NOTICE

All drawings located at the end of the document.

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CORRES CONTROL
INCOMING LTR NO

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DATE

ACTION

DIST	LTR	ENC
BURLINGAME, A H		
BUSBY, W S		
CARNIVAL, G J		
CORDOVA, R C		
DAVIS, J G		
FERRERA, D W		
FRAY, R E		
GEIS, J A		
GLOVER, W S		
GOLAN, P M		
HANNI, B J		
HEALY, T J		
HEDAHL, T G		
HILBIG, J G		
HUTCHINS, N M		
JACKSON, D T		
KELL, R E	X	
KUESTER, A W		
MARX, G E		
McDONALD, M M		
McKENNA, F G		
MORGAN, R V		
PIZZUTO, V M		
POTTER, G L		
SANDLIN, N B		
SATTERWHITE, D.G		
SCHUBERT, A L		
SCHWARTZ, J K		
SETLOCK, G.H.		
STIGER, S.G.		
TOBIN, P M.		
VOORHEIS, G.M		
WILSON, J.M.		
NESTA S	X	X
MONTGOMERY N	X	X
BADWAN F	X	
SCHRADER DC	X	X
MC CART D	X	
CORRES CONTROL	X	X
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PATS/T130G		

Reviewed for Addressee
Corres Control RFP

9-16-94 DDB
DATE BY

Ref Ltr #

DOE ORDER # 5400.1

RF-46522 (Rev 6/94)

1 OF 10

States Government **Department of Energy**

Memorandum

Rocky Flats Field Office

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FLATS PLANT
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NSEPD.JCS 08703

Subpart D Categorical Exclusion (RFFO/CX224-94) Determination

William F Kelly, Office of Site and Facility Transfer, EM-64, HQ

Attached for your information is the recently approved Categorical Exclusion, RFFO/CS24-94, Seismic Investigation Near Building 371. This categorical exclusion addresses the site investigation efforts in the Rocky Flats Buffer Zone to evaluate potential seismic fault anomalies as part of the Site Seismic Hazard Study.

Shirley J Olinger
Acting Assistant Manager for
Environment, Safety and Health

Attachment

cc w/Att:
B Smith, EM-64
K. Juroff, EM-641
R. Scott, EM-20
P Powell, EPD, RFFO
S. Nesta, EG&G
N. Montgomery, EG&G

cc w/o Att.
W. Bixby, EM-60
M. Silverman, OOM, RFFO
L. Smith, OOM, RFFO
[redacted]. Kell, EG&G
F Badwan, EG&G

ADMIN CORI

SW-SW-A-003358

SECTION D DETERMINATION
CATEGORICAL EXCLUSION (CX) DETERMINATION - RFFO/CX24-94

Proposed Action: Seismic Investigation near Building 371

Location North Buffer Zone, Rocky Flats Environmental Technology Site, Golden, Colorado.

Proposed by U.S Department of Energy, Rocky Flats Field Office

Description of the Proposed Action:

Rocky Flats Field Office proposes to perform seismic investigations to determine the location and recent activity level of suspected faults in an area that may affect Building 371 (Figure 1). The tests would be conducted to evaluate the suitability of Building 371 for special nuclear material storage The proposed action would involve digging test pits and trenches perpendicular to potential faults in the Buffer Zone north of Building 371 to expose a viewing wall from which signs of movement in the alluvium could be ascertained The proposed trench locations were selected based on siting criteria 1) location outside of know Individual Hazardous Substance Sites (IHSSs), Potential Areas of Concern, and/or Additional Areas of Concern, 2) proximity to Building 371, 3) the continuity of the Rocky Flats Alluvium surface across the postulated bedrock faults, 4) the degree of modification to the Rocky Flats Alluvium surface, 5) the subsurface constraints on the width of the target zone, 6) the thickness of Quaternary deposits above the deformation, and 7) presence of existing logistical constraints such as transmission lines, poles, and guide wires, and monitoring wells Due to relatively recent disturbances from construction activities, the area in the immediate vicinity of Building 371 does not meet the criteria for the siting of viewing trenches. The alternative locations were selected through previous investigatory and characterization work.

Background A preliminary assessment of borehole data and reconnaissance field investigations have identified a number of anomalies that have been interpreted to be possible faults north of the industrial area. Current data provide only preliminary details on the location, orientation, and amount of deformation of Cretaceous units in the area, and they provide very little information on the potential for any faults to be active It is not known if the alluvium deposits between the surface and the bedrock are displaced However, spot elevations of deformations are known from existing borehole data The purpose of this action would be to provide an opportunity for a visual observation of undisturbed alluvial strata to confirm any bedrock unconformity or recent fault activity

Scope of Work. RFETS proposes to excavate in two locations northeast of Building 371. Proposed excavations would go through the alluvium and approximately another 4 feet into claystone bedrock (10 to 25 feet deep) and would be a maximum of 500 to 1000 feet in length The full extent of proposed test pits and trenching described herein may not be needed, depending upon the quality of data obtained during the excavation

Groundwater would be sampled in the areas of Trenches RF-T1A and RF-T1B prior to digging each trench to determine if the groundwater is contaminated The tests would use a geoprobe to drive a hollow rod about 20 feet into the ground so a small (3/8") casing can be inserted for water sampling If contamination is not found, excavation would proceed in the proposed location If sampling and analysis show contamination, trench locations RF-T1A and RF-T1B would be

abandoned in favor of Trench RF-T1C, and two to five 160-foot-deep boreholes would be drilled for geophysical logging near RF-T4. This logging would further pinpoint the location of postulated faults; thereby decreasing the projected length of the excavation

Test pits would be located adjacent to proposed trench locations (Figures 2 and 3) along the proposed centerline of the trenches. The test pits would be dug to determine whether the alluvium in the proposed trench locations would provide a good indicator of fault movement and whether it would be necessary to trench all the way down to bedrock in each location Information derived from the test pit would assist in field determination of actual trench length and depth Test pits are proposed to be 40 feet long by 3 feet wide Anticipated depth is 10 to 15 feet

Trench RF-T1A would be located closest to Building 371, north of North Walnut Creek, and south of the landfill (Figure 2) The two postulated faults that may be beneath/near Building 371 are inferred to coalesce in this area. Nearby logistical constraints include a storage depot, an electrical substation; transmission lines, poles, and support wires; IHSSs 114, 166.2, 166 3, and 167 3, and monitoring well #6674. These constraints would be avoided, and power would be shut off in the power lines during excavation. RF-T1A would be approximately 800 feet long Anticipated trench depth is 10 to 25 feet Including test pits, trench configuration, spoil piles, and work area, the total disturbed surface area may equal 3/4 acre Total excavated volume may equal 44,800 cubic feet

Trench RF-T1B would be located just northeast of Trench RF-T1A (Figure 2) RF-T1B would complement RF-T1A which cannot be extended farther southeast because of a surface ridge. RF-T1B would be approximately 500 feet long Anticipated trench depth is 10 to 25 feet Including test pits, trench configuration, spoil piles, and work area, the total disturbed surface area may equal 1/2 acre. Total excavated volume may equal 28,000 cubic feet

Alternative Trench RF-T1C would be selected in place of RF-T1A and RF-T1B should groundwater sampling results indicate contamination is present in the area of the proposed trench The alternative trench would be located just southwest of RF-T1A (Figure 1) The trench would be approximately 400 feet long Anticipated trench depth is 15 to 25 feet. One to four test pits would be associated with the alternative trench Including test pits, trench configuration, spoil piles, and work area, the total disturbed surface area may equal 1/2 acre Total excavated volume may equal 34,000 cubic feet.

Alternative Trench RF-T4 would be selected in place of RF-T2 or RF-T1C should sampling results indicate contamination is also present in that area This alternative trench would be located northeast of the Landfill Pond and south of McKay Bypass Canal (Figure 1) Trench RF-T4 would be approximately 1000 feet long and 20 feet deep. Up to four test pits would be associated with the alternative trench Including test pits, trench configuration, spoil piles, and work area, the total disturbed surface area may equal 1 1/4 acres Total excavated volume may equal 112,000 cubic feet

Trench RF-T2 and Trench RF-T3 would be located north of North Firebreak Road, Upper Church Ditch, and McKay Ditch (Figure 3) RF-T2 would run northeast of borehole B203889 An anomaly has been inferred between boreholes B203889 and B203969, although there is no apparent geomorphic expression of surface or near-surface faulting between the boreholes An alternative trench may be considered for this trench given the thickness of the alluvium and the logistical constraints (RF-T4 on Figure 1) RF-T2 would be approximately 800 feet long and 25 feet deep Including test pits, trench configuration, spoil piles, and work area, the total disturbed surface area may equal 1 acre Total excavated volume may equal 112,000 cubic feet

Trench RF-T3 would run southeast between Upper Church Ditch and the access road RF-T3 would be approximately 500 feet long and 25 feet deep. Including test pits, trench configuration, spoil piles, and work area, the total disturbed surface area may equal 3/4 acre Total excavated volume may equal 70,000 cubic feet.

Design and Excavation. To maximize geologic exposures (for logging and interpretation), maintain a stable excavation, and minimize excavation volumes, the test pits and trenches would be excavated with near-vertical walls A standard design for excavation of all test pits and trenches is shown in Figure 4 Topsoil and spoil piles would be located separately adjacent to each trench and test pit. Each trench would remain open for 3 to 4 weeks or until final study and mapping was complete The main emphasis of the trench mapping would be to identify structures within the bedrock unit, to show the continuity of strata, and to show the absence or presence of displaced alluvial units exposed in the viewing wall Backfilling of the first trench, and its associated test pits, could begin prior to completion of study of the final trench.

The recommended dimensions and location of each trench may need to be adjusted if unexpected conditions are encountered while the trenches are being excavated. An on site field geologist would identify potential problems and recommend corrective measures Critical field relations or important samples for age dating can be destroyed during the excavation process, therefore, an on site Quaternary geologist would be assigned to mitigate such risks

Each test pit and trench would be excavated with a backhoe or track excavator equipped with a 36-inch to 48-inch wide bucket The excavations would be straight, one bucket wide, and have near vertical walls One end of the test pits/trenches would be ramped to allow ingress and egress Ladders would be placed so that workers within a trench would not need to move more than 25 feet laterally to reach a ladder Test pits and trenches greater than 20 feet deep would be engineered in accordance with the Occupational Health and Safety Administration (OSHA) regulations

As the excavation proceeds, hydraulic aluminum shoring would be installed from the surface to support the test pit/trench walls (Figure 4) Shoring would be lowered into the test pit/trench as excavation proceeds, following as closely behind the excavator as practical If the excavation does not stand long enough to allow installation of shoring, then the excavation plan would be modified to include benching and/or sloping of the excavation walls Benching or sloping would increase the amount of material excavated and the size of the disturbed area by as much as 100%.

Contingency plans for dewatering of excavations would be determined as part of the Ecological Protection Plan (see below), however, dewatering would likely entail sloping the pit or trench floor so that water can drain into one or more sumps where it can be pumped out of the excavation

Commitments and Contingency Planning Due to the location and size of the proposed action, certain commitments and contingency plans would be incorporated into the scope of work. These actions and plans would be developed in conjunction with and monitored by RFETS personnel specializing in these issues

Sampling, Monitoring, and Waste Management The proposed trenches have been located to avoid nearby IHSSs, however, IHSS boundaries are not definitive and areas adjacent to IHSSs are often considered suspect To avoid excavation in a potentially contaminated area, sampling would be conducted The tests would use a geoprobe to install a small (3/8") casing for sampling, as described previously In addition, all excavated locations would be monitored for radioactive contaminants and hydrocarbons Drill cuttings from borehole drilling would be taken to the landfill

Project Specific Health and Safety Plan According to OSHA 1910.120, a Project-Specific Health and Safety Plan (HSP) is required for all activities at RFETS The HSP for this project would be a graded plan to address training and other safety measures that must be planned for on a contingency basis — for example, a) safe egress, b) the integrity of the trench, and c) dewatering procedures

Ecological Protection Plan Since the sites are located in the Buffer Zone, precautions would need to be taken to protect wildlife and wildlife habitat. Specific precautions would be determined through a cooperative effort and may include the following: a) migratory bird surveys are required to be performed at each site within 2 weeks prior to start of construction, b) threatened and endangered species surveys are required once within 6 months prior to start of construction, depending on the season, c) barriers would be necessary to keep animals from falling into open pits or trenches, d) the disturbed area would need to be confined to a minimal area to avoid damaging habitat, and e) although, trenching would not take place in wetlands, if groundwater is encountered, dewatering procedures may not divert water into downstream wetlands.

Reclamation Plan. The proposed trench sites would be in areas of primarily undisturbed prairie which would require a reclamation plan to be prepared. The plan would address a) backfilling requirements, b) the need for weed control, c) the reclamation species and methods to be used, and d) success assurance monitoring

Coordination with the Groundwater Monitoring Program To maintain the integrity of the RFETS groundwater monitoring program, trenching operations would retain a 25 foot offset from any borehole or monitoring well.

Cost and Schedule The estimated total cost for the trenching operations would be $150,000 The work is to be completed by the end of 1994 Additional funding would be secured to carry out the requirements of the commitments and contingency plans

Categorical Exclusion to be applied:

B3.1 Site characterization and environmental monitoring, including siting, construction, operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA Specific activities include, but are not limited to

(a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, and radar), geochemical, and engineering surveys and mapping, including the establishment of survey marks,
(b) Installation and operation of field instruments, such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools,
(c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells,
(d) Aquifer response testing,
(e) Installation and operation of ambient air monitoring equipment;
(f) Sampling and characterization of water, soil, rock, or contaminants,
(g) Sampling and characterization of water effluents, air emissions, or solid waste streams, (h) Installation and operation of meteorological towers and associated activities, including assessment of potential wind energy resources,
(i) Sampling of flora or fauna, and
(j) Archeological, historic, and cultural resource identification in compliance with 35 CFR part 800 and 43 CFR part 7

DOE NEPA REGULATIONS SUBPART D
CATEGORICAL EXCLUSION DETERMINATION — RFFO/CX24-94

Seismic Investigation for Building 371

I have determined that the proposed action meets the requirements for a categorical exclusion as defined in Subpart D of 10 CFR 1021 Therefore, I approve the categorical exclusion of the proposed action from further NEPA review and documentation.

Date. 9-12-94

Signature.

Mark N. Silverman
Title: Manager, Rocky Flats Field Office

RFFO Project Sponsor: I have reviewed the project description for this proposal and concur with its accuracy and validity

Date: 9/9/94

Signature

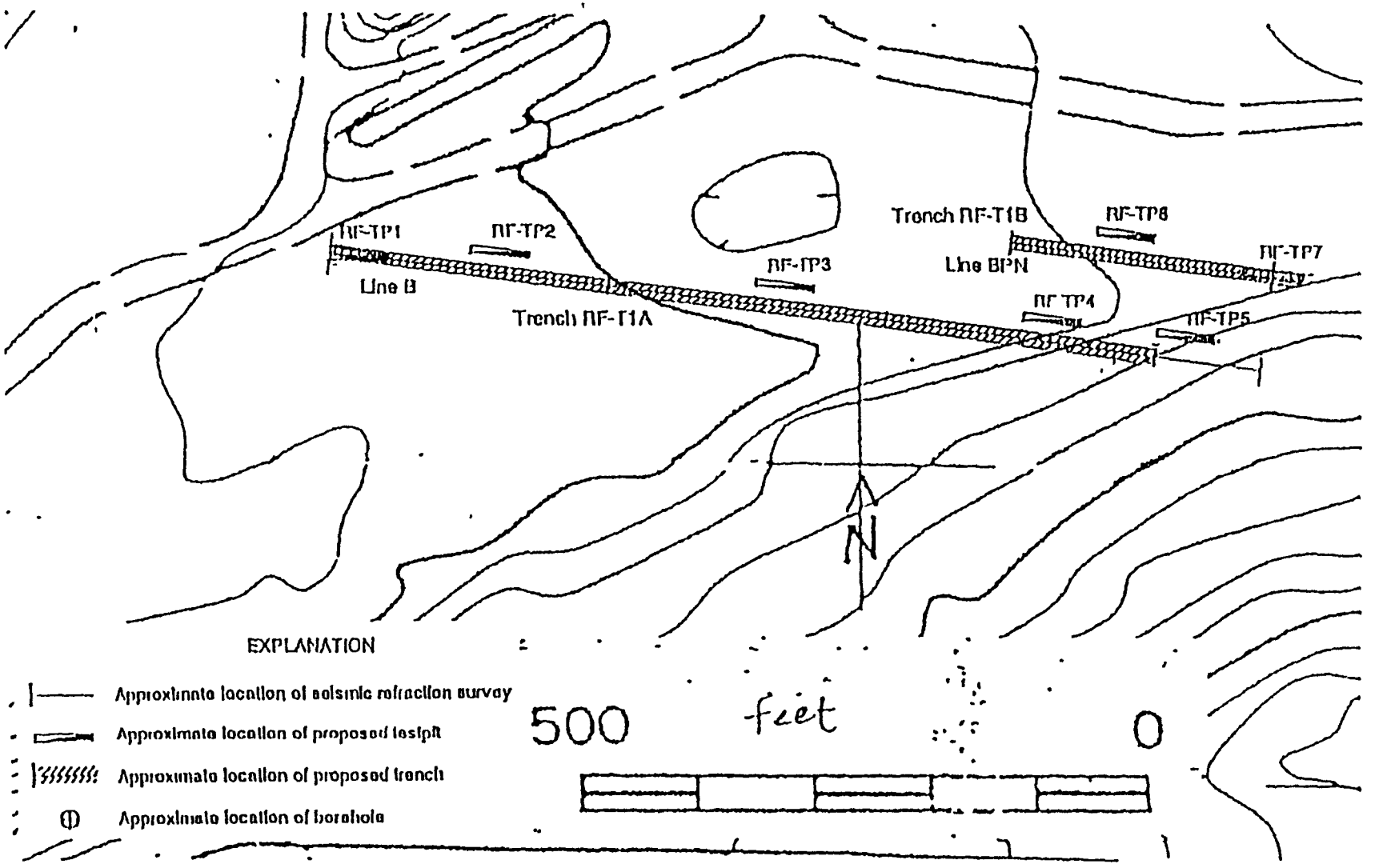
James Selan
Title Acting Director, Nuclear Safety and Emergency Preparedness Division

I have reviewed this determination and find that a categorical exclusion is the appropriate level of NEPA documentation.

Date September 8, 1994

Signature. P M Powell

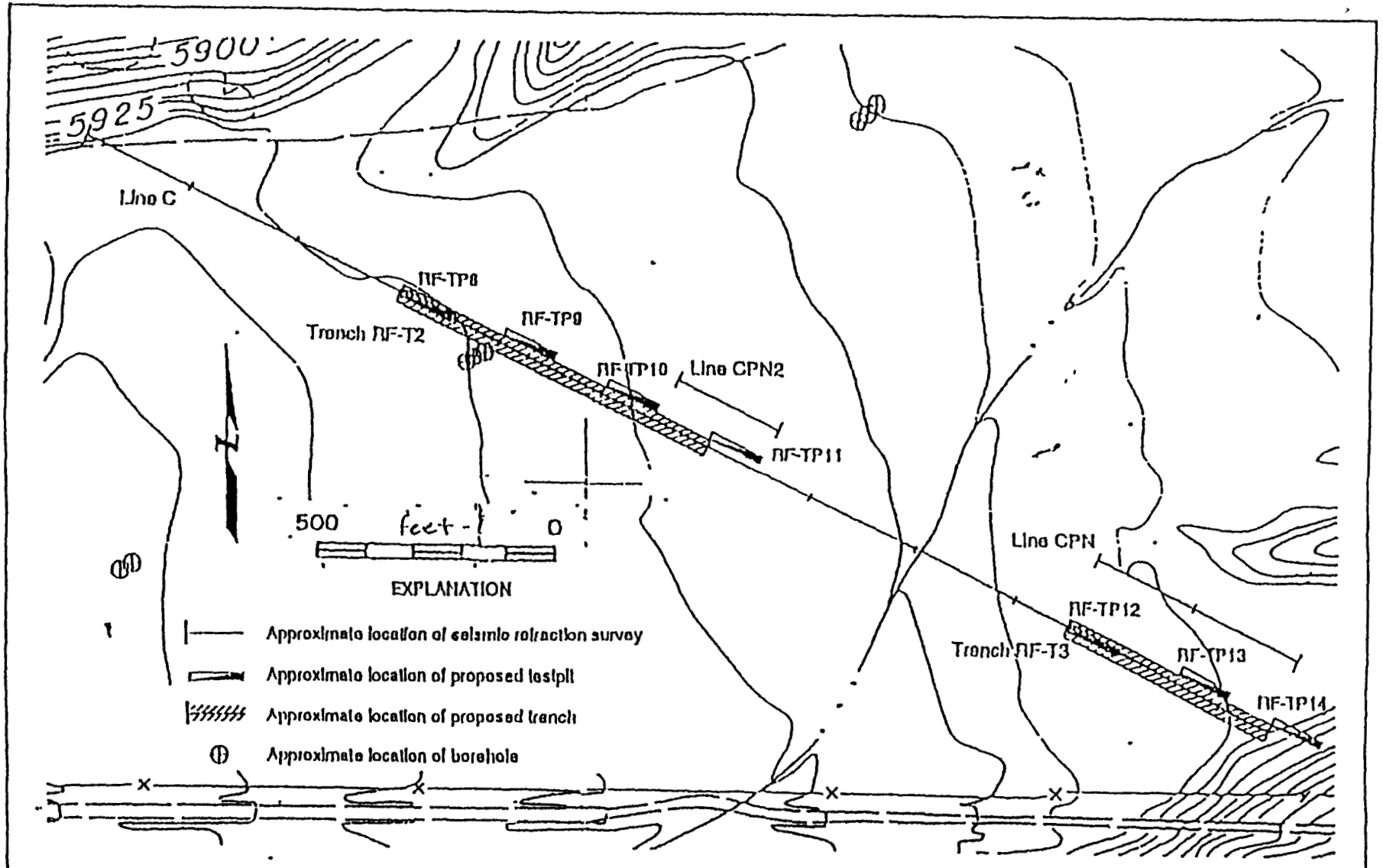
Patricia M Powell
Title. NEPA Compliance Officer



PROPOSED LOCATION OF TRENCHES AND TESTPITS, SOUTH ROCKY FLATS PLANT, COLORADO

Figure 2
TRENCH RF-T1A and RF-T1B

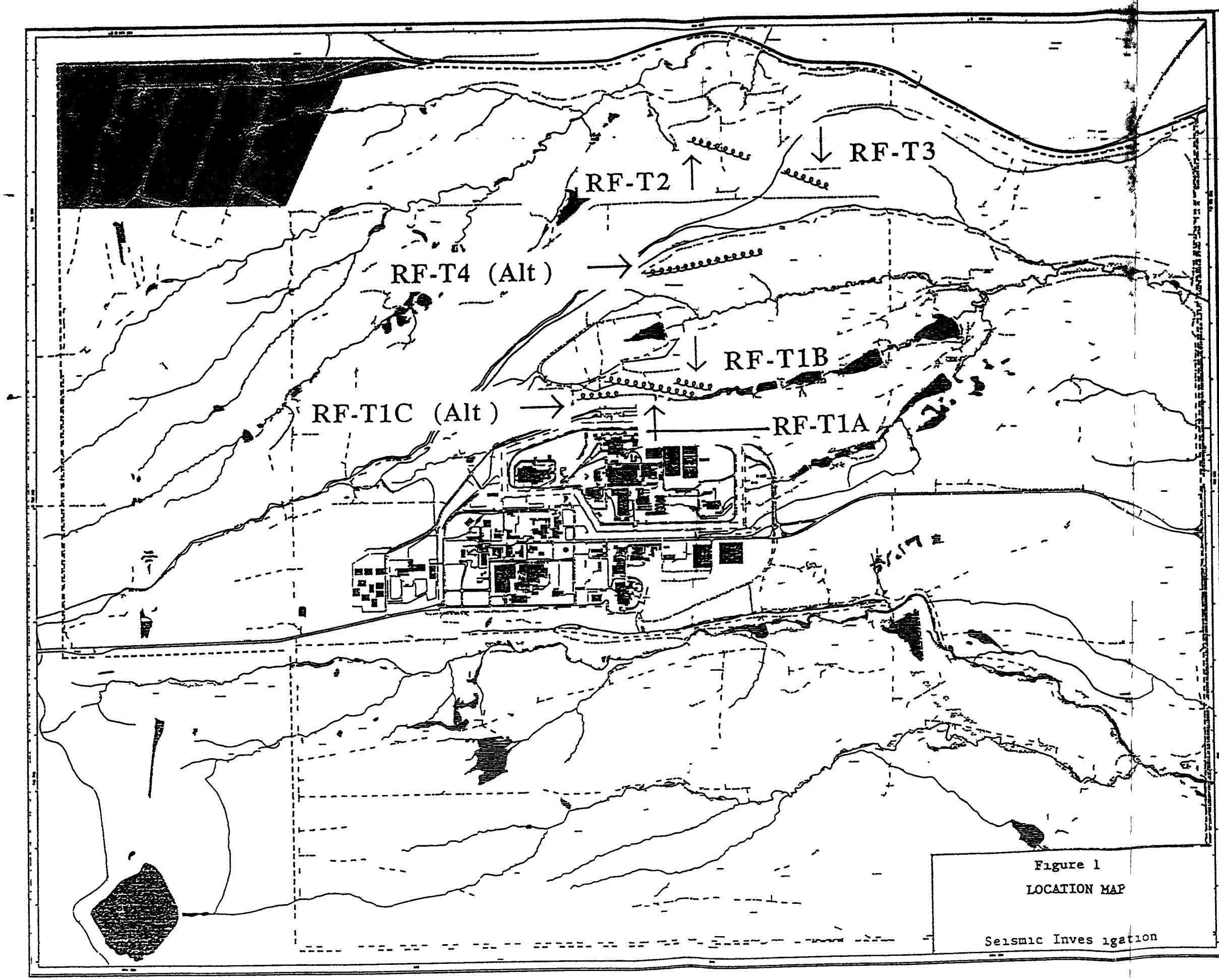
Seismic Invescigation



PROPOSED LOCATION OF TRENCHES AND TESTPITS, NORTH ROCKY FLATS PLANT, COLORADO

Figure 3
TRENCH RF-T2
and RF-T3

Seismic Investigation



US Department of Energy

Rocky Flats Plant

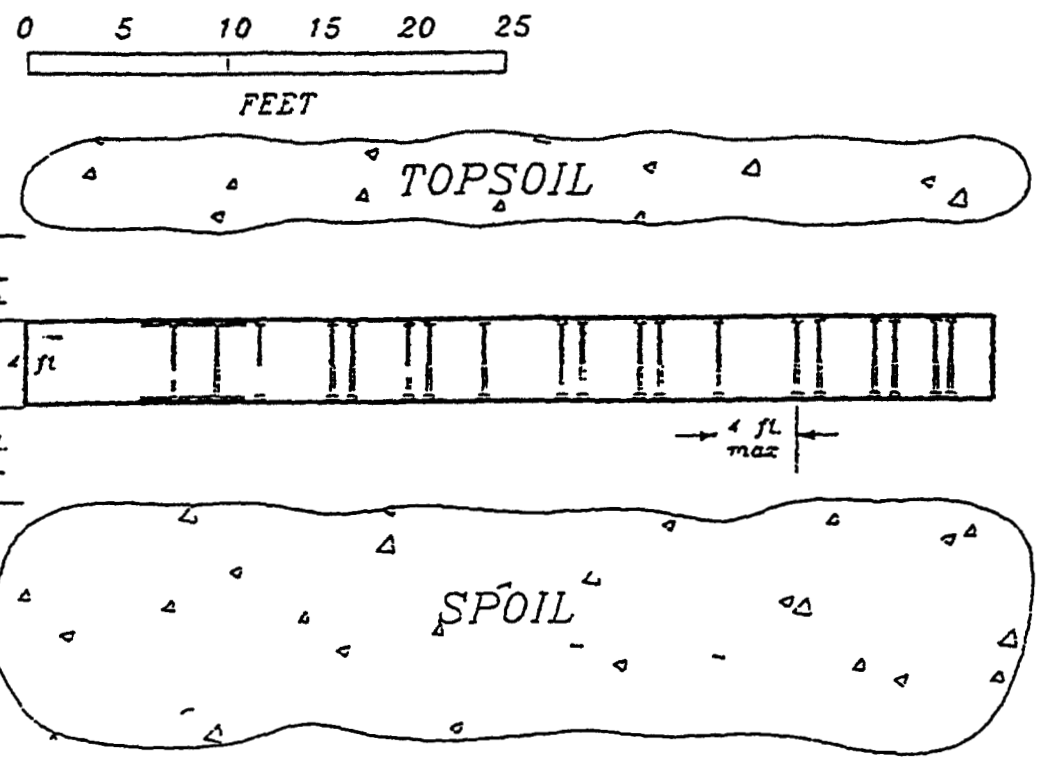
TRENCH

Figure 1

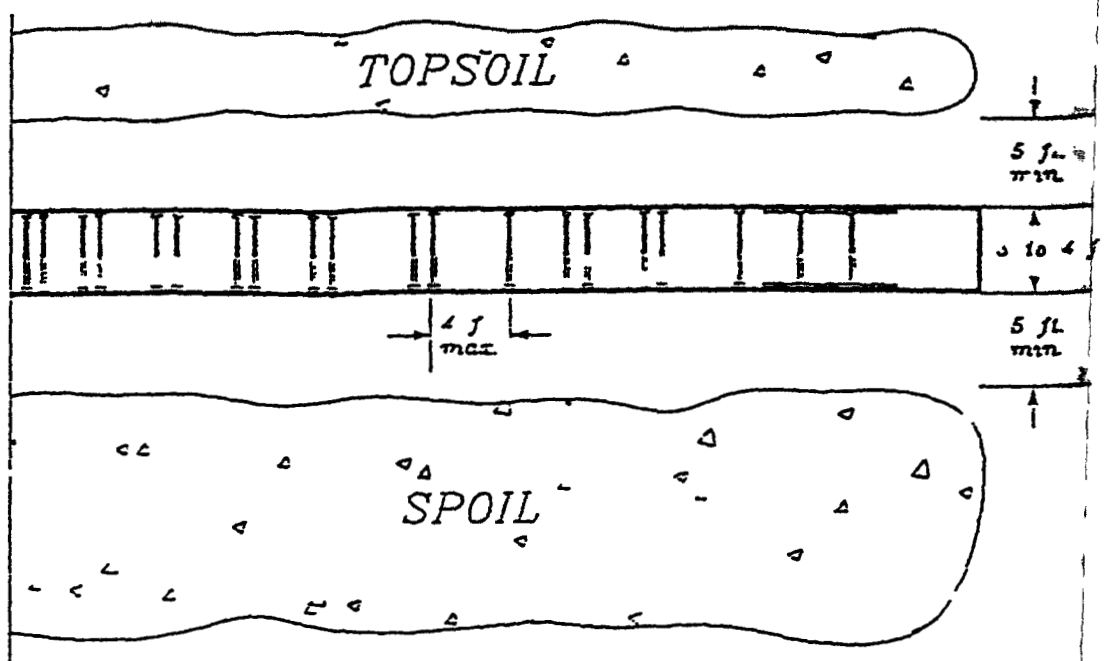
LOCATION MAP

Seismic Investigation

EG&G ROCKY FLATS



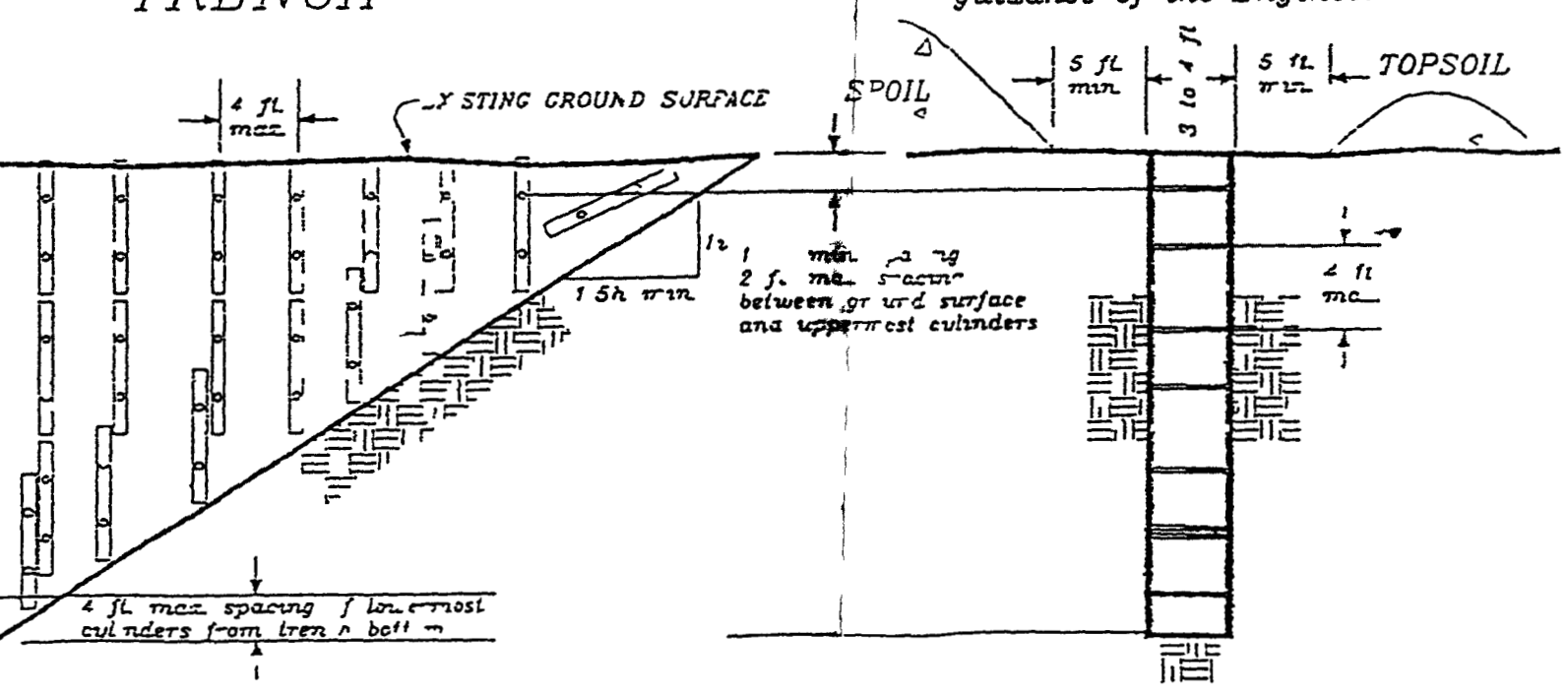
TEST PIT



TRENCH

NOTES

1 Design is based on requirements for OSHA TYPE C soils
2 Design is based on use of either Model 46 or Model 55 hydraulic Speed Shores with 2-inch hydraulic cylinders
3 Maximum depth of excavation is 25 feet Depth of excavation greater than 25 feet will require redesign.
4 Maximum horizontal and vertical spacing between adjacent hydraulic cylinders shall not exceed 4 feet
5 Top hydraulic cylinders shall be no less than 1 foot nor more than 2 feet from the top of excavation.
6 Bottom hydraulic cylinders shall be no more than 4 feet from the bottom of the excavation.
7 Sides of the excavation shall be near vertical and straight
8 Ground water if encountered shall be removed from the excavation by pumping
9 Confirmation of soil conditions excavation, and shoring installation shall be performed under the guidance of the Engineer



SEE ATTACHED REPORT FOR ADDITIONAL INFORMATION AND REQUIREMENTS

EXPLORATORY TEST PIT/TRENCH DESIGNS (Max depth = 25 feet) USING HYDRAULIC SPEED SHORES

Figure 4
TRENCHING & SHORING DESIGN

Seismic Investigation