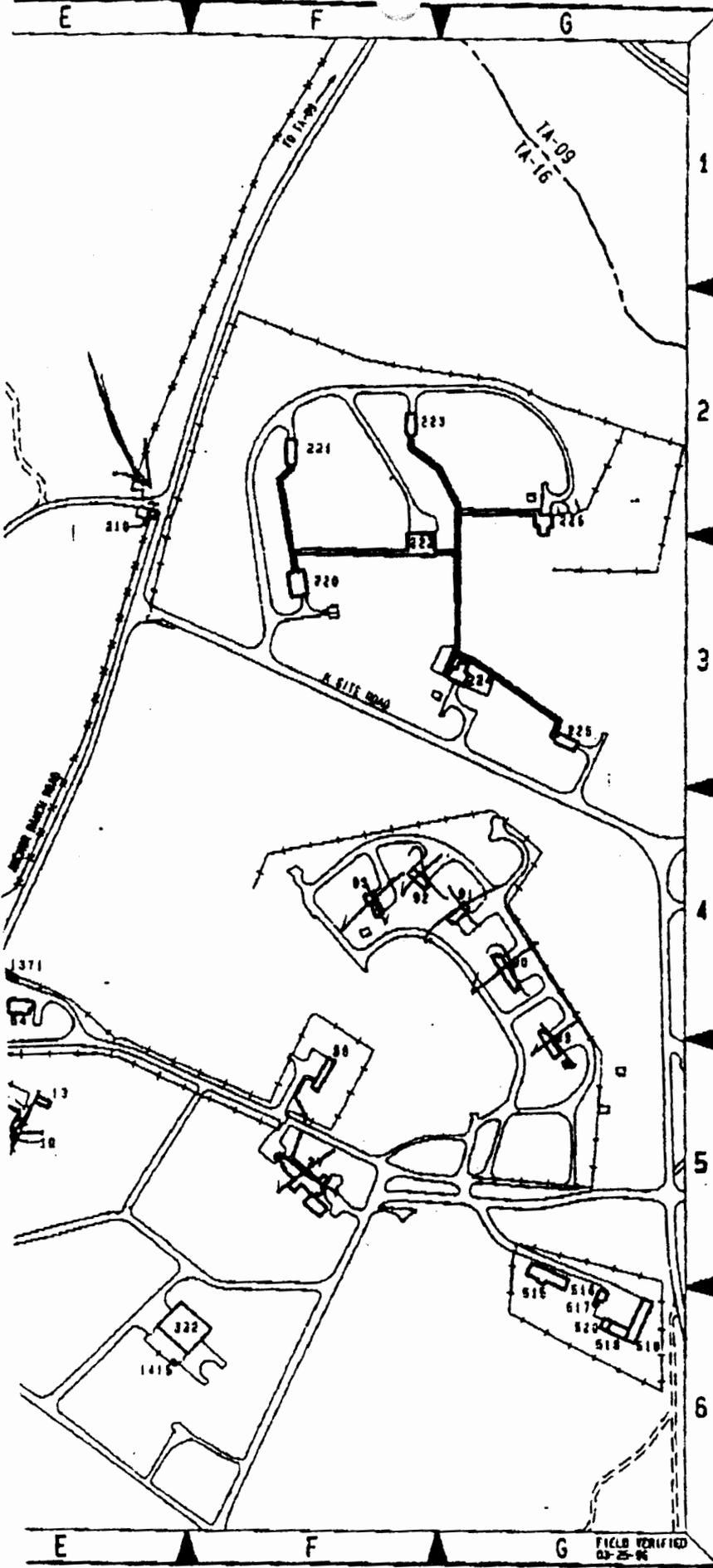
VECTUE



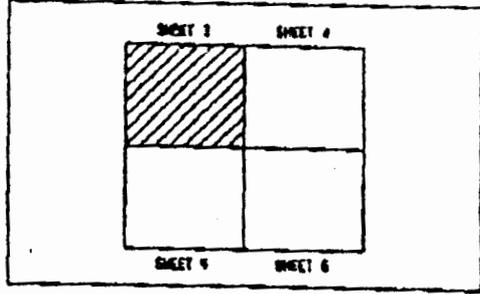
00X-0453
 Emergency

DOWNED
 FENCE





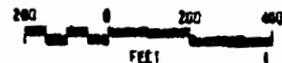
KEY MAP



00X-0454
EMERGENCY



SCALE: 1:2400



7	03-20-96	REVISED TO STATUS OF 03-25-96	JAC						
6	01-31-96	REVISED TO STATUS OF 01-20-96	JAC						
5	12-29-95	REVISED TO STATUS OF 12-10-95	JAC						
4	08-01-95	REVISED TO STATUS OF 08-01-95	JAC						

JOHNSON CONTROLS

AS-BUILT STRUCTURE LOCATION MAPS

TA-16

S-SITE

DATE	03-25-96
BY	JAC
CHECKED	JAC
DATE	03-25-96

APPROVED FOR RELEASE
DATE 03-25-96

Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

CLASSIFICATION: UNCLASSIFIED
PROJECT ID: 11952

REVISION: 3
DATE: 4/19/97

DATE: 03-25-96

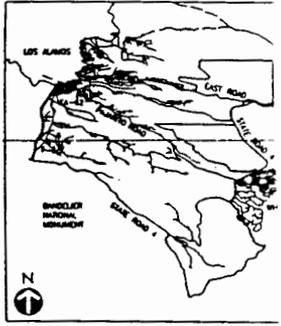
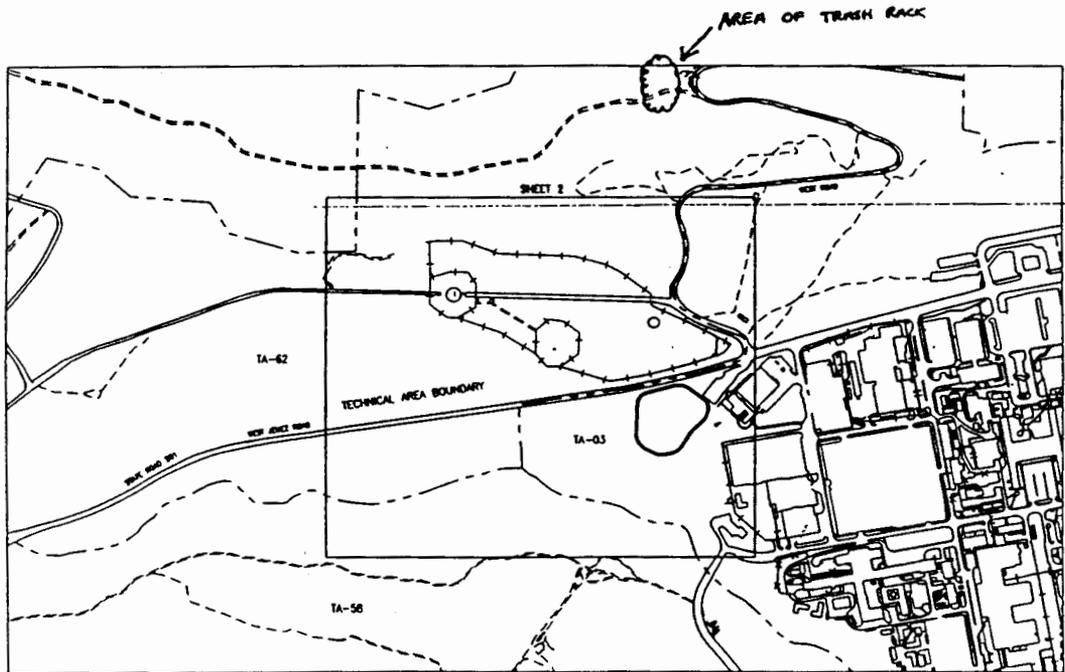
AB21

7

FIELD VERIFIED 03-25-96

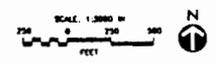
OOX - 0472
EMERGENCY

STRUCTURE LOCATION MAPS



LOCATION MAP
SCALE: NONE

TA-62 KEY MAP



NO.	DESCRIPTION	DATE	BY	REVISION
1	AS-BUILT STRUCTURE LOCATION MAPS			
2	TA-62			
3	NORTHWEST SITE			

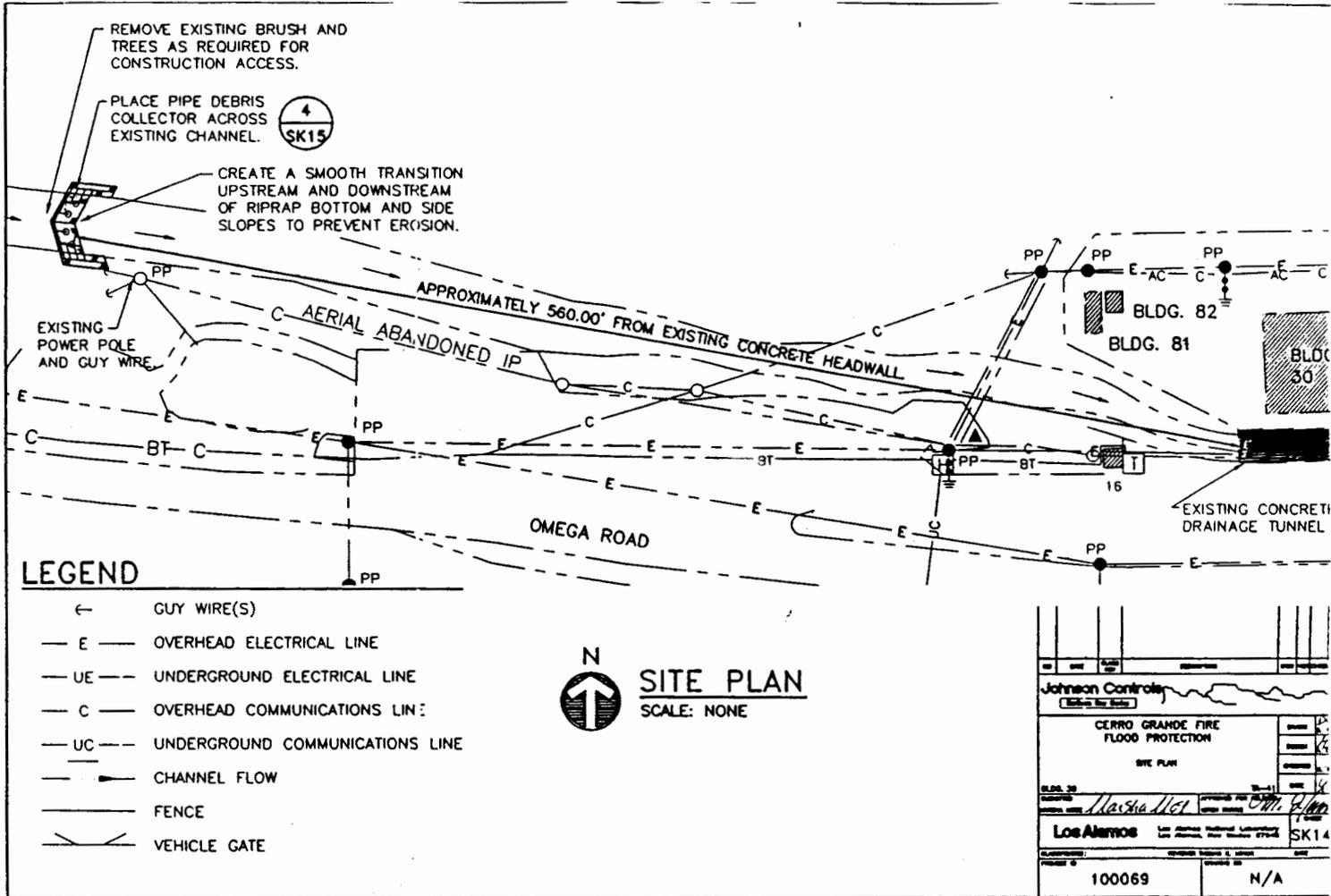
Johnson Controls
DESIGN/CONSTRUCTION

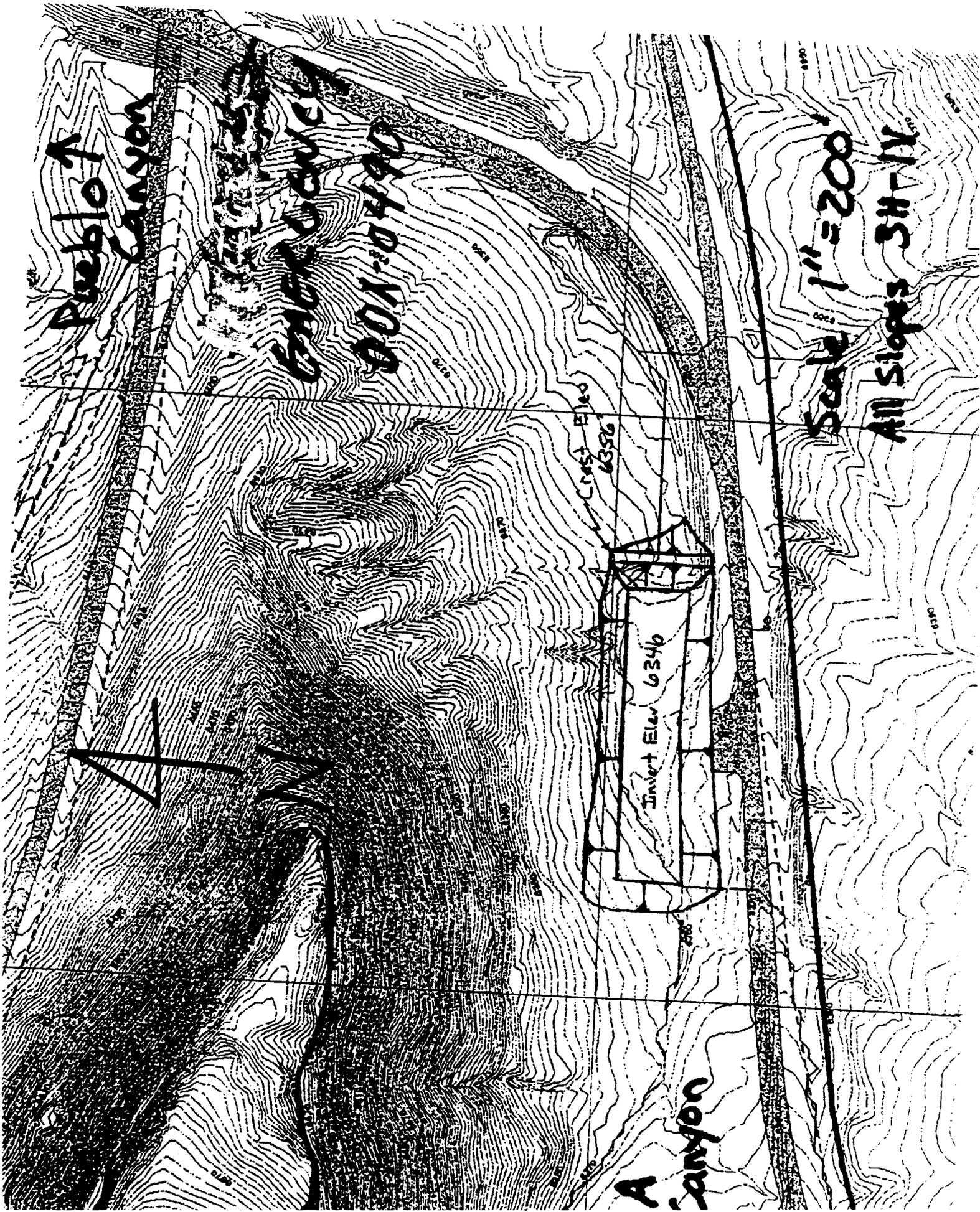
Los Alamos

PROJECT # 11952

AB48

EXCAVATION PERMIT REVIEW OOX-0473





Pueblo Canyon

344 D-1008

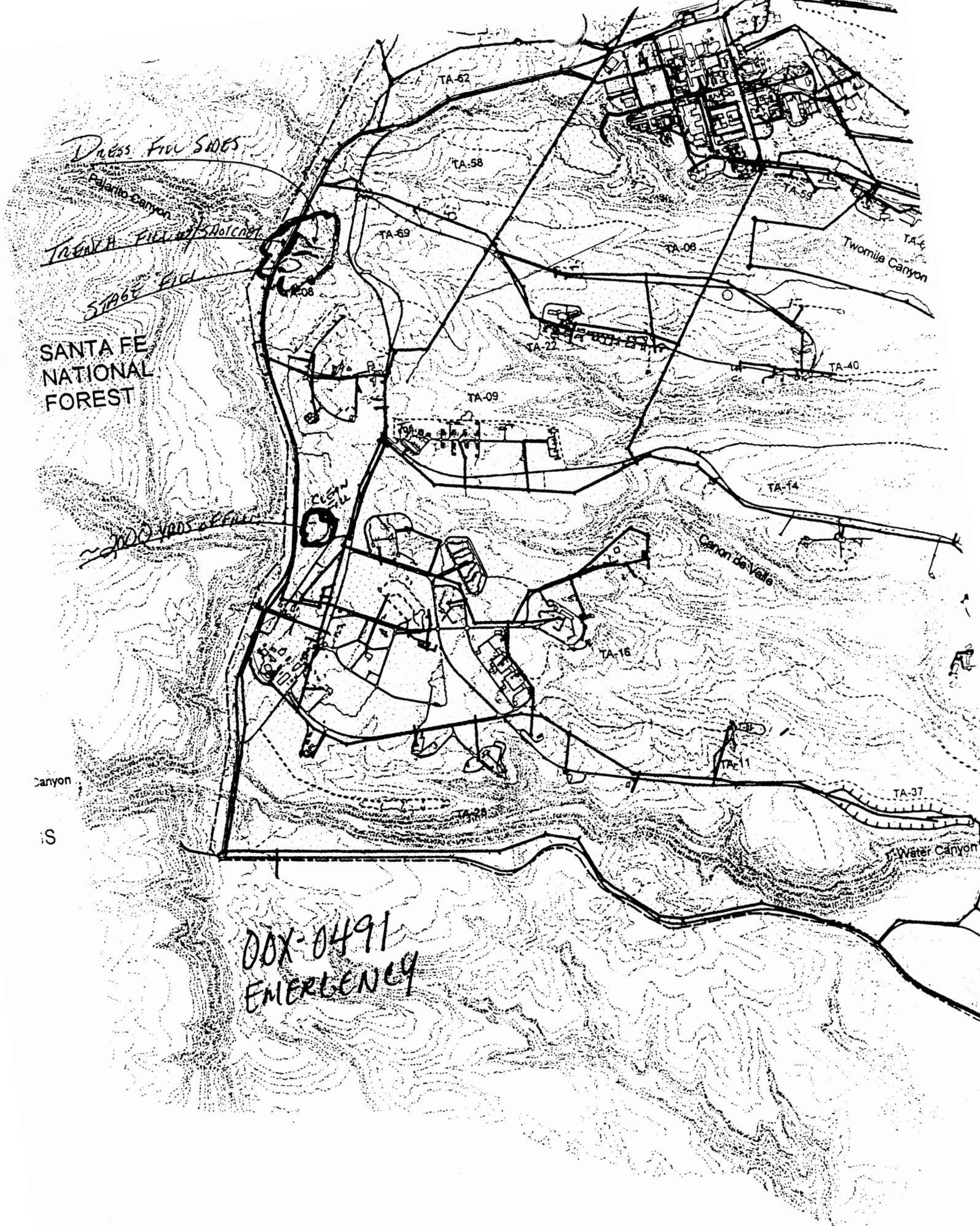
A Canyon

Scale 1" = 200'

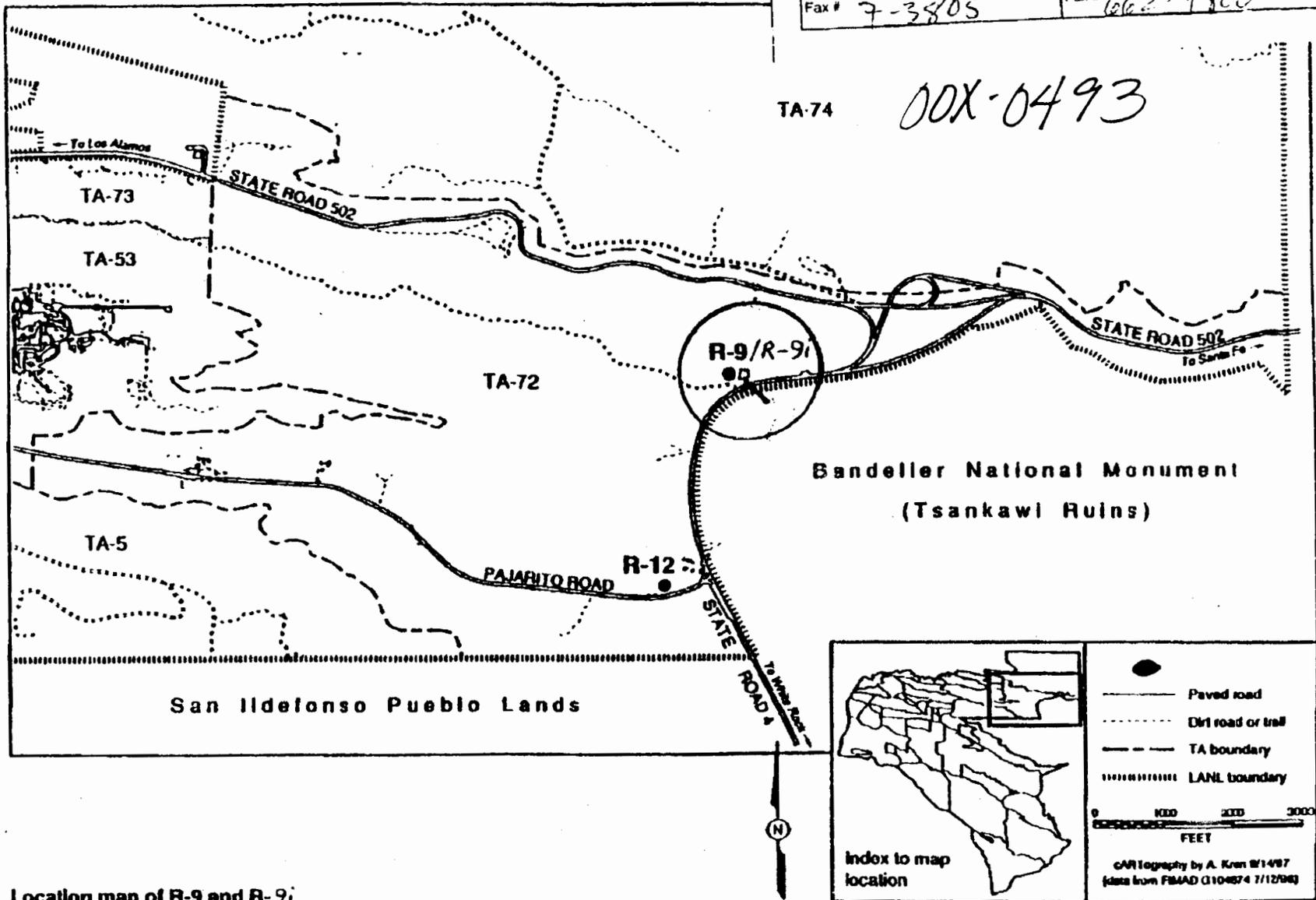
All Slopes 3H-1V

Invert Elev 6346

Crest Elev 6356



Post-it® Fax Note	7671	Date	7/12/00	# of pages	1
To	Julie Martinez	From	Andy Crowder		
Co/Dept	ESH-3	Co.	MKI PMC		
Phone #		Phone #	662-1338		
Fax #	7-3805	Fax #	662-7800		

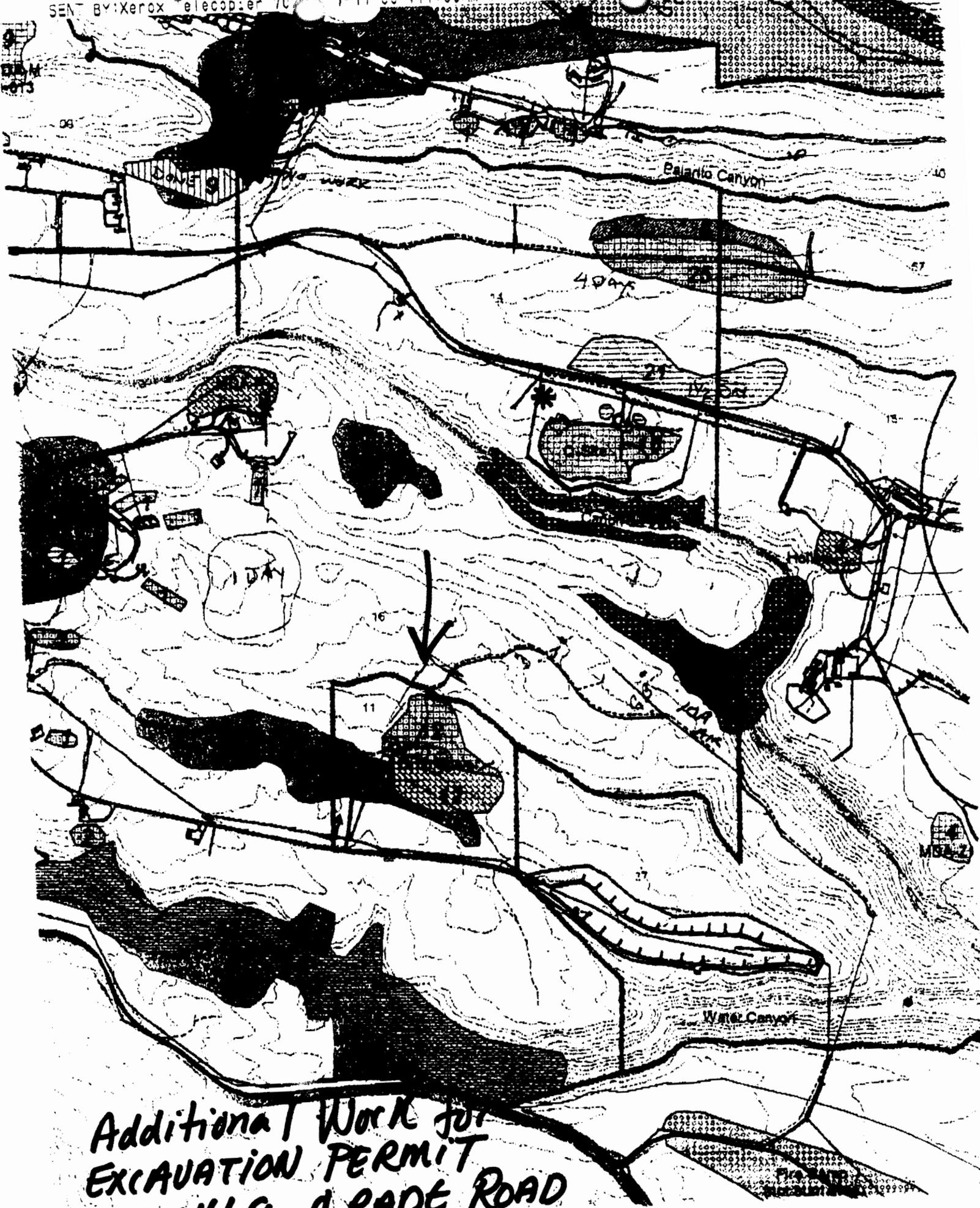


Location map of R-9 and R-9i

JUL 12 00 03:23P

SOS - 12-7800

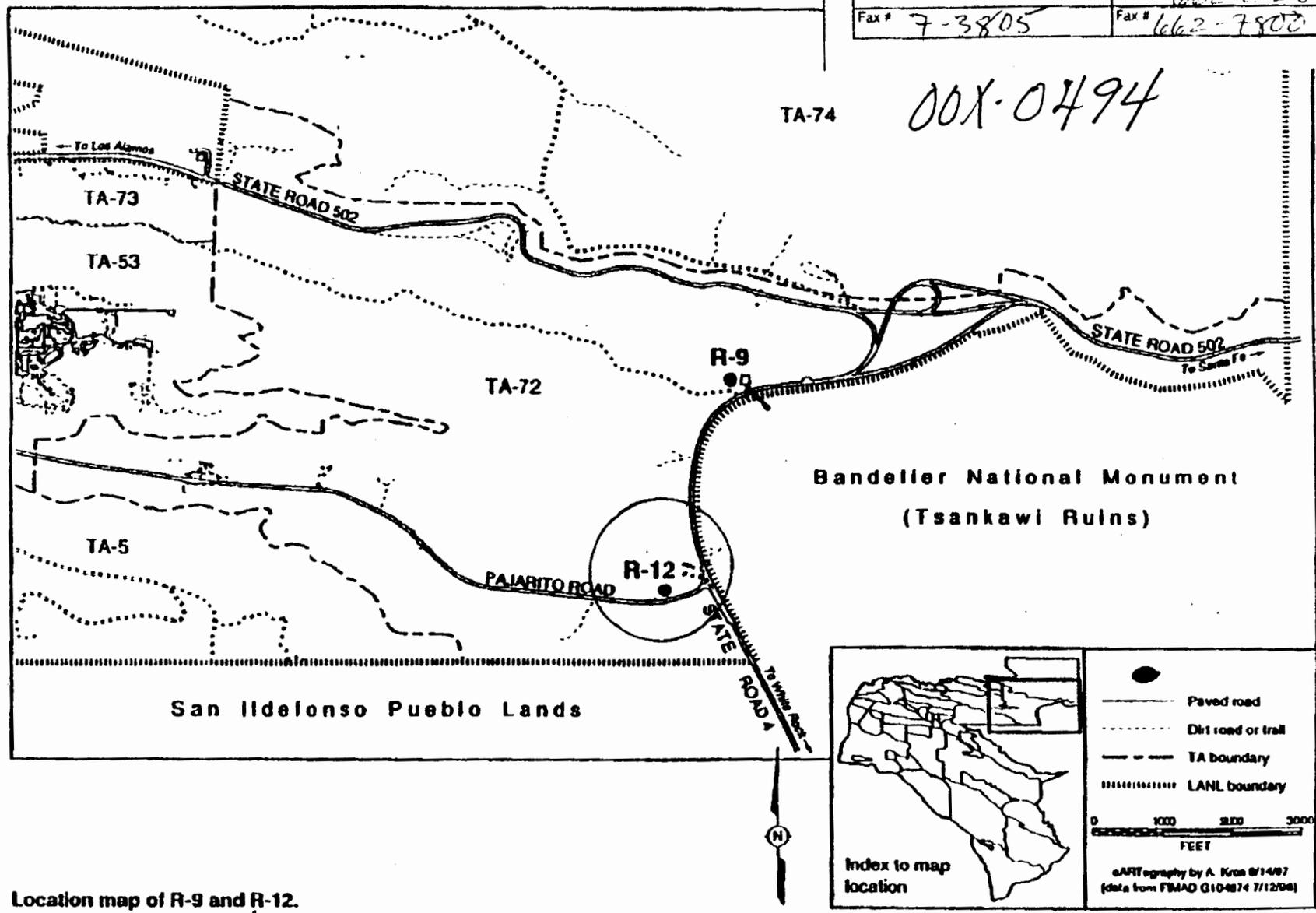
P. 1



Additional Work for
 EXCAVATION PERMIT
 NOX-0469. GRADE ROAD

Post-it* Fax Note	7671	Date	7/12/00	# of pages	1
To	Julie Martinez	From	Andy Crowder		
Co./Dept.	ESH-3	Co	mk!pmc		
Phone #		Phone #	662-1338		
Fax #	7-3805	Fax #	662-7800		

00X-0494



Location map of R-9 and R-12.

7YO CANYON

PUEBLO CANYON

00X-0504

EMERGENCY

73

LOS ALAMOS CANYON

DP CANYON

21

SANDIA CANYON

MORTANDAD CANYON

PUEBLO CANYON

LOS ALAMOS CANYON 41 2

43

MORTANDAD CANYON

THREEMILE CANYON

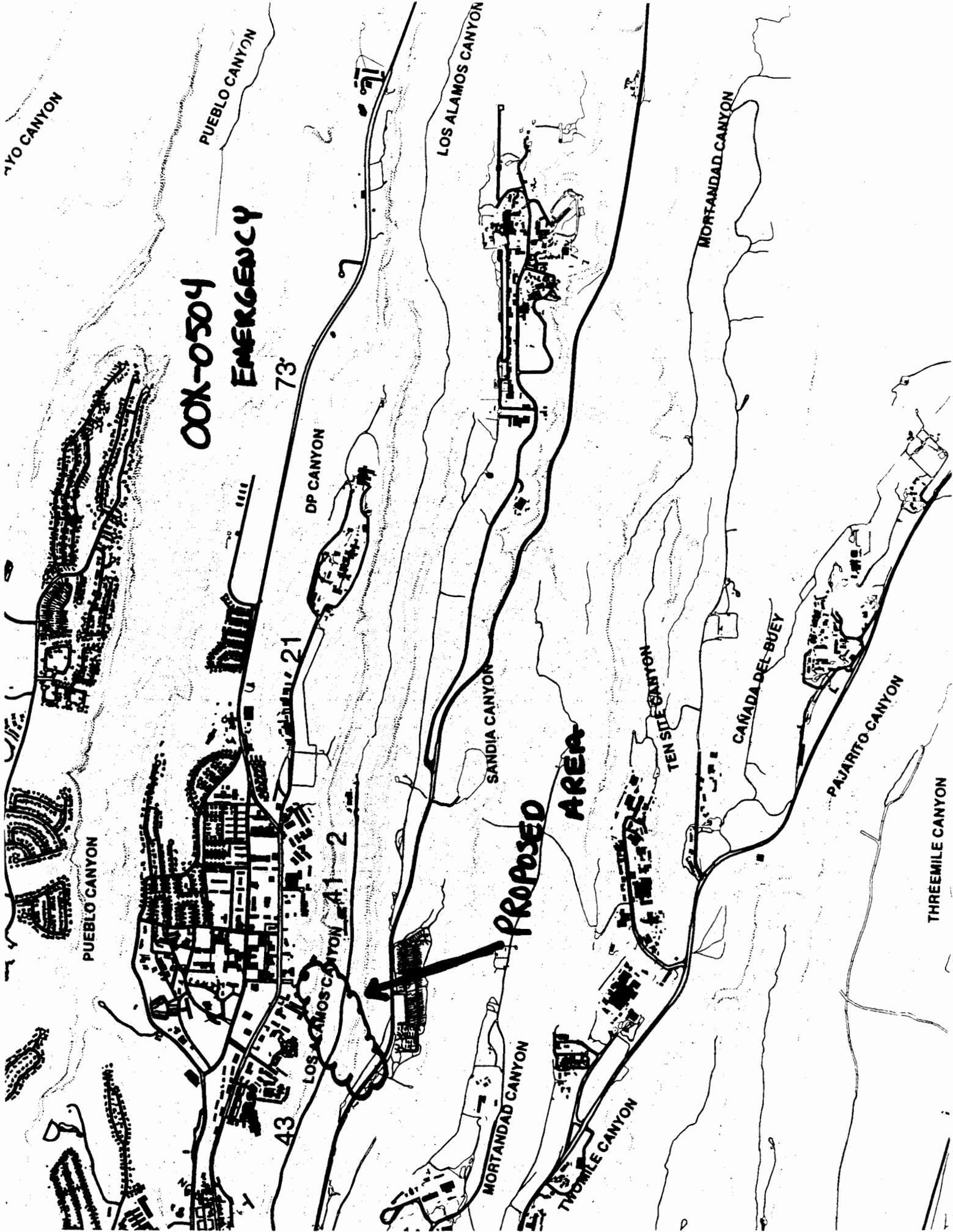
PROPOSED AREA

TEN SITE CANYON

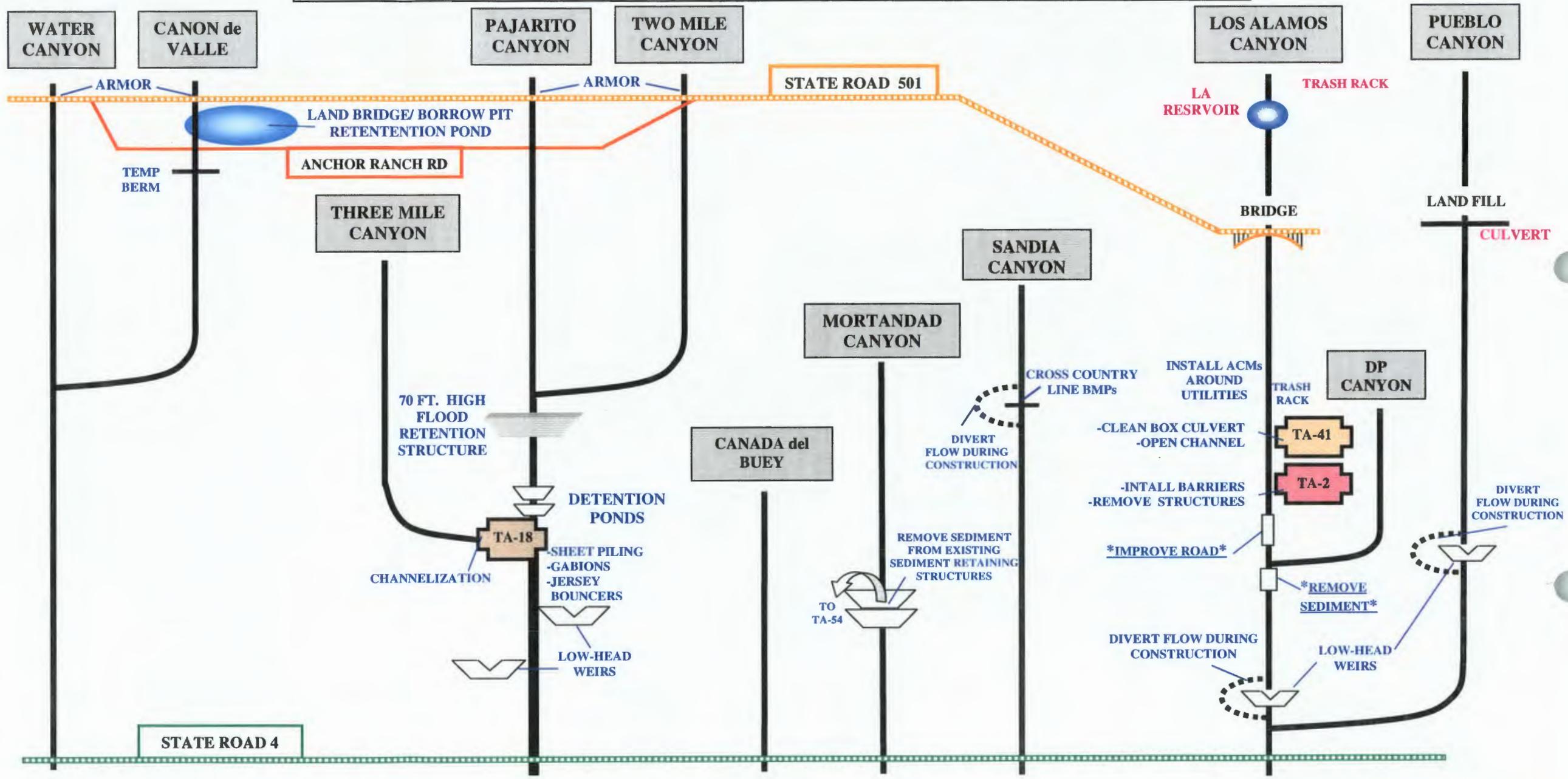
CANADA DEL-BUEY

PAJARITO CANYON

THREEMILE CANYON



CANYON WORK SCHEMATIC (MAJOR DREDGE AND FILL ACTIVITIES)



PURPLE TEXT = NWP #3, #18
BLUE TEXT = NWP #37 ***BLUE TEXT* = COMPLETED**

ENCLOSURE 5