UNITED STATES MARINE CORPS
2D LIGHT ARMORED VEHICLE BATTALION
2D MARINE DIVISION, FLEET MARINE FORCE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
1500
06/JGM/jgm
30 May 1984

From: Commanding Officer, 2d Light Armored Vehicle Battalion, 2d MARDIV, FMF, Camp Lejeune, North Carolina 28542
To: Commanding General, Marine Corps Base, Camp Lejeune, N.C. 28542 (ATTN: AC/S, Training)

Subj: REQUEST FOR ENVIRONMENTAL IMPACT REVIEW

Ref: (a) BASE ORDER 11000.1A

Encl: (1) Preliminary Environmental Assessment (PEA)

1. The enclosed PEA is submitted for review and approval in accordance with reference (a). Should further explanation be required, either the POC, listed in the enclosure, or I will be glad to assist.

James G. Magee

PRELIMINARY ENVIRONMENTAL ASSESSMENT

1. Action Sponsor: Commanding Officer, 2D LAV Battalion, 2DMARDIV FMF, Camp Lejeune, N.C. 28542

2. Point Of Contact: Captain Mark S. Sams, 2D LAV Bn, 2D MARDIV, FMF, Camp Lejeune, NC 28542; Phone (A) 484-1843/1922; (C) 919-451-1843/1922

3. Proposed Training Action Requiring Environmental Assessment:

Purpose: Train LAV Crews in operation of LAV-25 and LAV-Varients In night driving with night vision equipment (on vehicle and with individual night vision goggles). Training Area requested should be free of artificial lighting, and will be utilized only after last light, with training terminated and the training area vacated prior to first light.

Area Requested: Hoffmann Forest

Period of Training: 2200-0500, weekdays, beginning Fall 1984. Training periods will be five consecutive nights, once or twice a month for each period.

Environmental Protection Procedures (Proposed):

- All LAV vehicles will conform to DOT/EPA automotive and emission regulations for diesel powered motor vehicles, authorized to operate on state highways without special permit.

- LAV's will be operated only on existing roads within Hoffmann Forest. No off-road use will be allowed.

- No refueling operation will be conducted within the Forest.

- Each LAV will be equipped with on-board fire extinguisher systems.

- Liaison personnel and communications will be provided at any site requested by the N.C. Forest Service during all training within the Forest. Communications with all LAV's will be continuously maintained throughout all training. Units undergoing LAV night driver training will respond to, and assist, Forest Service personnel in combating any fires discovered during training, regardless of source of fire.

- Ammunition will not be expended during this training.

- No foreign matter: i.e.; food, packaging, containers, paint, etc. will be brought into, nor left in the Forest.

- Units undergoing LAV night driver training will not bivouac, hunt, fish, trap, cut trees or shrubs, nor use any resource of the Forest.

Encl (1)

4. Location: Hoffman Forest (see attached map)

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? 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 cleaned/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 spectic 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? NO Will public access for hunting, boating, fishing, etc., be restricted? SEE NOTE 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

* NATURAL RESOURCES NOTE: Public access will not be interrupted, per se, however hunters and fishermen must be advised that LAV's will be trafficing the Forest logging trails and roads during hours of darkness.

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.

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

IN REPLY REFER TO
5000
TRNG
22 Jun 84

From: Assistant Chief of Staff, Training, Marine Corps Base, Camp Lejeune
To: Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune, North Carolina 28542

Subj: CONSTRUCTION OF TRACKED VEHICLE TRAIL FROM RHODES POINT TO TLZ CARDINAL

Ref: (a) RCO ltr RCTL/HER/vec 11102 of 30 May 1984
(b) Dir, NREAD ltr 5200 over NREAD dtd 20 Jun 84

1. Reference (a) requested construction of subject tracked vehicle trail.

2. Reference (b) (attached) provides comments on the proposed new tracked vehicle trail.

3. It is requested that action be taken at the earliest possible date to start construction of the subject trail.

V/Resp
R. J. Weidner
R. J. WEIDNER
By direction

Preliminary Environmental Assessment

CONSTRUCTION OF TRACKED VEHICLE TRAIL FROM RHODES POINT TO TLZ CARDINAL

Action Sponsor: Assistant Chief of Staff, Training
Marine Corps Base
Camp Lejeune, NC

Prepared by: Director, Natural Resources and Environmental Affairs Division
Assistant Chief of Staff, Facilities
Marine Corps Base
Camp Lejeune, NC

Compiled by: Director, Natural Resources and Environmental Affairs Division
Assistant Chief of Staff, Facilities

This document was prepared in accordance with MCO P11000.8A, MCO 6280.5 and BO 11000.1A in compliance with Section 102(2)(c) of the National Environmental Policy Act of 1969.

UNITED STATES MARINE CORPS
Natural Resources and Environmental Affairs Division
Marine Corps Base
Camp Lejeune, North Carolina 29542

IN REPLY REFER TO
5200
NREAD
20 June 1984

From: Director
To: Assistant Chief of Staff, Training

Subj: CONSTRUCTION OF TRACKED VEHICLE TRAIL FROM RHODES POINT TO TLZ CARDINAL

Ref: (a) On site visit by Lt Redmond and MSgt Letcher, EOD; Lt Graham, Range Control; MSgt Moses, Range Maintenance, and Messrs. Jolly, Sharpe and Black, NREAD on 15 June 1984
(b) RCO ltr RCTL/HER/vec 11102 of 30 May 1984

Encl: (1) Map of and Comments on Proposed New Tracked Vehicle Trail

1. Reference (a) was held to determine a satisfactory location for the new section of the subject trail. During reference (a) the site of proposed trail identified by reference (b) was roughly located and its effects on environmental, soil, water and forestry programs were discussed. The concerns and the rough location discussed during reference (a) are shown in the enclosure.

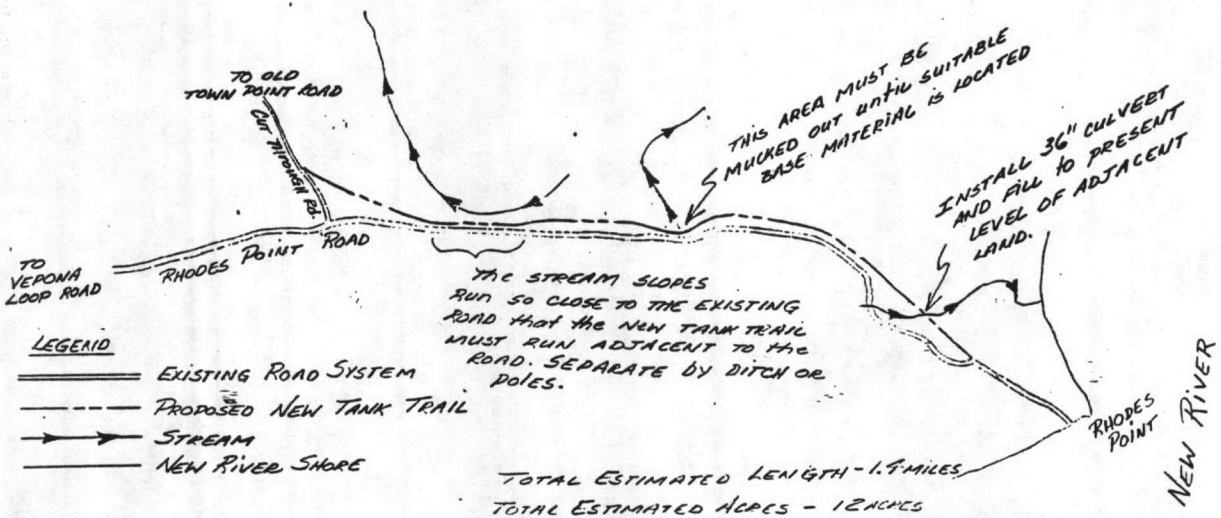
2. The location shown in the enclosure appeared to both satisfy mission requirement and minimize environmental impact. Other sites north of that shown in the enclosure have severe erosion problems, potential impact on wetlands, and will be more difficult to build and maintain.

J. I. Wooten

J. I. WOOTEN

Copy to:
TrainFacO

FROM RHODES 14. to TLZ CARDINAL



LEGEND

- EXISTING ROAD SYSTEM
- PROPOSED NEW TANK TRAIL
- STREAM
- NEW RIVER SHORE

TOTAL ESTIMATED LENGTH - 1.4 MILES

TOTAL ESTIMATED ACRES - 12 ACRES
(BASED ON 70' ROW)

EXISTING ROAD NETWORK WILL BE USED FOR TRACKED VEHICLE MOVEMENT FROM CUT THROUGH Rd. intersection to TLZ CARDINAL

SCALE: 1-15,840

COMMENTS ON ENVIRONMENTAL IMPACT
OF PROPOSED NEW TANK TRAIL AT RHODES POINT

1. Air Quality: Burning of debris from clearing of vegetation from trail will be one method for disposal. The remoteness of the site from populated areas (civilian or military) makes this an acceptable method provided weather conditions and forest fire hazard are acceptable at the time work is done. If this method of disposal is utilized, State environmental regulations, relative to fuels used and to time of day burning will be done, must be observed. Wilmington Office of North Carolina Department of Natural Resources and Community Development will be notified prior to burning.

2. Land Quality: Road construction will severely disturb approximately 12 acres of land presently vegetated with pines, hardwoods, shrubs and vines. The site was selected because soils are suitable and are relatively level, except where the trail crosses drains. Concentrated runoff in side ditches and disturbed areas will cause moderate to severe erosion if proper erosion control and surface water management practices are not installed and maintained. An erosion control plan approved by State is required. Borrow material appears to be available on the site.

3. Groundwater Quality: This project does not appear to have any impact on groundwater.

4. Surface Water Quality: The project will cause increased rates of runoff during and subsequent to construction. While the project will increase sedimentation from erosion, properly installed erosion control practices and stabilization with grass will hold pollution within acceptable standards.

5. Natural Resources: Approximately 12 acres of forestland will be lost along with the associated wildlife habitat. Because of the amount and quality habitat in the area, the action will not have a significant adverse impact on any species. There are no endangered species located in or routinely using the affected area.

6. SocioEconomic Considerations: The site is remote from populated areas. The project will serve an existing need and no increase in level of activity in the area is expected attributable to the project. There are no known archaeological or historical sites located in the project area as depicted on the attached map.

ENCLOSURE (1)

T-11010

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

11010
NREAD
13 June 1984

From: Assistant Chief of Staff, Facilities
To: Resident Officer in Charge of Construction
Jacksonville, North Carolina Area

Subj: TIMBER SALE; REQUEST FOR

Ref: (a) FONECON btwn Ms. Ennett, PWO, and Mr. Gibbs, NREAD, on 17 May 1984

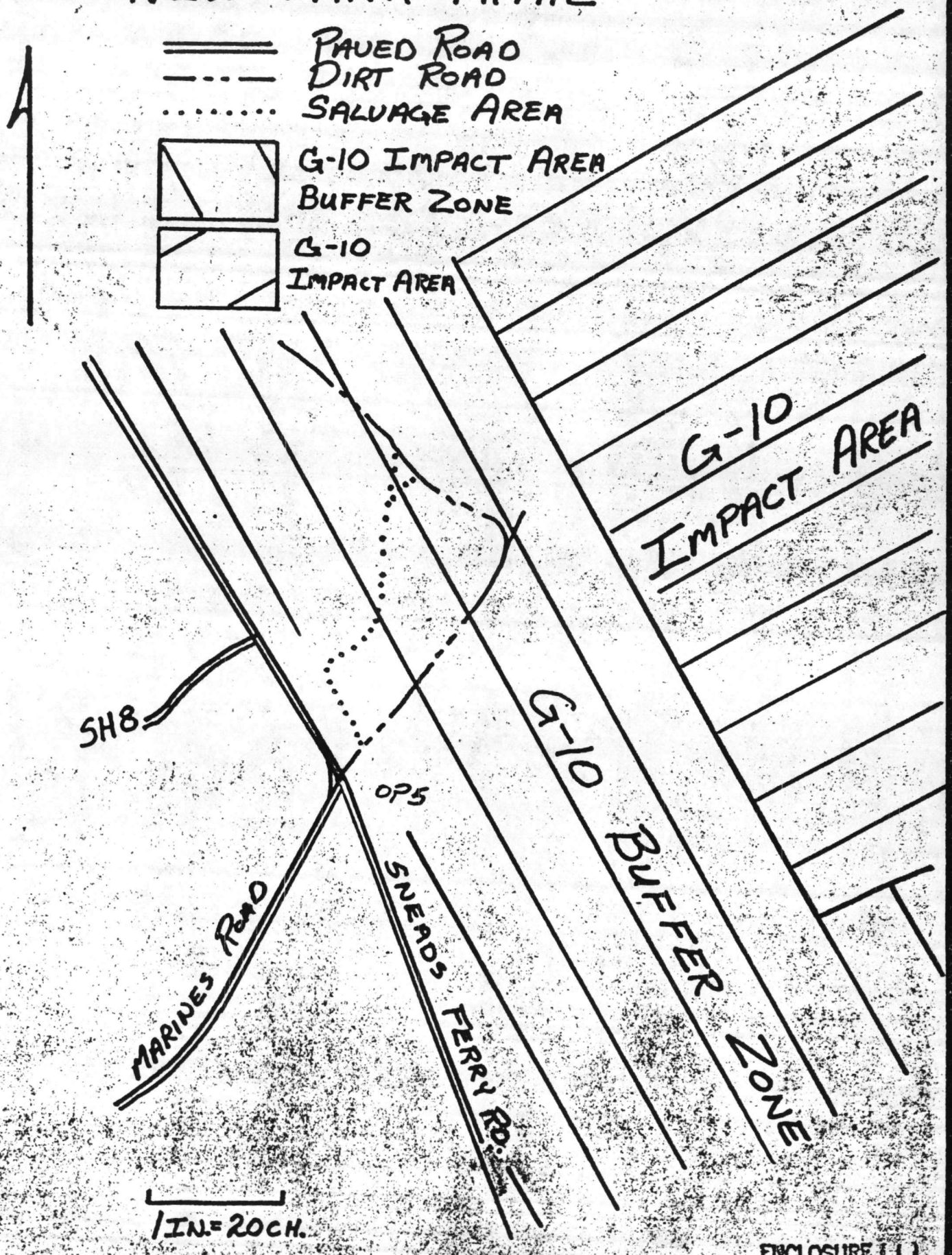
Encl: (1) Map of Damaged Timber OP-5
(2) EOD ltr EOD/HBR 8027 of 5 June 1984
(3) Informal Timber Sale Contract (Damaged Timber OP-5 New Tank Trail)

1. During reference (a), the harvest of timber under contract within surface hazard areas was discussed. Ms. Ennett indicated that areas of this type would require certification of explosive ordnance clearance prior to harvest. Base EOD has conducted a sweep of the salvage area shown in enclosure (1) and a copy of the letter forwarded this office is included as enclosure (2). If upon your review, this assessment proves adequate for the contractual harvest of timber within this area, please process enclosure (3) making any changes or additions required for safety and advertise at the earliest possible date.

J. I. WOOTEN
By direction

Writer: Jon Gibbs, NREAD, 5003
Typist: T. Hardison, 13 Jun 84

DAMAGED TIMBER OP-5
NEW TANK TRAIL



ENCLOSURE (1)

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

IN REPLY REFER TO
8027
EOD
7 Jun 84

FIRST ENDORSEMENT on EODO ltr 8027 over EOD dtd 5 Jun 84

From: Assistant Chief of Staff, Training
To: Natural Resources and Environmental Affairs Division
(Attn: Pete Black)
Via: Assistant Chief of Staff, Facilities: BWR 6/12/84

Subj: EOD SWEEP OF NEW TANK TRAIL; OP-5 GE/GA AREA

1. Forwarded.

J. J. FIZERLE
By direction

ENCLOSURE (2)

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

IN REPLY REFER TO:
8027
EOD
5 Jun 84

From: Explosive Ordnance Disposal Officer
To: Natural Resources and Environmental Affairs Division
(Attn: Pete Black)
Via: (1) Range Control Officer T.R.H. 840605
(2) Assistant Chief of Staff, Training
(3) Assistant Chief of Staff, Facilities

Subj: EOD SWEEP OF NEW TANK TRAIL; OP-5 GE/GA AREA

Ref: (a) Phonecon 1stLt REDMOND/EOD O/Pete Black, NREAD of 4 Jun 84

1. A EOD Surface Clearance Sweep conducted in the subject area located no unexploded ordnance.

2. A Surface EOD Clearance Sweep does not guarantee that there is no dud hazard in the area cleared. In my opinion, it is safe to use heavy equipment to remove timber from the cleared area. If desired, an EOD technician will be provided for all construction in the subject area.

3. Point of contact for EOD assistance is MSgt LECHER, NCOIC Base EOD Team, ext. 0558/0382.

H. B. Redmond Jr.
H. B. REDMOND JR.

INFORMAL TIMBER SAL[redacted] CONTRACT, SPECIFICATION NO. 0[redacted]

TIMBER SALE, [redacted] DAMAGED TIMBER OPS NEW TANK TRAIL

at the

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to remove timber from Government property.

2. LOCATION: The timber is located at the Marine Corps Base, Camp Lejeune, North Carolina, as shown on the attached map. The map is the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

3. GENERAL REQUIREMENTS: The work includes removal of all merchantable trees inside the sale area.

4. ESTIMATED VOLUMES:

PINE	VOLUME
[redacted]	[redacted]
Pulpwood	[redacted] CDS 10.8

5. TIME FOR COMPLETION: The entire work, including removal of all litter, shall be completed [redacted] 30 days after award. No time extensions will be allowed.

6. DETAILED REQUIREMENTS:

6.1 All access roads must be approved by the Contracting Officer or his representative.

6.2 Stump height shall not exceed 18 inches from the ground, measured on the uphill side of the stump. Tree tops must be lopped so that no portion is over five feet above the ground. Tops shall not be left outside the sale area.

6.3 Marine Corps Base security rules and regulations shall be followed. All fires shall be properly secured in accordance with Base Order 11320.1F.

~~6.4 All loading deck locations shall be approved in advance of any loading operation.~~

6.4 Purchaser shall give the Contracting Officer three days notice before moving on or off the Base.

7. CONTROL OF HAZARDOUS MATRIALS AND WASTE: No hazardous substance may be discharged onto the ground or into streams and surfacae waters. This includes all petroleum products, waste oil and lubricants (POL's). Any repair or maintenance which could result in leakage or spillage of POL's or any hazardous substance, must be done in a manner as to prevent it from entering any ditches, streams, or natural drainage. In the event of accidental spillage, the Contractor will be required to report such spillage in accordance with BO 11090.1B. Used POL's and other hazardous material will be containerized and removed from he Base by the Contractor. The Contractor shall bear the cost for cleanup of all the spillage.

ENCLOSURE (3)

8. UNAUTHORIZED REMOVAL OF, OR DAMAGE TO, STANDING TIMBER: Undesignated timber meeting utilization standards and unnecessarily damaged or negligently or willfully cut by Purchaser shall be paid for at bid prices and required deposits which are in addition to liquidated damages. If such timber is of a species or quality different from designated timber, the rates will be considered to be the current average monthly price quoted by TIMBER MART SOUTH, a monthly publication which gives the average stumpage price for the Coastal Plain of North Carolina.

8.1 Liquidated Damages: Unnecessary damage to or negligent or willful cutting of undesignated timber on portions of sale area cut over under this contract is likely to cause substantial silvicultural or other damage to the forest resource. It will be difficult, if not impossible, to determine the amount of such damage; therefore, Purchaser shall pay as fixed, agreed and liquidated damages an amount equivalent to, and in addition to, the amount payable at bid prices for such timber. If designated, Purchaser shall remove such damaged or cut timber.

8.2 Protection of Undesignated Timber: Undesignated timber, meeting utilization standards, shall be protected from damage or destruction in Purchaser's operations. In the event undesignated trees are unnecessarily or negligently damaged or destroyed by Purchaser's operations, such damage will cause serious and substantial silvicultural or other damages; therefore, the Purchaser shall pay as fixed, agreed and liquidated damages:

$35.00 for each pine sawtimber tree

$15.00 for each pine small roundwood tree

$100.00 for each red-cockaded woodpecker tree

Damage, as used herein, includes injury to the living crown, bole or roots of undesignated trees. If areas are marked on the ground around such trees, operation of heavy equipment or skidding of products within said area shall be considered to be damage to the trees. If designated, Purchaser shall remove such damaged or cut timber.

By agreement, and in accordance with the paragraph entitled "Designation Changes", individual trees designated for cutting in the vicinity of an undesignated tree(s) may be left standing if felling or skidding of such designated tree(s) would endanger the undesignated tree(s).

8.3 Designation Changes: Within sale area, minor adjustments may be made in boundaries of cutting units ~~or in the timber individually marked for cutting~~, when acceptable to the Purchaser and Contracting Officer.

8.4 Undesignated Timber Damaged Without Negligence: Undesignated timber meeting utilization standards, damaged without negligence by Purchaser and designated by Contracting Officer, shall be cut, removed and paid for at current contract rates and required deposits.

9. ADDITIONAL TIMBER: The designation of additional trees may be made for access roads or trails to facilitate logging operations and logging decks. Merchantable trees which must be removed by the Government, but are not part of an existing contract, may be added to an existing contract if approved by the Purchaser and approved by the Contracting Officer. In either case, the additional volume of all merchantable trees which were cut will be paid for at the bid price. Stumpage damaged by fire caused by negligence or fault of the Purchaser shall be cut. The Government will mark and tally stumpage and the Purchaser shall remove it from the Base. Payment which will occur prior to the harvest for such fire damaged products shall be made by the Purchaser at double the bid price. The harvesting of timber under this contract shall be accomplished by use of conventional or specialized equipment, when specified, and the application of standard forestry practices currently in use in the area. Work shall be conducted in a manner which minimizes the damage to residual timber, of all species, including natural regeneration. The use of tracked equipment having a blade or frame wider than the width of the tracks is restricted to: (1) the maintenance of established trails currently graded and maintained by the Base; (2) the construction and maintenance of necessary new haul roads as approved by the Contracting Officer; (3) the assistance of disabled vehicles; and (4) within the limits of designated areas to be cut only for felling trees, with no other use being permitted without prior approval.

10. MANDATORY INSURANCE COVERAGE:

(a) Prior to beginning the work, the successful bidder shall furnish to the Contracting Officer a certificate of insurance as evidence of the existence of the following insurance coverage in amounts not less than the amounts specified below:

Type of Insurance	COVERAGE Per Person	Per Accident	Property
Comprehensive General Liability	$300,000	$1,000,000	$100,000
Automobile Liability	$300,000	$1,000,000	$100,000
Workmen's Compensation (Other as required by state law)	AS REQUIRED BY STATE LAW		

The comprehensive general and automobile liability policies shall contain a provision worded as follows:

'The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy.'

The certificate of all policies shall provide for notice of cancellation to the Contracting Officer and the certificates shall indicate that the above provision has been included.

(b) The Prime Contractor shall also furnish a certificate of insurance as evidence of the existence of such coverage for all subcontractors who will work on the job. This certificate shall be furnished not less than five days before such subcontractor forces enter the Government premises.

11. PAYMENT: Entire amount of contract must be paid prior to entering sale area. Payment shall be made by certified check, cashier's check, bank draft, postal or express money order, payable to the Treasurer of the United States.

12. DEFINITIONS: "Purchaser" or "Contractor" means the party signing the contract for purchase of Government-owned timber. "Officer in Charge" and "Contracting Officer" are used interchangeably in this contract and have the same meaning.

13.

FORM OF CONTRACT: The contract will be executed on Standard Form 114, Sale of Government Property Bid and Award, and will include Standard Form 114B, Item Bid Page, Standard Form 114C, General Sale Terms and Conditions, and Supplement to SF 114-C, Additional Provisions (Timber Sales) dated March 1979.

IN CLAUSE 6, PAYMENT, of Standard Form 114-C, add the following:

"For payment purposes, the quantity of timber to be salvaged will be calculated according to Volume Tables used by Coastal Plain Units of the U. S. Forest Service in Region 8 (86 cubic feet equals one cord). A minimum of 10 cords of timber for salvage as pulpwood are marked initially for removal among the several identified infestation spots, and Purchaser shall pay the Government for the initial 10 cords prior to beginning work. Provided sufficient additional trees have been marked and added to the contract removal so as to exceed the initial 10 cords, Purchaser shall make payment for a second increment of 50 cords before he exceeds the first 10 cords of salvage, payment to be at the same unit price as bid. Similiarly, as even more trees are identified for salvage, Purchaser shall pay in advance before beginning to salvage the next 50-cord increment. When Purchaser has completed the removal of all identified infestations in his contract area, pro rata refund will be made for calculated shortfall in the final 50-cord increment."

CHANGES TO STANDARD FORM 114-C:

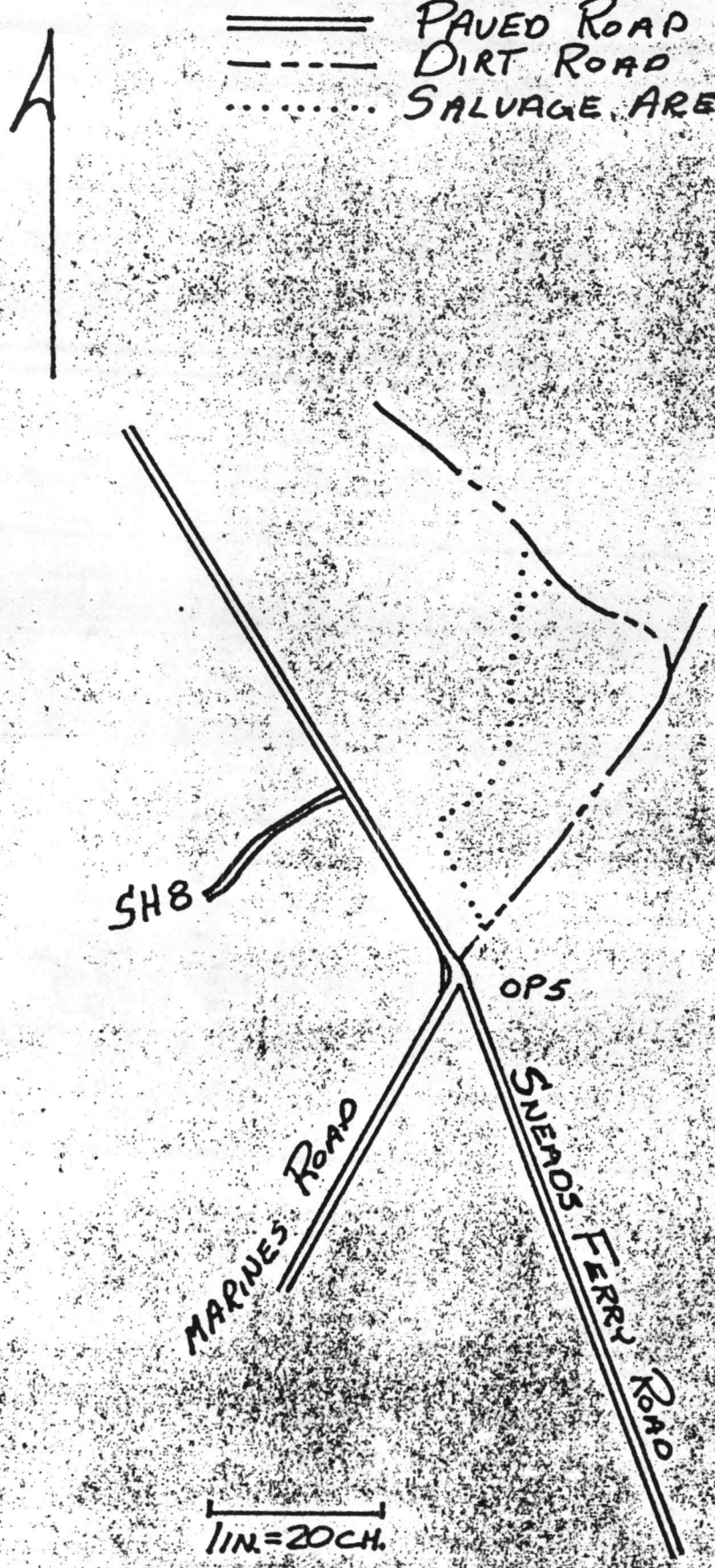
ADD the following to Clause 25. DEFINITIONS:

"(d) 'Purchaser' or 'Contractor' means the party signing the contract for purchase of the Government-owned timber."

"(e) 'Officer in Charge' is used interchangeably with 'Contracting Officer' and has the same meaning."

Clause 36. ALTERATIONS: After "DISPUTES" change "(1979 MAR)" to read "(1980 JUNE)".

DAMAGED TIMBER OP-5
NEW TANK TRAIL



SAWCO-E 21 June 1984

SUBJECT: Impact Zone Activities in Wetlands

Commanding General
Marine Corps Base
Camp Lejeune, North Carolina 28542

1. On 12 June 1984 Mr. Ernest Jahnke of my staff met with the following military and civilian personnel of Camp Lejeune: COL Melton Lilley, CPT Howard, LT Ben Redmond, and Messrs. Julian Wooten, Danny Sharp, Ken Jolly, and Don Gurganus.

2. The purpose of the meeting was to review and discuss onsite the nature of activities being carried out in wetlands that had not previously been brought to the attention of this office. Specifically, the work involves clearing, filling, and drainage in the G-10 Impact Area as follows:

a. Tank crossing at Jumping Run, immediately east of Sneads Ferry Road. Forested vegetation has been cleared along proposed trail including crossing at Jumping Run and its flood plain wetlands. Plans call for a fill and culverted causeway across the creek. No fill had been placed on the date of the meeting.

b. Jumping Run and associated wetlands in impact zone (G-3 Area). Forested vegetation has been leveled. Plans call for channelizing creek to approximate dimensions of 4 feet deep by 7 feet wide by 1,700 feet long. Stated purpose is to drain area to allow for controlled burning so as to enhance visual access to targets without the need to utilize heavy equipment to clear the area.

c. Cowhead Creek and associated wetlands in impact zone (G-10 Area). Approximately 1,800 linear feet of the creek has been channelized and associated wetland vegetation has been leveled. Plans call for ditching an additional 3,000+ feet of the drainage. The stated purpose of this activity is the same as cited in b. above.

3. Executive Order 11990 issued 24 May 1977 was issued "in order to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." As such, each (Federal) agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands.

SAWCO-E 21 June 1984
SUBJECT: Impact Zone Activities in Wetlands

4. Section 330.4 of the Code of Federal Regulations provides a nationwide permit for the discharge of dredged or fill materials into waters and wetlands above the headwaters of a given drainage basin. However, this activity was contingent upon compliance with certain conditions in order for the permit to be valid. These conditions included, among others, that the discharge would not adversely destroy threatened or endangered species or their critical habitat.

5. To insure that the terms and conditions of the nationwide permit are applicable to a specific project in a specific area, it has been the policy of this office to conduct field reviews of the proposed work before it commences where possible. It is my understanding that the new tank trail passes relatively close to the habitat that is designated suitable for the endangered red-cockaded woodpecker (Picoides borealis). Adverse impacts to such areas (if within our regulatory jurisdiction) might not allow dredge or fill activities to take place under authority of the nationwide permit.

6. Recently, a suit brought against the Corps of Engineers resulted in significantly modifying the nationwide permit authority in our regulations. When effective, the new regulations will likely require individual permits for work of the nature and extent that has been undertaken in the Cowhead Creek and Jumping Run areas. Issuance of such permits will depend upon a weighing of the benefits of the work against the environmental and other losses and a determination that the work is not contrary to the public interest.

7. On 14 June 1984 Mr. Robert Alexander of your base maintenance office was advised that all work, either undertaken or proposed, at Jumping Run and Cowhead Creek in the G-10 Impact Area can proceed under the current provisions of the nationwide permit. If work is not completed by the effective date of the new regulations, however, work may be required to cease until a determination of applicability of the nationwide permit is made by this office.

8. Future plans involving alteration of water or wetland areas at any location should be provided to this office in advance of project commencement so as to allow us to determine if, when, and where a permit is needed. Such advance contact will insure a minimum of delay in carrying out such activities in the future.

9. Mr. Jahnke of my Regulatory Branch is responsible for activities at Camp Lejeune. He can be contacted at telephone (919) 343-4467.

WAYNE A. HANSON
COL, Corps of Engineers
Commanding

BCF:
Mr. Julian Wooten
AC-S Facilities
NREAD-Building 1103
Marine Corps Base
Camp Lejeune, NC 28542

Peter Black - your copy

AV564-9613

2032BT:HCE:357c
11000
25 APR 1984

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune

Subj: Feasibility Study: Vegetation Control of G-10 Impact Area

Ref: (a) CG MCB CAMP LEJEUNE ltr FAC/REA/hf 6280 of 3 Oct 1983
(b) Meeting btwn CAMP LEJEUNE (COL Stokes and Staff)/ LANTNAVFACENGCOM (R. Warren and E. Eacho) of 13 March 1984
(c) PONECON btwn CAMP LEJEUNE (R. Alexander)/ LANTNAVFACENGCOM (E. Eacho) of 16 Apr 1984

Encl: (1) Primary Vegetation on OP-2, 3 and 5 Vista Areas and the G-10 Impact Area including Map of Dominant Vegetation Species
(2) Alternatives List: Improving Line of Sight from OP Areas to G-10 Impact Area
(3) Herbicides Survey (including cost estimates) and Management Recommendations

1. Reference (a) requested the development of the subject Feasibility Study for the use of herbicides as a means to remove vegetative obstructions from the G-10 Impact Area and its buffer zone, thereby restoring visibility of bombing targets.

2. The referenced study involved completion of three tasks which are delineated below:

Task 1: Assessment of Existing Vegetation

Task 2: Preparation of a Preliminary Environmental Assessment (PEA)

Task 3: Herbicide Survey and Management Recommendations

3. Tasks 1 and 3 are provided as enclosures (1) and (3) respectively. The alternatives analysis, developed as the initial phase of Task 2, is provided as enclosure (2).

2032BT:HCE:357c
11000

4. After evaluation of enclosure (2) during reference (b), cutting was preferred by Camp Lejeune over herbicide treatment. Consequently, the PEA for herbicide treatment is no longer required.

5. As discussed during reference (c), remaining funds appropriated for development of the PEA will be returned to Camp Lejeune via our finance office.

6. Should you have any questions concerning this matter, please contact Mr. Robert L. Warren (AV564-9605, FTS 954-9605, Commercial 804-444-9605) of my staff.

THOMAS C. HORSCH
By direction

Blind copy to:
Code 203

EACHO
hinton
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Primary Vegetation on the OP-2,3, and 5 Vista Areas and the G-10 Impact Area

The vista areas and G-10 impact area are composed of the following 3 types of vegetative sites:

1. Excessively drained, dry sites - Scattered Longleaf and Loblolly Pine, up to 60 feet tall with a light understory of Turkey and Blackjack Oak. Oaks range up to 10 feet tall. Scattered Gallberry and low-bush Huckleberry plants up to 4 feet high. Thin forest litter, and sparse vegetation. Shown in yellow on map.

2. Poorly to somewhat poorly drained sites - Scattered Pond, Longleaf and Loblolly Pine, up to 50-feet tall. Understory oaks are Blackjack, Black, Red, Water and Willow Oaks up to 10-feet tall. Shrubs are Loblolly, Titi, Wax Myrtle, Redbay, Sweetbay and range up to 10 feet in height. Sparse vegetation and thin forest litter. Shown in gray on map.

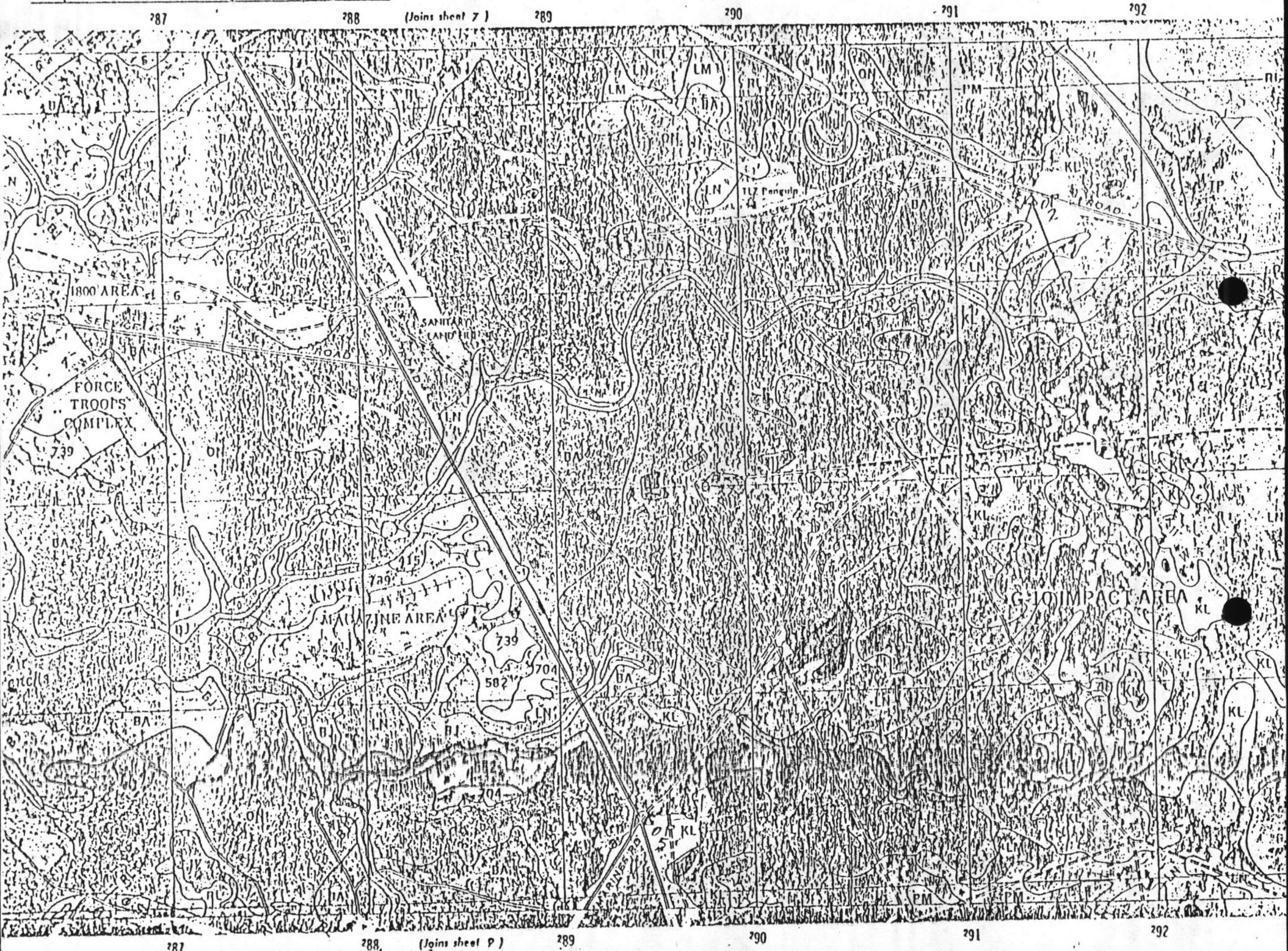
3. Very poorly drained sites - Scattered to moderately dense Pond Pine with an occassional Loblolly Pine, up to 30-feet tall. Shrubs and vines are dense; litter is thick. The important shrub and vine species are Sweetbay, Loblolly-bay, Redbay, Titi, Wax Myrtle, and Greenbrier and range up to 15 feet in height. Shown in blue on map.

All vegetation can be deadened, and thus defoliated, using approved EPA herbicides such as Tordon 101 or Garlon 4 or a combination of these chemicals. Aerial application would be the most feasible method of treatment.

The common and scientific names of the shrubs and vines mentioned above are as follows:

Gallberry - Ilex coriacea
Huckleberry - Gaylussacia frondosa
Titi - Cyrilla racemiflora
Sweetbay - Magnolia virginiana
Redbay- Persea borbonia
Wax Myrtle - Myrica cerifera
Greenbrier - Smilax sp.
Loblolly-bay - Gordonia lasianthus

Map of Dominant Vegetation Species • Pond and Loblolly Pine (very poorly drained, dense shrub cover)



Gray) Pond, longleaf, loblolly Pine (poorly

CLEARING WAS NOT CONSIDERED A VIABLE ALTERNATIVE

ALTERNATIVES: IMPROVING LINE OF SIGHT FROM OP AREAS TO G-10 IMPACT AREA

	Alternative	Frequency of Recurring Action	20 Year Life Cycle Cost	Visual Efficiency: Short-Term	Visual Efficiency: Long-Term	Potential Environmental Impacts	Regulatory Requirements
1	Herbicide Treatment ($147 per acre)	2-3 yrs. (for conversion to meadowlands)	Option 1: $1,612,216 (1,096 acres) Option 2: $797,280 (542 acres)	Low due to standing trees	High in conjunction with supplemental forestry practices	Potential loss of Red-Cockaded Woodpecker nesting and foraging habitat	Coordination with U.S. Fish and Wildlife Service
						Potential toxicity to vegetation and aquatic species associated with wooded swamps and coastal wetlands	Consistency Determination with North Carolina's Coastal Area Management (CAM) Act by OCM
						Potential herbicidal runoff into adjacent esturine system	Consistency Determination with North Carolina's CAM Act by OCM
2	Cutting * ($100 to $120 per acre by private contractor)	5 yrs. (retaining existing underbrush)	Option 1: $438,400 to $526,080 (1,096 acres) Option 2: $216,800 to $260,160 (542 acres)	High	High	Potential accelerated siltation of adjacent esturine system	Consistency Determination with North Carolina's CAM Act by OCM
						Potential disturbance of archaeological resources	Consultation with SHPO
						Potential loss of Red-Cockaded Woodpecker nesting and foraging habitat	Coordination with U.S. Fish and Wildlife Service
3	Installation of 100 Ft. Towers (capable of holding 20 men; $35,000 per tower)	Paint every 3 years	$132,500	High	High in conjunction with selective cutting	Negligible	None
4	No Action	Not applicable	Not applicable	Operational effectiveness degraded	Operational effectiveness degraded	None	None

* Camp Lejeune foresters have determined that timber is unmarketable.

ENCLOSURE (2)

TASK 3

A. List of EPA-approved herbicides with sample labels.

(1) There is no one herbicide that will provide control of all the species of vegetation identified. Particularly the waxy leaved species, such as Loblolly bay (Gordonia lasianthus). It must also be recognized that the various environmental conditions at the time of application will affect the effectiveness of any herbicide or combination selected.

(2) The following list of herbicides is approved for aerial applications:

(a) GARLON^{R}4; Triclopyr (3,5,6 - trichloro - 2 pyrindinyloxyacetic acid) butoxyethyl ester; 61.6%; Dow Chemical

(b) TORDON^{R} 101; Picloram (4-amino-3,5,6- trichloropicolinic acid) 10.2%; 2,4-dichlorophenoxyacetic acid 39.6%; Dow Chemical

(c) ROUNDUP^{R}; Isopropylamine salt of Glyphosate; 41.0%; Monsanto Chemical

(d) SPIKE^{R}40P; Tebuthiuron: N-[5 (1,1-dimethylethyl) - 1,3,4 - thiadiazol-2-yl]-N,N^{1}-dimethylurea; 40%; Elanco Chemical.

(e) Krenite^{R}; Ammonium salt of fosamine [ethyl hydrogen (aminocarbonyl) phosphonate]; 41.5%; DuPont Chemical.

(f) BANVEL^{R}-720; Dimethylamine salt of Dicamba (3,6-dichloro-o-anisic acid) 12.90%; Dimethylamine salt of 2,4-dichlorophenoxyacetic acid, 25.80%; Velsicol Chemical.

B. Herbicide Recommendation

(1) It is recommended that Garlon^R 4 in combination with Tordon^R 101 be used, to provide a broad spectrum of control with minimal long term environmental effects. This combination is to be mixed and applied according to label directions for aerial application at the rate of 1 gallon of Garlon^R 4 with 2 gallons of Tordon^R 101 in 25 gallons of water per acre.

(2) Density and susceptability of the vegetation may require two applications. The second application to be made after leaf drop from the overstory.

C. Long Term Management Plan

(1) Since 100 percent control is not guaranteed with the first year applications, herbiciding in the second year may be required. It should also be recognized that the trees in the treated areas will remain standing for several years.

(2) Left unmanaged, the area would revegetate to nearly the same mix of vegetation as currently exists. Long term management would require herbicide applications on a 2-3 year cycle, depending on rate and type of vegetative growth. Herbicide selection would be based on conditions as they exist at the time future controls are to be initiated.

(3) After vegetation kill and leaf drop from herbiciding and where there is sufficient fuel to carry a fire, prescribe burn during hot, dry weather to eliminate fire hazard and further reduce tree and brush development. Burn every summer if possible. (NOTE: A permit from North Carolina for burning would be required.)

D. PROPOSED SCOPE OF WORK FOR AERIAL APPLICATION OF HERBICIDES

A. GENERAL

1.1 SCOPE

The work covered by this specification consists of furnishing all labor, equipment and materials (except water), and performing all work required in connection with the aerial application of herbicide materials in the OP-2, 3 and 5 Vista areas and the G-10 impact area, Marine Corps Base, Camp Lejeune, North Carolina, complete in strict accordance with specifications, applicable label instructions, and subject to terms and conditions of the contract.

1.2 LOCATION

The areas to receive aerial herbicide treatment consists of an estimated (542 or 1,096) acres in the (TO BE FILLED IN BY SPEC. WRITER). The area to be treated is depicted in sketches attached which are made a part of this specification. Aerial photographs 1:24,000, and 1:50,000 maps are available for inspection at (TO BE FILLED IN BY SPEC. WRITER) between the hours of 7:30 a.m. and 4:00 p.m., holidays and weekends excluded. Photos and maps will be available to the contractor to accomplish flight control and planning. Due to the nature of military use of the Artillery Impact Area, ground access to that target area is extremely hazardous and will not be authorized for contractor personnel. The area is wooded, and is heavily seeded with unexploded munitions (duds). An adequate cleared landing zone is available within (TO BE FILLED IN BY SPEC. WRITER) air miles of the G-10 Artillery Impact Area. See sketch. The landing zone selected will be accessable to ground support vehicles. Landing/loading areas will be made available for contract operations at Marine Corps Air Station, New River.

1.3 PERSONNEL

The Contractor shall provide all labor necessary to transport and handle all materials to be applied under this contract, prepare them as necessary and load them into the aircraft. Contractor shall provide personnel to operate mixing, loading and other grounds support equipment and to pilot the aircraft. Contract personnel shall conduct flagging and marking operations and maintain equipment.

1.3.1 QUALIFICATIONS OF FLIGHT PERSONNEL

1.3.1.1 Each helicopter pilot employed under this specifications shall meet the following minimum requirements.

(1) Helicopter pilots shall possess a current Federal Aviation Administration (FAA) Commercial Helicopter Pilots license, and a commercial pesticide applicators license issued by the North Carolina Department of Natural Resources and Community Development.

(2) Pilots shall be currently qualified in the make and model of helicopter to be used in the contract.

1.3.1.2 Each helicopter pilot employed under these specifications shall be experienced and regularly employed in the commercial application of pesticides or other forestry/agricultural type low altitude flight operations. The pilot must have had a minimum of two (2) years flight experience in aerial application of pesticides, seed or fertilizers in forestry or right of way applications. The qualifications of all flight personnel shall be subject to review by the Contracting Officer's Representative (COR).

1.4 QUALITY CONTROL

1.4.1 CONTRACTOR PRELIMINARY QUALITY CONTROL PLAN (QCP): The contractor shall submit a preliminary quality control plan to the Contracting Officer in writing within 10 working days of notification of award. This plan will describe the personnel, equipment and procedures the bidder proposes to employ in providing the services requested under this solicitation. The proposal shall contain, but need not be limited to the following:

a. List of personnel to be employed on MCB CAMP LEJEUNE by occupation (skill, title) and number.

b. The name of the pilot or pilots to be utilized in aerial application procedures and a brief resume of their experience.

c. The name, address and telephone number of the individual who will be responsible for contractor operations at MCB CAMP LEJEUNE and will be authorized to make operational decisions for the Contractor.

d. A list of key equipment items to be utilized in accomplishing the handling and delivery of herbicides to include make and model number, trade or common name, purpose or function to be performed and, optionally, pertinent capabilities of each item.

e. Name, description, and rate of any adjuvant or diluent proposed to be added to either herbicide to improve distribution pattern. Adjuvant or diluent proposed in contractor plan will require approval of COR prior to application.

f. A sequential descritpion of inspection, adjustments, calibrations, control procedures and overall spray strategy proposed to be employed to avoid spills, drift, skips and excessive overlap to achieve even distribution at the rate specified. The Contractor shall indicate:

(1) Meteorlogical conditions which shall be avoided.
(2) Time of day application will be made.
(3) Height above ground swath will be flown.
(4) Width of swath.
(5) Marking or flagging proposed to guide pilot.
(6) Pressure at which spray equipment will operate and orifice size on nozzle.
(7) Spray droplet size to be attempted (VMD).
(8) Concentration of material as it is to be applied.

g. Preliminary Contractor Quality Control Plan must be approved by the COR prior to commencement of services.

The preliminary plan will be finalized jointly by pilot and COR during mandatory reconnaissance of treatment area to be made at time of application. (See Paragraph 1.4.2)

1.4.2 FINALIZATION OF QUALITY CONTROL PLAN: The pilot applying the herbicide shall attend a joint ground (aerial) reconnaissance of the area with the COR to define boundaries, sensitive areas, obstacles, problem areas, flight hazards and weather. The reconnaisance will be conducted prior, and as close as possible, to treatment. This joint inspection will provide for on-site discussion of problems and adoption of the best practicable treatment strategy for the site under prevailing weather and other circumstance. The Contractors Preliminary Quality Control plan will be jointly finalized at this time. Deletions, additions or changes which pilot and COR jointly agree are appropriate will be made in writing to the QCP at this time and will be signed by both parties.

1.4.3 PURPOSE OF QUALITY CONTROL PLAN: The finalized Quality Control Plan and the provisions of these specifications will provide the basis for all application of herbicide under this contract. Only that acreage treated in accordance with this plan and these specifications to the satisfaction of the COR will be measured for payment.

1.5 OPERATION OF AIRCRAFT.

Aircraft may be permitted to use Marine Corps Air Station, New River, located (TO BE FILLED IN BY SPEC. WRITER) from the target area. Use of airspace within the restricted area, which is the entire MCB CAMP LEJEUNE is strictly controlled by (TO BE FILLED IN BY SPEC. WRITER). Coordination for use of MCAS New River must be made by the Contractor at least 24 hours in advance by contacting the (TO BE FILLED BY SPEC. WRITER). MCAS New River does not offer fuel service nor use of government maintenance facilities. MCB CAMP LEJEUNE is an intensely flown military aircraft training area, and all flights under this contract will be coordinated with (TO BE FILLED BY SPEC. WRITER) on radio frequencies (TO BE FILLED BY SPEC. WRITER). Aircraft will maintain radio contact at all times during the flights in restricted area. Landings of aircraft will be allowed on open areas or landing zones in the vicinity of the treatment area. Aircraft will only be operated during the daylight hours, and when weather conditions are such that operatons can be conducted in accordance with Visual Flight Rules (VFR). Weather conditions are measured at MCAS New River. Standard weather forecasting service is available at MCAS New River Operations.

1.6 ENVIRONMENTAL AND SAFETY CONSIDERATIONS.

Necessary water will be made available by the government at the loading zone loaded in government vehicles. The Contractor shall furnish and transport all other materials necessary to the landing zone. The contractor shall assume responsibility for these materials during all phases of the work and full financial liability for any loss or damage that may occur to personnel or the environment during all procurement, transport, preparation, transfer, mixing, loading and application procedures. The Contractor shall handle and apply

these materials in such a manner as to preclude toxic exposure of personnel, wildlife, commercial timbers or other components of the environment outside target and test areas. The Contracting Officer's Representative will have the authority to stop work in progress at any time he believes that hazard to personnel or the environment might occur. Any pesticide spill will be cleaned up and the site decontaminated by the Contractor. No herbicide shall be dispersed into or onto any flowing stream.

1.7 MEASUREMENT AND PAYMENT:

The unit of measurement under this contract shall be the acre. The acreage will be measured by plotting the limits of areas acceptably treated on 1:24,000 scale aerial photographs, and the plotted areas determined utilizing the dot grid system of 64 dots per square inch with a conversion factor of 0.996 acres per dot. The unit price per acre quoted shall be full compensation for all work required in connection with the contract. Acceptance or rejection will be based on visual observation of the application process and of the results obtained. Areas where obvious skips between treatment swaths or skips at either end of the swaths occur and areas where excessive overlap occur or into which obvious drift occurs will be considered unacceptable. Only those areas treated in full compliance with this specification and the final Contractor Quality Control Plan will be acceptable and will be measured for payment.

B. DEFINITIONS.

2.1 LANDING ZONE (LZ)

A cleared area to be used as a loading, testing and staging area for aircraft employed under this contract, located as close as feasible to the treatment areas, to be selected jointly during joint reconnaisance (See Paragraph 1.4.2).

2.2 CONTRACTING OFFICER'S REPRESENTATIVE (COR).

Government employee acting on behalf of the Contracting Officer as is usual in DOD contracts, except that for the purposes of this contract, he shall be a Pest Management Professional (PMP) with extraordinary responsibilities in regard to environmental protection and safety of all personnel and is authorized to stop all work at any time he should feel that either is threatened. The COR for this contract shall be the (TO BE FILLED IN BY SPEC. WRITER).

2.3 VMD.

An acronym for volume median diameter, the diameter in microns of a spray droplet which is exceeded in size by all droplets on one half the volume produced by a specific adjustment of a spraying device and in turn larger than any of the droplets in the other (more finely divided) 1/2 of the volume.

2.4 ADJUVANT.

An inert ingredient added to a pesticide formulation to make it work better.

2.5 DILUENT.

Any liquid or solid material used to dilute or carry an active ingredient.

2.6 SURFACTANT.

A chemical which increases the emulsifying, dispersing, spreading and wetting properties of a pesticide product.

2.7 CONCENTRATION.

Strength of the active ingredient in a pesticide formulation. It must be specified whether concentration is measured in units of volume or weight.

C. GOVERNMENT FURNISHED ITEMS.

3.1 MATERIALS.

Adequate quantities of water to achieve planned concentration of herbicide materials will be delivered to the designated landing zone(s) in the vicinity of the treatment areas loaded on government vehicles.

3.2 EQUIPMENT.

The Government will furnish vehicles to transport water to the landing zone to stand by at that site during Contractor mixing and herbiciding operations.

3.3 SERVICES.

Government personnel will load water and operate vehicles used to transport these materials to the landing zone. All empty herbicide containers will be collected at the landing zone and disposed of by the Government.

D. CONTRACTOR FURNISHED ITEMS

4.1 MATERIALS: All materials will be delivered to the landing zone unopened in original factory containers.

4.1.1 TORDON^R 101. Contractor shall furnish (2192 or 1084) gallons of TORDON^R 101 mixture weed and brush killer to be mixed with (1096 or 542) gallons of GARLON^R 4 herbicide, see paragraph 4.1.2 below and applied to (1096 or 542) acres to be treated. Active ingredients of TORDON^R 101 are Picloram 10.2% and 2,4-D, 39.6 % as propanolamine salts (acid equivalents 0.54 lb/gal Picloram and 2 lb/gal 2,4-D) EPA Registration Number 464-306 as manufactured by Dow Chemical Company, Midland, Michigan.

4.1.2 GARLON^R 4. Contractor will furnish (1096 or 542) gallons of GARLON 4 herbicide (to be mixed with (2192 or 1084) gallons of TORDON^R 104 mixture weed and brush killer, See Paragraph 4.1.1 above) and applied to (1096 or 542) acres to be treated. Active ingredient of GARLON^R 4 is the butoxyethel ester of triclopyr 61.6 percent (acid equivalent 4 lb/gal), EPA Registration Number 464-554 as manufactured by DOW Chemical Company, Midland, Michigan.

4.1.5 SURFACTANT

4.1.5.1 STANDARD SURFACTANT. Contractor shall furnish a standard agricultural surfactant such as Tronic, Sponto 712, or ORTHO X-77 in sufficient quantity to be added to spray mixture to be applied at the rate of 1 quart per acre.

4.1.6 SUPPORT MATERIALS. All other materials, other than water, necessary to accomplish the work required in this specification. This shall include but not be limited to all fuel/POL for the equipment and any diluent or adjuvant materials opted for use by the Contractor and approved by the COR.

4.2 EQUIPMENT.

The equipment required to transport, mix and apply herbicides under this contract shall be furnished and operated by the contractor. The Government reserves the right to determine whether or not the Contractor has the proper equipment necessary to perform the work under this contract. The following equipment will be required as a minimum in the execution of the contract.

4.2.1 AIRCRAFT.

One (1) rotary wing aircraft (helicopter) completely equipped for aerial application of pellets and or aerial spray as appropriate. The aircraft should be certified as airworthy by the Federal Aviation Agency, and this certificate shall be current at the time work is performed under the contract. Each aircraft employed in the work at MARCORB Camp Lejeune shall be equipped with a radio capable of netting with (TO BE FILLED IN BY SPEC. WRITER).

4.2.2 HERBICIDE DISPERSAL EQUIPMENT.

Delivery system used to disperse sprays shall utilize a MICROFOIL™ boom as produced by Amchem Products, Incorporated, or equivalent. The boom will be equipped with diaphragm type check valve nozzles and with slotted strainers so as to achieve drip free shut off and maximum flow with a minimum pressure.

4.2.3 SUPPORT ITEMS.

4.2.2.1 All necessary flags, ballons, markers, smoke generators, etc. for marking areas to be treated with herbicides.

4.2.3.2 All grounds support vehicles required to refuel the aircraft, transport all materials (other than water), crew, or perform maintenance on the aircraft.

4.2.3.3 All equipment needed to mix and load herbicide in aircraft.

4.2.3.4 All diluent or adjuvant materials opted for use by the contractor and approved by the COR.

4.3 EQUIPMENT MAINTENANCE.

4.3.1 Level of maintenance. The Contractor shall maintain all equipment in a fully operational condition, with dispersal equipment clean and free of dirt or spray residue which might interfere with material disbursement rate, pattern or droplet size, free of leaks and in proper adjustment at all times. In the event of malfunction or breakdown no further application shall take place until the problem is corrected and any dispersal equipment is recalibrated.

4.3.2 Maintenance Inspection. At the landing zone provided, prior to initiation of application procedures, a joint inspection of each of the dispersal systems will be made by the Contracting Officer's Representative (COR) and the pilot to assure that equipment to be used is as specified and in good repair; that all controls function properly; that the system is free of leaks and free of debris or chemical residue that might interfere with materials flow.

4.4 CALIBRATION.

Following a joint inspection (See 4.5.2 above) the contractor shall conduct a ground calibration of each dispersal system in the presence of the COR. Materials furnished by the contractor will be used in this calibration. The purpose of this calibration will be to determine the flow rates of the materials and to characterize in so far as possible the dispersal pattern. As a part of the calibration procedure one test application flight over a specified test area in or adjacent to the landing zone, whereby the coverage and distribution pattern may be further characterized and evaluated under actual flight conditions may be requested. Flight conditions (ground speed, altitude, etc.) to be followed during actual application will be duplicated in so far as possible during the test flight. Failure to achieve even distribution of the materials onto the target or to demonstrate good control (timely start and quick shut off) of materials flow will require adjustment of equipment and/or procedures and repeat of the test until ability to apply materials evenly at specified rates onto the target area is demonstrated to the satisfaction of the COR. No additional cost will be born by the Government for flight time required for this calibration.

E. SPECIFIC TASKS

5.1 APPLICATION OF HERBICIDES, GENERAL

Areas to receive application of herbicides as illustrated in Sketches ___ will be delineated by the Contracting Officer's Representative who will show them to the pilot. All application shall be made under the personal direction of the COR, one of whom shall be present at all times when aerial application is being made. No Government personnel will be permitted to ride in Contractor's helicopter during the application of herbicides.

5.2 WEATHER RESTRICTIONS

Application will be made only when ceilings and visibility are within Visual Flight Rule (VFR) limitations as determined by MCAS New River Weather Station. Wind velocity at the application target area shall not exceed 10 mph velocity. No applications shall be made in fog or over ground fog; during rainfall or mist or when rainfall is predicted by MARCORB Camp Lejeune within 12 hours; or while a temperature inversion exists; or which the leaves or vegetation are wet. The Contracting Officer's Representative shall have final authority to determine if application can be safely and successfully made and shall have the right to halt spray operations at any time if, in his opinion, the Contractor is violating the terms of the contract or his performance is unsafe or unsatisfactory.

5.3 DOUBLE COVERAGE.

Double coverage of the treatment areas shall be made with each herbicide. An initial coverage at one half the prescribed rate (see subparagraphs 5.4, 5.5, and 5.6 below) shall be completed for each treatment area. This first coverage shall then be followed by a second treatment with the same materials (again at 1/2 prescribed rate) flown across the spray paths of the first treatment in such a manner that the flight paths of the aircraft during the second treatment are approximately at right angles to the flight paths flown during the first treatment.

5.4 APPLICATION OF TORDON(R) 101 AND GARLON(R) 4 MIXTURE

The application of this material is to be made during the period (TO BE FILLED IN BY SPEC. WRITER). The exact time and date of application shall be coordinated in advance with the Contracting Officer's Representative. Application will be made at the rate of 25 gallons of spray mixture per acre. The spray mixture will consist of 2 gallons of TORDON(R) 101, 1 gallon of GARLON(R) 4, 1 quart of surfactant, plus sufficient water to provide 25 gallons for each acre treated. Recommended order of addition to the spray tank is water, surfactant, TORDON(R) 101, GARLON(R) 4. Continuous moderate agitation is required.

The material shall be uniformly distributed over the target area and operations will be continuous until the materials have all been expended. The contractor shall take all necessary steps to assure that the spray mixture is delivered onto target areas only. After all designated areas have been treated, any portion of treated areas on which unacceptable application is evident shall be retreated to provide the specified quantity per acre. Additional flight swaths and additional materials needed to provide coverage will be provided by the Contractor at no cost to the Government.

E. COST ESTIMATE

1. Alternative A (Approximately 1,096 acres)

*Helicopter Cost: $15/AC X 1,096 acres = $16,440

Chemical Cost:

TORDON^R 101: $31.30/gal X 2 gal/acre X 1,096 acres = $68,610

GARLON^R 4: $69.50/gal X 1 gal/acre X 1,096 acres = $76,172

Total cost per application = $161,222
Profit Margin: 25% X $161,222 = $ 40.305
TOTAL COST = $201,527

Cost per acre = $161,222 divided by 1,096 ac = $147.10 per acre

Alternative B (Approximately 542 acres)

*Helicopter Cost: $15/acre X 542 acres = $8,130

Chemical Cost:

TORDON^R 101: $31.30/gal X 2 gal/acre X 542 acres = $33,929

GARLON^R 4: $69.50/gal X 1 gal/acre X 542 acres = $37,669

Total cost per application = $79,728
Profit Margin: 25% X $79,728 = $19.932
TOTAL COST = $99,660

Cost per acre = $79,728 divided by 542 ac = $147.10 per acre

*Includes labor to load helicopter with herbicides

Roundup

Herbicide by Monsanto

Complete Directions for Use

EPA Reg. No. 524-308-AA

For use of this product in California see pages 74 and 75.

AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES, SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT.

1981-2 237.10-001L77/53

Read each of these sections of this label for essential product performance information.

USE THESE CONVENIENT SECTION MARKERS.

GENERAL INFORMATION

APPLICATION

WEED CONTROL

NONCROP AREAS

CROP/PRE-EMERGENCE

CROP/POST-EMERGENCE

MINIMUM TILLAGE

PRECAUTIONARY STATEMENTS

PARTIAL LABEL

Environmental Hazards

Avoid direct applications to any body of water. Do not contaminate water by disposal of waste or cleaning of equipment.

Storage and Disposal

Avoid contamination of seed, feed, and foodstuffs.

Do not reuse container, destroy when empty.

ACTIVE INGREDIENT:	
*Isopropylamine salt of Glyphosate	41.0%
INERT INGREDIENTS	59.0%
	100.0%

*Contains 480 grams per liter or 4 pounds of the active ingredient isopropylamine salt of N-(phosphonomethyl) glycine per U.S. gallon. Equivalent to 356 grams per liter or 3 pounds per U.S. gallon of the acid, glyphosate.

U.S. Pat. No. 3,799,758 covers use
Other patents are pending
© MONSANTO COMPANY 1981

In case of an emergency involving this product
Call Collect day or night (314) 694-4000

MONSANTO COMPANY
AGRICULTURAL PRODUCTS
ST. LOUIS, MISSOURI 63166 U.S.A.

GENERAL INFORMATION

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL.

Roundup* herbicide, a water soluble liquid, mixes readily with water to be applied as a foliage spray for the control or destruction of most herbaceous plants. It may be applied through most standard industrial or field type sprayers after dilution and thorough mixing with water in accordance with label instructions.

This product moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days but on most perennial weeds may not occur for 7 days or more. Extremely cool or cloudy weather following treatment may slow down activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above ground growth and deterioration of underground plant parts.

Unless otherwise specified on this label delay application until vegetation has emerged and reached the stages described for control of such vegetation under the "Weeds Controlled" section of this label. Unemerged plants arising from unattached underground rhizomes or root sprers of perennials will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity.

Always use the higher rate of this product per acre within the recommended range when (1) weed growth is heavy or dense, or (2) weeds are growing in an undisturbed (non-cultivated) area.

Do not treat weeds under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow for the recommended stage for treatment.

Rainfall or irrigation occurring within 6 hours after application may reduce effectiveness. Heavy rainfall or irrigation within 2 hours after application may wash the chemical off the foliage and a repeat treatment may be required.

Roundup herbicide does not provide residual weed control. For subsequent residual weed control, follow a label-approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

Nonionic surfactants which are labeled for use with herbicides may be used to improve wetting of foliage. Do not reduce rates of Roundup when adding surfactant. Read and carefully observe surfactant rates, cautionary statements, and other information appearing on the surfactant label.

Buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of Roundup with herbicides or other materials that are not expressly recommended in this labeling. Mixing this product with herbicides or other materials not recommended on this label may result in reduced Roundup performance.

For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.

*Registered Trademark of Monsanto Company

ATTENTION

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

Do not allow the herbicide solution to mist, drip, drift, or splash on to desirable vegetation since minute quantities of this herbicide can cause severe damage or destruction to the crop, plants, or other areas on which treatment was not intended. The likelihood of injury occurring from the use of this product is greatest when winds are gusty or in excess of 5 miles per hour or when other conditions including lesser wind velocities will allow spray drift to occur. When spraying avoid combinations of pressure and nozzle tips that will result in splashes or fine particles (mist) which are likely to drift. AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.

NOTE: Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

Clean sprayer and parts immediately after using this product by thoroughly flushing with water.

Do not contaminate water by disposal of wastes or cleaning of equipment.

Do not reuse container. Destroy when empty.

DIRECTIONS AND APPLICATION INSTRUCTIONS

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES. DO NOT APPLY UNDER WIND OR OTHER CONDITIONS WHICH ALLOW DRIFT TO OCCUR. HAND GUN APPLICATIONS SHOULD BE PROPERLY DIRECTED TO AVOID SPRAYING DESIRABLE PLANTS. NOTE: REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, such as WATER FROM PONDS AND UNLINED DITCHES.

MIXING

This product mixes readily with water. Mix spray solutions of this product as follows: Fill the mixing or spray tank with the required amount of water. Add the proper amount of this product (see "Directions for Use" and "Weeds Controlled" sections of this label) near the end of the filling process and mix well. Remove hose from tank immediately after filling to avoid siphoning back into the carrier source. During mixing and application foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, place the filling hose below the surface of the spray solution, terminate by-pass and return lines at the bottom of the tank and if needed use an approved anti-foam or defoaming agent.

TANK MIXTURES

Always predetermine the compatibility of labeled tank mixes of this herbicide with water carrier by mixing small proportional quantities in advance.

Mix labeled tank mixtures of Roundup herbicide with water as follows:

1. Place a 20 to 35 mesh screen or wetting basket over filling port.
2. Through the screen, fill the sprayer tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.

SILVICULTURAL SITES and RIGHTS-OF-WAY

When applied as directed for "Non-Crop Uses" under conditions described, this product controls undesirable vegetation listed on this label. This product also suppresses or controls undesirable vegetation listed on this label when applied at recommended rates for release of established coniferous species listed on this label.

For specific rates of application and instructions for control of various brush, annual and perennial weeds, see the "Weeds Controlled" section of this label. For specific rates of application for release of listed coniferous species, see the "Conifer Release" part of this section of the label.

Where repeat applications are necessary, do not exceed 10.6 quarts of this product per acre per year.

Aerial Application — This product may be applied using aerial spray equipment for silvicultural site preparation, conifer release and rights-of-way treatments. See the "Application Equipment and Techniques" part of the "Mixing and Application" section of this label for information on how to properly spray this product by air.

Do not apply this product by air to rights-of-way sites in California.

In order to reduce the drift hazard to non-targeted plants and aquatic species when making aerial applications, maintain the following buffer zones:

1. Do not apply this product within 200 feet of any agricultural, horticultural, park, golf course, homestead or any populated areas.
2. For applications using more than 2 quarts per acre of this product, do not apply within 125 feet of lakes, ponds and streams used for significant domestic purposes or angling.
3. For applications using 2 quarts or less per acre of this product, do not apply within 75 feet of lakes, ponds and streams used for significant domestic purposes or angling.
4. When making applications on rights-of-way from 75 feet or more above ground level, do not apply within 400 feet of any agricultural, horticultural, park, golf course, homestead, populated areas, lakes, ponds and streams used for significant domestic purposes or angling.

Site Preparation — Following preplant applications of this product, any silvicultural species may be planted.

Post Directed Spray — In established silvicultural sites, use as a spray on the foliage of undesirable vegetation. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of desirable species.

Conifer Release — Apply 1½ to 2 quarts of this product per acre for release of the following coniferous species:

Douglas fir	Pines
Pseudotsuga menziesii	Pinus spp.
Fir	Spruce
Abies spp.	Picea spp.
Hemlock	
Tsuga spp.	

Applications must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in spring. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf fall has occurred. Annual and perennial weeds or woody brush or trees listed on this label may be controlled or suppressed.

For release, apply only where conifers have been established for more than a year. Vegetation should not be disturbed prior to treatment or until visual symptoms appear after treatment. Symptoms of treatment are slow to appear, especially if woody species treated in late fall. Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth.

NOTE: This product is not recommended for use as an over-the-top broadcast spray in silvicultural nurseries, ornamentals or Christmas Tree Plantations. DO NOT USE FOR CONIFER RELEASE IN THE FOLLOWING STATES: ALABAMA, ARKANSAS, FLORIDA, GEORGIA, LOUISIANA, MISSISSIPPI, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, TEXAS AND VIRGINIA.

FOR USE IN CONIFER RELEASE WEST OF THE CREST OF THE CASCADE MOUNTAINS:

Spring Application — Apply 1 quart of this product per acre before bud swell of conifers for control of annual weeds listed on the label.

Fall Applications — Apply 1 to 1½ quarts of this product per acre before leaf abscission of deciduous species. Apply only if no major leaf fall has occurred. Some autumn colors are acceptable.

Apply 1 quart of this product per acre for release of western hemlock.

Injection and Frill Applications — Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable injection equipment which must penetrate into living tissue. Use this product without dilution and apply at least 1 ml (1/29 oz.) of herbicide solution for each 2 to 3 inches of trunk diameter breast height (DBH). Space applications evenly around the circumference of the trunk. Application should be made during periods of active growth and full leaf expansion.

This treatment WILL CONTROL the following woody species:

Gum (sweet)	Poplar
Liquidambar styraciflua	Populus spp.
Oak	Sycamore
Quercus spp.	Plantanus occidentalis

This treatment WILL SUPPRESS the following woody species:

Dogwood	Hickory
Cornus spp.	Carya spp.
Gum (black)	Maple (red)
Nyssa sylvatica	Acer rubrum

NOTE TO USER

This product must not be used in areas where adverse impact on Federally designated endangered/threatened plant or aquatic species is likely.

Prior to making applications the user of this product must determine that no such species are located in or immediately adjacent to the area to be treated.

CONTROL OF WOODY BRUSH AND TREES

When applied as recommended under the conditions described, this product CONTROLS the following woody brush plants and trees:

Alder	Oak***
Alnus spp.	Quercus spp.
Berries*	Multiflora rose
Rubus spp.	Rosa multiflora
Elderberry	Poison Ivy
Sambucus spp.	Rhus radicans
Honeysuckle	Poison Oak
Lonicera spp.	Rhus toxicodendron
Kudzu	Trumpet creeper
Pueraria lobata	Campsis radicans
Maple**	Willow
Acer spp.	Salix spp.

*Includes blackberry, dewberry and raspberry.
**Includes sugar maple and red maple.
***Includes red oak, white oak and Northern pin oak.

NOTE: If brush has been mowed or felled or trees have been cut, do not treat until regrowth has reached the recommended stages of growth.

APPLICATION EQUIPMENT AND TECHNIQUES

AERIAL EQUIPMENT

Use the recommended rates of Roundup herbicide in 5 to 15 gallons of water per acre unless otherwise specified on this label. See "WEEDS CONTROLLED" section of this label for specific rates. Aerial applications of this product may only be made as specifically recommended on this label.

Avoid direct application to any body of water.

AVOID DRIFT — DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH WILL ALLOW DRIFT. DRIFT MAY CAUSE DAMAGE TO

ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

Ensure uniform application — To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE. The maintenance of an organic coating (Paint) which meets aerospace specification MIL-C-38413 may prevent corrosion.

ELANCO ID-59

Herbicide

Spike®

40P

Net Weight 50 Pounds

A surface applied herbicide for woody plant control in noncrop areas such as:

Spike® will kill trees and shrubs. Carefully read the precautions before using.

- Railroad rights-of-way
- Utility rights-of-way
- Industrial sites
- Pipelines
- Fence rows
- Firebreaks
- Ditch banks
- Long highways
- Other noncropland areas for the control of woody plant species

The degree and duration of control may vary with the amount of chemical applied, soil texture, and other conditions.

Active Ingredient	
Tebuthiuron 1-(5-1,1-dimethylethyl)-1,3,4-thiadiazol-2-yl-N,N'-dimethylurea	40.0%
Inert Ingredients	60.0%

Contains 20 pounds active ingredient per 50 pound bag.

SPIKE® – the registered trademark for Elanco Products Tebuthiuron.

CAUTION: KEEP OUT OF REACH OF CHILDREN.

See back panel for additional caution statements.

Directions for Use Before Applying

Woody Species Controlled

Apply 2.5 pounds SPIKE 40P per acre to control the following species.

Haplopappus heterophyllus (Burroweed)
Larrea tridentata (Creosotebush)
Mimosa borealis (Wait-a-minute-bush)

Apply 5 pounds SPIKE 40P per acre to control the following species.

Ailanthus altissima (Tree-of-heaven)
Amorpha fruticosa (Wineberry)
Artemisia tridentata (Big sagebrush)
Carya ovata (Pignut hickory)
Celtis occidentalis (Western hackberry)
Datura discolor (Desert thornapple)
Lycium berlandieri (Berlandier wolfberry)
Morus rubra (Red mulberry)
Pinus monticola (Western white pine)
Pinus spp. (Pine)
Prunus emarginata (Bitter cherry)
Rhus glabra (Smooth sumac)
Robinia pseudoacacia (Black locust)
Rosa multiflora (Multiflora rose)
Salvia leucophylla (Whiteleaf sage)
Salvia mellifera (Black sage)
Symphoricarpos orbiculatus (Buckbrush)
Ulmus americana (American elm)
Vaccinium or Gaylussacia spp. (Huckleberry)

Apply 7.5 pounds SPIKE 40P per acre to control the following species.

Abies balsamea (Balsam fir)
Acacia farnesiana (Huisache)
Acer saccharum (Sugar maple)
Alnus rubra (Speckled alder)
Betula populifolia (Gray birch)
Carya texana (Black hickory)
Celtis laevigata (Graneno)
Ceanothus coloratus (Ceanothus)
Ilex vomitoria (Yaupon)
Larix laricina (Tamarack)
Picea glauca (White spruce)
Populus balsamifera (Balsam poplar)
Populus deltoides (Eastern cottonwood)
Quercus chrysolepis (Canyon live oak)
Quercus douglasii (Blue oak)
Quercus marilandica (Blackjack oak)
Quercus stellata (Post oak)
Quercus velutina (Black oak)
Schaefferia cuneifolia (Desert yaupon)
Spiraea tomentosa (Hardhack)
Ulmus alata (Winged elm)

Apply 10 pounds SPIKE 40P per acre to control the following species.

Acacia berlandieri (Guajillo)
Acacia greggii (Catclaw acacia)
Acacia rigidula (Blackbrush acacia)
Acacia tortuosa (Twisted acacia)
Acer negundo (Boxelder)
Adenostoma fasciculatum (Chamise)
Alnus rubra (Red alder)
Ceanothus megacarpus (Humbolcreeper)
Carya ovata (Shagbark hickory)
Cercocarpus betuloides (Birchleaf mountainmahogany)
Condalia hookeri (Texas colubrina)
Condalia obovata (Bluewood condalia)
Cornus drummondii (Roughleaf dogwood)
Crataegus spp. (Hawthorn)
Dyschoriste linearis (Kidneywood)
Fagus grandifolia (American beech)
Jatropha dioica (Leatherstem)
Leucophyllum frutescens (Cenizo [Texas silverleaf])
Liquidambar styraciflua (Sweetgum)
Lonicera sempervirens (Southern trumpetvine)
Parthenocissus quinquefolia (Virginia creeper)
Populus grandidentata (Bigtooth aspen)
Prosopis glandulosa (Guayacan)
Prosopis pubescens (Mesquite)
Prunus virginiana (Common chokecherry)
Pseudotsuga menziesii (Douglas fir)
Rhamnus ilicifolia (Kuchu)
Quercus cornuta (California scrub oak)
Quercus palustris (Pin oak)
Quercus rubra (Red oak)
Quercus virginiana (Live oak)
Rhus typhina (Staghorn sumac)
Rubus allegheniensis (Allegheny blackberry)
Salvia officinalis (Shrubby blue salvia)

Apply 12.5 pounds SPIKE 40P per acre to control the following species.

Acer macrophyllum (Bigleaf maple)
Acer platanoides (Norway maple)
Acer saccharinum (Silver maple)
Celtis spp. (Hackberry tree)
Cornus florida (Flowering dogwood)
Fraxinus pennsylvanica (Green ash)
Heteromeles arbutifolia (Toyon)
Juniperus virginiana (Eastern redcedar)
Lantana camara (Lantana)
Liriodendron tulipifera (Tuliptree)
Melaleuca quinquenervia (Melaleuca)
Pinus banksiana (Jack pine)
Pinus echinata (Shortleaf pine)
Pinus resinosa (Red pine)
Pinus virginiana (Virginia pine)
Platanus occidentalis (American sycamore)
Prunus serotina (Black cherry)
Quercus alba (White oak)
Rubus laciniatus (Evergreen blackberry)
Rubus occidentalis (Black raspberry)
Schinus terebinthifolius (Brazilian peppertree)

Apply 15 pounds SPIKE 40P per acre to control the following species.

Acer circinatum (Vine maple)
Arctostaphylos patula (Greenleaf manzanita)
Ceanothus cuneatus (Wedgeleaf ceanothus)
Ceanothus leucodermis (Whitethorn chaparral)
Crataegus crus-galli (Cockspur hawthorn)
Diospyros virginiana (Persimmon)
Elaeagnus angustifolia (Russian olive)
Fraxinus americana (White ash)
Rhus laurina (Laurel sumac)
Smilax rotundifolia (Common greenbrier)
Ulmus parvifolia (Chinese elm)
Ulmus rubra (Slippery elm)

Species growing on deep prairie fine textured soils or deeply rooted species may show erratic control at rates listed or require a higher rate for effective control.

GENERAL DIRECTIONS

Apply SPIKE 40P uniformly to the woody plant infested area or by individual plant treatment.

Application can be made anytime during the year except when the ground is frozen or saturated with water. Effects are slow to appear and will not become apparent until after sufficient moisture has carried the SPIKE 40P into the root zone of target species. The time required to achieve control is dependent on soil texture, amount of rainfall, and depth of species rooting. Some species may go through several defoliations and refoliations over a period of approximately two years prior to dying.

Broadcast Application

SPIKE 40P may be applied using properly calibrated ground equipment. On utility rights-of-way SPIKE 40P may be applied using a helicopter equipped with application equipment such as Simplex Models 1610 and 1620. Use of equipment not designed to confine the spread of SPIKE 40P to the target area may result in injury or death of desirable plant species.

Individual (Spot) Woody Plant Application

Apply SPIKE 40P by hand tossing one-quarter ounce of the pellets around the base of the unwanted woody plant. Wear protective gloves when applying pellets by hand. Repeat the treatment for each unwanted woody plant in the area. CAUTION: DO NOT USE SPIKE 40P IN THIS MANNER IN ANY AREA WHERE DESIRABLE SPECIES ARE IN THE VICINITY OF THE PLANTS TO BE ELIMINATED. A SMALL AMOUNT OF SPIKE 40P IN CONTACT WITH THE ROOTS OF DESIRABLE TREES OR OTHER WOODY SPECIES MAY CAUSE SEVERE INJURY OR DEATH. THE ROOTS OF SUCH PLANTS MAY EXTEND FAR BEYOND THEIR DRIP LINES.

PRECAUTIONS

SPIKE 40P is intended for woody plant control. It is an extremely active herbicide which will kill trees, shrubs and other forms of desirable vegetation having roots extending into the treated area. Feeder roots of many species of desirable vegetation extend many feet beyond the drip line of the branches, and a very small amount of SPIKE 40P in contact with one feeder root of a tree, shrub or other desirable vegetation may cause serious injury or death to the entire plant. An arboriculturist (tree expert) should be consulted to help you to determine if the area of proposed application is free of all roots of desirable vegetation. The effect of SPIKE 40P on desirable vegetation may be irreversible and its presence in the soil may prevent growth of other desirable vegetation for some years after application. Read the entire label before using SPIKE 40P to determine if this product is suitable for the desired purpose.

Do not use SPIKE 40P on areas such as walks, driveways, streets, lawns, patios, tennis courts, swimming pools, cemeteries or other landscaped areas or under asphalt or concrete pavement where future landscaping is planned. Do not apply on or near field crops. Do not apply on any area into which the roots of desirable vegetation may extend. Do not apply in locations where the chemical may be washed by runoff or spread erosion in contact with roots of desirable vegetation, as severe injury or death may occur. ROOTS OF TREES, SHRUBS AND OTHER DESIRABLE VEGETATION MAY EXTEND FAR BEYOND THE DRIP LINE OF THE PLANTS' BRANCHES.

Ditchbank Usage—Do not apply SPIKE 40P to any portion of the ditchbank that will come into direct contact with water as movement of SPIKE 40P in the water to non-target plant species may result in injury or death of those plants. Do not apply on ditches used to transport irrigation or potable water.

Keep from contact with pesticides and seeds.

Thoroughly clean all traces of SPIKE 40P from application equipment after use. DO NOT EMPTY RESIDUES CLEANED FROM APPLICATION EQUIPMENT ON AREAS WHERE THEY MAY COME IN CONTACT WITH THE ROOTS OF DESIRABLE VEGETATION OR THE WATER SOURCE FOR SUCH VEGETATION.

HERBACEOUS PERENNIALS (NONWOODY PLANTS)

Do not allow domestic livestock to graze in treated areas.

Do not cut forage from treated areas for feeding livestock. SPIKE 40P may injure or suppress certain herbaceous vegetation in the treated area. Therefore, do not apply where such injury cannot be tolerated. Injury to most herbaceous perennials is reduced if SPIKE 40P is applied when this vegetation is dormant.

CAUTION

Human: harmful if swallowed. Avoid contact with skin, eyes or clothing. Wear protective gloves when applying pellets to individual woody plants by hand. In case of contact, flush with water.

Environmental: Do not contaminate any body of water, ponds or streams as death or injury may occur to vegetation impacted by such. Do not contaminate water by cleaning of equipment or disposal of wastes.

Storage and Disposal: The herbicidal properties of SPIKE 40P require caution in handling, storage and transportation of this product. Do not contaminate food or feed by storage or disposal. Open burning is prohibited. Do not reuse empty container. Dispose in an incinerator or landfill approved for pesticide containers or bury in a noncropland area away from desirable plants, trees and water supply.

Limited Warranty

[illegible]

PACKAGE SIZE(S):
30 Gallon Drum
5 Gallon Drum
6-1 Gallon Cans

KRENITE®

BRUSH CONTROL AGENT
WATER SOLUBLE LIQUID

Contains 4 lbs. Active Per Gallon

ACTIVE INGREDIENT:
Ammonium salt of fosamine
[ethyl hydrogen (aminocarbonyl) phosphonate] 41.5%

INERT INGREDIENTS 58.5%

U.S. Pats. 3,627,507 & 3,846,512 EPA Reg. No. 352-376

Keep out of reach of children.

CAUTION! MAY IRRITATE EYES, NOSE, THROAT, AND SKIN.
• Avoid breathing dust or spray mist • Avoid contact with skin, eyes, and clothing.

B-21371 8-79

IMPORTANT

Do not use on food crops. Do not allow drift or spray mist to contact desirable trees, shrubs, or other plants, as injury may result. Do not apply to brush in standing water. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides, and seeds.

Thoroughly clean all traces of "Krenite" from application equipment after use. Flush tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens (clean these parts separately). Do not contaminate water by cleaning of equipment or disposal of wastes. Do not re-use container. Crush and bury when empty.

GENERAL INFORMATION

DuPont "Krenite" Brush Control Agent is a water soluble liquid to be diluted with water and applied as a foliar spray for control and/or growth suppression of many woody species on non-cropland areas, including land adjacent to and surrounding domestic water supply reservoirs, supply streams, lakes and ponds. It is non-flammable and non-volatile.

"Krenite" is applied to brush in late summer or early fall and response is usually not observed until the following spring except for pines which may show a response soon after application. Susceptible treated plants fail to refoliate and subsequently die.

A spray directed to only part of a susceptible plant will provide control of only the portion sprayed, resulting in a trimming effect.

NOTICE OF WARRANTY

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

DIRECTIONS

"Krenite" Brush Control Agent should be used only in accordance with recommendations on this label, or in separate published Du Pont recommendations available through local dealers.

Non-Cropland Areas — Railroad, pipeline, utility and highway right-of-ways, drainage ditch banks, storage areas, industrial plant sites, reforestation areas prior to planting, and other similar areas.

For control of birch, blackberry, black locust, bracken (fern), loblolly pine, pin cherry, quaking aspen, red alder, red oak, salmonberry, sumac, sweet gum, thimbleberry, vine maple, water oak, white oak, and Virginia pine, make a single foliar application using 1½ to 3 gals. of "Krenite" per acre during the 2 month period prior to fall leaf coloration. Application also provides partial control and growth suppression of other brush plants such as bigleaf maple, black cherry, blackgum, chokecherry, elm, hawthorn, hickory, persimmon, red maple, sassafras, sourwood, tulip tree (yellow poplar), willow, and white ash.

For control of American elder, eastern cottonwood, eastern white pine, multiflora rose, slippery elm, sycamore, tree-of-heaven, wild grape, and wild plum, make a single foliar application of 2 to 3 gals. "Krenite" per acre during the 2 month period prior to fall leaf coloration. Application at this rate also provides partial control and growth suppression of basswood and winged elm.

For control of field bindweed, apply 2 to 3 gals. per acre after plants begin to bloom.

Use the highest rate of the recommended rate range on dense brush stands and on stands in which species partially controlled and suppressed are dominant.

Apply either by air or ground equipment. Before applying, calibrate equipment to determine quantity of water necessary to thoroughly and uniformly cover the plants, without drenching, in a measured area to be treated. For ground equipment, use a minimum of 1½ gals. "Krenite" per 100 gals. of spray solution not to exceed 200 gals. of volume per acre; gallonage required depends on height, density and type of brush, and on type of equipment used. Spray pressure at nozzles for ground equipment should be 100 to 300 psi. Use 10 to 40 gals. of spray per acre with aerial equipment.

Measure the proper amount of "Krenite" and use agitation to thoroughly mix into the necessary volume of water. Add a nonionic surfactant such as DuPont Surfactant WK at the rate of 1 qt. per 100 gals. spray. After "Krenite" has been thoroughly mixed in the spray tank, agitation of the spray solution is not required.

For control of only a portion of a plant, as in trimming, direct the spray to thoroughly cover only the section of the plant to be controlled.

Note: Effectiveness may be reduced if, following treatment, rainfall occurs the same day.

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries outside of the United States.

SPECIAL LOCAL NEED REGISTRATIONS [24(c)] FOR KRENITE® BRUSH CONTROL AGENT*

Crop	State	EPA SLN No.	Remarks
Forest Land	Oregon	OR-770054	Permits lower rates for conifer release
Forest Land	Washington	WA-770045	Permits lower rates for conifer release
Land Renovation	Missouri	MO-780014	Control of mixed oak species
Multiflora Rose control on non-cropland areas	Missouri	MO-770007	Permit lower use rates
Multiflora Rose control on non-cropland areas	Ohio	OH-770009	Permit lower use rates

*Copies of individual labels available upon request to nearest DuPont Biochemicals Office. For distribution and use only within the State specified.

CAUTION

Harmful if swallowed. Avoid contact with skin, eyes, and clothing. In case of contact, wash exposed skin with plenty of soap and water; flush eyes with plenty of water for at least 15 minutes and get medical attention. Keep out of reach of children.

CONTAINER DISPOSAL

Do not reuse empty container. The empty containers should be rinsed with water at least three times before disposal, and rinse water should be added to spray tank. Discard container in a safe place. Follow State Recommendations regarding container disposal.

IMPORTANT

Do not apply (except as recommended) on or near desirable plants, or in locations where the chemical may be washed or moved into contact with their roots. Applications by ground rigs and hand dispensers should be carried out only when there is no hazard from drift of product to susceptible plants such as beans, flowers, fruit trees, grapes, ornamentals, peas, potatoes, soybeans, sunflowers and tomatoes, during both the growing and dormant periods. (Coarse sprays are less likely to drift.) Do not contaminate irrigation ditches or water used for domestic purposes. Do not allow this product to come in direct contact with seeds, insecticides or fungicides. To avoid injury to desirable plants, equipment used for BANVEL®-720 should be thoroughly cleaned before reuse to handle or apply any other agricultural chemicals.

Do not graze dairy animals on treated areas within 7 days after application.

NOTICE

Because Velsicol Chemical Corporation has no control over storage, handling, and conditions of use, which are of critical importance, Velsicol Chemical Corporation makes no representation or warranty, either express or implied, for results or residues greater than any tolerance which may be established by appropriate governmental agencies, due to misuse, improper handling or storage of this material. Nor does Velsicol Chemical Corporation assume any responsibility for injury to persons, crops, animals, soil or property arising out of misuse, improper handling or storage of this material.

SUMMIT CHEMICAL CO.
117 WEST 24th STREET
BALTIMORE, MARYLAND 21218
301—467-1233

VELSICOL™

Banvel®-720

WATER SOLUBLE INDUSTRIAL HERBICIDE FOR BRUSH AND BROADLEAF WEED CONTROL

Contains 1 Pound Dicamba and 2 Pounds 2,4-D Per Gallon

ACTIVE INGREDIENTS:

Dimethylamine salt of dicamba (3,6-dichloro-o-anisic acid)	12.90%
Dimethylamin lts of related acids	1.80%
Dimethylamine salt of 2,4-dichloro phenoxyacetic acid*	25.80%
INERT INGREDIENTS:	59.50%
TOTAL	100.00%

*Equivalent to 21.43% 2,4-dichlorophenoxyacetic acid.

E.P.A. Reg. No. 876-177-AA

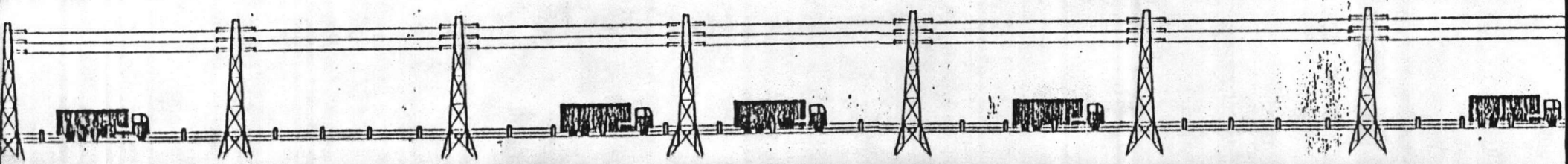
NET CONTENTS:

CAUTION

KEEP OUT OF REACH OF CHILDREN

See Side Panel for Additional Cautions.

VELSICOL CHEMICAL CORPORATION
341 EAST OHIO STREET, CHICAGO, ILLINOS 60611



CONTRACTOR	ADDRESS	TELEPHONE	TYPE OF AIRCRAFT
Helicopters of Houston Jerry W. Coon, Chief Pilot	8050 North Freeway Houston, TX 77037	703/448-5595	Hiller 12E Bell 206B III & Hughes 500C
Imperial Helicopter, Inc. Butch Allen	Box 27113 Charlotte, NC 28219	704/392-0303	Helicopter
Industrial Helicopter Ser. Glenn A. Martin	Box 7, East Erie St. Linesville, PA 16424	804/683-5805	Helicopter
Lauterbach Flying Service	Rt. 3, Box 154 Portales, N.M. 88130		
*Munden, Douglas	802 Arctic Ave. Virginia Beach, VA 23451		Helicopter
Napieralski Forestry Ser.	Rt. 3 Witts Spring, AR 72686		Helicopter
Noxious Vegetation Control, Inc.	Box 5691 Columbus, OH 43221	614/486-8994	
*Paramount Helicopters, Inc. Larry G. Zoellner	P.O. Box 488 Cartersville, GA 30120	404/382-0541	Helicopter
Propst Helicopters	P.O. Box 85 Block Rock, AR 72415	501/878-6859 or 878-6788	Helicopter
Progressive Helicopter Ser. Willie Dodson	5301 Chanprey Road Minneapolis, MN 55436		Helicopter
Spring Hollow Ag. Ser. Caleb A. Click	Rt. 1, Box 95 Rustburg, VA 24588	804/332-6259	Helicopter
*Summit Helicopters Carl Milko, President	5422 Forest Timbers Dr. Humble, TX 77338	713/852-8473	Helicopter
Vernon, Inc.	314 W. Main Street Tazewell, VA 24651		Helicopter
Va. Aviation Helicopter, Inc.	Box 113 Ivor, VA 23866		Helicopter

PROSPECTIVE BIDDING LIST FOR
VEGETATION CONTROL BY AERIAL SPRAYING

CONTRACTOR	ADDRESS	TELEPHONE	TYPE OF AIRCRAFT
*AG-Rotors, Inc. Tim Boss	Rt. 1, Box 578 Gettysburg, PA 17325	717/334-6777	Helicopter & Fixed Wing
Asplundh Company W. R. Jeffery	Blair Mill Road Willow Grove, PA 19090	215/784-4252	Helicopter
Bedford Helicopters C. K. Overstreet	Rt. 2, Box 138 Bedford, VA 24523	703/586-0223	Helicopter
Brooks County Flying Service Dave McDaniel	Box 858 Quitman, GA 31643		
Cardinal Aviation Horace Wood	Charlottesville-Albemarle Airport, Charlottesville, VA 22906		Helicopter
Caroline Helicopter Ser. Floyd Price III	P.O. Box 96 Selma, NC 27576	919/965-2311	Helicopter
*Chesapeake & Potomac Airways, Inc. Jim Bailey	BWI, Baltimore Maryland 21240	301/761-8200 761-8201	Helicopter
*Colonial Helicopter	310 W. Indian River Rd. Norfolk, VA 23523		Helicopter
*Eastern Helicopters Coop. Jerry Hill	Box 7455 Roanoke, VA 24019	703/992-2000	Helicopter
*Evergreen Helicopters Ron Quesenberry	Box 8565 Roanoke, VA 24014	703/989-3675	Helicopter
Forest Contractors Weekly Jack Noel	1021 Forrester NW Albuquerque, NM 87102		
Glen Holt Helicopter Ser. Glen Holt	Rt. 1 Brookneal, VA 24528	804/376-3058	Helicopter & Fixed Wing

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

IN REPLY REFER TO
FAC/REA/nh
6280/1
9 MAR 1984

From: Commanding General
To: Distribution List

Subj: Proposed G-3 Infantry Weapons Range; review of environmental considerations and completion schedule by Environmental Impact Review Board

Ref: (a) BO 11000.1A
(b) BO 11015.2G
(c) Liaison mtg btwn 1stLt REDMOND, Range Control; Mr. Cone, BMain Operations; and Maj BARNETSON, AC/S Fac

Encl: (1) AC/S Trng ltr RCTL/HBR/kes over 11000 dtd 11 Jan 84
(2) Site map, proposed clearing

1. Request that enclosure (1) be reviewed in accordance with references (a) and (b). Enclosure (2) represents the area and proposed clearing techniques. Concurrent with this review, project estimating and planning will proceed. Target date for construction to begin is 5 April, pending the outcome of the Board meeting. Timing for this project is critical in that the G-10 Impact Area must be closed during the EOD sweep and until clearing is complete. All work discussed during reference (c) must be complete by 26 April 1984.

2. A meeting of the subject Board has been scheduled at 0930 on Wednesday, 21 March 1984 in the Conference Room, Building 1 to discuss this proposal.

3. Points of contact for this review are Maj Barnetson and Mr. Alexander, ext 3034/3035, for project planning and environmental review, respectively.

B. W. ELSTON
By direction

DISTRIBUTION:

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

(Advisors)
Dir, NREA
SupvEcologist
BWildlifeMgr
BGameProtector
SAFD
SJA
DPDO
Ch, VetMedSvc, NavHosp
Ch, Occup/PrevMed, NavHosp

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

IN REPLY REFER TO
RCTL/HBR/kes
11000
11 Jan 84

From: Range Control Officer
To: Assistant Chief of Staff, Facilities
Via: Assistant Chief of Staff, Training

Subj: Infantry Weapons Range G-3; request for establishment of
Ref: (a) MCO P3570.1A/AR 385-63
Encl: (1) Map showing Proposed Range
(2) Preliminary Environmental Assessment (PEA)
(3) Description of Proposed Range

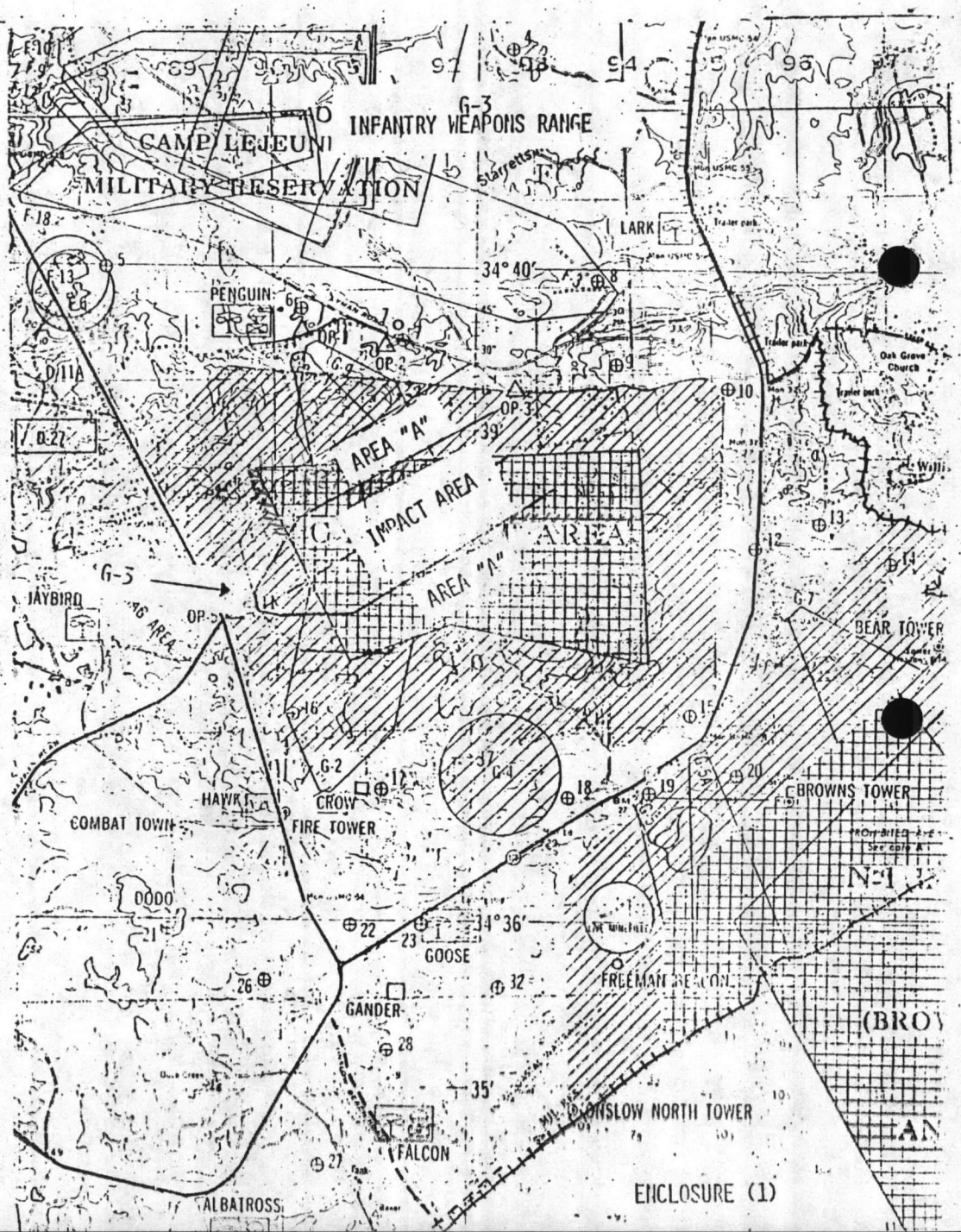
1. Introduction of new weapon such as the MK-19, 40mm gun system has established a requirement for Marine Corps Base, Camp Lejeune, North Carolina to provide a live fire training range for use of this weapon system and others, such as the SMAW and Dragon. At the current time no range currently exists that will accomodate the MK-19 Gun System. Because there is also a need for an Infantry Weapons Range on the east side of New River, it is requested the Range G-3 (Infantry Weapons Range) be established to meet these requirements.

2. The total area to be cleared is shown in enclosure (1) has no economic value and will have no significant environmental impact. It is requested that the Preliminary Environmental Assessment (PEA) in enclosure (2) be reviewed and if necessary, an Enviornmental Assessment (EA) be prepared. Enclosure (3) provides a description of the proposed range and the weapons systems to be used.

3. Point of contact is: MSgt Moses, Range Maintenance Chief, phone 5211.

R. W. ZUZ

ENCL 1



PRELIMINARY ENVIRONMENTAL ASSESSMENT
FOR
G-3 INFANTRY WEAPONS RANGE

1. Enclosures. Map showing proposed range.

2. Purpose and Need

a. The purpose of this proposed action is to provide the Marine Corps Base (MCB), Camp Lejeune, North Carolina with a multi-purpose "Infantry Weapons Range". This range will be used to:

(1) Teach grenade launcher firing techniques and to prepare grenade combat situations.

(2) Teach the skills needed to defeat armored vehicles with light antiarmor weapons.

(3) Teach the techniques of firing flash weapons at point and area targets.

(4) Teach mortar crews and forward observers to maintain technical proficiency in mortar firing.

(5) Teach the techniques of engaging targets with medium and heavy antiarmor weapons.

(6). Teach firing at targets comparable to battlefield ranges developing speed in target engagements, and developing confidence in individual ability.

b. Project Description

(1) This project generally consists of the following:

(a) Removal of brush and trees.

(b) Construction of a firing berm.

(c) Landscaping of the range to establish permanent grasses for erosion control and to facilitate maintenance.

c. Site Selection. The site is located on Enclosure (1). The location is currently part of the surface danger area for Range G-10 and will utilize some of the existing targets in the G-10 Impact Area. The site was selected because the terrain allows for visability of targets at ranges up to 2500 meters.

d. Range Characteristics

Firing Line Width - 100 meters

Target Area Width - 350 meters at 200 meters from the

firing line expanding out to 1200 meters at 960 meters from the firing line.

Minimum Range Depth - 2500 meters

Target Configuration - Static personnel and material targets.

e. Compliance With Environmental Requirements

(1) Air Quality: No emmissions are anticipated.

(2) Land Quality: Erosion control measures will be included in the project design. Construction management will provide preventive measures to contain all sediment on site. Reseeding of disturbed areas and vegetative cover on the cleared area will be accomplished within 30 days of completion of construction.

(3) Clean Water Act: No discharge of wastes to surface waters will occur during range development or subsequent use.

(4) National Historic Preservation Act: No significant cultural resources are located on the project site.

(5) Executive Order 11990 Protection of Wetlands: disturbance of wetlands will be avoided during clearing and earthmoving.

(6) Endangered Species Act: The impact of this project on the habitat of the Red-Cockaded Woodpecker is negligible. This statement is based on the determination that the habitat of this species does not occur within the area to be affected by clearing and earthwork.

f. Conclusion. The development for G-3 Infantry Weapons Range will not result in significant environmental impact provided the measures described herein are followed. further, the project is not considered controversial, thus, preparation of an Environmental Assessment per Marine Corps Order 6280.5 is not required.

RANGE DESCRIPTION

1. RANGE G-3

2. LOCATION GS 8934

3. DESCRIPTION

   a. Infantry Weapons Range

   b. Area and point targets at varying ranges from 150 to 3000 meters.

4. AUTHORIZED FIRING

   a. Weapons - All infantry weapons except Cal. 50 machine gun 106mm recoilless rifle, and hand grenade.

   b. Ammunition - Service

5. RANGE LIMITS

   a. Right Flank Coordinates:

      Azimuth 91 °G

   b. Left Flank Coordinates

      Azimuth 29 °G

6. COMMUNICATIONS

   a. Dial telephone (1431) available at OP-5.

   b. See Section IV.

   c. Dual communications required.

7. KNOWN INTERFERENCE. None

8. SAFETY EQUIPMENT. To be determined.

9. RANGE PERSONNEL Officer in charge of firing

10. MEDICAL. Medical corpsman and military safety vehicle with driver.

11. SPECIAL INSTRUCTIONS

    a. Insure that the minimum ranges for weapons comply with the safety criteria for the system.

    b. No down-range movement is permitted unless accompanied by EOD personnel.

    c. Report all duds to the Range Control Duty Officer (3064).

NREAD/JIW/th
11015/1a
7 Mar 1984

From: Director
To: Assistant Chief of Staff, Facilities (Attn: Environmental Engineer)

Subj: Proposed New G-3 Range near OP-5/Red-Cockaded Woodpecker Consultation

Ref: (a) Recent discussion btwn Mr. R. Alexander, Env Eng, and Mr. J. Wooten and Mr. D. Sharpe, NREAD
(b) FONECON btwn Mr. Gary Henry, USF&WS and Mr. J. Wooten, Dir, NREAD, on 1 March 1984
(c) FONECON btwn Mr. Alexander, Env Eng, and Mr. Wooten, Dir, NREAD, on 7 Mar 1984

1. Reference (a) pertained to the subject range and centered around the fact the range fan would include known Red-Cockaded Woodepcker habitat and would require consultation with the US Fish and Wildlife Service before the range is cleared and activated.

2. During reference (b), Mr. Gary Henry was contacted as to possibility of resolving the situation informally. Mr. Henry recommended a detailed package be prepared and forwarded to the US Fish and Wildlife Service for an appropriate action determination. The package should explain how the range would be used and include maps depicting the proposed range and Red-Cockaded Woodpecker habitat. A base opinion as to whether or not the new range will impact on the Red-Cockaded Woodpecker should be included.

3. During reference (c), Mr. Alexander advised that SJA was of the opinion MCB didn't need to enter consultation with the US Fish and Wildlife Service on the subject issue. It is recommended a formal legal opinion be obtained from SJA on this proposed new G-3 Range/Endangered Red-Cockaded Woodpecker habitat issue before the range is established.

J. I. WOOTEN

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

IN REPLY REFER TO
FAC/REA/nh
6280/1
9 MAR 1984

From: Commanding General
To: Distribution List

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Ref: (a) BO 11000.1A
(b) BO 11015.2G
(c) Liaison mtg btwn 1stLt REDMOND, Range Control; Mr. Cone, BMain Operations; and Maj BARNETSON, AC/S Fac

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3. Points of contact for this review are Maj Barnetson and Mr. Alexander, ext 3034/3035, for project planning and environmental review, respectively.

B. W. ELSTON
By direction

DISTRIBUTION:

(Members)	(Advisors)
Rep, 2d MarDiv (G-4)	Dir, NREA
Rep, 2d FSSG (G-4)	SupvEcologist
Rep, 6th MAB (G-4)	BWildlifeMgr
Rep, MCAS(H), NR (S-4)	BGameProtector
TFACO	SAFD
BMO	SJA
PWO	DPDO
	Ch, VetMedSvc, NavHosp
	Ch, Occup/PrevMed, NavHosp

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

IN REPLY REFER TO
RCTL/HBR/kes
11000
11 Jan 84

From: Range Control Officer
To: Assistant Chief of Staff, Facilities
Via: Assistant Chief of Staff, Training

Subj: Infantry Weapons Range G-3; request for establishment of
Ref: (a) MCO P3570.1A/AR 385-63
Encl: (1) Map showing Proposed Range
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(3) Description of Proposed Range

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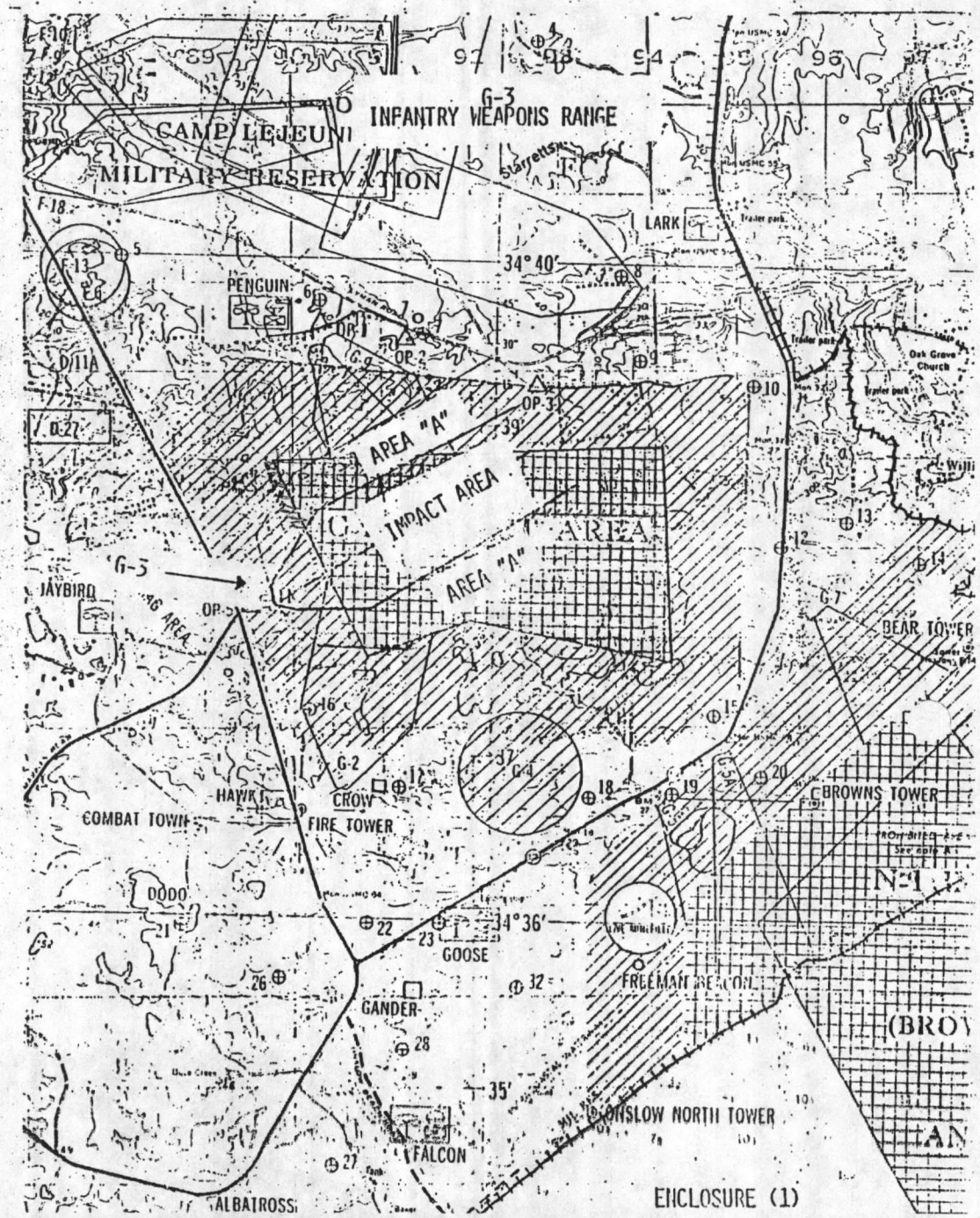
2. The total area to be cleared is shown in enclosure (1) has no economic value and will have no significant environmental impact. It is requested that the Preliminary Environmental Assessment (PEA) in enclosure (2) be reviewed and if necessary, an Enviornmental Assessment (EA) be prepared. Enclosure (3) provides a description of the proposed range and the weapons systems to be used.

3. Point of contact is: MSgt Moses, Range Maintenance Chief, phone 5211.

C. W. ZIVZ



ENCLOSURE (1)

PRELIMINARY ENVIRONMENTAL ASSESSMENT
FOR
G-3 INFANTRY WEAPONS RANGE

1. Enclosures. Map showing proposed range.

2. Purpose and Need

a. The purpose of this proposed action is to provide the Marine Corps Base (MCB), Camp Lejeune, North Carolina with a multi-purpose "Infantry Weapons Range". This range will be used to:

(1) Teach grenade launcher firing techniques and to prepare grenade combat situations.

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(6). Teach firing at targets comparable to battlefield ranges developing speed in target engagements, and developing confidence in individual ability.

b. Project Description

(1) This project generally consists of the following:

(a) Removal of brush and trees.

(b) Construction of a firing berm.

(c) Landscaping of the range to establish permanent grasses for erosion control and to facilitate maintenance.

c. Site Selection. The site is located on Enclosure (1). The location is currently part of the surface danger area for Range G-10 and will utilize some of the existing targets in the G-10 Impact Area. The site was selected because the terrain allows for visability of targets at ranges up to 2500 meters.

d. Range Characteristics

Firing Line Width - 100 meters

Target Area Width - 350 meters at 200 meters from the firing line expanding out to 1200 meters at 960 meters from the firing line.

Minimum Range Depth - 2500 meters

Target Configuration - Static personnel and material targets.

e. Compliance With Environmental Requirements

(1) Air Quality: No emmissions are anticipated.

(2) Land Quality: Erosion control measures will be included in the project design. Construction management will provide preventive measures to contain all sediment on site. Reseeding of disturbed areas and vegetative cover on the cleared area will be accomplished within 30 days of completion of construction.

(3) Clean Water Act: No discharge of wastes to surface waters will occur during range development or subsequent use.

(4) National Historic Preservation Act: No significant cultural resources are located on the project site.

(5) Executive Order 11990 Protection of Wetlands: disturbance of wetlands will be avoided during clearing and earthmoving.

(6) Endangered Species Act: The impact of this project on the habitat of the Red-Cockaded Woodpecker is negligible. This statement is based on the determination that the habitat of this species does not occur within the area to be affected by clearing and earthwork.

f. Conclusion. The development for G-3 Infantry Weapons Range will not result in significant environmental impact provided the measures described herein are followed. Further, the project is not considered controversial, thus, preparation of an Environmental Assessment per Marine Corps Order 6280.5 is not required.

RANGE DESCRIPTION

1. RANGE G-3

2. LOCATION GS 8934

3. DESCRIPTION

a. Infantry Weapons Range

b. Area and point targets at varying ranges from 150 to 3000 meters.

4. AUTHORIZED FIRING

a. Weapons - All infantry weapons except Cal. 50 machine gun 106mm recoilless rifle, and hand grenade.

b. Ammunition - Service

5. RANGE LIMITS

a. Right Flank Coordinates:

Azimuth 91 °G

b. Left Flank Coordinates

Azimuth 29 °G

6. COMMUNICATIONS

a. Dial telephone (1431) available at OP-5.

b. See Section IV.

c. Dual communications required.

7. KNOWN INTERFERENCE. None

8. SAFETY EQUIPMENT. To be determined.

9. RANGE PERSONNEL Officer in charge of firing

10. MEDICAL. Medical corpsman and military safety vehicle with driver.

11. SPECIAL INSTRUCTIONS

a. Insure that the minimum ranges for weapons comply with the safety criteria for the system.

b. No down-range movement is permitted unless accompanied by EOD personnel.

c. Report all duds to the Range Control Duty Officer (3064).

NREAD/JIW/th
11015/1a
7 Mar 1984

From: Director
To: Assistant Chief of Staff, Facilities (Attn: Environmental Engineer)

Subj: Proposed New G-3 Range near OP-5/Red-Cockaded Woodpecker Consultation

Ref: (a) Recent discussion btwn Mr. R. Alexander, Env Eng, and Mr. J. Wooten and Mr. D. Sharpe, NREAD
(b) FONECON btwn Mr. Gary Henry, USF&WS and Mr. J. Wooten, Dir, NREAD, on 1 March 1984
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J. I. WOOTEN

5200
NREAD
20 June 1984

From: Director
To: Assistant Chief of Staff, Training

Subj: CONSTRUCTION OF TRACKED VEHICLE TRAIL FROM RHODES POINT TO TLZ CARDINAL

Ref: (a) On site visit by Lt Redmond and MSgt Letcher, EOD; Lt Graham, Range Control; MSgt Moses, Range Maintenance, and Messrs. Jolly, Sharpe and Black, NREAD on 15 June 1984
(b) RCO ltr RCTL/HER/vec 11102 of 30 May 1984

Encl: (1) Map of and Comments on Proposed New Tracked Vehicle Trail

1. Reference (a) was held to determine a satisfactory location for the new section of the subject trail. During reference (a) the site of proposed trail identified by reference (b) was roughly located and its effects on environmental, soil, water and forestry programs were discussed. The concerns and the rough location discussed during reference (a) are shown in the enclosure.

2. The location shown in the enclosure appeared to both satisfy mission requirement and minimize environmental impact. Other sites north of that shown in the enclosure have severe erosion problems, potential impact on wetlands, and will be more difficult to build and maintain.

J. I. WOOTEN

Copy to:
TrainFacO

Writer: D. D. Sharpe, NREAD, 5003
Typist: J. Cross, 20Jun84

COMMENTS ON ENVIRONMENTAL IMPACT
OF PROPOSED NEW TANK TRAIL AT RHODES POINT

1. Air Quality: Burning of debris from clearing of vegetation from trail will be one method for disposal. The remoteness of the site from populated areas (civilian or military) makes this an acceptable method provided weather conditions and forest fire hazard are acceptable at the time work is done. If this method of disposal is utilized, State environmental regulations, relative to fuels used and to time of day burning will be done, must be observed. Wilmington Office of North Carolina Department of Natural Resources and Community Development will be notified prior to burning.

2. Land Quality: Road construction will severely disturb approximately 12 acres of land presently vegetated with pines, hardwoods, shrubs and vines. The site was selected because soils are suitable and are relatively level, except where the trail crosses drains. Concentrated runoff in side ditches and disturbed areas will cause moderate to severe erosion if proper erosion control and surface water management practices are not installed and maintained. An erosion control plan approved by State is required. Borrow material appears to be available on the site.

3. Groundwater Quality: This project does not appear to have any impact on groundwater.

4. Surface Water Quality: The project will cause increased rates of runoff during and subsequent to construction. While the project will increase sedimentation from erosion, properly installed erosion control practices and stabilization with grass will hold pollution within acceptable standards.

5. Natural Resources: Approximately 12 acres of forestland will be lost along with the associated wildlife habitat. Because of the amount and quality habitat in the area, the action will not have a significant adverse impact on any species. There are no endangered species located in or routinely using the affected area.

6. SocioEconomic Considerations: The site is remote from populated areas. The project will serve an existing need and no increase in level of activity in the area is expected attributable to the project. There are no known archaeological or historical sites located in the project area as depicted on the attached map.

ENCLOSURE (1)

ASSISTANT CHIEF OF STAFF, FACILITIES
HEADQUARTERS, MARINE CORPS BASE

DATE 6/8/84

TO:

BASE MAINT O
PUBLIC WORKS O
~~COMM ELECT O~~
DIR., NAT. RESOURCES & ENV. AFFAIRS

DIR, FAMILY HOUSING
DIR, UNACCOMPANIED PERS HSG
~~BASE FIRE~~ CHIEF

ATTN: Mr. Wooten

1. Attached is forwarded for info/action.

Please evaluate.

2. Please initial, or comment, and return all papers to this office.

3. Your file copy.

Thanks
Al S

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

MCBCL 5216/21 (REV. 6-83)

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

12 June 84
Date

From: Director
To: Danny, P. Black ~~Charles~~ COP

Please get with Training FacO. and evaluate on the ground.

P. Black coordinate + draft memo to AC/S Fac.

Capt. Howard. TFACO.

ON SITE VISIT SCHEDULED FOR 1400 ON 6-15-84

ROUTING SLIP 6 JUN 1984

FAC ROUTING			
	ACTION	INFO	INT
FACO		✓	
4A		✓	OK
4B		✓	
4C			
4D			
4E			
4FC	✓		
4LC			
SEC			
CLK			

COMMENTS:

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

IN REPLY REFER TO
11102
TRNG
6 Jun 84

FIRST ENDORSEMENT on RCO, MCB ltr RCTL/HBR/vec over 11102 dtd 30 May 84

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

Subj: CONSTRUCTION OF A TRACKED VEHICLE TRAIL FROM RHODES POINT TO TLZ CARDINAL

1. Forwarded, recommending approval.

F. J. CIERLE
By direction

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

IN REPLY REFER TO:
RCTL/HBR/vec
11102
30 May 1984

From: Range Control Officer
To: Assistant chief of Staff, Facilities
Via: Assistant Chief of Staff, Training

Subj: Construction of a Tracked Vehicle Trail from Rhodes Point to TLZ Cardinal

Ref: (a) MCO 3571.1A

Encl: (1) Map Showing Proposed Tracked Vehicle Trail
(2) Preliminary Environmental Assessment (PEA)

1. Tracked vehicles have been using Rhodes Point Road for access to TLZ CARDINAL from Rhodes Point. Rhodes Point Road is currently being reconditioned and is no longer authorized for use by tracked vehicles. In accordance with the reference, it is requested that a new tracked vehicle trail be constructed as shown in enclosure (1).

2. The total area to be cleared is shown in enclosure (1) and will have no significant environmental impact. Enclosure (2) is the Preliminary Environmental Assessment (PEA) for the proposed tank trail.

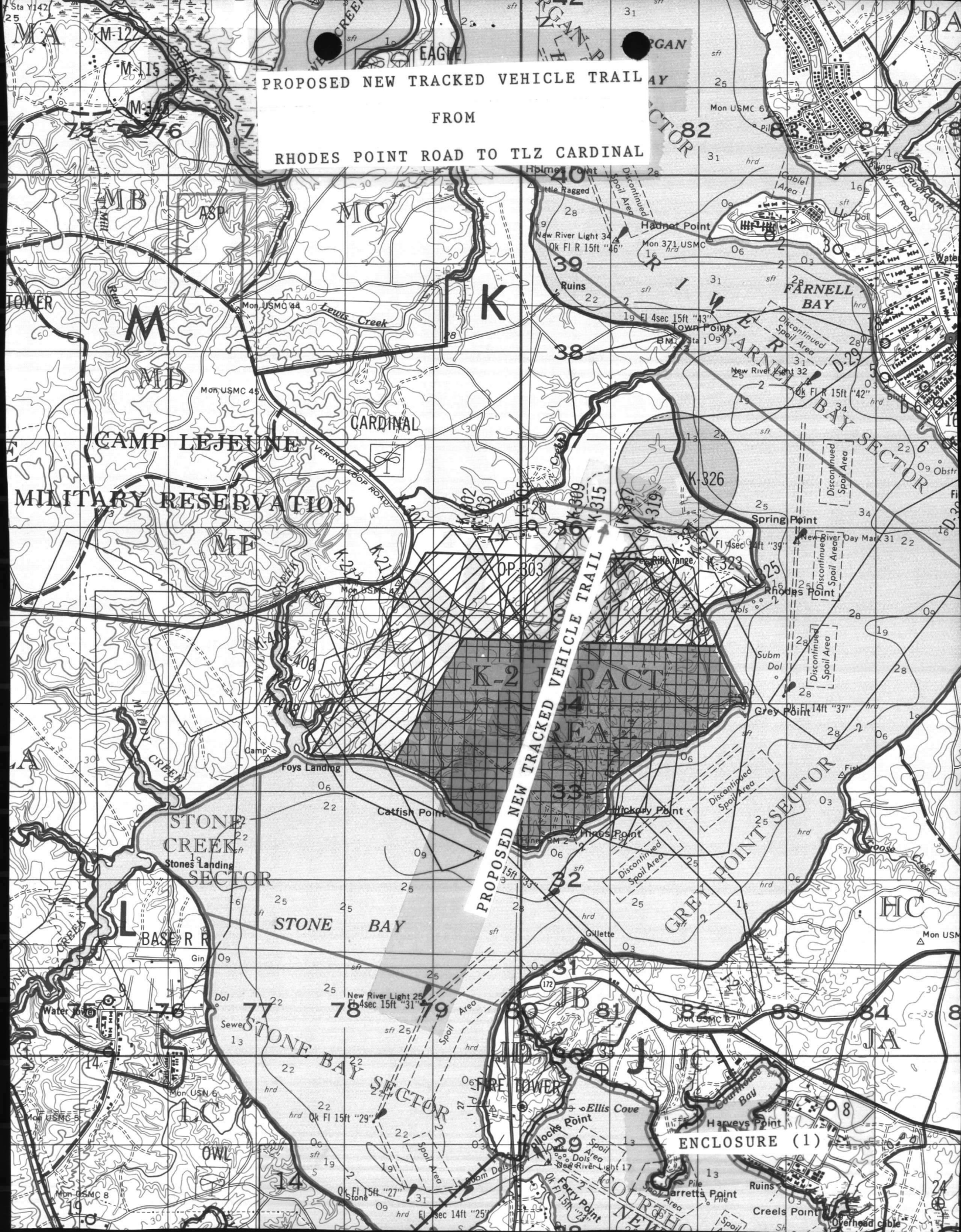
3. Point of contact is MSgt MOSES, Range Maintenance Chief, phone ext 5211/3542.

K. W. ZITZ

PROPOSED NEW TRACKED VEHICLE TRAIL

FROM

RHODES POINT ROAD TO TLZ CARDINAL



ENCLOSURE (1)

PRELIMINARY ENVIRONMENTAL ASSESSMENT

FOR

TANK TRAIL RHODES POINT TO TLZ CARDINAL AREA

1. Enclosure. Map showing proposed tank trail.

2. Purpose and Need. The purpose of this proposed action is to provide a usable tank trail from Rhodes Point to TLZ Cardinal along the northern edge of Rhodes Point Road.

3. Project Description. The project consists of clearing trees and brush as indicated in the enclosure and installation of a culvert as needed.

4. Site Selection. The site is located on enclosure (1) and is the most ideal location for the tank trail.

5. Compliance With Environmental Requirements

a. Air Quality: No emisions are anticipated.

b. Land Quality: Erosion control measures will be included in the project design. Construction management will provide preventative measures to contain all sediment on site.

c. Clean Water Act: No discharge of waste to surface waters will occur during development or subsequent use.

d. National Historic Preservation Act: No significant cultural resources are located on the project site.

e. Executive Order 11990 Protection of Wetlands: Disturbance of wetlands will be avoided during clearing and construction.

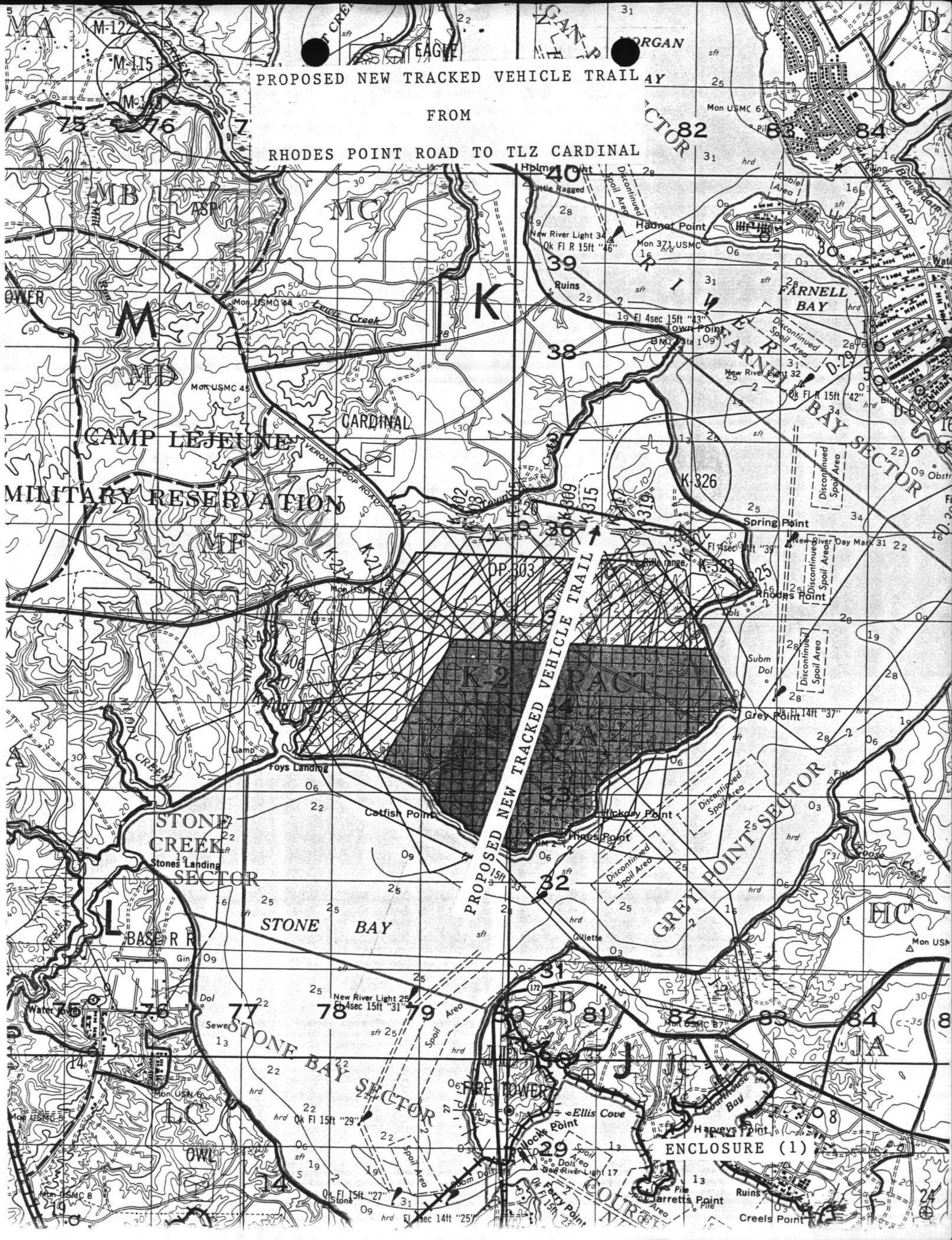
f. Endangered Species Act: The impact of this project on the habitat of endangered species has been determined to be negligible. This statement is based on the determination that no endangered species are known to live in the area to be affected by construction.

6. Conclusion: The construction of this tank trail will not result in significant environmental impact provided the measures described herein are followed. Further, the project is not considered controversial, thus, preparation of an Environmental Assessment per Marine Corps Order 6280.5 is not required.

PROPOSED NEW TRACKED VEHICLE TRAIL

FROM

RHODES POINT ROAD TO TLZ CARDINAL



ENCLOSURE (1)