



US Army Corps
Of Engineers
Wilmington District

PUBLIC NOTICE

Issue Date: October 3, 2017
Comment Deadline: November 2, 2017
Corps Action ID Number: SAW-2017-02000

The Wilmington District, Corps of Engineers (Corps) received an application from the United States Marine Corps Base-Camp Lejeune seeking Department of the Army authorization to discharge fill and associated wetland forest conversion, for the development of Battle Site Zero (BZO) range adjacent to Tank Range SR-10 in Onslow County, North Carolina.

Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at:

<http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram.aspx>

Applicant: USMC-Camp Lejeune
Attn: Mr. John Townson, Director Environment Management
Marine Corps Installations East-Marine Corps Base
PSC Box 20005
Camp Lejeune, North Carolina 28542-0005

AGENT (if applicable): Avolis Engineering, PA
Attn: Mr. Joseph Avolis
Post Office Box 15564
New Bern, North Carolina 28561

Authority

The Corps evaluates this application and decides whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of the following Statutory Authorities:

- ☒ Section 404 of the Clean Water Act (33 U.S.C. 1344)
- ☐ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

Location

Location Description: The project area is located within the Greater Sandy Run Area (GSRA), 42,000-acre training ground, located north of Holly Ridge bordered on the east side by US 17 and on the west side by NC Hwy 50. Specifically, the project is located along the east side of the existing Tank Range (SR-10).

Project Area (acres): 26.04 Nearest Town: Holly Ridge
Nearest Waterway: Juniper Swamp River Basin: Cape Fear
Latitude and Longitude: 34.5603 N, -77.5494 W

Existing Site Conditions

The proposed BZO is located at SR-10 (an existing Tank Range) within the lower half of the GSRA training area. SR-10 is approximately 650 acres in size and the new BZO would be located along the southeast corner of SR-10. SR-10 is cleared with a series of targets and access roads while the BZO is currently forested with a combination of mature Pine and scrub shrub sub canopy.

Applicant's Stated Purpose

The applicant states the purpose is to develop a range to calibrate tank weaponry prior to moving onto the adjacent SR-10 tank range for live training. The BZO range will make the range operations more efficient from ammunition and range utilization perspectives by conducting these functions prior to moving onto the actual SR-10 range for live gunnery training.

Project Description

Camp Lejeune proposes to permanently fill 3.74 acres of Section 404 wetlands to construct three gravel access drives consisting of one firing point and two target locations. The 22.3 acres of forested area between the drives will be maintained using Best Management Practices for Vegetation Cutting in Wetlands. This practice involves cutting the vegetation above ground without having soil disturbance during the clearing process. This initial clearing will be maintained to accomplish a clear line of site through the range

The project has three separate areas consisting of an armored tank bore sighting and firing area and two down range target areas. All three include gravel access drives. The firing area includes a 30' x 255' gravel drive and a 63' x 164' concrete pad for tanks to position on for firing. The first target area is located 1,670' down range and includes a 15'

x 350' gravel access drive and a 255' x 51' protective berm. The second target area is located 2,645' down range and includes 20' x 390' gravel drive and an 80' x 376' earthen berm to protect the target supports and the gravel access drive from tank projectiles.

Avoidance and Minimization

The applicant provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment: The project area is sized at the minimum footprint to accomplish the mission for a company of tanks. The location of the facility is where it will not interfere with other SR-10 tank range training operations. All areas around the tank range consist primarily of wetlands.

See additional information in the Finding of No Significant Impact (FONSI) and Environmental Assessment (EA) electronically attached to the Public Notice, web address above.

Compensatory Mitigation

The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment: USMC-Camp Lejeune has developed a mitigation bank within the Greater Sandy Run Area to offset future permit needs. This is an established bank with all credits released. For this proposed action, the Base has offered mitigation from the bank at 2:1 for the loss of wetlands and 0.5 to 1 for the permanent wetland conversion from forested to scrub shrub habitat.

Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, this Public Notice initiates the Essential Fish Habitat (EFH) consultation requirements. The Corps' initial determination is that the proposed project would not effect EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

Cultural Resources

Pursuant to Section 106 of the National Historic Preservation Act of 1966, Appendix C of 33 CFR Part 325, and the 2005 Revised Interim Guidance for Implementing Appendix C, the District Engineer consulted district files and records and the latest published version of the National Register of Historic Places and initially determines that:

- ☐ Should historic properties, or properties eligible for inclusion in the National Register, be present within the Corps' permit area; the proposed activity requiring

the DA permit (the undertaking) is a type of activity that will have no potential to cause an effect to an historic properties.

- ☒ No historic properties, nor properties eligible for inclusion in the National Register, are present within the Corps' permit area; therefore, there will be no historic properties affected. The Corps subsequently requests concurrence from the SHPO (or THPO). This determination was made by the Base Archaeologist.
- ☐ Properties ineligible for inclusion in the National Register are present within the Corps' permit area; there will be no historic properties affected by the proposed work. The Corps subsequently requests concurrence from the SHPO (or THPO).
- ☐ Historic properties, or properties eligible for inclusion in the National Register, are present within the Corps' permit area; however, the undertaking will have no adverse effect on these historic properties. The Corps subsequently requests concurrence from the SHPO (or THPO).
- ☐ Historic properties, or properties eligible for inclusion in the National Register, are present within the Corps' permit area; moreover, the undertaking may have an adverse effect on these historic properties. The Corps subsequently initiates consultation with the SHPO (or THPO).
- ☐ The proposed work takes place in an area known to have the potential for the presence of prehistoric and historic cultural resources; however, the area has not been formally surveyed for the presence of cultural resources. No sites eligible for inclusion in the National Register of Historic Places are known to be present in the vicinity of the proposed work. Additional work may be necessary to identify and assess any historic or prehistoric resources that may be present.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

Endangered Species

Pursuant to the Endangered Species Act of 1973, the Corps reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information:

- ☐ The Corps determines that the proposed project would not affect federally listed endangered or threatened species or their formally designated critical habitat.
- ☐ The Corps determines that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat.

- ☐ The Corps initiates consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- ☐ The Corps will consult under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- ☐ The Corps has initiated consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- ☐ The Corps determines that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat. Consultation has been completed for this type of activity and the effects of the proposed activity have been evaluated and/or authorized by the National Marine Fisheries Service (NMFS) in the South Atlantic Regional Biological Opinion or its associated documents, including 7(a)(2) & 7(d) analyses and Critical Habitat assessments. A copy of this public notice will be sent to the NMFS.
- ☒ The Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 (ESA) within the project area. The Corps will make a final determination on the effects of the proposed project upon additional review of the project and completion of any necessary biological assessment and/or consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Based on the Heritage database there are occurrences of *Lysimachia asperulifolia* (Rough-leaf loosestrife) approximately 8,000 feet north of the project area and 6,000 feet east of the project area.

Other Required Authorizations

The Corps forwards this notice and all applicable application materials to the appropriate State agencies for review.

North Carolina Division of Water Resources (NCDWR): The Corps will generally not make a final permit decision until the NCDWR issues, denies, or waives the state Certification as required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice, combined with the appropriate application fee, at the NCDWR Central Office in Raleigh constitutes initial receipt of an application for a 401 Certification. A waiver will be deemed to occur if the NCDWR fails to act on this request for certification within sixty days of receipt of a complete application. Additional information regarding the 401 Certification may be reviewed at the NCDWR Central Office, 401 and Buffer Permitting Unit, 512 North Salisbury Street, Raleigh, North

Carolina 27604-2260. All persons desiring to make comments regarding the application for a 401 Certification should do so, in writing, by October 28, 2017 to:

NCDWR Central Office
Attention: Ms. Karen Higgins, 401 and Buffer Permitting Unit
(USPS mailing address): 1617 Mail Service Center, Raleigh, NC 27699-1617

Or,

(physical address): 512 North Salisbury Street, Raleigh, North Carolina 27604

North Carolina Division of Coastal Management (NCDCM):

☒ The application included a certification that the proposed work complies with and would be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2 (b)(2) the Corps cannot issue a Department of Army (DA) permit for the proposed work until the applicant submits such a certification to the Corps and the NCDCM, and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification. As the application included the consistency certification, the Corps requests, via this Public Notice, concurrence or objection from the NCDCM.

☐ Based upon all available information, the Corps determines that this application for a Department of Army (DA) permit does not involve an activity which would affect the coastal zone, which is defined by the Coastal Zone Management (CZM) Act (16 U.S.C. § 1453).

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

The Corps of Engineers, Wilmington District will receive written comments pertinent to the proposed work, as outlined above, until 5pm, November 2, 2017. Comments should be submitted to Brad Shaver, Wilmington Regulatory Field Office, Wilmington, North Carolina 28403 , or email: brad.e.shaver@usace.army.mil.



UNITED STATES MARINE CORPS
MARINE CORPS INSTALLATIONS EAST-MARINE CORPS BASE
PSC BOX 20005
CAMP LEJEUNE NC 28542-0005

5090.12

BEMD

SEP 07 2017

From: Commander, Marine Corps Installations East-Marine Corps Base
Camp Lejeune

To: Commanding Officer, United States Army Corps of Engineers,
Wilmington District 69 Darlington Avenue, Wilmington, NC 28403
Attn: Brad Shaver

Subj: APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT FOR THE
CONSTRUCTION OF A BATTLE SITE ZERO RANGE ADJACENT TO TANK RANGE
SR-10 ON MARINE CORPS INSTALLATIONS EAST-MARINE CORPS BASE,
CAMP LEJEUNE

Encl: (1) Application for Department of the Army Permit for the
Construction of a Battle Site Zero (BZO) range adjacent to
Tank Range SR-10 on Marine Corps Installations East-Marine
Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ)

1. The enclosed application to discharge fill into Section 404
wetlands to construct a BZO range on MCIEAST-MCB CAMLEJ is submitted
for your review and approval.

2. Camp Lejeune proposes to permanently fill 3.74 acres of Section
404 wetlands to construct three gravel access drives consisting of one
firing point and two target locations. The 22.3 acres of forested
area between the drives will be maintained using USACE Best Management
Practices for Vegetation Cutting in Wetlands. A NEPA Environmental
Assessment was completed for this project in February 2015.

3. The point of contact for this project is Ms. Jessi Baker,
Environmental Conservation Branch, Environmental Management Division,
G-F at telephone (910)451-4542 or email jessi.baker@usmc.mil.

Sincerely,

JOHN R. TOWNSON
Director, Environmental Management
By direction of the
Commanding General

Copy to:
NCDENR, DWQ, 401 Section, Attn: J. Burdette
NCDENR, DWQ, WRO, Attn: R. Mairs

Form Approved -
OMB No. 0710-0003
Expires: 30-SEPTEMBER-2015

PRIVACY ACT STATEMENT

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

STATEMENT OF AUTHORIZATION

SIGNATURE OF APPLICANT

DATE _____

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT

Latitude: °N 34.5603

Longitude: °W 77.5494

City - MCB Camp Lejeune State- NC Zip- 28547

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID N/A

Municipality MCB Camp Lejeune

Section -

Township -

Range -

17. DIRECTIONS TO THE SITE

Project site is located adjacent to the eastern side of the SR-10 tank range within the Greater Sandy Run Area (GSRA) of MCB Camp Lejeune. Access to the site and the surrounding 42,000 acre military training area is by the gravel surfaced South Bay Road located 1.3 miles south of the NC Highway 210 and US Highway 17 intersection on US 17. Proceed west on South Bay Road 4.3 miles to the SR-10 tank range. Project site is in the wooded area on right hand (eastern) side of the SR-10 range.

18. Nature of Activity (Description of project, include all features)

The project has three separate areas consisting of an armored tank bore sighting and firing area and two down range target areas. All three include gravel access drives. The firing area includes a 30' x 255' gravel drive and a 63' x 164' concrete pad for tanks to position on for firing. The first target area is located 1,670' down range and includes a 15' x 350' gravel access drive and a 255' x 51' protective berm. The second target area is located 2,645' down range and includes 20' x 390' gravel drive and a 80' x 376' earthen berm to protect the target supports and the gravel access drive from tank projectiles. The wooded area between the firing and target areas will be cut flush with the ground with no fill. The vegetated area between the firing position and the target areas will be maintained using USACE Best Management Practices for vegetation cutting in wetlands (attached) in order to keep the firing lines unobstructed. These areas of vegetation management using Best Management Practices total 22.3 acres.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Project will be used to bore site and zero the tank weaponry prior to moving onto adjacent SR-10 tank range for live training. The bore sighting and zeroing processes will align the tank barrel with the down range targets, allow tank crews to program their firing computers, and confirm those solutions by zeroing the weapon systems. The BZO range will make the range operations more efficient from ammunition and range utilization perspectives by conducting these functions prior to moving onto the actual SR-10 range for live gunnery training.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The areas adjacent to the existing SR-10 tank range consist of 404 Pocosin Pine Wetlands. The fill proposed to be placed in the wetland areas will be high enough to bridge out of the wet conditions and will allow the gravel drives and concrete slab to support the proposed loads associated with the tank training operations.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Soil - 14,784	Gravel - 985 (Placed over fill)	Concrete - 383 (Placed over fill/gravel)

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres Firing Area (45,283 SF) + Target Area 1 (49,939 SF) + Target Area 2 (67,833 SF) = 163,055 SF (3.74 AC)
or

Linear Feet Fill will be by bulldozer and motor grader. Silt fencing will be placed around work area.

23. Description of Avoidance, Minimization, and Compensation (see instructions)

The project area is sized at the minimum footprint to accomplish the mission for a company of tanks. The location of the facility is where it will not interfere with other SR-10 tank range training operations. All areas around the tank range consist primarily of wetlands. MCB Camp Lejeune operates the Greater Sandy Run Area wetland mitigation bank and has adequate credits available to complete this project. The typical mitigation ratio is 1.5 acres per 1.0 acres impacted. MCB Camp Lejeune maintains a balance sheet for the mitigation area.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list)

a. Address- Project area is located within a 42,000 acre military training area. The nearest private property is 1.9 miles from the site.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
NCDEQ	401 Water Quality	Pending			

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

DATE

9/26/2017

SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

GENERAL CONSTRUCTION NOTES:

1. THE LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCANNING THE AREA OF WORK TO IDENTIFY TO HIS OWN SATISFACTION THE EXTENT OF UTILITIES PRESENT INCLUDING THE UTILITIES INDICATED TO BE PRESENT, THOSE NOT SHOWN, AND THOSE SHOWN TO BE IN A DIFFERENT LOCATION.
2. PHYSICAL SITE FEATURES OUTSIDE THE AREA OF WORK OR THOSE FEATURES NOT RELEVANT TO THE WORK BEING PERFORMED ARE NOT SHOWN FOR CLARITY.
3. ALL EXISTING VEGETATED AREAS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PROJECT VEGETATION PLAN, SEE DETAIL F, SHEET C-502.

NEW WORK ITEMS (THIS SHEET ONLY):

- ① CUT EXISTING VEGETATION FLUSH WITH THE GROUND WITH NO LAND GRADING, EXCEPT WITHIN THE THREE INDICATED IMPROVEMENT AREAS.

BMP: VEGETATION CUTTING IN WETLANDS:

WORK IS LIMITED TO THE CUTTING AND/OR REMOVAL OF VEGETATION ABOVE THE GROUND. TO AVOID SOIL DISTURBANCE, CHAIN SAWS, TREE SHEARS, TREE PINCHERS, MOWERS, ROTARY CUTTERS OR SIMILAR EQUIPMENT SHOULD BE USED TO CUT ABOVE THE GROUND SURFACE WHILE LEAVING THE SOILS AND ROOTS INTACT. ALL HEAVY EQUIPMENT SHOULD BE MOUNTED ON RUBBER TIED VEHICLES, HIGH FLOTATION TIED VEHICLES, OR PLACED ON MATS.

IF NECESSARY, CUT VEGETATION SHOULD BE LIFTED INTO WINDROWS PROVIDED THIS ACTIVITY DOES NOT RESULT IN MORE THAN A DE MINIMUS (INCIDENTAL) DISCHARGE OR REDEPOSITION OF EXCAVATED MATERIAL. CHIPPING OR MULCHING IS ACCEPTABLE PROVIDED THE BIOMASS DOES NOT IMPEDE OR DIVERT NATURAL DRAINAGE PATTERNS AND DOES NOT RESULT IN EFFECTIVELY FILLING THE WETLAND AREA WITH CHIPPED OR MULCHED MATERIAL.

CHIPPED OR MULCHED MATERIAL MAY BE PLACED IN CONTAINERS FOR REMOVAL TO AN UPLAND DISPOSAL SITE.

STOCKPILING AND/OR MECHANICAL SPREADING OF CHIPPED OR MULCHED MATERIAL MUST RECEIVE PRIOR APPROVAL BY A DEPARTMENT OF THE ARMY (DA) SECTION 404 PERMIT FROM THE CORPS OF ENGINEERS.

WETLAND IMPACT TABLE

ID	WETLAND AREA IMPACT
ACCESS ROAD & CONCRETE PAD	45,263 SF / 1.04 Ac
TARGET ACCESS ROAD	45,440 SF / 1.04 Ac
TARGET ACCESS ROAD & IMPACT BERM	67,833 SF / 1.56 Ac

VEGETATION MANAGEMENT AREA IMPACT TABLE

ID	VEGETATION MANAGEMENT AREA IMPACT
MANAGEMENT AREA #1	613,580 SF / 14.09 Ac
MANAGEMENT AREA #2	76,014 SF / 1.75 Ac
MANAGEMENT AREA #3 (UPLANDS)	60,037 SF / 1.38 Ac
MANAGEMENT AREA #4	98,482 SF / 2.26 Ac
MANAGEMENT AREA #5	113,050 SF / 2.60 Ac
MANAGEMENT AREA #6	88,284 SF / 1.99 Ac

TOTAL WETLAND VEGETATION MANAGEMENT AREA = 970,390 SF (22.3 ACRES)

TARGET ACCESS ROAD SEE SHEET EX-3 FOR ENLARGED SITE PLAN

ACCESS ROAD & CONCRETE PAD SEE SHEET EX-2 FOR ENLARGED SITE PLAN

AVOLIS ENGINEERING, P.A.
P.O. BOX 15564
NEW BERN, NC 28551
PH: (252) 633-0068, FAX: (252) 633-6507

DES: J. C. AVOLIS, P.E.

DR: MSP / WFF

CHK: J. K. AVOLIS, P.E.

SUBMITTED BY:

DESIGN DIR: T. H. BURTON

DEPARTMENT OF THE ARMY MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

SITE DESIGN FOR
SR10 AND B20 RANGES
MARINE CORPS BASE CAMP LEJEUNE
EXHIBIT 1 - OVERALL SITE PLAN

SPEC NO. 15-17
CONSTR. CONTR. STUDY NO. 15-17

GRAPHIC SCALE: 1" = 400'

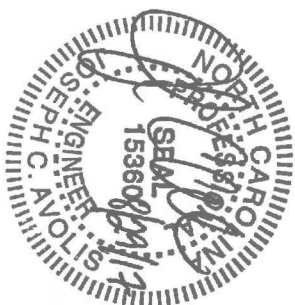
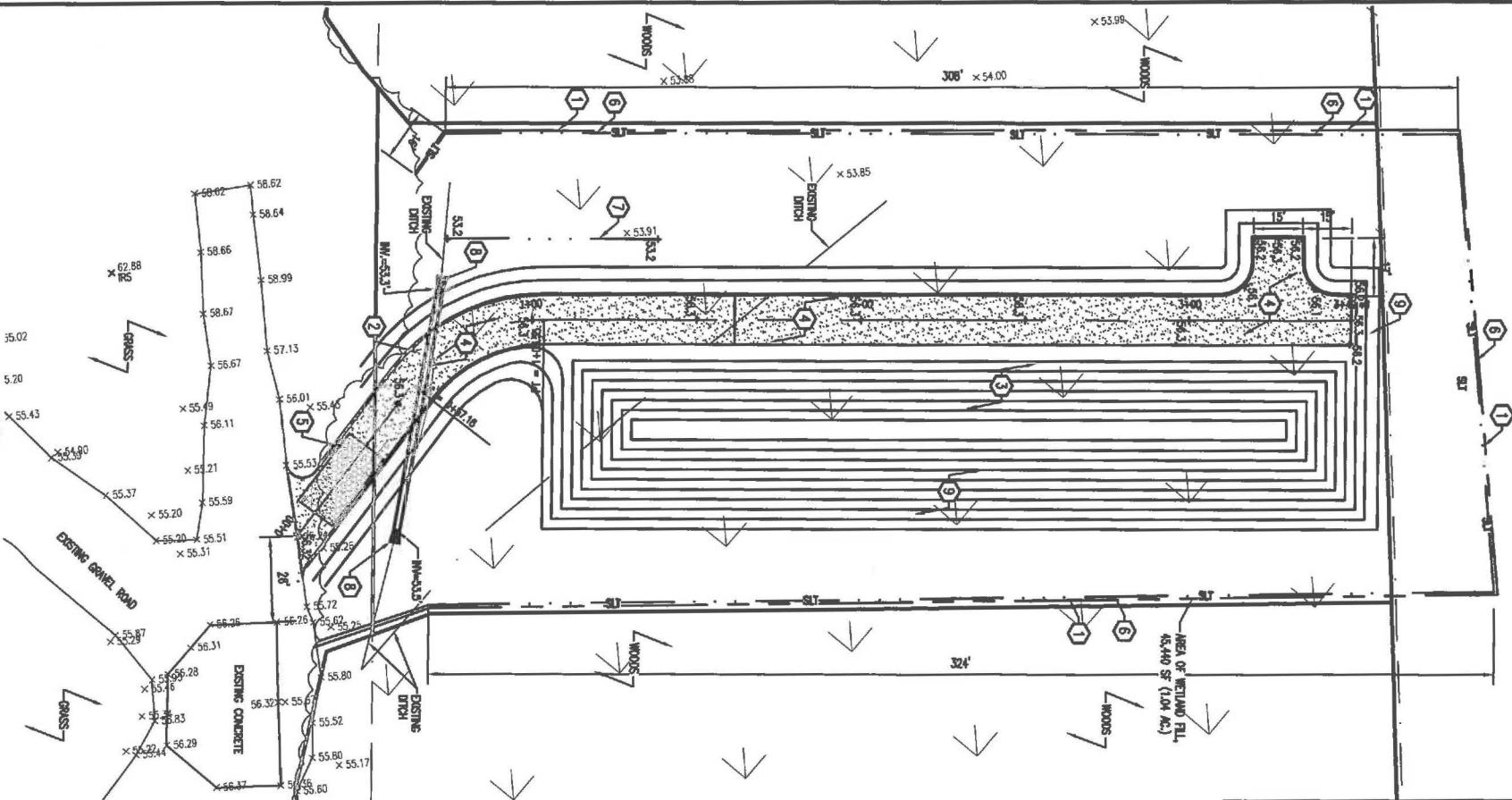
EX-1

SHEET 1 OF 09



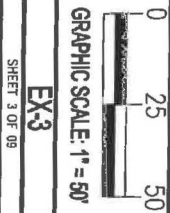
A EXHIBIT 1 - OVERALL SITE PLAN
EX-1 SCALE: 1"=400'

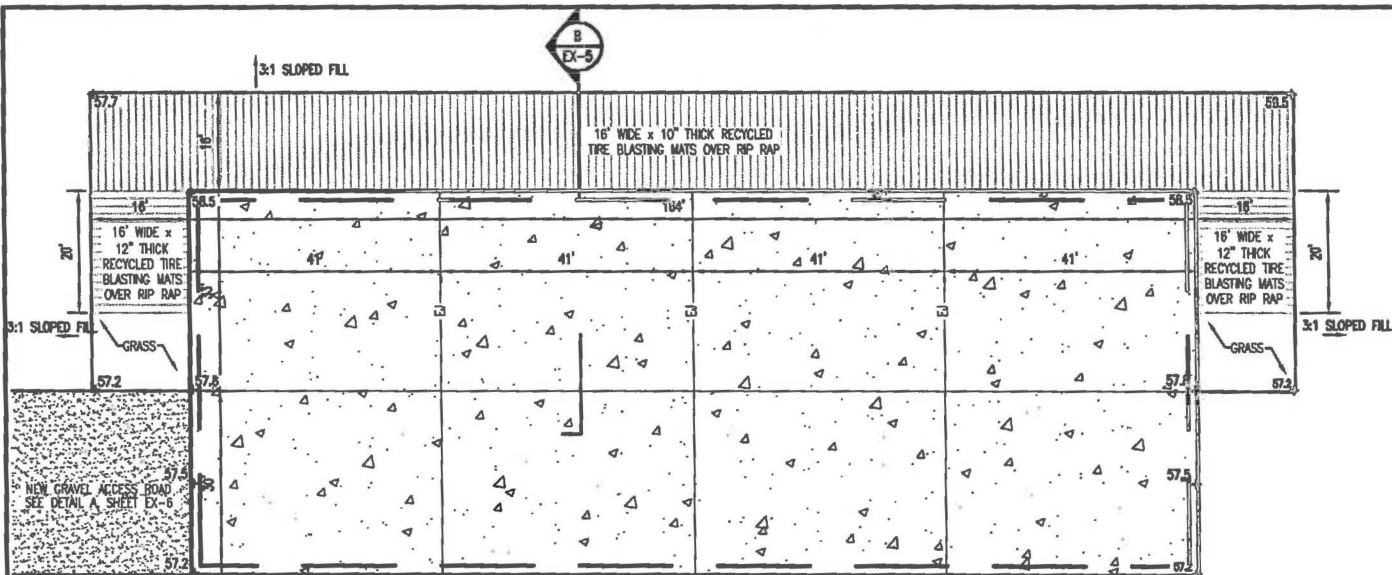
A EXHIBIT 3 - TARGET ACCESS ROAD
EX-3 SCALE: 1"=50'



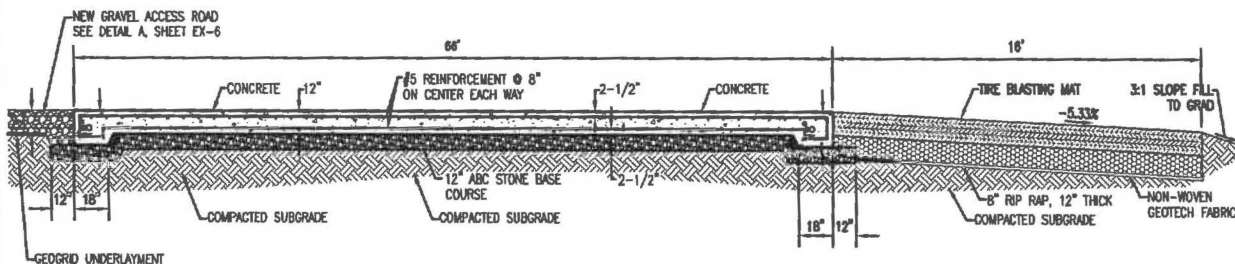
- GENERAL CONSTRUCTION NOTES:**
1. THE LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE AREA OF WORK TO DETERMINE TO HIS OWN SATISFACTION THE EXISTING UTILITIES PRESENT INCLUDING THE UTILITIES INDICATED TO BE PRESENT, THOSE NOT SHOWN, AND THOSE SHOWN TO BE IN A DIFFERENT LOCATION.
 2. PHYSICAL SITE FEATURES OUTSIDE THE AREA OF WORK OR THOSE FEATURES NOT RELEVANT TO THE WORK BEING PERFORMED ARE NOT SHOWN FOR CLARITY.
 3. ALL EXISTING VEGETATED AREAS DESTROYED DURING CONSTRUCTION SHALL BE REGENERATED IN ACCORDANCE WITH THE PROJECT VEGETATION PLAN. SEE DETAIL F, SHEET D-6.
- NEW WORK ITEMS (THIS SHEET ONLY):**
1. UNITS OF CEMENT, UNDERCUT AREA UNDER ROAD & IMPACT BEAM 12 INCHES.
 2. NEW SOUP 16" RCP.
 3. NEW EARTHEN IMPACT BEAM, 3:1 SIDE SLOPES.
 4. NEW GRAVEL ACCESS ROAD - SEE DETAIL A, SHEET D-6.
 5. INSTALL GRAVEL CONTROL ENTRANCE - SEE DETAIL B, SHEET D-6.
 6. INSTALL SLIT FENCE - SEE DETAIL C, SHEET D-6.
 7. NEW CROSS SLOPE - SEE DETAIL D, SHEET D-6.
 8. NEW RPP PIPE/OUTLET PROTECTION - SEE DETAIL E, SHEET D-6.
 9. PROVIDE ALIVE NET STABILIZATION ON ALL NEW SLOPED SURFACES. SEE DETAIL G, SHEET D-6.

DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		AVOLIS ENGINEERING, P.A. P.O. BOX 15564 NEW BERN, NC 28561 PH. (252) 633-0068, FAX (252) 633-6507		LICENSE NO. C-0708
SITE DESIGN FOR SR10 AND BZO RANGES MARINE CORPS BASE CAMP LEJEUNE EXHIBIT 3 - TARGET ACCESS ROAD		DES. J. C. AVOLIS, P.E. DR. MSP / WFF CHK. J. K. AVOLIS, P.E. SUBMITTED BY: DESIGN DIR. T. H. BURTON		
CONSTR. CONTR. STUDY NO. 16-17		SPEC. NO. 15-17		

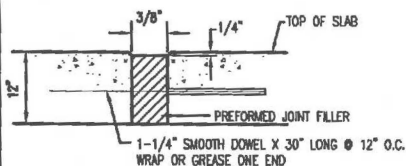




A ENLARGED PLAN - CONCRETE APRON
EX-5 SCALE: 1"=30'

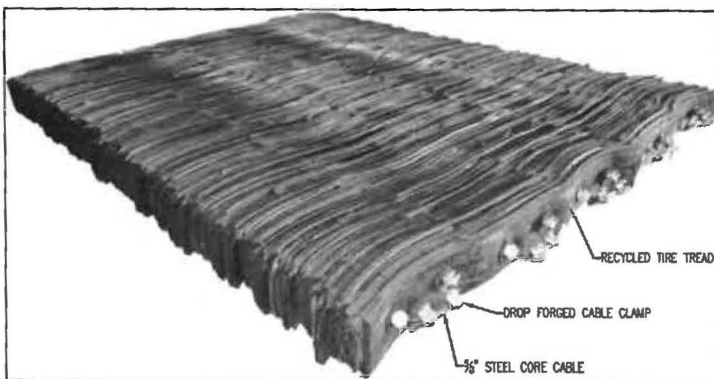


B CROSS SECTION - CONCRETE APRON
EX-5 SCALE: 1/8"=1'



TYPICAL EXPANSION JOINT (EJ)

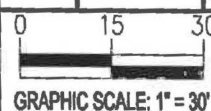
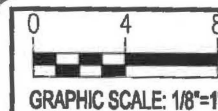
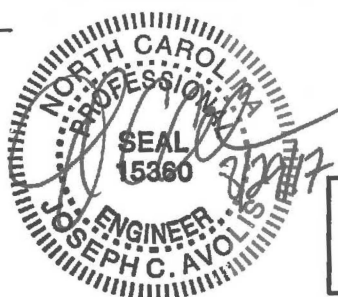
C SLAB-ON-GRADE JOINTS
EX-5 NOT TO SCALE



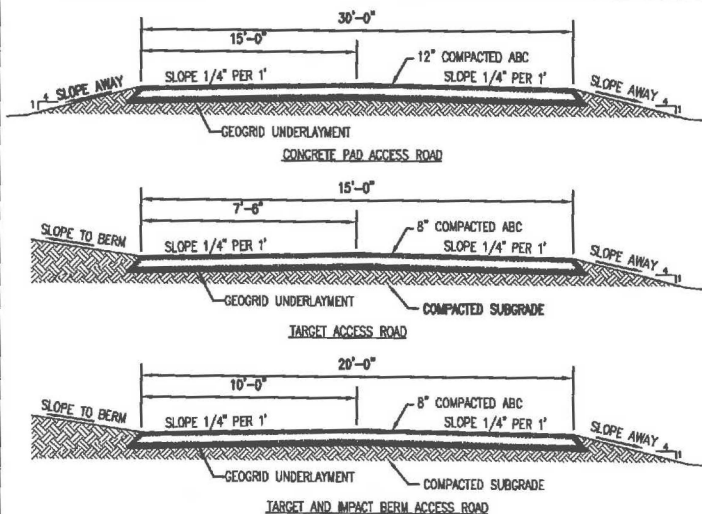
NOTES:

1. BLASTING MATS SHALL BE CONSTRUCTED OF 10" THICK RECYCLED TRUCK TIRE TREADS. INDIVIDUAL MAT SIZES SHALL BE 16'x20'x10" THICK AND APPROXIMATELY 50 LBS PER SQUARE FOOT.
2. TIRE TREADS SHALL BE THREADED ONTO A NEW 5/8" STEEL CORE CABLES AT 12" O.C. WITH DROP FORGED CABLE CLAMPS AND LIFTING RINGS. ALL CABLES SHALL BE DOUBLE CLAMP FOR EASY HANDLING.

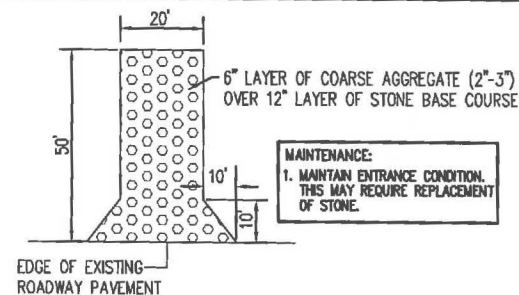
D BLAST MAT
EX-5 NOT TO SCALE



<p>AVOLIS ENGINEERING, P.A. P.O. BOX 15564 NEW BERN, NC 28551 PH: (252) 633-0668, FAX: (252) 633-6507</p>	<p>MARINE CORPS BASE CAMP LEJUNE, NORTH CAROLINA</p>	<p>EX-5</p>
<p>DES. J. C. AVOLIS, P.E. DR. MSP/WFF CHK. J. K. AVOLIS, P.E.</p>	<p>SITE DESIGN FOR SR10 AND BZO RANGES MARINE CORPS BASE CAMP LEJUNE</p>	<p>EXHIBIT 5 - ENLARGED PLANS AND DETAILS</p>
<p>SUBMITTED BY: T. H. BURTON</p>	<p>CONSTR. CONTR. STUDY NO. 15-17</p>	<p>SHEET 5 OF XX</p>



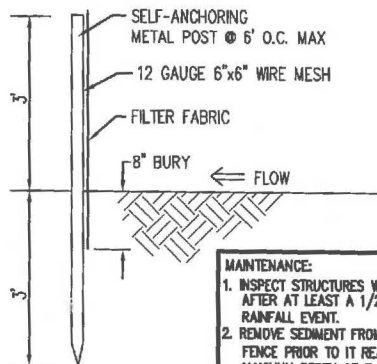
A TYPICAL GRAVEL ROAD SECTIONS
EX-6 NOT TO SCALE



B GRAVEL CONTROL ENTRANCE
EX-6 NOT TO SCALE



D VEGETATED SWALE
EX-6 NOT TO SCALE



C SILT FENCE
EX-6 NOT TO SCALE

PROCEDURE

STRAW MULCH SHALL BE APPLIED AT A RATE WHICH WILL INSURE APPROXIMATELY 95% COVERAGE OF THE SEED AREA. THE STRAW AND SOWN SEED WILL BE LIGHTLY DISCED INTO THE BED TO GIVE IT FURTHER RESISTANCE TO BLOWING AND WASHING. THE CONTRACTOR SHALL GUARANTEE A FULL STAND OF GRASS OVER THE ENTIRE DISTURBED AREA. IF NECESSARY, THE CONTRACTOR WILL WET DOWN THE AREAS TO ASSIST IN SEED GERMINATION OR AID IN GROWTH IN TIMES OF EXCESSIVELY DRY WEATHER. A STAND OF GRASS WILL BE CONSIDERED ACCEPTABLE WHEN THE ENTIRE STAND OF GRASS IS AT LEAST FOUR INCHES HIGH AND HAS ACHIEVED AT LEAST 95% COVERAGE OF DISTURBED AREAS. RESEEDING WILL BE REQUIRED AS NECESSARY BY THE CONTRACTOR TO OBTAIN THE SPECIFIED STAND OF GRASS.

THE AREAS DISTURBED BY THIS PROJECT WILL BE STABILIZED WITH GRASS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

TEMPORARY SEEDING (NOVEMBER 1 - FEBRUARY 15)

RYE GRASS	120 LBS/AC
ANNUAL LESPEDEZA KOBÉ	50 LBS/AC
LIME	2,000 LBS/AC
10-10-10 FERTILIZER	750 LBS/AC
MULCH	4,000 LBS/AC

ANCHOR STRAW BY TACKING WITH ASPHALT.

PERMANENT SEEDING (FEBRUARY 15 - OCTOBER 31)

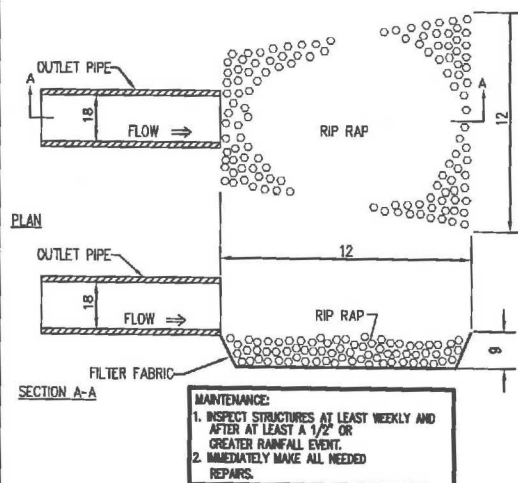
TALL FESCUE	80 LBS/AC
PENSACOLA BAHIAGRASS	50 LBS/AC
SERICEA LESPEDEZA	30 LBS/AC
KOBÉ LESPEDEZA	10 LBS/AC
LIME	3,000 LBS/AC
10-10-10 FERTILIZER	1,000 LBS/AC
MULCH	4,000 LB/AC (TACKED WITH ASPHALT)

FROM SEPTEMBER 1 - OCTOBER 31, USE UNSCARIFIED SERICEA SEED. BETWEEN APRIL 15 AND AUGUST 15, ADD 10 LB/AC GERMAN MILLET. PRIOR TO MAY 1 OR AFTER AUGUST 15, ADD 25 LB/AC RYE GRASS.

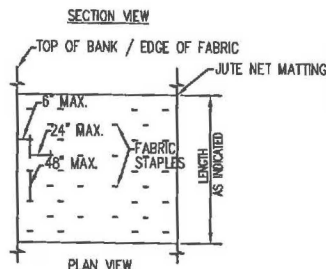
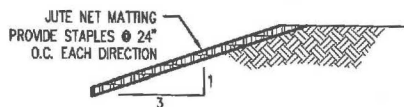
SPECIAL SEEDING NOTE:

CUT & FILL SLOPES WILL, WITHIN 7 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED AND PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

F VEGETATION PLAN
EX-6 NOT TO SCALE

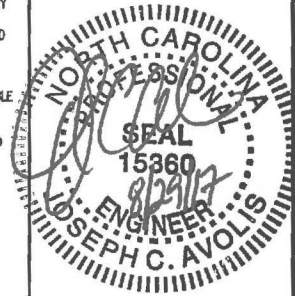


E OUTLET PROTECTION
EX-6 NOT TO SCALE



NOTE: PROVIDE ON ALL NEW SLOPED SURFACES

G JUTE NET SLOPE PROTECTION
EX-6 NOT TO SCALE



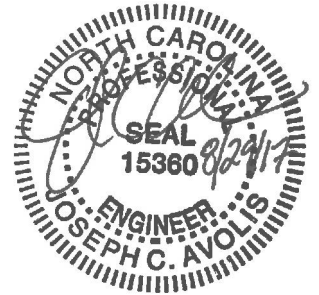
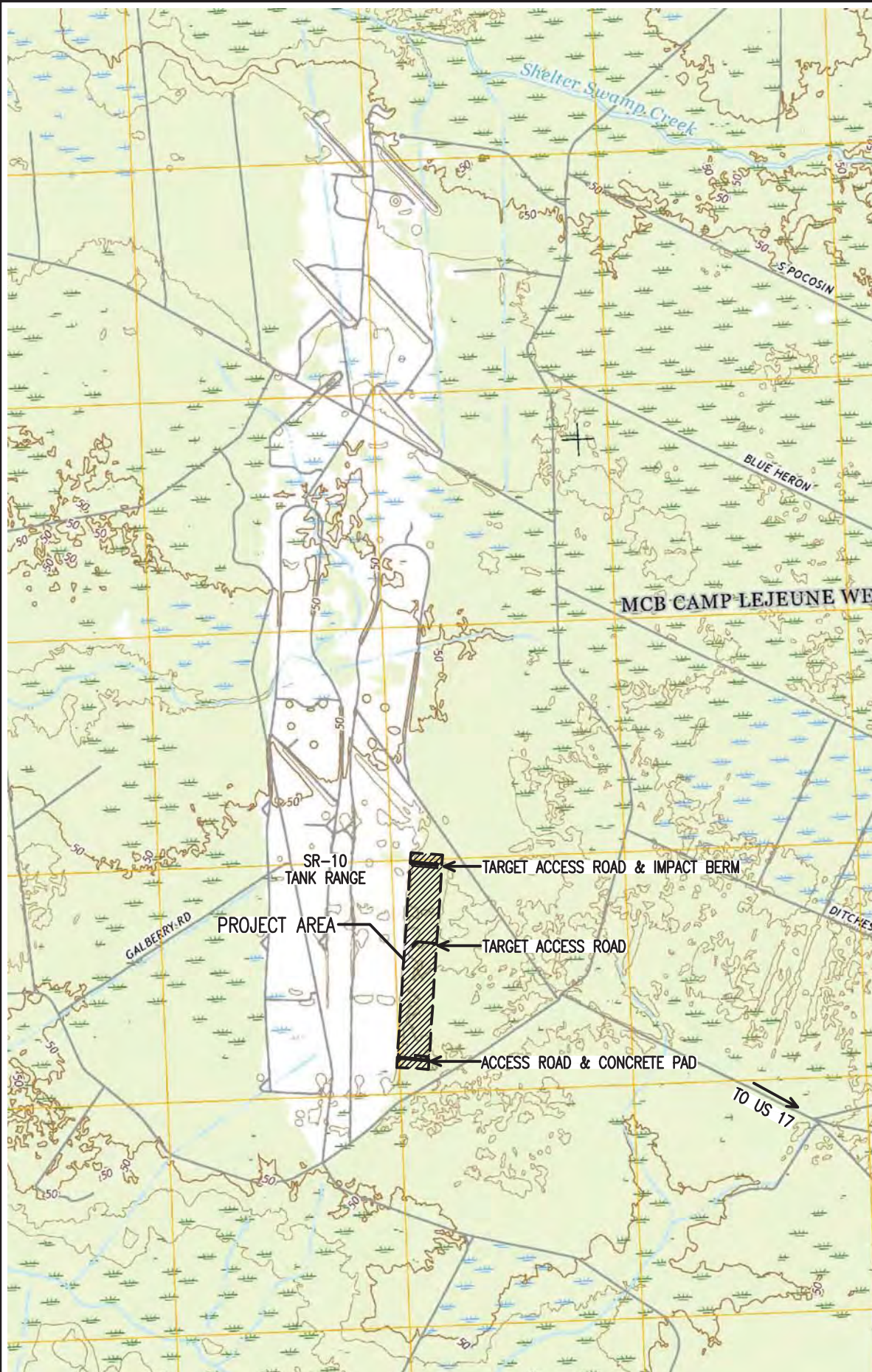
AVOLIS ENGINEERING, P.A. P.O. BOX 15564 NEW BERN, NC 28561 PH (252) 633-0068, FAX (252) 633-6507	DES. J. C. AVOLIS, P.E. DR. MSP/WFF CHK. J. K. AVOLIS, P.E.	SUBMITTED BY: DESIGN DR. T. H. BURTON
---	---	--

DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	SITE DESIGN FOR SR10 AND B20 RANGES MARINE CORPS BASE CAMP LEJEUNE EXHIBIT 6 - DETAILS	SPEC NO. 15-17
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NOT TO SCALE

EX-6

SHEET 6 OF 09



A EXHIBIT 7 - 2016 USGS MAP
EX-7 SCALE: 1"=2000'



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DES: J. C. AVOLIS, P.E.
DR: MSP/WFF
CHK: J. K. AVOLIS, P.E.
SUBMITTED BY:
DESIGN DIR: T. H. BURTON

DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

**SITE DESIGN FOR
SR10 AND BZO RANGES**
MARINE CORPS BASE CAMP LEJEUNE
EXHIBIT 7-2016 USGS MAPS

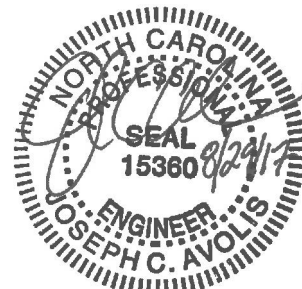
0 1000 2000

GRAPHIC SCALE: 1" = 2000'

EX-7


SHEET 7 OF 09

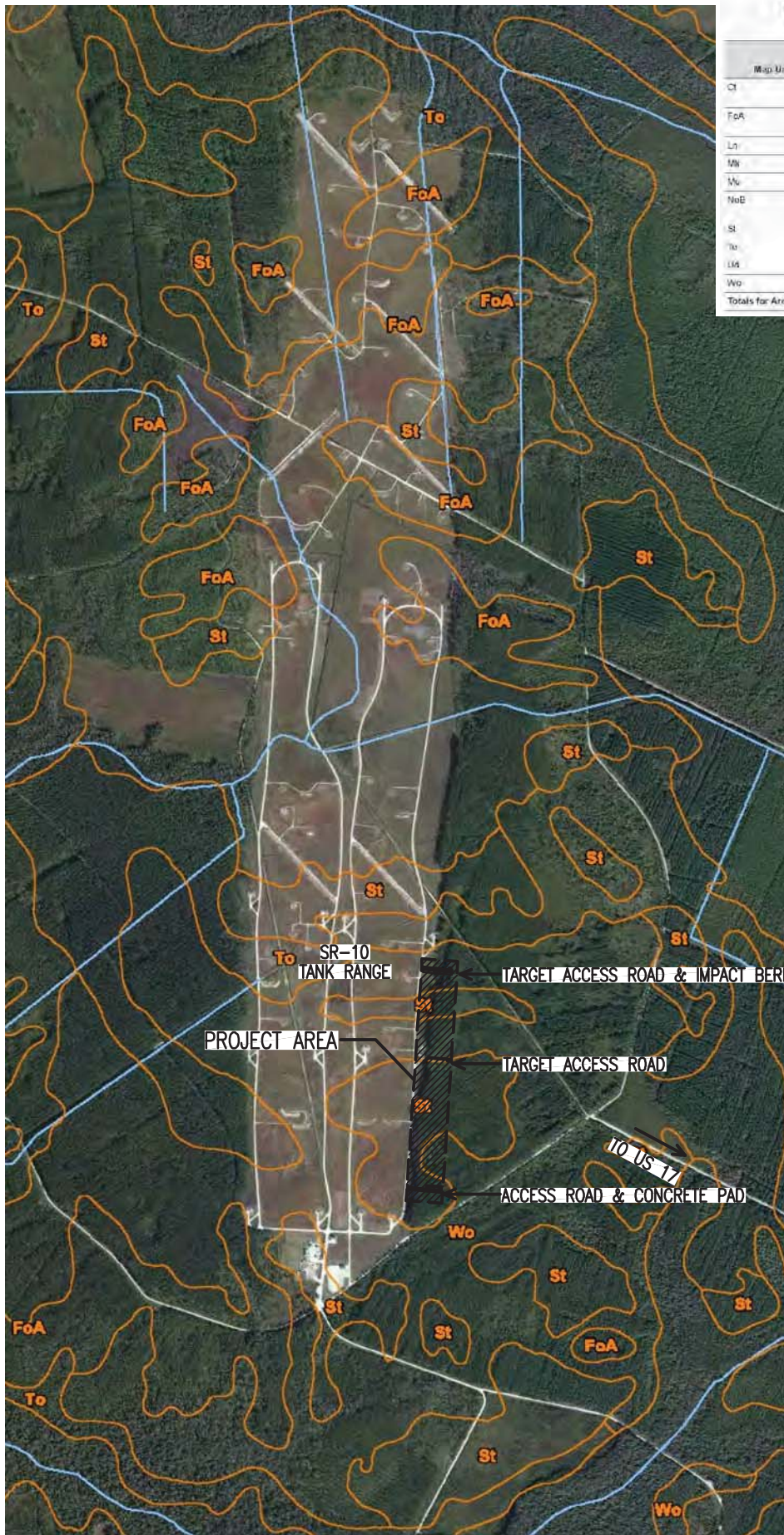
CONSTR. CONTR. STUDY NO. 15-17 SPEC NO. 15-17



A EXHIBIT 8 - 2016 USGS AERIAL
EX-8 SCALE: 1"=2000'

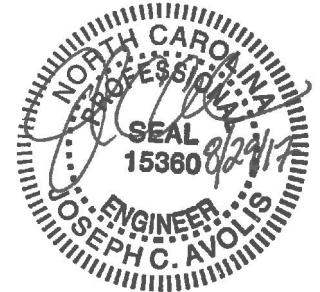


AVOLIS ENGINEERING, P.A. LICENSE NO. C-0706 P.O. BOX 15564 NEW BERN, NC 28561 PH. (252) 633-0068 FAX (252) 633-6507		 DES. J. C. AVOLIS, P.E. DR. MSP/WFF CHK. J. K. AVOLIS, P.E. SUBMITTED BY: DESIGN DIR. T. H. BURTON	
DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		SPEC NO. 15-17	
SITE DESIGN FOR SR10 AND BZO RANGES MARINE CORPS BASE CAMP LEJEUNE EXHIBIT 8- 2016 USGS AERIAL		CONSTR. CONTR. STUDY NO. 15-17	
0 1000 2000 GRAPHIC SCALE: 1" = 2000'		EX-8 SHEET 8 OF 09	



Map Unit Legend

Onslow County, North Carolina (NC133)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cl	Clayton mud, ponded 0 to 2 percent slopes	2,140.8	13.9%
FoA	Forestal loamy fine sand, 0 to 2 percent slopes	2,516.8	16.4%
Lh	Leon fine sand	1,013.7	6.6%
Mh	Muckalee loam	1,855.0	12.3%
Mu	Murvin fine sand	855.3	5.6%
NeB	Norfolk loamy fine sand, 2 to 6 percent slopes	153.9	1.0%
St	Steeple loamy fine sand	1,287.1	9.0%
To	Tobacco fine sandy loam	1,503.1	9.8%
Ud	Udumharts loamy	2.6	0.0%
Wo	Woodstock loamy fine sand	3,527.5	25.2%
Totals for Area of Interest		15,378.8	100.0%



AVOLIS ENGINEERING, P.A. P.O. BOX 15564 NEW BERN, NC 28561 PH: (252) 633-0068, FAX: (252) 633-6507		DES: J. C. AVOLIS, P.E. DR: MSP/WFF CHK: J. K. AVOLIS, P.E. SUBMITTED BY: DESIGN DIR: T. H. BURTON	
DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		SPEC NO. 15-17	
SITE DESIGN FOR SR10 AND BZO RANGES MARINE CORPS BASE CAMP LEJEUNE EXHIBIT 9 - SOILS MAP		CONSTR. CONTR. STUDY NO. 15-17	
0 1000 2000 GRAPHIC SCALE: 1" = 2000'		EX-9 SHEET 9 OF 09	

A EXHIBIT 8 - SOILS MAP
EX-9 SCALE: 1"=2000'



ID#	23532
Document Type	Correspondence
Document Title	SR-10 BZO Range USACE IP Application
Date Received/Created	6/22/2017
Date Signed	6/28/2017
Mail Status	Outgoing
Document Status	Final
Author	MCBCL/EMD
Program	5090.12 NEPA
Keywords	SR-10 BZO Range USACE IP wetland
Building/Room #	EMPORAL
Storage	Electronic Copy
Route	
Mailing Instructions	
Comments	EA was completed for this work in Feb 2015
Working File Link	https://em.usmc.mil/sites/le/wf/5090_12_NEPA/Permits%20and%20Consistency%20Determinations/SR-10%20and%20BZO%20ranges/SR-10%20and%20BZO%20USACE%20IP%20Cvr_ltr_Sept6.docx
Director Comments	
Permanent	Yes
Reviewed by PM	No
Mission Assurance Review Completed	No
Content Type: Item	
Version: 6.0	
Created at 6/22/2017 12:31 PM by <input type="checkbox"/> Baker CIV Jessi O	
Last modified at 9/6/2017 8:31 AM by <input type="checkbox"/> Baker CIV Jessi O	

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9/6/17

Close

**DEPARTMENT OF DEFENSE (DOD)
UNITED STATES MARINE CORPS (USMC)
FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED
CONSTRUCTION OF BATTLESIGHT ZERO (BZO) RANGE ADJACENT TO SR-10
MARINE CORPS INSTALLATIONS EAST-MARINE CORPS BASE CAMP LEJEUNE
(MCIEAST-MCB CAMLEJ)
ONSLOW COUNTY, NORTH CAROLINA**

Responsible Officer
Commanding General
Marine Corps Installations East-Marine Corps Base
PSC Box 20005
Camp Lejeune, North Carolina 28542-0005

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February 2015

DEPARTMENT OF DEFENSE (DOD)
UNITED STATES MARINE CORPS (USMC)
FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED
CONSTRUCTION OF BATTLESIGHT ZERO (BZO) RANGE ADJACENT TO SR-10
MARINE CORPS INSTALLATIONS EAST-MARINE CORPS BASE CAMP LEJEUNE
(MCIEAST-MCB CAMLEJ)
ONSLow COUNTY, NORTH CAROLINA

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations (CFR) Parts 1500 – 1508) implementing procedural provisions of the National Environmental Policy Act (NEPA) and Marine Corps Order (MCO) P5090.2A, the United States Marine Corps (USMC) gives notice that a Environmental Assessment (EA) for the proposed construction of a BZO Range adjacent to SR-10, MCB CAMLEJ, Onslow County, North Carolina has been prepared.

1.0 EXECUTIVE SUMMARY

The NEPA requires Federal agencies to incorporate environmental considerations into planning and decision-making processes along with technical and economic considerations. Specifically, Federal agencies must formally assess environmental impacts of their actions and consider reasonable alternatives to meet the purpose and need of the action. EAs, Environmental Impact Statements (EISs), and Categorical Exclusion (CATEX) Decision Memoranda are the written documentation of this process. Chapter 12 of MCO P5090.2A, Change 3, outlines the USMC policy regarding NEPA compliance. The installation Commanding Officer has the responsibility of determining whether a proposed action as addressed in an EA warrants a FONSI, and therefore does not require preparation of an EIS.

The current proposed action under consideration would construct a new BZO range directly adjacent to the SR-10 Tank Gunnery Range in the Greater Sandy Run Area (GSRA) of MCIEAST-MCB CAMLEJ. The purpose and need of the proposed action is to optimize tank crew command and control, tank crew accuracy, and tank weaponry calibration prior to firing on the SR-10 range. Important issues addressed during development of this document include permanent wetland impacts resulting from the construction of various range components. Any unavoidable impacts to wetlands that occur from the project are expected to be minimal and will be mitigated as required under the Clean Water Act at the GSRA wetland mitigation bank. There are no remaining concerns that would preclude issuance of a FONSI.

2.0 NAME OF ACTION

Proposed construction of BZO Range adjacent to SR-10.

3.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The USMC proposes to construct a new BZO Range directly adjacent to the SR-10 Tank Gunnery Range. Vegetation would be cleared, and stumps would be ground down to the soil surface over the entire 37-acre footprint of the new range; however, root masses would be left in place. Any timber and vegetation that is not sold by the Base forestry department would be piled onsite and burned. Once cleared of trees, a Tank Screening Line/Co-axial Machine Gun BZO Line would be constructed. Range components would include a concrete pad at the firing point measuring 50 meters (m) long by 10 m wide to support eight tanks (one-half a tank Company) bore sighting and screening simultaneously, a 50 m by 2 m soil impact berm, a 265 foot (ft) long access road to the concrete firing pad, as well as a 390 ft long access road to the impact berm. During the verification of the zeroing process, each tank will shoot eight main gun tank rounds at a "bullseye" type plywood target. The SDZ of the new range would fall within the existing SDZ of SR-10. Rounds fired are expected to land predominantly within the impact area. The entire 37-acre footprint would be seeded with grasses and maintained by quarterly mowing. Any ruts resulting from the tank movements and rounds would be filled with purchased fill dirt as is done on the adjacent SR-10 range.

Alternative 1 (No Action Alternative). The no action alternative is to continue using the SR-10 range for screening with no new construction. There would be no new impacts to the resources described in section 5 of this EA, and the SR-10 range would continue to be damaged by the BZO process. This would not allow for the Battalion Gunner to effectively train and inspect his tank crews to ensure they are using the computer correctly during boresighting operations while still observing and running the live fire portion of the range, thereby reducing the effectiveness of the training operation.

Alternative 2 (Preferred Alternative). The preferred alternative is to construct a new sighting range directly adjacent to SR-10. This would allow tank units to calibrate their weapons immediately adjacent to the range they will be training on, would reduce impacts and the stress of overuse of the SR-10 range, and allow for the Battalion Gunner to inspect each tank during training operations while still observing and running the live fire portion of the range.

Alternative 3 (Different Location Alternative). Constructing the new range at other locations in the GSRA or on mainside MCIEAST-MCB CAMLEJ would reduce efficiency in comparison to the proposed placement directly adjacent to the main tank gunnery range. Additional transport time and fuel usage would be required for other locations. This additional cost could be substantial since calibration occurs before each gunnery event. Environmental conditions in the GSRA are homogeneous; other locations within the GSRA area would have similar conditions and therefore similar impacts from the proposed construction. Other locations would also have to be reviewed to ensure that the resulting SDZ would not conflict with other ranges and to avoid the need to close roadways during firing activities. Therefore, MCIEAST-MCB CAMLEJ determined that other potential locations throughout the GSRA and mainside Camp Lejeune would not meet the purpose and need of the action and are not discussed further in this EA.

4.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Consistent with 40 CFR 1501.7 (a)(3), several resource areas have been eliminated from detailed analysis because the Proposed Action either has no potential to impact them, or the potential impacts will be negligible. These resources include Installation Restoration Sites, solid waste management units, aboveground storage tanks (ASTs) or underground storage tanks (USTs). The following is a brief summary of the anticipated impacts from the Proposed Action.

Topography and Soils. The preferred alternative would result in minor impacts to the existing topography and soil of the area during clearing of the project area through erosion and compaction; however, these impacts would be minimal since the predominant soils in the area have only a slight erosion hazard. Erosion impacts due to construction would be temporary and would be minimized by employing applicable soil erosion and sedimentation control techniques at the construction sites. Erosion and sedimentation control devices would likely include sediment fence, silt fence, and matting.

Managed Forest/Vegetation. The preferred alternative would require initial clearing of all vegetation within the 37-acre project area. Base Forestry would conduct a timber operation to remove all merchantable timber. A site clearing contract would follow the timber operation to remove all remaining, non-merchantable vegetation. Following the initial clearing and subsequent range construction, Range Development would maintain the footprint of the proposed BZO range in low growing vegetation through mechanical means (drum chopping, bush hogging), prescribed burning and possibly herbicides.

Threatened and Endangered Species. There are no known occurrences of any federally listed threatened or endangered species within the project review area, and it is not located in an area

determined to have a high probability of species occurrence. MCIEAST-MCB CAMLEJ determined that the preferred alternative would have no effect on any federally listed threatened or endangered species.

Cultural Resources. Based on the available information and concurrence from the Base archeologist, MCIEAST-MCB CAMLEJ determined that no historic properties are located within the project's APE, and, therefore, the project would have no potential to affect cultural resources.

Wetlands. Before the project is implemented, a wetland delineation would be completed, and the project would be designed to avoid wetland areas to the maximum extent practicable. If complete avoidance of the placement of fill into wetlands is not possible, the Base would acquire all necessary state and federal permits prior to any work taking place in the area. Assuming the entirety of the footprint of the road, firing line, and berm were constructed in wetlands, the project would result in up to approximately 0.34 acres of permanent wetland fill. Any permanent wetland fill impacts that could not be avoided would be mitigated through a debit to the GSRA wetland mitigation bank.

Wildlife. The effect to wildlife would be minor because the habitat that would be lost is a minor portion of the similar habitat available to these species both on the Base and in the region around the Base. The preferred alternative would have minor permanent impacts to wildlife through clearing of pine forest, and minor recurring impacts to wildlife by the continued use of the range for tank firing operations.

Migratory Birds. Population level effects to migratory birds would not occur because the habitat that would be lost is a minor portion of the similar habitat available to these species both on the Base and in the region around the Base. Therefore, the proposed action would comply with the intent of the Memorandum of Understanding between the Department of Defense and the U. S. Fish and Wildlife Service (USFWS) for coordination on activities when proposed actions could cause impacts to populations of migratory birds and would not require coordination with the USFWS for migratory birds prior to implementation.

Noise. The same noise standards that are currently in place for the SR-10 range would be maintained for the new range. Additionally, the proposed BZO location is so close to the existing SR-location that the shape and extent of noise contours would not change. Temporary noise impacts from the use of construction equipment for clearing of the range and construction of the access roads, tank firing line, and impact berm are expected. These impacts are temporary and are minor in comparison to the noise levels created by the intended uses of the ranges.

Air Quality. All impacts to air quality resulting from the preferred alternative would be temporary and air quality levels would return to pre construction levels once construction and vegetation burning are completed. Therefore the preferred alternative would have minor temporary and no permanent effects to air quality.

Environmental Justice. There are no low income and minority populations or children within or near the proposed new BZO range. Implementing the proposed action would not cause impacts to low income and minority populations and to children.

Unexploded Ordnance (UXO). There is the potential to encounter UXO during construction of the preferred alternative. All areas where construction activities might impact UXO will be surveyed for ordnance prior to commencing construction activities. In addition, a UXO safety officer will be on site during all construction, clearing and burning. The preferred alternative will result in minor effects to the safety of workers due to the possible presence of UXO; however, this effect would be minimized by surveying the area for UXO prior to commencing any activities that might impact UXO, and by having a UXO safety officer on hand during all construction, clearing and burning.

Coastal Zone Management Consistency. The proposed action was reviewed to determine its consistency with the applicable requirements of the North Carolina Coastal Area Management Act (CAMA). MCIEAST-MCB CAMLEJ has determined that implementing the proposed action would be fully consistent with the applicable policies of the North Carolina CAMA. The proposed action would have no effect on coastal resources or coastal Areas of Environmental Concern (AEC) and the proposed action is not located in an AEC.

Cumulative Impacts. Since acquisition of the GSRA in 1992, approximately 3,000 acres of the 41,000 total acres in the GSRA has been converted to either range use or a landing zone, and approximately 400 acres or 1.7 percent of the total predicted wetland area in the GSRA has been impacted by construction projects. The currently proposed BZO range will result in an additional 37 acres of vegetation clearing and up to 0.34 acres of wetland fill. This is a very small impact when considering the sizes of the existing ranges and other impacts from development within the GSRA. Additionally, any impacts resulting from the proposed project would be mitigated appropriately by the GSRA wetland mitigation bank.

5.0 MITIGATION

In the event that workers encounter any potentially significant historic or archaeological sites during construction, all activity in the area will halt until the MCIEAST-MCB CAMLEJ archaeologist has determined the appropriate course of action. Project designs will avoid and minimize impacts to wetlands and waters of the United States to the maximum extent practicable. Any unavoidable permanent impacts to wetlands as a result of the proposed project would be mitigated appropriately and as required under the Clean Water Act. The exact amount of mitigation would be determined once the amount of impact to wetlands has been determined.

6.0 CONCLUSION

Based on the results of the EA, the USMC has determined that the proposed action, as defined and executed in accordance with the measures described, will have no significant direct, indirect, or cumulative impacts on the quality of the natural or human environment. A FONSI is thus warranted. The requirements of NEPA and the Council on Environmental Quality have been satisfied; an EIS is not required and will not be prepared.



Y. R. ESCALANTE
Colonel, U.S. Marine Corps
Acting Commander
Marine Corps Installations East-
Marine Corps Base, Camp Lejeune

9 MARCH 2015
DATE

**ENVIRONMENTAL ASSESSMENT
FOR
PROPOSED CONSTRUCTION OF BATTLE
SIGHT ZERO (BZO) RANGE ADJACENT TO SR-10
MARINE CORPS INSTALLATIONS EAST-MARINE CORPS BASE, CAMP LEJEUNE
(MCIEAST-MCB CAMLEJ)
ONslow COUNTY, NORTH CAROLINA**

Responsible Officer
Commanding General
Marine Corps Installations East-Marine Corps Base
PSC Box 20005
Camp Lejeune, North Carolina 28542-0005

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February 2015

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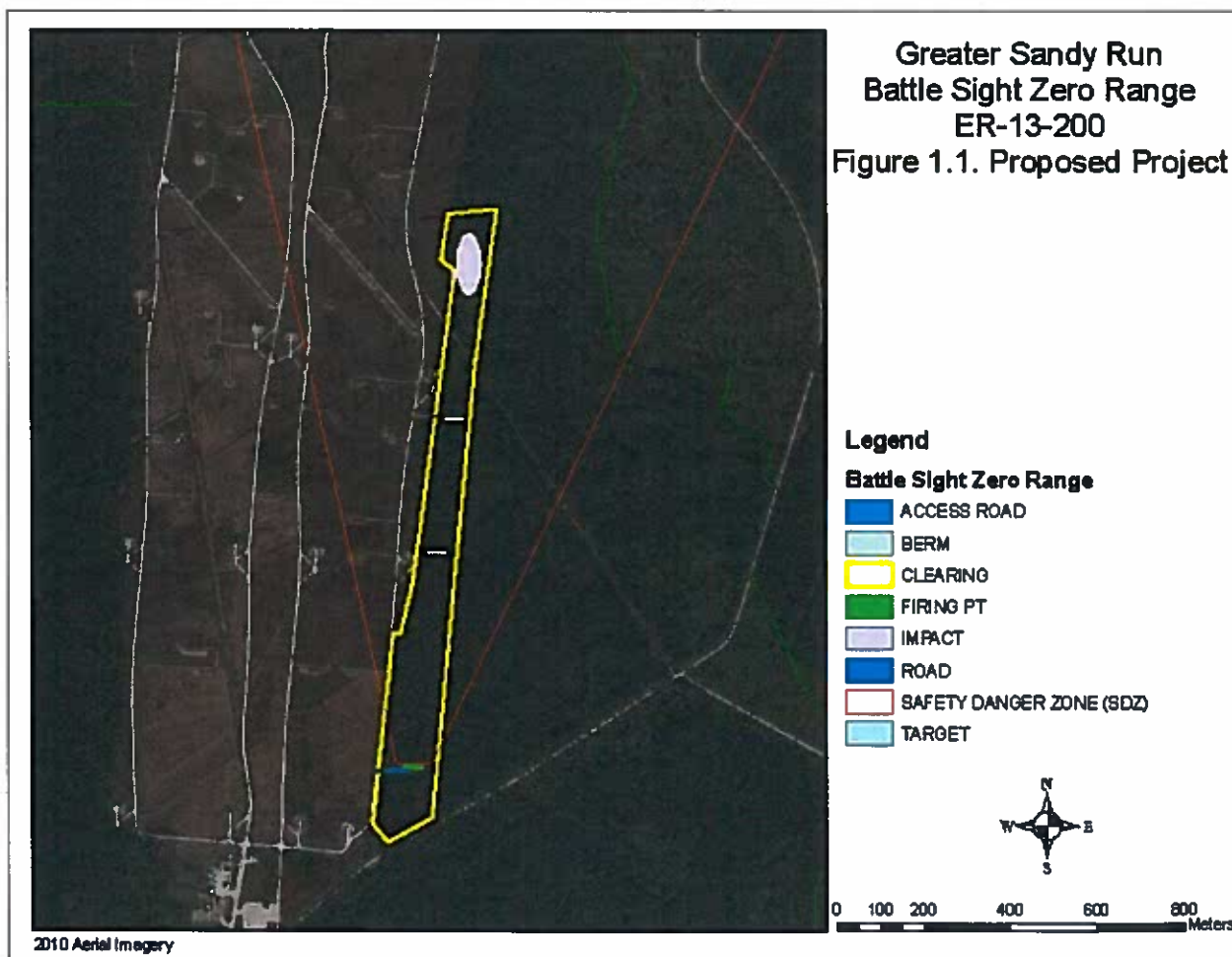
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1. Proposed Action

The project would construct a new BZO Range directly adjacent to the SR-10 Tank Gunnery Range. Vegetation would be cleared, and stumps would be ground down to the soil surface over the entire 37-acre footprint of the new range; however, root masses would be left in place. Any timber and vegetation that is not sold by the Base forestry department would be piled onsite and burned. Once cleared of trees, a Tank Screening Line/Co-axial Machine Gun BZO Line would be constructed. Range components would include a concrete pad at the firing point measuring 50 meters (m) long by 10 m wide to support eight tanks (one-half a tank Company) boresighting and screening simultaneously, a 50 m by 2 m soil impact berm, a 265 foot (ft) long access road to the concrete firing pad, as well as a 390 ft long access road to the impact berm. During the verification of the zeroing process, each tank will shoot eight main gun tank rounds at a "bullseye" type plywood target. The Surface Danger Zone of the new range would fall within the existing SDZ of SR-10. Rounds fired are expected to land predominantly within the impact area (see figure below). The entire 37-acre footprint would be seeded with grasses and maintained by quarterly mowing. Any ruts resulting from the tank movements and rounds would be filled with purchased fill dirt as is done on the adjacent SR-10 Range.

Boresighting is the process of synchronizing the tanks computer in the firing system to the weapon using a laser.

Screening is the process of selecting a specific ammunition type in the tank's computer and checking that the system has the right deflection for that type of round by firing multiple rounds and making a manual changes to the computer as needed. This process links the computer to the barrel and to the eight different types of rounds the tanks can shoot.



2. Environmental Review Process

This document is an Environmental Assessment (EA) prepared in accordance with Marine Corps Order P5090.2A, Change 3, *Environmental Compliance and Protection Manual*. Chapter 12 of the order requires installations to set up and implement an environmental impact review process to determine environmental impacts and documentation requirements of proposed actions. The purpose of preparing the EA is to determine if implementation of the proposed action would have significant environmental impacts.

By preparing the EA, MCB CAMLEJ complies with Marine Corps policy and responsibilities for installations set forth in the order. Further, the Marine Corps assures compliance with the National Environmental Policy Act (NEPA) of 1969 (codified at 42 U.S.C. 4321 *et seq.*). Federal agencies are directed to implement the provisions of NEPA by the Council on Environmental Quality (CEQ) regulations as contained in 40 Code of Federal Regulations (CFR) Parts 1500 to 1508.

3. Purpose and Need

The project purpose and need is to optimize tank crew command and control, tank crew accuracy, and tank weaponry calibration prior to firing on the SR-10 Range. Currently, tank units are calibrating their weapons on targets within the SR-10 Range. This is not an efficient use of the range over the long-term; it reduces throughput capability on the SR-10 which should be reserved for the much more sophisticated requirements of the overall gunnery event. It also increases cost and maintenance overall by causing damage to SR-10 target areas for an activity that could occur elsewhere with simple plywood/paper targets.

Each time a tank crew conducts gunnery qualifications, they go through a BZO process for the tank which is called "screening." This process trains the crews on how to align their optical sighting systems with the main gun and co-axial machine gun. Screening is currently occurring on SR-10 itself and is damaging the targets intended for other training purposes. Also, the SR-10 Range is not set up for screening and does not allow for the Battalion Gunner, lead tanker in the battalion, to train his tank crews and inspect each tank to ensure they are using the computer correctly during boresighting operations. If the tanks are closer together, the Battalion Gunner could walk from tank to tank and still be able to observe and run the live fire portion of the range as required by Base safety orders. Due to the wide spacing on the existing SR-10 Range, the Battalion Gunner must monitor the live-fire portion of the range from a tower and cannot interact with the tank operators directly. The construction of this separate screening line would support gunnery accuracy training and would take the stress off the large number of training rounds being fired onto the SR-10 automated range berms and roadways.

4. Alternatives

This section of the environmental assessment describes the alternatives and summarizes the environmental impact of the alternatives. Alternatives discussed in this environmental assessment are the No Action Alternative, the Preferred Alternative, and the Different Location Alternative.

4.1. No Action Alternative. The no action alternative is to continue using the SR-10 Range for screening with no new construction. There would be no new impacts to the resources described in section 5 of this EA, and the SR-10 Range would continue to be damaged by the BZO process. This would not allow for the Battalion Gunner to effectively train and inspect his tank crews to ensure they are using the computer correctly during boresighting operations while still observing and running the live fire portion of the range, thereby reducing the effectiveness of the training operation.

4.2. Proposed Action, Preferred Alternative. The preferred alternative is to construct a new sighting range directly adjacent to SR-10, as described in Section 1 above. This would allow

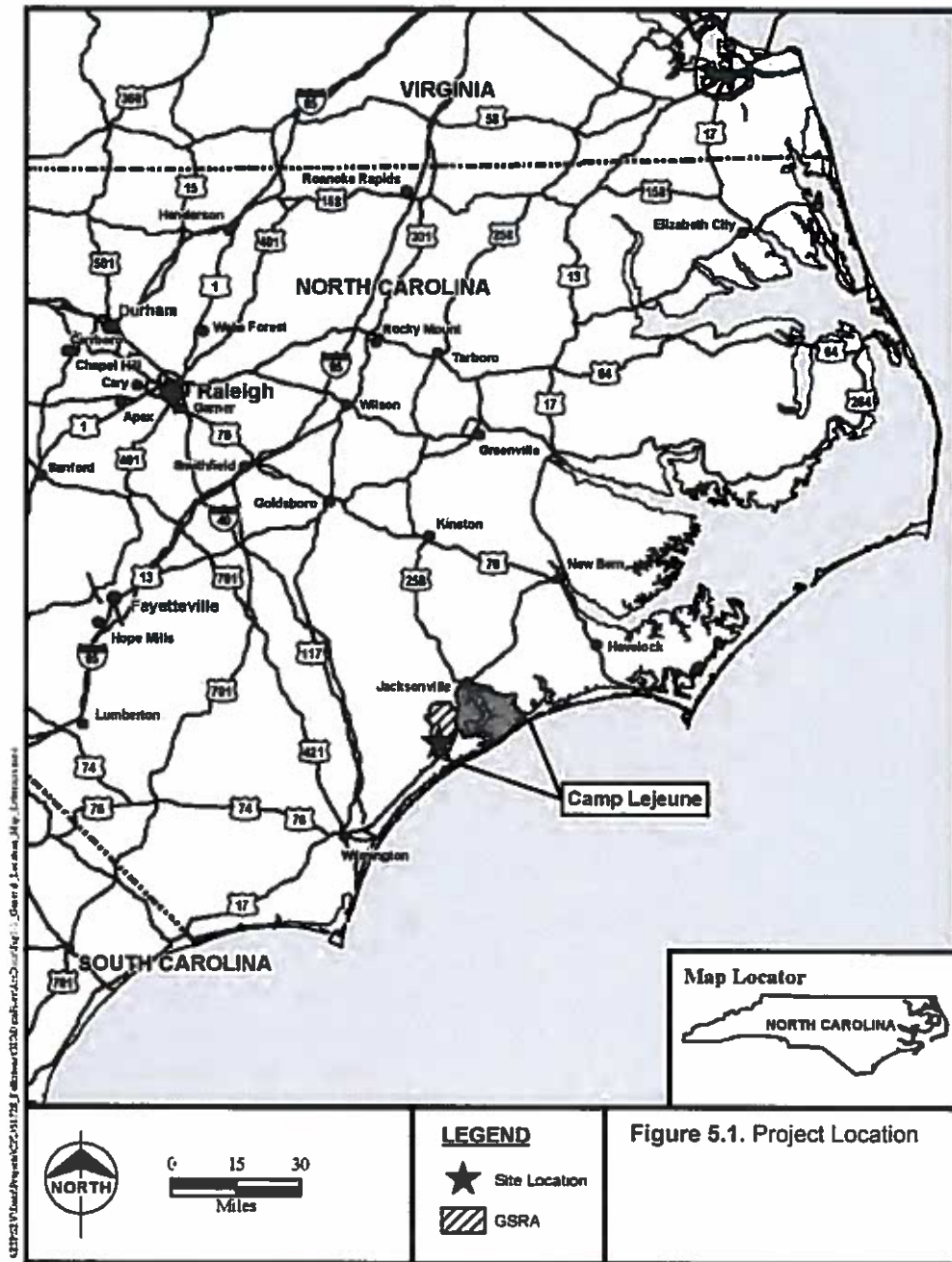
tank units to calibrate their weapons immediately adjacent to the range they will be training on, would reduce impacts and the stress of overuse of the SR-10 Range, and allow for the Battalion Gunner to inspect each tank during training operations while still observing and running the live fire portion of the range.

- 4.3. Different Location Alternative.** Constructing the new range at other locations in the GSRA or on mainside MCIEAST-MCB CAMLEJ would reduce efficiency in comparison to the proposed placement directly adjacent to the main tank gunnery range. Additional transport time and fuel usage would be required for other locations. This additional cost could be substantial since calibration occurs before each gunnery event. Environmental conditions in the GSRA are homogeneous; other locations within the GSRA area would have similar conditions and therefore similar impacts from the proposed construction. While additional time spent driving the tanks has its own training value, the additional expense of fuel is not environmentally justified since other potential locations would have similar natural resource impacts. Other locations would also have to be reviewed to ensure that the resulting SDZ would not conflict with other ranges and to avoid the need to close roadways during firing activities. Therefore, MCIEAST-MCB CAMLEJ determined that other potential locations throughout the GSRA and mainside Camp Lejeune would not meet the purpose and need of the action and are not discussed further in this EA.

5. Affected Environment and Environmental Consequences

This section describes the environment of the area that would be affected by the proposed action, as required by Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500 – 1508) and the effect of each alternative on the area. The description focuses on those features of the environment that the proposed action would potentially affect. The proposed project is located in the GSRA of MCIEAST-MCB CAMLEJ which is located in Onslow County in the Southeastern portion of North Carolina. In 1992, Camp Lejeune acquired the GSRA, located along the western boundary of the base, increasing Camp Lejeune's size by 41,000 acres to a total area of 153,439 acres. The majority of the GSRA was once owned by the International Paper Company, and vast wetland areas were ditched and drained to facilitate intensive timber management practice of the time.

No installation restoration sites, solid waste management units, aboveground storage tanks (ASTs) or underground storage tanks (USTs) appear in the Base Geographic Information Services (GIS) layers, and it is not expected that any would be located within the project review area. Therefore, Installation Restoration Sites are not discussed further in the EA. Other areas of the environment that might be affected by the proposed project are described below.



Revised October 6, 2010

5.1. Topography and Soils

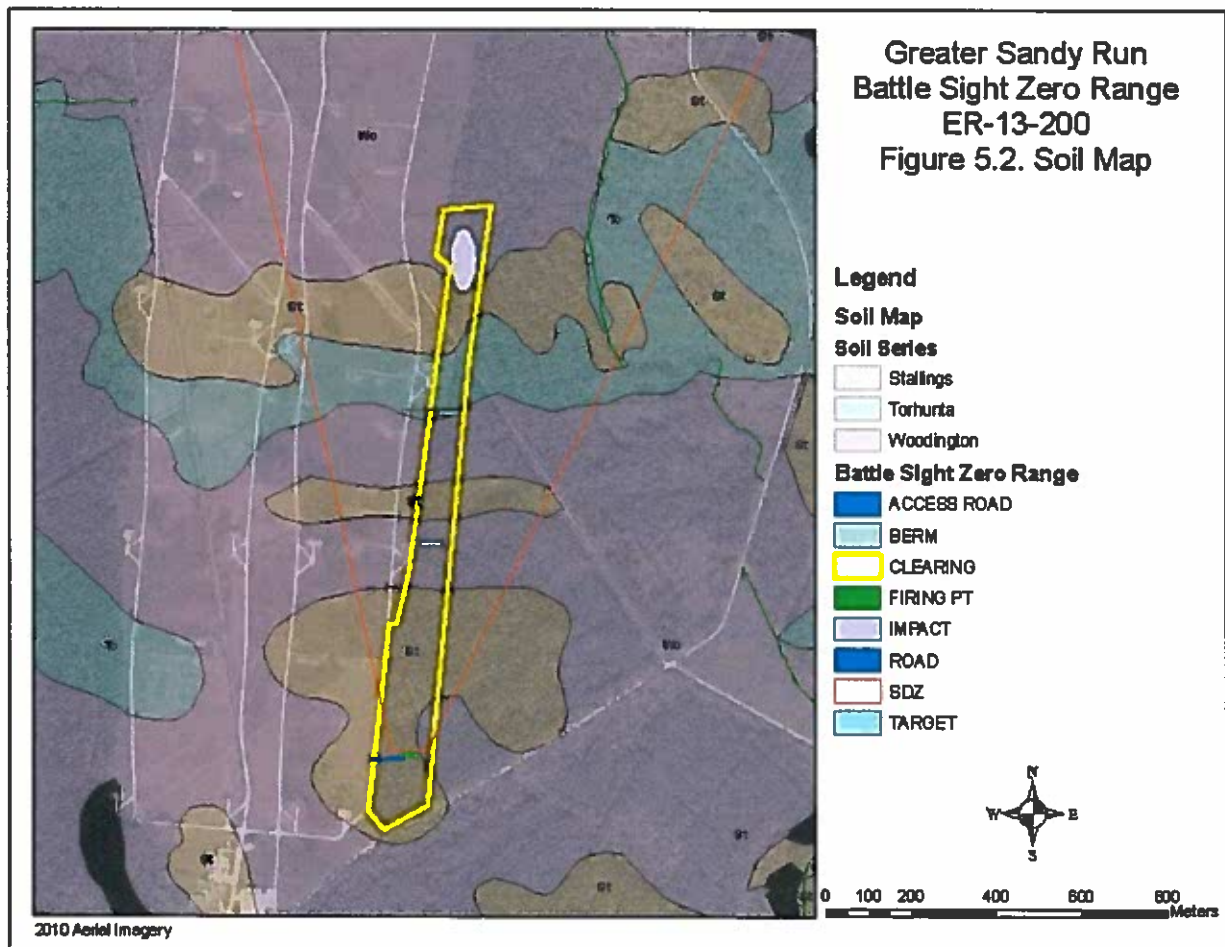
5.1.1. Baseline Description

The preferred alternative encompasses 37 acres of relatively flatland with an elevation range of approximately 50 to 57 feet above sea level. Multiple man-made linear drainage features are located throughout the project area. The project area is predominately comprised of two soil types: approximately 53 percent is Stallings loamy fine sand and 37 percent is Woodington loamy fine sand.

Stallings loamy fine sand is found in coastal plains at elevations of 20 to 330 feet with slopes of zero to three percent. They are somewhat poorly drained with the depth to restrictive feature more than 80 inches. Stallings soils pose a slight erosion hazard which

means few modifications are necessary to prevent erosion. However, Stallings soils pose a moderate equipment limitation which means the soil does not require exceptional risk or cost for use, but the soil does have certain undesirable properties or features. Some modification of the soil itself, special designs, or maintenance may be required before equipment is used in the area. Stallings also has a moderate to severe rating for recreational and building site development due to wetness and cut banks caving which means there is an unacceptable risk to use the soil if not appreciably modified. Special design, a significant increase in construction cost, or an appreciably higher maintenance cost may be required.

Woodington loamy fine sand is found in coastal plains at elevations of 20 to 160 feet with slopes of zero to two percent. They are poorly drained with a seasonally high water table within 10 inches of the surface and the depth to restrictive feature more than 80 inches. Woodington soils pose a slight erosion hazard and severe equipment limitation. They have a severe rating for recreational and building site development due to wetness and cut banks caving.



5.1.2. Environmental Consequences

5.1.2.1. No Action Alternative. Implementation of the no action alternative would result in no impacts to soils within the proposed action area. However, the soils in the existing SR-10 Range would continue to be impacted by tank rounds during the screening process which leave multiple ruts when hitting the ground and have caused damage to targets and roads within the range. These would continue to be filled in with purchased fill material. The original construction of the SR-10

Range involved clearing of vegetation, grubbing roots out of the soil, and placement of large amounts of fill dirt to elevate the range and improve drainage. Therefore, small amounts of fill dirt brought in to conduct repairs as needed are a minor addition to the soil and topography impacts that have already occurred.

5.1.2.2. Preferred Alternative. The preferred alternative would result in minor impacts to the existing topography and soil of the area. The area is relatively flat with a slope of zero to three percent; therefore, no major leveling would be necessary. Minor impacts would occur during clearing of the project area through erosion and compaction; however, these impacts would be minimal since the predominant soils in the area have only a slight erosion hazard. These impacts would be further minimized by gyro tracking stumps down to the soil surface and leaving root masses intact. Areas to be filled for the two access roads, tank firing line and impact berm would be graded and leveled. Erosion impacts would be temporary and would be minimized by employing applicable soil erosion and sedimentation control techniques at the construction sites. Erosion and sedimentation control devices would likely include sediment fence, silt fence, and matting.

5.1.3. Mitigation

None required. None proposed.

5.2. Managed Forest/Vegetation

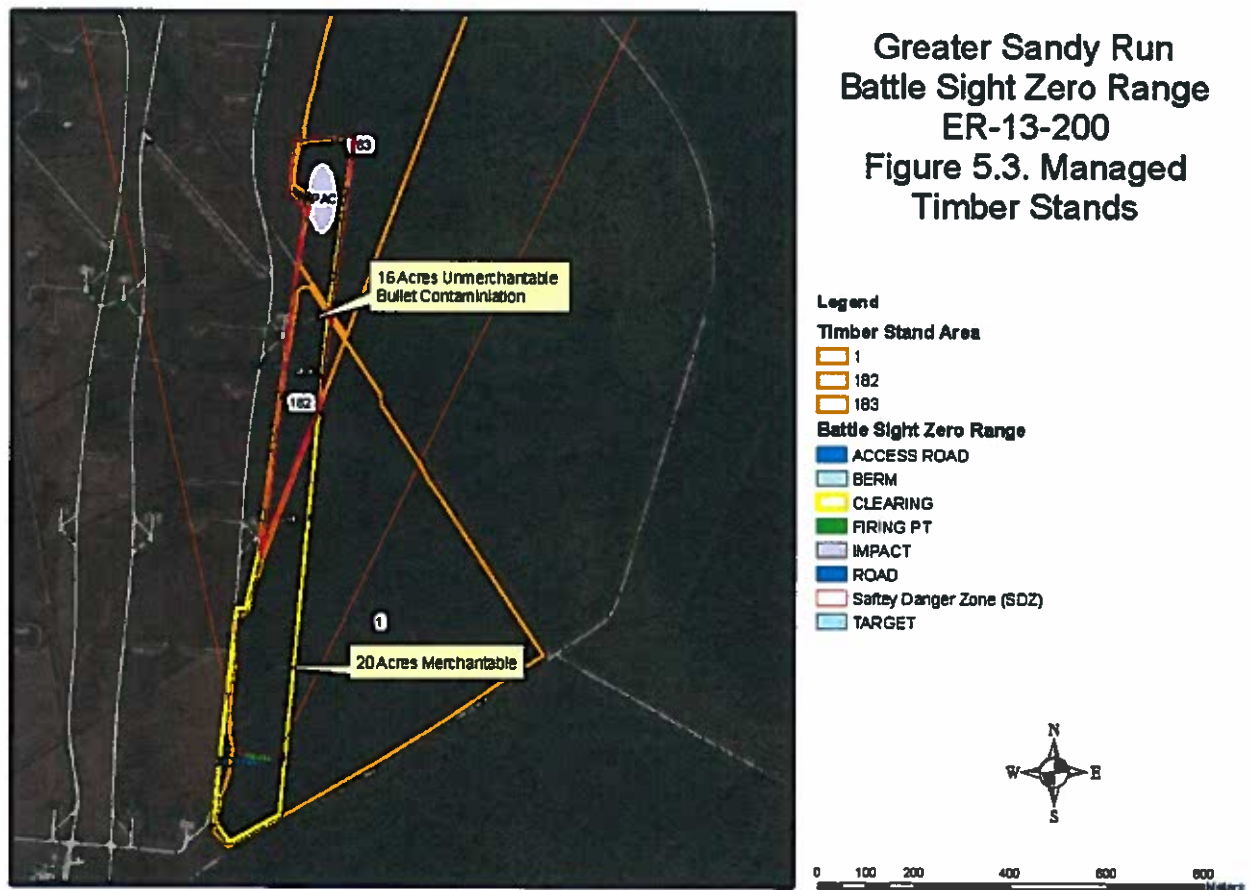
5.2.1. Baseline Description

The proposed BZO Range location contains portions of three managed forest stands: compartment 74 Stands 1, 182 and 183. All three stands were originally planted by the International Paper Company. Stands 1 and 182 were planted in 1977, and Stand 183 was planted in 1981. The most recent harvesting activity to take place was a fourth row thin which was performed in Stands 1 and 182 in 2003. Stand 183 has never been harvested due to slow growth at the site. All three stands are being managed for loblolly pine habitat. Due to the proximity of the SR-10 Range, the trees within Stands 182 and 183 are likely to contain bullet fragments and can no longer be safely run through a sawmill. They, therefore, no longer have commercial value. The only forest management activities that occur in these stands are prescribed burning and wildland fire suppression. Stand 1 is close to the firing line of the SR-10 Range and not to the targets; the trees are unlikely to contain bullet fragments.

Because the area has been managed for commercial timber, the predominant vegetation on the site is loblolly pine with an understory of woody shrubs and a strong herbaceous layer.

5.2.2. Environmental Consequences

5.2.2.1. No Action Alternative. Under the No Action Alternative, Base Forestry would continue to manage the stands in the project area according to the current Integrated Natural Resources Management Plan (INRMP) and associated silvicultural plans. Under the current silvicultural plan, Stand 1 would receive a thin in 2013. Within the project area, timber Stands 182 and 183 are not safe to harvest, so no silvicultural treatment would occur other than prescribed burning. Vegetation in the shrub and herbaceous layers within the limits of the project area would continue to grow under current conditions as affected by prescribed burning and the forestry operations described above.



5.2.2.2. Preferred Alternative. The preferred alternative would require initial clearing of all vegetation within the 37-acre project area. Base Forestry would conduct a timber operation to remove all merchantable timber. A site clearing contract would follow the timber operation to remove all remaining, non-merchantable vegetation including trees with fragment contamination and smaller shrubs and trees with no commercial value. Both operations would cut vegetation only to the ground surface; roots would not be pushed out of the ground except potentially in areas that will receive fill for targets and access roads. Following the initial clearing and subsequent range construction Range Development would maintain the footprint of the proposed BZO Range in low growing vegetation through mechanical means (drum chopping, bush hogging), prescribed burning and possibly herbicides.

5.2.3. Mitigation

None required. None proposed.

5.3. Threatened and Endangered Species

5.3.1. Baseline Description

The Marine Corps, as a Federal agency, is responsible for managing federally listed threatened and endangered species on its lands in accordance with the Endangered Species Act. There are fourteen federally protected species for Onslow County that also have potential to be found on MCIEAST-MCB CAMLEJ: American alligator (*Alligator mississippiensis*), bald eagle (*Haliaeetus leucocephalus*), green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), piping plover (*Charadrius melodus*), red-cockaded woodpecker (*Picoides borealis*), shortnose sturgeon (*Acipenser brevirostrum*), West Indian manatee (*Trichechus*

manatus), Cooley's meadowrue (*Thalictrum cooleyi*), golden sedge (*Carex lutea*), pondberry (*Lindera melissifolia*), rough-leaved loosestrife (*Lysimachia asperulaefolia*), and seabeach amaranth (*Amaranthus pumilus*). These species are listed as Endangered, Threatened, or Threatened due to similarity of appearance with another listed species. Bald Eagle was delisted from the Endangered Species Act in 2007, but is still afforded federal protection by the Bald and Golden Eagle Protection Act (BGPA) and the Migratory Bird Treaty Act (MBTA).

The Base has in place a threatened and endangered species management program. Part of the management program includes a requirement to determine if proposals "may affect" a listed species. If the Base determines a proposal may affect one or more species, then it must consult with the U. S. Fish and Wildlife Service (USFWS). Concurrence from the USFWS regarding the potential impacts of the proposal is required prior to performing work associated with the proposal.

There are no known occurrences of any federally listed threatened or endangered species within the project review area, and it is not located in an area determined to have a high probability of any species occurrence.

5.3.2. Environmental Consequences

5.3.2.1. No Action Alternative. The no action alternative would continue to use the existing SR-10 Range for tank crews to sight tanks for gunnery qualifications. The range is already being used for this purpose as well as for other range operations, and it has not been documented that use of this range is resulting in any adverse impacts to any federally listed threatened or endangered species. Therefore, the no action alternative would have no effect on any federally listed threatened or endangered species.

5.3.2.2. Preferred Alternative. The preferred alternative would impact approximately 37 acres of forest land, mainly by vegetation clearing, but also by minor amounts of fill. There are no known occurrences of any federally listed threatened or endangered species within the project review area, and it is not located in an area determined to have a high probability of species occurrence. The Base threatened and endangered species coordinator has been consulted and has no concerns with the proposed project. Therefore, MCIEAST-MCB CAMLEJ determined that the preferred alternative would have no effect on any federally listed threatened or endangered species.

5.3.3. Mitigation

None required. None proposed.

5.4. Cultural Resources

5.4.1. Baseline Description

Cultural resources include archaeological sites and historic buildings and structures that have a high level of importance in a historic context. MCIEAST-MCB CAMLEJ, as a Federal agency, protects these resources using the rules in National Historic Preservation Act of 1966 and the direction specific to Federal agencies in Executive Order 11593, *Protection and Enhancement of the Cultural Environment*.

Camp Lejeune has more than 1200 recorded archaeological sites. The sites represent more than 8,000 years of occupation and land-use at Camp Lejeune. The sites consist of material remains of prehistoric camps and villages, Native American burial sites, early European colonial sites, and later European and African-American settlement locations.

5.4.2. Environmental Consequences

5.4.2.1. No Action Alternative. The no action alternative would continue to use the existing SR-10 Range for tank crews to sight tanks for gunnery qualifications.

The range is already being used for this purpose as well as for other range operations. There are no known cultural resources within the existing range footprint. The no action alternative would have no potential to effect cultural resources.

5.4.2.2. Preferred Alternative. The preferred alternative would impact approximately 37 acres of forest land, mainly by vegetation clearing, but also by minor amounts of fill. No cultural resources appear in the Base GIS layers within the footprint of the preferred alternative. Additionally the Base Archeologist has been consulted on the project. The preferred alternative's Area of Potential Effect (APE) was surveyed as part of GSRA acquisition and SR-10 Range construction prior to development of the high probability model, and no cultural resources were encountered at that time. Additionally, the area is situated outside of soils with a high probability of cultural resources. Based on the available information and concurrence from the Base archeologist, MCIEAST-MCB CAMLEJ determined that no historic properties are located within the project's APE and, therefore, the project would have no potential to effect cultural resources.

5.4.3. Mitigation

None required. None proposed.

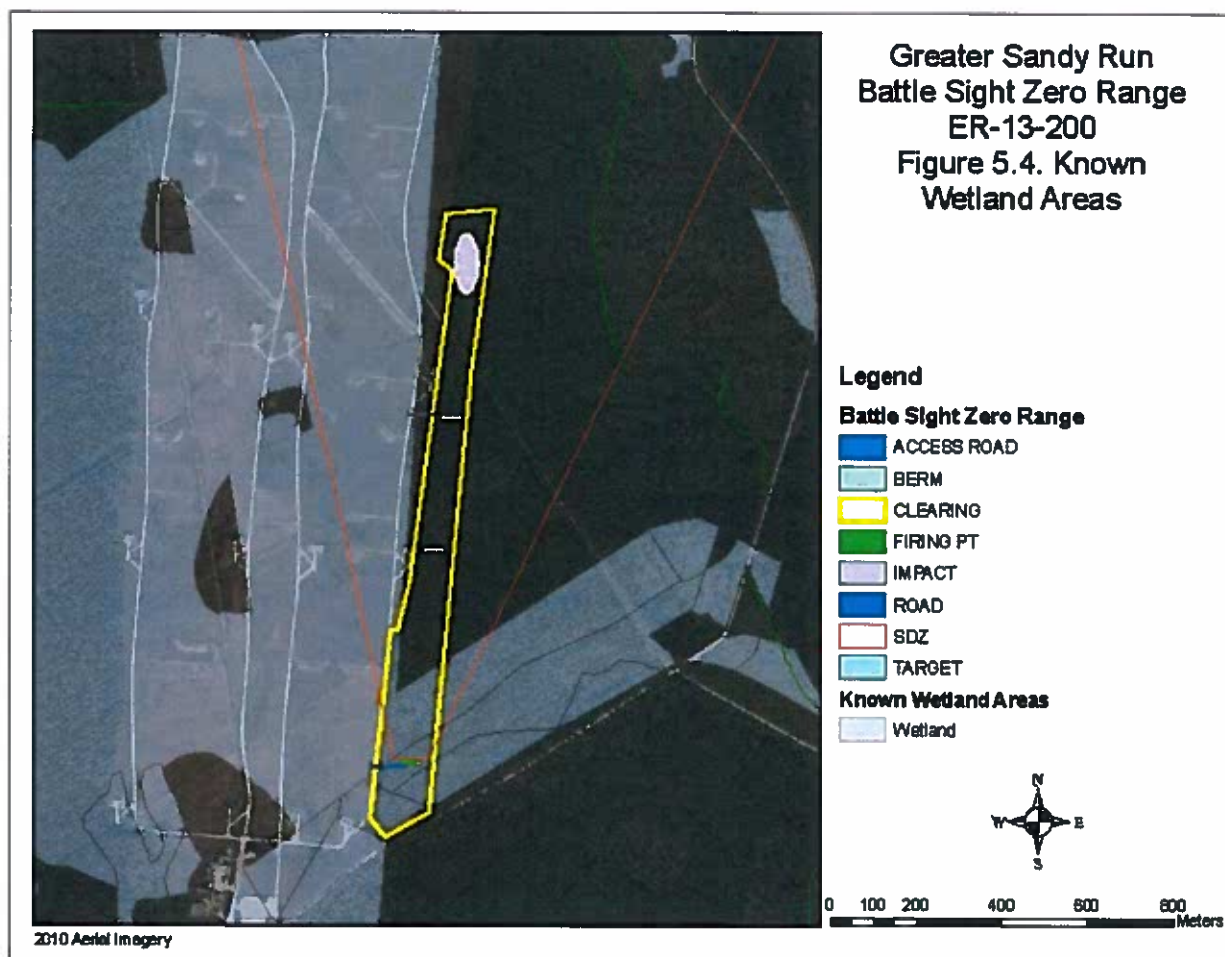
5.5. Wetlands

5.5.1. Baseline Description

Wetlands are defined as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions such as swamps, pocosins, and marshes. The U. S. Army Corps of Engineers, in accordance with Section 404 of the Clean Water Act, regulates the placement of fill into Waters of the U.S. which include jurisdictional wetlands. Federal agencies, as directed by Executive Order 11990, *Protection of Wetlands*, must minimize the destruction, loss, or degradation of wetlands on their lands. The order further requires agencies to use their established NEPA procedures to review proposals that could impact wetlands.

The total number of wetlands on MCIEAST-MCB CAMLEJ is estimated to be over 55,000 acres, about 44 percent of the base's land area. Many types of wetlands can be found on Base. They are generally forested palustrine and coastal estuarine systems. Dominant wetland communities include wet pine flatwoods, blackwater bottomland hardwoods, pocosins, vernal pools and small depression ponds, and coastal salt marshes. The GSRA, approximately 41,000 acres in size and during its acquisition in 1992, was estimated that 56 percent of the area is wetland for a total of approximately 22,900 acres of wetlands. The wetland types found in the GSRA are similar to those found throughout the rest of the Base.

A wetland delineation has not been completed for the project area. However, based on a previous wetland delineation on the adjacent SR-10 Range as well as available information on the soils, vegetation, topography, and aerial photography, much of the project area is likely to be wetland.



5.5.2. Environmental Consequences

- 5.5.2.1. No Action Alternative.** The no action alternative would continue to use the existing SR-10 Range for tank crews to sight tanks for gunnery qualifications. The range is already being used for this purpose as well as for other range operations and would not result in any additional impacts to wetlands. The initial construction of the SR-10 Range resulted in the filling of 66.98 acres were pocosin pine flat wetlands and 7.49 acres of bottomland hardwood wetlands for a total of 74.47 acres of wetland fill. These impacts were mitigated at the GSRA wetland mitigation bank by the use of 100.47 pocosin pine flat mitigation credits and 22.47 bottomland hardwood credits.
- 5.5.2.2. Preferred Alternative.** Assuming the entirety of the footprint of the road, firing line and berm were constructed in wetlands, the project would result in up to approximately 0.34 acres of permanent wetland fill. Efforts would be made to minimize these impacts and any permanent wetland fill impacts that could not be avoided would be mitigated through a debit to the GSRA wetland mitigation bank. The preferred alternative would also result in a change in vegetation through the clearing of 37 acres of forested habitat as described above. Any wetlands within this cleared area would be affected by this as a secondary project impact since the functionality of the wetland, specifically the habitat value, would be altered. This would be a secondary impact, not a permanent impact, since the area would still provide for wetland habitat. Should the range go into disuse and was no longer maintained, the forested habitat would have the potential to naturally reestablish. Impacts to the wetland soils would be minimized through compliance with the requirements of appendix A and the measures contained within the "Best Management Practices for vegetation clearing in forested wetlands."

The proposed action does not include any additional ditching for surface drainage improvement.

Before the project is implemented, a wetland delineation would be completed, and the project would be designed to avoid wetland areas to the maximum extent practicable. If complete avoidance of the placement of fill into wetlands is not possible, the Base would acquire all necessary state and Federal permits prior to any work taking place in the area. The Base would also mitigate for any unavoidable impacts to wetlands as described below.

5.5.3. Mitigation

Camp Lejeune established the GSRA wetland mitigation bank in November 2000. This mitigation bank is located in the GSRA, the same area as the proposed project, and was specifically created to mitigate impacts authorized by Clean Water Act permits issued for range and infrastructure development in the GSRA. When the mitigation bank was established, a total of 1,250.50 credits were created. Of this total, 895.817 credits have been used to mitigate various projects on Camp Lejeune. To date, 354.683 credits are still available to mitigate future projects. Any impacts to wetlands as a result of the proposed project would be mitigated appropriately and as required under the Clean Water Act. The exact amount of mitigation would be determined once the amount of impact to wetlands has been determined.

5.6. Wildlife

5.6.1. Baseline Description

Prior to the Base acquiring the GSRA, the majority of the area was owned by the International Paper Company and is planted loblolly pine forest. Loblolly pine habitat in the action area of the proposed project is a typical habitat found commonly throughout southeastern coastal plains of North Carolina. The project area currently provides high quality habitat for many common wildlife species. However, due to the proximity of the SR-10 Range, wildlife present in the project area would be subject to a high level of noise and disturbance.

The project area provides nesting and foraging habitat for bird species. Virtually all birds that occupy MCIEAST-MCB CAMLEJ throughout the year are protected under the Migratory Bird Treaty Act of 1918 (MBTA) and are discussed below in section 5.7.

5.6.2. Environmental Consequences

5.6.2.1. No Action Alternative. The no action alternative would continue to use the existing SR-10 Range for tank crews to complete the BZO process. The SR-10 Range is surrounded on all sides by pine forest with the SR-10 Range area itself being cleared during development of the range and is now maintained as grassland. Noise and disturbance impacts to wildlife in adjacent habitat would continue. Wildlife would continue to use the area as they currently do, with mobile species likely vacating the area to surrounding forest during training operations due to noise impacts and other disturbances. Additionally, forest management activities in the project area would continue to impact (both positively and negatively) wildlife.

5.6.2.2. Preferred Alternative. The preferred alternative would result in minor impacts to wildlife through the conversion of 37 acres of pine forest to grasses that would be mowed quarterly. The effect to wildlife would be minor because the habitat that would be lost is a minor portion of the similar habitat available to these species both on the Base and in the region around the Base. During clearing and construction, any wildlife species utilizing the area would likely move to adjacent pine forest and not be affected by the proposed project. Other effects to wildlife from the proposed project include the continued impact from range operations such as noise disturbances and tank round impacts. Wildlife that continue to use

the area after clearing would likely move to the surrounding forest during training operations due to these noise impacts and other disturbances. Therefore, the preferred alternative would have minor permanent impacts to wildlife through clearing of pine forest, and minor recurring impacts to wildlife by the continued use of the range for tank firing operations. However, these impacts are minor when considering the amount of available similar habitat.

5.6.3. Mitigation

None required. None proposed.

5.7. Migratory Birds

5.7.1. Baseline Description

The MBTA is the primary legislation in the United States established to conserve populations of migratory birds. The MBTA prohibits the taking, killing, or possessing of migratory birds unless permitted by regulation. The Department of Defense (DoD) operates under a Memorandum of Understanding (MOU) with the USFWS for MBTA coordination on activities, such as the proposed action, that are not specifically related to military readiness. The MOU states that range development and construction activities are not military readiness activities and that prior to starting any activity that is likely to affect populations of migratory birds the DoD shall proactively address migratory bird conservation, and initiate appropriate actions to avoid or minimize the take of migratory birds.

5.7.2. Environmental Consequences

5.7.2.1. No Action Alternative. The no action alternative would continue to use the existing SR-10 Range for tank crews to complete the BZO process. No new impacts to vegetation or land use would occur as a result of this alternative. Any impacts that result from this alternative are impacts that are currently occurring with the use of the range. Any migratory birds utilizing the area would likely move to adjacent pine forest during range use and would not be affected. The no action alternative would have no new effect on migratory birds.

5.7.2.2. Preferred Alternative. The proposed action would convert 37 acres of vegetation from pine forest to grasses that would be mowed quarterly. Population level effects to migratory birds would not occur because the habitat that would be lost is a minor portion of the similar habitat available to these species both on the Base and in the region around the Base. Any migratory birds utilizing the area would likely move to adjacent pine forest and not be affected by the proposed project. Other effects to migratory birds from the proposed project include the continued impact from range operations such as noise disturbances and tank round impacts. Just as with the existing SR-10 Range, any migratory birds utilizing the area would likely move to adjacent pine forest during range use and would not be affected by the proposed project. Therefore, the proposed action would comply with the intent of the MOU between the DoD and the USFWS for coordination on activities when proposed actions could cause impacts to populations of migratory birds. The proposed action would not require coordination with the USFWS for migratory birds prior to implementation.

5.7.3. Mitigation

None required. None proposed.

5.8. Noise

5.8.1. Baseline Description

Due to the large amount of noise produced on the SR-10 Range during use, it is outfitted with monitors to ensure the noise level does not reach unsafe levels or causes a nuisance to the general public outside of the base. If the noise level at 500 yards from the firing line reaches higher than 125 decibels (dB), range operations must cease. Only one tank is allowed to fire at a time, but up to four could fire as they are getting zeroed. Most

problems with noise are encountered during heavy cloud cover with a western wind that blows the sound over Holly Ridge and Topsail. If this occurs, the range will be shut down until the cloud cover dissipates or the wind direction changes.

5.8.2. Environmental Consequences

5.8.2.1. No Action Alternative. Under the No Action Alternative, there would be no changes to the way the SR-10 Range is operated, and the BZO process would continue to take place on the SR-10 Range. Since there would be no increases to the amount or location of activity taking place on the range, noise levels produced would remain the same. If noise levels reach higher than 125 dB during any activity, operations would cease until it has been determined activity may resume without noise reaching undesirable levels as is the current procedure on the range.

5.8.2.2. Preferred Alternative. Under the Preferred Alternative, the BZO process would be moved to the adjacent newly created range. This would reduce the amount of activity taking place overall on the SR-10 Range. Due to safety reasons, the SR-10 Range and the new BZO Range will not be operated at the same time. This will eliminate the potential of noise increases that might have occurred had the two ranges been operated at the same time; the same standards that are currently in place for the SR-10 Range would be maintained for the new range. The noise monitors that are currently in place for the SR-10 Range are set in locations that would allow them to detect noise levels on both the SR-10 Range and the new BZO Range simultaneously. If noise levels on either of the ranges reach over 125 dB, the operations on the ranges would be halted until it has been determined activity may resume without noise reaching undesirable levels as is the current procedure on the SR-10 Range. Additionally, the proposed BZO location is so close to the existing SR-location that the shape and extent of noise contours would not noticeably change.

Other noise impacts that may result from development of the new range would be temporary noise impacts from the use of construction equipment for clearing of the range and construction of the access roads, tank firing line, and impact berm. These impacts are temporary and are minor in comparison to the noise levels created by the intended uses of the ranges. Therefore, temporary noise impacts resulting from the direct construction of the range are negligible.

5.8.3. Mitigation

None required. None proposed.

5.9. Air Quality

5.9.1. Baseline Description

The Clean Air Act, last amended in 1990, requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. NEPA Reviews ensure that land use projects developed by governmental entities account for air quality emission impacts generated by the construction and long-term use of the proposed projects

5.9.2. Environmental Consequences

5.9.2.1. No Action Alternative. Under the No Action Alternative, there would be no changes to the use of the area. The BZO process would continue to take place on the SR-10 Range as is the current procedure. Therefore, there would be no changes in air quality as a result of this alternative.

5.9.2.2. Preferred Alternative. The preferred alternative would have temporary effects on air quality during construction. The use of heavy machinery for tree clearing and

the construction of access roads, tank firing line and impact berm would result in minor temporary impacts to air quality; however, the air quality effects resulting from construction would be minor when compared to the training activities already taking place on the adjacent SR-10 Range. There would be additional air quality effects resulting from the burning of any trees and vegetation that are not sold as timber by the Base forestry department. All vegetation that has been determined to be contaminated by bullets would be piled on site and burned. Burning is a regular occurrence on base, and it is not expected that this would result in the increase of any air pollutant to undesirable levels. Since the BZO process is currently occurring on the SR-10 Range, there would be no increases in the amount of activity taking place in the area, only changes in the specific location of the activities. Therefore, no impacts to air quality would occur from use of the new range. All impacts to air quality resulting from the preferred alternative would be temporary and air quality levels would return to pre-construction levels once construction and vegetation burning are completed. Therefore, the preferred alternative would have minor temporary and no permanent effects to air quality.

5.9.3. Mitigation

None required. None proposed.

5.10. Environmental Justice

5.10.1. Baseline Description

Federal agencies must identify and discuss potential impacts of its proposed actions on low income and minority populations and on children. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations*, requires identification and analysis of disproportionate environmental impacts on low income and minority populations. Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs federal agencies to identify and assess environmental health and safety risks to children by all policies, programs, and activities proposed. The project is located within the existing Base boundaries and in a location that normal range operations would have a minor effect to the surrounding populations.

5.10.2. Environmental Consequences

5.10.2.1. No Action Alternative. There are no low income and minority populations or children within or near the existing SR-10 Range. Implementing the no action alternative and continuing current use of the range would not impact low income and minority populations or children.

5.10.2.2. Preferred Alternative. There are no low income and minority populations or children within or near the proposed new BZO Range. Implementing the proposed action would not cause impacts to low income and minority populations and to children.

5.10.3. Mitigation

None required. None proposed.

5.11. Unexploded Ordnance (UXO)

5.11.1. Baseline Description

Since the MCIEAST-MCB CAMLEJ acquisition of the GSRA property, only non-UXO producing training activities are authorized within the GSRA. UXO is an issue where high explosive ordnance is used or where UXO has been buried. On 9 June 2008, explosive .50 caliber rounds were fired onto the SR-6 range in the GSRA. It is also possible that these rounds were fired on the SR-7 and SR-10 Ranges.

Fire can trigger detonation of the rounds. Due to the nature of the UXO and the inability to determine exactly where they may be encountered, the UXO were left in place and permanent containment lines (Figure 5.5) were established on the perimeter of the ranges

to contain wildfires. To ensure safety of the firefighters the Base has established a “no direct fire suppression” area in which any incidental fires would be allowed to burn up to the primary containment line. Fire suppression activities could and would safely be conducted in the area between the primary and secondary containment line.

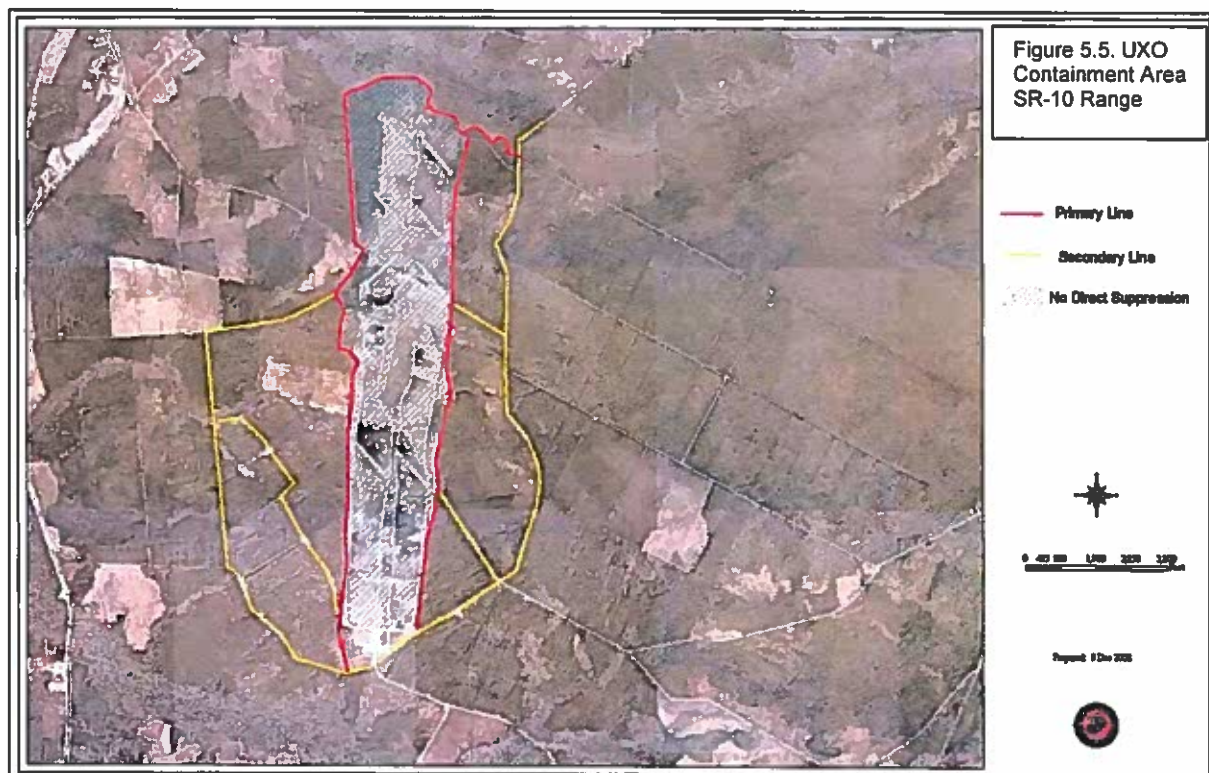
5.11.2. Environmental Consequences

5.11.2.1. No Action Alternative. The No Action Alternative would continue to use the existing SR-10 Range for tank crews to complete the BZO process. There are no ground disturbing activities or intentional fire burning activities associated with normal use of the SR-10 Range, and, therefore, the risk of UXO is minimal.

5.11.2.2. Preferred Alternative. The preferred alternative would require land clearing, grubbing vegetation down to the surface, burning piles of vegetation, and the placement of fill for the construction of two access roads, a tank firing line and an impact berm. There is the potential to encounter UXO during these activities. All areas where construction activities might impact UXO will be surveyed for ordnance prior to commencing construction activities. In addition, a UXO Safety Officer will be on site during all construction, clearing and burning. The preferred alternative will result in minor effects to the safety of workers due to the possible presence of UXO; however, this effect would be minimized by surveying the area for UXO prior to commencing any activities that might impact UXO and by having a UXO Safety Officer on hand during all construction, clearing and burning.

5.11.3. Mitigation

None required. None proposed.



6. Coastal Zone Management Consistency

The coastal zone is rich in natural, commercial, recreational, ecological, industrial, and aesthetic resources. As such, it is protected by legislation for the effective management of its resources. The Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. § 1451, et seq., as amended) provides assistance to states, in cooperation with Federal and local agencies, for developing land and water use programs in the coastal zone.

CZMA policy is implemented through state coastal zone management programs. Federal lands are excluded from the jurisdiction of these state programs. However, activities on Federal lands are subject to CZMA federal consistency requirements if the Federal activity would affect any land or water or natural resource in the state's coastal zone, including reasonably foreseeable effects. There are two tiers of regulatory review for projects within the coastal zone. The first tier includes projects that are located in Areas of Environmental Concern (AEC) which are designated by the state. The second tier includes land uses with the potential to affect coastal waters even though they are not defined as AECs. These projects are reviewed under the North Carolina Coastal Area Management Act (CAMA) General Policy Guidelines.

The North Carolina CAMA of 1974 was passed in accordance with the Federal CZMA. It established a cooperative program of coastal area management between local and state governments. The CAMA established the Coastal Resources Commission, required local land use planning in the coastal counties, and provided for a program for regulating development. The CAMA was federally approved in 1978. North Carolina's coastal zone includes the 20 counties that are adjacent to, adjoining, intersected by, or bounded by the Atlantic Ocean or any coastal sound, including Onslow County. The coastal zone extends seaward to the six kilometers (three nautical miles) territorial sea limit.

Areas of Environmental Concern (AECs)

The North Carolina Coastal Resources Commission designated AECs within the 20 coastal counties and set rules for managing development within these areas. An AEC is an area of environmental, social, economic, or aesthetic values that make it valuable. Its classification protects the area from uncontrolled development. Projects located within an AEC undergo a more thorough level of regulatory review.

AECs include almost all coastal waters and about three percent of the land in the 20 coastal counties. The four categories of AECs are:

1. The Estuarine and Ocean System, which includes public trust areas, estuarine coastal waters, coastal shorelines, and coastal wetlands;
2. The Ocean Hazard System, which includes components of barrier island systems;
3. Public Water Supplies, which include certain small surface water supply watersheds and public water supply well fields; and
4. Natural and Cultural Resource Area, which include coastal complex natural areas; areas providing habitat for Federal or state designated rare, threatened or endangered species; unique coastal geologic formations; or significant coastal archaeological or historic resources.

The Base encompasses coastal resource areas designated as AECs, including estuarine coastal waters, coastal shorelines, and coastal wetlands of the Estuarine and Ocean System AEC, as well as habitat for Federal or state designated species and archaeological or historic resources of the Natural and Cultural Resource Area AEC. There are no identified AECs within the proposed project area.

The proposed action was reviewed to determine its consistency with the applicable requirements of the CAMA. MCIEAST-MCB CAMLEJ has determined that implementing the proposed action would be fully consistent with the applicable policies of the CAMA. The proposed action would have no effect on coastal resources or coastal AECs, and the proposed action is not located in an AEC.

7. Cumulative Impact Analysis

Cumulative impacts have been defined by the CEQ in 40 CFR 1508.7 as: Impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) or person undertakes such other actions.

The CEQ regulations further require that NEPA environmental analyses address connected, cumulative and similar actions in the same document (40 CFR 1508.25). This requirement prohibits segmentation of a project into smaller components to avoid required environmental analysis.

Past projects in the GSRA area of MCIEAST-MCB CAMLEJ include the construction of the following ranges: SR-6, an Infantry Platoon Battle Course; SR-7, an LAR crew qualification and .50 caliber range; SR-8, a multi-purpose machine gun range; SR-9, an Infantry Platoon Battle Course; and SR-10, a Tank Qualification Range. Other development activities that have taken place in the GSRA include Camp Davis North, a tactical airfield assault and seizure training area; access and perimeter roads; a simulated forward operating base; an Improvised Explosives Device course; and a 115-kV transmission line.

As a result of these developments, approximately 3,000 acres or seven percent of the total land area in the GSRA has been converted to either range use or a landing zone, and approximately 400 acres or 1.7 percent of the total predicted wetland area in the GSRA has been impacted by projects. The currently proposed BZO Range will result in an additional 37 acres of vegetation clearing and up to 0.34 acres of wetland fill. This is a very small impact when considering the sizes of the existing ranges and other impacts from development within the GSRA. Additionally, any impacts resulting from the proposed project would be mitigated appropriately by the GSRA wetland mitigation bank as discussed above.

Potential future projects in the GSRA area of MCIEAST-MCB CAMLEJ include a unit-level armored vehicle maneuver training course. This project is in the preliminary planning stage, and detailed concepts for the course would be developed after initial wetland surveys are conducted. However, based on the initial proposal, it would require tree thinning on over 15,470 acres of land to allow vehicles to freely maneuver across the landscape (off-road) between remaining trees. The project would cause soil and wetland impacts from vehicles. The extent of wetland impacts is not yet known and would depend on whether the wetland mapping shows that it is possible to cross over wetlands with bridging for example, or conversely shows that the wetlands are so extensive that avoidance is impracticable and therefore vehicles must drive through wetland areas.

There are no other new development projects within the GSRA in the reasonably foreseeable future. However, it is expected that modifications and upgrades to existing ranges and structures currently existing within the GSRA would be needed in the future, and this may result in a minor amount of additional vegetation clearing and wetland fill.

8. References

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