

FILE FOLDER

DESCRIPTION ON TAB:

11000/2 mil Trng

- Outside/inside of actual folder did not contain hand written information
- Outside/inside of actual folder did contain hand written information
*Scanned as next image

JAN 02 1987

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS
Marine Corps Base
Camp Lejeune, North Carolina 28542

9 July 87
Date

From: Director

To:

~~Charles~~ CP

Subj:

Danny DPO

Peter PEB

Attached for your info.

Jehan

1. Why E-1 range area?
2. Will there be gas released?
What effect on turtles,
fisherman & beach combers?

3. Has this been cleared with
other federal and state agencies?

Julian: Called Paul Hubbel as discussed. After
checking with Capt. Manley, MDEEC and research
of his literature he informed that there was no
environmental / Natural Resources problem
with this operation. Could be problem
in local community relations if
public became aware of
operation even though
there is no env. impact
Chad

13 July 87

Charles discussed this with Marlo & Paul on 10 July 87. Apparently everything is OK. Not aware of coordination with outside agencies.

Jebson

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

6280
FAC
JUL 06 1987

SECOND ENDORSEMENT on CG MCDEC ltr 6280 D094 11 Jun 87

From: Assistant Chief of Staff, Facilities, Marine Corps Base,
Camp Lejeune

To: Assistant Chief of Staff, Training and Operations,
Marine Corps Base, Camp Lejeune

Subj: PROPOSED TESTING OF XM21 NBC AGENT DETECTOR; ENVIRONMENTAL
ISSUES

1. Returned, approved. We agree with the conclusion of "no significant environmental impact" as described in the MCDEC proposal.

T. J. DALZELL

Copy to:
EnvEngr
→ NREAD

1901-20 JUL



UNITED STATES MARINE CORPS
MARINE CORPS DEVELOPMENT AND EDUCATION COMMAND
QUANTICO, VIRGINIA 22134-5001

IN REPLY REFER TO:

6280
D094

11 JUN 1987

From: Commanding General, Marine Corps Development and Education Command

To: Commanding General, Marine Corps Base (G3 Ops), Camp Lejeune, NC 28542-5000

Subj: PROPOSED TESTING OF XM21 NBC AGENT DETECTOR; ENVIRONMENTAL ISSUES

Ref: (a) Your ltr 6280 FAC dtd 26 May 87

Encl: (1) Preliminary Environmental Assessment

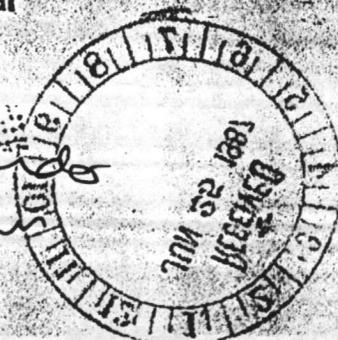
1. The enclosure is provided per the reference.
2. Point of contact is the Development Center (D091), Captain Manley, AUTOVON 278-2092.

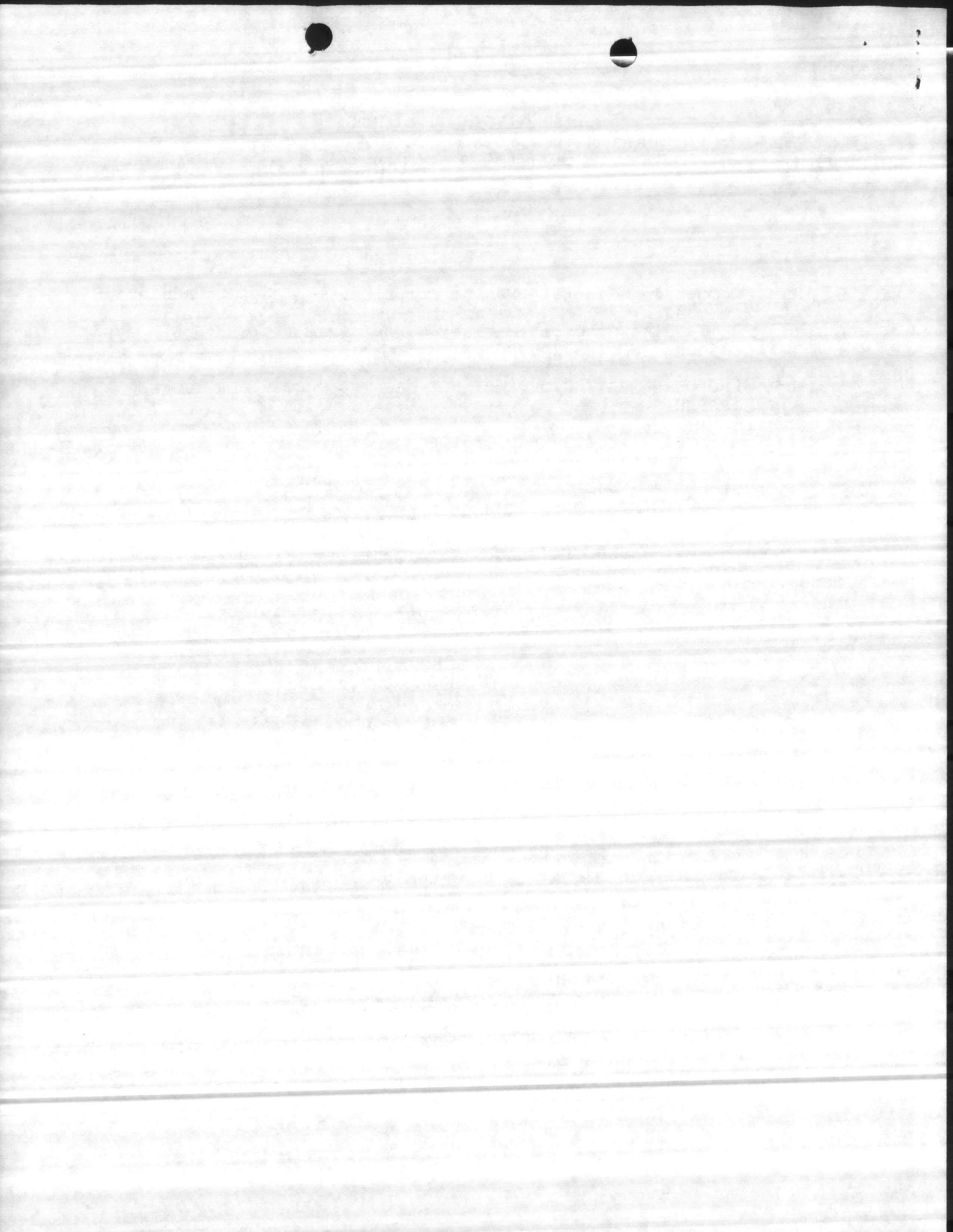
J. L. Adkinson
J. L. ADKINSON
By direction

1 ^{EF} ENDORSEMENT Date 28 June 87
From: AC/S, TRAINING AND OPERATIONS
To: AC/S, FACILITIES
Via: (1) N/A
(2) N/A

- FORWARDED
- FORWARDED FOR APPROPRIATE ACTION
- FORWARDED Recommending Approval/Disapproval
- FORWARDED FOR INFO.
- RETURNED

A. S. Leonard
By direction





REQUEST FOR ENVIRONMENTAL IMPACT REVIEW; FORMAT AND PROCEDURES FOR SUBMISSION OF

1. Action Sponsor: Commanding General, Marine Corps Development and Education Command
Quantico, Virginia 22134-5001
2. Name, Address, Phone Number of Point of Contact: Firepower Division (D091)

Development Center, MCDEC, Quantico, VA 22134-5080 Attn: Captain T. F. MANLEY, II

3. Title and Brief Description of Proposed Action (state purpose, when proposed action is to occur, and any proposed environmental protection measure):
AUTOVON 278-2092

I. TEST BACKGROUND AND PURPOSE:

The USMC is actively participating in a joint service program to develop a Remote Sensing Chemical Agent Alarm (RSCAAL). The XM21 RSCAAL is a tactical chemical agent detector designed to provide 3-5 km stand-off detection capability for nerve and blister agent vapors. XM21 uses passive infra-red sensing technology and sophisticated signal processing algorithms to differentiate the presence of agents from normal background readings. The XM21 is the only mature technology available that will afford tactical commanders stand-off warning capability for agent vapor hazards.

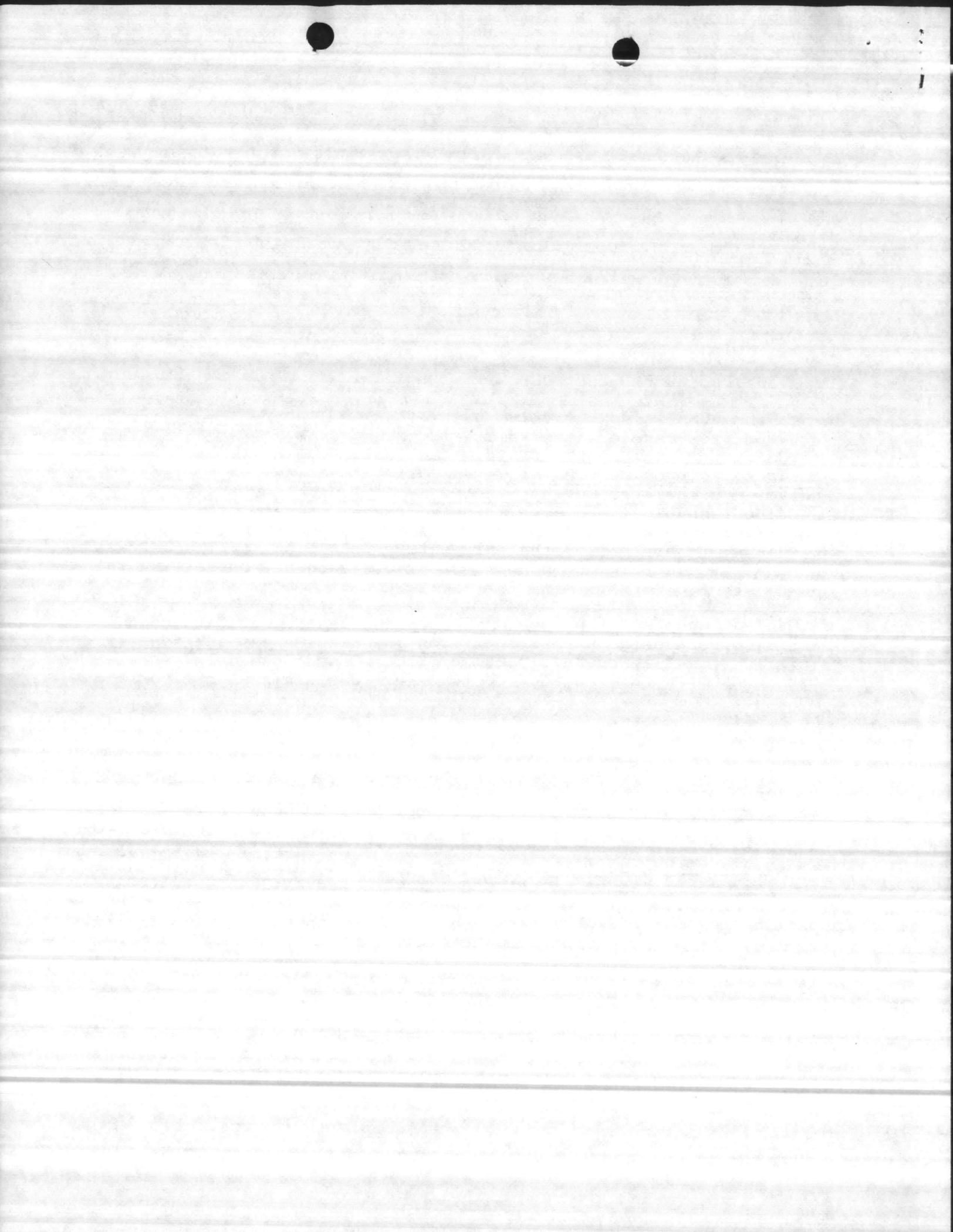
The purpose of proposed USMC unique testing at Camp Lejeune is to collect data on XM21 operation in a sea coast environment. This data will be analyzed by the Army Chemical Research Development and Engineering Center for use in system/algorithm upgrade.

II. TEST DESCRIPTION:

XM21 testing will involve the collection of scanning data, during various times of the day, in the Onslow Beach coastal area. Testing will require controlled release of sulfur hexafluoride (SF6) simulant, into the atmosphere over land and sea, to evaluate detection of agent vapors. It is estimated that ten standard cylinders of SF6 will be expended during the two week testing. SF6 has been tested and determined environmentally and physiologically safe for this type testing release. USMC unique testing for the XM21 has been requested for the period 13-22 July 1987 at the E-1 range of Camp Lejeune.

III. PROPOSED ENVIRONMENTAL PROTECTION MEASURES:

Based on the information submitted with the original range request package (CG, MCDEC ltr 3900 over D091 dtd 4 May 1987) and the above stated, the requested testing will have no significant adverse environmental impact.



1 May 1984

4. Location: Attach a Camp Lejeune Special Map (or equivalent quality map) showing location of proposed action/project site(s). E-1 range area, Camp Lejeune Special Map 1:50,000 SN. V7425CPLEJEUNE

5. Potential Environmental Impact/Considerations: (See Note 1)

a. Air Quality: Will there be any open burning associated with the project/action? NO Will there be any new boilers, incinerators or fuel storage tanks (larger than 1,000 gallons) provided? NO Will there be any paint booths, solvent vats, degreasers or other vapor-producing industrial processes involved? YES (Release of SF₆) Will the project involve the use or disposal of asbestos? NO Will project cause dust problems? NO

b. Land Quality: Will the action require use of significant amount of earthen fill material? NO Will there be an increase in level of soil disturbance/damage to vegetation? NO Will there be one acre or more of land cleared/disturbed? NO

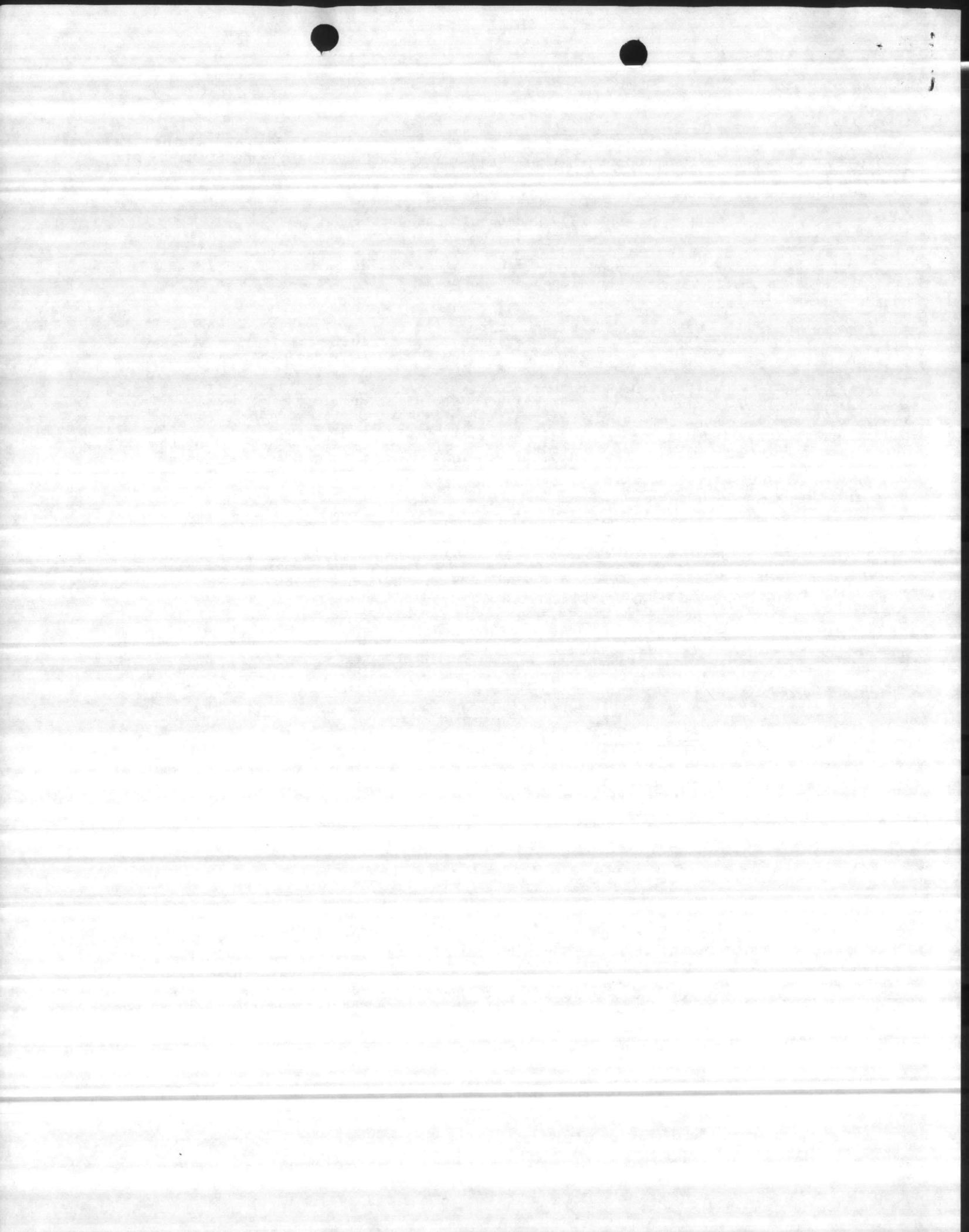
c. Groundwater Quality: Does the project involve use of herbicides, insecticides or other pesticides in significant amounts? NO Does the project involve installation/use of septic tanks, or any other on-site disposal of sanitary waste? NO Will there be any wells dug or any excavations deeper than twenty feet? NO Will any toxic or hazardous material/waste requiring disposal be used or generated by the project? NO Will there be a net increase of solid waste caused by implementing the project/action? NO Will the project or action be carried out within 200 feet of a drinking water supply well? NO

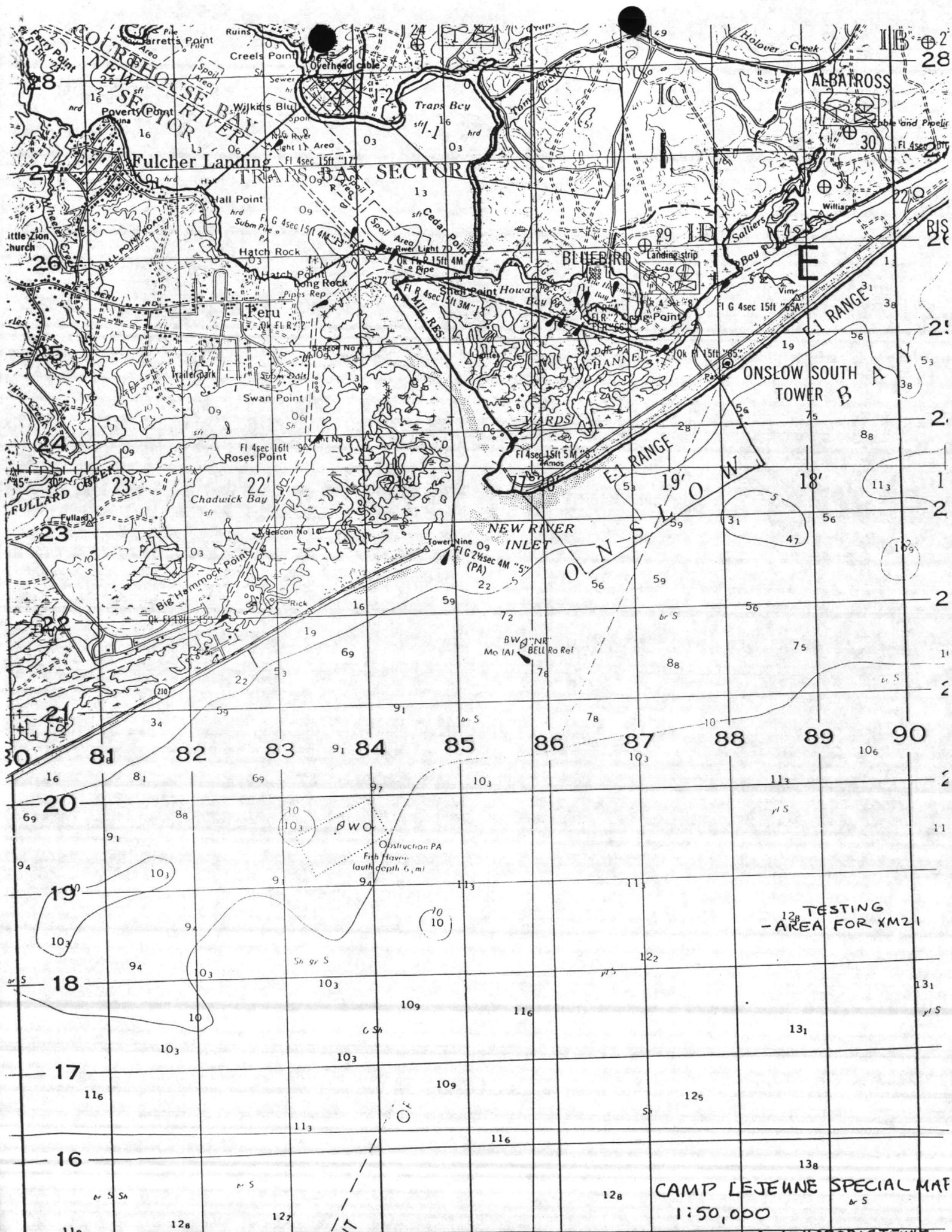
d. Surface Water Quality: Is the project located on or in a water body or adjacent 100-year flood plain? YES Will the project involve construction of drainage ditches/underground drains for purposes of lowering water table? NO Will all wastewater be connected to sanitary sewer? YES Will there be an increase in erosion/siltation from soil disturbing activity? NO Will petroleum oil and lubricants be routinely stored or used at the site? NO Will the project increase rates of surface/storm water run-off? NO

e. Natural Resources: Will there be a loss of forest land? NO Will public access for hunting, boating, fishing, etc., be restricted? NO Is there a change in land use from what is presently shown in Base Master Plan? UNK Will removal of existing vegetation be required? NO Are there any known effects on any endangered species? NO Does the project involve the purchase or sale of any real estate? NO

f. Socio-Economic Considerations: Will the project cause an increase/decrease in on or off-base military population? NO Will there be any increased demand on a local or state government to provide services? NO Will there be any changes to traffic flow and patterns on or off-base? NO Will any noise, traffic, dust, etc., be generated which may affect off-base persons or property? NO Is there any known controversy associated with the type of project or action proposed? NO Are there any historical or archaeological sites affected by project/action? NO

NOTE 1. Answer either "yes", "no" or "unknown". Answers should be based on information available to the action sponsor at time of submission to the Base Environmental Impact Review Board. Do not delay the submission of this request awaiting additional information. Many environmental considerations need to be addressed in early planning stages. If additional information becomes available after submission, it should be forwarded to the EIRE.





CAMP LEJEUNE SPECIAL MAP

1:50,000

SHEET NUMBER: V 7425CPLEJEUNE

TESTING - AREA FOR XM21

Obstruction PA
Fish Haven
depth 6, m

BW 3 "NR"
Mo. IAI
BELL Ro Ref

Tower Nine 09
Fl G 2 1/2 sec 4M "5"
(PA)

ONSLOW SOUTH
TOWER B

NEW RAKER
INLET

ONSLOW

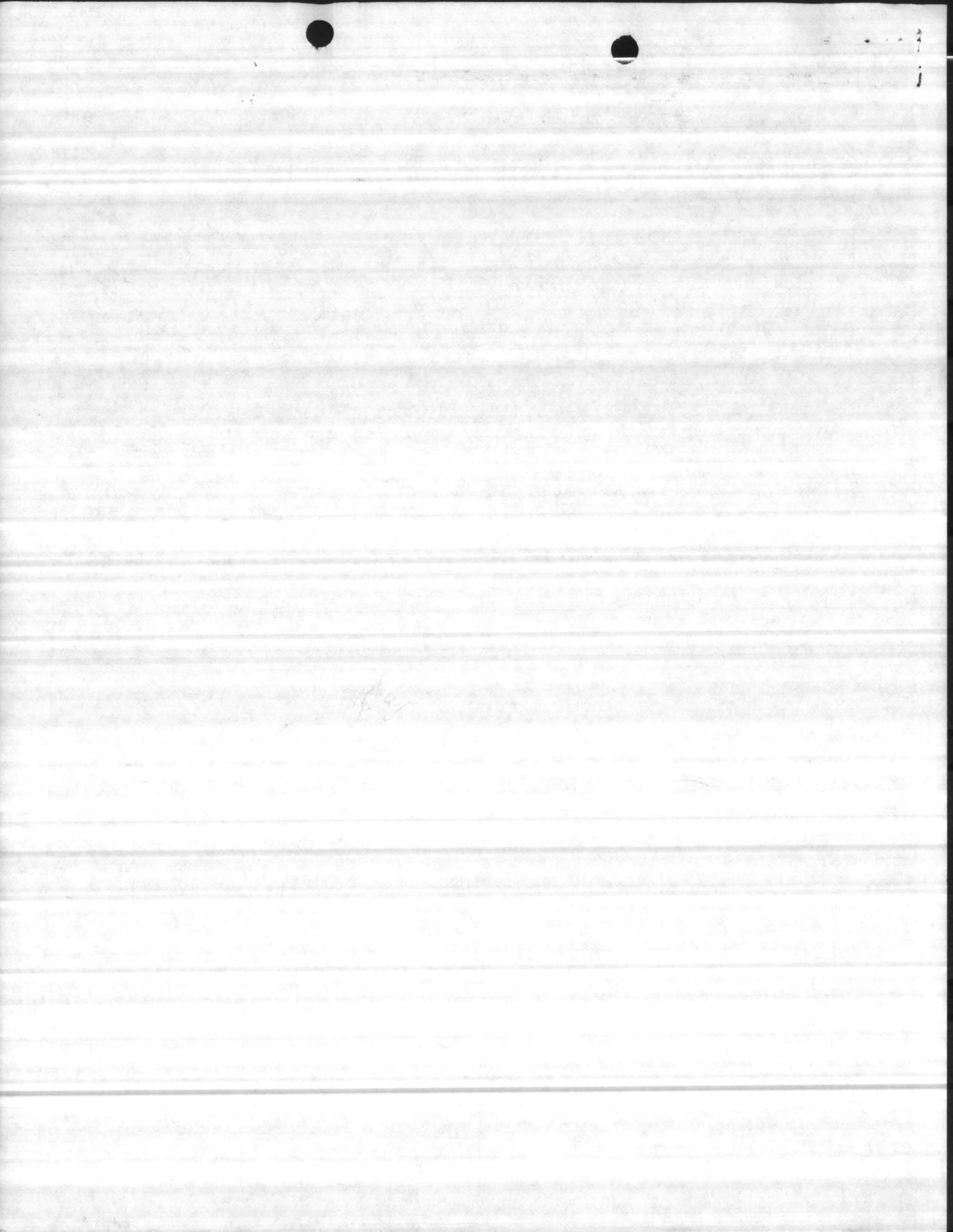
BLUEBIRD

TRANS BAY SECTOR

FULCHER LANDING

NEW HOUSE BAY

ALBATROSS



NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS
Marine Corps Base
Camp Lejeune, North Carolina 28542

19 June 87
Date

From: Director

To: Peter PEB

Subj: Charles CDP

Dany DP

(Poor Letter
FOR ENR imp
documentation)

See attached

Peter

Coordinate timber removal.

OK's PEB

Juban?

Milestones ???



Handwritten notes, possibly including the number '11'.

Faded handwritten text, possibly starting with 'The'.

Handwritten text, possibly including the word 'The'.

Faded handwritten text, possibly including the word 'The'.

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

6280
FAC
JUN 10 1987

THIRD ENDORSEMENT on CO, 2d LSBn ltr 3000 over 4 dtd 16 Jun 87

From: Assistant Chief of Staff, Facilities, Marine Corps Base, Camp
Lejeune

To: Assistant Chief of Staff, Training and Operations

Subj: ENVIRONMENTAL REVIEW OF PROPOSED DROP ZONE FALCON CLEARING
PROJECT

Ref: (e) FAC ltr 6280 dtd 20 Jan 87

1. Returned, approved provided environmental protection measures
listed in reference (e) are followed.

2. Request NREAD proceed with harvest of marketable timber and
coordinate schedule with CO, 2d LSB and BMain. Please provide
estimated milestones to this office as they are defined.

K. J. KIRIACOPOULOS
By direction

Copy to:

BMO

→ NREAD

EnvEngr

UNITED STATES MARINE CORPS
MARINE CORPS
Camp Lejeune, North Carolina 28542-5001

JUN 20 1971

THIRD ENDORSEMENT ON CO. 30 2584 FOR 2000 OVER 1 AND 12 12 27

1. Assistant Chief of Staff, Facilities, Marine Corps Base, Camp

Lejeune

2. Assistant Chief of Staff, Training and Operations

3. Assistant Chief of Staff, Logistics, Marine Corps Base, Camp

Lejeune

4. Assistant Chief of Staff, Personnel

5. Assistant Chief of Staff, Administration, Marine Corps Base, Camp

Lejeune

6. Assistant Chief of Staff, Information Systems, Marine Corps Base, Camp

Lejeune

7. Assistant Chief of Staff, Security, Marine Corps Base, Camp

Lejeune

1. 3. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30.

107 101
200
1000
←



UNITED STATES MARINE CORPS
RANGE CONTROL
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:

3000
TRNG&OPS
16 June 1987

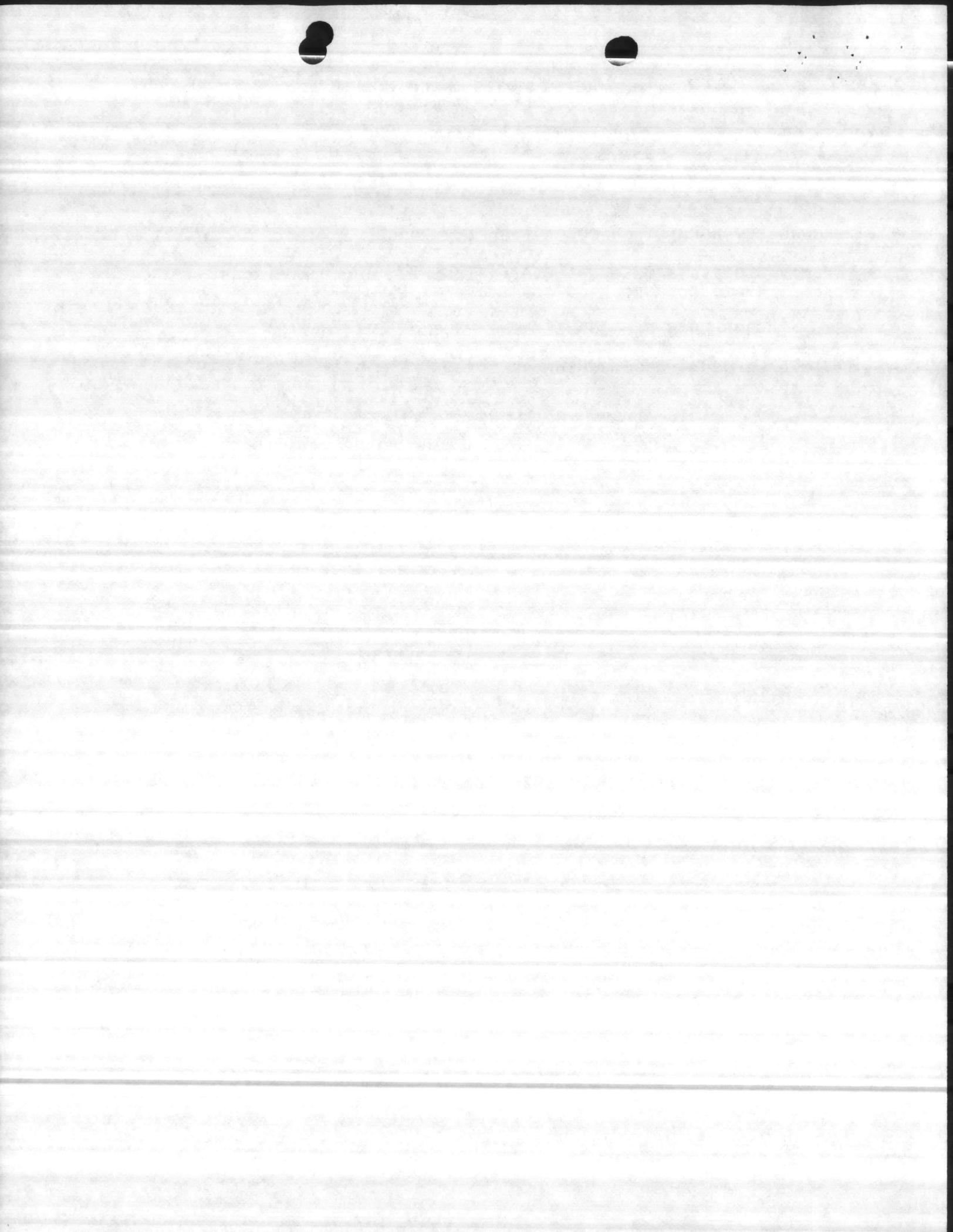
SECOND ENDORSEMENT on CO 2d LSBn ltr 3000 over 4 dtd 16 Jun 87

From: Assistant Chief of Staff, Training and Operations
To: Assistant Chief of Staff, Facilities

Subj: DROP ZONE FALCON CLEARING PROJECT

1. Forwarded, recommending approval.

J. F. Charles
J. F. CHARLES





UNITED STATES MARINE CORPS
2d FORCE SERVICE SUPPORT GROUP (REIN)
FLEET MARINE FORCE, ATLANTIC
CAMP LEJEUNE, NORTH CAROLINA 28542-5701

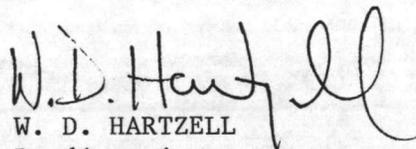
IN REPLY REFER TO:
3000
G-3T
16 June 1987

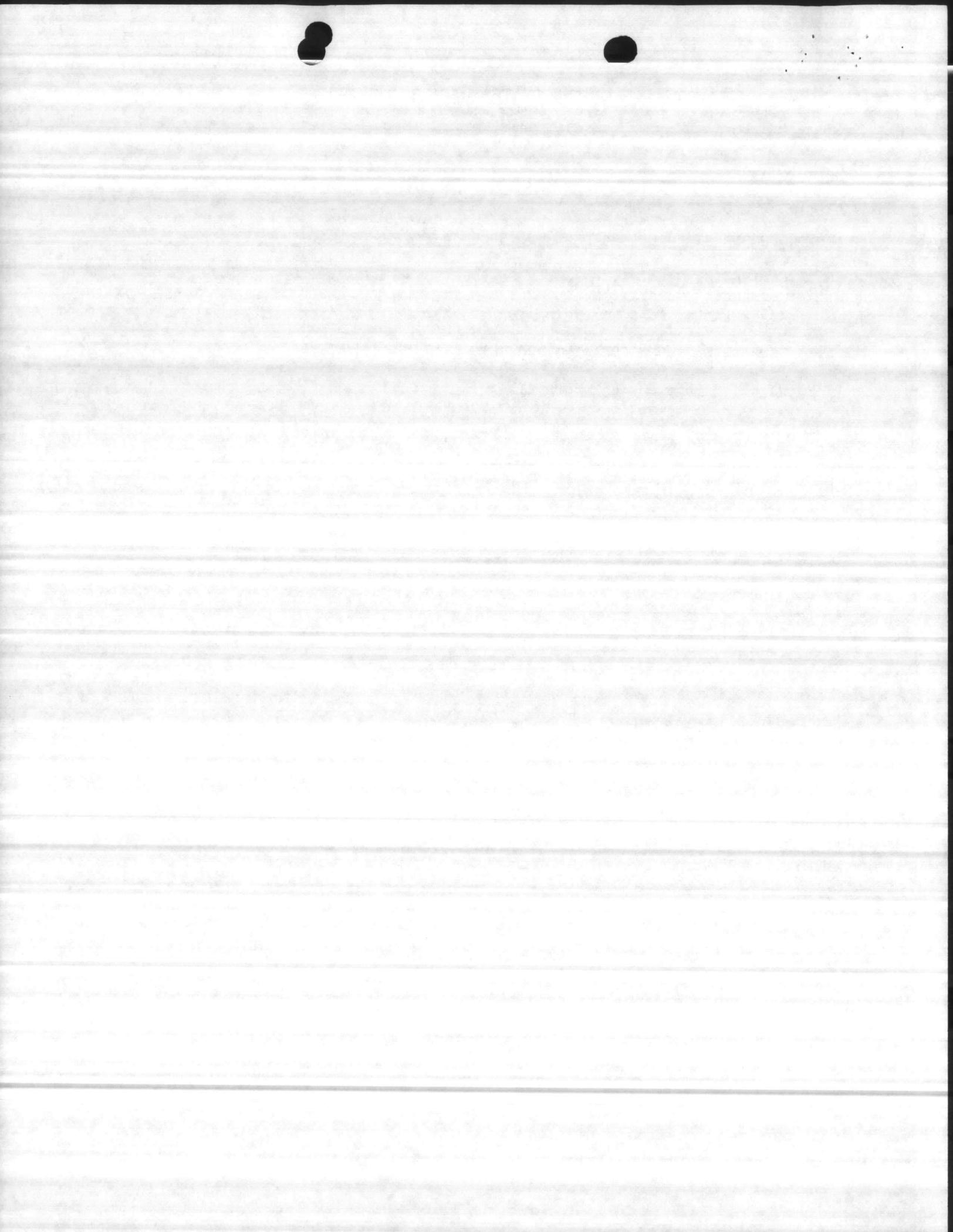
FIRST ENDORSEMENT on CO, 2d LSBn ltr 3000 over 4 dtd 16 June 87

From: Commanding General, 2d Force Service Support Group (Rein)
To: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina
28542 (Attn: AC/S, Training)

Subj: DROP ZONE FALCON CLEARING PROJECT

1. Forwarded, recommending approval.


W. D. HARTZELL
By direction





UNITED STATES MARINE CORPS
2D LANDING SUPPORT BATTALION
2D FORCE SERVICE SUPPORT GROUP (REIN)
FLEET MARINE FORCE, ATLANTIC
CAMP LEJEUNE, NORTH CAROLINA 28542-5705

IN REPLY REFER TO:

3000
4
16 June 87

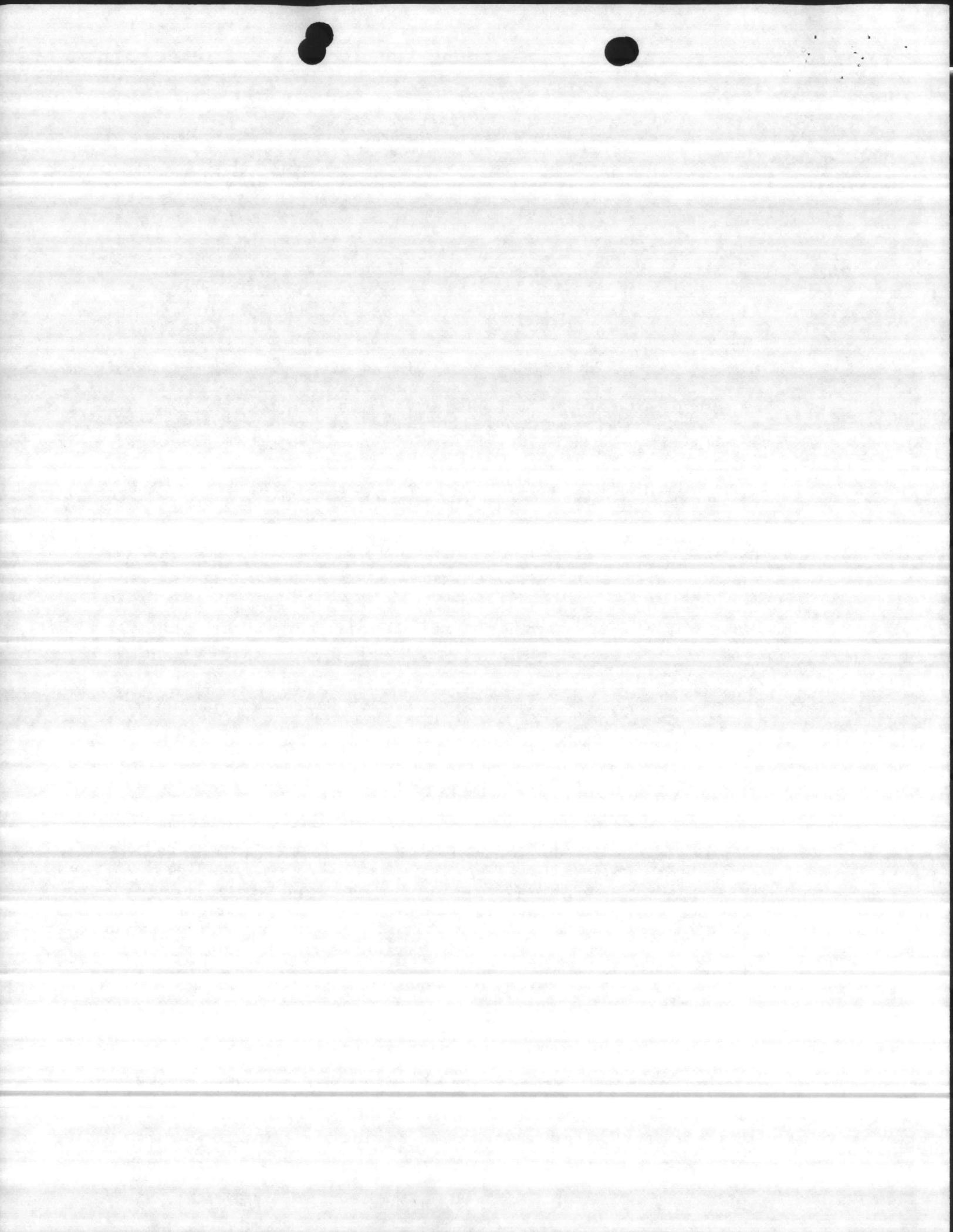
From: Commanding Officer, 2d Landing Support Battalion
To: Commanding General, Marine Corps Base, Camp Lejeune
(Attn: AC/S Training)
Via: (1) Commanding General, 2d Force Service Support Group
(Attn: G-3 Training)

Subj: DROP ZONE FALCON CLEARING PROJECT

Ref: (a) CO, 2d LandSptBn ltr 3000 over 4 dtd 8 Jul 86
(b) CG, MCB, Camp Lejeune, ltr 11102 over OPS dtd 11 Sept 86
(c) CO, 2d LSB, 2d FSSG request for Environmental Impact Review
(d) BO 11000.1B

Encl: (1) Request for Environmental Impact Review
(2) Revised Site Plan

1. Reference (a) requested that the trees be cleared from the area designated as DZ Falcon in order to better support air delivery operations and parachute operations involving personnel.
2. Reference (b) authorized Second Landing Support Battalion to perform clearing and grading operations in the open portions of LZ's Falcon and Gander.
3. Reference (c) was submitted in accordance with reference (d).
4. Site preparation has been completed of the area approved to date.
5. In accordance with reference (d), enclosures (1) and (2) are submitted for approval in accomplishing remaining clearing and site preparation for the expanded drop zone.
6. Drop Zone Falcon is the only certified drop zone available for heavy platform drop at Camp Lejeune. Approximately 30 percent of the originally surveyed drop zone is heavily wooded and still remains to be cleared. The heavily wooded areas pose a safety hazard to parachutists and significantly impacts on the cost of conducting heavy air drop operations.
7. Environmental impacts are minimized by harvesting commercially marketable timber prior to additional clearing. Landing Support Battalion will coordinate with base forestry to determine a harvesting schedule.
8. It is proposed that this project be completed in four (4) phases:
 - a. Phase I - Obtain permission to complete project and coordinate with other agencies.
 - b. Phase II - Harvest marketable timber.



c. Phase III - Clearing operations and site preparation conducted by Landing Support Battalion. Downed trees will be disposed of by controlled burning. Burning will be done simultaneously with clearing. Safety will be paramount.

d. Phase IV - Erosion control will be implemented by seeding cleared areas within 30 days of project completion.

9. The Proposed timetable for this project is:

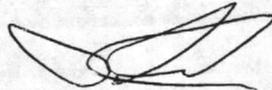
a. Phase I - 10 days

b. Phase II - three to four weeks

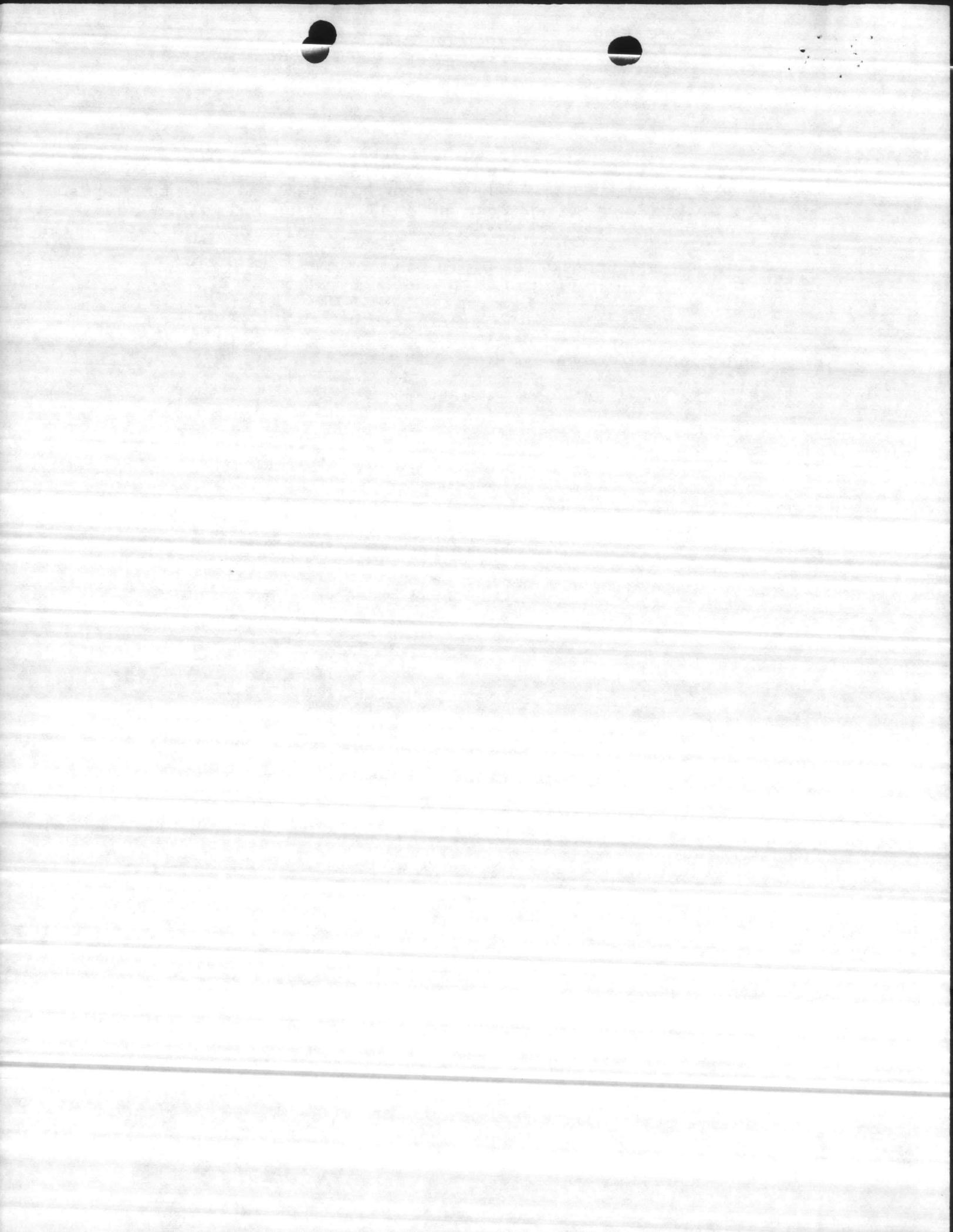
c. Phase III - 75 to 90 days

d. Phase IV - 30 days

10. Point of contact at this command is Capt Wickwire (ext: 3256/3754).



D. B. ROCHE
By direction



1 May 1984

4. Location: Attach a Camp Lejeune Special Map (or equivalent quality map) showing location of proposed action/project site(s).

5. Potential Environmental Impact/Considerations: (See Note 1)

a. Air Quality: Will there be any open burning associated with the project/action? Yes Will there be any new boilers, incinerators or fuel storage tanks (larger than 1,000 gallons) provided? NO Will there be any paint booths, solvent vats, degreasers or other vapor-producing industrial processes involved? NO Will the project involve the use or disposal of asbestos? NO Will project cause dust problems? No

b. Land Quality: Will the action require use of significant amount of earthen fill material? No Will there be an increase in level of soil disturbance/damage to vegetation? Yes Will there be one acre or more of land cleared/disturbed? Yes

c. Groundwater Quality: Does the project involve use of herbicides, insecticides or other pesticides in significant amounts? NO Does the project involve installation/use of septic tanks, or any other on-site disposal of sanitary waste? NO Will there be any wells dug or any excavations deeper than twenty feet? NO Will any toxic or hazardous material/waste requiring disposal be used or generated by the project? NO Will there be a net increase of solid waste caused by implementing the project/action? NO Will the project or action be carried out within 200 feet of a drinking water supply well? No

d. Surface Water Quality: Is the project located on or in a water body or adjacent 100-year flood plain? NO Will the project involve construction of drainage ditches/underground drains for purposes of lowering water table? NO Will all wastewater be connected to sanitary sewer? NO Will there be an increase in erosion/siltation from soil disturbing activity? NO Will petroleum oil and lubricants be routinely stored or used at the site? NO Will the project increase rates of surface/storm water run-off? No

e. Natural Resources: Will there be a loss of forest land? Yes Will public access for hunting, boating, fishing, etc., be restricted? NO Is there a change in land use from what is presently shown in Base Master Plan? NO Will removal of existing vegetation be required? NO Are there any known effects on any endangered species? NO Does the project involve the purchase or sale of any real estate? NO

f. Socio-Economic Considerations: Will the project cause an increase/decrease in on or off-base military population? NO Will there be any increased demand on a local or state government to provide services? NO Will there be any changes to traffic flow and patterns on or off-base? NO Will any noise, traffic, dust, etc., be generated which may affect off-base persons or property? NO Is there any known controversy associated with the type of project or action proposed? NO Are there any historical or archaeological sites affected by project/action? No

NOTE 1. Answer either "yes", "no" or "unknown". Answers should be based on information available to the action sponsor at time of submission to the Base Environmental Impact Review Board. Do not delay the submission of this request awaiting additional information. Many environmental considerations need to be addressed in early planning stages. If additional information becomes available after submission, it should be forwarded to the EIRE.

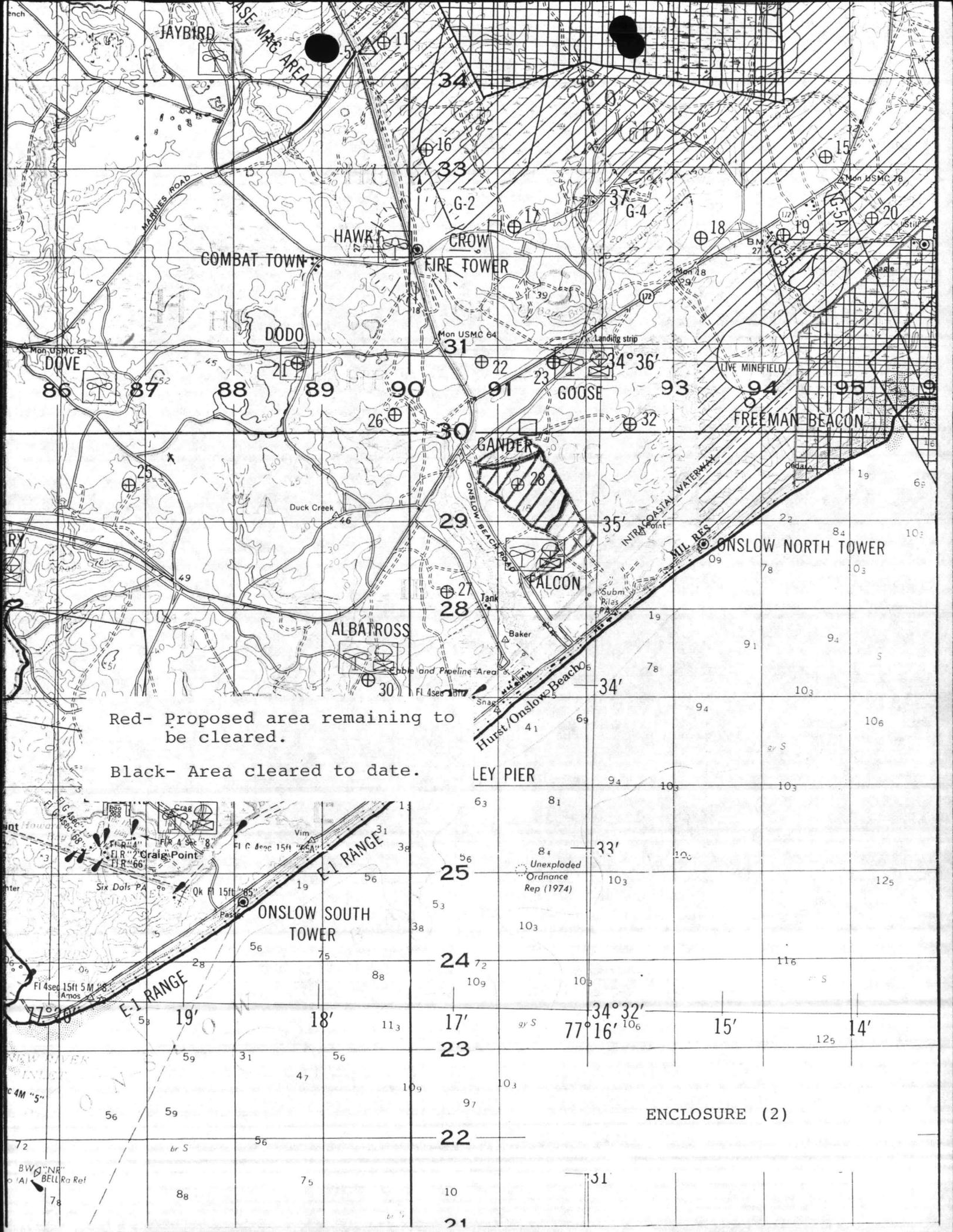
REQUEST FOR ENVIRONMENTAL IMPACT REVIEW; FORMAT AND PROCEDURES FOR SUBMISSION OF

1. Action Sponsor: Commanding Officer, 2d Landing Support Battalion, 2d FSSG
2. Name, Address, Phone Number of Point of Contact: Capt. K. D. WICKWIRE
2d Landing Support Battalion, 2d Force Service Support Group, CLNC. 28540
3. Title and Brief Description of Proposed Action (state purpose, when proposed action is to occur, and any proposed environmental protection measure):

TITLE: DROP ZONE FALCON CLEARING PROJECT

DESCRIPTION OF PROPOSED ACTION: Over the past year or two there has been a continuing effort to establish a heavy, multiple-platform drop zone to support the Air Delivery training requirements at Camp Lejeune. Within this time, efforts have begun to establish a drop zone of sufficient size and surface suitability for heavy, multiple-platform Air Delivery operations. Clearing and grading operations of the project area approved to date has been completed. Approximately 30 percent of the originally surveyed drop zone still remains in wooded land. Second Landing Support Battalion wishes to resume work on the DZ Falcon project as soon as possible. No environmental impact is expected as a result of this project. Catapillar D-7 tractors will be utilized to clear timber and will be on hand for the controlled burning phase of the operation.

ENCLOSURE (1)



Red- Proposed area remaining to be cleared.

Black- Area cleared to date.

ENCLOSURE (2)



—

5200
NREAD
29 May 87

From: Director, Natural Resources and Environmental Affairs
Division, Marine Corps Base, Camp Lejeune
To: Assistant Chief of Staff, Facilities, Marine Corps Base,
Camp Lejeune

Subj: EXPANSION OF MARINE CORPS ENGINEERS SCHOOL EQUIPMENT
TRAINING AREAS

Ref: (a) Chairman, Env Impact Review Board (EIRB) ltr 5420/2
FAC of 28 Apr 87
(b) AC/S, FAC memo 11102 FAC of 27 May 87

Encl: (1) Excerpts from Base Arch/Hist Mgmt Plan dated Apr 87
(2) Historical Site Map
(3) Dept of Navy ltr dtd 22 Aug 1942

1. Reference (a) provided minutes of the 10 April 87 (EIRB) meeting which includes the subject areas. Potential Water Pollution and Wetland impact from soil erosion and sedimentation associated with this project received considerable discussion. Additional mitigation measures for controlling erosion/sedimentation, protecting wetlands and receiving waters has not been received from the CO, Engineering School for review. Submittal to the State of a properly prepared Erosion Control Plan (ECP) is required prior to land disturbance. The approved plan along with conditions established by state during review will set the standards. The ECP should be developed and sent to the state promptly to prevent project delays. If adjacent protected wetlands and receiving waters the base does not have control over are impacted, a Coastal Zone Contingency Determination may be required.

2. It should be noted State shellfish personnel recently did a pretty thorough inspection of the base property from Onslow Beach Road to Mile Hammock Bay Road out to Hwy 172 in search of the source of Salliers Bay water pollution. Land disturbing activities was one thing they were looking for. Local shellfishermen were very disturbed about the closing of Salliers Bay to shellfishing due to water pollution and were pointing at the base as the problem.

3. Enclosures (1) and (2) show the Atlantic Missionary Baptist Church site and recommends a survey of the area before any increase in ground disturbing activities. Enclosure (3) documents another Indian Ossuary in the Courthouse Bay Area. As discussed with the Environmental Engineer, I am of the opinion a professional archaeologist should survey the area before land disturbing activity begins.

... ..
... ..
... ..

... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..

5200
NREAD
29 May 87

Subj: EXPANSION OF MARINE CORPS ENGINEERS SCHOOL EQUIPMENT
TRAINING AREAS

4. The harvest of timber in the subject areas addressed during the 10 April 87 EIRB meeting and addressed by reference (b), has been completed. The area has been opened to firewood gathering.

5. Failure to address all or part of the above issues may result in legal action that would slow or stop the project and embarrass the command. A legal review of applicable laws and regulations pertaining to the subject project is recommended.

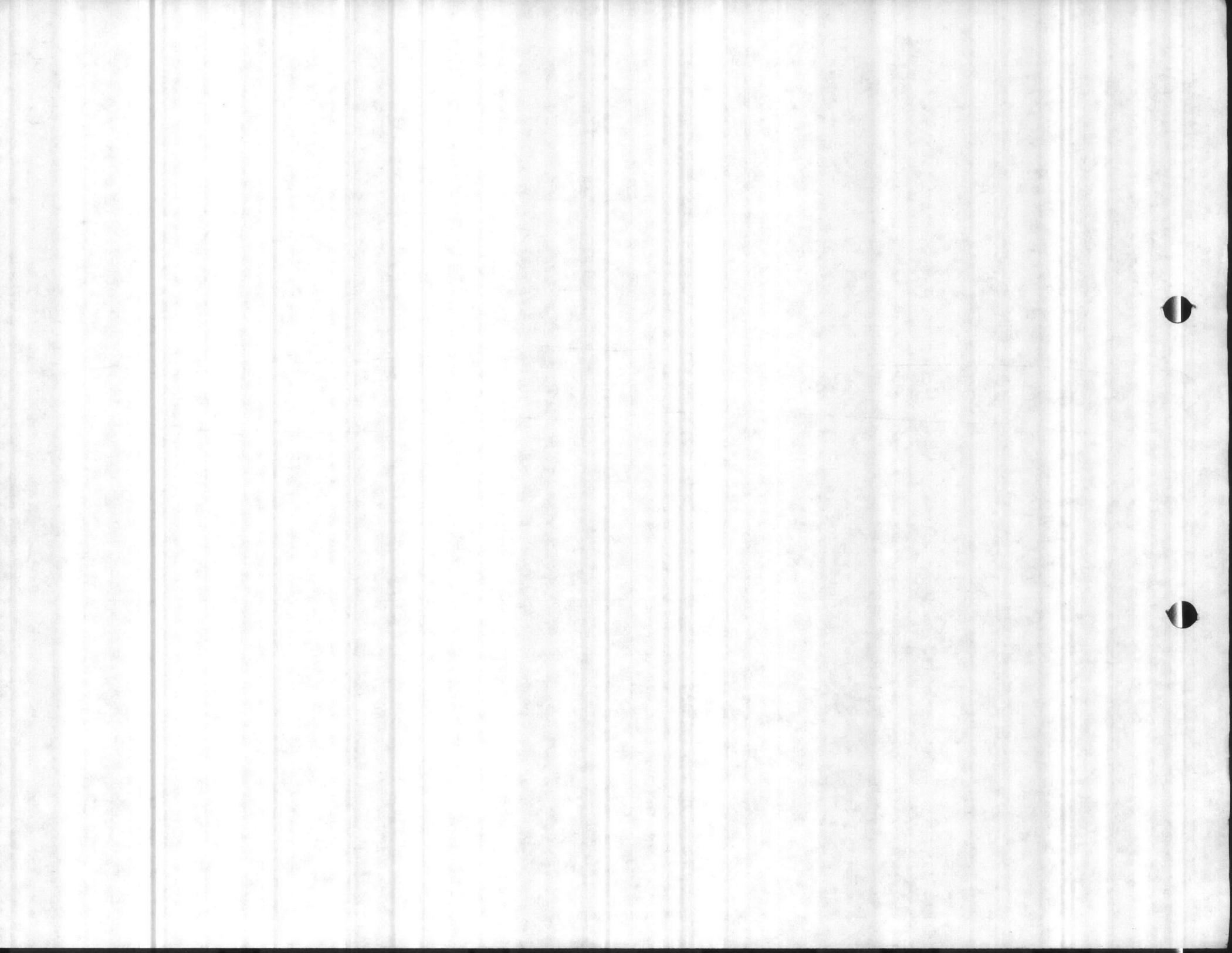
J. I. WOOTEN

Table 4-3. Known Cultural Resources Not Assigned State Numbers, Camp Lejeune, North Carolina (Page 6 of 10)

| N.C. State Site No. | Other Nos. | UTM | NRHP Recommendation | Site Description | Action Required/Recommendation | References |
|---------------------|------------|-----|---------------------|--|---|----------------|
| -- | #38 | | Not eligible | Onslow Beach. Mid 1920s development. | No further study required. | Littleton 1981 |
| -- | #39 | | Not eligible | Henderson Beach (south of Onslow Beach). mid 1920s development. | No further study required. | Littleton 1981 |
| -- | #40 | | Not eligible | The Haulover (Sandy Inlet) south of Onslow Beach opposite Gillett's Creek. | No further study required. | Littleton 1981 |
| -- | #41 | | Undetermined | Hazel Chapel. Methodist chapel in early 1920s. Located south of Highway 172 near Mulberry Tree Branch. No evidence. | Survey prior to any increase in ground disturbing activities. | Littleton 1981 |
| -- | #43 | | Undetermined | Atlantic Missionary Baptist Church. 1897-1941 church located on south side Highway 172 east of Courthouse Bay road. No evidence. | Survey prior to any increase in ground disturbing activities. | Littleton 1981 |
| -- | #52 | | Undetermined | Edward Marshburn Plantation. Plantation, mill, and possible school dating to 1730-1740. Located between Marshburn's Great Branch (Hicks Run) and Mill Branch. No evidence located. Littleton says NRHP eligible. | Survey prior to any change in ground disturbing activities. | Littleton 1981 |

4-47

End (U)



#38 Onslow Beach

Presently, the main recreational beach area on the base. No further study is required.

#39 Henderson Beach

Beach area to the south of Onslow Beach. No further study is required.

#40 The Haulover or Holover (Sandy Inlet)

A haulover refers to a narrow strip of land separating bays or sounds. The Haulover at Camp Lejeune is located on the barrier island opposite the mouth of Gillette's Creek. It is unlikely that this site would yield significant research data and no further study is required.

#41 Hazel Chapel

This Methodist chapel was active in the early 1920s. It was located near Mulberry Tree Branch between Highway 172 and Sallier's Bay. No surface evidence was located for this site. A subsurface survey is required prior to any increase in ground disturbance.

#43 Atlantic Missionary Baptist Church

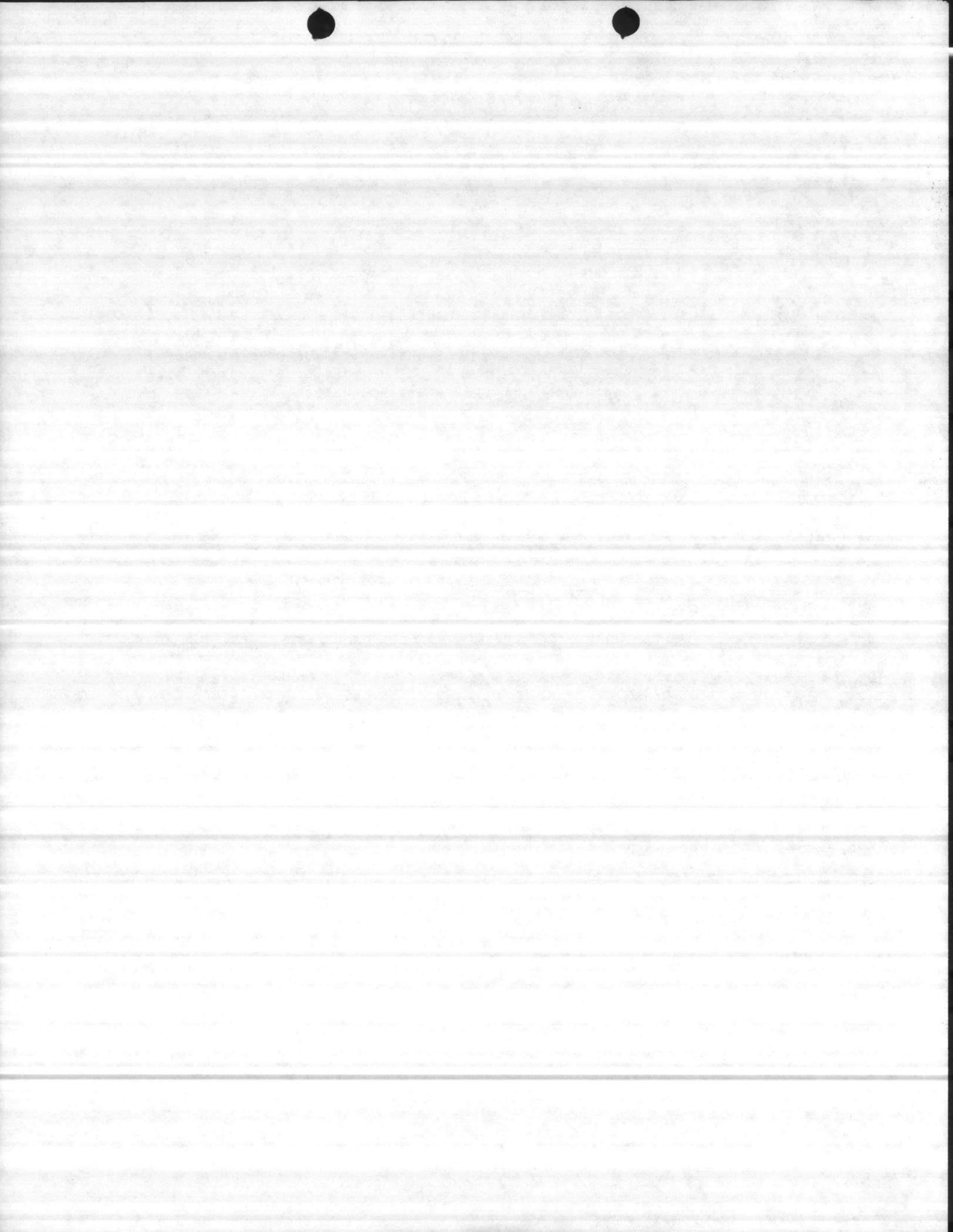
This church was begun in 1897 and continued up until government acquisition of the land. The church was located on the south side of Highway 172 east of the entrance road to the community of Marines (now Courthouse Bay Road). No surface evidence was located for this site. A subsurface survey is required prior to increased ground disturbance.

#52 Edward Marshburn Plantation

Marshburn was the second known teacher in the history of North Carolina. He was also deputy clerk of the court. His plantation was established as early as 1730-1740. It is believed that Marshburn taught school on his property, based on the designation of one of the streams as Schoolhouse Branch. The plantation was located between Marshburn's Great Branch (Hick's Run) and Mill Branch. No surface evidence of the site was located in this heavily wooded area. Littleton identifies the site as potentially NRHP eligible. It may yield information on both plantation life and educational systems of the 18th century. A subsurface survey is required prior to increased ground disturbance.

#53 Bear Head School

This school was active in the early 20th century. The school was located northwest of the intersection of Holcomb Boulevard and Sneads Ferry Road. No surface evidence was located for this site. A subsurface survey is required prior to increased ground disturbance.



4.7.3 Management of NRHP Properties

Section 106 of the National Historic Preservation Act (NHPA), outlines the procedures for management of NRHP properties. Figure 1-2 illustrates the basic procedure. A detailed explanation is presented in Section 1.3 of the HPP, Marine Corps Order 11000.19 (Appendix A), and Working with Section 106 (ACHP 1986). To briefly summarize the procedure, the following steps are involved:

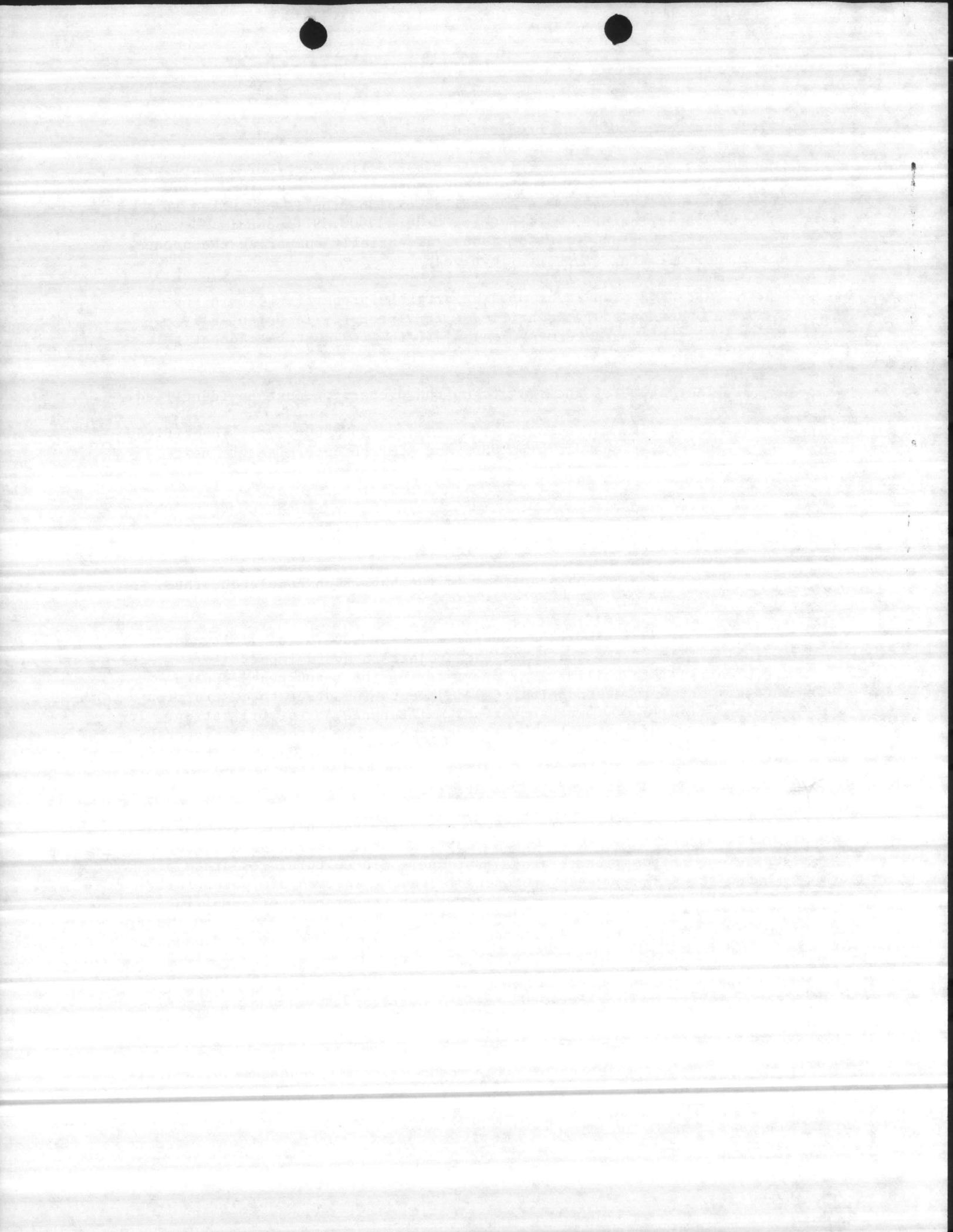
1. All NRHP properties or NRHP eligible properties within the impact area are identified. If a property is potentially eligible, a determination of eligibility must be made at this time.
2. The nature of the impacts on the properties must be identified.
3. If an effect (impact), as defined by 36CFR800.3, is identified, USMC must consult with SHPO and ACHP to determine the next step.
4. After consultation with SHPO and ACHP, a Memorandum of Agreement (MOA) is drawn up which outlines the management strategies for the property.
5. Once the actions specified in MOA have been completed, the project may proceed.

Management of NRHP eligible properties may include: (a) limiting the degree of impact; (b) modifying the project to avoid impacts; (c) repairing, rehabilitating, or restoring the resource; (d) data recovery prior to destruction; (e) documentation prior to destruction or alteration; and (f) preservation, maintenance, or stabilization. It is also possible that all parties may concur that although a property will be irrevocably impacted, no mitigation alternatives are required.

4.7.4 Survey and Testing Recommendations

At this point in time, Camp Lejuene has taken the initial step towards compliance with Executive Order 11539 and NHPA. They have obtained sufficient information to state that there are cultural resources present on the base and that a number of these resources are potentially significant. The next step is to continue the process of complying with the legislation. While a total survey of the base would be ideal, this is not a realistic approach. The following steps are recommended:

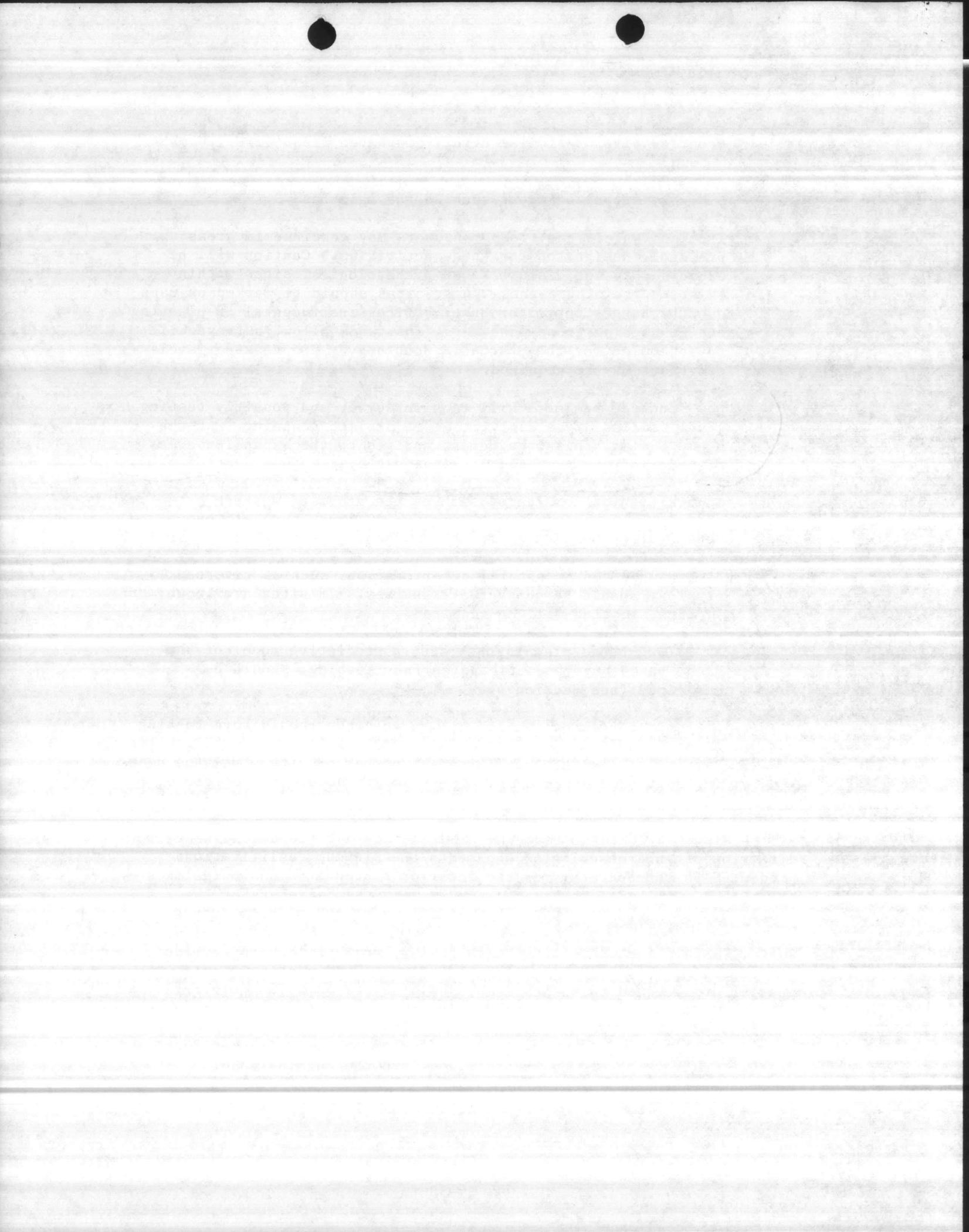
1. Areas which are so highly disturbed as to prohibit reasonable research contributions will be excluded from future archaeological study. Some of these areas are indicated on USGS maps submitted as separate documents. They include:
 - o Existing impact or live ordnance areas (present G-10, N-1, K-2)

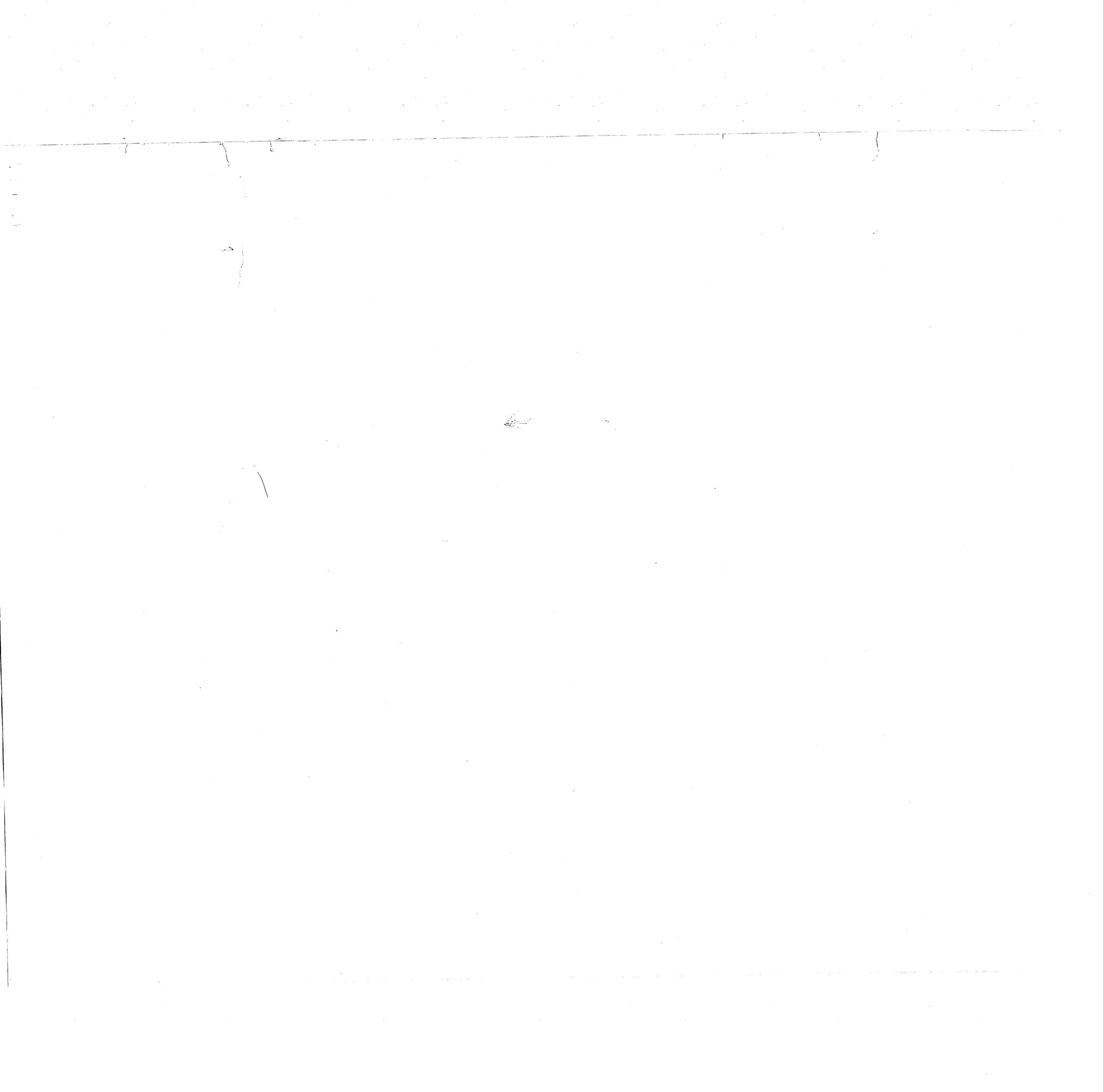


- o Borrow pits or similar highly disturbed areas (i.e., Combat Town)
 - o Highly urbanized areas such as the main base.
2. Tracked vehicle and troop maneuvers may continue in areas presently designated for these activities. Caution will be exercised to not disturb known archaeological sites within existing training areas. These sites should be marked on maps used by Range Control or other offices instrumental in planning and conducting troop maneuvers. As funds allow, surveys will be scheduled for these areas. Both survey and testing levels of effort may be required.
 3. New land use projects will require survey and possibly testing level studies at an early stage of project planning. At the present time, this requirement applies to the expansion areas of G-10 and the proposed MEC maneuver course (see Section 3.0).
 4. Acquisition of new lands, such as the proposed western expansion of the base, will require a survey as a minimum. Should sites be located in the new lands, testing is required.
 5. Areas subjected to natural deterioration, such as riverbank erosion, should be subjected to survey. If sites are known, or located, testing will be required.
 6. As a long-range planning project, a predictive model of the base, based on systematic subsurface testing, should be developed (see Section 4.6).
 7. As funds become available, all known sites should have testing in order to make a determination of eligibility for NRHP. This testing will probably eliminate a number of sites from the need for continued protection. If sites are determined eligible, USMC should proceed with NRHP nominations (see Section 4.7.8.).

All prehistoric cultural resource studies should be conducted under the direction of an archaeologist who meets the minimum qualifications presented in the Secretary of the Interior's Standards and Guidelines (NPS 1983). All projects should comply with the Secretary of the Interior's Standards and with the guidelines of ACHP (1980; 1986).

Surveys should include a literature review, oral history interviews, and subsurface testing of undisturbed areas. This testing should consist of screened (1/4-inch mesh) shovel tests on a 30-meter grid unless alternative methodologies can be fully justified. Use of consistent, comparable methodologies facilitates creation and refinement of a predictive model for the base. All data obtained from cultural resource surveys should be incorporated into the ongoing model development process.





NAVY DEPARTMENT
OFFICER IN CHARGE, CONTRACT NOy-4750

Marine Barracks
New River, North Carolina

22 August 1942

From: W. H. Burke, Navy Office Engineer
To: Mr. Roach.
Mr. Jones
Subject: Burial Ground

Relative to your request that an investigation and location be made of the four graves at the Balloon Barrage Area, I am giving you a copy of my report as follows:

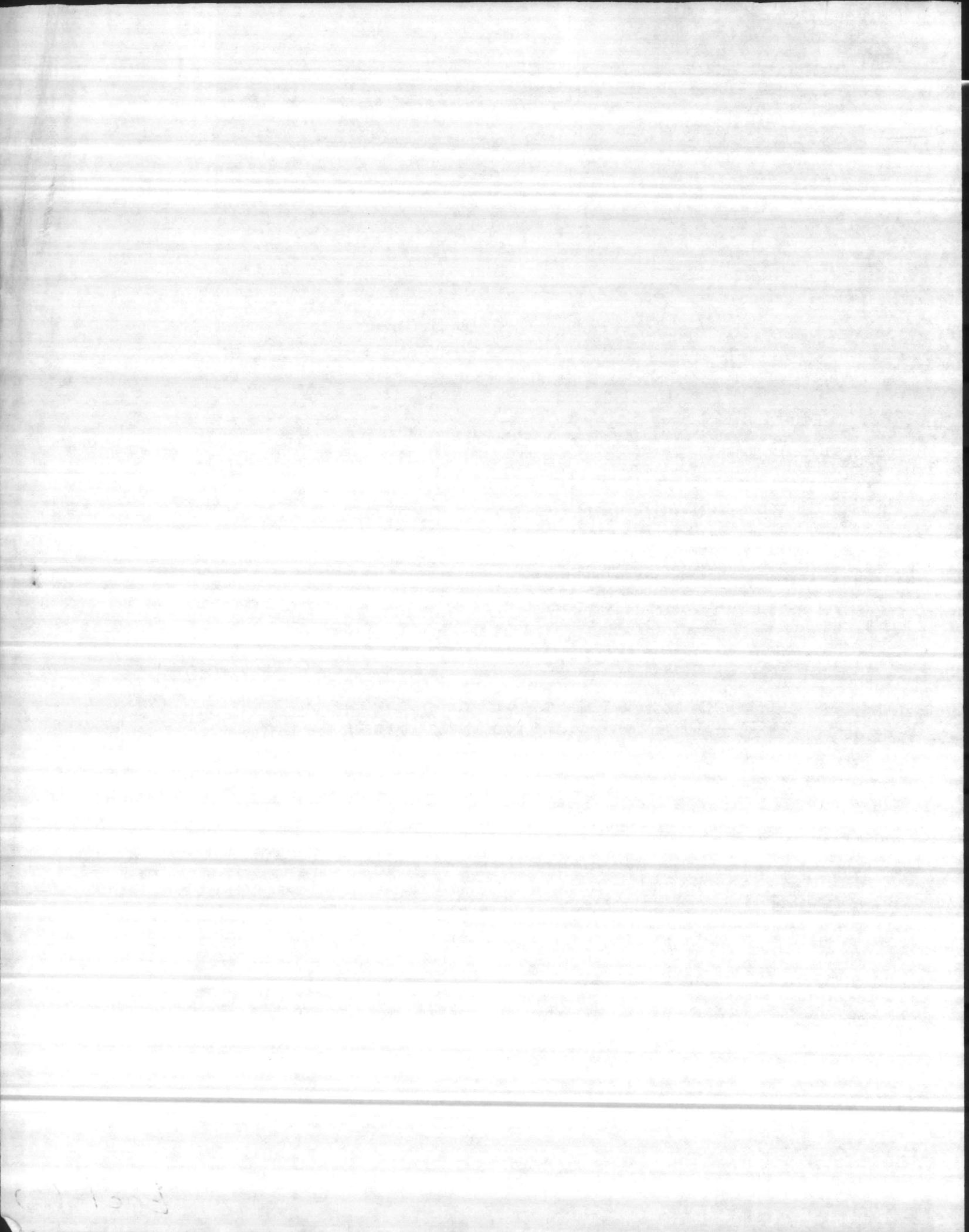
Ollie Marine, an employee of the Contractors here at the Balloon Barrage, and a grandson of the founder of this community originally known as Marines, said, "During my life time, the area where the bones were uncovered was farmed, and that if there had been any Burial Ground in that area, it would have been known to my family; furthermore from the description of the skulls of the bodies they were evidently remains of Indians. One of the skulls which was uncovered had a circle of beads around it which is the characteristic of the burial of an Indian."

At 4:30 P.M., August 20, 1942, at which time this report was submitted, there had been the remains of at least ten bodies uncovered which made it appear as if two and possibly three bodies were in one grave. The grave was in the shape of a circle with a diameter of approximately four feet. The bones were intermingled as if the bodies were just piled in together. The bottom of the grave is just six feet below the natural ground.

Due to the evidence uncovered, it appears that it may be unnecessary to provide a map showing this location; although if it is essential, I have the necessary data to indicate this exact position on the site plan of the Balloon Barracks.

W. H. Burke
W. H. Burke

Encl (3)





JDA
Charles
Danny
Peter
cap
DPS

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:
5420/2
FAC
APR 30 1987

From: Chairman, Environmental Impact Review Board
To: Commanding Officer, Marine Corps Engineer School, Marine Corps Base, Camp Lejeune, NC 28542

Subj: PRELIMINARY ENVIRONMENTAL ASSESSMENTS: EXPANSION OF ENGINEER EQUIPMENT OPERATORS COURSE TRAINING FACILITIES

Ref: (a) Environmental Impact Review Board mtg dtd 10 Apr 87
(b) BO 11000.1B
(c) Site Visit btwn MCES, NREAD and Fac Dept Staff dtd 17 Apr 87

Encl: (1) Preliminary Environmental Assessment (PEA)
(2) Project Map

1. The subject PEA is conditionally approved as described at enclosure (1). Request these environmental concerns be incorporated into project planning and construction as discussed during reference (a). Further, request your review of additional construction requirements due to the expansion and your assessment of related environmental impacts per reference (b).

2. Land clearing and bunker construction at the I-2 demolition training area known as the steel cutting pit was also discussed during reference (a). Please provide a more detailed site plan in order to assess potential impacts on adjacent coastal waters. The site plan should include the following items discussed during reference (c):

- Approximate areas to be cleared.
- Proposed banker site.
- Erosion control measures to be used.
- Vegetative buffer zone between cleared areas and shoreline.
- Disposition of debris.

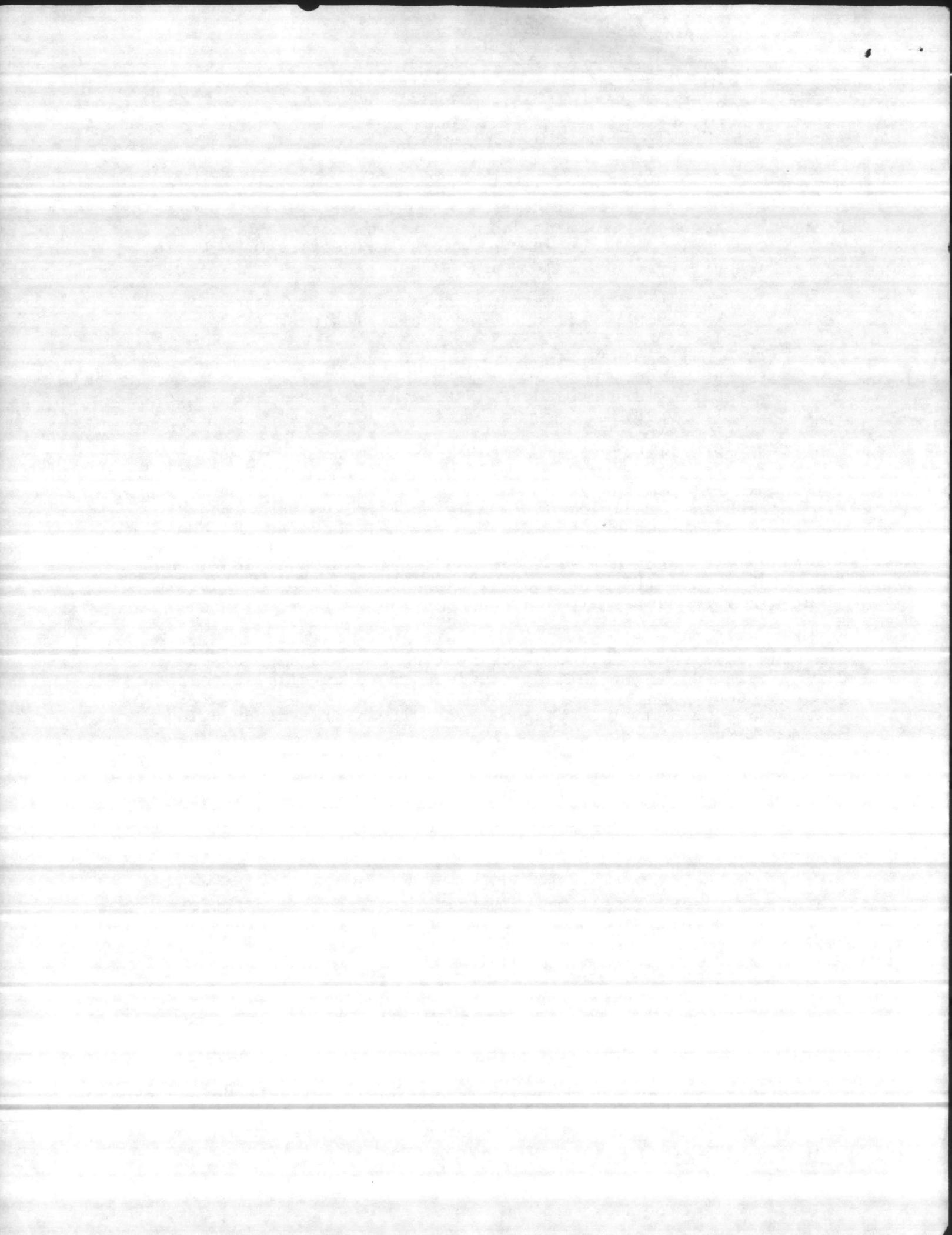
3. Further, please indicate whether you plan this as a troop training project or will be forwarding a project request for execution by Base Maintenance Division. Our POC is Mr. Alexander, ext. 3034.

T. J. Dalzell
T. J. DALZELL

DISTRIBUTION:

(Members)
Rep, 2d MarDiv (G-4)
Rep, 2d FSSG (G-4)
Rep, 6th MAB (G-4)
Rep, MCAS, NR (S-4)
TFACO
BMO
PWO

| | |
|----------------|------------------------|
| (Advisors) | |
| Dir, NREA | Ch, VetMedSvc, NavHosp |
| SupvEcologist | Ch, Occ/PrMed, NavHosp |
| BWildlifeMgr | EnvEngr |
| BGameProtector | |
| SAFD | |
| SJA | |
| DPDO | |



UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

ENVIRONMENTAL IMPACT/ENVIRONMENTAL ENHANCEMENT REVIEW BOARD

PRELIMINARY ENVIRONMENTAL ASSESSMENT (PEA) Date: APR 30 1987

SUBJ: EXPANSION OF ENGINEER EQUIPMENT OPERATOR'S COURSE, FY-88,
MARINE CORPS ENGINEER SCHOOL

In accordance with Base Orders 11000.1B and 11015.2G, the subject action has been reviewed by the Marine Corps Base Environmental Impact Review Board.

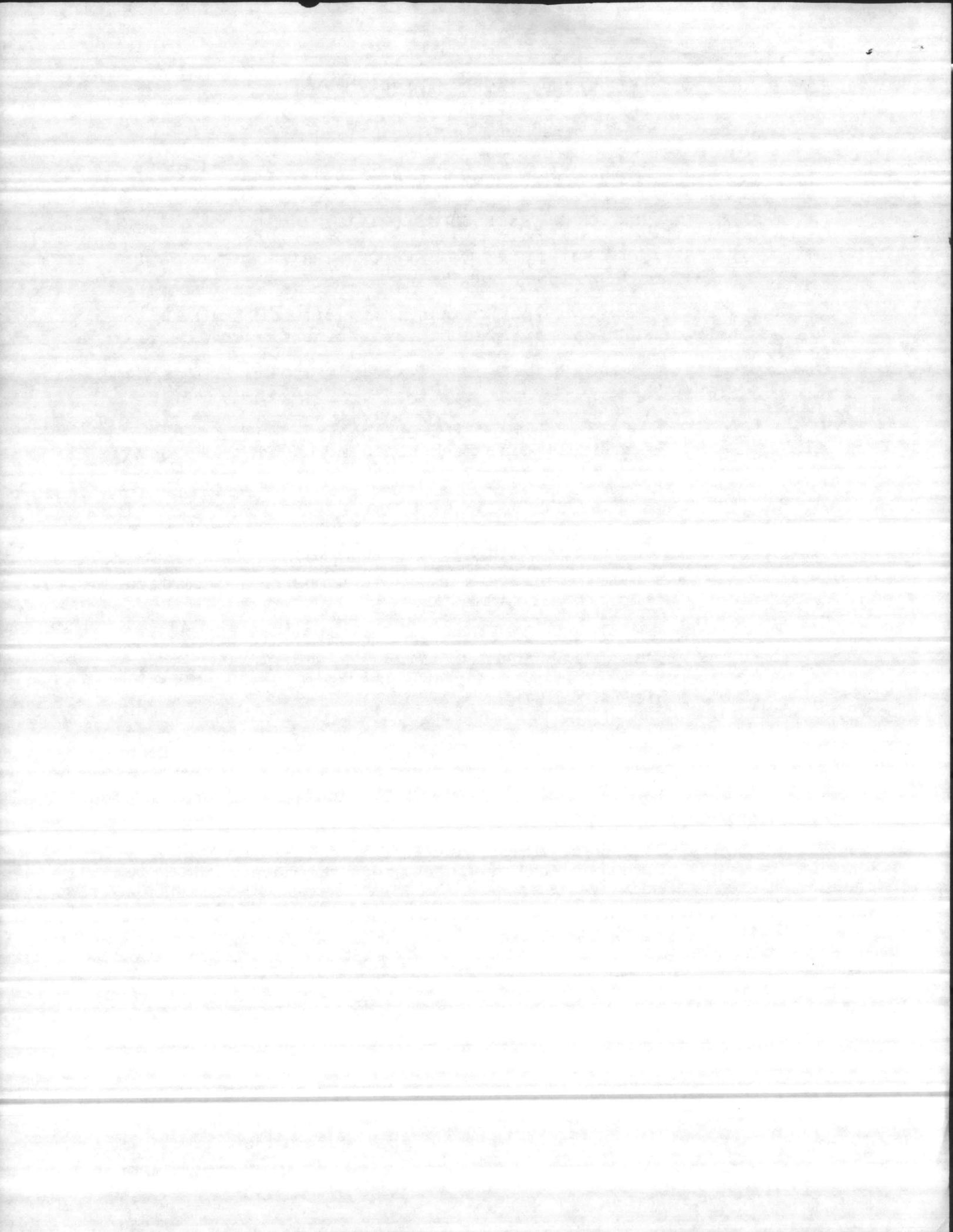
BOARD ACTION

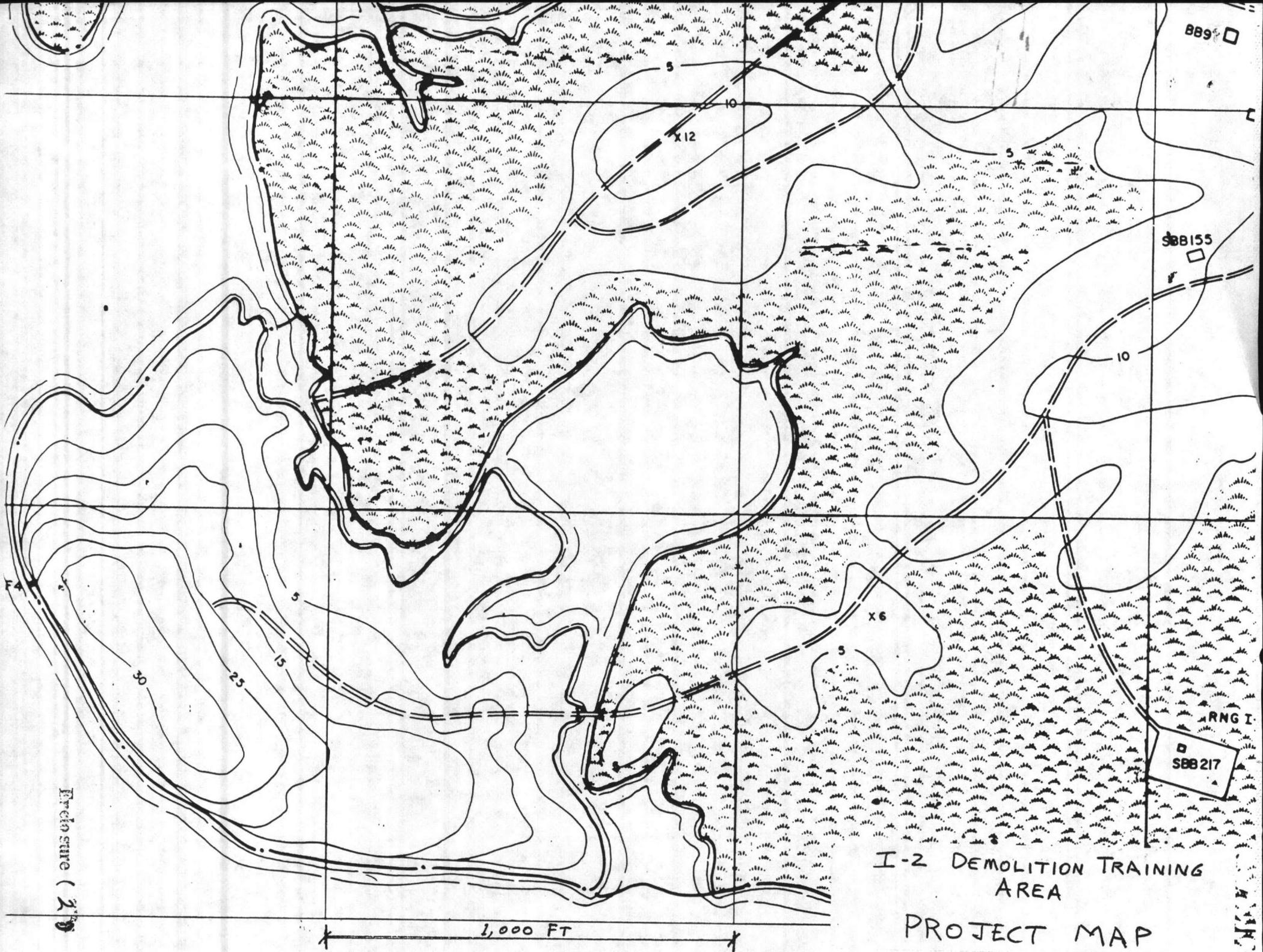
_____ The board agreed there appears to be no significant environmental impact or controversy associated with this project.

XX _____ The Board agreed there appears to be no significant environmental impact or controversy associated with this project provided:

- Harvesting of marketable timber is accomplished prior to site clearing.
- Erosion controls are implemented during site preparation and maintained by MCEs during equipment training such that all sediment is retained on-site.
- Spill prevention control measures are planned and implemented and a spill response SOP is prepared, forwarded for approval, and used by fuels personnel for operation of the interim fuel system.

_____ The Board agreed there is potential environmental impact with the project and recommends the following:





889 □

X12

SBB155 □

10

X6

RNG I

SBB217 □

Enclosure (2)

1,000 FT

I-2 DEMOLITION TRAINING
AREA
PROJECT MAP



11000
NREAD
7 Apr 87

From: Director, Natural Resources and Environmental Affairs
Division, Marine Corps Base, Camp Lejeune
To: Assistant Chief of Staff, Facilities, Marine Corps
Base, Camp Lejeune (Attn: Environmental Engineer)

Subj: ENVIRONMENTAL IMPACT OF DEPLOYING NAPALM IN G-10

Ref: (a) EnvEngr memo of 16 Mar 87
(b) BO 11000.1A

1. Reference (a) has been reviewed and it is recommended the package therein pertaining to the subject proposal be returned to the originator with instructions to resubmit in format required by reference (b).

JULIAN I. WOOTEN

1980
10-10-80

From: Director, National Resources and Environmental Affairs
Division, Marine Corps Base, Parris Island
Attention: Chief of Staff, Facilities, Marine Corps
Base, Camp Lejeune (Attn: Environmental Manager)

RE: ENVIRONMENTAL REPORT ON DEPOSITING WASTE IN C-10

Re: (a) Environmental Report of 10-1-80
(b) 10-10-80

I enclose (a) two copies of the report and it is recommended the
copies be retained in the subject project file. The report
to the Director with the original of the report is forwarded
under reference (b).

Very truly yours,
[Signature]

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS
Marine Corps Base
Camp Lejeune, North Carolina 28542

17 March 87
Date

From: Director
To: Charles CSP
Subj: Danny DOB
Peter PAB

See attached - Comments

Please
NCEAD init the action sponsor.

I think a PEA should be
developed for this project/expense.

Jubian

Recommend that FAC (Env Eng.)
return to originator with instructions
to resubmit in format required by
BO 11000.1A DOB



11

ASSISTANT CHIEF OF STAFF, FACILITIES
HEADQUARTERS, MARINE CORPS BASE

DATE 3/16/87

TO:

- BASE MAINT O
- PUBLIC WORKS O
- COMM-ELECT O
- DIR., NAT. RESOURCES & ENV. AFFAIRS
- DIR, FAMILY HOUSING
- DIR, BACHELOR HOUSING
- BASE FIRE CHIEF

ATTN: Julian Pete Black

1. Attached is forwarded for info/action. *comment on this.*
It's apparently a one-time request.
Call me w/ your input.
2. ~~Please initial, or comment, and return all papers to this office.~~

v/r
Bob A

3. Your file copy.

"LET'S THINK OF A FEW REASONS
WHY IT CAN BE DONE"



12/17

12/17

12/17



UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:
11000
TRNG&OPS
23 Feb 87

SECOND ENDORSEMENT on EOD ltr 6280 over BEOD dtd 9 Feb 87

From: Assistant Chief of Staff, Training and Operations
To: Director, Natural Resources and Environmental Division
Via: Assistant Chief of Staff, Facilities: *BW Etr 2/24/87*

Subj: ENVIRONMENTAL IMPACT OF DEPLOYING NAPALM IN G-10

1. Forwarded.

J. F. Charles
J. F. CHARLES
By direction

Copy to:
RCTL



1000
1000

1000

1000

1000

1000

1000

1000

1000

1000



UNITED STATES MARINE CORPS
RANGE CONTROL
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:

11 FEB 1987

6280

RCTL

10 Feb 1987

FIRST ENDORSEMENT on EOD ltr 6280 over BEOD dtd 9 Feb 1987

From: Base Range Control Officer
To: Director, Natural Resources and Environmental Division
Via: (2) Assistant Chief of Staff, Training and Operations
(3) Assistant Chief of Staff, Facilities

Subj: ENVIRONMENTAL IMPACT OF DEPLOYING NAPALM IN G-10

1. Forwarded.

A handwritten signature in cursive script, appearing to read "D. N. Buckner", is written above the printed name.

D. N. BUCKNER

0210

1000

FROM: [Illegible]
 TO: [Illegible]
 SUBJECT: [Illegible]

[Illegible text block]



UNITED STATES MARINE CORPS
Explosive Ordnance Disposal
Range Control
Marine Corps Base
Camp Lejeune, North Carolina 28542-5000

IN REPLY REFER TO:

6280

EOD

9 Feb 1987

From: Explosive Ordnance Disposal Officer, Marine Corps Base
To: Director, Natural Resources and Environmental Division
Via: (1) Base Range Control Officer
(2) Assistant Chief of Staff, Training and Operations
(3) Assistant Chief of Staff, Facilities

Subj: ENVIRONMENTAL IMPACT OF DEPLOYING NAPALM IN G-10

Ref: (a) MCO 6280.7

1. Recently, requests have been received by Range Control for permission to deploy napalm from aircraft into G-10.
2. The flight trajectory falls within allowable limits, pilot error not considered. However, the question of contamination was raised.
3. Napalm mixture consist of two solutions; solution (A) and solution (B); their component parts, as stated in the reference, are as follows:

Solution (A)

Fatty Acid 80%
Anti-Freeze 20%

Solution (B)

Sodium Hydroxide 28%
Potassium Hydroxide 16%
Water 55%
Pyrodallol .8%

4. It is requested that your division determine what environmental impact, if any, would result from burning napalm in G-10. Also any recommendations on seasonal considerations would be welcomed.

R. Way
R. WAY

From: Director, Operational Support Division, Marine Corps Base
Director, Technical Support and Environmental Division
Vice: (1) Base Maintenance Officer
(2) Assistant Chief of Staff, Training and Operations
(3) Assistant Chief of Staff, Logistics

Subject: REPAIR AND MAINTENANCE OF THE WIND TOWER IN 8-10

Ref: (1) HQ 01001

1. Recently, requests have been received by the Control Room
operator to allow repair of the tower in 8-10.

2. The tower is a structure which is used for training and
is not considered a priority. However, the possibility of a
collapse is being considered.

3. The tower is a structure which is used for training and
is not considered a priority. However, the possibility of a
collapse is being considered.

4. The tower is a structure which is used for training and
is not considered a priority. However, the possibility of a
collapse is being considered.

5. The tower is a structure which is used for training and
is not considered a priority. However, the possibility of a
collapse is being considered.

6. The tower is a structure which is used for training and
is not considered a priority. However, the possibility of a
collapse is being considered.

7. The tower is a structure which is used for training and
is not considered a priority. However, the possibility of a
collapse is being considered.

ASSISTANT CHIEF OF STAFF, FACILITIES
HEADQUARTERS, MARINE CORPS BASE

SUBJ: Training Area
Maintenance

DATE 2/1/87

TO:

- BASE MAINT O
- PUBLIC WORKS O
- COMM-ELECT O
- DIR., NAT. RESOURCES & ENV. AFFAIRS
- DIR, FAMILY HOUSING
- DIR, BACHELOR HOUSING
- BASE FIRE CHIEF

ATTN: Jalida / Danny / [initials] / [initials]

1. Attached is forwarded for info/action.
2. Please initial, or comment, and return all papers to this office.

I'm looking into this - what are your impressions? Should we get more info for AC/S try & BMAIN?

3. Your file copy.

v/dp

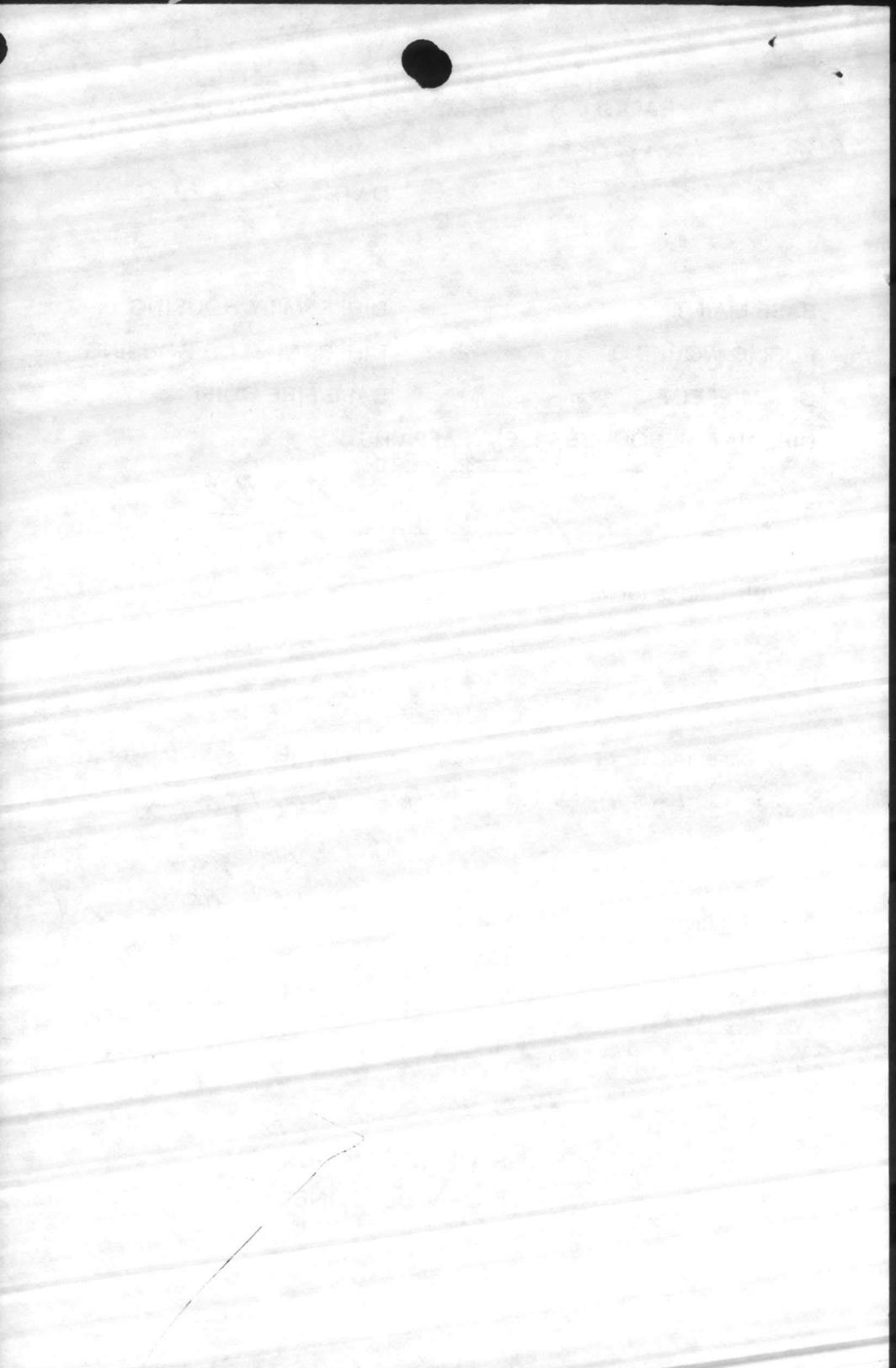
*Danny
For info*

4-6-87

JRW

"LET'S THINK OF A FEW REASONS
WHY IT CAN BE DONE"

*File
JRW*





US Army Corps
of Engineers

Office of the Chief
of Engineers

FTAT Projects

For Information on FTAT Projects
Contact Dr. Gil Williamson,
FTAT Information Manager,
USA-CERL, P.O. Box 4005,
Champaign, Il. 61820-1305 217-373-7206

October 1986

TRAINING AREA MAINTENANCE

Description of Technology. The U.S. Army Construction Engineering Research Laboratory (USA-CERL) has developed a comprehensive training area maintenance program. Part one consists of rehabilitation and maintenance, where ground covers of native grasses, forbs, and shrubs are planted using various seedbed preparation techniques. Species selection is based on: (1) ability to withstand the effects of vehicular traffic, (2) suitability for providing tactical concealment, (3) contribution to creating as natural a training environment as possible, and (4) effectiveness for erosion control.

Part two, rotational scheduling, is based on new, small area rotation (or mini-rotation) principles. Only severely damaged areas requiring undisturbed rehabilitation are rested and their size is generally limited to 250 acres. Contiguous areas or areas located close to each other are not rested simultaneously to avoid interfering with training activities. Signs, topographical features, drainage ditches, roads, and large structures are used to delineate rested areas; no fencing is required. A program for use on microcomputers has been developed to assist installation personnel in managing training land. The program will contain information such as records of training use of land, damage information, rehabilitation and maintenance alternatives, and costs of maintenance.

A multi-media environmental awareness program, part three, emphasizes practicing environmental conservation during training. Videotapes, slide presentations, posters, stickers, circulars, and T-shirts introduce officers, enlisted personnel, and civilian employees to an installation's natural resources.

In part four, cost benefit analyses show installation personnel the financial benefits that result from implementing the program. Finally, in part five, personnel requirements analysis, current personnel workloads and available equipment are surveyed. Any changes to personnel and equipment requirements that are required to implement the program are identified; justification is provided and the necessary changes are made.

Status of Demonstration. This program is being demonstrated at Fort Carson, Colorado, as part of the Facilities Technology Applications Test (FTAT) program. The seeding was completed in FY84 and short-term monitoring concluded in FY86. A 7,000 acre parcel of land has been subdivided into management scheduling units. Each area has been verified for its discernability to soldiers. Damage has been assessed on each of those areas. This data is being gathered for the computer program; the program will

be available at the end of FY86. Parts of the environmental awareness program have been implemented. An awareness videotape was completed at the end of FY85. A training circular for the new Pinyon Canyon training area was completed in FY85.

Benefits of Technology. This training land maintenance program will provide realistic training environments and save the Army money by reducing current land reclamation and acquisition costs. For example, at Fort Carson, it took eight years to acquire additional training land at a cost of 24 million dollars. USA-CERL researchers predict that Fort Carson training areas could be maintained effectively with the interest from this money alone.

If state governments set a ceiling on erosion losses, this program may be the only way for the Army to comply with these new standards and still conduct effective training. Finally, a natural training setting means a better quality environment that will benefit both the military and the general public.

Points of Contact. Dr. William D. Severinghaus, USA-CERL, P.O. Box 4005, Champaign, IL 61820-1305, COMM 217-373-6744, FTS 958-7744, AV 862-1110 (ask for commercial number), or toll-free 800-USA-CERL (Outside Illinois), 800-252-7122 (Within Illinois).



**US Army Corps
of Engineers**

Office of the Chief
of Engineers

FTAT Projects

For Information on FTAT Projects
Contact Dr. Gil Williamson,
FTAT Information Manager,
USA-CERL, P.O. Box 4005,
Champaign, Il. 61820-1305 217-373-7206

October 1986

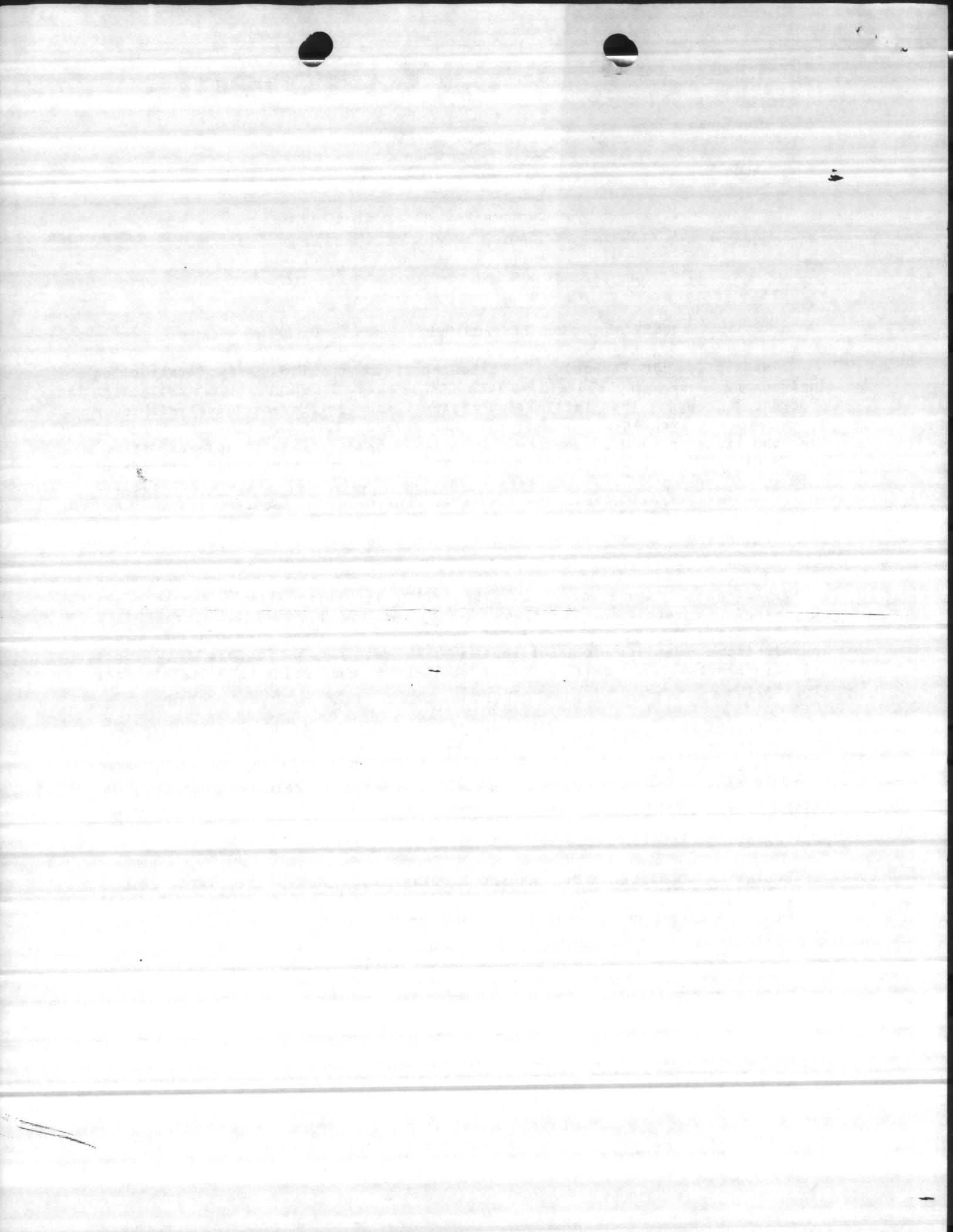
ENVIRONMENTAL GUIDELINES FOR MULTI-PURPOSE TRAINING AREAS

Description of Technology. Researchers at the U.S. Army Construction Engineering Research Laboratory (USA-CERL) have developed data collection procedures, computerized information systems, and environmental analysis tools to conduct environmental assessments and develop land maintenance programs. The construction and operation of Multi-Purpose Range Complexes (MPRC) represents a new approach to training. The long-term environmental effects of MPRC operation are of concern because of the substantial investment required for these facilities. These environmental management procedures, systems, and analysis tools will assist installation planners and land managers in the planning, operation, and maintenance of land resources that are part of MPRC.

Status of Demonstration. A detailed, specific plan for long-term land monitoring and maintenance for the MPRC at Fort Riley, Kansas, was completed. A report was written to document the procedures, systems, and analysis tools used in the process of developing the plan. Personnel at other installations planning to construct a MPRC can use the report to perform similar studies and develop their long-term monitoring and maintenance program.

Benefits of Technology. The use of environmental planning and management technology to develop long-term land monitoring and maintenance programs for MPRC will help protect the substantial investments being made in these types of facilities. The land is an essential resource for training missions. The procedures, systems, and analysis tools being demonstrated will provide a unique capability to installation planners and land managers for the effective management of training land.

Point of Contact. Mr. Robert Riggins, P.O. Box 4005, Champaign, IL 61820-1305, COMM 217-373-7234, FTS 958-7234, AV 862-1110 (ask for commercial number), or toll-free 800-USA-CERL (Outside Illinois), 800-252-7122 (Within Illinois).



File

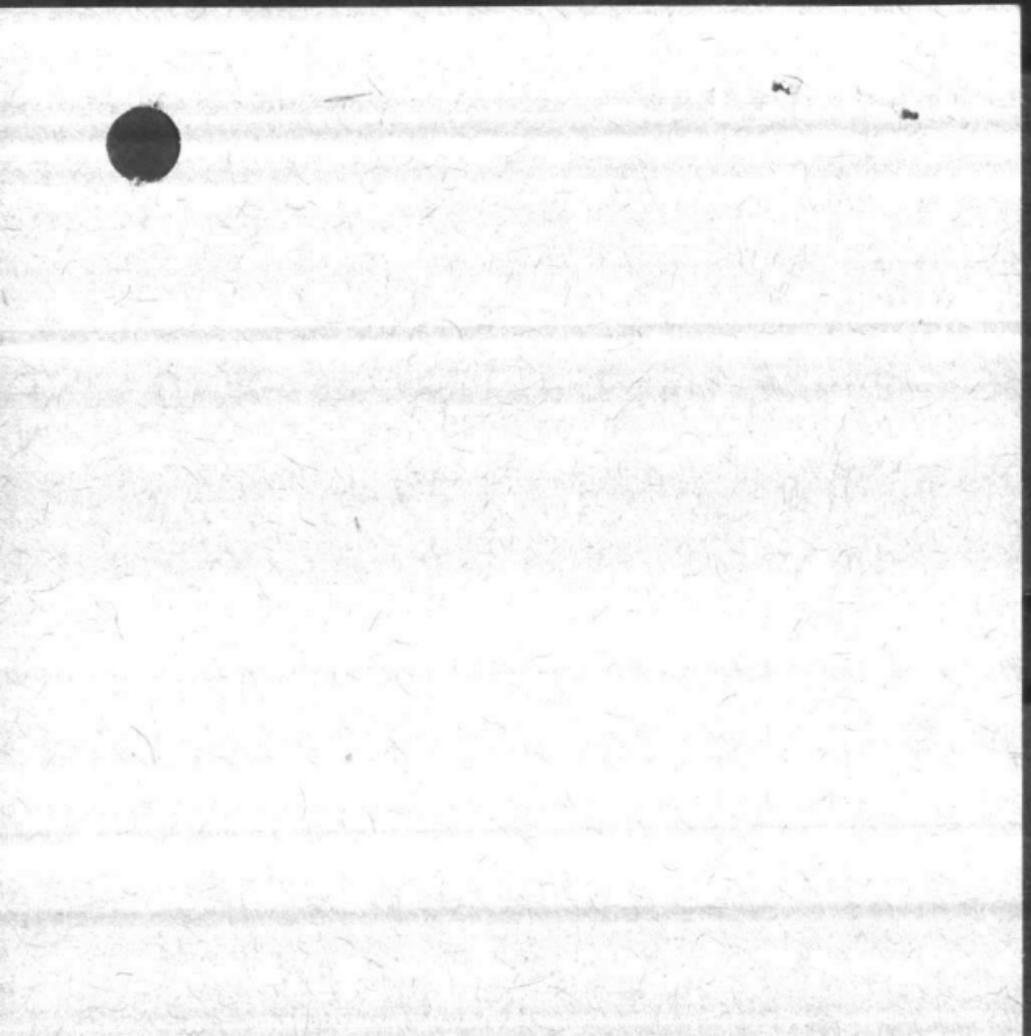
19 March 87

JULIAN,

No further
burning at Combat

Town was

Required.
Thank you
etc

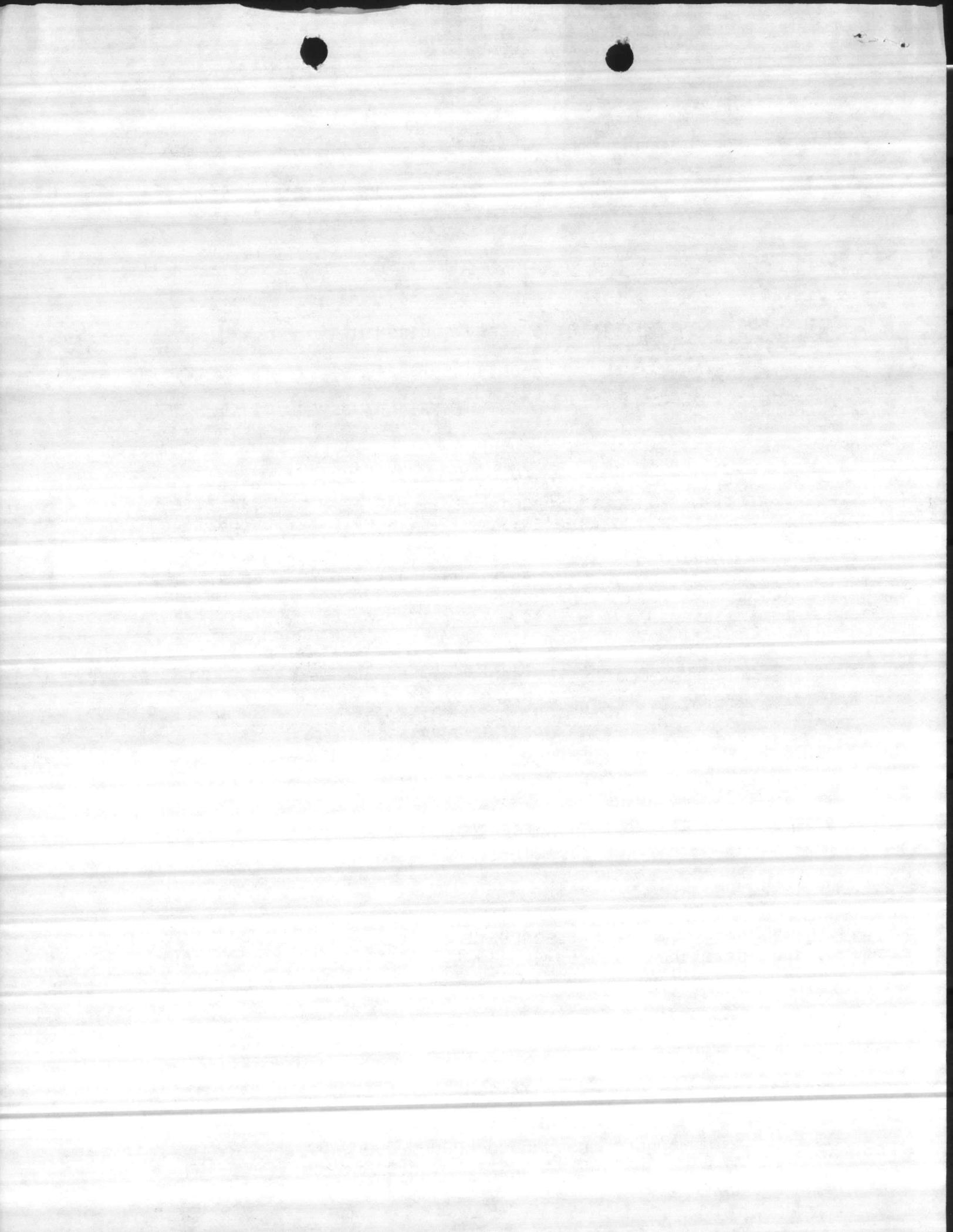


18/3/87

Request you take
FOR ACTION.



D. J. Hashagen, Sr.
Deputy Range Control Officer



T-11000
11000
NREAD
1 Apr 87

From: Director, Natural Resources and Environmental Affairs
To: Assistant Chief of Staff, Facilities, Marine Corps Base,
Camp Lejeune

Subj: PEA JOINT EXERCISE SOLID SHIELD 87

Ref: (a) Chrmn EE/EIRB memo 5420/2 FAC of 10 Mar 87

1. The PEA's provided by the reference have been reviewed and the following comments are provided.

a. What effect will the use of Camp Davis as a drop zone have on NC Forest Service use of Camp Davis for fire suppression?

b. Does this include sea turtles or is this before nesting season?

c. How will this effect the possible need to have assistance from state aircraft for forest fire suppression, both on base and on leased land (International Paper Company)?

d. Would like to add flares, star dusters, smoke grenades, tracer ammunition and WP to the list of prohibited munitions. Add a statement stating that requested assistance will be provided by any available units during the forest fire suppression effort. Road block will be manned at all times to allow easy access of fire suppression equipment and tank traps will be constructed so as to allow hauling units with tractors to pass safely.

e. There will be some timber products for removal by timber sale contract (NREAD action) on projects P-873 and P-702.

JULAIN I. WOOTEN

1100
MAY 1971

11-1-71

Director, National Resources and Environmental Affairs
For Assistant Chief of State, Wildlife, Marine, and
Game Service

Re: (a) Certain ES/SLT memo dated 10/10/70

The items provided by the references have been reviewed and
the following comments are provided:

- a. The effect will be that of the ES/SLT memo dated 10/10/70
has on the Forest Service and of the ES/SLT memo dated 10/10/70
- b. Does this include any further or other items?

How will this affect the possible need to have a status
report prepared for forest fire suppression, both on date
and in case of an international paper commodity?

World like forest fires, soil erosion, smoke drainage,
and a statement stating that requested assistance will be
provided, if available, with the forest fire suppression
efforts. Road block will be removed in all cases to allow
easy access of the suppression equipment and tanks will
be connected so as to allow hauling units with tractors

There will be some timber products for removal by
road, and a number of trucks will be used.

T S D F

Mess Hall - Bldg
Transportation -

How Wallace Creek

Camp Singer AS

Jay Sander

Vice Schider

From: Dir
TO: AC/S Fac

Subj: PEA Joint Exercise Solid Shield 87 (~~88-89~~)

Ref(a) ~~AC/S Fac~~ Chairman E Enhancement/Inspection Board memo
5420/2 Fac of 10 March 87

~~In accord~~
The PEA's provided by the Ref have
been reviewed and the following comments
are provided.

~~ENC (1) No timber harvest~~

1. What effect will the use of Camp Davis as a drop zone have on NCTS use of Camp Davis for fire suppression?
2. Does this include sea turtle or is this before nesting season?
3. How will this effect the possible need to have assistance from state air crew for forest fire suppression, both on base and on leased land (EPG)
4. Would like to add flares, star clusters, smoke grenader, tracer ammunition and W.P. to the list of prohibited munitions. And a statement stating that requested assistance will be provided by any available units during the forest fire suppression effort. Road block will be manned at all times to allow easy access of ^{fire} suppression equipments and tank traps will be constructed so as to allow hauling units with tractors to pass safely.
5. There will be some timber products for removal by Timber Sale Contract (NREAP action) on projects P-873 + P-702.

ENC (2) unknown timber, no location map

P-873

ENC (3) some timber, availability will investigate further

P 702

ENC (4) No timber harvest

ENC (5) No timber harvest

Handwritten text, possibly a signature or name, obscured by a thick black horizontal bar.

Handwritten text, possibly a signature or name, located below the black bar.

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

5420/2

FAC

MAR 10 1987

From: Chairman, Environmental Enhancement/Impact Review Board

Subj: MEETING OF ENVIRONMENTAL ENHANCEMENT/IMPACT REVIEW BOARD

Ref: (a) BO 11015.2G
(b) BO 11000.1B
(c) Chmn, EIRB ltr 5420/2 FAC dtd 5 Dec 86

Encl: (1) Joint Exercise Solid Shield 87 (SS-87) (Action Sponsor: CINCLant)
(2) P-873; Remotely Piloted Vehicle Maintenance Shop (Action Sponsor: 2d MarDiv)
(3) P-702; Alcohol Rehabilitation Center (Action Sponsor: NavHosp)
(4) P-517, Armory Addition (Action Sponsor: MCAS)
(5) LEJ-90-M, Reutilization and Marketing Facility (Action Sponsor: DRMO)

1. In accordance with the provisions of references (a) and (b), a meeting of the subject Board is scheduled in the Conference Room of Building 1 at 1000, 9 April 1987. Advisors to the Board are invited to attend the meeting.

2. The Board will review the preliminary environmental assessments as provided in enclosures (1) through (5) and provide recommendations on environmental significance to action sponsors. Enclosure (4) is in response to questions on siting raised by reference (c). Members and advisors knowing of other agenda items should notify the Chairman at extension 3034/5925 as soon as possible prior to the meeting.


T. J. DALZELL

DISTRIBUTION:

(Members)

Rep, 2d MarDiv (G-4)

Rep, 2d FSSG (G-4)

Rep, 6th MAB (G-4)

Rep, MCAS, NR (S-4)

TFACO

BMO

PWO

(Advisors)

Dir, NREA

SupvEcologist

BWildlifeMgr

BGameProtector

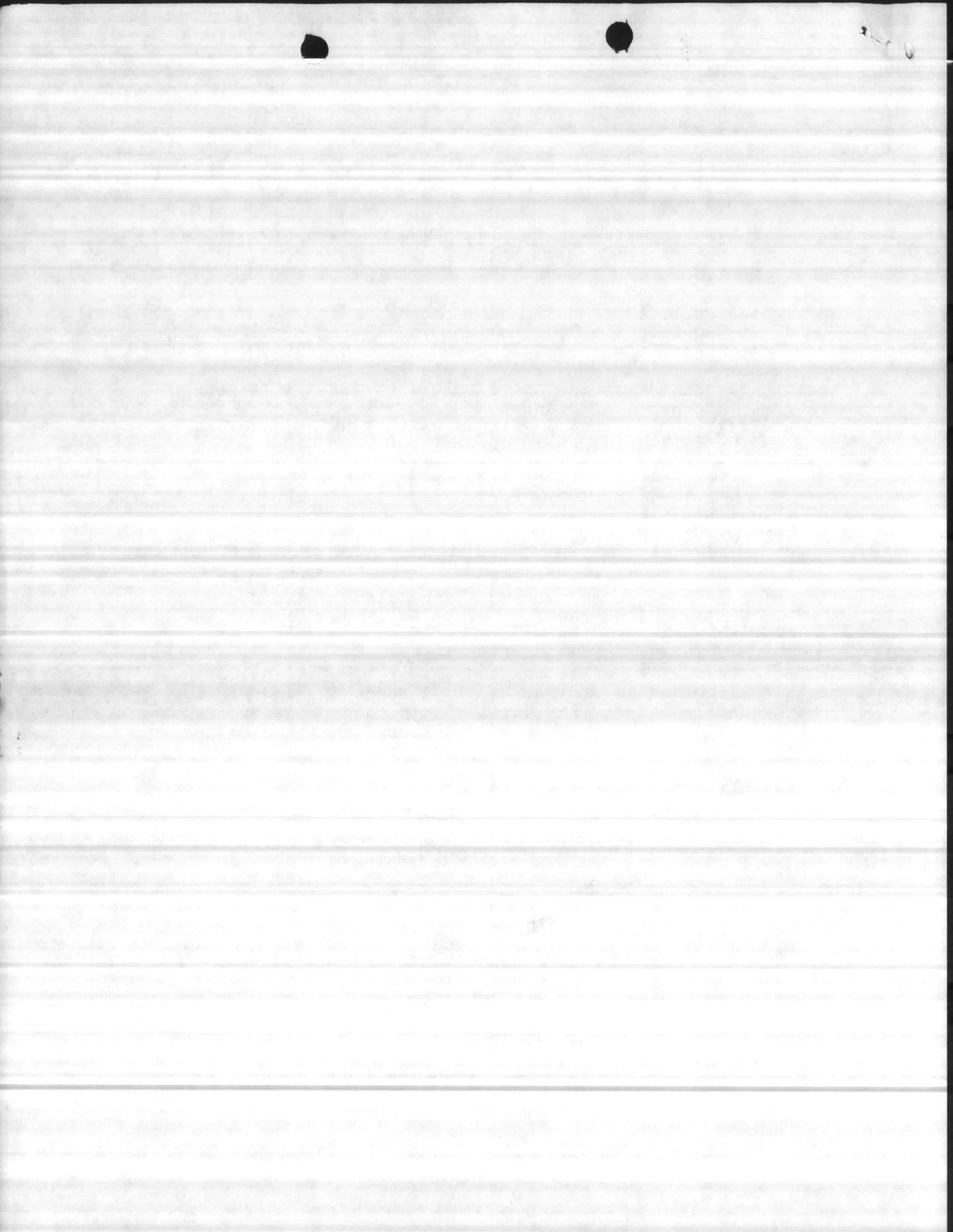
SAFD

SJA

DRMO

CH; VetMedSvc, NH

CH, Occup/PrevMed, NH





DEPARTMENT OF DEFENSE
THE ATLANTIC COMMAND
HEADQUARTERS OF THE COMMANDER IN CHIEF
NORFOLK, VIRGINIA 23511

11000
Ser N4423/001084
2 FEB 1987

From: Commander in Chief, U.S. Atlantic Command
Subj: PRELIMINARY ENVIRONMENTAL ASSESSMENT (PEA), JOINT EXERCISE SOLID SHIELD 87 (SS-87)
Ref: (a) DODINST 6050.1, Environmental Effects in the United States of DOD Actions, of 30 Jul 1979
(b) USCINCLANT ltr Ser J34C/C 001645 of 3 Oct 1986 (Subj: USCINCLANT Letter of Instruction, SOLID SHIELD 87)
Encl: (1) Preliminary Environmental Assessment Joint Exercise SOLID SHIELD 87

1. Enclosure (1) was prepared in accordance with reference (a). Sufficient data was collected on which to base an informed judgment on anticipated environmental impacts expected during SOLID SHIELD 87. Also, during the planning steps of the exercise, mitigating measures were incorporated to minimize potential environmental impact. The "Mitigation Measures," Section II H of enclosure (1), contains the rules of exercise play and procedural guidelines that stress the avoidance of any action which might subject the environment to substantial damage.
2. The "Proposal Evaluation and Conclusion" (Section V of enclosure (1)) states that no environmental impact statement is required. Also, the section contains the conclusion that no significant environmental impact will result from the proposed exercise.
3. SOLID SHIELD 87 participants are aware of the mitigating measures contained in enclosure (1) and shall operate within the guidelines described in enclosure (1) and reference (b).

J. V. KNAPP
COLONEL, USMC
Director, Joint Exercises Division

Distribution:
DEPT OF STATE (PM/RSA), WASHINGTON, DC 20520 (2)
DEPT OF DEFENSE (ISA/PA), WASHINGTON, DC 20301 (2)
OJCS, J3 JED, WASHINGTON, DC 20301 (2)
CSA (DACS-ZA/PAMO-C4J/DAMO-CAL), WASHINGTON, DC 20370 (3)
CNO (OP-9426) (OP-642), WASHINGTON, DC 20350 (2)
CSAF (XOORC), WASHINGTON, DC 20330
CMC (CCA), WASHINGTON, DC 20380
COMDT COGARD (G-OMR-3), WASHINGTON, DC 20590
JSCE, MACDILL AFB, FL 33608 (2)
USSPACECOM, PETERSON AFB CO
USCINCSO QUARRY HEIGHTS PM (SCJ3-EX, SCJ4-LP, J6-0)
USCINCRD MACDILL AFB FL (RCJ5-E)

Subj: PRELIMINARY ENVIRONMENTAL ASSESSMENT (PEA), JOINT EXERCISE SOLID SHIELD
87 (SS-87)

Distribution: (Cont'd)
CINCARLANT/CDRFORSCOM FT MCPHERSON GA (AFOP-OXJ, AFGL-POO, AFIN-IOP)
CINCAFLANT LANGLEY AFB VA (DO, DOX, DOY, DOF, DOO, SIO, LGX, SPP, LGT, SGX,
PAX, XPJ, DED, DPX, XPM)
CINCLANTFLT NORFOLK VA (NO2C, N3, N33, N37, N4, N41, N44, N5, N6, N8)
COMUSFORCARIB KEY WEST FL (5)
COMNAVAIRLANT NORFOLK VA (2)
COMNAVSURFLANT NORFOLK VA (2)
COMSUBLANT NORFOLK VA (2)
COMSECONDFLT (6)
COMUSMARDEZLANT NEW YORK NY (N5, N3, N6)
COMARDEZSECFIVE NORFOLK, VA (4)
COMLANTAREA COGARD NEW YORK NY (ATT, AO, AP)
COMPHIBGRU TWO (6)
COMSERVGRU TWO
COMSCLANT BAYONNE NJ
COMSC WASHINGTON DC
MSCLNOLANT NORFOLK VA
COMTACGRU TWO (2)
FLTDECGRULANT NORFOLK VA
DIR NSA/CSS (P393), FORT GEORGE C. MEADE MD 20755
DCAOC (N240), WASHINGTON, DC 20305
DMA (PRP), WASHINGTON, DC 20305 (2)
NGB, WASHINGTON, DC 20305 (2)
CNR (101R), ONR ARLINGTON, VA 22217
U.S. ARMY CORPS OF ENGINEERS, P. O. BOX 889, SAVANNAH, GA 31402
U.S. ARMY CORPS OF ENGINEERS, P. O. BOX 99, CARY, NC 27511
TACRON TWO ONE (2)
TACRON TWO TWO
USS SARATOGA (CV 60) (5)
COMNAVBEACHGRU TWO
NAVCHAPGRU
COMDESRON THIRTY TWO
COMPHIBRON TWO
COMINERON TWO (3)
COMEODGRU TWO (3)
MPSRON ONE
HELMINRON FOURTEEN (3)
COMCRUDESGRU EIGHT
COMCARAIRWINGRES ONE
COMCARAIRWINGRES TWO ZERO (3)
CARAEWRON SEVEN EIGHT
COMCARAIRWING SEVENTEEN
COMNAVFORCARIB ROOSEVELT ROADS RQ
COMNAVBASE NORFOLK VA
NAVPHIBASE LITTLE CREEK VA
NAS JACKSONVILLE FL (2)
NAS KEY WEST
USNAVSTA ROOSEVELT ROADS (2)
NAVEASTOCEANCEN NORFOLK VA
NAVOCEANCOMFAC JACKSONVILLE FL
COMFITMATAEWINGSLANT OCEANA VA
COMPATWINGSLANT BRUNSWICK ME
COMHELTACWING ONE NORFOLK VA
COMINEWARCOM CHARLESTON SC (2)
COMFEWSG NORFOLK VA (2)
COMLANTDAC
COMNAVSPECWARGRU TWO (2)

Subj: PRELIMINARY ENVIRONMENTAL ASSESSMENT (PEA), JOINT EXERCISE SOLID SHIELD
87 (SS-87)

Distribution: (Cont'd)
COMNAVAIRES DET 286 NAS NORFOLK VA
COMSOCLANT FT BRAGG NC (5)
CG FMFLANT (G2, G3, G4)
CG II MAF (G2, G3, G4, CE)
CG SECOND MARDEV (5)
CG FOURTH MARDIV (5)
CG SECOND FSSG (2)
CG SECOND MAW (2)
CG FOURTH MAB (2)
CG SIXTH MAB (2)
CG MAB CAMP LEJEUNE NC (G3, RANGE CONTROL)
CG MCAS CHERRY PT NC (4)
VMFP THREE
CG XVIII ABNCORPS FT BRAGG NC (AFZA-GE, AFZA-GD-P, AFZA-DPT-ED, AFZA-CE-O,
AFCOFS-G2, AFZN-D5, AFZA-MD, AFZA-DTP-EP)
CG 82DABNDIV FT BRAGG NC (G-3) (2)
CG 101STABNDIV FT CAMPBELL KY (AFZB-GD) (2)
CDR 75TH INF (RGR) REGT FT BENNING GA (AFVS-RGR-SC)
DET 1 507 TAIRCW FT BRAGG NC (2)
CDR1STCOSCOP FT BRAGG NC (AVFS-GC-P)
CDR1ST PSYOP BN FT BRAGG NC (2)
CDR 7TH SFG FT BRAGG NC
CDR 10TH PSYOP CO FT GILLEM GA
CDR 79THARCOM NAS WILLOW GROVE PA (2)
CDR 96TH CA BN FT BRAGG NC (AFVS-CAB-SC)
305TH PSYOPS BATTALION ARLINGTON HEIGHTS IL (2)
CDR 358TH CA BDE 1020 SANDY ST., NORRISTOWN, PA
CDR 416TH CA CO 1020 SANDY ST., NORRISTOWN, PA
CDR 360TH BDE FT JACKSON SC (2)
CDR 193RD SOG HA MIDDLETOWN PA (DOX, LG, MA)
HQ AFIS FT BELVOIR VA (INU)
HQ AFOSI BOLLING AFB DC (IVX, XPX)
HQ ESC KELLY AFB TX (DOXE)
HQ SAC OFFUTT AFB NE (DO, DOO, INX)
HQ MAC SCOTT AFB IL (DO, DOOX, INX)
MQ TAC LANGLEY AFB VA (SGX, INA)
2AD HURLBURT FLD FL
8AF BARKSDALE AFB FL (DOO, DOOK, DOOB)
9AF SHAW AFB SC (DOXE)
12AF BERGSTROM AFB TX (DO, DOY, DOXE, SIO, LGXE, INX, SIF)
21AF MCGUIRE AFB NJ (DOX)
23AF SCOTT AFB IL (DOOX)
2BMW BARKSDALE AFB LA (DOO, DOT)
42 BMW LORING AFB ME (DOO, DOT)
19 AREFW ROBINS AFB GA (DONO)
68 AREFG SEYMOUR JOHNSON AFB NC (DONO)
12TIS BERGSTROM AFB TX
156 TFG SAN JUAN RQ
602 TACCS BERGSTROM AFB TX (DOX)
552AWACW TINKER AFB OK (DC)
1SOW HURLBURT FLD FL (DOX)
5WW LANGLEY AFB VA
DIA WASHINGTON DC (DI-2B, VP-CM)
DIR DMAODS WASHINGTON DC (PRP/PRN PRT)

Subj: PRELIMINARY ENVIRONMENTAL ASSESSMENT (PEA), JOINT EXERCISE SOLID SHIELD
87 (SS-87)

Distribution: (Cont'd)

DIR DMAODS WASHINGTON DC (IMA)
JEWIC SAN ANTONIO TX (OPX)
JRCC KEY WEST
FACSFAC VACAPES OCEANA VA (2)
FACSFAC JACKSONVILLE FL (2)
CINCLANTFLT OAC OCEANA VA
LANTFLTWPNTAFAC ROOSEVELT ROADS RQ (2)
FAA WASHINGTON HQ WASHINGTON DC (ATO-1)
FAA SOUTHERN RGN HQ ATLANTA GA (ASO-530) (5)
FAA EASTERN RGN HQ NEW YORK NR (AEO-530)
FAA JACKSONVILLE ARTCC HILLIARD JACKSONVILLE FL
FAA MIAMI ARTCC MIAMI FL
FAA WASHINGTON ARTCC LEESBURG VA
NAVREPSO FT GILLEM GA
3246 TEST EGLIN AFB FL (TZPS)
56TTW MACDILL AFB FL
4TFW SEYMOUR JOHNSON AFB NC
DIRECTOR JOINT CONTROL GROUP, NAB LITTLE CREEK 23521 (25)
USS IOWA (BB 61)
USS MT WHITNEY (LCC 20)
USS SAIPAN (LHA 2)
USS SHREVEPORT (LPD 12)
USS MANITOWOC (LSD 1180)
USS GUAM (LPH 9)
USS HERMITAGE (LSD 34)
USS CHARLESTON (LKA 113)
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PRELIMINARY
ENVIRONMENTAL ASSESSMENT

JOINT EXERCISE

SOLID SHIELD 87

FEBRUARY 1987

Prepared by Commander in Chief, U.S. Atlantic Command, in accordance with Department of Defense Directive 6050.1, in compliance with Section 102(2)(c) of the National Environmental Policy Act of 1969.

Encl (1)

I. PURPOSE AND NEED

Joint Exercise SOLID SHIELD 87 (SS-87) is a Commander in Chief, U.S. Atlantic Command (USCINCLANT) sponsored, Joint Training Exercise scheduled to be conducted during the spring of 1987 on military reservations, national forest areas, leased/licensed locations in the southeastern United States and other geographic areas including islands in the Caribbean Basin. The exercise entails deployment, employment and redeployment of a Joint Task Force whose mission is to conduct operations similar to those anticipated in various contingency plans. SS-87 is designed to exercise selected organizations of component services in the procedures and tactics to be used in future combat situations. It provides a vehicle to test existing joint procedures and to develop new procedures for conducting joint operations.

II. ALTERNATIVES

A. Selection Criteria

The decision to conduct an exercise rests on criteria/objectives which will determine the validity of the exercise. The primary decision criteria affecting the SOLID SHIELD exercise is the need to maximize the achievement of the military training objectives while minimizing the environmental and economic costs, i.e., maximum training with minimum resource expenditures. Some considerations that enter into the decision to select a site for the exercise are:

Area accessibility by land, air and water.

Availability of physical resource to conduct the exercise.

Ecological considerations.

Economic factors, including budgetary constraints.

Force composition.

Geophysical factors, including meteorological, oceanographic and physiographic conditions.

Health and safety of personnel and equipment risks.

Integration of the exercise into the overall Department of Defense and component services mission, training programs and objectives.

Military readiness posture of USCINCLANT forces.

Potential effects on non-military operations in the exercise area.

World political situation, including potential threats to the balance of power.

A preliminary evaluation was conducted based on the above and other related factors. Decisions were based on a comparative evaluation that involves both qualitative and quantitative analysis of preliminary information. The relative availability of specific forces was assessed to ensure that the proposed exercise can be integrated into the annual exercise schedules of participating commands. A qualitative discussion of alternatives, as affected by the preceding constraints is presented as follows:

Elements of the Air Force, Army, Coast Guard, Marine Corps and Navy are programmed for participation in the training evolution. All phases of a contingency will be accomplished by command posts and maneuvering elements, or be simulated by the exercise control group.

Navy and Coast Guard ship activities in national and international waters off the coast of Virginia, the Carolinas and Caribbean Islands are anticipated. Navy ship activities may occur at other areas under the operational control of USCINCLANT or subordinate commanders. No unusual naval training activities are planned and, no unusual restrictions on the use of these waters as a result of the exercise are anticipated. The provisions of the U.S. Coast Guard Navigation Rules (COMDTINST M16672.2) and 33 CFR Navigation and Navigable Waters are applicable.

Military aircraft (Air Force, Marine, Navy and Coast Guard) will conduct exercise-related activities which will occur over government reservations and within temporarily restricted airspace. Use of those airspaces are approved by the Federal Aviation Administration. All low altitude sorties will be flown on approved low level routes and/or within the appropriate installation/range complex.

Army and Marine activities will consist of the manning and operation of the command posts necessary to meet the tasking as presented in subsequent paragraphs. Airlifted and sealifted forces will conduct coordinated amphibious and airborne assaults, follow-on maneuvers and dispersals. Ground forces will maneuver as necessary to provide the degree of realism required for specific support operations.

Exercise areas are defined as the overall areas wherein exercise play is expected to take place with sufficient concentrated activity as to be noticeably exercise-related. Virtually all activity directly resulting from the exercise will be conducted in the exercise areas.

The exercise areas are subject to further revision as exercise planning progresses.

*SAME
except
low-to-mid
intensity*

The SOLID SHIELD 87 scenario is planned to exercise the forces of USCINCLANT in a low-to-mid intensity conflict, with emphasis on field operations. SS-87 places an emphasis on providing commanders maximum latitude in employment of ground forces in a short-term, high mobility joint operation in a field environment, as opposed to emphasis on a tactical headquarters exercise. Tactical headquarters for participating commands will be located in realistic field sites. In addition to command posts, actual operating forces will be deployed to conduct specific operations in support of joint or service objectives. While some troop operations will be simulated in the scenario, the following is tentatively scheduled to be conducted by actual operating forces:

Air/land and amphibious operations will use helicopters and fixed wing aircraft, air mobile/helicopter borne assaults and include parachute assaults. Air operations will use both land based and carrier based aircraft. A limited counter-air campaign will also take place.

The Exercise Operation Plan (EXOPLAN) will resemble actual contingency plans in format and general content. Therefore, all exercise dates, maneuver areas, force lists, details of the scenario and sequence of events are classified "Confidential". This procedure protects information that would reveal operational procedures of U.S. military forces.

B. Preferred Alternative

The preferred locations for SOLID SHIELD 87 were selected based on preceding criteria. The areas are consistent with those sites utilized in 16 previous annual exercises conducted by USCINCLANT, as directed by the Joint Chiefs of Staff. Previous exercises in this series include EXOTIC DANCER I through VI and SOLID SHIELD 74 through 85. These exercises were conducted in the southeastern United States and Caribbean Basin. Previous environmental documentation includes Environmental Impact Statements for EXOTIC DANCER V and VI, Environmental Assessments for SOLID SHIELD 75 through 79, and Preliminary Environmental Assessments prepared for SOLID SHIELD 81, 83 and 85. No known significant environmental impacts resulted from the previous exercises.

Once a preliminary evaluation as to the need for the exercise is conducted, then various associated decisions must be made. These decisions are based on comparative evaluations that involve qualitative and quantitative information concerning both the overall as well as each Service's exercise objectives. These decisions generally establish the preferred locale and time frame alternative for the exercise. Additionally, the availability of specific forces is assessed to ensure that the proposed scenario can be integrated into the the annual schedules of the various commands concerned. The exercise then continues to be planned within the preceding constraints until it actually commences.

The choice of alternative locations for the exercise is restricted by the area under the cognizance of USCINCLANT and Service component installations within that area that can meet the requirements of the scenario. Further constraints include the potential environmental impact on an installation from over-utilization (the carrying capacity of the installation for Field Training Exercises), cost factors in relocating units from their home base (vice locating them in the field at their home or nearby installation), interference with installation high priority missions and numerous other considerations.

Aviation units are generally restricted to the locale of their home base because of support and range scheduling requirements. SOLID SHIELD air operations, therefore, are generally confined to sorties from/to existing major east coast installations with some utilization of the lesser used outlying and alternate landing fields. In addition, aircraft operations are restricted to existing controlled airspace and routes or temporary Military Operating Areas acquired from FAA.

Ground troops generally are limited to maneuver locations within their own base or bases to which they can quickly and cost effectively be transported without undue logistic problems. For example, if a mechanized battalion is required to convoy any lengthy distance, then logistics support is required enroute, thus increasing cost and time spent not training. In the case of a tank battalion, rail shipment may be a consideration. Marine ground units are generally are restricted to amphibious shipping availability/capacity and coastal locations for amphibious landings or within 150 miles of the coast for "vertical inserts" (heliborne operations). All of these constraints are carefully considered in selecting preferred alternatives during initial and follow-on planning.

The following major installations are located within the exercise area and could be used for, or in support of, SOLID SHIELD-87 operations depending on the actual scenario.

VIRGINIA

LANGLEY AFB
NAVSTA NORFOLK
NAS NORFOLK
NAS OCEANA
NAVPHIBASE LITTLE CREEK (including CAMP PENDLETON)
VIRGINIA CAPES
HAMPTON ROADS

NORTH CAROLINA

SEYMOUR JOHNSON AFB
POPE AFB
CG AIRSTA ELIZABETH CITY
MCB CAMP LEJEUNE (including CAMP GEIGER)
MCAS (H) NEW RIVER
MCAS CHERRY POINT
OLF BOGUE
OLF ATLANTIC
RADIO ISLAND, POE, MOREHEAD CITY
CAMP DAVIS (former airfield currently owned by International Paper Company)

OLF OAK GROVE?

SOUTH CAROLINA

SHAW AFB
MCENTIRE ANGB
MYRTLE BEACH AFB
MCAS BEAUFORT
NAVSTA CHARLESTON

GEORGIA

WRIGHT AAF
HUNTER AAF
FORT STEWART

FLORIDA

EGLIN AFB
CAMP BLANDING AAF
CG AIRSTA MIAMI
NAVSTA MAYPORT
NAS JACKSONVILLE
NAS CECIL FIELD
OLF WHITEHOUSE
HOMESTEAD AFB
NAS KEY WEST
NAS PENSACOLA
MACDILL AFB

RANGES

AVON PARK FLORIDA
PINCASTLE FLORIDA
EGLIN FLORIDA
DARE COUNTY NORTH CAROLINA

CARIBBEAN BASIN

NAS ROOSEVELT ROADS
MUNIZ ANGB
CAMP SANTIAGO NGB
VIEQUES RANGES

In addition to the above military installations, most of the Service's possess various licenses for nearby Federal and state lands and private holdings that provide for limited rights of entry, etc., for military operations, e.g., helicopter landing zones for special operations elements, etc.

The exercise is essentially a repetition of approximately 20 similar exercises conducted over a 10-year period in terms of land areas used. Therefore, most property owners are familiar with the type of training conducted. Also, the Corps of Engineers maintains a full time office in Jacksonville, NC to support exercises of this type by obtaining leases and licenses for use of private lands. The Corps of Engineers administers the funds available to repair and restore lands disturbed by the exercise.

In broadest terms, the repetitive SOLID SHIELD scenario consists of a hypothetical world situation which allows for training/testing and most importantly evaluating the ability of the joint services to perform their mission of bringing the battle to the enemy in a unified manner against opposition forces. For the exercise, opposition forces are comprised of U.S. forces designated as "the enemy". The SS-87 scenario is designed to allow each Service to accomplish assigned missions for national defense. Therefore, the Air Force will practice the deployment of tactical and support aircraft, defend air strike packages, attack enemy aircraft, provide air cover, and provide ground forces with close air support. The Navy will practice harbor breakout, sea lane protection, transport of amphibious assault troops, provide air cover and close air support for ground forces. The Marine Corps will carry out amphibious assaults and vertical insertion missions. The Army will conduct land battles and vertical insertion. The Coast Guard will conduct harbor defense, sea lane protection and rescue missions.

SOLID SHIELD 87 is planned to exercise the forces of USCINCLANT in a mid-to-high-intensity conflict, with emphasis on field operations involving reinforcement, non-combatant evacuation, and offensive operations in a crisis area. SS-87 places emphasis on providing commanders maximum latitude in employment of ground forces in a short-term, high mobility joint operation in a field environment, as opposed to emphasis on a tactical headquarters exercise. Tactical headquarters for participating commands will be located in realistic field sites. In addition to command posts, actual operating forces will be deployed to conduct specific operations in support of joint or service objectives. While some troop operations will be simulated in the scenario, most will not.

For ease of discussion, the operations to be conducted during SS-87 can be divided into sea, air, land amphibious assault and airborne assault.

The Air Force has approved the Camp Davis area as a personnel and equipment drop zone. The exercise is structured to use the abandoned runway for aircraft landings and take offs. Current tree and understory growth, however, prevent safe usage. The owner has been requested to remove the harvestable timber. Any remaining trees and brush could be removed by opposition forces and the airborne unit. The use of up to 100 charges of 1/2 pound explosives or less is expected to fell designated trees and to uproot stumps. Following the exercise, the land will be restored in accordance with the lease/license agreement reached with International Paper Company.

The assault unit will be equipped with an armored reconnaissance/airborne assault vehicle, commonly known as the Sheridan. Combat loaded, the vehicle weighs 36,000 pounds and exerts a ground pressure of 6.5 psi. The vehicles will move from the drop zone over existing roads on Camp Davis to Highway 17.

*SAME
except
mid-to-high
intensity*

*Question
1*

The vehicles will move approximately 10 miles north on Highway 17 before leaving the highway onto Camp Lejeune tank trails. The State of North Carolina will be requested to approve the movement of 10 or less units with appropriate highway patrol support.

The Sheridan assault vehicles are expected to be delivered by using the Low Altitude Parachute Extraction System (LAPES) which is the standard technique for delivering armored fighting vehicles to frontline troops.

Preparing the air drop zone and follow on ground deployment will require some tree felling in the Camp Davis area. All drop zone preparations will be consistent with normal timber management programs normally carried out by International Paper Company. The preparation plan has been discussed with company representatives and is consistent with the lease/license agreement. The drop zone preparation will not significantly impact the environment and no irreversible or irretrievable commitment of resources will be made.

✓ Amphibious Assault

General concept of the exercise calls for a combined surface and heliborne amphibious assault on Onslow Beach, NC. The assault will be conducted in accordance with existing Camp Lejeune directives, including environmental protection for use of Onslow training beach.

Question #2 → For personnel safety and training, a daylight rehearsal will be conducted at Camp Pendleton, VA. The rehearsal will be conducted in accordance with Naval Amphibious Base, Little Creek directives, including environmental protection during use of the beach. The rehearsal will not include ground maneuvers or live fire exercises.

Airborne Assault

An airborne assault will be conducted during pre-dawn hours on Camp Davis, NC. Camp Davis has an abandoned airfield owned by International Paper Company. The company has agreed to lease the land for the exercise.

Sea

Navy ship activities in national and international waters off the coast of Virginia, the Carolinas, Georgia, Florida and Caribbean Basin are anticipated. Navy ship activities may occur at other areas under the operational control of USCINCLANT or subordinate commanders. No unusual naval training activities are planned and no unusual restrictions on the use of these waters as a result of the exercise are anticipated. The provisions of the U.S. Coast Guard Navigation Rules (COMDTINST M16672.2) and 33 CFR Navigation and Navigable Waters are applicable.

Naval activities at sea will consist of a series of "routine" training drills normally associated with independent steaming or convoy deployment. Examples of these drills are port breakout, mine countermeasure, anti-submarine warfare, and opposed transit. All of these activities are conducted in accordance with prescribed procedures contained in classified Allied Tactical Publications or Navy operating manuals.

Air

Aerial training activity will involve the full spectrum of Department of Defense tactical air assets including bombers, tactical fighters, cargo planes, helicopters, etc. Air operations will include offensive and defensive counter air campaigns, air interdiction, air reconnaissance, tactical airlift, aerial refueling, aerial minelaying, airborne warning and control, attacks on "enemy" shipping, close air support of troops, etc. Air operations will be conducted at sea, over existing restricted air space, over Military Operating Areas (MOAs), within temporary MOAs licensed by the FAA and on existing target ranges. No supersonic flight will occur over land areas. Supersonic flight will occur offshore only.

Air operations for SS-87 will involve both fixed wing aircraft and helicopters. Air operations will be conducted within the Exercise Area Airspace (EAA) as depicted on Map 1. High performance aircraft will be thoroughly engaged in exercise missions such as acquiring and holding air and ground targets. Helicopter pilots will be devoting full attention to low level navigation, evasion tactics, and payload delivery. It is essential, therefore, that all non-exercise aircraft remain well clear of the EAA.

Joint Federal Aviation Administration/Military Air Acquisition/North Carolina Department of Transportation conferences were held to discuss airspace proposals for the exercise and to reach agreements as to responsibility for accomplishing radio and telephone communications links, Air Traffic Control Facilities (ATCF), coordination with the FAA, commercial traffic accommodation of general aviation traffic, use of Restricted Areas, Warning Areas, Military Operating Areas, and low level routes.

The impact of airspace restrictions to the private sector occur in the form of higher costs and extended operations when aircraft are routed around or above exercise airspace. The impact at the air/land interface occurs in the form of noise from ordnance delivery on existing ranges as well as from use of the exercise airspace for air combat maneuvers. During the course of the exercise, most sorties will be flown over land during the period from 0800 to 2000. However, during the airborne assault, the drop time will commence at 0100 (1 a.m.) for the drop date only. Residences in the vicinity of the drop zone will be notified prior to the early morning drop.

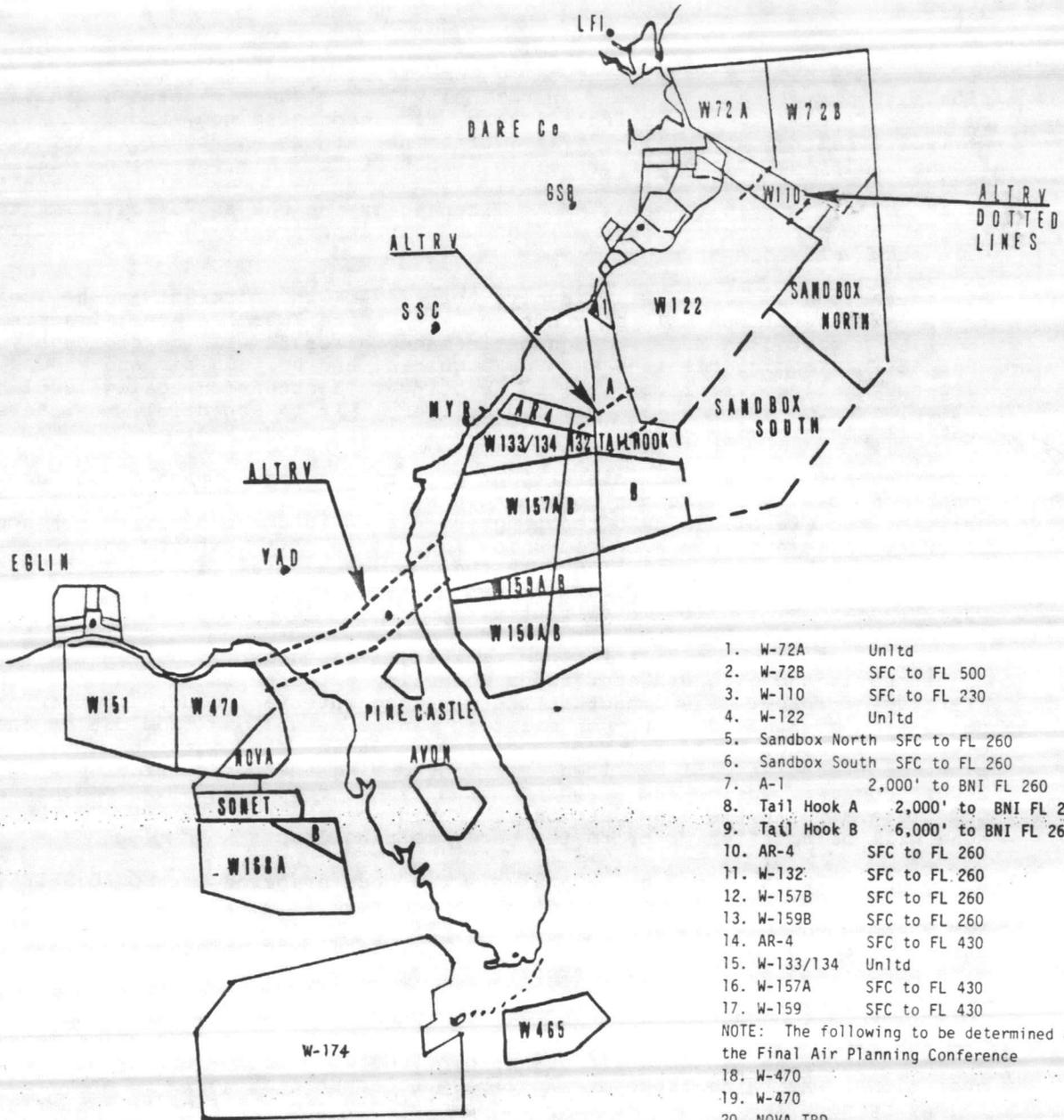
Although no "worst case" noise analysis has been prepared for SOLID SHIELD 87, a previously developed analysis of an anti-air warfare exercise is submitted for example and discussion. In this example, one F-4 pursues and engages in aerial combat with two A-6 aircraft. Flight level was maintained at 500 feet with power setting above 90 percent.

Noise levels ranged from a low of 64 to a high of 69 Ldn, which is within the HUD acceptable level for new housing projects. The worst case noise level, which exceeds that which would be anticipated for over 90 percent of the SS-87 operations, including those over military reservations, would be annoying to a receiving populace. The sparsity of population, and the fact that most aircraft operations over areas other than targets will be above 3,000 feet over military reservations, reduces the potential for noise as a significant impact on humans, agricultural livestock or wildlife to nearly insignificant levels.

Question #3



WARNING AREAS FOR SS-87



Land

Ground operations will consist of the covert "insertion" of special operations personnel into the land maneuver areas to perform surveillance/sabotage operations, amphibious assault operations coupled with a heliborne and/or paratroop assault against "enemy" positions, biological and chemical warfare defense, and other troop maneuvers which would occur in a realistic scenario. Live fire will take place on military ranges and designated impact areas only.

Host country agreements further specify specific training areas and appropriate environmental constraints.

C. The No Action/No Exercise Alternative

The SOLID SHIELD series, or an exercise series of similar scope and complexity, presents the only opportunity USCINCLANT has for testing, developing and evaluating its capabilities to act within the joint service framework. Additionally, SOLID SHIELD also provides flexibility for testing unique factors pertaining to contingency operations. The problems encountered in scheduling, planning, and executing an operation of this nature are understandably complex. However, joint Service training of this magnitude is essential to the goals and objectives of the national security program. Without such exercises, USCINCLANT would be unable to further develop, test and evaluate current contingency plans.

D. Conducting Several Smaller Scale Exercises

The ability to conduct a joint operation in a contingency is paramount to the USCINCLANT role. Several smaller scale exercises would not test/exercise the component service capabilities to function as a joint force. Smaller scale exercises rely heavily upon unrealistic features and artificial constructive vice actual operations. Small scale component exercises deny assigned troops the opportunities associated with the training and experience to be gained in a joint service project. Planning staffs are also denied the opportunity to test, evaluate and develop joint service concepts and doctrine in light of the ever changing threat. It is the judgment of USCINCLANT that a joint service exercise, such as SOLID SHIELD with its attendant scope, objectives and opportunities, is the best solution to the problem of developing joint operations expertise commensurate with minimum or no damage to the environment.

E. Alternative Sites

The choice of alternative locations for the exercise is restricted by the area under the cognizance of USCINCLANT and the location of military installations within that area that can meet the requirements of the scenario. Further constraints include the potential environmental impact on an installation from over-utilization, i.e., the carrying capacity of the installation for Field Training Exercises, interference with installation high priority missions, and numerous other considerations.

F. Alternative Force Lists

Units are selected to participate in joint exercises by component services based on mission, ability, and availability. Minimum force size will be used in SS-87 consistent with exercise objectives.

G. Alternative Exercise Design

SS-87 is being planned for a minimum impact on the environment. SS-87 planning maintains a realistic balance between practical training objectives and environmental concern. The decisions made and directives issued covering the environmental quality aspects of the exercise introduce or amplify certain military artificialities. The exercise directives require all participating units to comply with host installations environmental plans and programs. Units participating in foreign countries will be required to comply with the host country agreement. We believe that all exercise directives represent an effective combination of military training objectives, procedures, and genuine concern for the quality of the human environment, to include its enhancement and protection. To further alter exercise design or introduce further artificialities at this point would seriously hamper the planning process.

H. Comparative Discussion of Impacts

The following impacts will occur to a similar degree for each of the alternatives which would place troops in the field.

1. Physical Environment

Some topographic alterations will occur due to the disturbance of surface soils. Off-road tracked and wheeled vehicle operations will disturb surface soil layers and expose less fertile subsoil, causing the potential for increased soil erosion by wind and rainfall. Steep sloped areas, if traversed, will be less capable of revegetation by natural processes and could require human effort to halt the erosion process. Repeated compaction of soils by vehicles will limit production of vegetation. Limited beach disturbance in the vicinity of amphibious operations will occur.

Localized degradation to surface waters will result from soakage pit and straddle trench leachate. Stream crossings by vehicles will result in some increase in suspended solids and possibly some contamination by oils and grease from vehicles. Violation of stream standards from these activities or from a Petroleum, Oil, Lubricants (POL) spill could occur. The host installation Spill Containment and Control Contingency Plan will be activated. Erosion will cause suspended solid levels to be higher than normal for a period of time. In any case, decreases in water quality are projected as being minor. Air quality degradation will occur in localized areas of concentrated activity. Smoke generating activities include weapons firing, vehicle operations producing dust and emissions and operation of internal combustion engines of portable power sources. Resultant degradation will be localized and temporary, producing no measurable effect on regional air quality.

2. Natural Environment

In vehicle maneuver areas, uprooting and destruction of ground cover by crushing and soil compaction will occur as will destruction of grasses and similar type ground cover in areas of heavy foot traffic, e.g., Field Headquarters areas. Some mature trees and shrubs will be damaged by tracked vehicles. Some damage to wildlife food resources will thus occur. Small amounts of endangered species habitat may be destroyed in spite of precautions to protect it from disruption.

3. Infrastructure

Low volumes of solid waste will be generated by field troops daily during the exercises. These low volumes are based on the fact that field elements must remain mobile and subsist on field rations. Disposal of solid waste will be in host installation landfills.

Potable water requirements are estimated at five gallons per man per day. A large volume of water may be required by a washdown prior to the backload of equipment. The wash water for the last phase of amphibious backload is normally obtained from the service craft. A preliminary washdown of equipment uses up to 300 gallons of water per vehicle. The water is obtained from the host facility. This amount is not considered excessive.

In summation, some cumulative short-term direct effects (five years or less), although considered slight, will nevertheless occur, as will some long-term effects. Consideration of these cumulative effects, as well as consideration of the resultant impact of previous similar exercises, does not reveal the potential for significant effects on long-term productivity. The disruption of surface soils, resultant erosion, and eventual stabilization of disturbed soils, either naturally or by artificial means, may produce an altered vegetation pattern in the affected area, i.e., natural succession from field to thicket, etc., will be altered. This, however, is the usual situation in any man-dominated environment.

Host installation commanders have the authority to detain troops for the purpose of restoring damaged areas as appropriate.

I. Mitigation Measures

Exercises planners and participants are acutely aware of the potential for severe adverse environmental effects of this exercise. Potential adverse impacts could result from the operation of supersonic aircraft, tracked and wheeled vehicles, artillery, naval gunfire and large concentrations of personnel in a field exercise. They are primarily associated with the normal operations of an exercise force. They are generally grouped under the heading of localized and short-term effects within the exercise area.

In summary, this exercise produces a generalized, unquantifiable benefit to the proponent (USCINCLANT) within the category of testing and enhancing operational readiness. Environmental impacts are essentially neutral in that pre- and post-exercise conditions will be essentially unchanged. Steps have been taken to reduce or otherwise mitigate the potential for accidental damage. Basic procedural guidelines have been prepared and issued to all participants. It is believed that the benefits accruable from the exercise far outweigh potential environmental impacts. Further, the various alternatives to the exercise fail to meet the overall existing requirements of USCINCLANT.

Rules of exercise play stress the avoidance of any action which might subject the environment to substantial damage or destruction. These mitigating rules have been disseminated to commands and units participating in the exercise. These rules are contained in the Letter of Instruction and presented as follows:

1. Areas surrounding communication/radar equipment capable of producing hazardous levels of radio frequency (R-F) emissions will be posted at the appropriate distance to warn personnel that a radiation hazard exists.

2. The use of live ammunition is prohibited except at authorized target complexes. Blank small arms ammunition will be issued and used. The use of chemical and riot agents, except in small volumes under strictly regulated conditions, is prohibited. The use of blank ammunition, smoke pots, trip flares (which simulate trip grenades/mines) and other incendiaries will be suspended if the wildfire danger is deemed excessive, as determined by the host installation's forest fire index procedures. Deliberate setting of fires, including cooking or campfires, is prohibited.

3. The disposal of unused ordnance and pyrotechnics will be closely monitored and controlled. Unused ordnance and ammunition residues (cartridge casing, etc.) with the exception of expended small arms cartridges, will be returned to ammunition supply points for proper disposal, vice being discarded in training areas.

4. Camouflage activities are restricted by host installation regulations.

5. The intentional spilling of oil is prohibited. Department of Defense instructions on the discharge of oil or other hazardous materials will be strictly observed. These directives require compliance with the National Oil and Hazardous Substances Pollution Contingency Plan. Each installation/component has a Spill Prevention and Control Countermeasures Plan.

6. All solid wastes will be disposed of in sanitary landfills in an approved manner as directed by host installation procedures. Sanitary landfills are the only approved means of solid waste disposal.

7. Human waste collection facilities will not pollute groundwater or endanger human health. Chemical toilets or field latrines with concrete collection vaults are the minimum acceptable human sewage disposal facilities in troop concentration areas. Human waste residues will be collected and disposal procedures coordinated with local public health officials or installation commanders, as appropriate. When available, suitable installed sanitary sewage facilities will be used. Shipboard generated sewage will be disposed of in accordance with Navy policy and other Federal regulations and laws. Discharge of untreated "black water" sewage is prohibited within the navigable waters of the United States, which include the territorial seas (3 nautical miles) and all associated inland systems of water.

8. Any portion of the exercise conducted in a foreign country will be conducted consistent with the governmental agreement.

9. Discharges into the open ocean by ships in motion tend to be diluted, thus reducing their potential impact. Most naval vessel activity will occur well offshore; thus, potential impacts of ship sewage discharges are minimized. Sewage discharges during landing operations will also be minimal.

10. Stream crossings are restricted by host installation to approved points. Vehicle washing in streams is prohibited. The use of streams and ponds in the maneuver area is restricted. No liquid discharges or refuse disposal will be allowed into water courses. Streams will be crossed at roads, bridges and fording sites as coordinated with the host installation. Restrictions on stream fording sites will reduce turbulence and the chance of accidental minor POL spillage. All vehicle and aircraft washing will be confined to wash racks as approved by the installation commander.

Question
#4
2 →

11. All bivouac areas will be thoroughly policed prior to final troop departure from the exercise area. Component commanders are responsible for the policing of maneuver areas utilized by their troops. If necessary, troops will be returned to the area to effect adequate cleanup. Exercise and installation commanders shall ensure the expeditious repair of maneuver areas in accordance with the USCINCLANT Letter of Instruction (LOI) and applicable host installation instructions.

12. All aviation operations shall be in accordance with procedures, restrictions and associated agreements coordinated with the Federal Aviation Administration (FAA). These procedures will ensure aircraft on fire fighting missions receive airspace priority over exercise aircraft. Supersonic flights are prohibited except for limited flights in authorized areas over the Atlantic Ocean. Aircraft afterburner use will be limited to situations where such use is dictated by flight safety requirements. Low level (below 1,200 feet) flight by high performance fixed wing aircraft will be limited to:

a. Takeoffs, landings, and operations in the proximity of targets within the exercise airspace.

b. Authorized airspace

Flight time will be minimized consistent with exercise requirements. Optimum cruise control procedures will be followed during administrative flights in order to reduce fuel consumption and pollutant generation.

Question #2 →

III. AFFECTED ENVIRONMENT

Some exercise activity may occur at the Atlantic Fleet Weapons Training Facility (AFWTF). Potential environmental impacts on the Island of Vieques (site of AFWTF ranges) were thoroughly evaluated and documented in a Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS) completed in 1980. The DEIS/FEIS evaluated environmental impacts and subsequent litigation determined that some unavoidable adverse impacts resulted from use of the AFWTF ranges on Vieques. However, these impacts were either not significant or could be mitigated so that training could be conducted in an environmentally acceptable manner.

The exercise will take place, insofar as practicable, on military reservations. Some activities may occur in rural areas adjacent to those military installations/reservations where troop concentrations and related activity will take place. No troop operations on the U.S. continent will be conducted in urban areas.

A. Natural Environment

1. Threatened or Endangered Species

The Endangered Species Act of 1973 directed the Department of Agriculture, Interior and Defense to protect endangered species and their habitats on lands which they administer when such actions are consistent with the mission of the area.

Section 7 of the Endangered Species Act requires Federal agencies to consult with the Fish and Wildlife Service and the National Marine Fisheries Service. This is to ensure that actions do not jeopardize the continued existence of an endangered or threatened species. Also, the action will not result in the adverse modification or destruction of their critical habitat. This coordination/consultation has been accomplished by installation commanders.

IS THIS TRUE?

In summary, Federal and local inventory lists of rare and endangered plant and animal species are available at each reservation. The Natural Resources and/or Environmental Affairs Departments of the installations have initiated endangered species programs and have completed, or are involved in, negotiations under the Interagency Cooperation Regulations. Established programs appear to be sufficient to ensure a successful long-range program consistent with the military installation missions and exercise activities for the protection of threatened and endangered species.

B. Socio Cultural

1. Land Use

Land use on all military installations is similar in that there is usually a main cantonment area where personnel support, housing, administration, maintenance, supply and other such related activities are located. The remainder of the reservation is devoted to training ranges, including impact areas, safety zones, maneuver areas and/or areas necessary for the accomplishment of the base mission, e.g., training ranges, runway, hangar areas, etc.

In most instances, off-base areas surrounding the military reservations have developed as commercial/residential areas dependent upon the economy of the military base. Other areas surrounding installations, and not dependent upon it for economic viability, are generally agrarian in nature.

2. Parks, Historical and Cultural Properties

National Register properties are located on some host installations. These installations, in coordination with their respective Office of Historic Preservation, have developed and implemented plans for protection and enhancement of historic properties. These properties will not be affected by the proposed exercise.

On the Island of Vieques, an archeological survey has revealed the presence of national resources of potential importance. Artifacts give evidence of early Indian inhabitation of the area. The known location of archeological sites at the installation have been identified and are shown in the "Cultural Resource Reconnaissance Survey for the Vieques Naval Reservation." The exercise has been planned to avoid such known sites. Any unidentified sites found by exercise participants will be marked. COMNAVFORCARIB is to be notified of any new discoveries.

C. Infrastructure

1. Water and Sewer Systems

For the most part, host military installations have their own water and sewer systems. Installation sewer systems are connected to a treatment plant, providing at the minimum, primary treatment with effluent being discharged to a receiving water. In remote locations an on-station activity may be served by a septic system. Each installation treatment plant meets local and Federal standards for effluent discharge. Maneuvering units training on an installation are required to adhere to installation regulations and service Standard Operating Procedures (SOP) for field hygiene and sanitation. This SOP requires that the minimum acceptable sewage disposal facility for personnel concentrations engaged in field training exercises (FTX) is the chemical toilet or concrete collection vault. Maneuvering units may employ slit trenches, pit latrines, urinal pits, straddle trenches or "cat holes" in accordance with the appropriate component field hygiene and sanitation manual and installation regulations, as dictated by exercise play. However, host installations directives will govern procedures in all cases where conflict may arise.

2. Solid Waste Disposal

Solid waste generated by the exercise components will be collected and disposed of in accordance with host installation procedures. In all instances, these procedures require that all solid wastes be collected and disposed of in a sanitary landfill. In most cases, the landfill is located aboard the installation. Each installation has specific guidelines pertaining to the logistics of the trash collection system (e.g., GI cans, dumpsters or trash bags) including the responsibilities for delivery to the landfill. It should be noted that no installation allows disposal of solid wastes outside the landfill by burial, burning or other means. Special Operating Forces (SOF) may bury their solid wastes when no other means of disposal is available. Appropriate field manuals will be followed to ensure that SOF wastes are buried at sufficient depths to preclude animals from detecting and uncovering the disposal pit.

3. Utilities

Electric power and telephone services are available at all host military installations. In some instances, the installation supplements power purchased from private or public utilities with peak load generating plants and/or operates on-base telephone systems. Field units will be operating under combat conditions and will require mobile power sources. Field headquarters will utilize field generators to power communications equipment and lighting.

IV. ENVIRONMENTAL CONSEQUENCES

A. Physical Environment

1. Geology

The proposed exercise will not have any impact on the geologic formations within the proposed exercise areas. This determination is based on the small scale of actual field maneuvering and related military activity. No major construction activity is planned as part of this exercise.

2. Topography

The topography of military installations where concentrated exercise activity will take place will not be altered by the movements of vehicles and troops to and from the headquarters bivouacs in the deployment/redeployment or during the employment of those troops conducting field maneuvers. Some limited beach damage will occur in the vicinity of the landing operations from heavy trucks, cargo handling equipment and tracked vehicles. If soils are disturbed on sloped areas, the problem of erosion of exposed soils will be accelerated during periods of heavy rainfall. If erosion goes uncontrolled or occurs on a large scale, receiving bodies of water could suffer detriment. Training maneuvers occur on host installations on a regularly scheduled basis with seemingly little significant adverse effects on topography features. It has been determined that no significant impact on topography will occur as a result of the exercise. This exercise is consistent with the Vieques Soil Erosion Control Plan.

The majority of SS-87 activity consists of the insertion of mobile troops in a field environment. Component maneuver elements will remain mobile within the confines of host installations. The passage of heavy trucks and equipment will be over established roads for the most part. This type of traffic will have minimum impact on local soils.

Off-road movements by maneuvering units (track and wheel) do have the potential for significant localized and long-term impacts. However, most of the off-road movements will occur within existing tracked vehicle maneuver areas. In those areas not maintained by trails, vehicle tracks will compact the soil and crush the existing stabilizing vegetation, consisting of shrubs and ground covers. In high traffic or maneuver areas, the surface layer will be seriously damaged, exposing the less fertile sandy subsoil which is less capable of supporting vegetation. In areas where the vegetation is destroyed or damaged, loose soil will be subject to the erosive effects of wind and rain until such time as sufficient vegetation has recovered to stabilize the soil. Prevailing winds and rainfall tend to fill in the low areas with soil until vegetation is established. As vegetation develops, there will be a tendency for ruts to occur. Thus, without repair, the scarred surface could become a permanent mark on the terrain. In areas where the surface layer is destroyed and the subsoil exposed, natural stabilization may not occur for several years after the exercise. In sloped areas, the disturbed areas could continue to be subjected to water erosion until corrective actions were taken, resulting in increasing siltation of adjacent streams with every rain. Thus, to preserve the ecological status quo, as well as the tracked vehicle maneuver areas, repair to these areas by grading and/or seeding may be required by host installations. Because of the relatively low mileage per vehicle in an off-road mode, the total impact on soils as a result of the exercise, although considered adverse, is not considered significant.

The operation of vehicles over vegetated terrain will result in increased sediment loads and turbidity from run-off in receiving waters during periods of heavy rainfall. This impact will continue to exist after the redeployment of personnel until the affected areas are revegetated. If natural recovery is allowed, with no impetus in the form of mulching or seeding, then the process will minimally require one complete growth cycle, i.e., surviving vegetation must grow, go to seed and the seeds must take root. Dependent upon the type of groundcover, this may require in excess of one year.

3. Groundwater

Troops operating in cantonment areas will use existing water and sewage facilities. In some locations, potable water dispensing facilities are available for field headquarters which will use approximately 60 gallons per man per day. Field elements will require 5 gallons per man per day. In field locations, water will be either brought from an existing source (water point) by trailer, or obtained on-site from an existing water source and treated by a portable treatment system. Purification equipment will not be backwashed into water sources since backwashing produces water that is high in suspended solids. This water will be discharged to a soakage pit constructed in accordance with the applicable component service field manual. All soakage pits for personal hygiene and other "gray" water will be similarly constructed. Sewage generated by bivouac personnel will be collected from "porta potty" facilities or similar structures and discharged to the installation sewage plants or approved septic systems.

These procedures are not anticipated to overly tax existing systems and should minimize the adverse potential impacts that could occur from concentrations of personnel.

Maneuver elements will utilize slit trenches, pit latrines, urinal pits, straddle trenches or "cat holes" constructed and maintained in accordance with the applicable component field manual. In no instance will these types of structures be sited closer than 200 feet to a water source or in wet areas. Also, slit trenches, etc., will not be used in areas where more than 50 troops occupy an area for longer than 24 hours.

Some localized degradation of surface waters will occur from the natural purification process of soakage pit and straddle trench leachate. The distance restriction from water sources should provide ample protection of surface water quality.

Refueling of vehicles and aircraft by tankers, fuel pods, bladders and five-gallon cans all provide a potential for POL spills. In all instances of fuel storage and vehicle refueling, the component field manual for the handling of POL products will be observed. This will include the construction of an impervious berm around fuel bladders or tanks with a 500-gallon or more capacity to contain fuel if a mishap were to occur. Any POL spill greater than 25 gallons on land or any spill which produces a visible sheen on a water surface will be reported to the installation commander to ensure implementation of the Installation Spill Control and Countermeasures plan.

The extent of surface water contamination or the degree of degradation of surface water is impossible to predict. However, because of the short duration of the exercise and precautions taken to preclude uncontrolled contamination, surface water degradation, at worst, would be localized and temporary.

4. Climate

The climate of the area will not be affected.

5. Air Quality

Air contaminants will be generated by weapons firing, vehicle usage, and small power generating activities.

a. Weapons. Oxides of sulfur and nitrogen are added to the atmosphere by weapons firing in amounts which cannot be quantified because of the dispersion of troops throughout the training area. Considering the restrictions on live ordnance, the nature of the area wherein firing is likely, air volume and movement, the type of weapons used and the intermittent nature of the firing, it is considered unlikely that these contaminants will have a measurable effect on ambient air quality outside a radius of several hundred feet from the firing points.

b. Vehicles. Dust, particularly that caused by trucks, tracked vehicles or helicopters operating in unpaved areas, will be generated. Dust and other solid particulates are expected to settle out quickly. The settling rate is a function of particle size, the velocity of the transporting media, temperature, and other geophysical considerations. No effect by dust generating activities beyond an extremely localized area downwind of the source is anticipated. Dust settling on vegetation is removed by natural processes and has not caused any apparent damage to roadside areas adjacent to heavy year-round traffic routes on any of the affected installations.

c. Internal Combustion Engines. Pollutants from internal combustion engines will be widespread and will dissipate under normal climatic conditions.

In summation, there will be no significant long-range adverse impact on air quality as a result of this exercise. The exercise will result in some minor localized adverse impacts on air quality due to weapons firing and vehicle usage. These activities are consistent with normal range and maneuver area use and will not result in significant degradation of air quality. Any degradation is short-term in nature and does not exceed the assimilative capabilities of the areas.

B. Natural Environment

The impacts on the natural environment that result from the exercise will primarily consist of the destruction of natural habitat and food supplies that will occur from maneuvering troops, the amphibious operation and the Field Headquarters/Command Posts. In field Headquarters areas and other troop concentration areas, the vegetation will be trampled by the repetitive movement of individuals between functional areas. In maneuver or heavy traffic areas, vegetation, including ground cover, small trees and shrubs, will be destroyed.

In addition to the actual crushing and uprooting of vegetation, some mortality will result from damage to roots and tree trunks that may not be apparent until after the exercise. Should heavy damage occur, long-term changes in the vegetative patterns could be expected. While the vegetation destroyed will consist of ground cover, shrubs and some trees, only the ground cover could reasonably be expected to reestablish itself in a relatively short time frame. Thus, the exercise could result in a less diverse vegetative cover in the areas of concentrated activity.

The most significant impact on fauna will be the loss of or damage to natural habitat and food as a result of impacts on vegetation. It is anticipated that avian and terrestrial species will temporarily relocate to other habitat areas if disturbed by personnel.

Crossing of streams by vehicles will increase turbidity in the waters and could adversely affect the habitat of the aquatic species present. Any fording of streams by vehicles will result in the creation of avenues of erosion leading to increased siltation of the streams. Fuels and lubricants on the exterior surface of the vehicles will enter the streams during fording operations. Although washing operations are prohibited in streams, soaps and detergents from unauthorized operations would add to the impact. This pollution, plus that from runoff, will temporarily alter the natural habitat of the species present and may adversely affect some species.

In sum, exercise activity will result in disturbing some species which may temporarily relocate from their range and some mortality from vehicles and personnel is anticipated for the less mobile forms of wildlife. However, the impacts on the flora and fauna of the areas of concentrated activity are not considered to be of significant magnitude or duration to upset or significantly alter the ecological balance in the training areas. The requirements established in the previously mentioned DEIS/FEIS and litigation to protect mangroves, manatees, turtles, whales and pelicans will be carried out by the participating forces.

1. Threatened or Endangered Species

The accidental destruction or disturbance of the habitat of the endangered or threatened species remains a reality. However, the likelihood of appreciable destruction or alteration of endangered species habitat occurring, in light of the precautions taken by host installations wildlife management personnel, is considered remote. Further, should an incident occur, it is considered that damage to habitat would be minimal and would not threaten the continued existence or propagation of the species.

C. Socio Cultural

1. Economy

Land use on the affected installations will not be altered in that the location of Field Headquarters units and the maneuvering of troops in training areas is a common occurrence. SOF operations that may occur off-post should remain unnoticed by the local populations. No segment of the population other than exercise participants will be displaced by the proposal.

No residential displacement or permanent disruption of community life will occur as a result of SOLID SHIELD 87, nor will any subsequent development activities occur as a result of the proposal. The economic impact of the exercise on the local area is not readily quantifiable. However, it is considered to be slight in that personnel involved in the exercise are wholly transported and supported by their commands. Thus, there are no requirements to purchase goods or supplies from local sources.

2. Parks, Historical and Cultural Properties

There is the possibility that the exercise may damage unknown archeological or historical sites which have scientific value. This is considered unlikely as the exercise will occur in areas that have been extensively used on a regular basis.

If any site of potential historical or archeological importance is encountered during the exercise, the host installation commander will be notified. The field commander will order actions in the vicinity halted and the area marked. The installation commander, in turn, will then comply with applicable DOD and component procedures to determine the significance of the find.

No parks or recreation areas will be adversely affected by the activities that occur during the exercise. Some on-post recreational areas located in maneuver areas may be closed temporarily because of military activities that could present a safety hazard to individuals. These closures will be temporary and primarily will affect active duty personnel and their dependents.

D. Infrastructure

1. Water and Sewer Systems

The impact on the water and sewer systems will consist of increased water demand and sewage load at host installations. The increase in water demand or sewage load will not exceed the capacity of these facilities.

2. Solid Waste Disposal

Waste material will be compacted and buried at approved host installation land fill sites. No debris other than spent small arms blanks and SOF forces refuse is to be abandoned in the field. However, as previously stated, unauthorized waste disposal may occur. To preclude any health hazards occurring, base commanders will inspect the maneuver area and detain any troops necessary to properly police the area.

E. Other Potential Impacts

1. Wildfires

The possibility of an accidental wildfire resulting from the exercise is recognized. Extreme caution is imperative as wildfires may seriously affect the environment of the areas consumed and require years for nature to restore the area to pre-fire habitat conditions. Wildfires may reduce available resources, destroy wildlife habitats, endanger life (human, animal and plant), increase erosion potential, reduce nutrients, increase air pollutant levels, alter wildlife habitat patterns and generate additional primary and secondary effects too numerous to list. Fire fighting programs geared to the exercise are the responsibility of the host installation. In the final analysis, the potential for forest fires will be determined by the host installation forest fire index. Standard operating procedure of host installations will be observed.

2. Noise

Animals, particularly wild animals not accustomed to human generated noise, can be expected to move temporarily from areas where exercise noise is generated. However, permanent habitat abandonment is unlikely, minimizing potential secondary effects. Aircraft operations at airfields and landing zones will generate relatively high localized noise levels. This may prove an annoyance or nuisance factor to personnel in adjacent areas. However, such operations generally fit the normal airspace use patterns in the area. Low-level flight (below 1,200 feet), except for high performance aircraft simulating attacks on assigned targets, are generally restricted to take-offs, landings, and flights by helicopters, and observation aircraft. The exception

Questions
3:4
21

is when the Sheridan assault vehicles are deployed from aircraft using the LAPES method. At moment of drop, aircraft will be at an altitude of 50 feet or less.

Target attacks generally require low-level, high-speed flight for brief periods over a relatively small area in the target vicinity. The remainder of the flight profile flown by high performance aircraft is generally accomplished at altitudes in excess of 3,000 feet.

3. Radio Frequency Emissions

Operation of communication/radar equipment will result in localized short-term increases in nonionized radiation. There is a potential electromagnetic interference problem with nonparticipating agencies; however, electromagnetic frequencies are coordinated with a DOD agency frequency manager to reduce the possibility of interference. Observation of appropriate safe lateral distance criteria for each emitter will ensure that any hazard to personnel, wildlife or property is minimized.

4. POL Spills

In spite of precautions, there is potential for accidental POL spillage to occur. Certain discharges due to safety practices, such as those which might involve purging contaminated fuel systems, also are possible. In this light, it should be noted that Department of Defense directives state that DOD components will not discharge oil or other hazardous materials into or upon the navigable water of the United States, adjoining shorelines or contiguous waters. Oil and oily wastes should not be discharged from any Navy activity or ship within the "prohibited zone", i.e., within 50 miles of the coastline of the United States or its possessions.

F. Damage Repair

Despite the general precautions noted, accidental damage is possible. Experience in similar exercises has indicated that the effects of such damage can best be minimized by augmenting the basic precautionary measures with damage repair procedures peculiar to the exercise. Repair and clean-up procedures followed by exercise participant troop commanders and the attendant use of participating engineer personnel will minimize the effects of accidental damage to military installations. Damage to roads, pine plantings, drainage structures and other natural or man-made features will be expeditiously reported via the nearest telephone or radio facility to the appropriate host installation's Public Works activity.

G. Indirect Effects

Long-term, indirect effects include the increased ability to develop realistic USCINCLANT plans, higher levels of proficiency for the combatants and greater understanding and cooperation among the Joint Services.

Exercise activity will not preclude future use or enjoyment of any significant natural or depletable resources; nor does it commit these resources to a long term requirement.

H. Energy Requirements

The energy resources required by the exercise, as well as the attendant resources required for planning and executing the exercise, will be consumed should the exercise take place as planned. Fuel expenditure for exercise purposes occurs within the framework of overall component Service and Department of Defense energy allocations and programs and is not in excess of these allowances.

In summation, the exercise, as planned, will not produce a significant effect curtailing the beneficial use of natural or depletable resources. Further, the exercise does not constitute a commitment of resources to some future requirement. Conservation of natural and depletable resources was an integral part of the exercise planning process.

V. PROPOSAL EVALUATION AND CONCLUSION

The proposed exercise as described and assessed in this document and in other environment statements and assessments for EXOTIC DANCER V and VI, SOLID SHIELD 74 through 85 and the Atlantic Fleet Weapon Training Facility Draft/Final Environmental Impact Statement (1980) is not expected to result in significant environmentally based controversy. The potential for accidental environmental damage is realized and mitigating measures have been built into the exercise scenario to mitigate significant environmental damage from occurring during the exercise.

It is concluded that no environmental impact statement is required, and a finding of no significant impact is appropriate. The exercise will be monitored to ensure that mitigating measures are implemented by participating units.

Fred

Fred Estes, Planning Branch
Public Works Bldg. 1005
Camp Lejune, NC 28542

November 17, 1986

Dear Mr. Estes,

In response to your inquiry regarding environmental hazards associated with the Mastiff RPV system, the following sound level information is provided. Please note that the information pertains to the Pioneer RPV system, because we do not currently have Mastiff sound data. I believe the information is generalizable however, and useful in determining conservative hearing protection requirements.

Sound level measurements and noise dosimeter measurements were sampled at various locations to assess noise levels. The results are noted below:

Sound Level Measurements

| <u>Locations</u> | <u>dB(A)</u> |
|----------------------------|---------------|
| RPV (500-6000 RPM) | |
| 3 feet | 113 (average) |
| 5 feet | 118 (average) |
| 10 feet | 103 (average) |
| 20 Feet | 93 (average) |
|
Ground Control Station | |
| 30 feet from running RPV | 91 (peak) |
|
Maintenance Shelter | |
| 20 feet from running RPV | 93 (peak) |
|
Tracking Control Unit | |
| 30 feet from running RPV | 97 (peak) |

Noise Dosimeter Measurement

Technician at RPV: Within one hour received 60-70% of allowable daily dosage (8 hour time weighted average of 85 dBA). (Reference: 29CFR Part 1910, Occupational Noise Exposure; Hearing Conservation Amendment).

Two "Wandering" Technicians: Within one hour received 2-3% of daily dosage.

In accordance with the above findings, it is recommended that:

- 1) Individuals within 50 feet of a running RPV should wear molded ear plugs or a combination headset/microphone with any type ear plug.



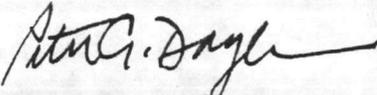
- 2) Individuals outside a 50 foot radius of a running RPV should wear protective ear cups and/or foam ear plugs.
- 3) A hearing conservation program be established for crewmen working on RPV systems. The program should include:
 - a) exposure monitoring
 - b) audiometric testing
 - c) training

With respect to Mastiff paint, the only information I could find was that the paint used is an epoxy-resin paint which is a two-part paint sprayed on the aircraft. Unfortunately AAI does not presently stock the paint and I am unable at present to determine the paint manufacturer or any cautions/warnings for that brand.

Should you require additional information, please call me at 301-628-3998.

Very truly yours,

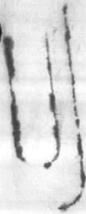
AAI Corporation



Peter A. Doyle

PAD/akn

cc: ABlack
MKeech



ENVIRONMENTAL IMPACT ASSESSMENT

This statement prepared by the Naval Hospital, Camp Lejeune, N. C. 28542, for Naval Facilities Engineering Command in accordance with OPNAVINST 6240.3E in compliance with Section 102(2)(C) of the National Environment Policy Act of 1969. 5090.1

Installation: Naval Hospital, Camp Lejeune, N. C. 28542

Project Title: Alcohol Rehabilitation Center P-702

Date of Submission:

1. Introduction

a. Project Description: Construct an Alcohol Rehabilitation Facility at the Naval Hospital Complex, Marine Corps Base, Camp Lejeune, N. C.

b. Existing Environment of Proposed Site: The land to be used by this project is owned by the U. S. Government and is located within the boundary of the Naval Hospital, Camp Lejeune, N. C. Complex. The site is located in a wooded area and contains little or no animal life. The area has adequate drainage and the area is in consonance with the master plans for the Marine Corps Base Complex.

2. Relation of proposed action to land use Plans, Policies and Controls for the affected area. This project conforms with the objectives of approved land use plans for the area affected.

3. The Probable Impact of the Proposed Action on the Environment:

a. The potentially significant effect of this action is that it:

(1) Will not introduce toxic or hazardous substances of significant amount of chemicals, organic substances of solid waste into bodies of water, on land or otherwise effect water or soil quality.

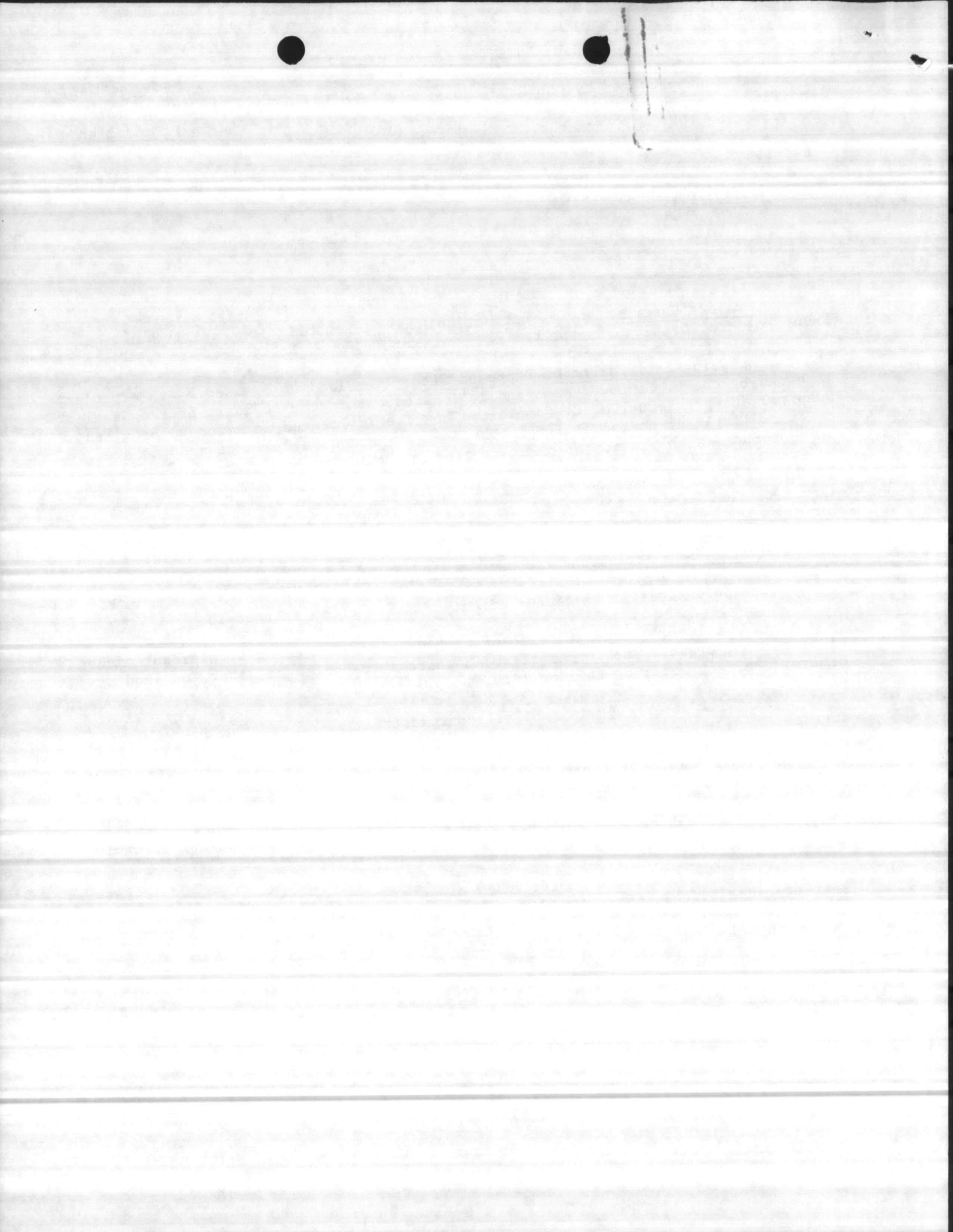
(2) Will not result in a significant destruction of vegetation, wild or marine life.

(3) Will not affect beneficially or adversely, other forms of life or the ecosystems of which they are a part.

(4) Will not cause a major change in landscape, extensive clearing, paving or excavating.

(5) Will not affect, beneficially or adversely, neighborhood character (aesthetic qualities) and zoning.

(6) Will not alter area hydrologic properties.



b. The proposed action will not have a potentially significant effect on:

- (1) Traffic.
- (2) Area appearance.
- (3) Community facilities.
- (4) Utilities.
- (5) Land management.

4. Alternatives to the Proposed Action: There is no feasible alternative.

5. Any Probable Adverse Environmental Effect Which Cannot Be Avoided Should The Proposal Be Implemented: No adverse effects on the environment are anticipated.

6. Relationship Between Local Short Term Uses of the Environment and the Maintenance and Enhancement of Long Term Productivity: Adverse effects on the environment, if any, will occur only during the construction period and these will create permanent or long-lasting adverse effects. The proposed action will enhance the short-term use of resources. Long-term productivity will be enhanced by improvement in operational efficiency.

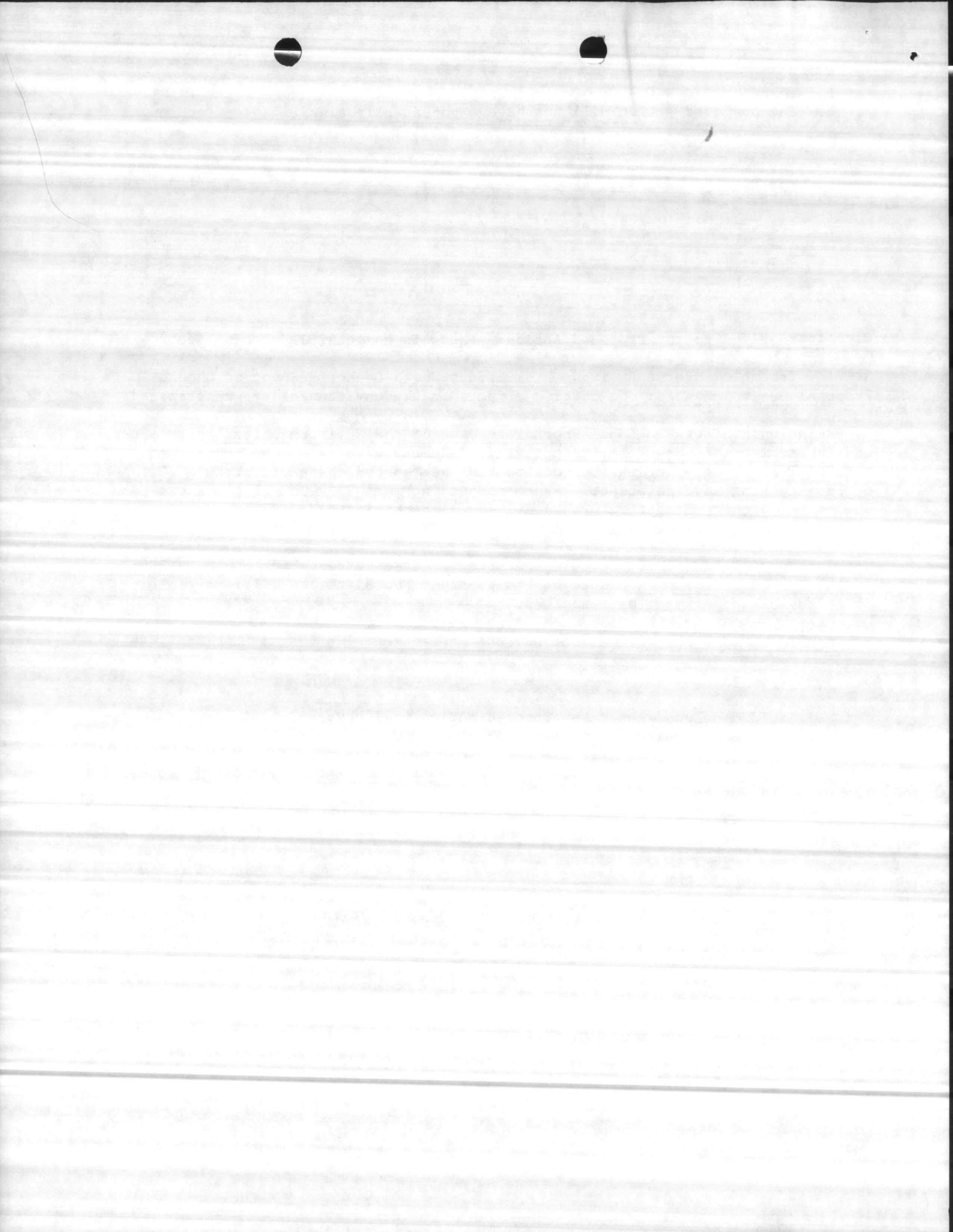
7. Irreversible and Irretrievable Commitments of Resources Which Would Be Involved in the Proposed Action Should It Be Implemented: No significant irreversible or irretrievable commitment of resources.

8. Considerations that Offset the Adverse Environmental Effects: Not applicable.

9. Summary:

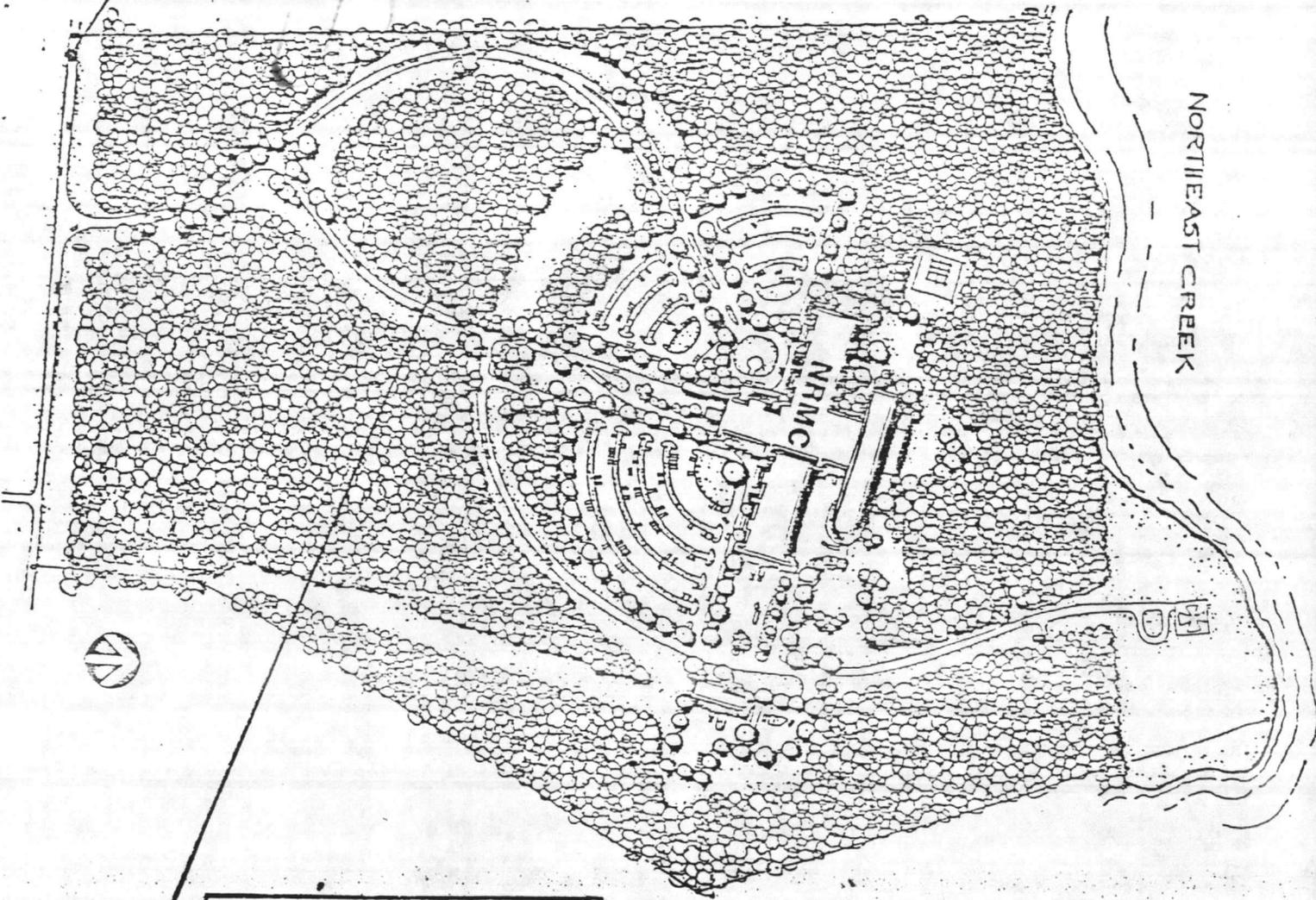
a. It is concluded that the proposed action will have no significant adverse effects on the environment.

b. There has not been, nor is there currently, any known controversy concerning the proposed action.



BREWSTER
BOULEVARD

NORTHEAST CREEK



PROJECT LOCATION
P-702

ALCOHOL REHAB. CENTER
NAVAL HOSPITAL
CAMP LEJEUNE N. C.
PROJECT P-702





UNITED STATES MARINE CORPS

MARINE CORPS AIR STATION
NEW RIVER, JACKSONVILLE
NORTH CAROLINA 28545-5001

IN REPLY REFER TO

11000

S-4

DEC 3 1986

From: Commanding Officer, Marine Corps Air Station, New River
To: Commanding General, Marine Corps Base, Camp Lejeune, North
Carolina 28542 (Attn: Assistant Chief of Staff,
Facilities)

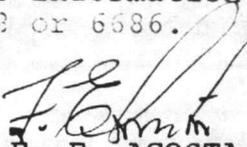
Subj: PRELIMINARY ENVIRONMENTAL ASSESSMENT; SUBMISSION OF

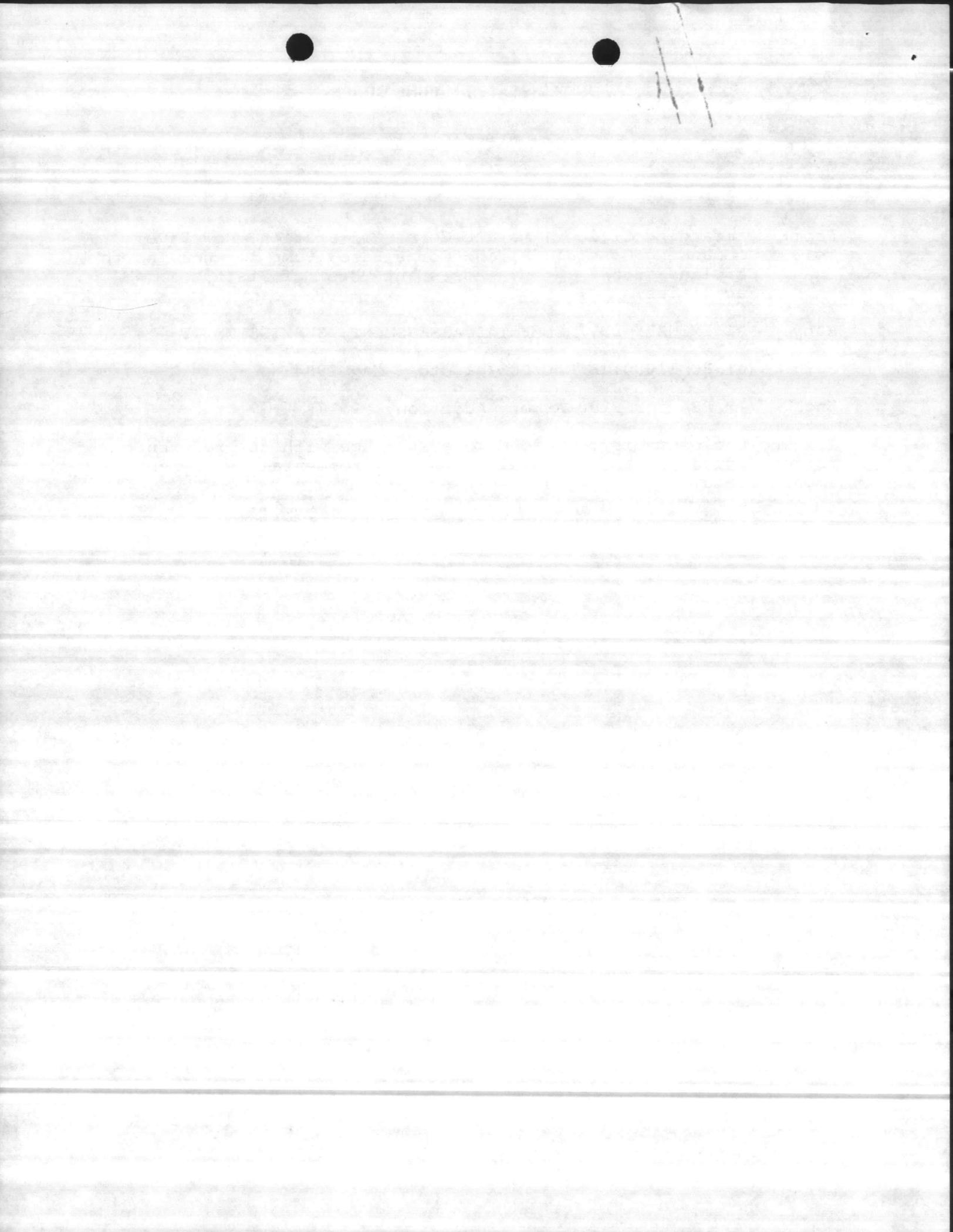
Ref: (a) BO 11000.1B FAC/DDS/el dtd 1 May 1984

Encl: (1) PEA for FY90 Armory Addition, P-517

1. The enclosure is forwarded in accordance with the reference for consideration and approval by the Environmental Assessment Impact Board.

2. Point of contact for further information is Mr. F. E. Acosta or Mrs. M. G. Briley at 451-6518 or 6686.


F. E. ACOSTA
By direction



REQUEST FOR ENVIRONMENTAL IMPACT REVIEW; SUBMISSION OF

1. Action Sponsor: Marine Corps Air Station, New River
2. Name, Address, Phone Number of Point of Contact: Mr. F. E. Acosta or Mrs. M. G. Briley, MCAS S-4 Office, 451-6518
3. FY 90 MILITARY CONSTRUCTION PROJECT P-517, ARMORY ADDITION, AS-4145

This project will construct an addition to the existing single story station armory. Additional parking and access drives are anticipated.

4. Location: See attached site location map
5. Potential Environmental Impact/Considerations:

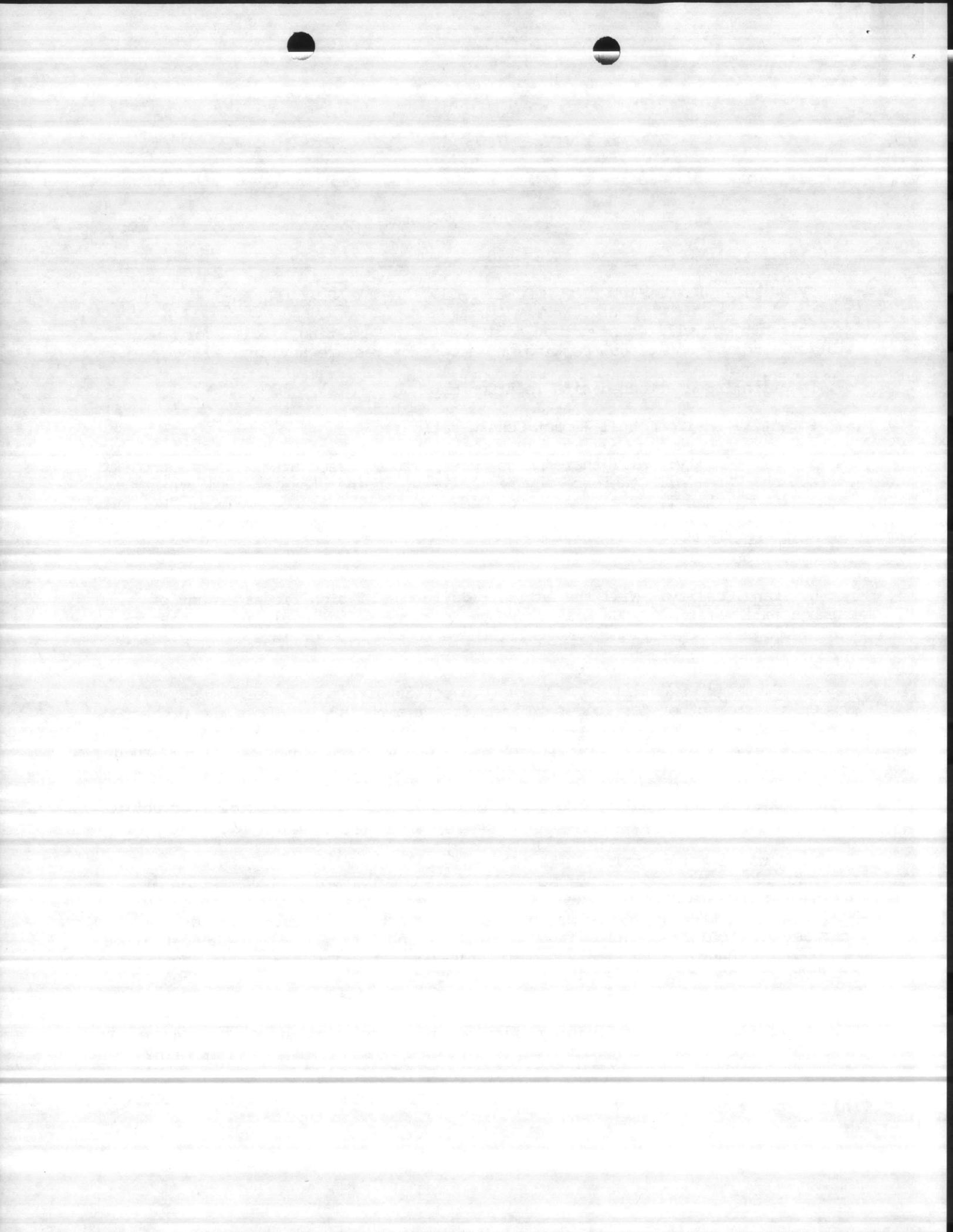
a. Air Quality: Will there be any open burning associated with the project/action? NO Will there be any new boilers, incinerators or fuel storage tanks (larger than 1,000 gallons) provided? NO Will there be any paint booths, solvent vats, degreasers or other-vapor-producing industrial processes involved? NO Will the project involve the use or disposal of asbestos? NO Will project cause dust problems? NO

b. Land Quality: Will the action require use of significant amount of earthen fill material? NO Will there be an increase in level of soil disturbance/damage to vegetation? NO Will there be one acre or more of land cleared/disturbed? NO

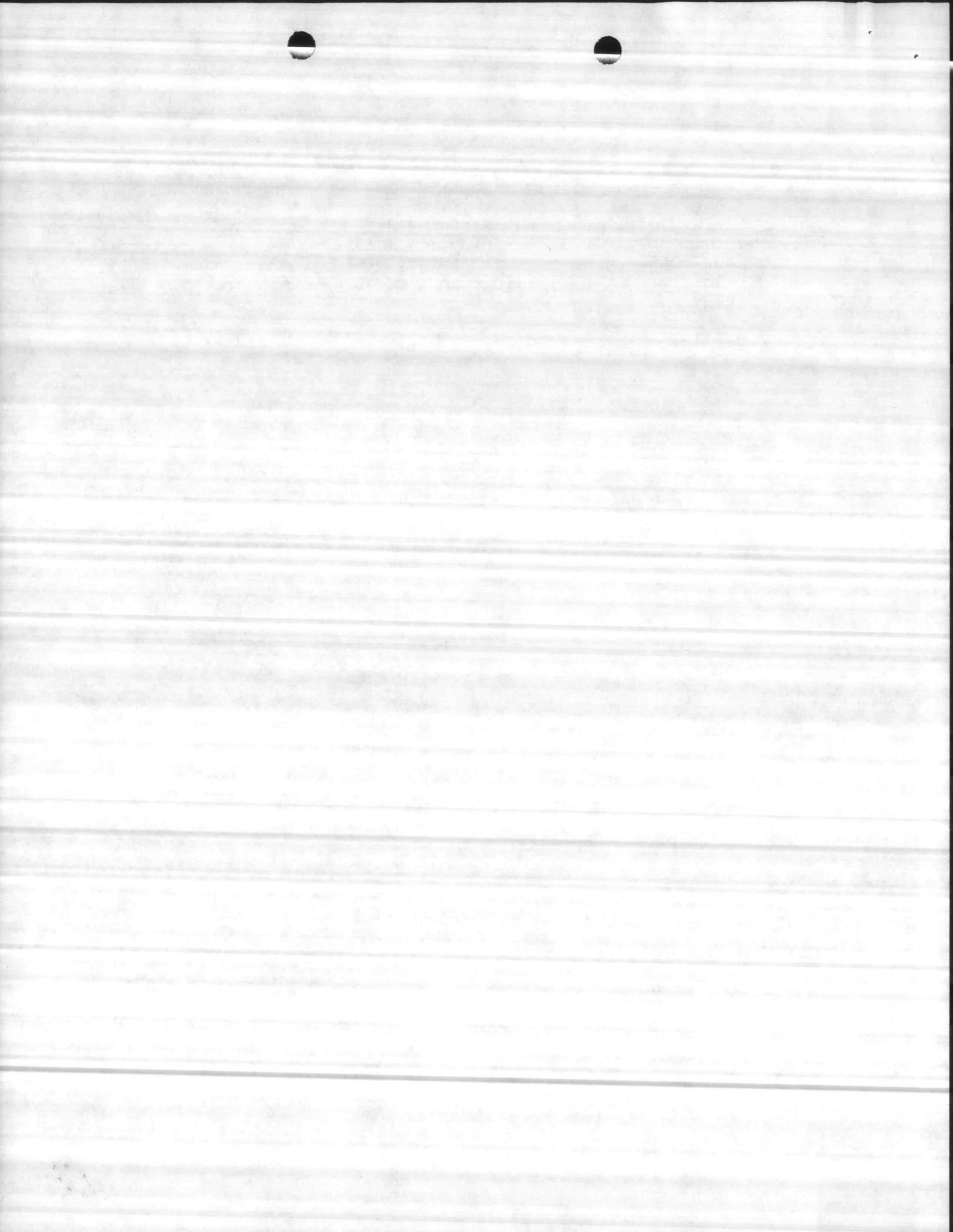
c. Groundwater Quality: Does the project involve use of herbicides, insecticides or other pesticides in significant amounts? NO Does the project involve installation/use of septic tanks, or any other on-site disposal of sanitary waste? NO Will there be any wells dug or any excavations deeper than twenty feet? NO Will any toxic or hazardous material/waste requiring disposal be used or generated by the project? NO Will there be a net increase of solid waste caused by implementing the project/action? NO Will the project or action be carried out within 200 feet of a drinking water supply well? NO

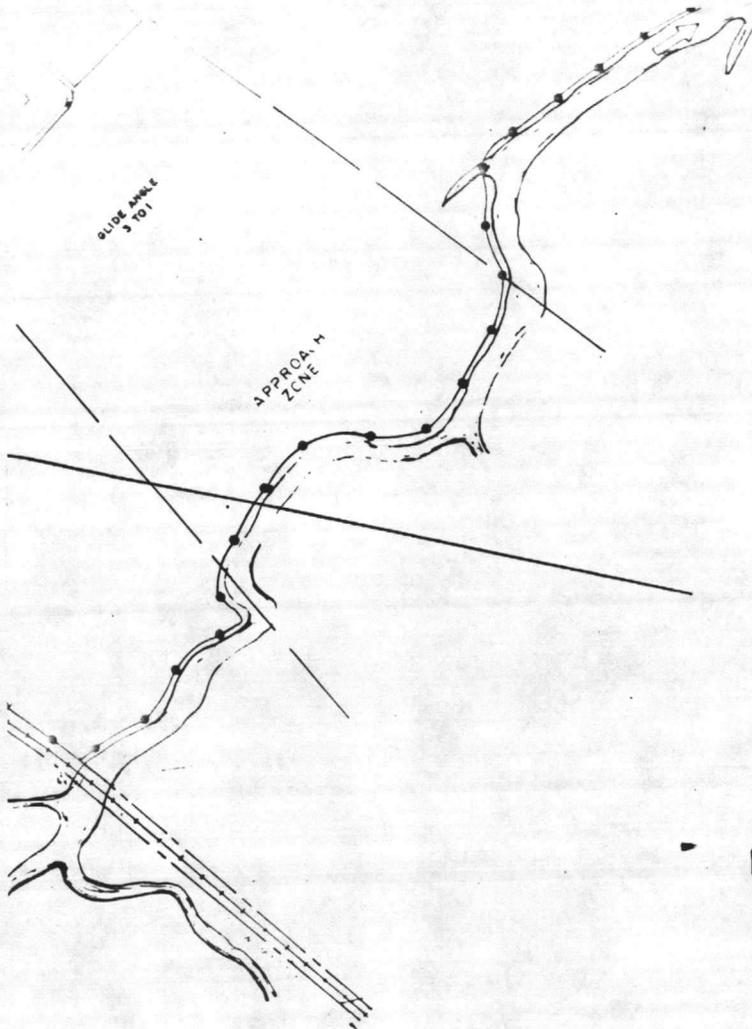
d. Surface Water Quality: Is the project located on or in a water body or adjacent 100-year flood plain? NO Will the project involve construction of drainage ditches/underground drains for purposes of lowering water table? NO Will all wastewater be connected to sanitary sewer? YES Will there be an increase in erosion/siltation from soil disturbing activity? NO Will petroleum oil and lubricants be routinely stored or used at the site? NO Will the project increase rates of surface/storm water run-off? NO

e. Natural Resources: Will there be a loss of forest land? NO Will public access for hunting, boating, fishing, etc., be restricted? NO Is there a change in land use from what is presently shown in Base Master Plan? NO Will removal of existing vegetation be required? NO Are there any known effects on any endangered species? NO Does the project involve the purchase or sale of any real estate? NO



f. Socio-Economic Considerations: Will the project cause an increase/decrease in on or off-base military population? NO Will there be any increased demand on a local or state government to provide services? NO Will there be any changes to traffic flow and patterns on or off-base? NO Will any noise, traffic, dust, etc., be generated which may affect off-base persons or property? NO Is there any known controversy associated with the type of project or action proposed? NO Are there any historical or archaeological sites affected by project/action? NO





SITE LOCATION MAP
 P-517
 ARMORY ADDITION
 MAP OF
AIR STATION AREA
MARINE CORPS AIR STATION
(HELICOPTOR)
NEW RIVER

JACKSONVILLE, NORTH CAROLINA
 SHOWING CONDITIONS ON
OCTOBER 1, 1980

[Signature]

PUBLIC WORKS OFFICER
 MGB CLNC

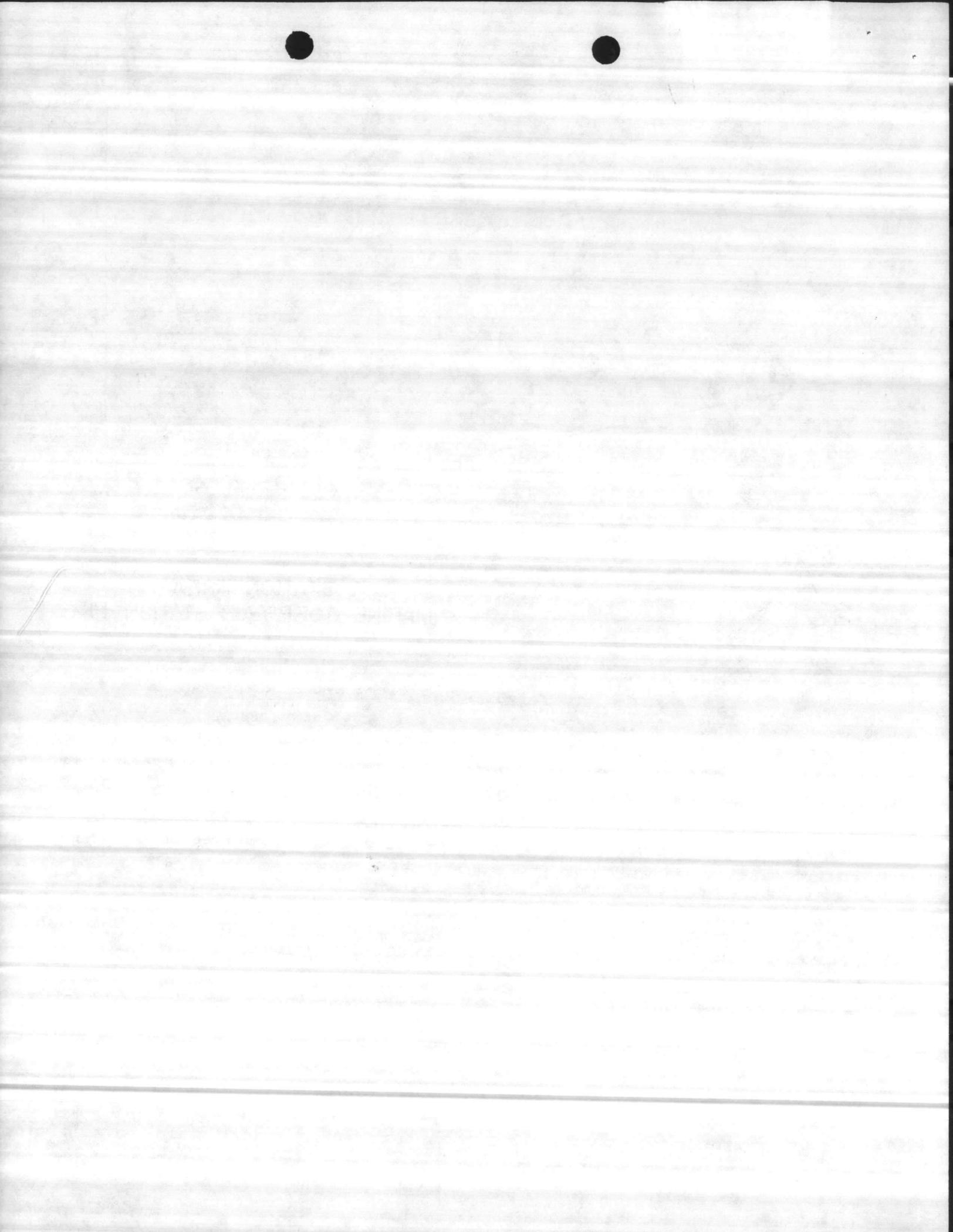
4080402
 NAVFAC DWG. NO.

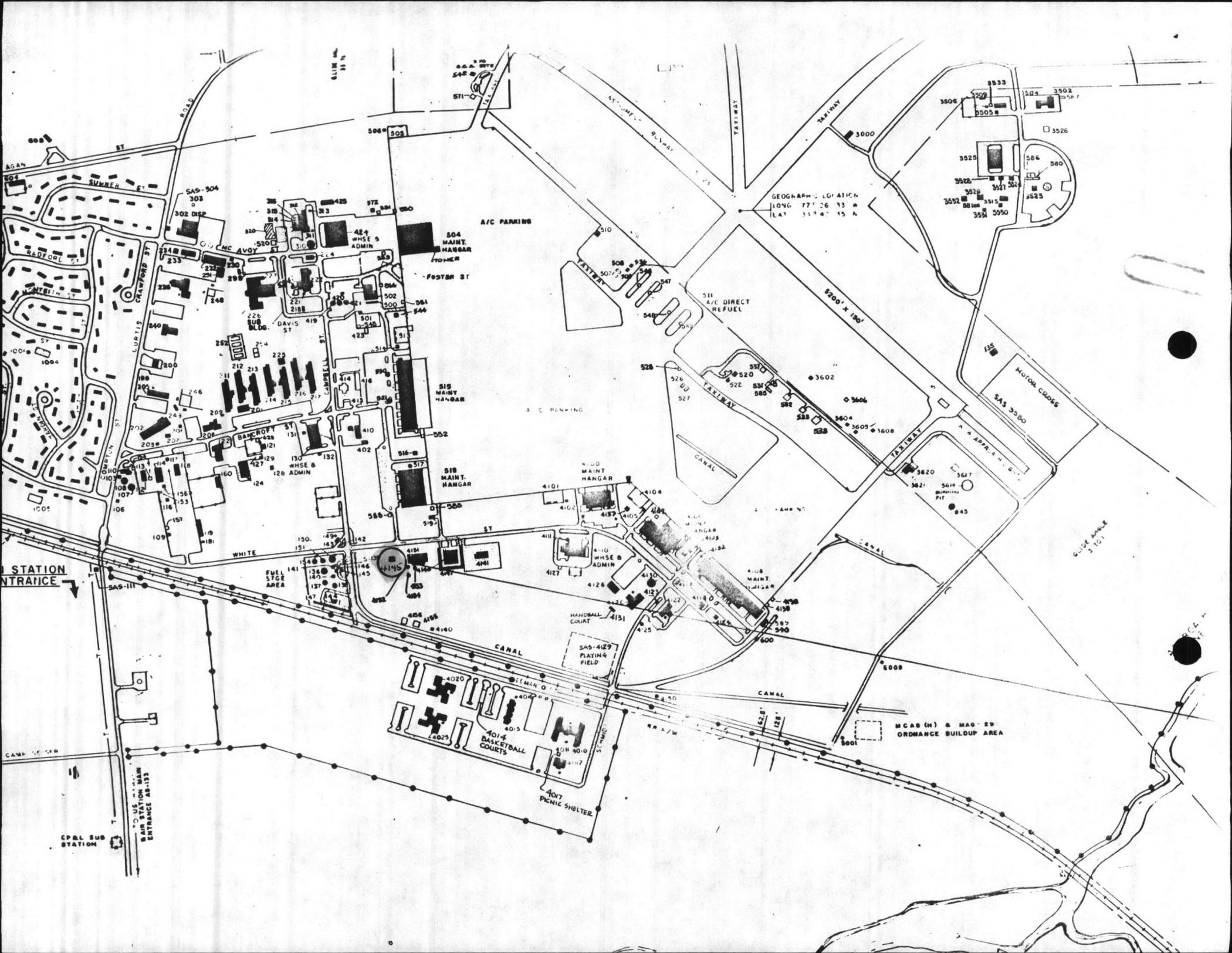
SHEET 23 OF 24

ONLY

| | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

O
 P
 Q
 R
 S
 T
 U
 V
 W
 X
 Y
 Z
 AA





GEOGRAPHICAL LOCATION
LONG 77° 26' 13" W
LAT 35° 42' 45" N

A/C PARKING

504 MAINT HANGAR

515 MAINT HANGAR

518 MAINT HANGAR

400 MAINT HANGAR

410 WHSE B ADMIN

SAS-504

SAS-502

SAS-501

SAS-500

SAS-499

SAS-498

SAS-497

SAS-496

SAS-495

SAS-494

SAS-493

SAS-492

SAS-491

3533

3520

3508

3502

3500

3500

3500

3500

3500

3500

3500

3500

3500

3500

AGAN ST

SUMNER ST

RADFORD ST

MC AVOY ST

DAVIS ST

BANCROFT ST

WHITE ST

STATION ENTRANCE

RAILROAD

CAMP

CPAL SUB STATION

US MAIL MAIN ENTRANCE

RAILROAD

RAILROAD

508

507

506

505

504

503

502

501

500

499

498

497

496

495

508

507

506

505

504

503

502

501

500

499

498

497

3500' x 100'

MOTOR CROCK

SAS 3500

MCAS (H) & MAG-29
ORDNANCE BUILDUP AREA

HANDBALL COURT

SAS-429 PLAYING FIELD

401-4 BASKETBALL COURTS

407 PICNIC SHELTER

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

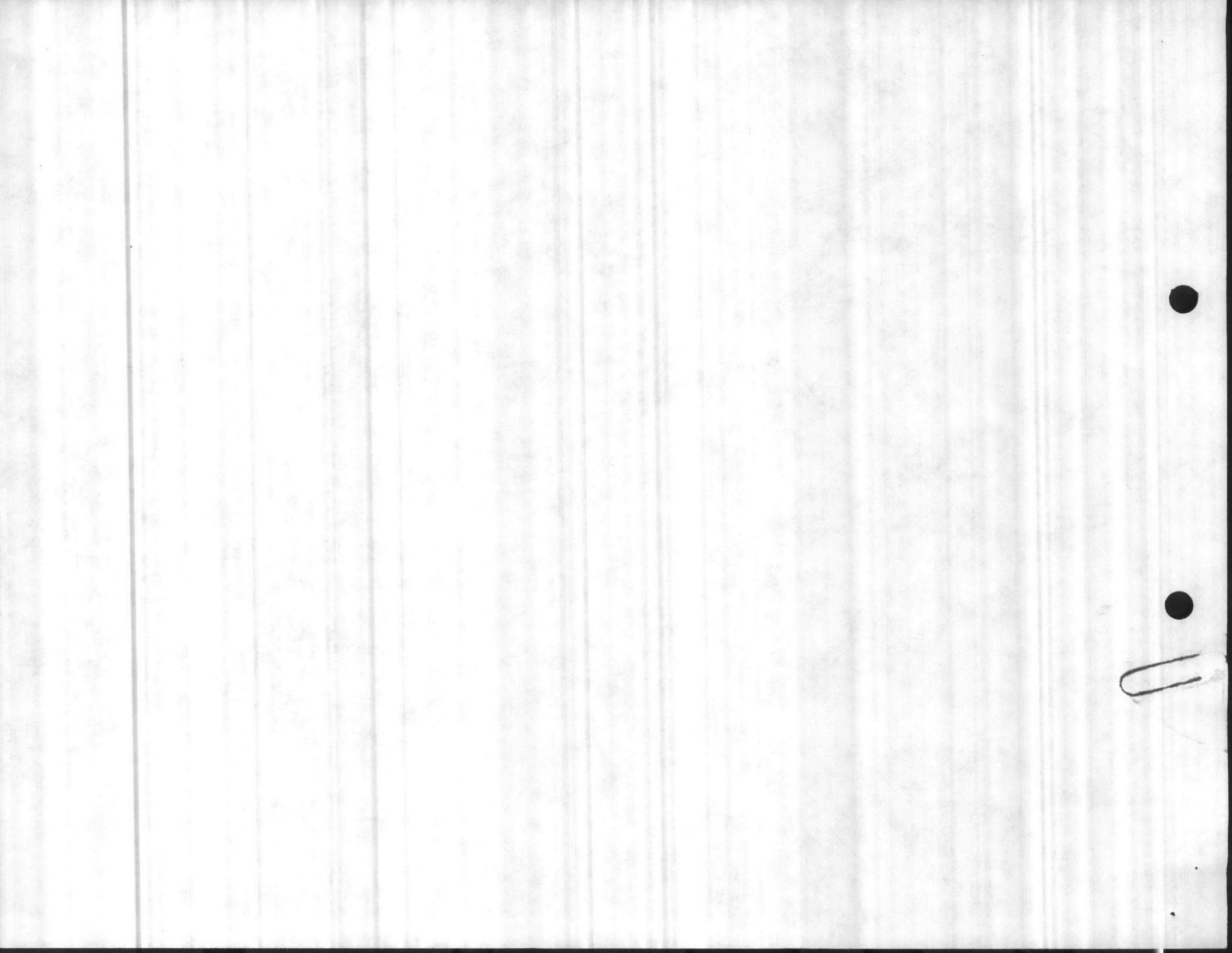
620

621

622

623

6





DEFENSE LOGISTICS AGENCY
DEFENSE REUTILIZATION AND MARKETING OFFICE-LEJEUNE
LOUIS ROAD, BUILDING 906
CAMP LEJEUNE, NC 28542-5000

IN REPLY
REFER TO DRMO-ZWM (N. Hipp/451-5652/1lp)

4 February 1987

SUBJECT: Reutilization and Marketing Facility, Project LEJ-90-M

TO: Assistant Chief of Staff, Facilities
Marine Corps Base
Camp Lejeune, N.C. 28542-5000

1. Reference: Base Order 11000.1B.
2. Enclosures 1 and 2 are submitted for an Environmental Impact Review for the subject project in accordance with the above reference.
3. The point of contact for this review is Mr. Thomas Adair, (AV) 683-6872.

2 Encl

Nadine Hipp
Nadine Hipp
Chief, Defense Reutilization
and Marketing Office

Enclosure (5)

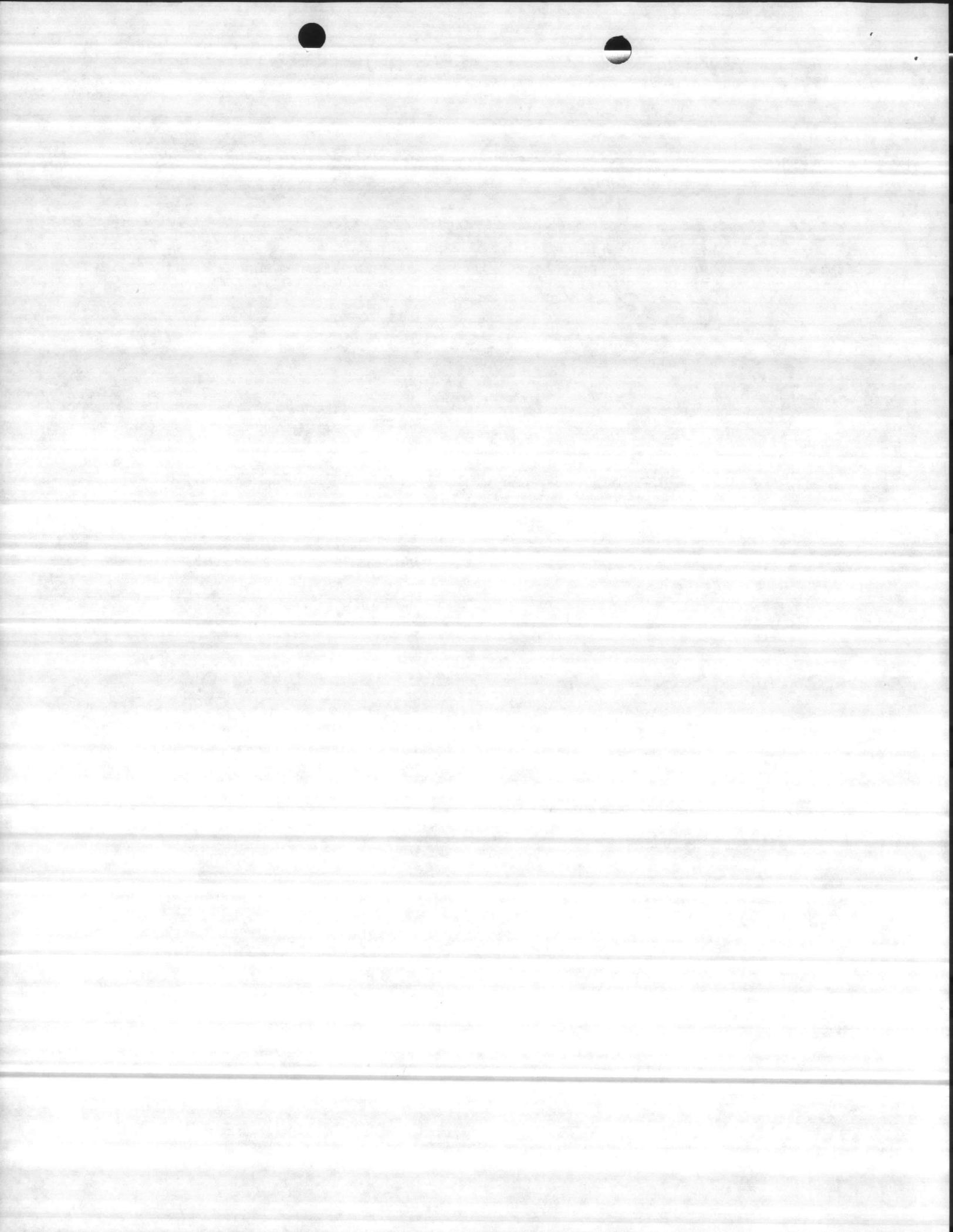


U

REQUEST FOR ENVIRONMENTAL IMPACT REVIEW; FORMAT AND PROCEDURES FOR SUBMISSION OF

1. Action Sponsor: DEFENSE REUTILIZATION AND MARKETING SERVICE
2. Name, Address, Phone Number of Point of Contact: THOMAS H. ADAIR, DRMS-LW-M,
DRMR-M, 2163 AIRWAYS BLVD, MEMPHIS, TN. 38114-5297 (AV) 683-6872
(901) 775-6872
3. Title and Brief Description of Proposed Action (state purpose, when proposed action is to occur, and any proposed environmental protection measure):

DD 1391/1391c ATTACHED



1 May 1984

4. Location: Attach a Camp Lejeune Special Map (or equivalent quality map) showing location of proposed action/project site(s).

5. Potential Environmental Impact/Considerations: (See Note 1)

a. Air Quality: Will there be any open burning associated with the project/action? NO Will there be any new boilers, incinerators or fuel storage tanks (larger than 1,000 gallons) provided? NO Will there be any paint booths, solvent wats, degreasers or other vapor-producing industrial processes involved? NO Will the project involve the use or disposal of asbestos? NO Will project cause dust problems? _____

b. Land Quality: Will the action require use of significant amount of earthen fill material? NO Will there be an increase in level of soil disturbance/damage to vegetation? NO Will there be one acre or more of land cleared/disturbed? YES

c. Groundwater Quality: Does the project involve use of herbicides, insecticides or other pesticides in significant amounts? NO Does the project involve installation/use of septic tanks, or any other on-site disposal of sanitary waste? UNK Will there be any wells dug or any excavations deeper than twenty feet? NO Will any toxic or hazardous material/waste requiring disposal be used or generated by the project? NO Will there be a net increase of solid waste caused by implementing the project/action? NO Will the project or action be carried out within 200 feet of a drinking water supply well? UNK

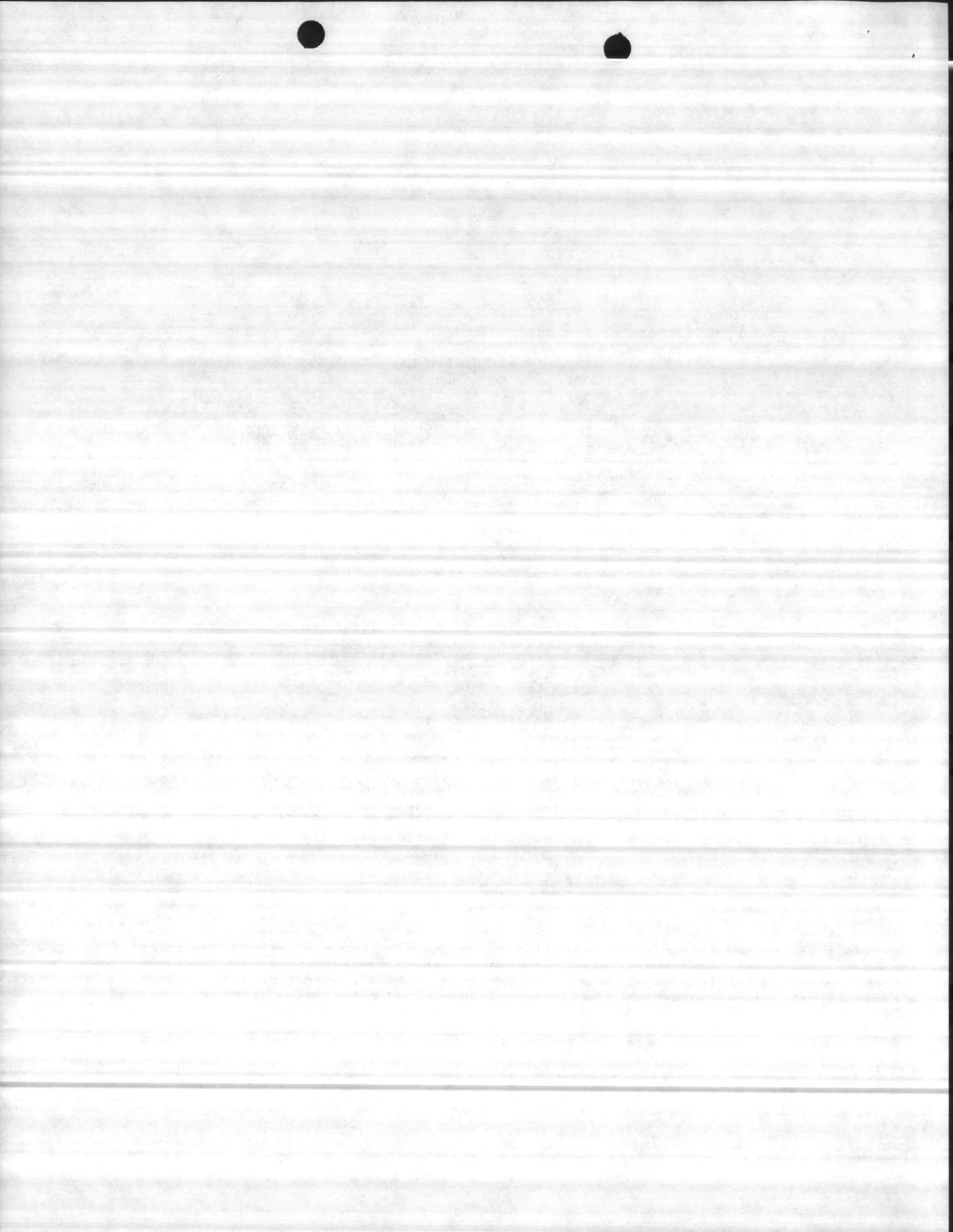
d. Surface Water Quality: Is the project located on or in a water body or adjacent 100-year flood plain? UNK Will the project involve construction of drainage ditches/underground drains for purposes of lowering water table? NO Will all wastewater be connected to sanitary sewer? UNK Will there be an increase in erosion/siltation from soil disturbing activity? NO Will petroleum oil and lubricants be routinely stored or used at the site? YES Will the project increase rates of surface/storm water run-off? YES

e. Natural Resources: Will there be a loss of forest land? NO Will public access for hunting, boating, fishing, etc., be restricted? YES Is there a change in land use from what is presently shown in Base Master Plan? YES Will removal of existing vegetation be required? YES Are there any known effects on any endangered species? NO Does the project involve the purchase or sale of any real estate? NO

f. Socio-Economic Considerations: Will the project cause an increase/decrease in on or off-base military population? NO Will there be any increased demand on a local or state government to provide services? NO Will there be any changes to traffic flow and patterns on or off-base? UNK Will any noise, traffic, dust, etc., be generated which may affect off-base persons or property? NO Is there any known controversy associated with the type of project or action proposed? NO Are there any historical or archaeological sites affected by project/action? UNK

NOTE 1. Answer either "yes", "no" or "unknown". Answers should be based on information available to the action sponsor at time of submission to the Base Environmental Impact Review Board. Do not delay the submission of this request awaiting additional information. Many environmental considerations need to be addressed in early planning stages. If additional information becomes available after submission, it should be forwarded to the EIRB.

ENCLOSURE (1)



| | | |
|------------------------------------|--|----------------------|
| 1 COMPONENT
DEFENSE
DLA/DRMS | FY 1990 MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|------------------------------------|--|----------------------|

| | |
|---|--|
| 3 INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | 4 PROJECT TITLE
RELOCATION AND CONSOLIDATION OF
FACILITIES |
|---|--|

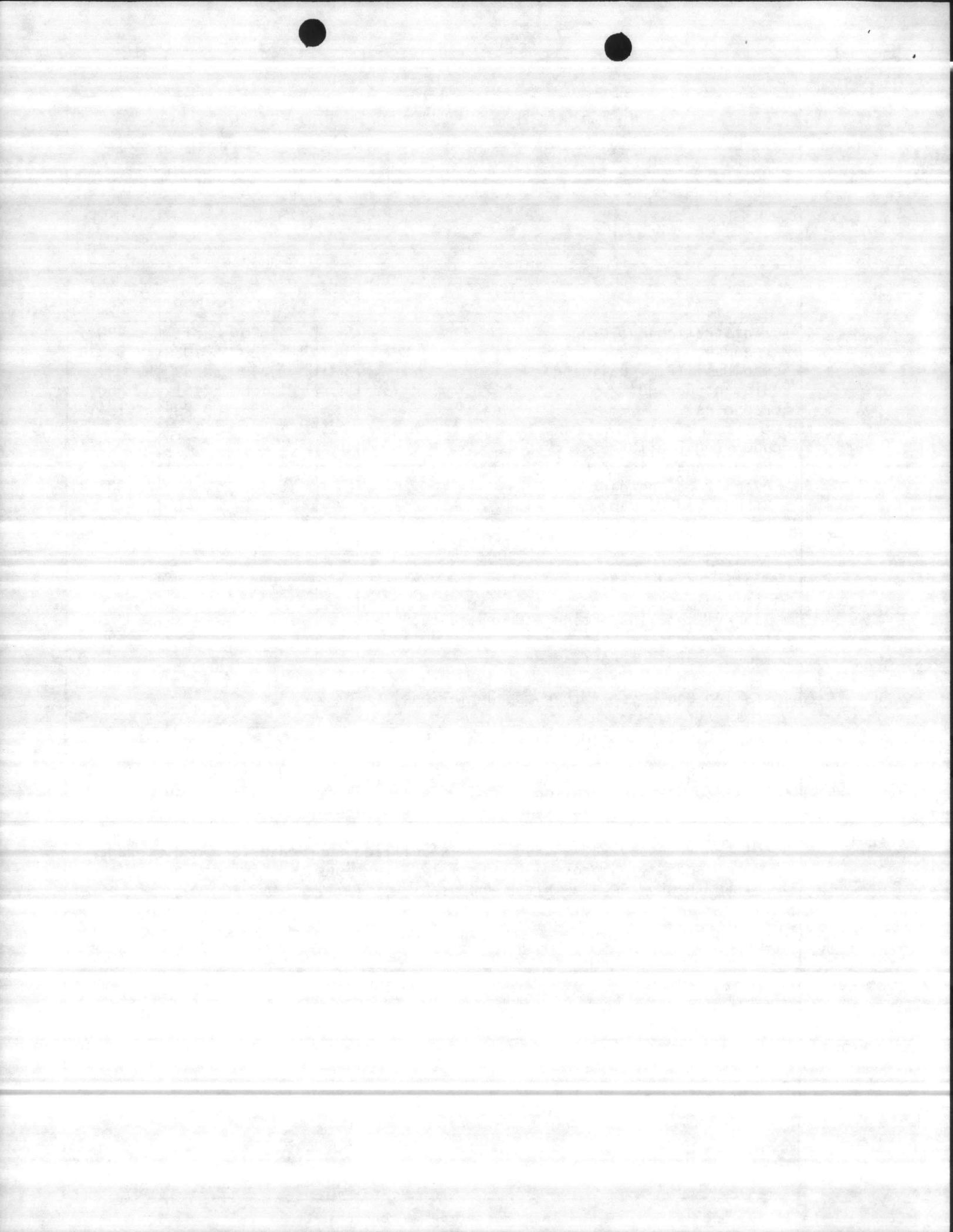
| | | | |
|-------------------|----------------------------|------------------------------|------------------------------------|
| 5 PROGRAM ELEMENT | 6 CATEGORY CODE
442/452 | 7 PROJECT NUMBER
LEJ-90-M | 8 PROJECT COST (\$000)
11,200.0 |
|-------------------|----------------------------|------------------------------|------------------------------------|

9 COST ESTIMATES

| ITEM | U M | QUANTITY | UNIT COST | COST (\$000) |
|--|-----|----------|-----------|--------------|
| Administration Building | SF | 4,800 | 102.11 | 490.1 |
| Warehouse | SF | 155,220 | 52.08 | 8,083.6 |
| Scrap/Demil/P.M. Building | SF | 1,440 | 56.69 | 81.6 |
| Equipment Garage | SF | 1,100 | 54.61 | 60.1 |
| Scrap bins | SY | 1,536 | 100.23 | 154.0 |
| Supporting Facilities | | | | 1,232.1 |
| Site preparation & utilities | LS | | | (664.3) |
| Asphalt paving/parking | SY | 16,105 | 19.09 | (307.4) |
| Stabilized storage & parking | SY | 14,800 | 8.45 | (125.0) |
| Concrete paving | SY | 1,780 | 76.09 | (135.4) |
| Estimated Contract Cost | | | | 10,101.5 |
| Contingencies (5%) | | | | 505.1 |
| Estimated Construction Cost | | | | 10,606.6 |
| Supervision, Inspection & Overhead (5.5%) | | | | 583.4 |
| Estimated Project Cost | | | | 11,190.0 |
| Estimated Project Cost, rounded | | | | 11,200.0 |
| Installed equipment (Other appropriations) | | | | 0 |

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Construct a 155,220 SF (709' x 219') General Purpose Warehouse, a 4800 SF (40' x 120') Administration Building, a 1440 SF (24' x 460') Scrap/Demil/PM Building, a 1100 SF (24' x 46') Equipment Garage and 1536 SY of Scrap bins. Open area improvements include 16,105 SY of asphalt roadway/parking, 1780 SY of concrete paving, 14,800 SY of stabilized aggregate for open storage/parking, and site improvements, utility extensions and landscaping as required to provide a complete and usable facility.



| | | |
|-------------------------------------|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 <u>90</u> MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|-------------------------------------|--|----------------------|

| |
|--|
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC |
|--|

| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|

| 11. REQUIREMENT: | ADEQUATE: | SUBSTANDARD: |
|------------------|------------|--------------|
| Covered Storage | 155,220 SF | 0 |
| Administration | 4,800 SF | 93,500 SF |
| Scrap/Demil/PM | 1,440 SF | 2,500 SF |
| Equipment Garage | 1,100 SF | 0 |
| Scrap Bins | 1,536 SY | 0 |
| Open Storage | | 700 SY |
| Paved | 17,885 SY | 0 |
| Stabilized | 14,800 SY | 17,885 SY |
| Unimproved | 137,300 SY | 0 |

PROJECT: Relocate and consolidate DRMO Lejeune into lot 203 of Camp Lejeune, NC.

REQUIREMENT: This project is required to provide open and covered storage facilities as prescribed by DoD 4160-21-M.

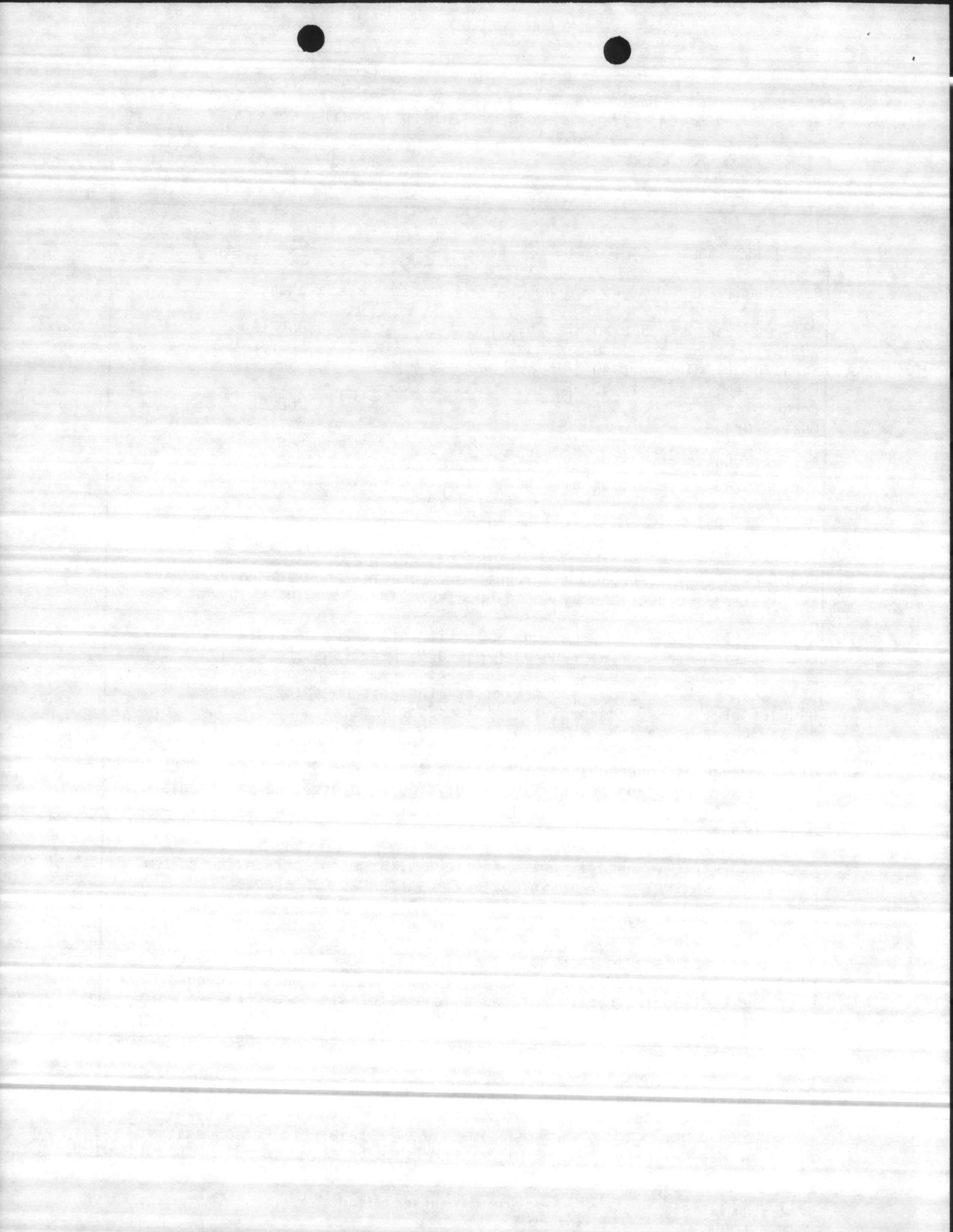
CURRENT SITUATION: DRMO Lejeune is split into three separate locations. Lot 203 is used for scrap and open storage operations and is almost 2 miles from the DRMO receiving/admin area. Items being moved to sales must be transported, outside, about 1/4 mile. There is no space to assemble bidders at the DRMO and host facilities 3 or 4 miles away are used for bidder/buyer operations.

The shortage of covered storage prevents the proper display of merchandise and the screeners and buyers find it difficult to give the merchandise adequate inspection. The lack of parking impacts the operation of good sales management.

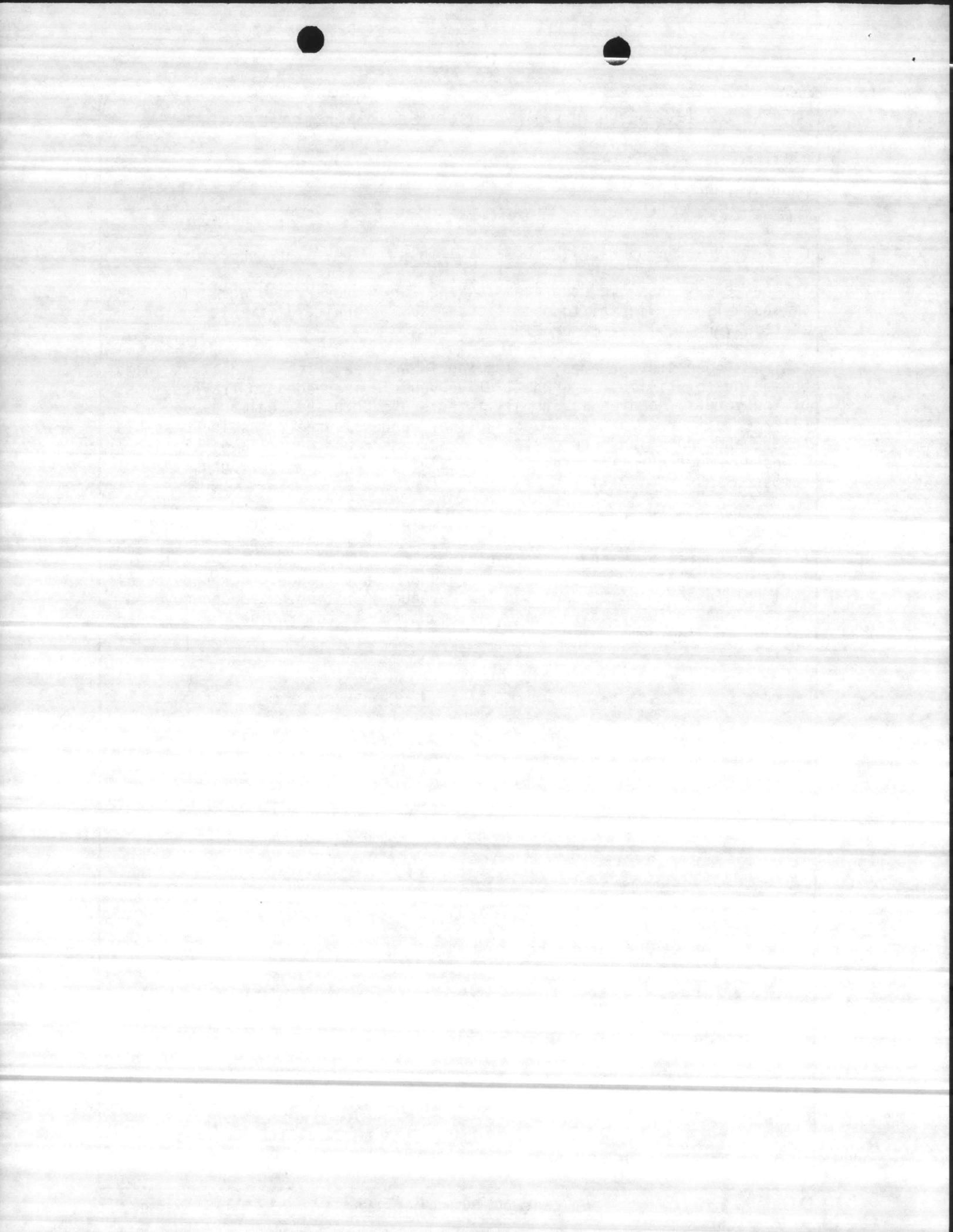
The administrative area is not sufficiently large to contain the sales/reutilization sections. These operate in a fenced off area of the warehouse. Working under these conditions is not conducive to good productivity and has a detrimental effect on morale.

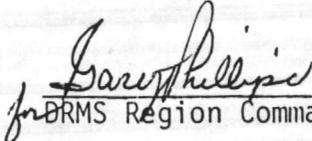
The sales area is less than half the size that it should be. About 3/4 of the sales area is needed for a sale. The gradual increase in generations over the past several years has caused the materials to be crowded into this space. The remaining 1/4 of the area is used to build the next sale. When this area is full, generations are held in the receiving warehouse, which, in itself, is inadequate.

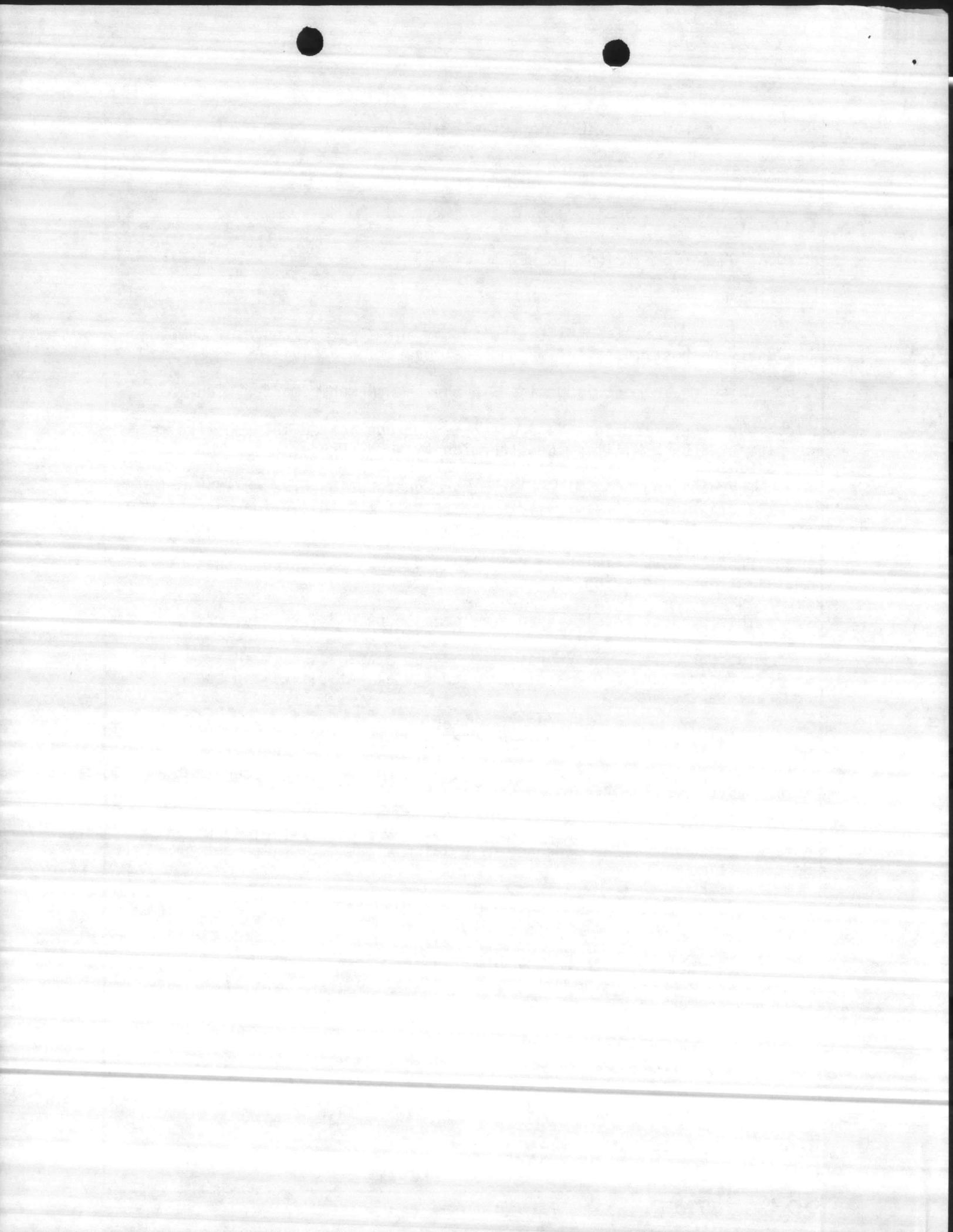
The receiving warehouse would be undersized even if the administrative functions were relocated. To complicate matters even more, certain items, which should be in the scrapyard, are stored here as protection against theft or weather. The backlog of materials to be moved to sales is evident



| | | |
|---|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M | |
| <p>in that every possible open area is used for temporary storage. The lack of space is detrimental to operation, makes screening difficult and presents a very real safety problem.</p> <p>Lot 203 (open storage area) is located in an area which the host is just beginning to utilize. A 4 wheel drive vehicle is needed to traverse most of the yard. The area is, to all intents and purposes, unimproved. In-climate weather or extremely dry weather renders large areas inaccessible to MHE and operations are curtailed. Screeners and buyers avoid inspections during these times and scrap receiving and removal are greatly hampered.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Deferral of this project will result in the continued use of substandard facilities. The open storage area will continue to be an operational and maintenance problem and will be inaccessible at times because of puddles, potholes, ruts and soft ground. Scrap disposal will remain as a substandard and low revenue operation. Crowded covered storage and administrative space will continue to compromise the assigned missions of the host and DLA.</p> | | |



| | | |
|---|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M | |
| <p><u>ADDITIONAL:</u></p> <p>a. This project is consistent with the anticipated tenure of DRMO Lejeune, the host installation and the generating activities.</p> <p>b. This requirement is defined in the DRMR-Memphis Master Plan.</p> <p>c. Work specified in this project is not duplicated in, additive to, or supplemented by a Military Construction (MILCON) Project.</p> <p>d. There has been no MILCON or Minor Construction of a related nature completed at this activity within one year of the initiation date of this project.</p> <p>e. Project work shall be accomplished by contract through the host installation engineering department.</p> <p>f. This project results in a complete and usable facility.</p> <p>g. This project is not considered a "new start" as defined in DLAR 4151.3, "Operation of Commercial or Industrial Activities and Use of Contract Services."</p> <p>h. Provisions for the handicapped will be required.</p> <p>i. This project has been reviewed and it has been concluded that a formal Environmental Assessment is not required.</p> <p>j. The proposed site is not within the 100 year flood plain or an area which suggests the presence of a seismic fault displacement in Holocene time.</p> <p>k. This project will increase utility usage of electricity at this location.</p> <p>l. This project has been developed on the basis of material and facilities surveys. Alternate facilities are not available to satisfy this requirement.</p> <p style="text-align: center;"> 
 for DRMS Region Commander </p> <p style="text-align: center;"> <u>23 Oct 86</u>
 Date </p> | | |



| | | |
|-------------------------------------|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|-------------------------------------|--|----------------------|

| |
|--|
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC |
|--|

| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITY | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|

HOST VERIFICATION

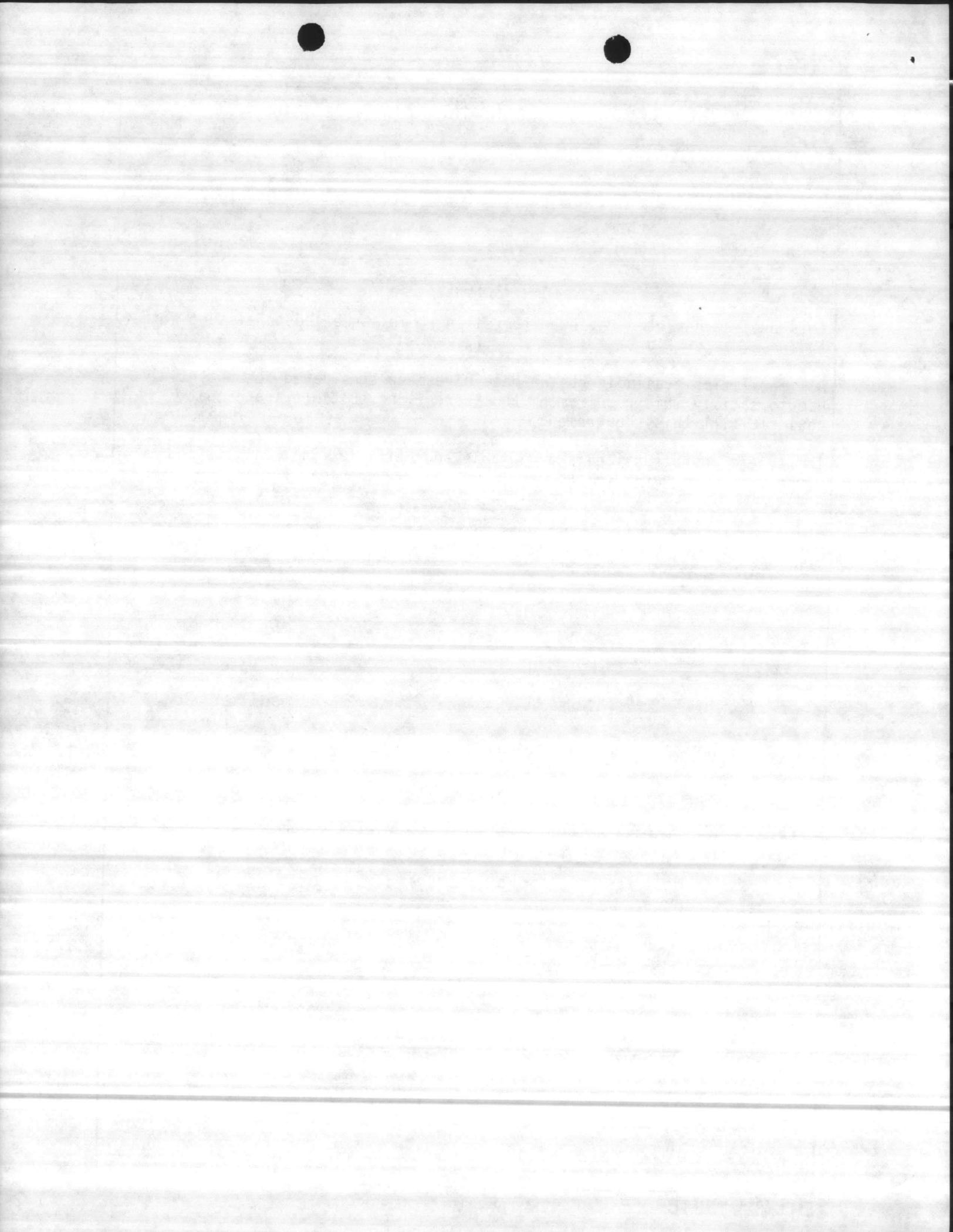
This project has been reviewed for siting compliance and consistent with the Base Master Plan.

All facilities available on the base have been considered for potential use to satisfy this requirement and there is no suitable space that could fulfill this requirement.

The type of construction is acceptable and utilities in the types and amounts required are available or are properly provided for in the project.

The requirements of Executive Order No. 11988 (Flood Hazards) are not applicable.

| | | |
|-------|----------------|-------|
| _____ | _____ | _____ |
| Title | Host Signature | Date |



1. COMPONENT
DEFENSE
DLA/DRMS

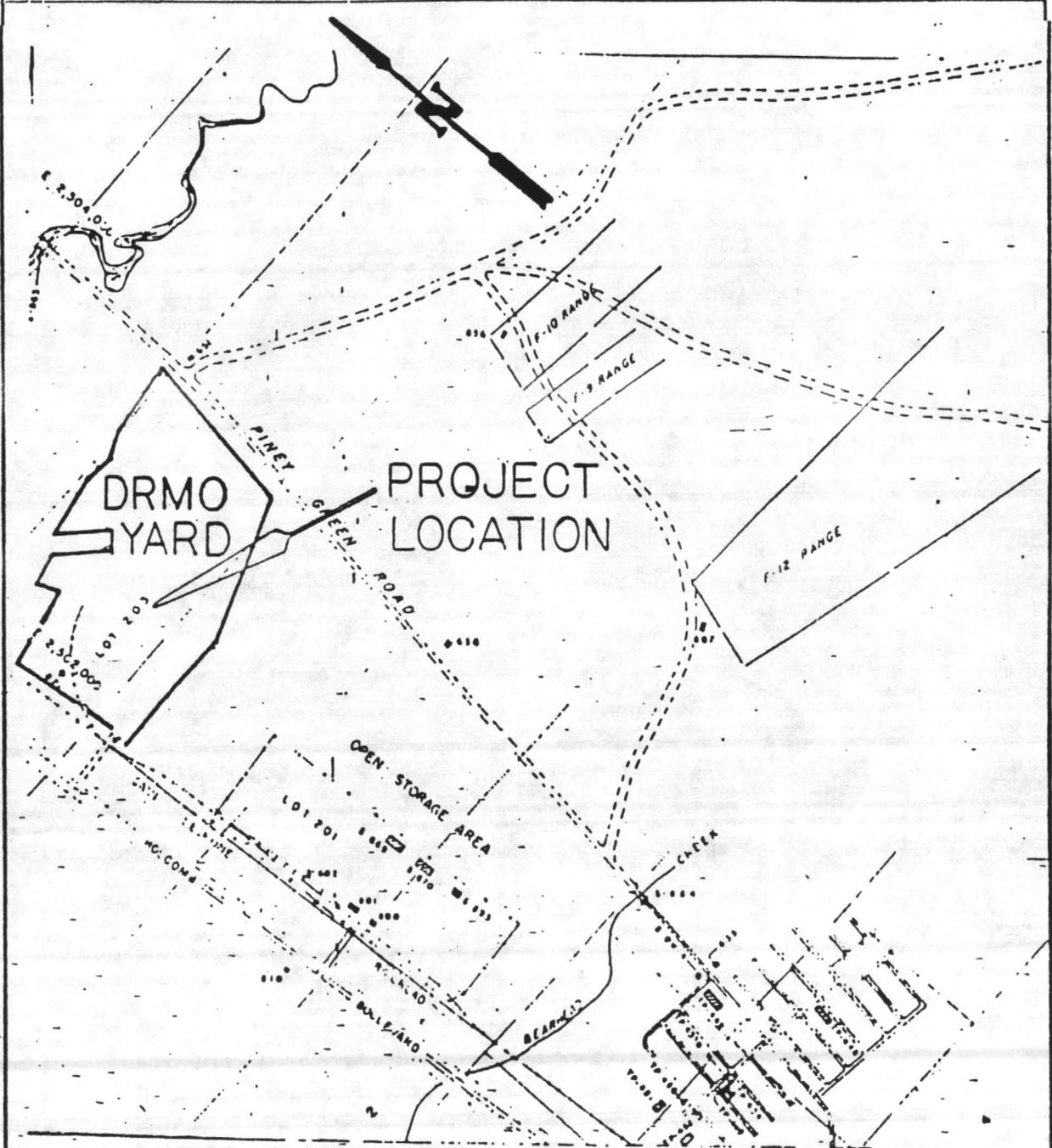
FY 19⁹⁰ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
26 SEP 86

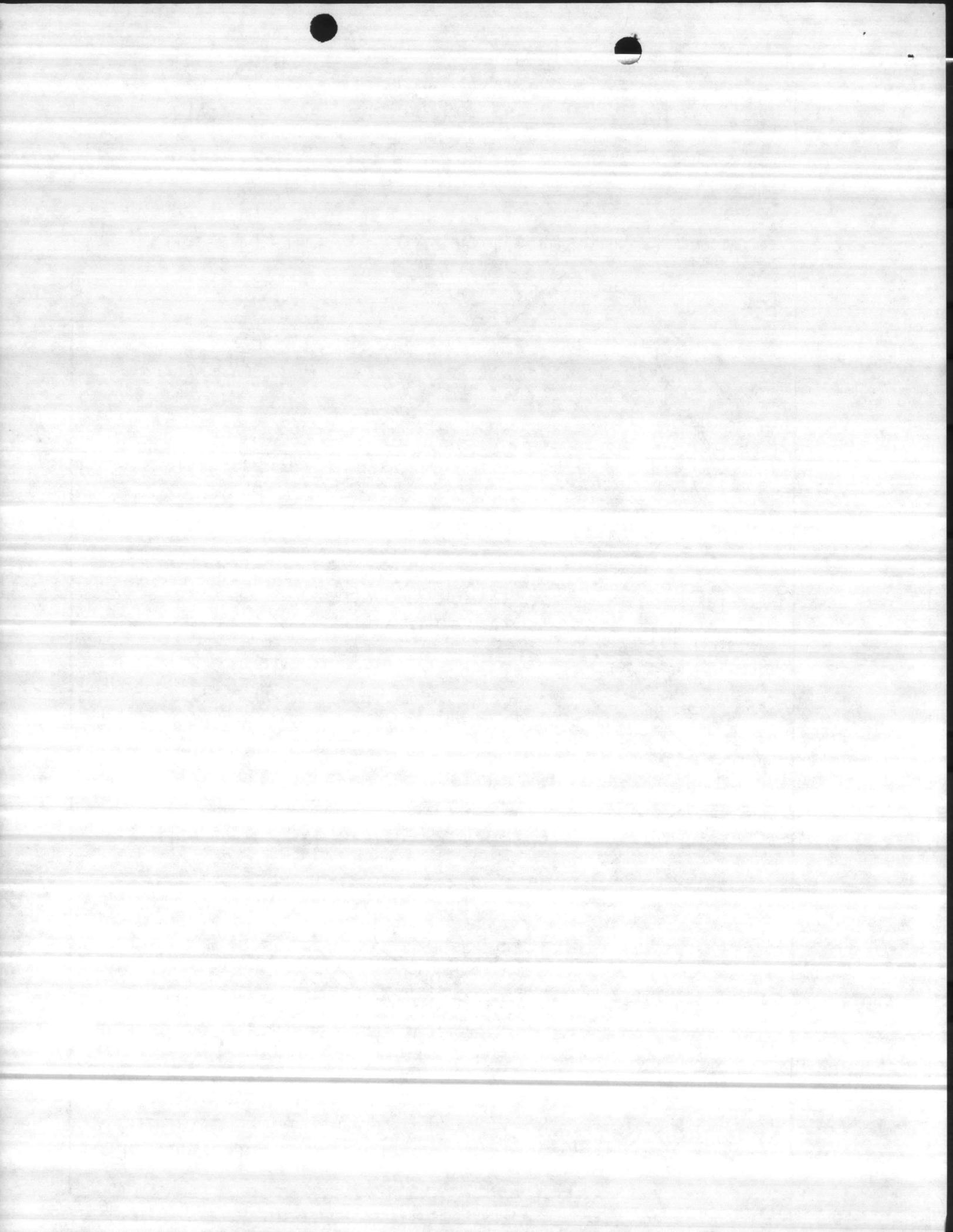
3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

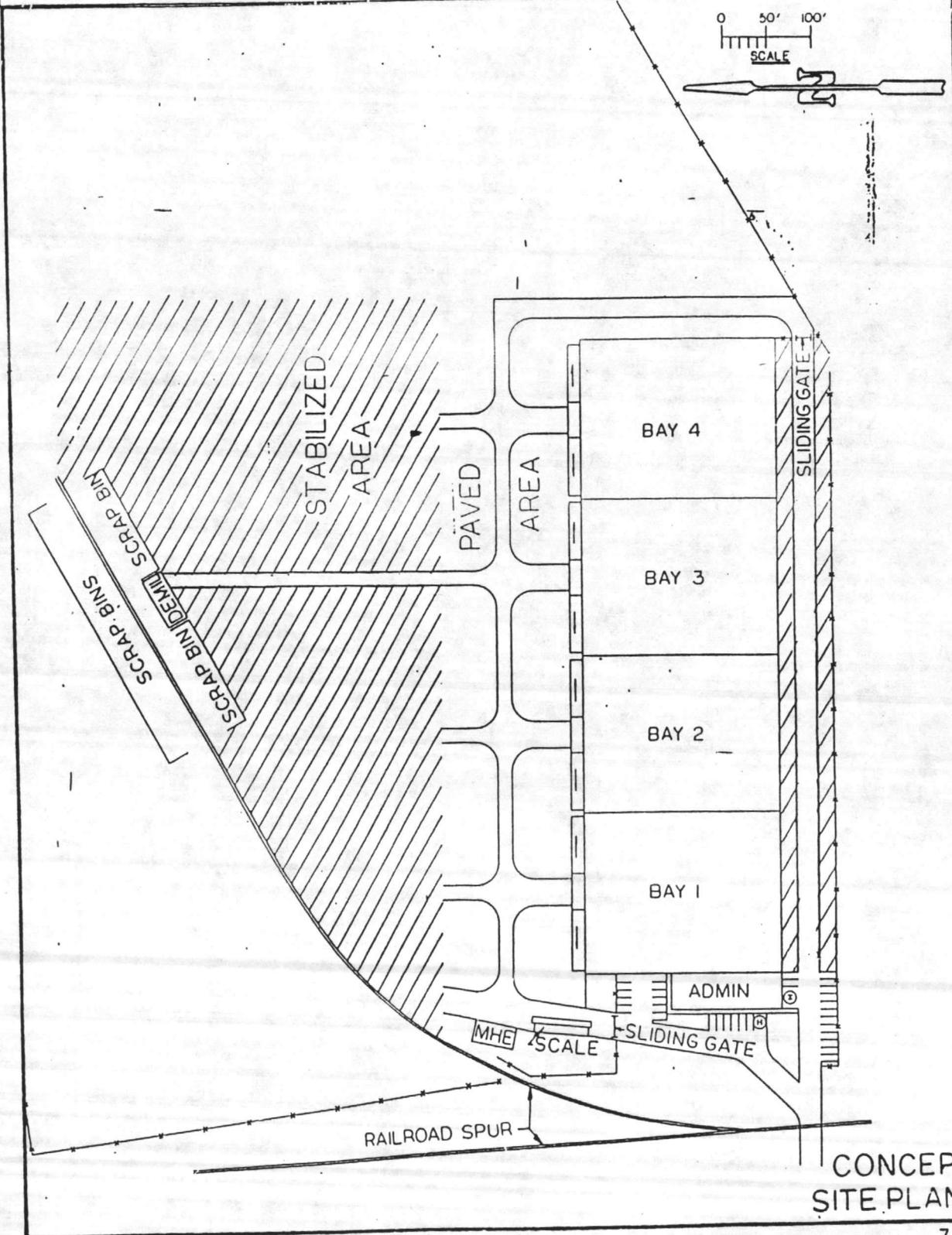
5. PROJECT NUMBER
LEJ-90-M

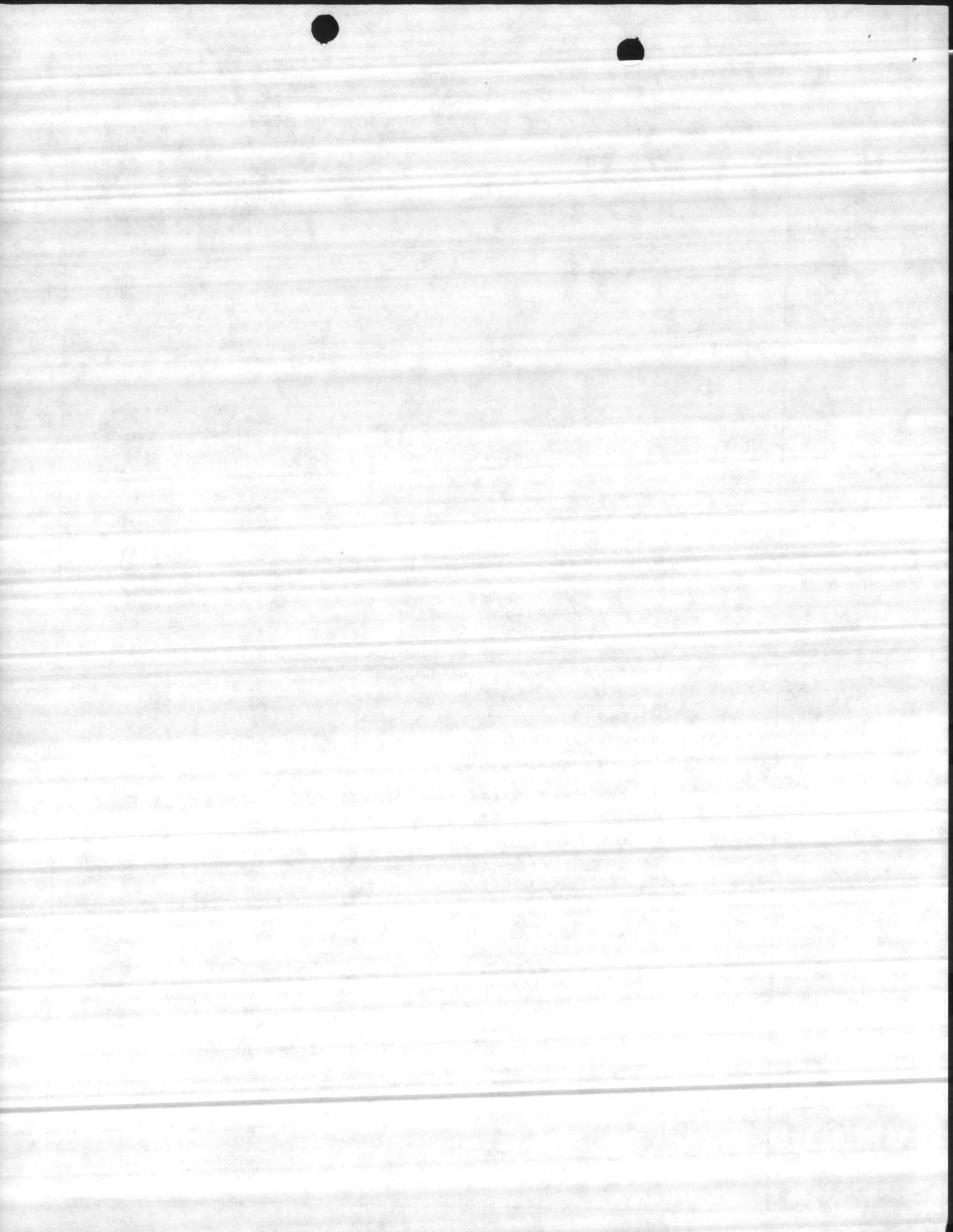


CONCEPT
LOCATION PLAN



| | | |
|--|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M | |





1. COMPONENT
DEFENSE
DLA/DRMS

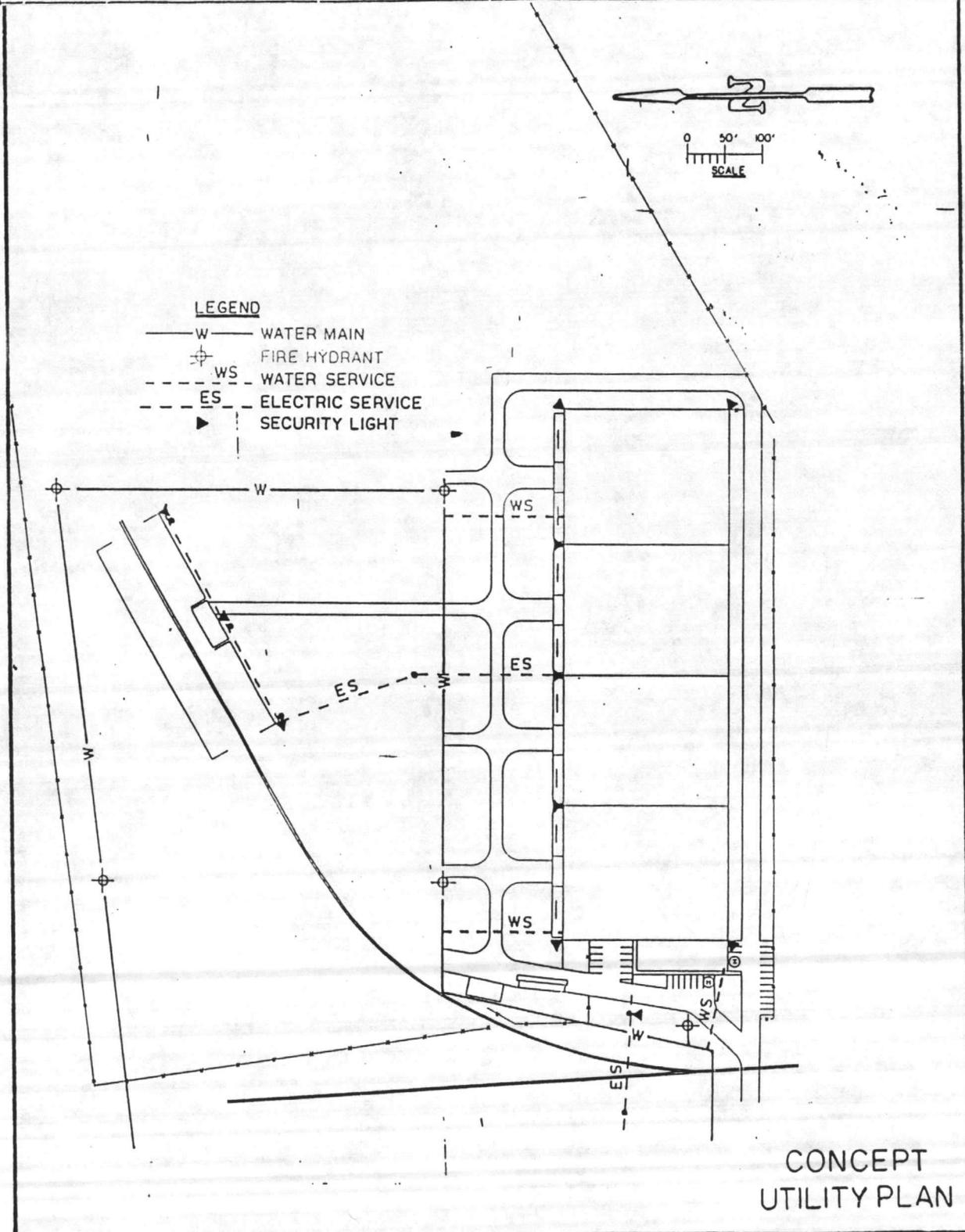
FY 19⁹⁰ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
26 SEP 86

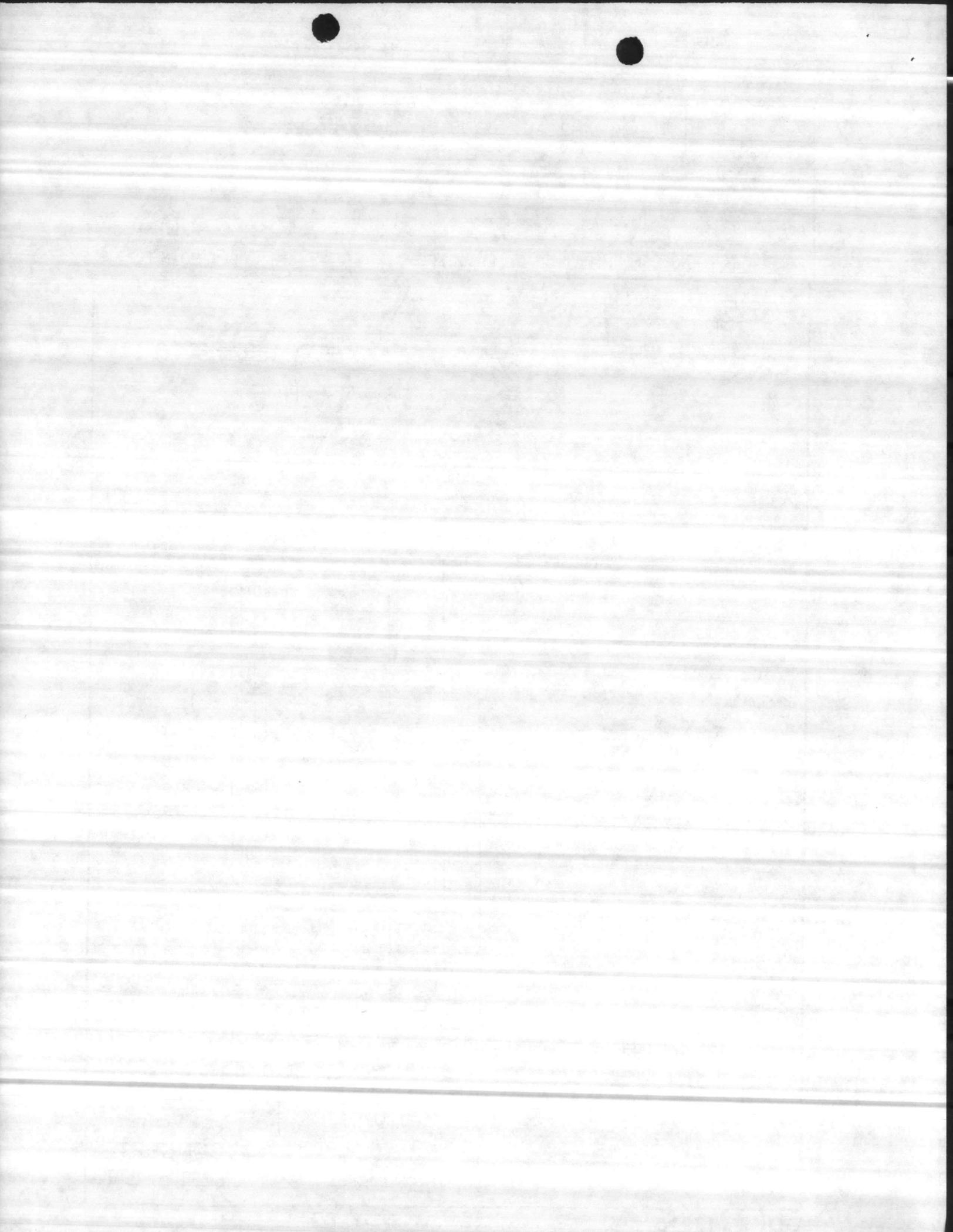
3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

5. PROJECT NUMBER
LEJ-90-M



CONCEPT
UTILITY PLAN



1. COMPONENT
DEFENSE
DLA/DRMS

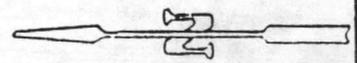
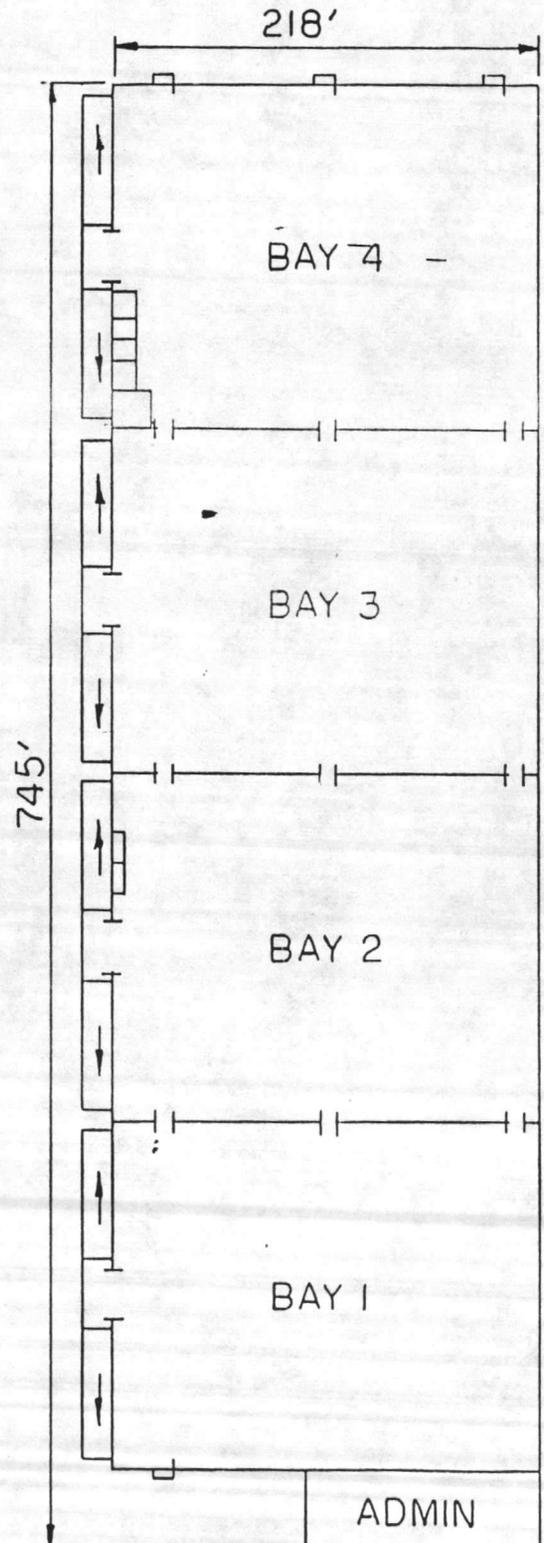
FY 19⁹⁰ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
26 SEP 86

3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

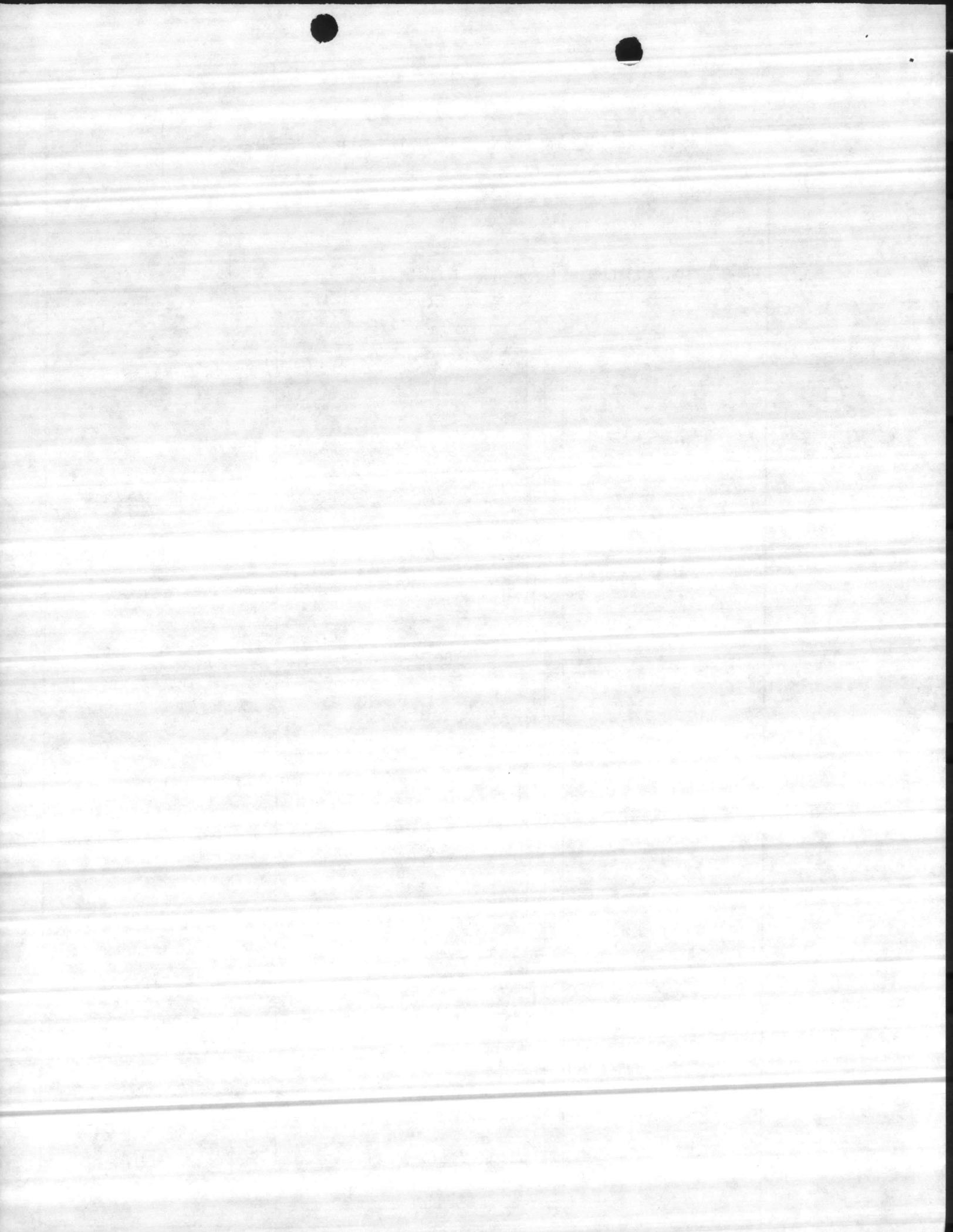
4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

5. PROJECT NUMBER
LEJ-90-M

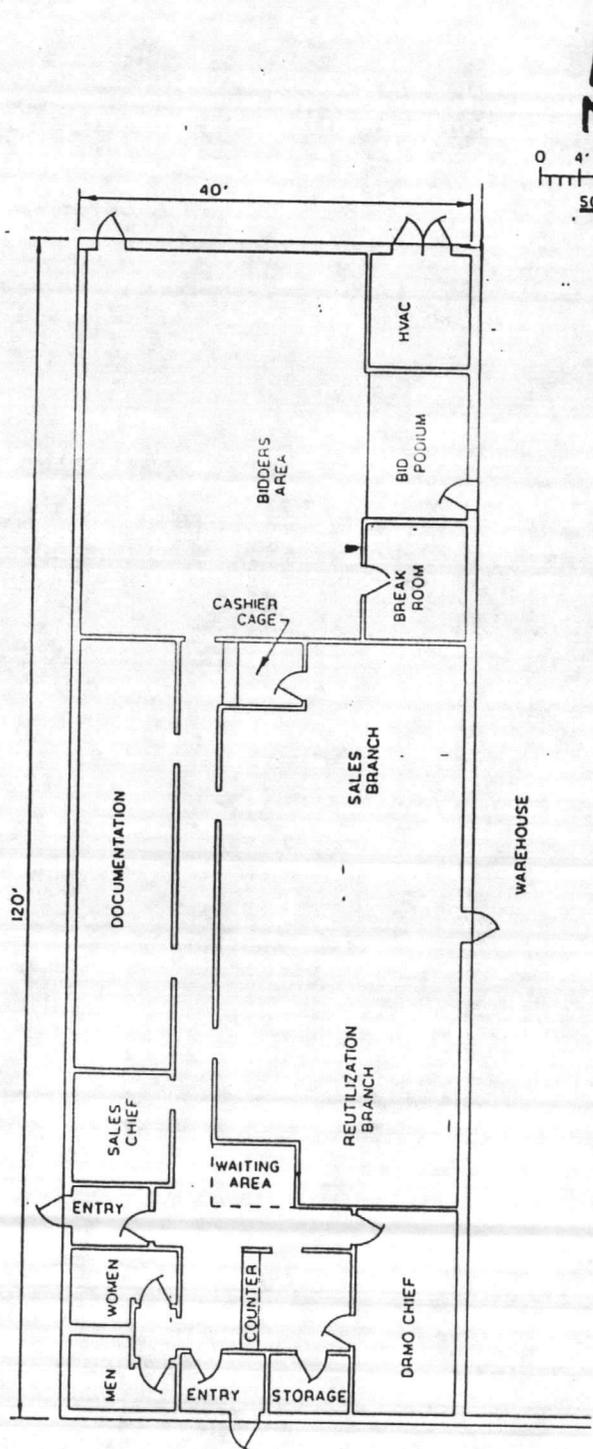


SCALE 1"=100'

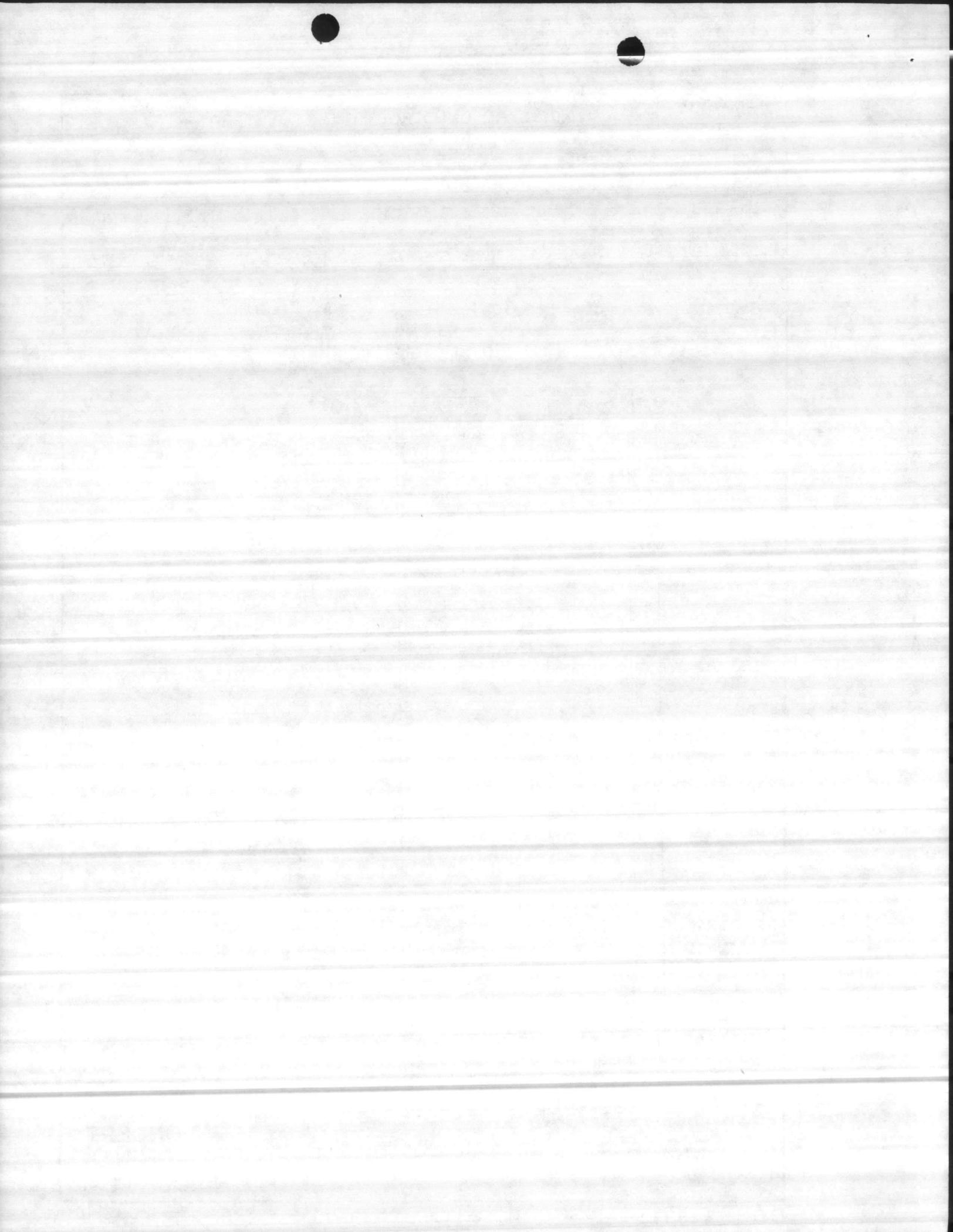
CONCEPT
ADMIN &
WAREHOUSE



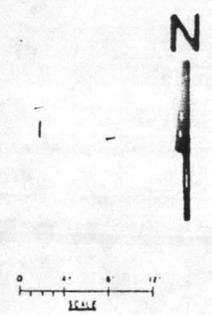
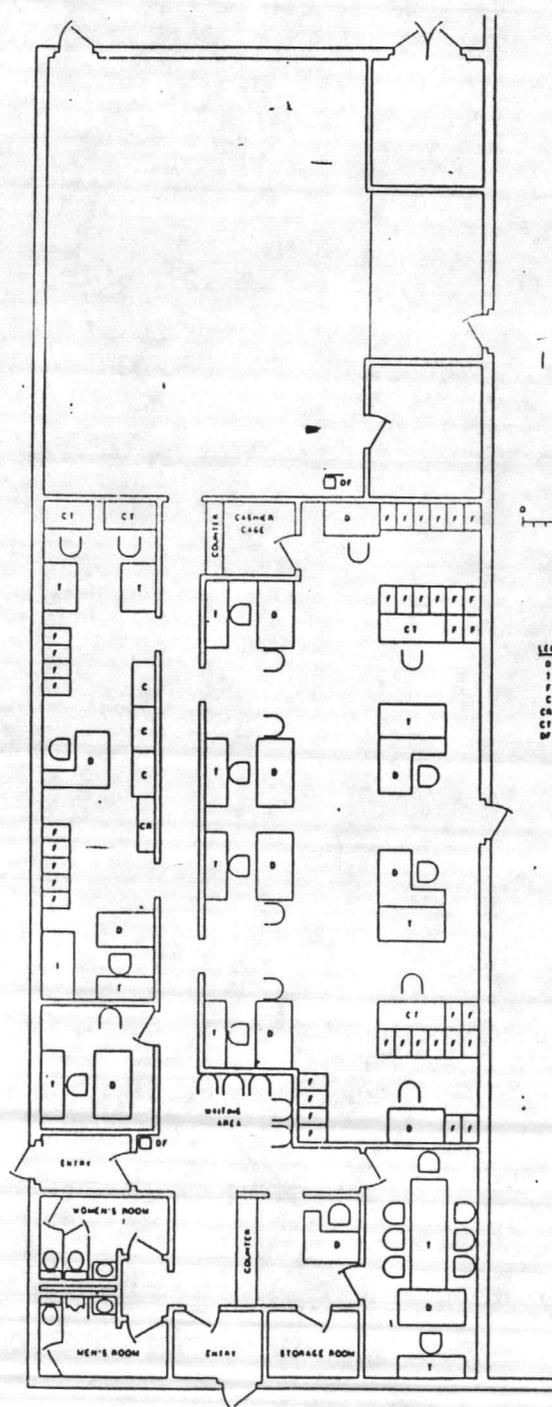
| | | |
|--|--|-------------------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | | 5. PROJECT NUMBER
LEJ-90-M |



CONCEPT
ADMIN
FLOOR PLAN



| | | |
|--|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M | |



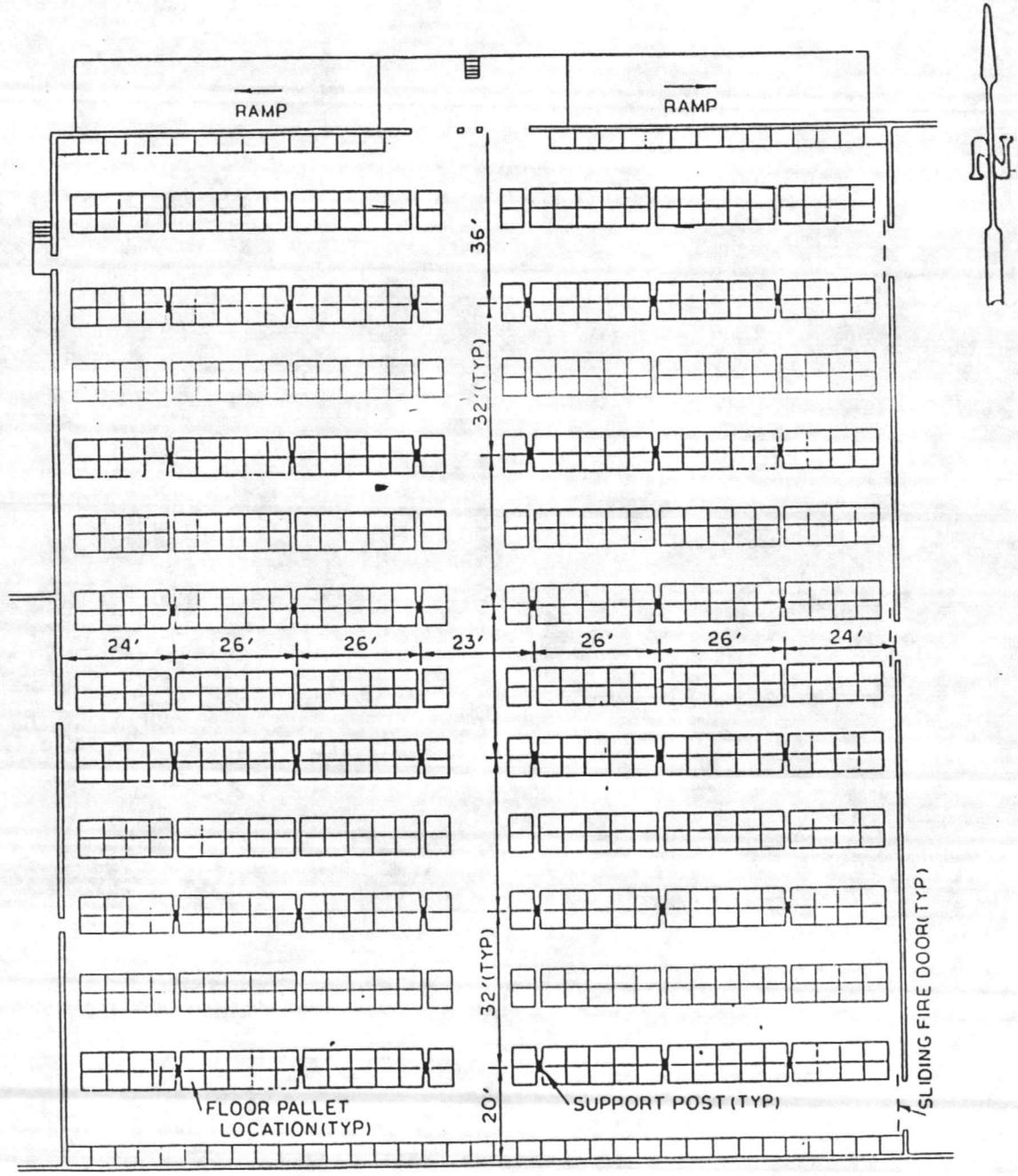
LEGEND
D - DESK
T - TABLE
F - FILE
C - CABINET
CR - COUNTER
CT - COMPUTER
DF - DRAWING
F - FURNITURE

CONCEPT
ADMIN OFFICE
FURNITURE PLAN



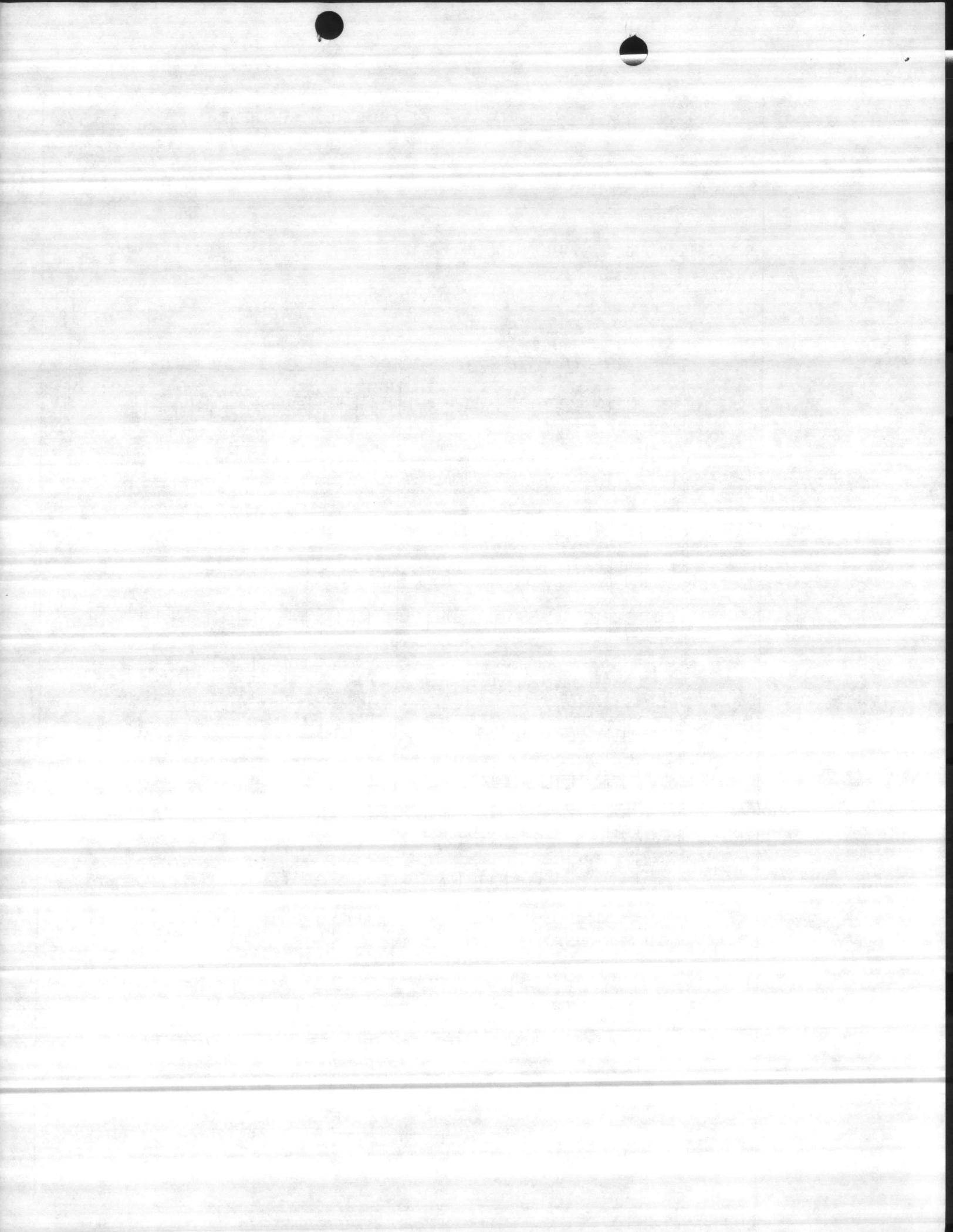
x

| | | |
|--|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M | |



FLOOR PLAN/PLANOGRAPH
BAY I
0 10' 20' 40' 60'
SCALE

CONCEPT
WAREHOUSE



1. COMPONENT
DEFENSE
DLA/DRMS

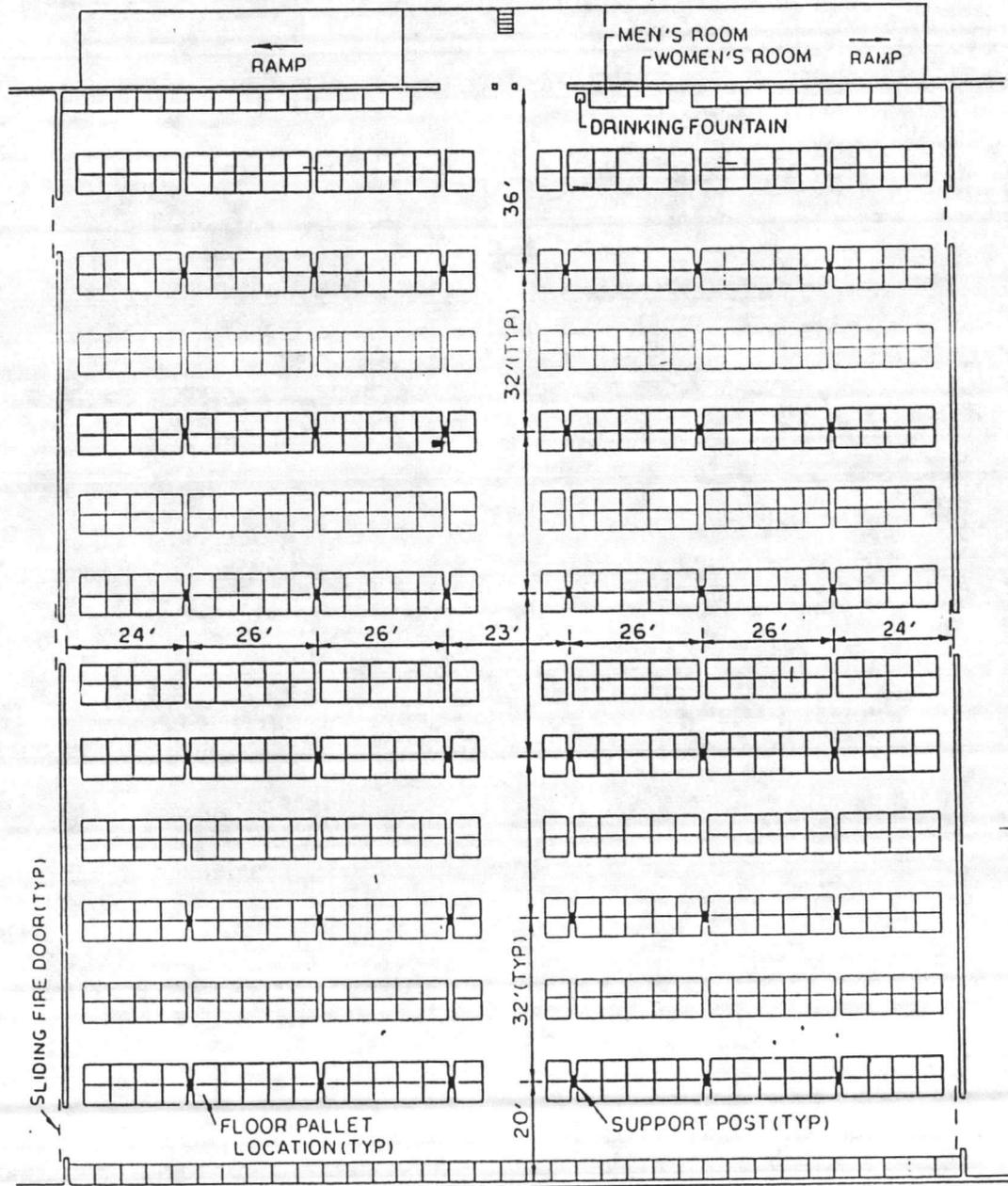
FY 19⁹⁰ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
26 SEP 86

3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

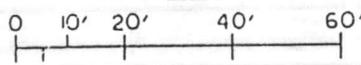
4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

5. PROJECT NUMBER
LEJ-90-M



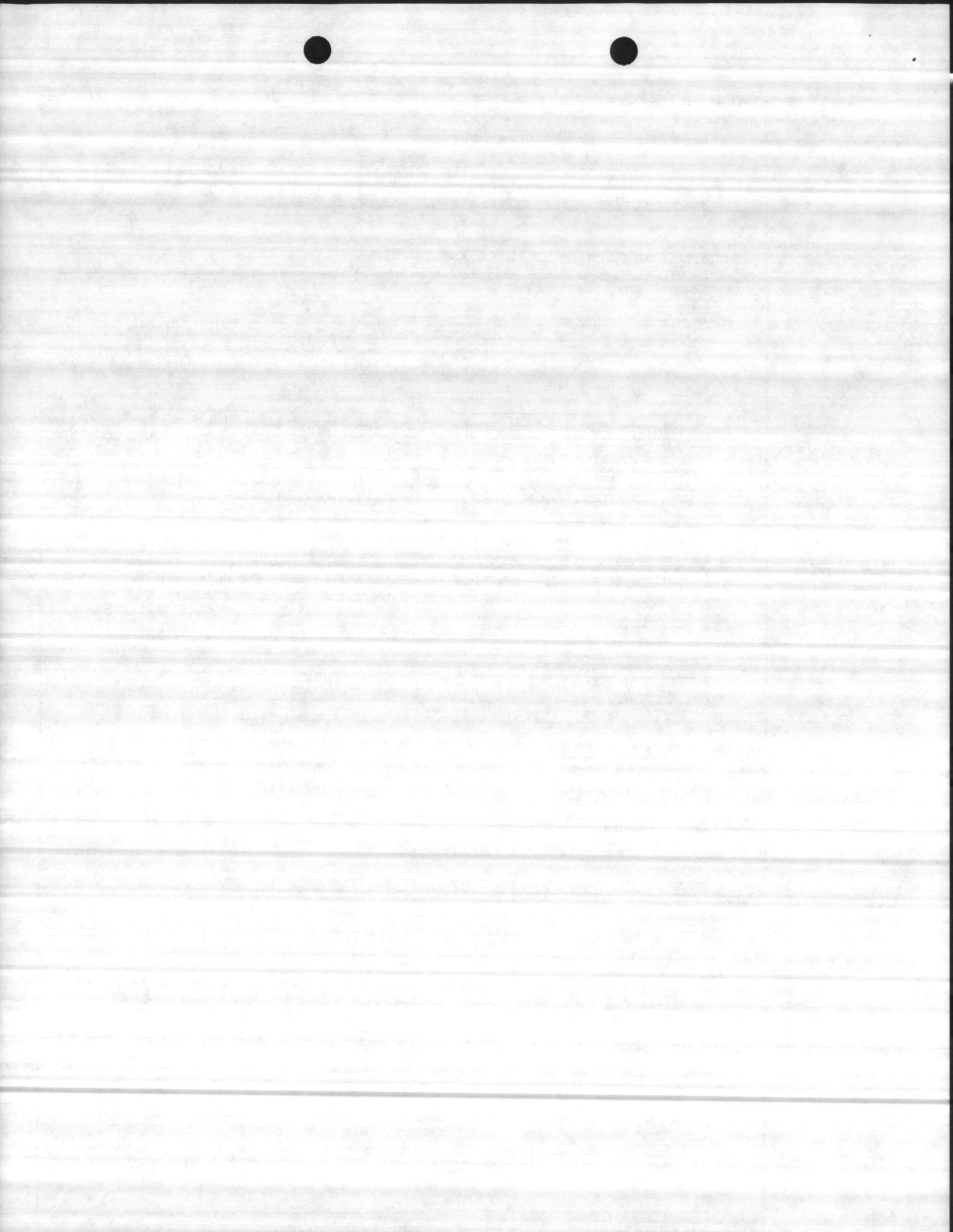
FLOOR PLAN/PLANOGRAPH

BAY 2



SCALE

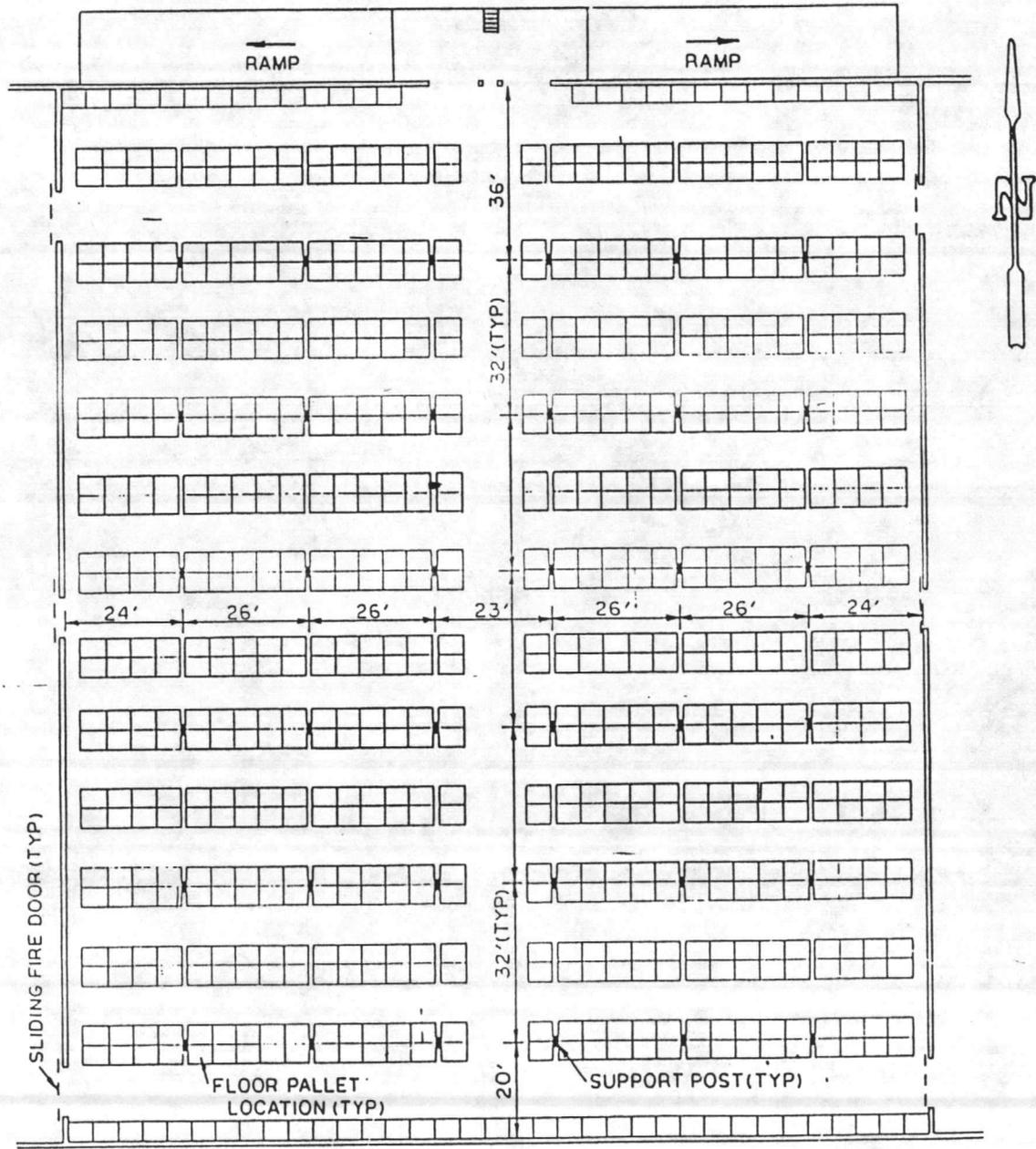
CONCEPT
WAREHOUSE



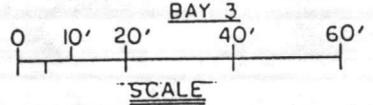
| | | |
|--|--|----------------------|
| 1. COMPONENT
DEFENSE
D.L.A./DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|--|--|----------------------|

| |
|--|
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC |
|--|

| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|



FLOOR PLAN / PLANOGRAPH



CONCEPT
WAREHOUSE



1. COMPONENT
DEFENSE
DLA/DRMS

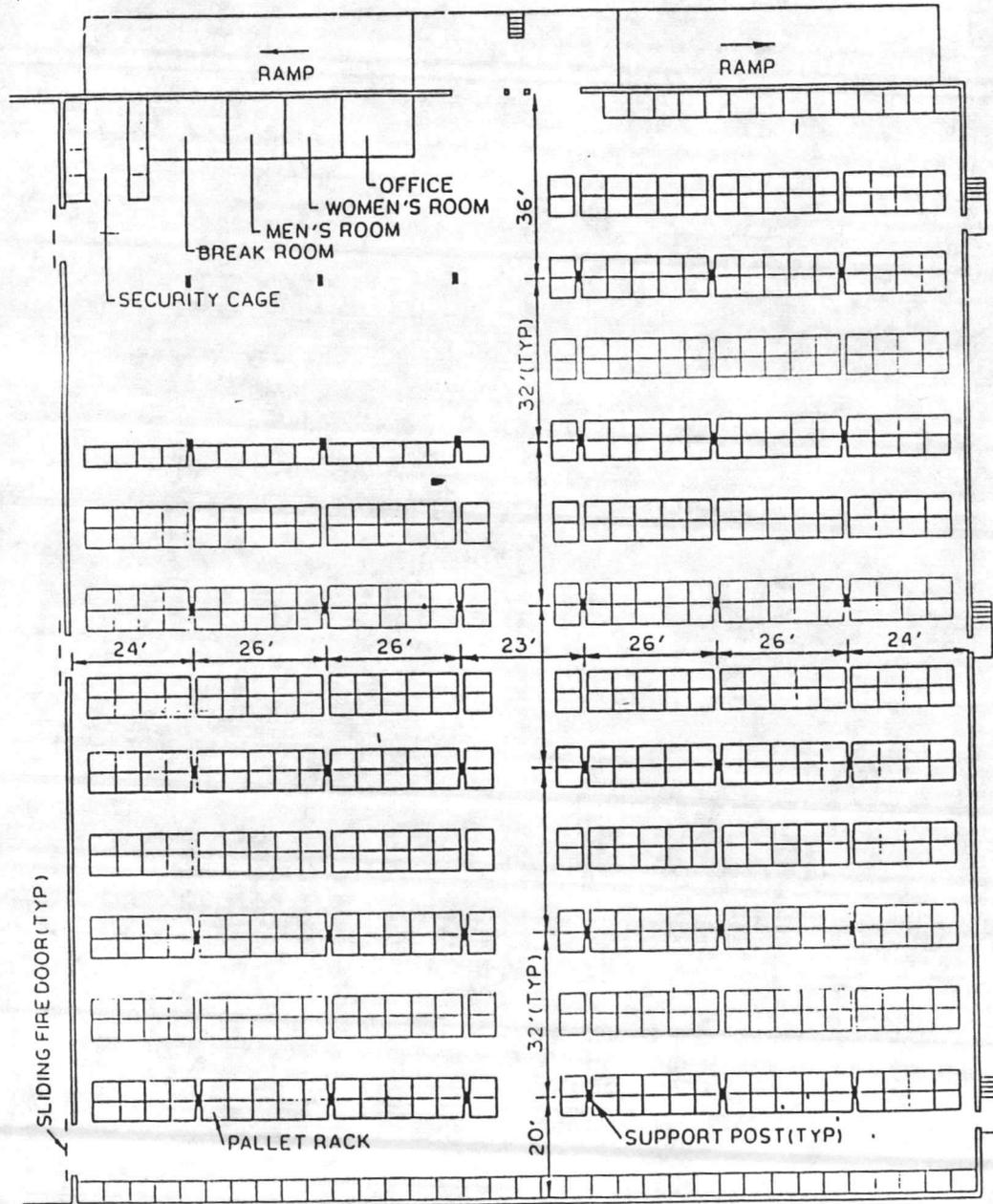
FY 19⁹⁰ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
26 SEP 86

3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

5. PROJECT NUMBER
LEJ-90-M



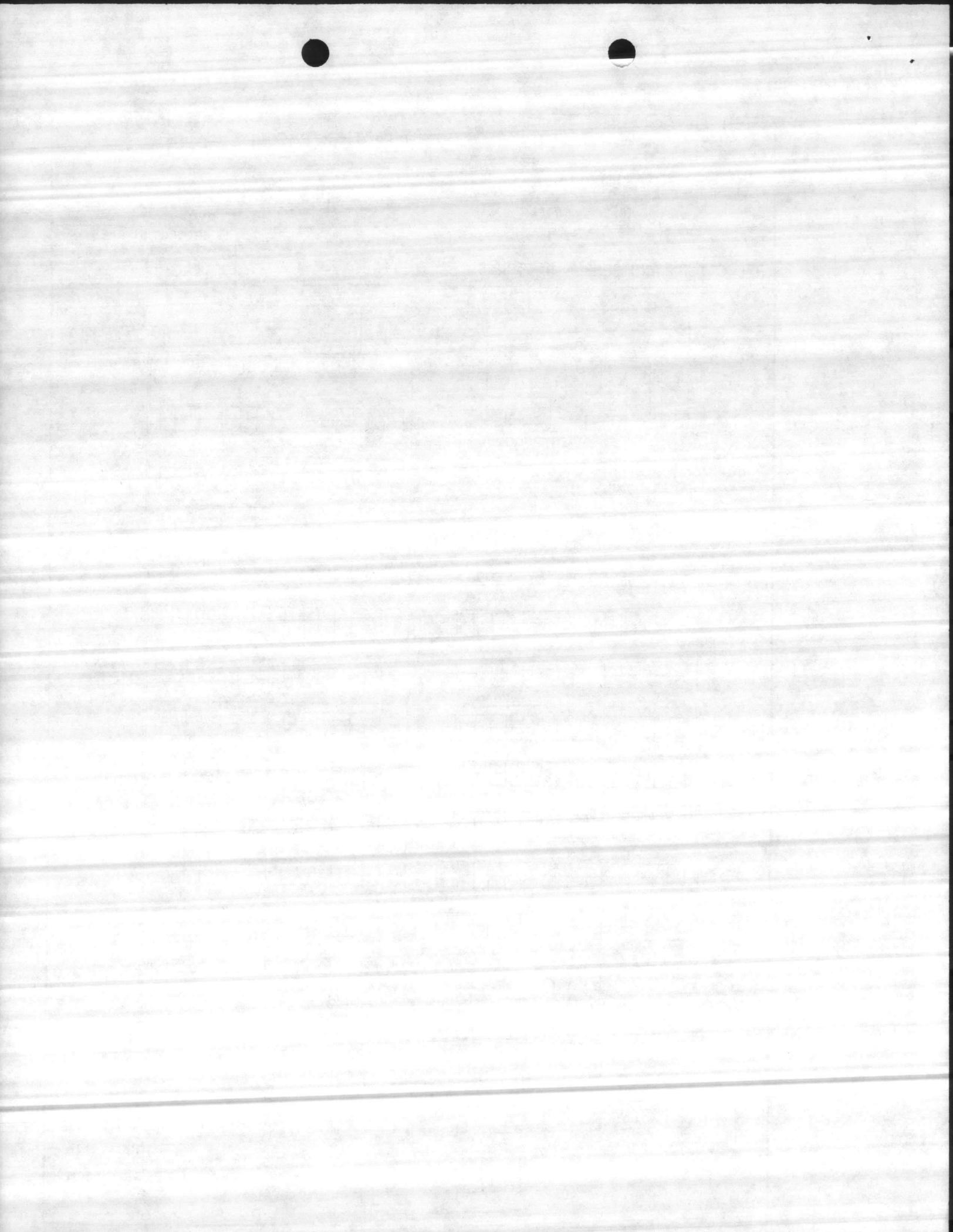
FLOOR PLAN/ PLANOGRAPH

BAY 4

0 10' 20' 40' 60'

SCALE

CONCEPT
WAREHOUSE

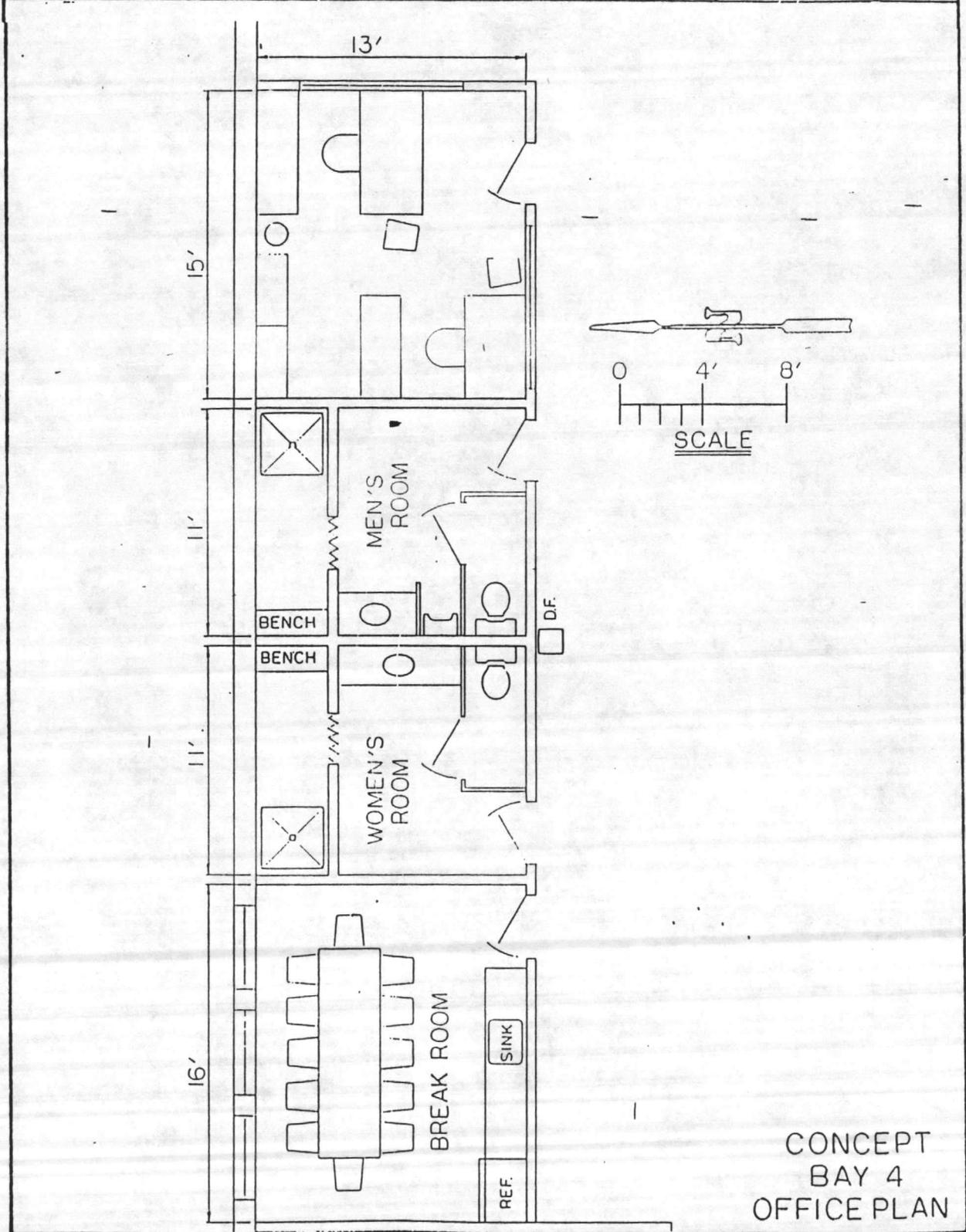


| | | |
|-------------------------------------|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 85 |
|-------------------------------------|--|----------------------|

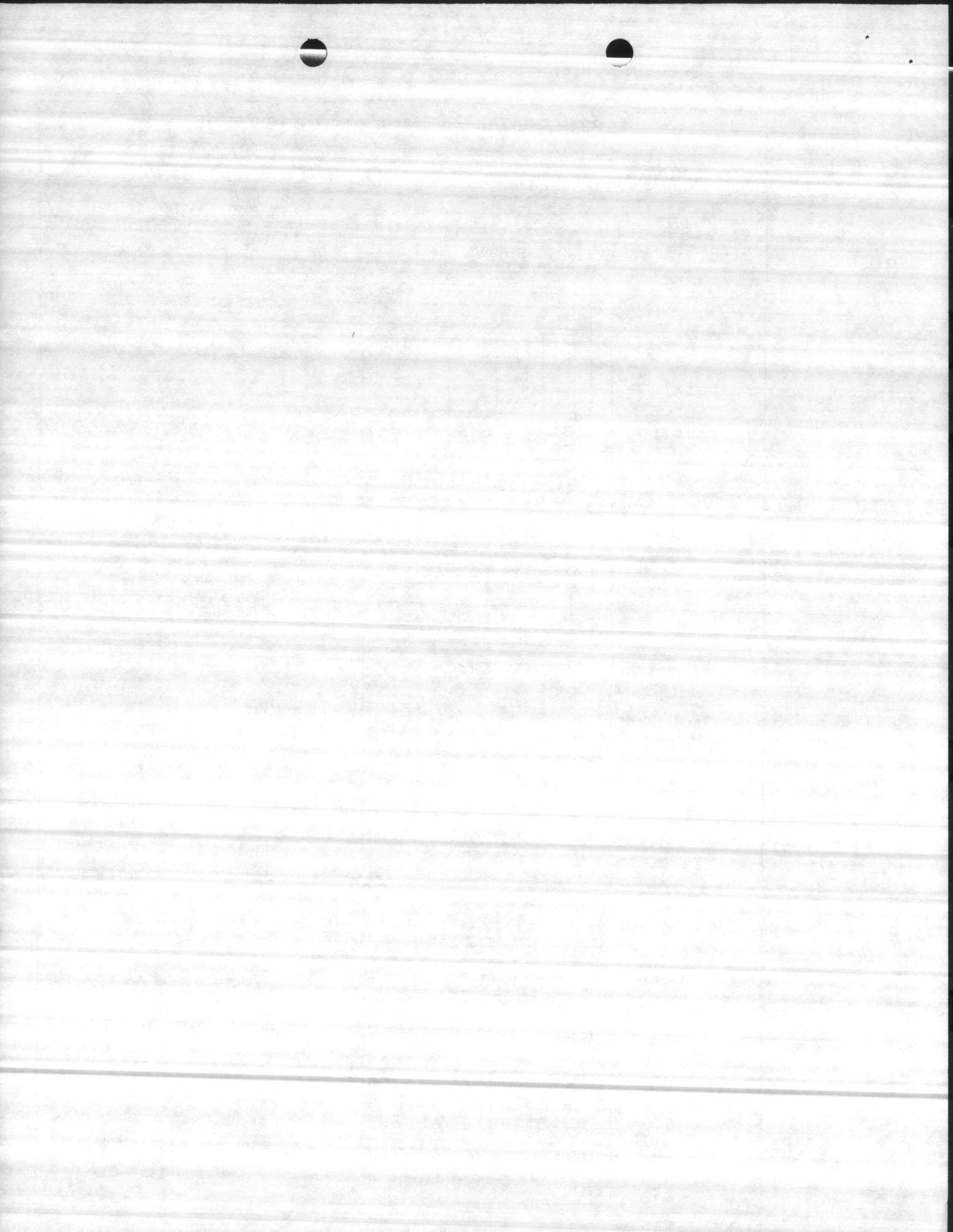
3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

5. PROJECT NUMBER
LEJ-90-M



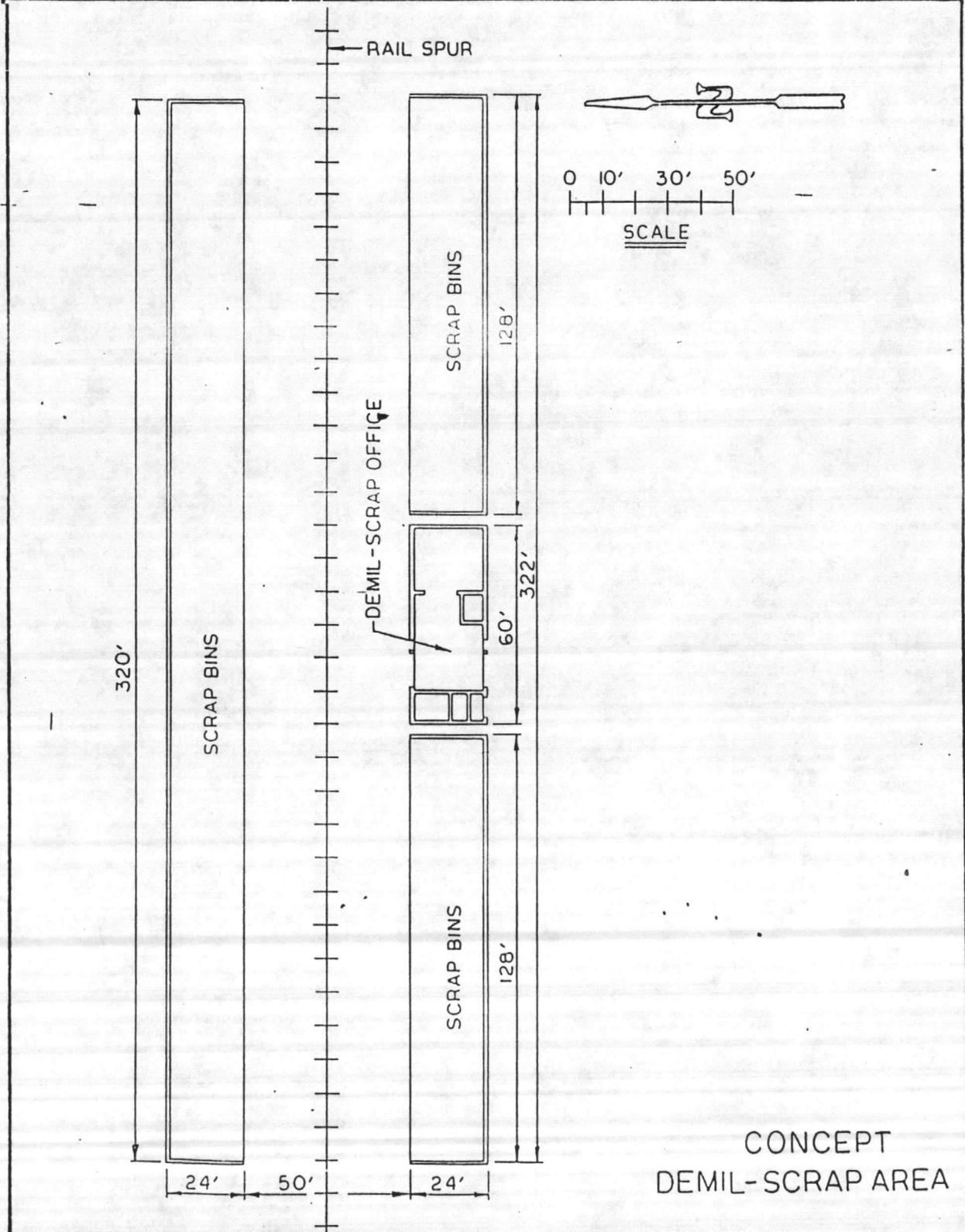
CONCEPT
BAY 4
OFFICE PLAN



| | | |
|-------------------------------------|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|-------------------------------------|--|----------------------|

| |
|--|
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC |
|--|

| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|





1. COMPONENT
DEFENSE
DLA/DRMS

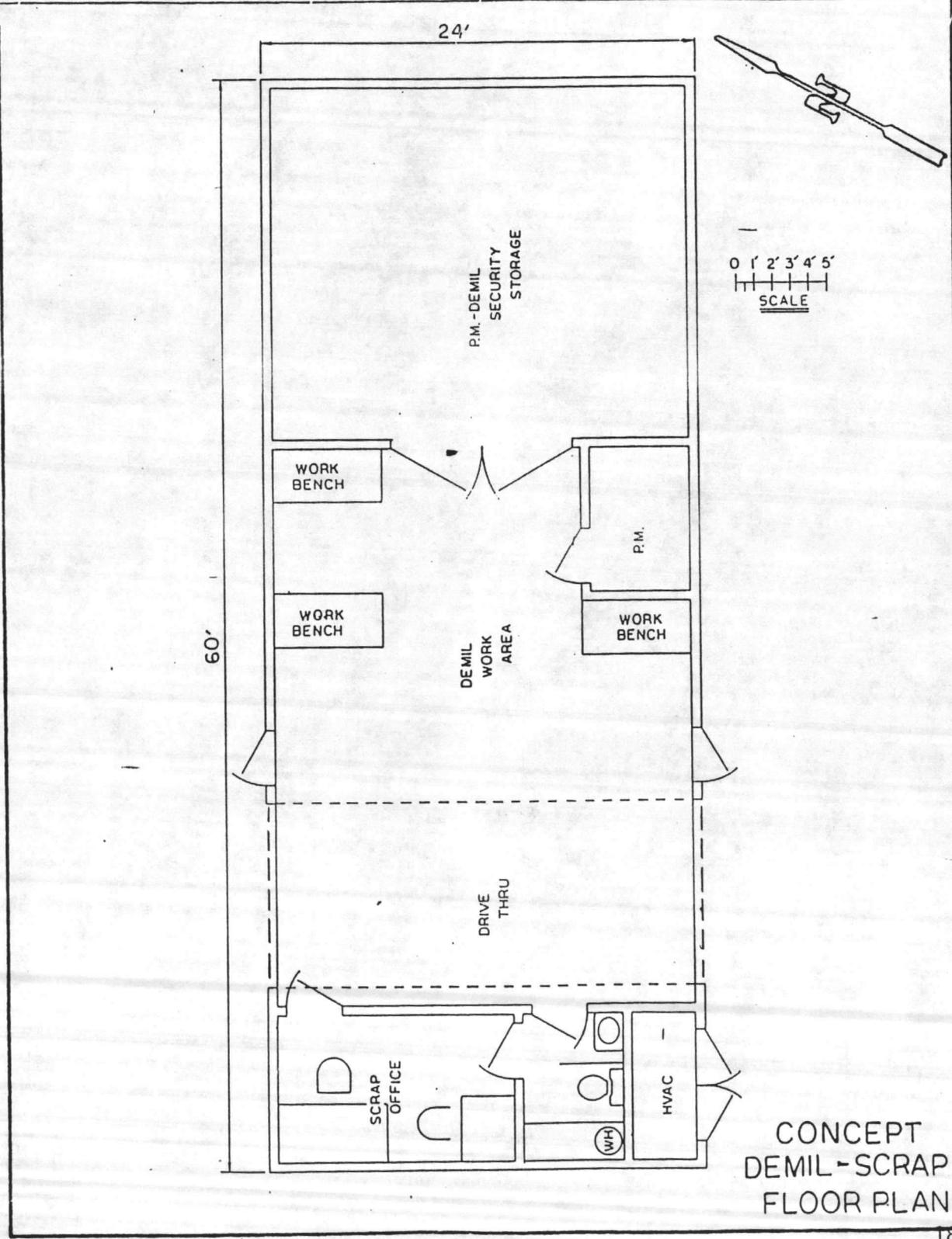
FY 19⁹⁰ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
26 SEP 86

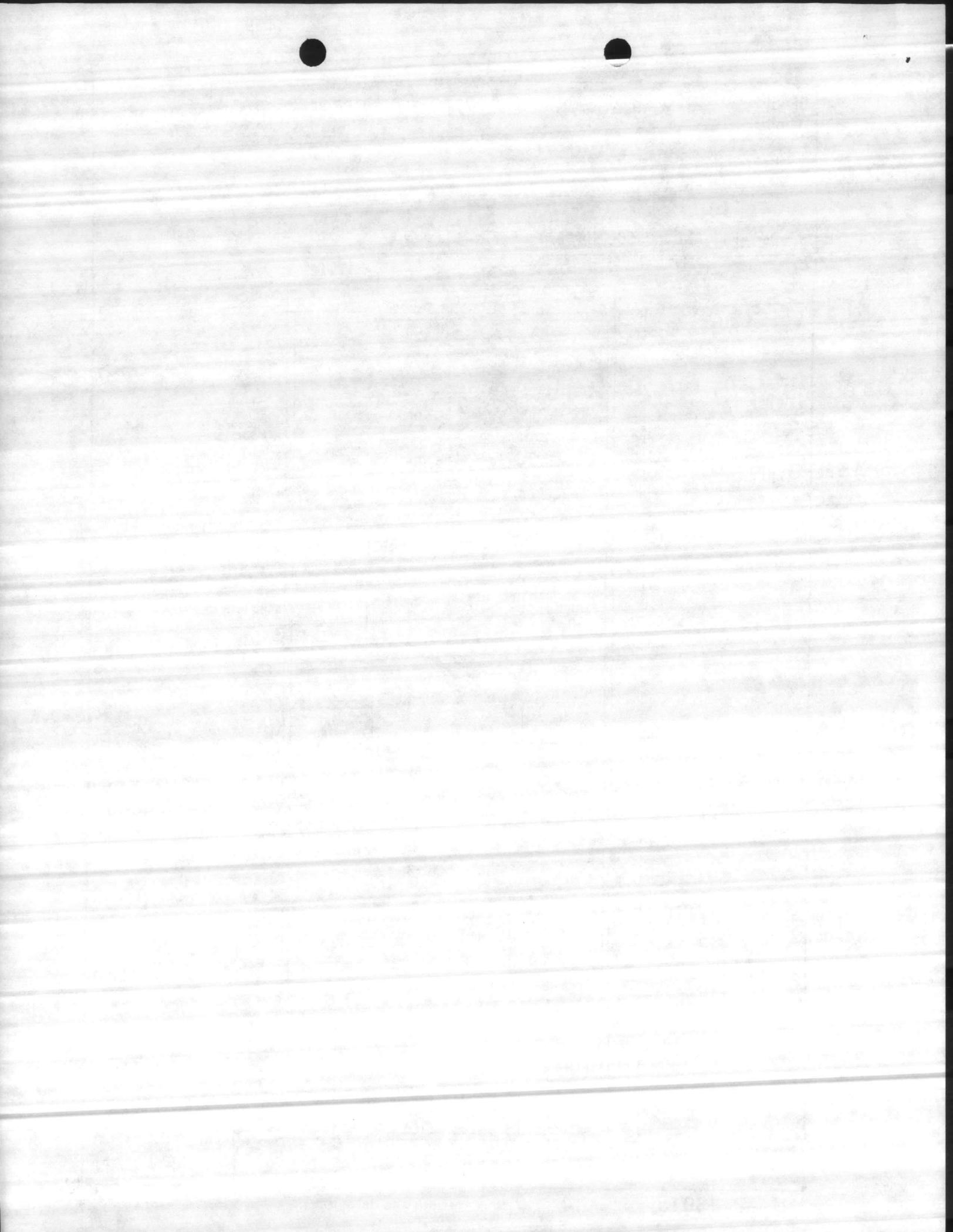
3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES

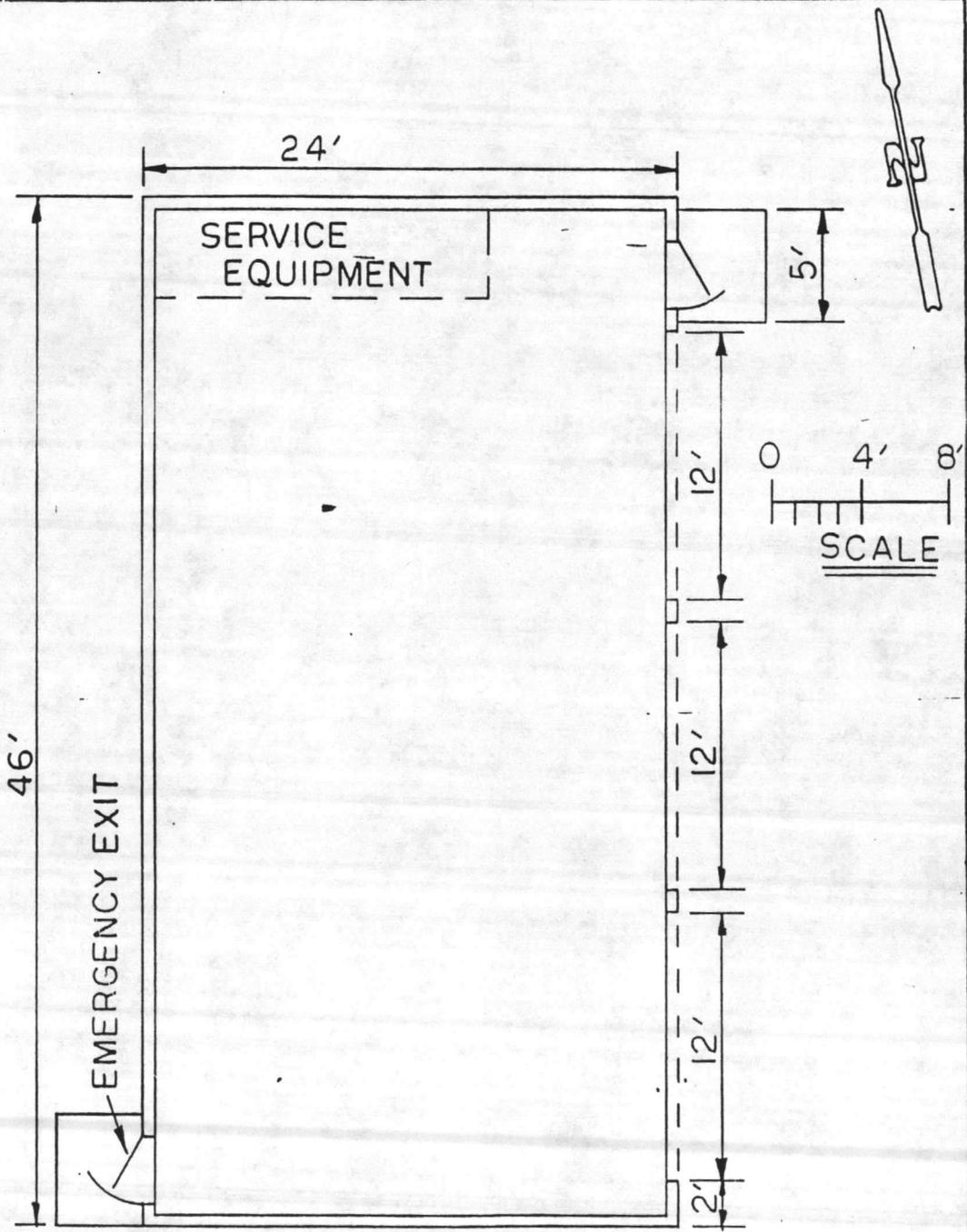
5. PROJECT NUMBER
LEJ-90-M



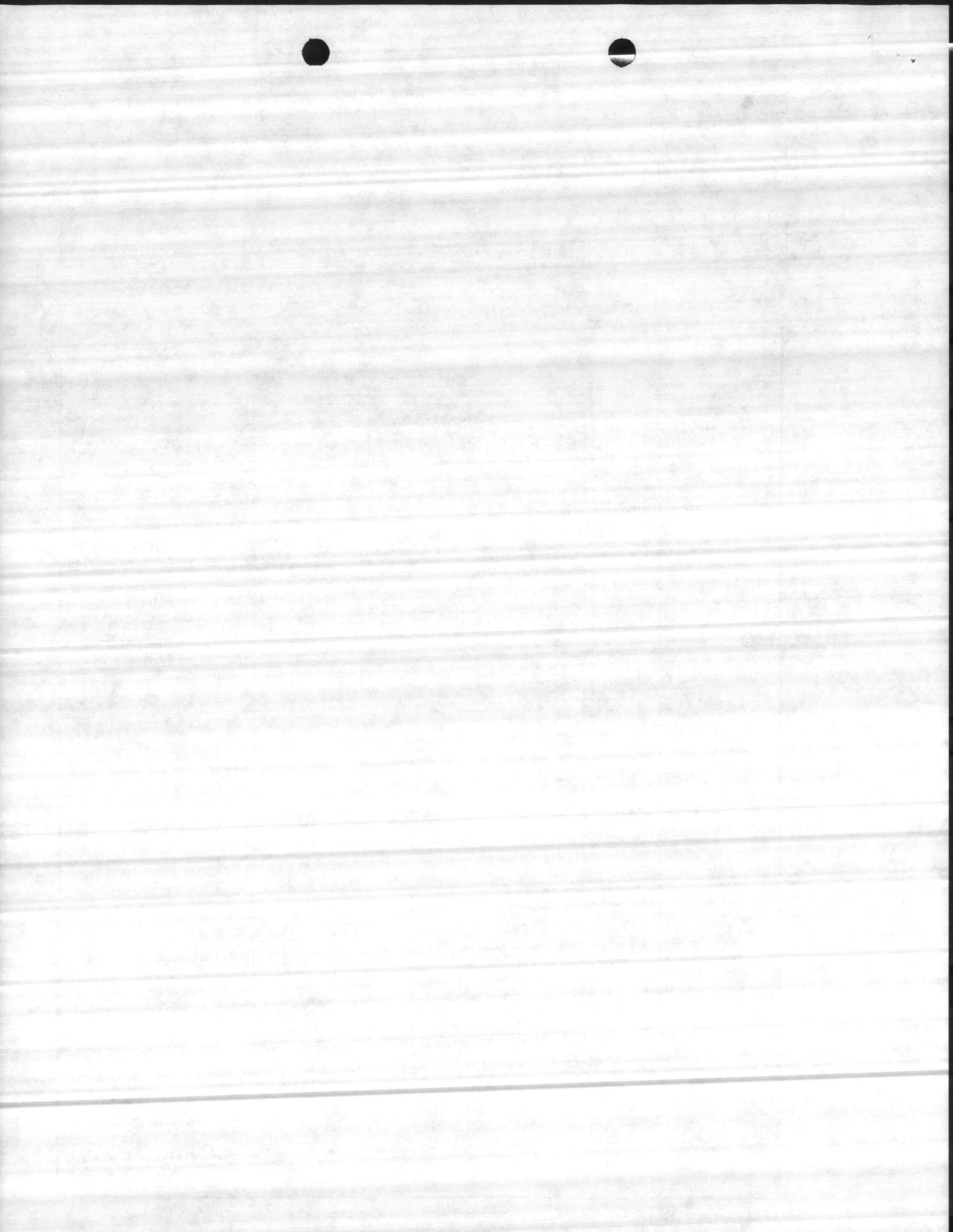
CONCEPT
DEMIL-SCRAP
FLOOR PLAN



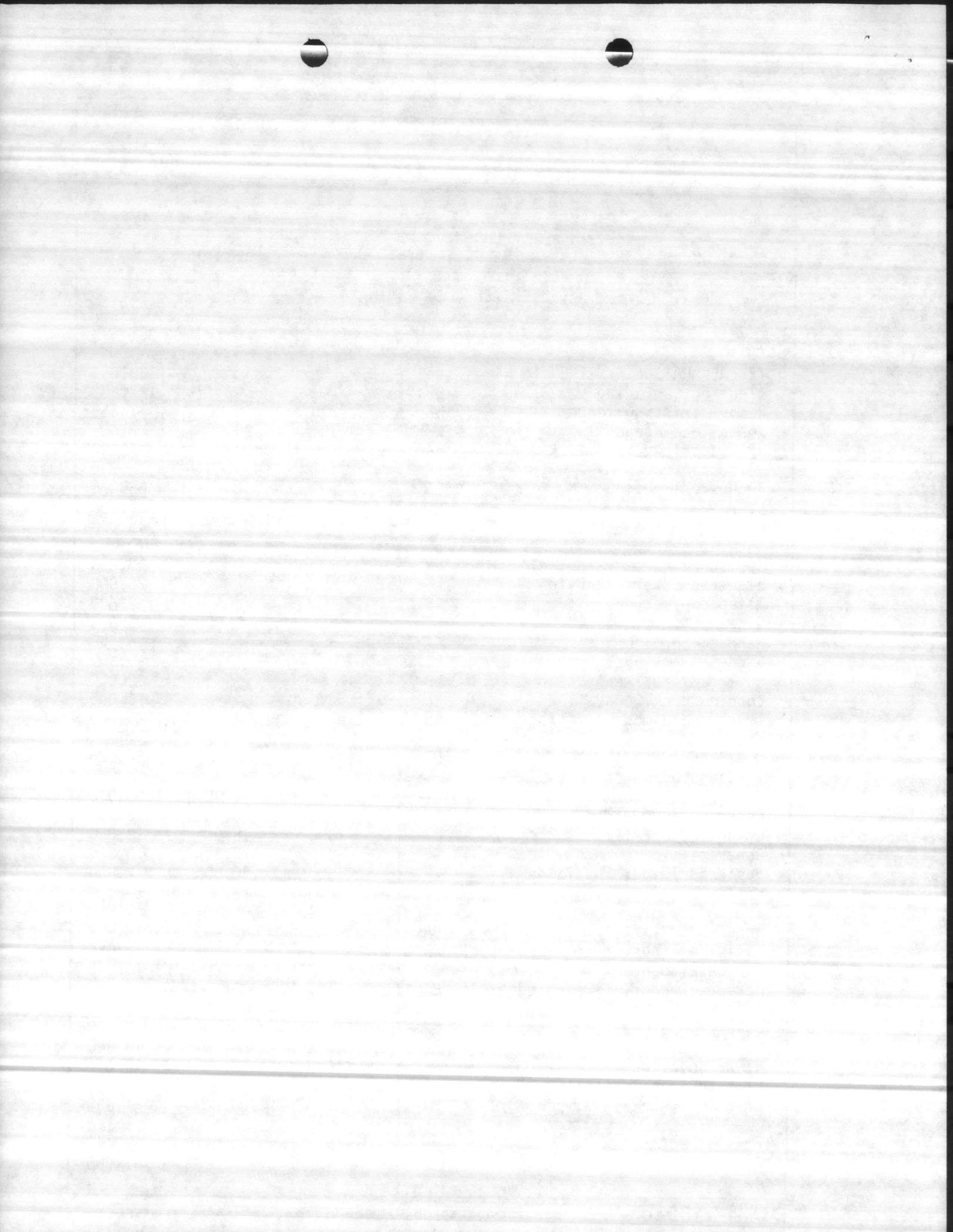
| | | |
|--|--|----------------------|
| 1. COMPONENT
DEFENSE:
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 96 |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M | |



CONCEPT
MHE
STORAGE BLDG
FLOOR PLAN



| | | | | | |
|--|-----|--|-----------|-------------------------------|-----------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | | 2. DATE
26 SEP 86 | |
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC | | | | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITY | | | | 5. PROJECT NUMBER
LEJ-90-M | |
| ITEMIZED COST ESTIMATE | | | | | |
| ITEM | U/M | QTY | U/COST | COST | |
| <u>SITE PREPARATION & UTILITIES</u> | | (LS) | | (629,050) | |
| Clearing & grading | LS | | | 127,600 | |
| Remove existing fence | LF | 270 | 5.00 | 1,350 | |
| Install new fence | LF | 100 | 20.00 | 2,000 | |
| 30' Electric gate | EA | 2 | 3600.00 | 7,200 | |
| Personnel gate | EA | 2 | 400.00 | 800 | |
| Security lighting | LS | | | 55,000 | |
| Storm drainage | LS | | | 260,000 | |
| Water main & fire hydrant | LS | | | 48,000 | |
| Water service | LS | | | 42,000 | |
| Septic tanks & drain fields | LS | | | 13,000 | |
| Electric power extension | LS | | | 26,000 | |
| Telephone service | LS | | | 2,800 | |
| Sidewalk | SF | 825 | 4.00 | 3,300 | |
| Landscaping | SY | 1300 | 5.00 | 6,500 | |
| Signs & markings | LS | | | 6,000 | |
| Railroad spur renovation | LS | | | 42,000 | |
| Loading dock renovation | LS | | | 15,000 | |
| Truck scale modernization | LS | | | 20,000 | |
| <u>ADMINISTRATION BUILDING</u> | | (LS) | (4800) | (96.69) | (464,125) |
| <u>Building Construction</u> | | | | | |
| Excavation & backfill | CY | 250 | 8.00 | 2,000 | |
| Concrete foundation | CY | 82 | 200.00 | 16,400 | |
| Compacted backfill | CY | 890 | 15.00 | 13,350 | |
| Concrete floor | SF | 4800 | 3.75 | 18,000 | |
| Basic building, insulated | SF | 4800 | 40.00 | 192,000 | |
| Walls, partitions, windows | SF | 3200 | 5.00 | 16,000 | |
| Entrance door | EA | 4 | 1000.00 | 4,000 | |
| Wheelchair lift | EA | 1 | 2400.00 | 2,400 | |
| Walls/ceilings, fire rated | SF | 560 | 5.50 | 3,080 | |
| Personnel door | EA | 12 | 325.00 | 3,900 | |
| Personnel door, fire rated | EA | 4 | 525.00 | 2,100 | |
| Restrooms, male & female | EA | 2 | 10,000.00 | 20,000 | |
| Breakroom | LS | | | 4,300 | |
| Suspended | SF | 4800 | 4.10 | 19,680 | |
| Floor covering | SF | 4800 | 3.75 | 18,000 | |
| Fire suppression system | SF | 4800 | 5.60 | 26,880 | |
| Drinking fountain | EA | 2 | 780.00 | 1,560 | |
| <u>Interior Utilities</u> | | | | | |
| Power panel | LS | | | 1,800 | |



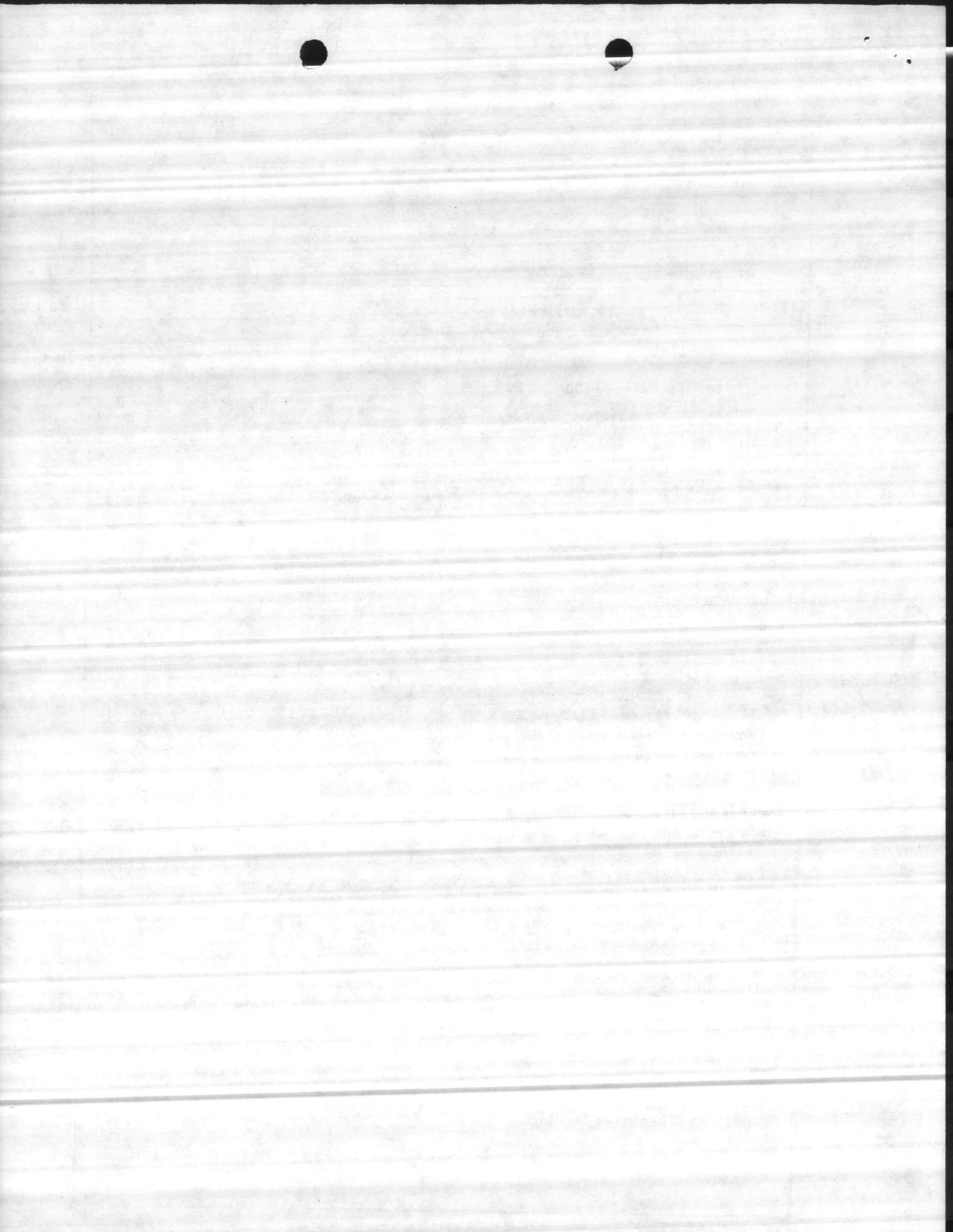
| | | |
|-------------------------------------|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|-------------------------------------|--|----------------------|

| |
|--|
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC |
|--|

| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|

ITEMIZED COST ESTIMATE

| ITEM | U/M | QTY | U/COST | COST |
|--|------|-----------|---------|-------------|
| Electric, lighting & power | SF | 4800 | 4.50 | 21,600 |
| Computer terminal | EA | 4 | 1100.00 | 4,400 |
| Telephone/communication | LS | — | | 6,400 |
| Rough plumbing | LS | — | | 16,000 |
| Exit sign, illuminated | EA | 7 | 325.00 | 2,275 |
| Fire detection/alarm | SF | 4800 | 2.00 | 9,600 |
| HVAC | SF | 4800 | 8.00 | 38,400 |
| <u>GENERAL PURPOSE WAREHOUSE</u> | (SF) | (155,220) | (49.32) | (7,654,935) |
| Building construction | | | | |
| Excavation and backfill | CY | 6600 | 8.00 | 52,800 |
| Concrete foundation | CY | 1025 | 200.00 | 205,000 |
| Compacted backfill | CY | 28,750 | 15.00 | 431,250 |
| Concrete floor/dock/ramp | SF | 164,300 | 3.75 | 616,125 |
| Basic building, insulated,
fire rated | SF | 155,220 | 25.00 | 3,880,500 |
| Walls, partitions, windows | SF | 2,525 | 5.00 | 12,625 |
| Walls, partitions, fire rated | SF | 13,100 | 6.10 | 79,910 |
| Cargo door, electric, 12'x14' | EA | 8 | 2580.00 | 20,640 |
| Fire door, sliding, 10'x10' | EA | 6 | 2100.00 | 12,600 |
| Fire door, sliding, 8'x10' | EA | 3 | 1400.00 | 4,200 |
| Personnel door | EA | 7 | 525.00 | 3,675 |
| Receiving office | SF | 195 | 12.00 | 2,340 |
| Latrine w/change room & shower | EA | 2 | 4800.00 | 9,600 |
| Restroom (visitors) | EA | 2 | 1000.00 | 2,000 |
| Breakroom | SF | 210 | 14.00 | 2,940 |
| Dock leveler | EA | 8 | 3800.00 | 30,400 |
| Dock canopy | SF | 2400 | 9.00 | 21,600 |
| Emergency eyewash/shower | EA | 4 | 1250.00 | 5,000 |
| Emergency light | EA | 27 | 195.00 | 5,265 |
| Exit sign, illuminated | EA | 27 | 325.00 | 8,775 |
| Fire suppression system | SF | 155,220 | 5.10 | 791,622 |
| Drinking fountain | EA | 2 | 780.00 | 1,560 |
| Signs and markings | SF | 155,220 | 0.10 | 15,522 |
| Interior Utilities | | | | |
| Power panel | EA | 4 | 1800.00 | 7,200 |
| MHE charger power | EA | 6 | 900.00 | 5,400 |
| Electric, lighting & power | SF | 155,220 | 3.50 | 543,270 |
| Rough plumbing | LS | — | | 38,900 |
| Warehouse heating | SF | 155,220 | 1.00 | 155,220 |
| Mechanical ventilation | SF | 155,220 | 2.00 | 310,440 |



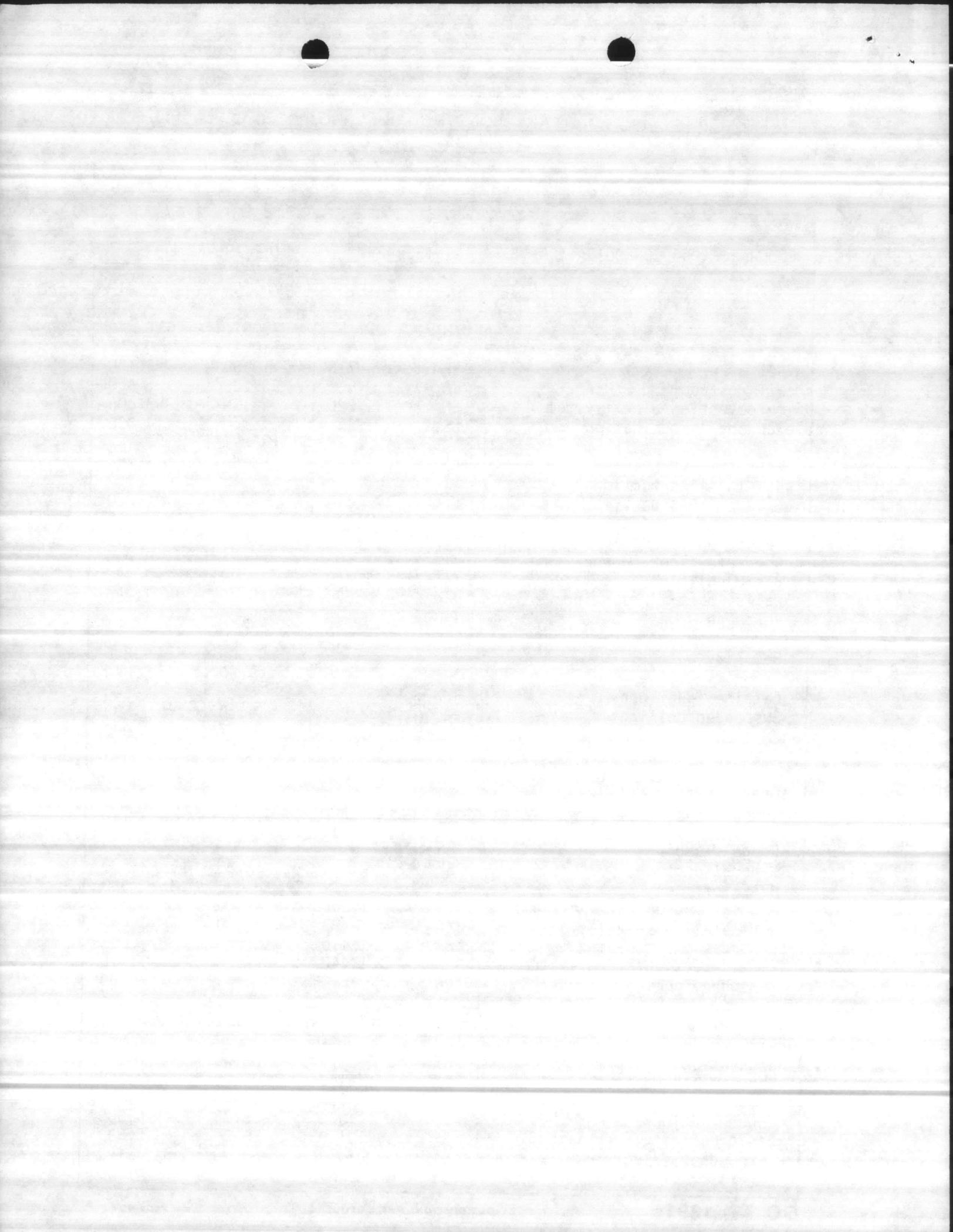
| | | |
|-------------------------------------|--|----------------------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | FY 19 ⁹⁰ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE
26 SEP 86 |
|-------------------------------------|--|----------------------|

3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC

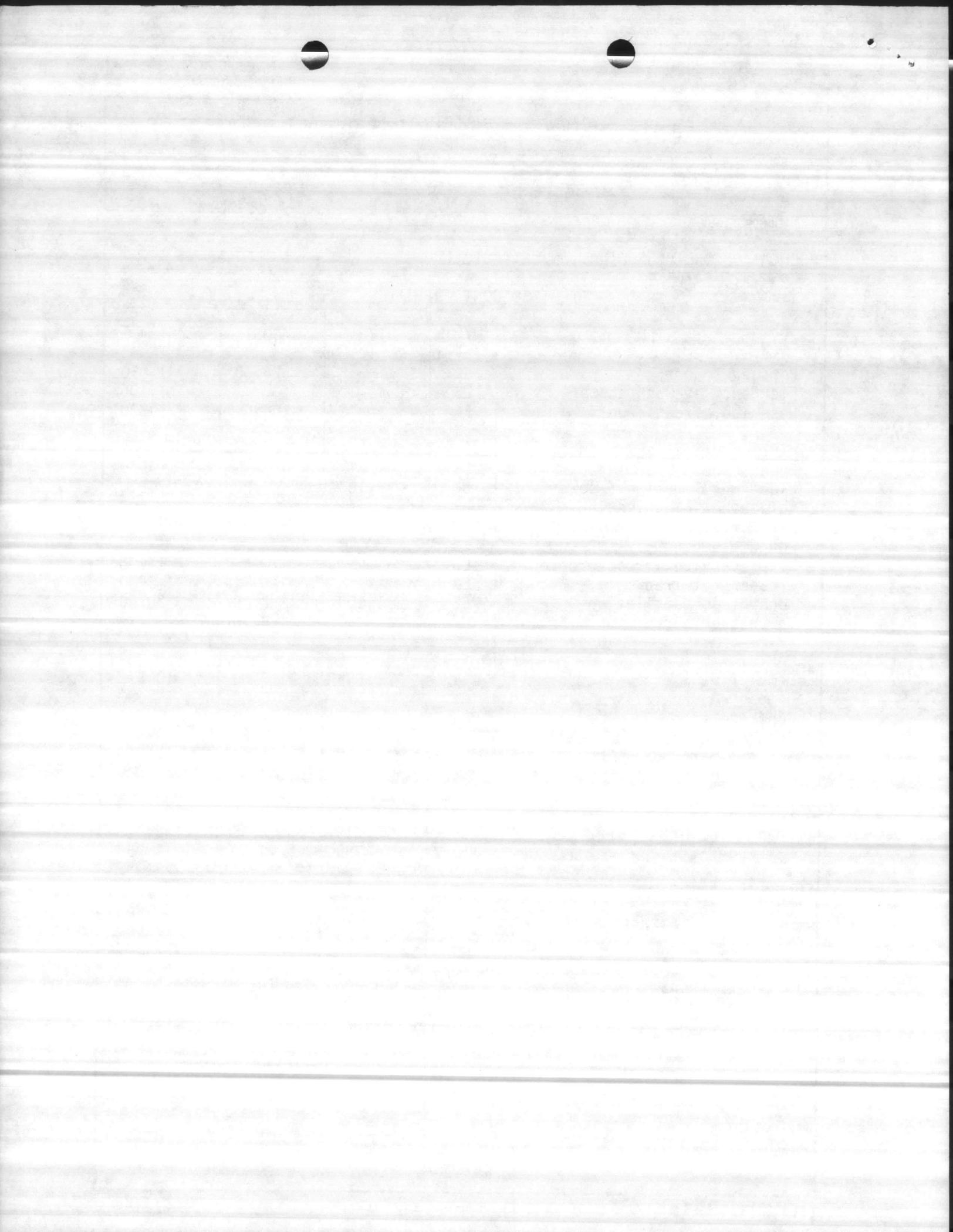
| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITIES | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|

ITEMIZED COST ESTIMATE

| ITEM | U/M | QTY | U/COST | COST |
|--------------------------------|------|---------|---------|----------|
| HVAC | SF | 715 | 10.00 | 7,150 |
| Heat, restroom | EA | 2 | 200.00 | 400 |
| Fire detection/alarm system | SF | 155,220 | 2.30 | 357,006 |
| Telephone/communication | LS | | | 14,000 |
| <u>SCRAP/DEMIL/PM BUILDING</u> | (SF) | (1,440) | (53.68) | (77,298) |
| <u>Building Construction</u> | | | | |
| Excavation & backfill | CY | 115 | 8.00 | 920 |
| Concrete foundation | CY | 41 | 200.00 | 8,200 |
| Compacted backfill | CY | 54 | 15.00 | 810 |
| Concrete floor, apron | SF | 1,600 | 3.75 | 6,000 |
| Basic building, insulated | SF | 1,440 | 19.00 | 27,360 |
| Walls, partitions, windows | SF | 370 | 5.00 | 1,850 |
| Personnel door | EA | 3 | 525.00 | 1,575 |
| Cargo door, electric, 10'x12' | EA | 2 | 2260.00 | 4,520 |
| Security gate 5'x10' | EA | 2 | 500.00 | 1,000 |
| Security wall | SF | 480 | 5.50 | 2,640 |
| Latrine (dual use) | LS | | | 1,600 |
| Suspended ceiling | SF | 144 | 4.10 | 590 |
| PM isolation room | LS | | | 900 |
| Emergency eyewash/shower | LS | | | 1,100 |
| <u>Interior Utilities</u> | | | | |
| Power panel | | | | |
| Electric, lighting & power | SF | 1,440 | 3.50 | 5,040 |
| Rough plumbing | LS | | | 1,200 |
| General heating | SF | 1,250 | 2.00 | 2,500 |
| HVAC (office) | LS | | | 500 |
| General mechanical ventilation | SF | 1,250 | 2.00 | 2,500 |
| Work station ventilation | EA | 3 | 480.00 | 1,440 |
| Compressed air piping | LF | 110 | 3.10 | 341 |
| Fire detection/alarm system | SF | 1,440 | 2.30 | 3,312 |
| Telephone/communications | LS | | | 500 |
| <u>EQUIPMENT GARAGE</u> | (SF) | (1,100) | (51.72) | (56,889) |
| <u>Building construction</u> | | | | |
| Excavation & backfill | CY | 110 | 8.00 | 880 |
| Concrete foundation | CY | 40 | 200.00 | 8,000 |
| Compacted backfill | CY | 110 | 15.00 | 1,650 |
| Concrete floor, apron | SF | 1,600 | 3.75 | 6,000 |
| Basic building, insulated | SF | 1,100 | 16.00 | 17,600 |
| Cargo door, electric, 12'x14' | EA | 3 | 2460.00 | 7,380 |



| | | | | | |
|--|--|--|----------|-------------------------------|-----------|
| 1. COMPONENT
DEFENSE
DLA/DRMS | | FY 19 90 MILITARY CONSTRUCTION PROJECT DATA | | 2. DATE
26 SEP 86 | |
| 3. INSTALLATION AND LOCATION
DRMO-LEJEUNE
CAMP LEJEUNE, NC | | | | | |
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITY | | | | 5. PROJECT NUMBER
LEJ-90-M | |
| ITEMIZED COST ESTIMATE | | | | | |
| ITEM | | U/M | QTY | U/COST | COST |
| Personnel door | | EA | 2 | 525.00 | 1,050 |
| Emergency eyewash/shower | | LS | | | 1,100 |
| Hosebibb, frost proof- | | EA | 2 | 100.00 | 200 |
| Interior Utilities | | | | | |
| Power panel | | LS | | | 900 |
| Electric, lighting & power | | SF | 1,100 | 3.50 | 3,850 |
| Telephone/communications | | LS | | | 500 |
| Fire detection/alarm system | | SF | 1,100 | 2.00 | 2,200 |
| Rough plumbing | | LS | | | 600 |
| Water service, frost proofed | | LS | | | 1,600 |
| Grease/grit trap | | LS | | | 900 |
| Mechanical ventilation | | SF | 1,100 | 2.00 | 2,200 |
| Compressed air piping | | LF | 90 | 3.10 | 279 |
| <u>SCRAP BINS</u> | | (SY) | (1,536) | (51.72) | (56,889) |
| Demolition & excavation | | SY | 1,536 | 7.00 | 10,752 |
| Compacted backfill | | CY | 512 | 15.00 | 7,680 |
| Concrete slab | | SY | 1,536 | 60.00 | 92,160 |
| Concrete pushwall/end wall,6' | | SF | 4,320 | 7.80 | 33,696 |
| Signs & markings | | LS | | | 1,500 |
| <u>ASPHALT PAVING</u> | | (LS) | | | (291,088) |
| Roadway | | SY | 4,610 | 22.00 | 101,420 |
| Open storage | | SY | 10,710 | 16.50 | 176,715 |
| Parking | | SY | 785 | 16.50 | 12,953 |
| <u>CONCRETE PAVING</u> | | (SY) | (1,780) | (72.06) | (128,260) |
| Excavation | | SY | 1,780 | 7.00 | 12,460 |
| Compacted backfill | | CY | 600 | 15.00 | 9,000 |
| Concrete paving | | SY | 1,780 | 60.00 | 106,800 |
| <u>STABILIZED AREAS</u> | | (SY) | (14,800) | (8.00) | (118,400) |
| Visitor parking | | SY | 2,800 | 8.00 | 22,400 |
| Open storage | | SY | 12,000 | 8.00 | 96,000 |



| | | |
|------------------------------------|--|---------------------|
| 1 COMPONENT
DEFENSE
DLA/DRMS | FY 19 <u>90</u> MILITARY CONSTRUCTION PROJECT DATA | 2 DATE
26 SEP 86 |
|------------------------------------|--|---------------------|

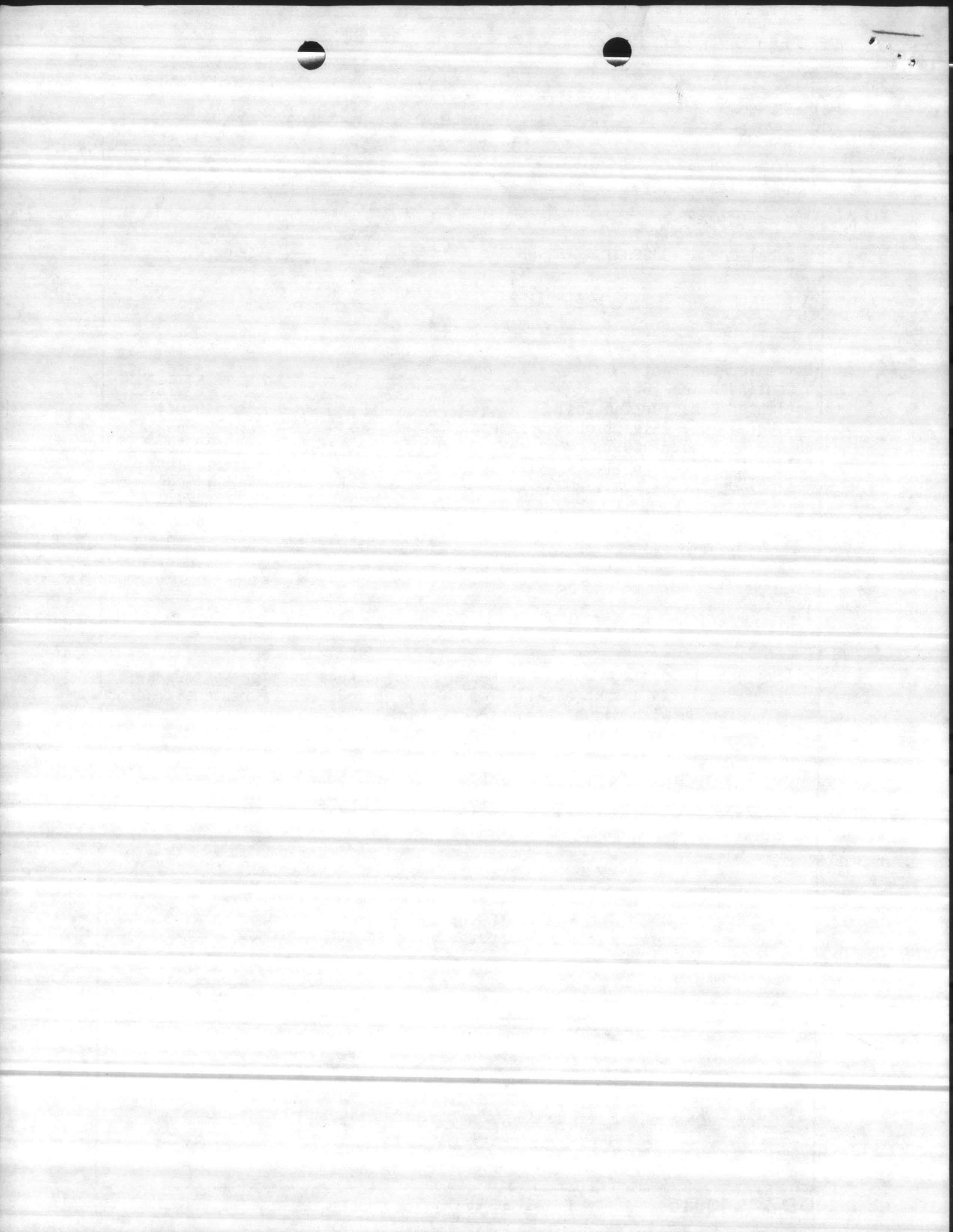
| |
|--|
| 3. INSTALLATION AND LOCATION
DRMO LEJEUNE
CAMP LEJEUNE, NC |
|--|

| | |
|--|-------------------------------|
| 4. PROJECT TITLE
RELOCATION AND CONSOLIDATION OF FACILITY | 5. PROJECT NUMBER
LEJ-90-M |
|--|-------------------------------|

ITEMIZED COST ESTIMATE

| | |
|---|------------|
| Estimated Contract Cost | 9,565,833 |
| Contingencies (5%) | 478,292 |
| Estimated Construction Cost | 10,044,125 |
| Supervision, Inspection & Overhead (5.5%) | 552,427 |
| ESTIMATED PROJECT COST, 1985 | 10,596,552 |
| ESTIMATED PROJECT COST, 1990 | 11,189,958 |
| ESTIMATED PROJECT COST, ROUNDED | 11,200,000 |

NOTE: Unit prices are based on "Means Building Construction Cost Data for 1985" with a cost escalation factor of 1.228 and a regional factor of 0.86 with midpoint construction of July 1990.



John
Charles *CWP*
Peter *PK*
Darryl *DJK*

6280
FAC
JAN 20 1987

Assistant Chief of Staff, Facilities, Marine Corps Base, Camp
Lejeune
Assistant Chief of Staff, Training and Operations

DROP ZONE FALCON CLEARING PROJECT

Ref: (a) BO 11000.1B

Encl: (1) CO, 2d LSB, 2d FSSG Request for Environmental Impact Review

1. Enclosure (1) is forwarded as a matter under your cognizance.
2. This project meets requirements of reference provided:

- a. Completion of work (burning of debris) on previously disturbed area is accomplished prior to additional clearing.

- b. DZ boundaries are shown on a large-scale map (1" = 2000') and flagged for timber estimating.

- c. Impacts on natural resources are minimized by harvesting commercially marketable timber prior to additional clearing.

- d. Erosion control is implemented by reseeding disturbed areas within 30 days of project completion.

- e. Air pollution problems from burning windrowed debris are minimized by proper timing and coordination of burning with forestry and fire prevention personnel.

3. Request coordination between Landing Support Battalion, Base Maintenance Division, and NREAD to fulfill requirements of paragraph 2. A revised request for Environmental Review and site map should then be forwarded by 2d LSB for final project approval per the reference.

K. J. KIRIACOPOULOS
By direction

Copy to:
BMO
NREAD
EnvEngr

Handwritten notes and signatures at the top right of the page.

6380
EAC
JAN 20 1987

Assistant Chief of Staff, Facilities, Marine Corps Base, Camp
Lafayette
Assistant Chief of Staff, Training and Operations

DROP ZONE FACCOM CLEARING PROJECT

Ref: (S) 80 1100.11

Encl: (1) CO, 25 L&S, 23 F250 Request for Environmental Impact Review

1. Enclosure (1) is forwarded as a matter under your cognizance.

2. This project meets requirements of reference provided:

a. Completion of work (burning of debris) on previously disturbed area is accomplished prior to additional clearing.

b. Debris piles are shown on a large-scale map (1:2000) and tagged for linear siting.

c. Impacts on natural resources are minimized by harvesting commercially marketable timber prior to additional clearing.

d. Erosion control is implemented by seeding disturbed areas within 30 days of project completion.

e. Air pollution problems from burning windrowed debris are minimized by proper timing and coordination of burning with forestry and fire prevention personnel.

3. Request coordination between Landing Support Battalion, Base Maintenance Division, and WMAAD to fulfill requirements of paragraph 2. A revised request for Environmental Review and site map should then be forwarded by 24 L&S for final project approval per the reference.

K. J. KIRKCOPTULOS
By direction

Copy for
EAC
WMAAD
SMB/BJ

REQUEST FOR ENVIRONMENTAL IMPACT REVIEW; FORMAT AND PROCEDURES FOR SUBMISSION OF

1. Action Sponsor: Commanding Officer, 2d Landing Support Battalion, 2d Force Service Support Group
2. Name, Address, Phone Number of Point of Contact: Capt. G. F. Myers

2d Landing Support Battalion, 2d Force Service Support Group, Camp Lejeune, N.C. 28540

3. Title and Brief Description of Proposed Action (state purpose, when proposed action is to occur, and any proposed environmental protection measure):

TITLE: DROP ZONE FALCON CLEARING PROJECT

DESCRIPTION OF PROPOSED ACTION: Over the past year there has been a continuing effort to establish a heavy, multiple-platform drop zone to support the Air Delivery training requirements at Camp Lejeune. The latest proposal was the clearing of DZ Falcon. Approximately 30% of the originally surveyed drop zone remains in wooded land. The proposed clearing project when completed will provide a drop zone of sufficient size and surface suitability for heavy, multiple-platform Air Delivery operations.

2d Landing Support Battalion will resume work on the DZ Falcon project 12 January 1987. No environmental impact is expected as a result of this project. Catapillar D-7 tractors will be utilized to clear timber and will be on hand for the controlled burning phase of the operation.

ENCLOSURE (1)

1 May 1984

4. Location: Attach a Camp Lejeune Special Map (or equivalent quality map) showing location of proposed action/project site(s).

5. Potential Environmental Impact/Considerations: (See Note 1)

a. Air Quality: Will there be any open burning associated with the project/action? Yes Will there be any new boilers, incinerators or fuel storage tanks (larger than 1,000 gallons) provided? No Will there be any paint booths, solvent vats, degreasers or other vapor-producing industrial processes involved? No Will the project involve the use or disposal of asbestos? No Will project cause dust problems? No

b. Land Quality: Will the action require use of significant amount of earthen fill material? No Will there be an increase in level of soil disturbance/damage to vegetation? Yes Will there be one acre or more of land cleared/disturbed? Yes

c. Groundwater Quality: Does the project involve use of herbicides, insecticides or other pesticides in significant amounts? No Does the project involve installation/use of septic tanks, or any other on-site disposal of sanitary waste? No Will there be any wells dug or any excavations deeper than twenty feet? No Will any toxic or hazardous material/waste requiring disposal be used or generated by the project? No Will there be a net increase of solid waste caused by implementing the project/action? No Will the project or action be carried out within 200 feet of a drinking water supply well? No

d. Surface Water Quality: Is the project located on or in a water body or adjacent 100-year flood plain? No Will the project involve construction of drainage ditches/underground drains for purposes of lowering water table? No Will all wastewater be connected to sanitary sewer? No Will there be an increase in erosion/siltation from soil disturbing activity? No Will petroleum oil and lubricants be routinely stored or used at the site? No Will the project increase rates of surface/storm water run-off? No

e. Natural Resources: Will there be a loss of forest land? Yes Will public access for hunting, boating, fishing, etc., be restricted? No Is there a change in land use from what is presently shown in Base Master Plan? No Will removal of existing vegetation be required? No Are there any known effects on any endangered species? No Does the project involve the purchase or sale of any real estate? No

f. Socio-Economic Considerations: Will the project cause an increase/decrease in on or off-base military population? change Will there be any increased demand on a local or state government to provide services? No Will there be any changes to traffic flow and patterns on or off-base? No Will any noise, traffic, dust, etc., be generated which may affect off-base persons or property? No Is there any known controversy associated with the type of project or action proposed? No Are there any historical or archaeological sites affected by project/action? No

NOTE 1. Answer either "yes", "no" or "unknown". Answers should be based on information available to the action sponsor at time of submission to the Base Environmental Impact Review Board. Do not delay the submission of this request awaiting additional information. Many environmental considerations need to be addressed in early planning stages. If additional information becomes available after submission, it should be forwarded to the EIRE.

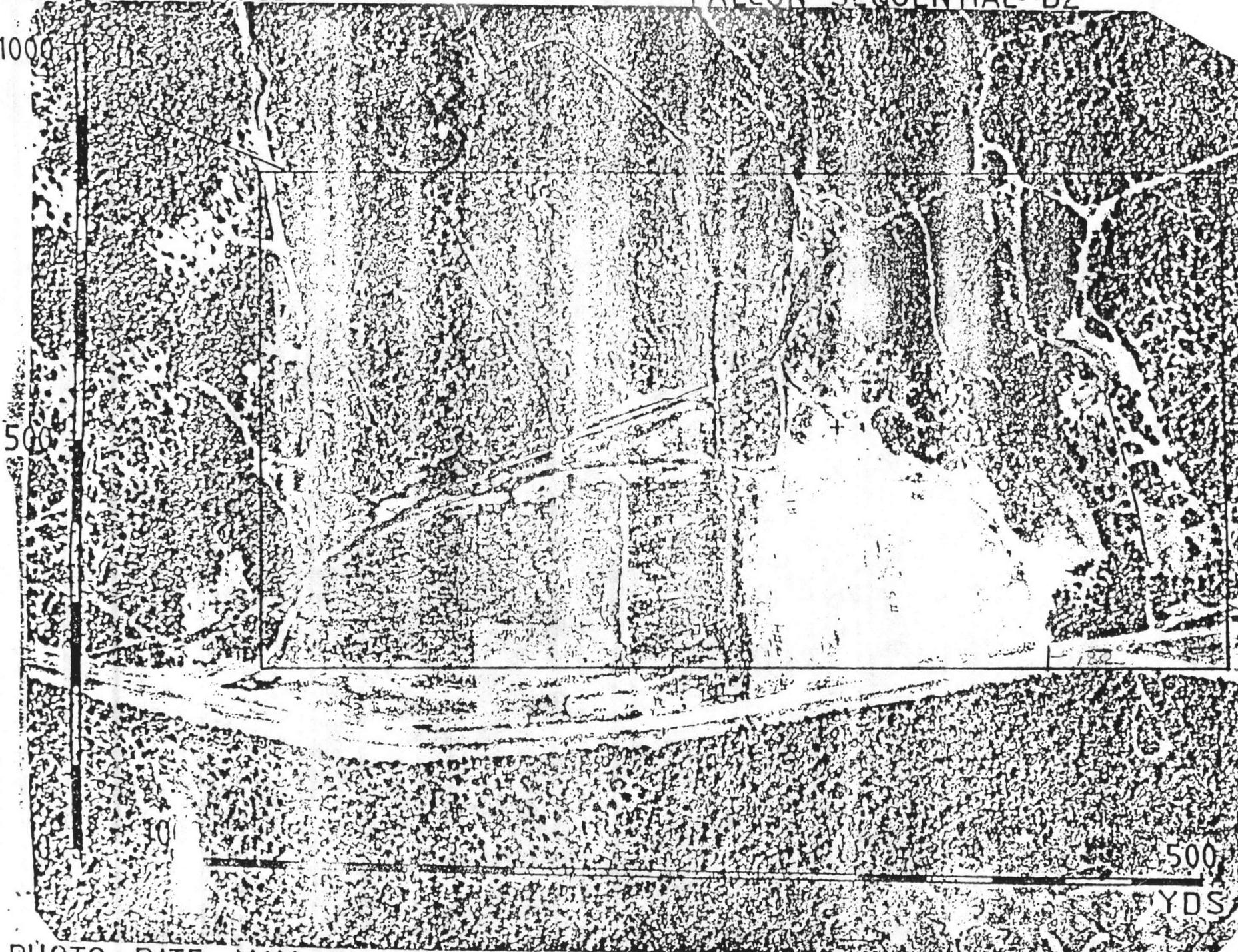
ENCLOSURE (1)

MOSAIC 3 MAY 85

FALCON SEQUENTIAL-DZ

1000

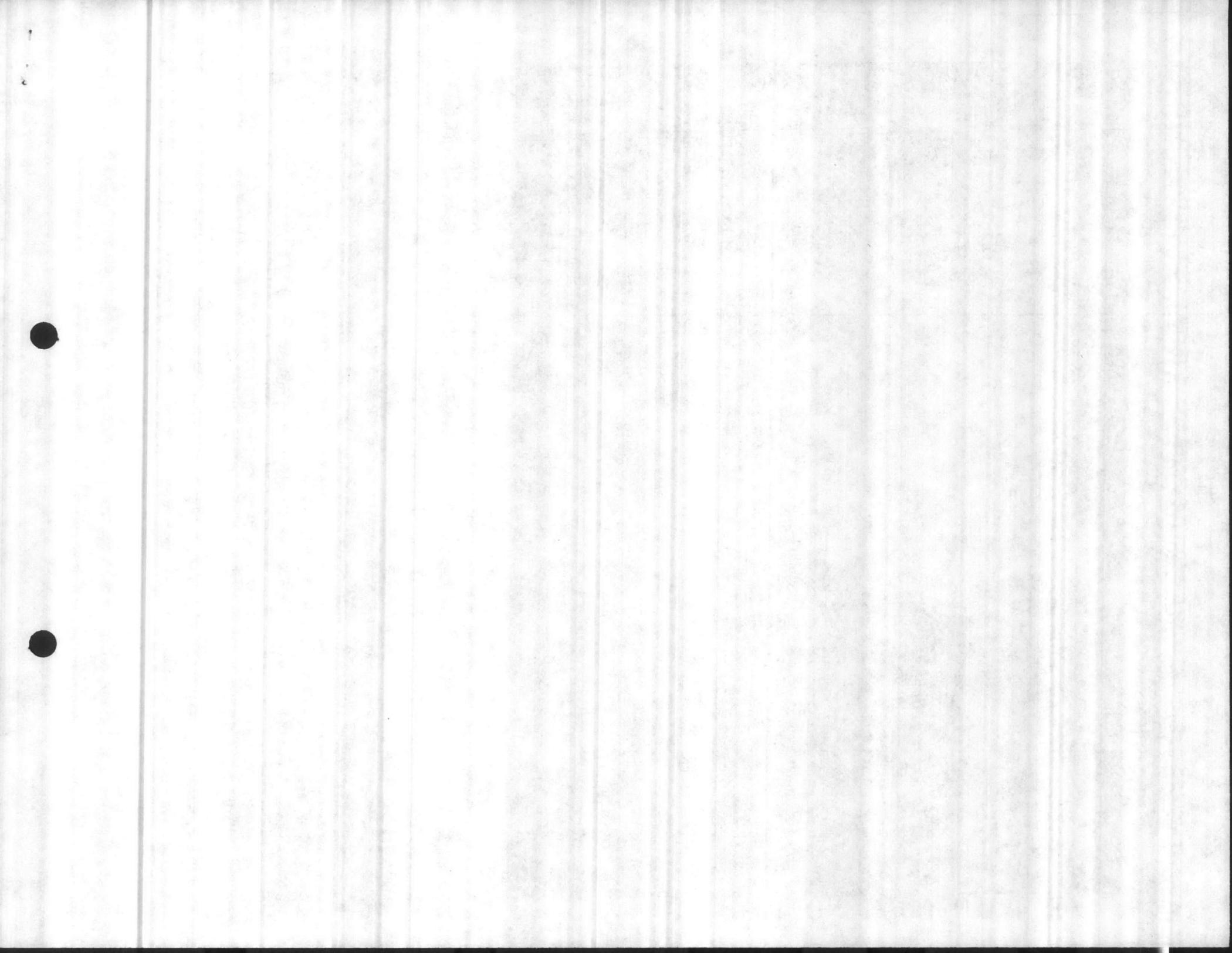
500



500

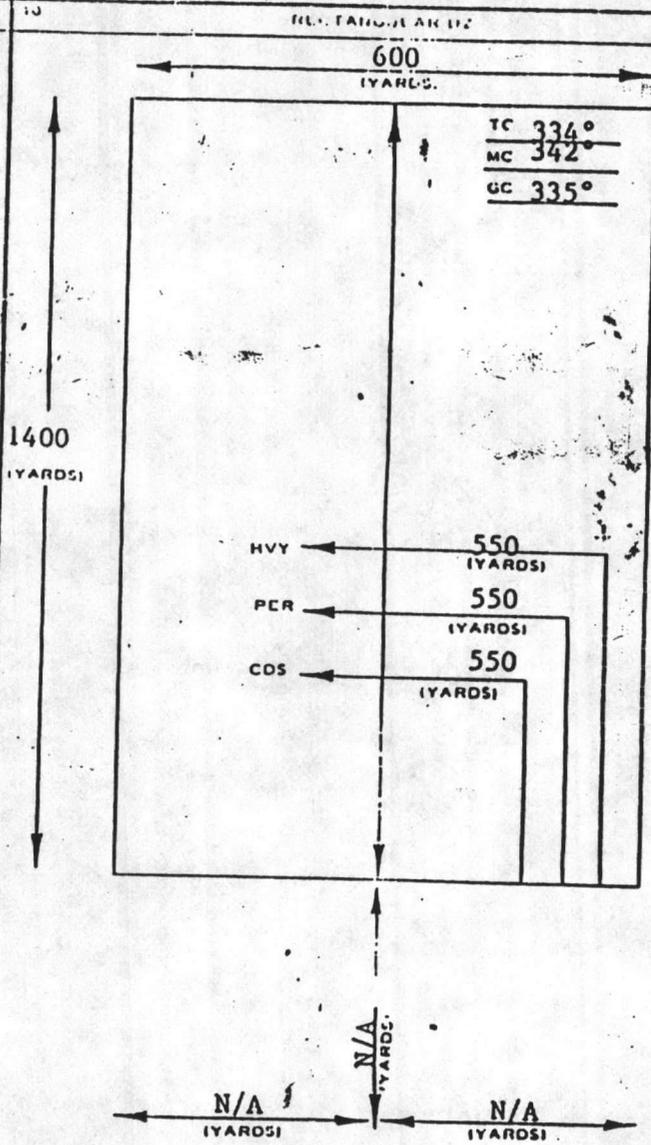
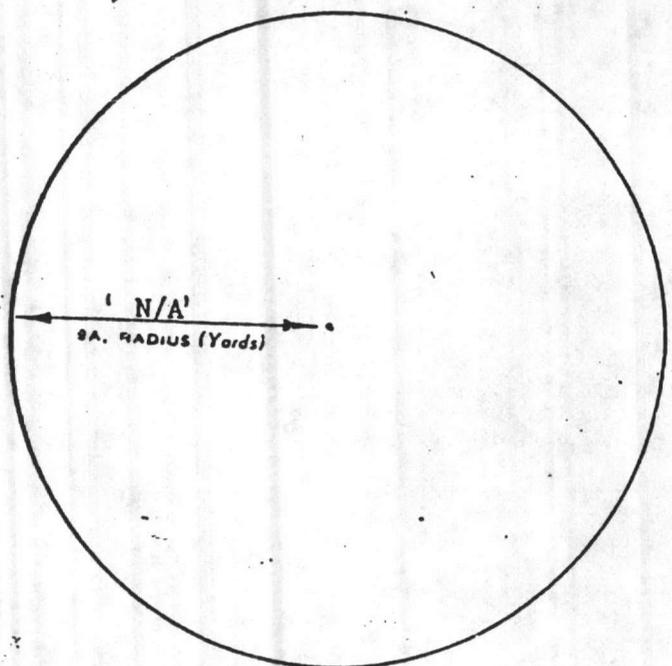
YDS

PHOTO DATE MAY 78



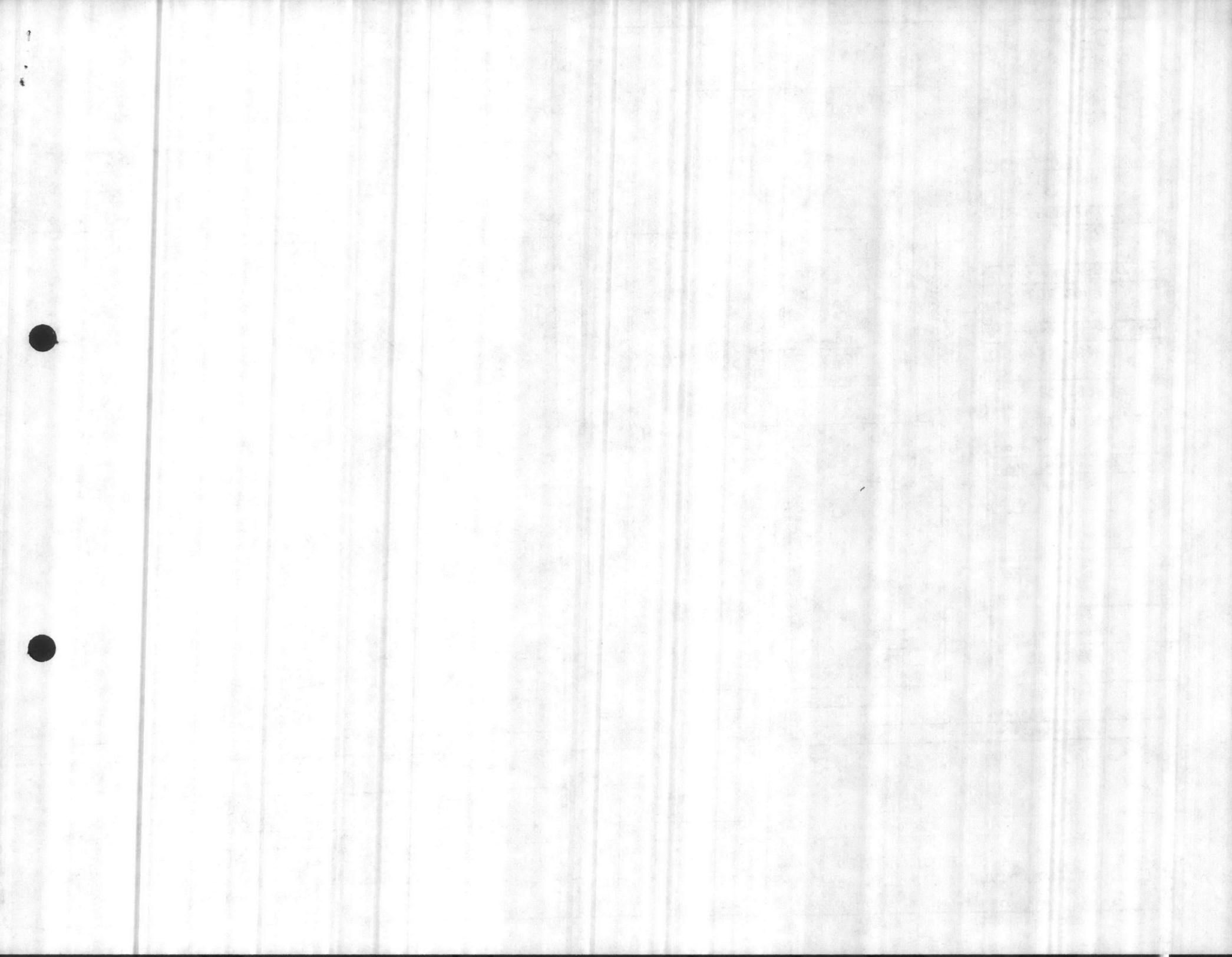
DROP ZONE SURVEY

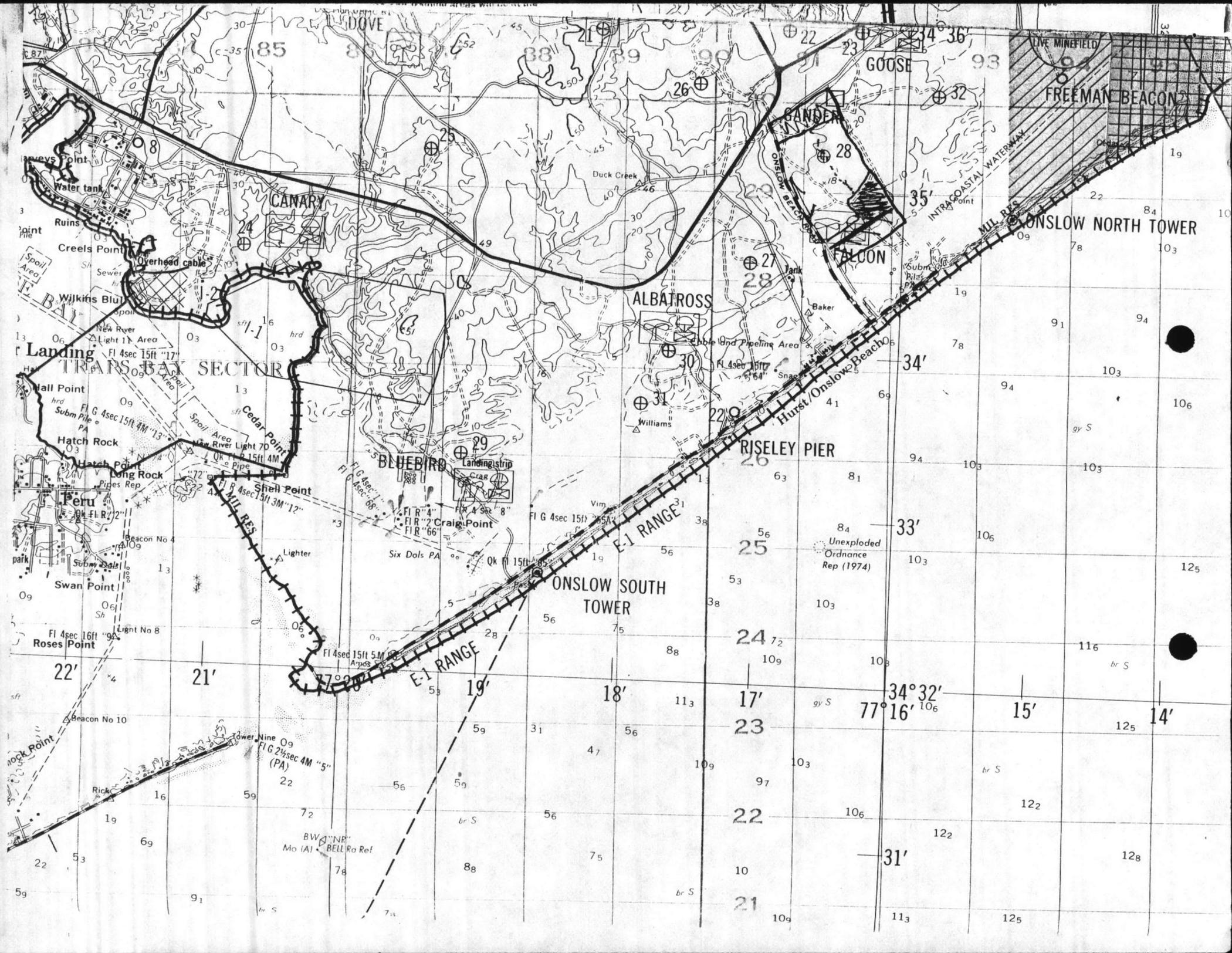
| | | | | | |
|---|--------------------------------------|---|---------------------|--|--|
| 1. DZ NAME
FALCON SEQUENTIAL DZ | | 2. LOCATION
Camp LeJeune 'C | | 3. MAP SHEET, SHEET NUMBER, EDITION AND DATE OF MAP
V742 5553 III 6 DMATC New River 1972
V742 SCPLJEUNE 1974 | |
| 4. DATE SURVEYED
30 Apr 85 | 5. DATE APPROVED
30 Apr 85 | 6. DZ TYPE
YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | | | |
| 7. GROUND POINT ELEVATION | | | 8. LOW LEVEL ROUTES | | |
| A. COS
20' | B. EQUIPMENT
20' | 9. ROUTE NAME/VELOCATOR
NONE AVAILABLE | | | |
| C. PERSONNEL
20' | D. HIGHEST
20' | | | | |

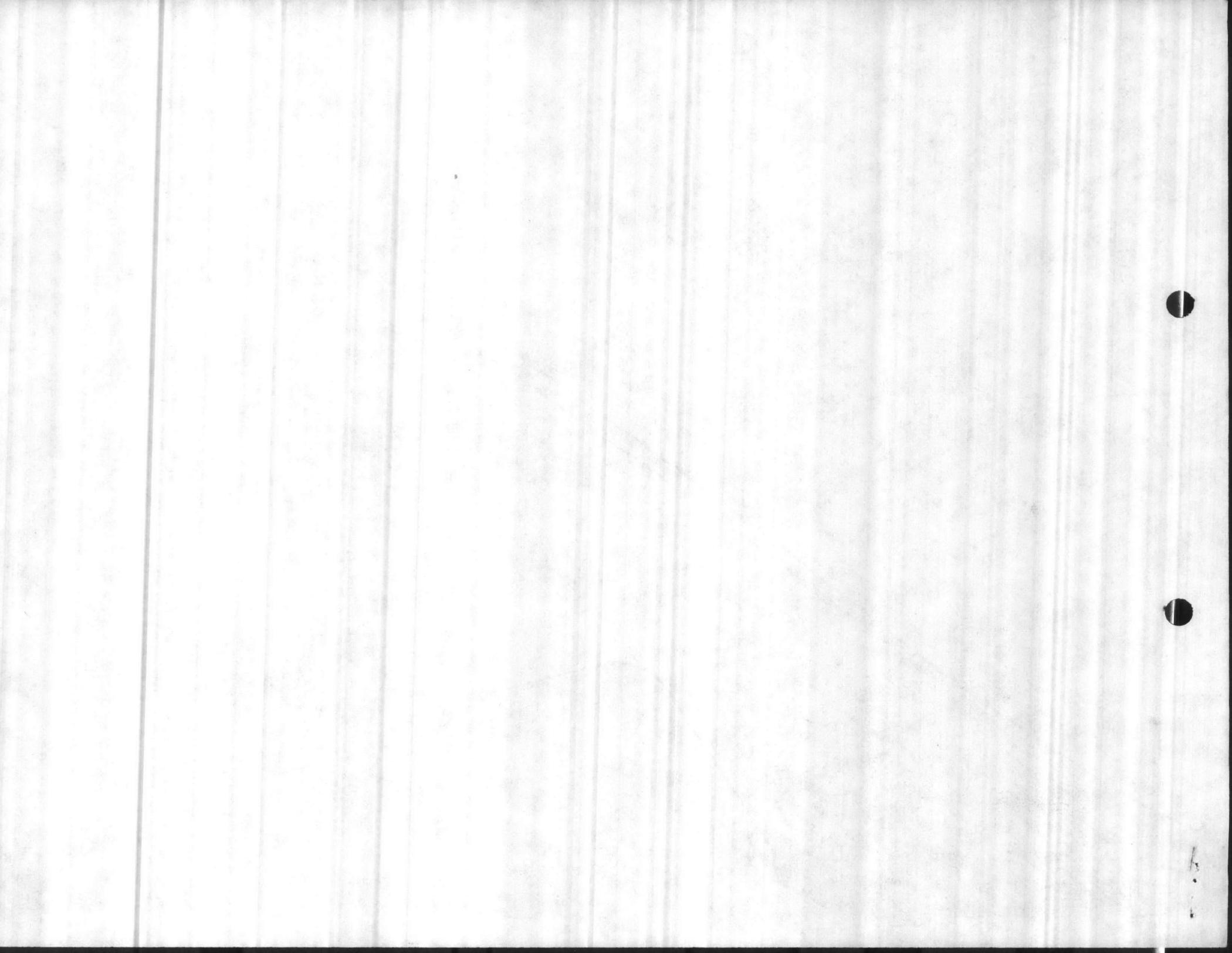


| | |
|------------------------------|------------------|
| A. CORNERS OF DZ | |
| LEFT LEADING EDGE | 9130 2871 |
| RIGHT LEADING EDGE | 9180 2844 |
| LEFT TRAILING EDGE | 9076 2937 |
| RIGHT TRAILING EDGE | 9126 2960 |
| B. TIMING POINTS | |
| LEFT | N/A |
| RIGHT | N/A |
| C. POINTS OF IMPACT | |
| CDS | 9134 2878 |
| PER | 9134 2878 |
| HVY | 9134 2878 |
| D. TRAILING EDGE CENTER LINE | |
| | 9101 2948 |
| E. LEADING EDGE CENTER LINE | |
| | 9155 2832 |
| F. POINT OF ORIGIN | |
| | 9134 2878 |
| G. REMARKS | |

| |
|--|
| 5D. CENTER MASS |
| 1. LATITUDE AND LONGITUDE (Degrees, minutes and seconds) |
| (18S) 50N 34° 34' 57.1" 2W 77° 16' 31.0" |
| 2. UTM COORDINATES |
| 9128 2890 |
| 3. REMARKS |







Peter
Charles
Danny

ADP
DS

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

6280
FAC
JAN 07 1987

From: Assistant Chief of Staff, Facilities, Marine Corps Base,
Camp Lejeune
To: Training Facilities Officer, Marine Corps Base, Camp
Lejeune
Via: Assistant Chief of Staff, Training and Operations
Subj: NBC TRAINING AREA, SNEAD'S FERRY ROAD AREA
Ref: (a) Site Visit by GySgt Martin, Base Gas Chamber, and
Mr. Alexander, Fac Dept, 29 Dec 86
(b) BO 11000.lb

Encl: (1) Project Site Map

1. Development of the NBC training area as a troop training project is approved as located on the enclosure. Since this project involves limited clearing and trail construction, no significant adverse environmental impact is anticipated per references (a) and (b). Submission of a preliminary environmental assessment is not required.

2. In order to prevent potential adverse impacts, we recommend the following measures be taken:

a. Coordinate with Base Maintenance Division on disposition of unmarketable mature timber and wood debris, such as use of Base Landfill.

b. Request Base Maintenance Division to seed the area upon completion of clearing and grading operations.

3. Point of contact is Mr. Alexander, MCB Environmental Engineer, extension 3034.

K. J. KIRIACOPOULOS
By direction

Copy to:
BMO
NREAD
EnvEngr

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

Handwritten: Kelly
Charles
Tang

6250
FAN 07 1981

from: Assistant Chief of Staff, Facilities, Marine Corps Base
Camp Lejeune
To: Training Facilities Officer, Marine Corps Base, Camp
Lejeune
Via: Assistant Chief of Staff, Training and Operations
Subject: WBE TRAINING AREA, BENTON'S LAKE ROAD AREA
Re: (a) site visit by Capt Martin, Base Gas Chamber, and
Mr. Alexander, Gas Dept, 23 Dec 80
(b) HQ 11000 LP

Enclosure (1) Project Site Map
Development of the WBE training area as a troop training
project is approved as stated on the enclosure. Since this
project involves limited clearing and earth construction, no
significant adverse environmental impact is anticipated per
References (a) and (b). Completion of a preliminary environ-
mental assessment is not required.

2. In order to prevent potential adverse impacts, we recommend
the following measures be taken:

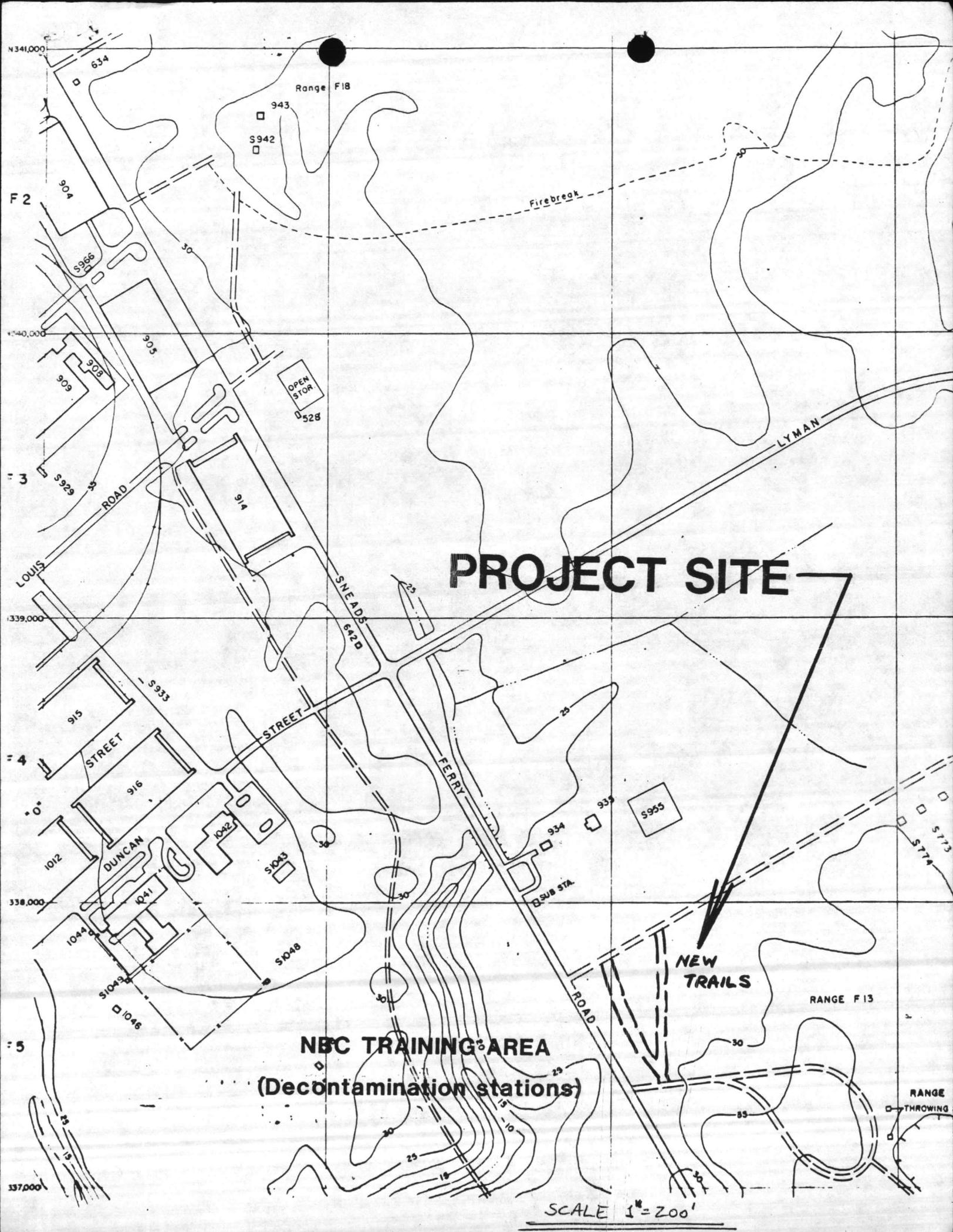
a. Coordinate with Base Maintenance Division on disposition
of unusable marine timber and wood debris, such as use of
Base Landfill.

b. Request Base Maintenance Division to seed the area upon
completion of clearing and grading operations.

3. Point of contact is Mr. Alexander, 604 Environmental Engi-
neering, Extension 3084.

K. G. WIRACOBULDS
by electronic

Copy to:
LAW
WELB
11/11/81



PROJECT SITE

**NBC TRAINING AREA
(Decontamination stations)**

NEW TRAILS

SCALE 1" = 200'

