UNITED STATES MARINE CORPS
MARINE CORPS BASE
QUANTICO, VIRGINIA 22134-5001

MCBO 8020.1A
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MARINE CORPS BASE ORDER 8020.1A

From: Commander
To: Distribution List

Subj: HAZARDS OF ELECTROMAGNETIC RADIATION TO ORDNANCE (HERO); EMISSION CONDITION (EMCON) BILL

Ref: (a) NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010, Volume 2, Tenth Revision, 15 January 2001
(b) Hazards of Electromagnetic Radiation to Ordnance Assessment of Marine Corps Base/Marine Corps Air Facility Quantico, Virginia, August 2001 (NOTAL)
(c) NAVFAC 11010/31 Parts I and II

Encl: (1) List of HERO SUSCEPTIBLE and HERO UNSAFE Ordnance
(2) HERO Warning Label and Warning Sign
(3) HERO Zones, Ordnance Transportation Routes, and Ordnance and Data Collection Locations Maps
(4) Applications for Setting HERO Conditions
(5) HERO Emission Condition (EMCON) Procedures
(6) Safe Separation Distances for Aircraft High Frequency (HF), Very High Frequency (VHF), Ultrahigh Frequency (UHF), and Radar Transmitters, Portable and Mobile Transmitters
(7) General HERO Safe Separation Distance Requirements

1. Purpose. This order publishes policy and procedures for the safe handling, storage, transportation, and use of ordnance that is susceptible to electromagnetic radiation aboard MCB/MCAF Quantico.

2. Cancellation. MCBO 8020.1.

3. Summary of Revisions. This revision contains a significant number of changes and should be reviewed in its entirety.

4. Scope. This order is applicable any time HERO SUSCEPTIBLE or HERO UNSAFE ORDNANCE is handled, loaded, or transported by MCB/MCAF Quantico personnel at all ordnance locations. Enclosure (1) is a list of HERO SUSCEPTIBLE and HERO UNSAFE ORDNANCE commonly used aboard the base.

5. General Discussion. As described in reference (a), electromagnetic radiation (EMR) hazards stem from the functional characteristics of electrically initiated ordnance, and are a result of absorption of electromagnetic energy by the firing circuitry of electrically initiated devices (EID). Radiated energy can cause heating of the bridge wire and primary explosive, possibly resulting in premature, unintended actuation of the EID. Such an event can pose either a safety or reliability problem. In general, ordnance is most susceptible to radio-frequency (RF) environments during assembly, disassembly, handling, loading, and unloading. There are three classifications pertinent to HERO: HERO SAFE ORDNANCE, HERO SUSCEPTIBLE ORDNANCE, and HERO UNSAFE ORDNANCE. Therefore, HERO Electronic EMCON as well as ordnance handling restrictions and procedures (see reference (b)) form a compromise that allows for the safe handling of ordnance within the existing RF environment. EMCON is derived from an analysis of the fields produced by the existing RF transmitters and the ordnance susceptibilities described in reference (a), or through a HERO survey. The following paragraphs describe the categories of ordnance:

a. HERO SAFE ORDNANCE. Ordnance requiring no RF environmental restrictions beyond general HERO requirements described in paragraph 5-4 of reference (a) are referred to as HERO SAFE ORDNANCE.

b. HERO SUSCEPTIBLE ORDNANCE. Ordnance items that are susceptible and require moderate RF environmental restrictions are referred to as HERO SUSCEPTIBLE ORDNANCE.

c. HERO UNSAFE ORDNANCE. Ordnance items that are extremely susceptible and require severe RF environmental restrictions are referred to as HERO UNSAFE ORDNANCE.

6. Commander’s Intent. HERO represents a very real and significant threat if not properly attended. MCB/MCAF Quantico have established a range of policies and institutionalized various procedures to maintain a safe environment aboard both installations. The HERO threat will be mitigated by leveraging existing policy and procedures rather than creating an entirely new HERO safety regime. Policy and procedures for ordnance storage and handling in the installation’s Ammunition Supply Point (ASP); range and training area (RTA) use; frequency spectrum management; and emergency first-response have undergone a deliberate and thorough review and modified/expanded as required to appropriately address the HERO threat.

7. Policy. Adhering to the policies and procedures governing the following will mitigate HERO concerns aboard MCB/MCAF Quantico:

a. Ordnance storage and handling in the ASP;

b. RTA use;

c. Radio frequency spectrum management;

d. Emergency first-response; and

e. DoD approved locations at MCB/MCAF Quantico.

NOTE: HERO SUSECPTIBLE and HERO UNSAFE ORDNANCE may only be handled, stored, and employed in the ASP or in appropriate RTAs.

8. Responsibilities. Oversight of the HERO Program will be a joint operation with responsibilities shared between the MCB Safety Division and G-6. For HERO issues that exceed the local knowledge or expertise of the HERO Committee, the Naval Surface Warfare Center, Dahlgren Division (NSWCDD)(Code J52) will be contacted.

a. Assistant Chief of Staff, G-3

(1) Emergency Operations Center. Activate the MCB Quantico Emergency Operations Center as required, to support response to a HERO SUSCEPTIBLE or HERO UNSAFE incident aboard the base.

(2) HERO Points of Contact. Identify Range Management and Explosive Ordnance Disposal (EOD) HERO points of contact.

(3) Head, Range Management Branch. The Head, Range Management Branch is responsible for ensuring units and personnel using MCB Quantico RTAs, and the special use airspace (R6608A, R6608B, and R6608C) west of Interstate 95 are aware of HERO and understand their responsibilities and procedures to prevent and respond to a HERO incident.

(a) Appoint an officer to serve on the HERO Committee.

(b) During certification training, educate range officers in charge and range safety officers on safety precautions and procedures when using ordnance susceptible to EMR.

(c) Incorporate HERO guidance and instructions into applicable SOPs for RTAs and airspace; update HERO information in the SOPs, as required.

(d) Provide support to emergency personnel first responding to a HERO incident that occurs in the MCB Quantico RTA complex west of Interstate 95.

(e) Through the Range Management Branch Fire Desk, maintain required communications with all military aircraft operating within the special use airspace and brief pilots on necessary HERO precautions or threats. Civilian aircraft allowed flight through the special use airspace shall maintain a minimum altitude of 2,500 feet above sea level (outside of HERO sensitivity). In the event communications with an aircraft (military or civilian) fail, the fire desk will notify training units or first responders of the uncontrolled flight and potential HERO threat; they will then take appropriate action on the ground to safeguard personnel under their control.

(f) Take immediate action to halt training when the potential for a HERO incident is perceived.

(4) Explosive Ordnance Disposal Officer. The MCB Quantico EOD Officer shall:

(a) Appoint an officer (commissioned or staff noncommissioned) to serve on the HERO Committee.

(b) Review enclosure (1) semiannually, and provide updated information to the G-6 HERO point of contact for incorporation into the next revision to the HERO directive.

(c) Provide technical support to the ASP, training units, and emergency personnel first responding to a HERO incident that occurs aboard MCB/MCAF Quantico, as required.

(d) Safely transport and dispose of HERO SUSCEPTIBLE and HERO UNSAFE ORDNANCE that cannot be made safe.

b. Director, Safety Division

(1) Appoint an officer (commissioned or staff noncommissioned) or civilian employee of like grade to serve on the HERO Committee.

(2) Be responsible for annual inspections of the MCB Quantico HERO Program to ensure it meets all requirements of reference (a) and this order.

(3) Convene semiannual conferences of ordnance and radiation hazard (RADHAZ) personnel who are representatives of each organization to discuss and recommend changes to the instructions.

(4) Monitor the supply of HERO warning signs and stickers and order as necessary (see enclosure (2) for examples).

(5) Review RADHAZ requirements and request HERO surveys when required. (MCB Quantico is currently on a 7-year cycle per reference (a)).

(6) Maintain and update all ordnance transportation routes aboard the base and update enclosure (3) as necessary.

(7) Ensure safety investigations are conducted for any mishaps involving HERO sensitive ordnance, as appropriate.

(8) Place and maintain safety signs onboard the installation to identify the HERO issue to motorists.

(9) Publish, on a quarterly basis, notices in the *MCCDC LAN Manager* and the *Quantico Sentry* to advise all commands, including tenant activities, of the nature of the HERO hazard for educational purposes.

(10) Coordinate with the Federal Bureau of Investigation and Drug Enforcement Agency safety personnel to educate them about HERO on a semiannual basis.

c. Assistant Chief of Staff, G-6. Appoint an officer (commissioned or staff noncommissioned) to serve on the HERO Committee.

(1) Frequency Manager, G-6. The Frequency Manager shall:

(a) Provide frequency management specific expertise;

(b) Serve as the base point of contact for radio frequency coordination;

(c) Ensure all communications specialists are familiar with HERO restrictions from a RF perspective;

(d) Provide recommendations to the G-6 Operations Officer with regard to the approval/disapproval of any requests to operate amateur radio equipment aboard MCB Quantico. If approval is recommended, ensure the HERO Committee is consulted prior to approving the request; and

(e) Ensure the HERO Committee is notified of transmitter and antenna changes aboard the base so committee members may review and provide comments on the ordnance specific implications of these changes. All new or modified transmitter installations should be submitted for HERO review per reference (c).

(2) Head, Electronics Maintenance Branch

(a) Ensure that all RF emitters under the cognizance of this command are marked with the safe operating distance prior to issue.

(b) Inform the Frequency Manager when stationary communications transmitters or radars are relocated or new equipment is obtained.

(c) Affix HERO warning labels to all mobile and portable radios. Enclosure (2) provides additional information on HERO warning labels.

(d) Establish check-in procedures for owners of citizens band and other mobile radios and cellular telephones to familiarize operators with HERO.

d. Assistant Chief of Staff, G-4

(1) Officer in Charge, Ammunition Supply Point. The OIC ASP shall:

(a) Serve as a member of the HERO Committee;

(b) Ensure that all ASP personnel are familiar with HERO restrictions applicable to ammunition and explosives (A&E) operations;

(c) When issuing A&E, advise the user of ordnance HERO status during all aspects of its life cycle (e.g., assembly, handling, loading/downloading operations);

(d) Inform the HERO Committee upon receipt of ordnance items not listed in enclosure (1) that are categorized as HERO SUSCEPTIBLE or HERO UNSAFE ORDNANCE so that they may be included in this order and HERO issues can be mitigated;

(e) Ensure catalogued A&E items have gone through a Weapon System Explosives Safety Review Board (WSESRB) and identify packaging requirements based on drawing numbers per the Ammunition Component Handbook and, therefore require no additional packaging considerations. A&E items that are not catalogued, (i.e., commercial items) will be considered HERO UNSAFE at all times;

(f) Set the appropriate HERO condition during the handling of HERO SUSCEPTIBLE and HERO UNSAFE munitions within the ASP; and

(g) Place HERO warning signs prohibiting radio transmissions at the entrance to the magazine area and all ordnance handling or storage activities.

e. Operations Officer, Marine Corps Air Facility. The incumbent shall serve as a member of the HERO Committee. Additionally, the Operations Officer will:

(1) Act as the point of contact for the setting and monitoring of HERO EMCON aboard the MCAF, as outlined in reference (b). The Operations Officer will maintain a list of names and telephone numbers for those activities impacted by HERO EMCON. All future emitter changes at MCAF Quantico should be provided via the Air Traffic Control Maintenance Officer to the AC/S G-6 and the HERO Committee for inclusion into this order;

(2) Restrict aircraft on the flight lines from indiscriminately energizing any RF transmitters (communications, radars, or electronic warfare equipment) while HERO conditions are in effect;

(3) Ensure that taxiing/landing aircraft are informed when HERO conditions are set;

(4) Establish and maintain liaison with Marine Helicopter Squadron-One (HMX-1), the Quantico Flying Club, and the HERO Committee, and resolve any conflicts in HERO requirements;

(5) Include HERO EMCON radio operating training as a qualification requirement for vehicle operators on the airfield and aboard the air facility; and

(6) Inform the HERO Committee upon receipt of ordnance items not listed in enclosure (1) that are categorized as HERO SUSCEPTIBLE or HERO UNSAFE ORDNANCE so that they may be included in this order and HERO issues can be mitigated.

f. Commanding Officers/Officers in Charge and Department Heads/Special Staff Assistants

(1) Ensure all operators of communications equipment and aircrews comply with this order.

(2) Ensure personnel operating transmitters are properly instructed in their use during EMCON conditions.

(3) Notify the Frequency Manager, G-6, MCB Quantico prior to using new electronic equipment (that radiates) at MCB/MCAF Quantico.

(4) Promulgate supplementary instructions pertaining to their own equipment, personnel, and operating procedures as required to ensure compliance with this order.

g. Tenant Activities

(1) Notify the AC/S G-6 MCB Quantico when new communications (or radar) equipment acquisitions are planned.

(2) Notify the HERO Committee in advance of the loading, downloading, or transportation of said equipment so that HERO concerns can be properly addressed.

h. Commanding Officer, Security Battalion (SctyBn). The CO SctyBn shall be responsible for notifying station personnel and visitors who have mobile transmitters in their personal vehicles that transmission on MCB/MCAF Quantico will be permitted only with written permission of the Comdr MCB Quantico.

9. Requirements. To ensure ordnance-handling safety, precautions must be taken to limit the radiation of RF energy in and around ordnance handling areas. Enclosure (4) contains standard HERO precautions and enclosure (5) provides HERO requirements during ordnance operations.

a. When ordnance is being handled or transported within the confines of the magazine area, emissions from various mobile and portable very high frequency/ultrahigh frequency (VHF/UHF) shall be silenced or the HERO UNSAFE and HERO SUSCEPTIBLE ORDNANCE safe separation distances, as provided in enclosure (6), should be maintained.

b. HERO SUSCEPTIBLE or HERO UNSAFE ORDNANCE cannot be moved, transported, loaded, or downloaded unless HERO EMCON has been set by appropriate personnel.

c. Other conditions necessitating deviations from the requirements outlined in reference (a) shall be reported to the Naval Sea Systems Command (NAVSEASYSCOM) per reference (a).

10. Procedures

a. The following general procedures apply when setting HERO EMCON at MCB/MCAF Quantico:

(1) In the event of an ordnance accident or emergency involving aircraft carrying aviation ordnance (or an ordnance carrier along the ordnance transportation route), the appropriate HERO EMCON (defined in enclosures (4) and (5)) will be set by the Range Control Officer, OIC ASP, and Operations Officer, MCAF, as appropriate. The EMCON will remain in effect until EOD personnel have rendered the ordnance safe or determined that EMCON is no longer required;

NOTE: The EOD Officer or Operations Officer, MCAF, as appropriate, will notify all ordnance accident response units to maintain a minimum separation distance of 150 feet from the accident site when three VHF/UHF mobile radios are in use, and 50 feet when three or more portable radios
are in use.

(2) When practical, the Range Control Officer, MCB and/or Operations Officer, MCAF will be notified 24 hours prior to routine implementation of HERO requirements by the using activity's ordnance personnel any time HERO SUSCEPTIBLE ORDNANCE will be used and/or transported; and

(3) In all instances, the Operations Officer, MCAF will contact all activities impacted by HERO (stationary transmitters to be silenced) and inform all aircraft on the ground (or inbound aircraft) to discontinue the use of HF communications and high power radars.

b. The following procedures apply when handling HERO UNSAFE or HERO SUSCEPTIBLE ORDNANCE at MCB/MCAF Quantico:

(1) Transport and store HERO UNSAFE ORDNANCE in the original packaging. If original packaging is not available, package items as appropriate and maintain appropriate HERO distances;

(2) When transporting HERO SUSCEPTIBLE ORDNANCE, comply with ordnance handling requirements listed in chapter 5 of reference (a);

(3) Ensure that radios installed in ordnance handling vehicles maintain the minimum 10-foot antenna–to-ordnance separation distance required for HERO SAFE ORDNANCE. (See chapter 5, paragraph 5-4.4 of reference (a)); and

(4) Emissions from various mobile and portable VHF/UHF transmitters should be silenced for HERO UNSAFE and HERO SUSCEPTIBLE ORDNANCE or safe separation distances be maintained, as provided in enclosure (6).

c. The following procedures apply when handling HERO UNSAFE or HERO SUSCEPTIBLE ORDNANCE within the ASP:

(1) No ordnance shall be made HERO UNSAFE except in the ASP or at an approved range or training area;

(2) Affix HERO warning labels stating separation distances (as listed in enclosure (6) for HERO UNSAFE or HERO SUSCEPTIBLE ORDNANCE to all mobile and portable transmitters. (Enclosure (2) illustrates a recommended label);

(3) Ensure that radios installed in ordnance handling vehicles maintain the minimum 10-foot antenna-to-ordnance separation distance required for HERO SAFE ORDNANCE. (See enclosure (7)); and

(4) HERO UNSAFE ORDNANCE shall be stored in original packaging. If original packaging is not available, package items as appropriate and maintain appropriate HERO distances.

J. W. LUKEMAN
Chief of Staff

DISTRIBUTION: A

LIST OF HERO SUSCEPTIBLE AND HERO UNSAFE ORDNANCE

NALC	NIINS	NOMENCLATURE	HERO STATUS
AA26	Q	CARTRIDGE, 20 MM, C/O 4 SAPHEI, PGU-28A/B AND 1 TPT PGU-30A/B 100 ROUNDS PER CONTAINER. FOR M61A1, M61A2, M197, AND XM301 AIRCRAFT CANNON	SUSCEPTIBLE
AA27	Q	CARTRIDGE, 20 MM, C/O 4 TPT PGU-27A/B AND 1 TP PGU-30A/B PACKAGED 100 ROUNDS PER CONTAINER. FOR M61A1, M61A2, M197, AND XM301	SUSCEPTIBLE
B642	L	CARTRIDGE, 60 MM, H.E. COMP B, M720 W/MULTI-OPTION FUZE M734 NSN 1310-01-022-7680 SHIPPED IN METAL PA70 CONTAINER	SUSCEPTIBLE
C868	L	CARTRIDGE, 81 MM, HE, COMP B, M821 W/FUZE MULTI-OPTION M734. SHIPPED IN METAL CONTAINER. SAFE FOR TRANSPORTATION AND STORAGE IN METAL CONTAINER	SUSCEPTIBLE
C995	L	LAUNCHER AND CARTRIDGE 84 MM, M136 (AT4)	SUSCEPTIBLE
G826	L	GRENADE, LAUNCHER, SMOKE, IR SCREENING, M76 PKG 4 PER M2A1 METAL CONTAINER NSN 1330-01-171-8869 P/N E13-19-150 OR B13-19-216	SUSCEPTIBLE
HX05	L	ROCKET ASSAULT (SMAW) ENCASED, 83 MM, DUAL MODE, MK 3 MOD 0 SAFE HX07 L ROCKET, ASSAULT, ENCASED, HEAA, PRACTICE (SMAW) MK 7 MOD 0	SAFE
K143	L	MINE, ANTI-PERS, M18A1, NONBOUNDING, NONMETALIC NSN 1345-00-710-6946 P/N 8837104 NSN 1345-00-166-6378 P/N 8835166	UNSAFE
J143	L	ROCKET MOTOR, 5 IN, MK 22 MOD 2 F/DEMOLITION LINEAR CHARGE M58A1, M68A1 MODIFIED. ALSO MK 22 MOD 3 AND MK 22 MOD 4	UNSAFE
K869	X	SMOKE POT, FLOATING, FUEL AND SGF2 FOG OIL, AN-M7 SERIES, W/ FUZE, 8 TO 13 MINUTES BURNING TIME NSN 1365-00-025-3268 P/N D36-1-111 W/M208 MECH FUZE (NO REQ) NSN 1365-00-181-9679 P/N D36-2-214 W/M208 MECH FUZE (NO REQ) NSN 1365-00-939-6599 P/N 36-2-214 W/M209 ELEC FUZE (SUSC)	SUSCEPTIBLE

NALC	NIINS	NOMENCLATURE	HERO STATUS
K886	L	FUZE, SMOKE POT, ELECTRICAL, M209, F/USE WITH K869	UNSAFE
L367	L	SIMULATOR, M22, LAUNCHING, ANTITANK, GUIDED MISSILE AND ROCKET NSN 1370-01-085-2601 P/N 11749630	SAFE
L592	L	BLAST SIMULATOR ASSY, F/TOW M70 TRAINING SET	SAFE
L596	L	SIMULATOR, FLASH, ARTILLERY, M110. SHIPPED IN WOODEN BOX W/S72 SQUIB NSN 1370-00-028-5112 W/S93 SQUIB NSN 1370-00-935-1969	UNSAFE
MD65	H	CARTRIDGE IMPULSE, CCU-45/B IN HERMETICALLY SEALED METAL CONTAINER NSN 1377-01-063-3162 OR 1377-01-063-3166 OR 1377-01-063-3167 P/N 5184830-2	SUSCEPTIBLE
MD66	H	CARTRIDGE, IMPULSE CCU-44/B IN HERMETICALLY SEALED CONTAINER NSN 1377-01-063-3161 OR 1377-01-063-3164 OR 1377-01-63-3165 P/N 5184850	SUSCEPTIBLE
MJ21	H	CARTRIDGE, IMPULSE CCU-92/A FOR TCU-3/A AND JAU-52 NSN 1377-01-211-7211 P/N 1512AS121	SAFE
MT23	H	CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER, FOR CH-53E AND MH-53E HELICOPTER NSN 1377-00-140-2651 P/N 876561	SUSCEPTIBLE
MT95	H	CARTRIDGE, IMPULSE CCU-107/B F/AIRCRAFT STORES SEPARATION NSN 1377-01-364-7322 P/N 6260802. SHIPPED IN HERMETICALLY SEALED METAL CONTAINER.	SUSCEPTIBLE
M012	H	CARTRIDGE, IMPULSE, MK 19 MOD 0 NSN 1377-00-793-9926 P/N 2164465 DWG LD419700	SAFE
M015	H	CARTRIDGE, IMPULSE, MK 24 MOD 0 F/SH-3H, UH-3H, and CH-53E, MH-53E, AND NMH-53E AIRCRAFT NSN 1377-00-630-9597 P/N 2518431 (4 PER METAL CONTAINER) NSN 1377-01-301-3791 P/N 2518431 (1 PER METAL CONTAINER)	SUSCEPTIBLE

NALC	NIINS	NOMENCLATURE	HERO STATUS
M130	L	CAP, BLASTING, SPECIAL, ELECTRIC, J2/M6. ALL VERSIONS BUT NSN 1375-00-028-5224, 1375-00-028-5225, AND 1375-00-756-1865 ARE SHIPPED IN METAL CONTAINERS. ITEMS IN SEALED METAL CONTAINERS REQUIRE NO RESTRICTIONS DURING TRANSPORTATION AND STORAGE. THE FOLLOWING NSNS ARE SHIPPED IN METAL CONTAINERS: 1375-00-283-9442, 1375-00-889-2003, 1375-01-192-9174, AND 1375-01-316-1229	SUSCEPTIBLE
M162	H	CARTRIDGE, IMPULSE F/CH-46A AND -46D HELICOPTER	SUSCEPTIBLE
M174	L	CARTRIDGE, IMPULSE, ELECT INITIATED, NAVORD DWG. NO. LD416875, .50 CAL FOR EOD USE. SHIPPED IN METAL BOX. NSN 1385-00-512-2886 P/N DL2193702 NSN 1385-00-605-0253 P/N DL2193702-12 NSN 1385-00-896-3694 P/N DL2193702	SUSCEPTIBLE
M190	H	CARTRIDGE, IMPULSE, MK 2 MOD 1 NSN 1377-00-103-3434 P/N 1283661 10 PER PACKAGE NSN 1377-00-293-8184 P/N 1283661 65 PER PACKAGE NSN 1377-00-512-2864 P/N 1283661 52 PER PACKAGE	SUSCEPTIBLE
M193	H	CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER NSN 1377-00-930-9390 P/N 2519614 OR 30903823 OR 13083-5	SUSCEPTIBLE
M232	H	CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER (P/N 873364) NSN 1377-01-419-8796 FOR F-111 NSN 1377-00-824-5858 P/N 2519707 NSN 1377-01-257-1359 P/N 1660AS200 CCU-68/A	SUSCEPTIBLE
M363	H	CARTRIDGE, IMPULSE MK 124 MOD 0. 40 PER METAL CONTAINER NSN 1377-00-193-8832 P/N 2838195	SUSCEPTIBLE
M514	H	CARTRIDGE, IMPULSE, MK 44 MOD 0 1377-00-987-3603 P/N 2240772 SAFE FOR TRANSPORTATION AND STORAGE IN SEALED METAL CONTAINER	SUSCEPTIBLE
N289	L	FUZE, ELECTRONIC TIME, M762, W/O BOOSTER	SAFE

NALC	NIINS	NOMENCLATURE	HERO STATUS
PB96	L	GUIDED MISSILE, PRACTICE, BTM-71A-2, TOW {CONTAINS MISSILE ORDNANCE INHIBIT CIRCUIT} BOTH 0T AND 8E COGS. 0T IS SURFACE TO SURFACE, 8E IS AIR TO SURFACE ATTACK.	SUSCEPTIBLE
PU68	L	GUIDED MISSILE, BGM-71A-5 EXTENDED RANGE TOW MISSILE, WITH ENHANCED MISSILE ORDNANCE INHIBIT CIRCUIT (E-MOIC) NSN 0T 1410-01-406-9252 IN WOOD BOX	SUSCEPTIBLE
1W18	H	EXPLOSIVE SEPARATOR FOR CH-53E EXTERNAL CARGO HANDLING SYSTEM NSN 1377-01-130-2907 P/N 10436-1	SAFE
		FBI-OWNED AMMUNITION/EXPLOSIVES	
HX04	L	ROCKET, PRACTICE, ASSAULT, ENCASED, {SMAW} 83 MM, MK 4 MOD 0, W/RKT MK 2 MOD 0, {INERT WHD}	SUSCEPTIBLE
M130	L	CAP, BLASTING, SPECIAL, ELECTRIC, J2/M6. ALL VERSIONS BUT NSN 1375-00-028-5224, 1375-00-028-5225, AND 1375-00-756-1865 ARE SHIPPED IN METAL CONTAINERS. ITEMS IN SEALED METAL CONTAINERS REQUIRE NO RESTRICTIONS DURING TRANSPORTATION AND STORAGE. THE FOLLOWING NSNS ARE SHIPPED IN METAL CONTAINERS: 1375-00-283-9442, 1375-00-889-2003, 1375-01-192-9174, AND 1375-01-316-1229	SUSCEPTIBLE
M862	L	SQUIB, ELECTRIC, S-75, 1.5 GRAIN, 4FT LEAD WIRES NSN 1377-00-113-7677 P/N 2128283 OR 2113892 (METAL BOX) NSN 1377-00-806-4886 P/N 2519524 (2T COG IN METAL, N0T IN FIBERBOARD BOX)	UNSAFE

NALC	NIINS	NOMENCLATURE	HERO STATUS
*LQ01	FBI000600	SOUND AND FLASH DEVICE, ELECTRIC, NICO-16	UNSAFE
*MQ05	FBI000305	CAP, BLASTING, ELEC, SAF-T-DET	UNSAFE
*MQ06	FBI000306	CAP, BLASTING, ELEC, 16FT LEAD, 50MS DELAY, PERIOD 2	UNSAFE
*MQ07	FBI000307	CAP, BLASTING, ELEC, 16FT LEAD, 75MS DELAY, PERIOD 3	UNSAFE
*MQ08	FBI000308	CAP, BLASTING, ELEC, 16FT LEAD, 100MS DELAY, PERIOD 4	UNSAFE
*MQ09	FBI000309	CAP, BLASTING, ELEC, 16FT LEAD, 125MS DELAY, PERIOD 5	UNSAFE
*MQ10	FBI000310	CAP, BLASTING, ELEC, 16FT LEAD, 150MS DELAY, PERIOD 6	UNSAFE
*MQ11	FBI000311	CAP, BLASTING, ELEC, 16FT LEAD, 175MS DELAY, PERIOD 7	UNSAFE
*MQ12	FBI000312	CAP, BLASTING, ELEC, 16FT LEAD, 200MS DELAY, PERIOD 8	UNSAFE
*MQ13	FBI000313	CAP, BLASTING, ELEC, 16FT LEAD, 225MS, DELAY PERIOD 9	UNSAFE
*MQ14	FBI000314	CAP, BLASTING, ELEC, 16FT LEAD, 275MS DELAY, PERIOD 11	UNSAFE
*MQ15	FBI000315	CAP, BLASTING, ELEC, 16FT LEAD, 300MS DELAY, PERIOD 12	UNSAFE
*MQ16	FBI000316	CAP, BLASTING, ELEC, 16FT LEAD, 325MS DELAY, PERIOD 13	UNSAFE
*MQ17	FBI000317	CAP, BLASTING, ELEC, 16FT LEAD, 350MS DELAY, PERIOD 14	UNSAFE
*MQ18	FBI000318	CAP, BLASTING, ELEC, 16FT LEAD, 375MS DELAY, PERIOD 15	UNSAFE
*MQ19	FBI000319	CAP, BLASTING, ELEC, 16FT LEAD, 400MS DELAY, PERIOD 16	UNSAFE
*MQ20	FBI000320	CAP, BLASTING, ELEC, 24FT LEAD, 200MS DELAY, PERIOD 8	UNSAFE

NALC	NIINS	NOMENCLATURE	HERO STATUS
*MQ21	FBI000321	CAP, BLASTING, ELEC, 24FT LEAD, 225MS DELAY, PERIOD 9	UNSAFE
*MQ22	FBI000322	CAP, BLASTING, ELEC, 24FT LEAD, 275MS, DELAY, PERIOD 11	UNSAFE
*MQ23	FBI000323	CAP, BLASTING, ELEC, 24FT LEAD, 300MS DELAY, PERIOD 12	UNSAFE
*MQ24	FBI000324	CAP, BLASTING, ELEC, 24FT LEAD, 325MS DELAY, PERIOD 13	UNSAFE
*MQ25	FBI000325	CAP, BLASTING, ELEC, 24FT LEAD, 350MS DELAY, PERIOD 14	UNSAFE
*MQ26	FBI000326	CAP, BLASTING, ELEC, 24FT LEAD, 375MS DELAY, PERIOD 15	UNSAFE
*MQ27	FBI000327	CAP, BLASTING, ELEC, 24FT LEAD, 400MS DELAY, PERIOD 16	UNSAFE
*MQ28	FBI000328	CAP, BLASTING, ELEC, 24FT LEAD, 425MS DELAY, PERIOD 17	UNSAFE
*MQ29	FBI000329	CAP, BLASTING, ELEC, 24FT LEAD, 475MS DELAY, PERIOD 19	UNSAFE
*MQ30	FBI000330	CAP, BLASTING, ELEC, 24FT LEAD, 400MS DELAY, PERIOD 20	UNSAFE
*MQ58	FBI000358	CAP, BLASTING ELEC, 12FT LEAD, INSTANT	UNSAFE
*MQ60	FBI000360	CAP, BLASTING ELEC, 16FT LEAD, 250MS DELAY, PERIOD 10	UNSAFE
*MQ61	FBI000361	CAP, BLASTING ELEC, 16FT LEAD, 425MS DELAY, PERIOD 17	UNSAFE
*MQ62	FBI000362	CAP, BLASTING ELEC, 16FT LEAD, 450MS DELAY, PERIOD 18	UNSAFE
*MQ63	FBI000363	CAP, BLASTING ELEC, 16FT LEAD, 475MS DELAY, PERIOD 19	UNSAFE
*MQ64	FBI000364	CAP, BLASTING ELEC, 16FT LEAD, 500MS DELAY, PERIOD 20	UNSAFE
*MQ65	FBI000365	CAP, BLASTING ELEC, 24FT LEAD, INSTANT	UNSAFE

NALC	NIINS	NOMENCLATURE	HERO STATUS
*MQ66	FBI000366	CAP, BLASTING ELEC, 24FT LEAD, 25MS DELAY, PERIOD 1	UNSAFE
*MQ67	FBI000367	CAP, BLASTING ELEC, 24FT LEAD, 50MS DELAY, PERIOD 2	UNSAFE
*MQ73	FBI000373	SQUIB, ELEC, 4FT LEAD, TYPE A	UNSAFE
*MQ74	FBI000374	SQUIBS, NON-ELEC, SHORT SHOCK TUBE	UNSAFE
*MQ80	FBI000380	ELECTRIC MATCH	UNSAFE
*MQ95	FBI000395	VIBROGEL 3	UNSAFE

*NOTE: Ammunition/explosive items are locally assigned NALCs and National Item Identification Numbers (NIINs). They are purchased through non-DOD sources and have no HERO classification.

HERO WARNING LABEL AND WARNING SIGN

1. The HERO warning label shown in figure 1 is to be affixed to mobile and portable communications radios. This warning label alerts a radio operator to a potential hazard if the radio is operated within the prescribed distance of ordnance operations.

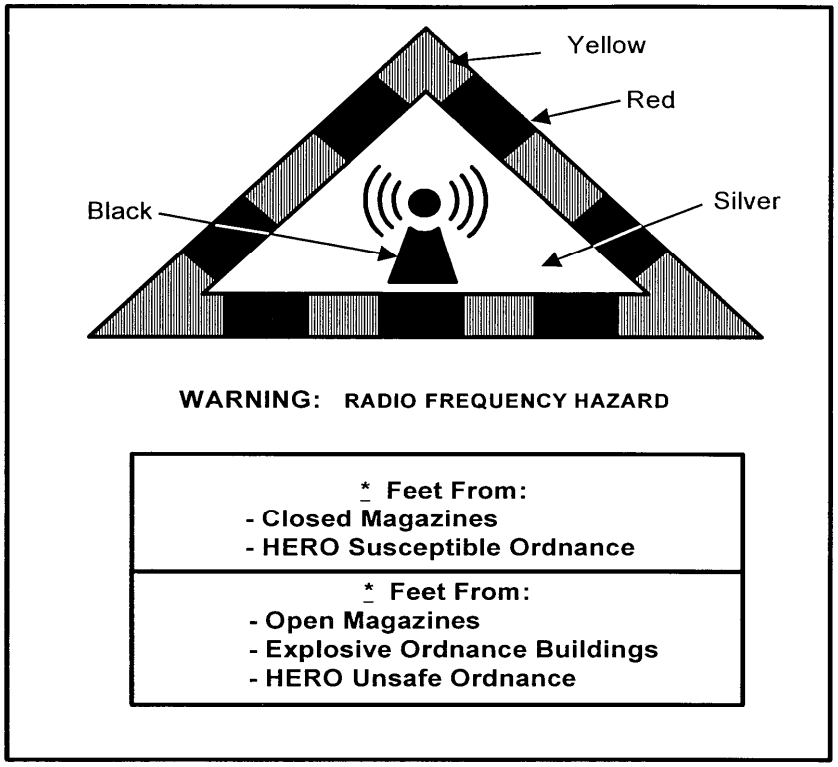


Figure 1.--HERO Warning Label.

2. Table 1 provides data pertaining to the above label. The label has blank spaces for inserting HERO SUSCEPTIBLE or HERO UNSAFE separation distances in feet. The distances are obtained from appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF for individual radios. Additional radio listings and their corresponding HERO separation distances are found in chapter 2 of NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEK 0967-LP-624-6010. The smaller label is recommended for hand-held portable radios and the larger for mobiles.

TABLE 1. HERO WARNING LABEL INFORMATION*

NAVSEA FORM	STOCK NUMBER	SIZE	DESCRIPTION
NAVSEA 5104/4	0116-LF-115-0700	2" x 22/3″	RADHAZ Warning Label (Blank) Feet
NAVSEA 5140/3	0116-LF-115-0800	11/2″ x 21/3″	RADHAZ Warning Label (Blank) Feet

*NOTE: Available from Defense Automated Printing Service (DAPS) Philadelphia: 215-697-2981/2982 or http://forms.daps.mil.

3. The recommended HERO warning sign is shown in figure 2. It is placed along ordnance transportation routes at prescribed locations to ordnance operations (e.g., missile assembly, ammunition pier, etc.) to alert radio operators to a potential hazard when using radios beyond this point. Guidance for manufacturing signs is provided below.

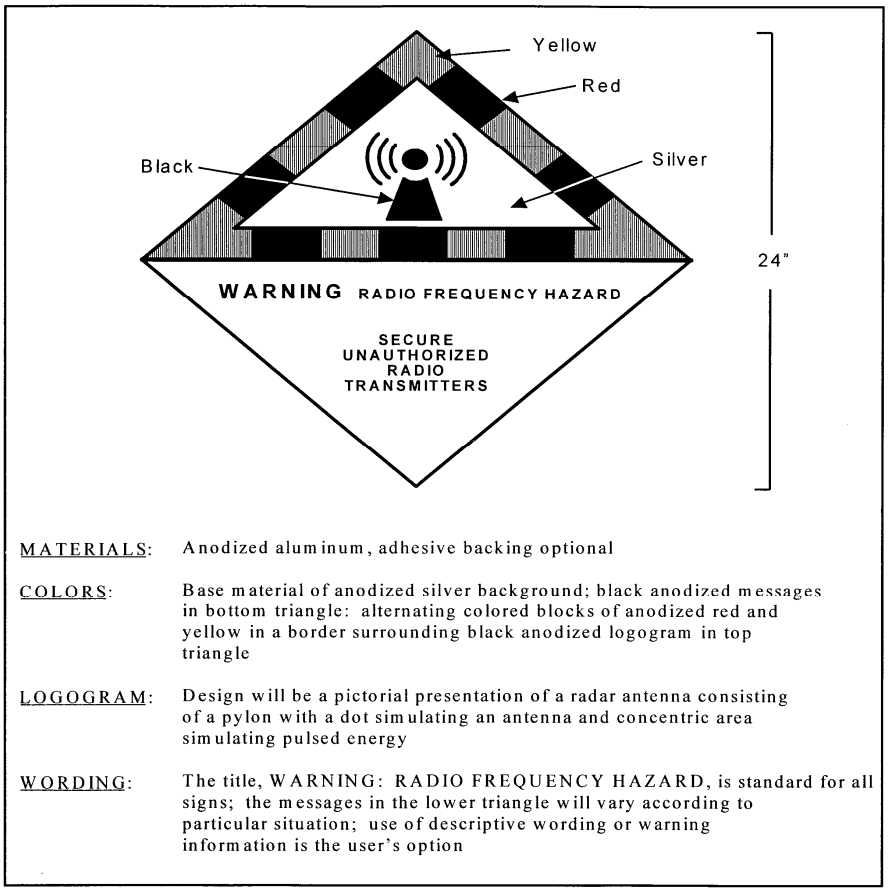
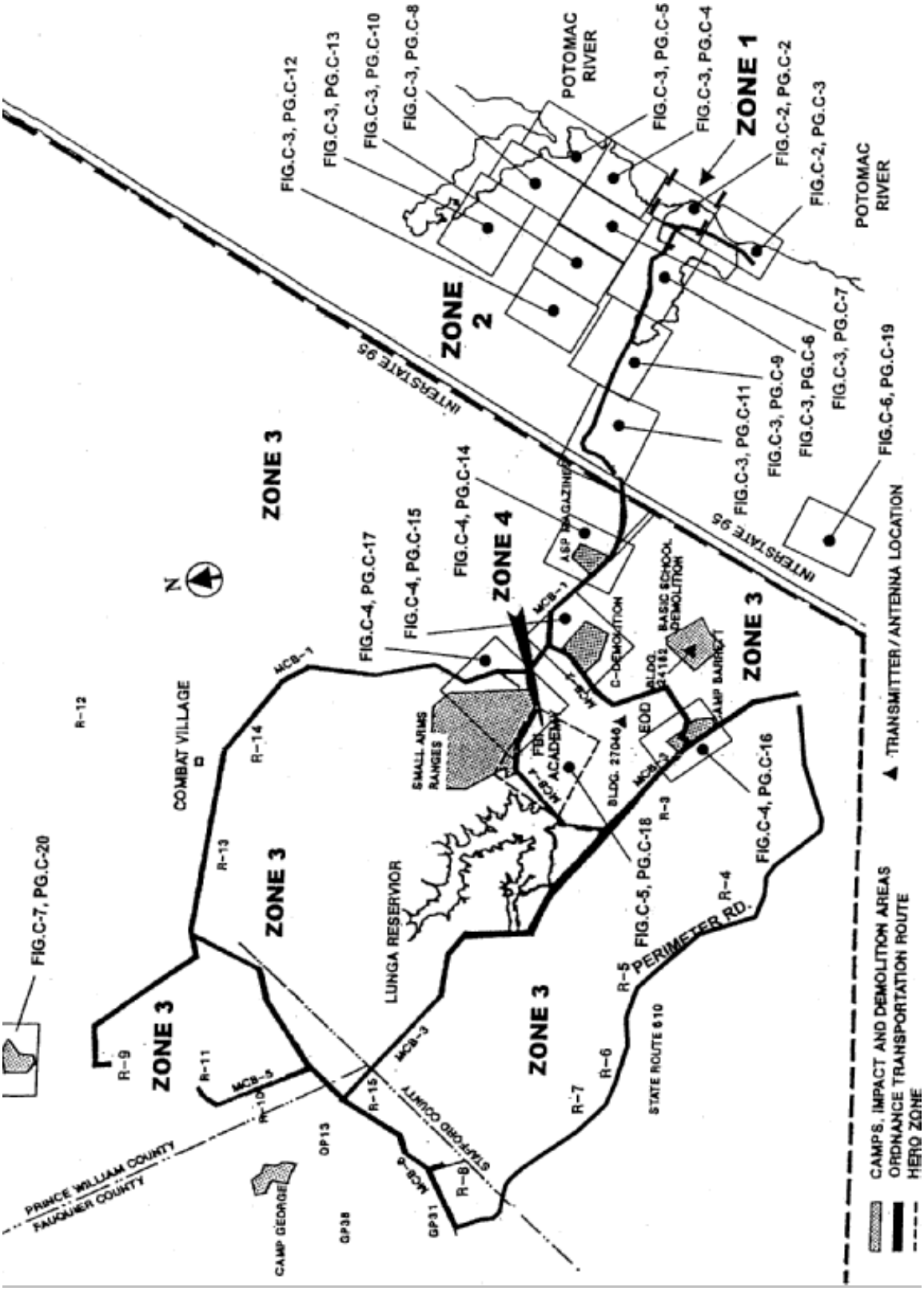


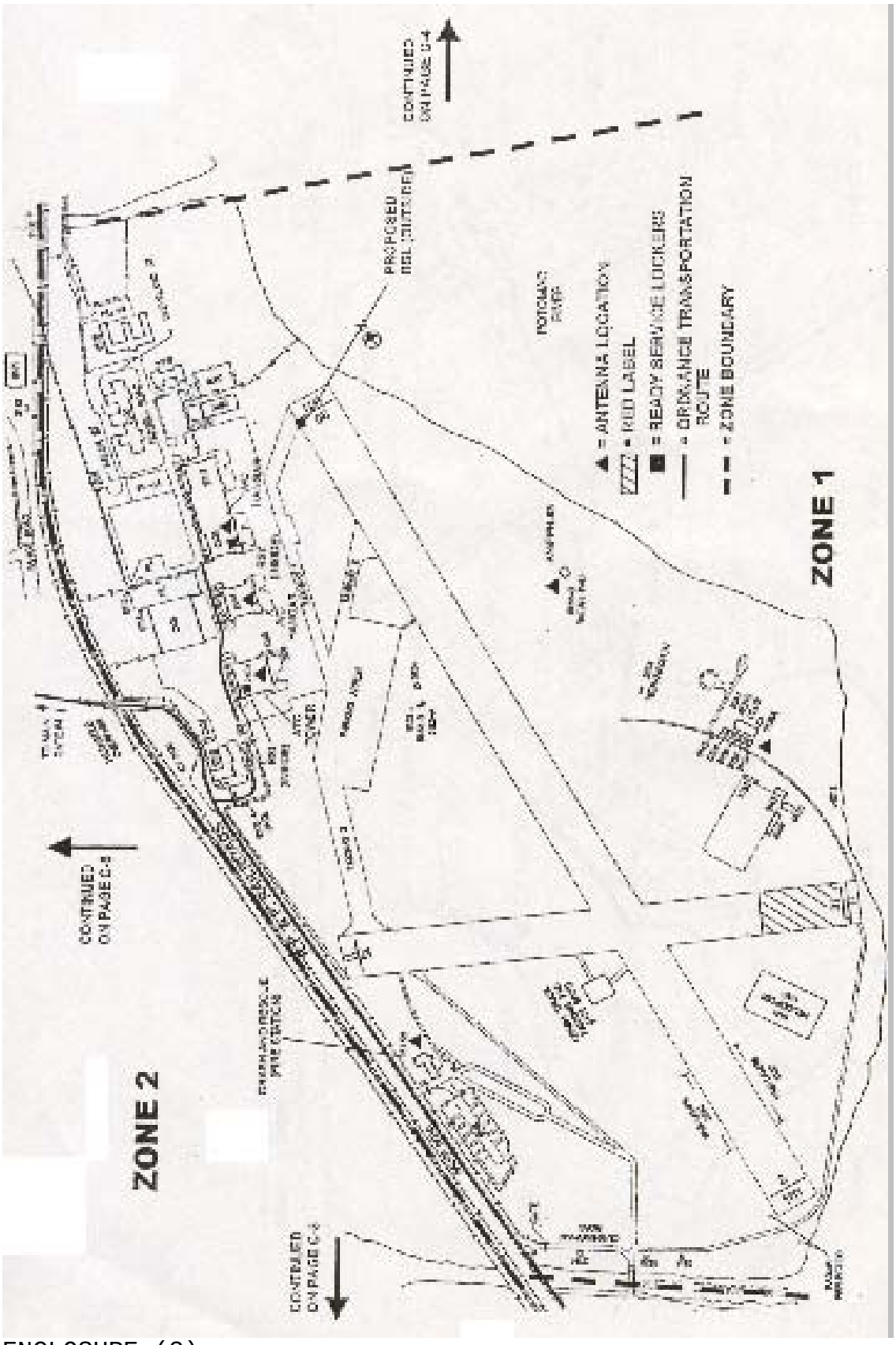
Figure 2.--HERO Warning Sign.

ENCLOSURE (2)

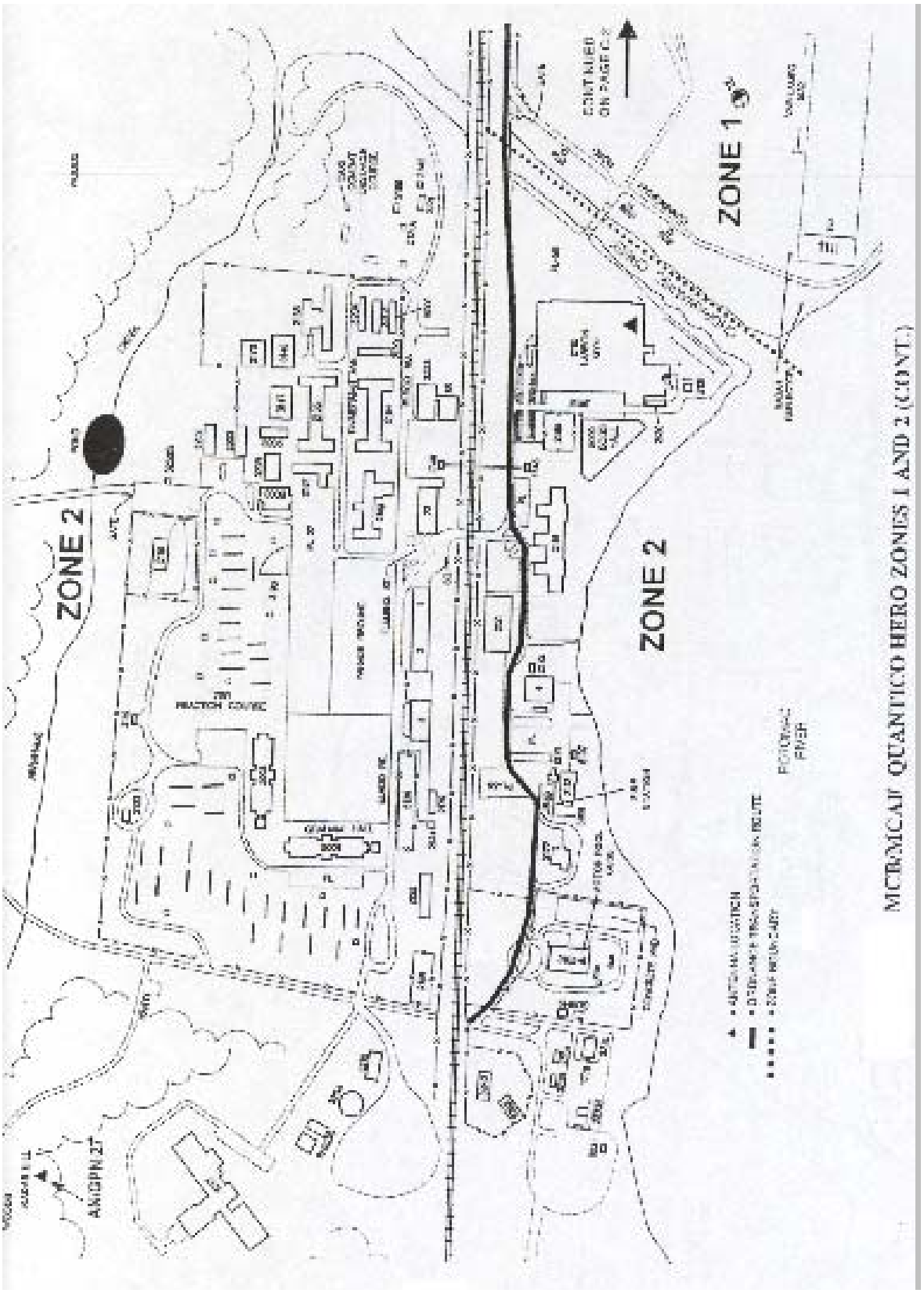
HERO ZONES, ORDNANCE TRANSPORTATION ROUTES, AND ORDNANCE AND DATA COLLECTION LOCATIONS MAPS



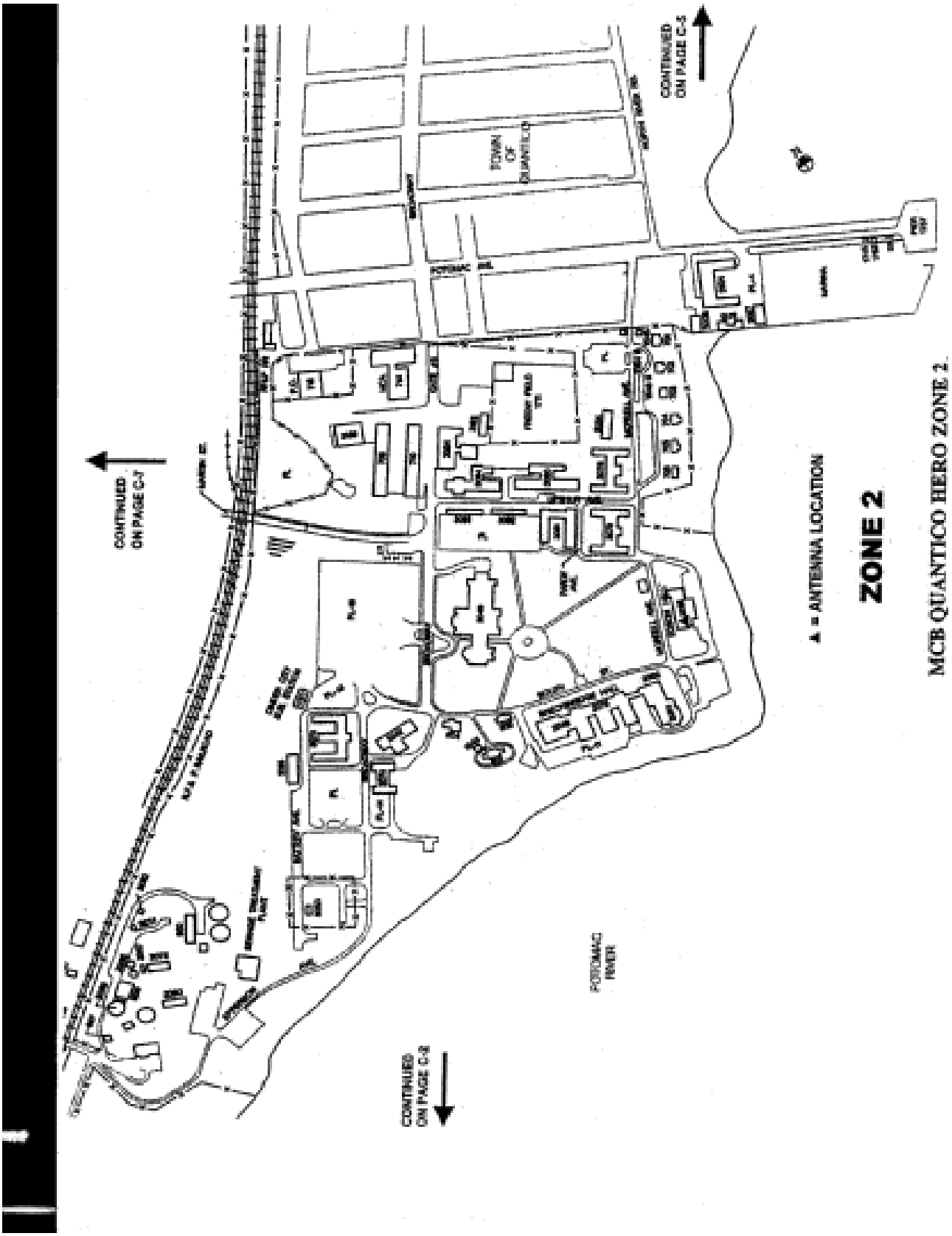
ENCLOSURE (3)


ZONE 1
ZONE 2
= ANTENNA LOCATION
= RED LABEL
= READY SERVICE LOCKERS
= ORDNANCE TRANSPORTATION ROUTE
= ZONE BOUNDARY
CONTINUED ON PAGE C-4
CONTINUED ON PAGE C-3
CONTINUED ON PAGE C-4
PROPOSED RELOCATION
POTOMAC RIVER

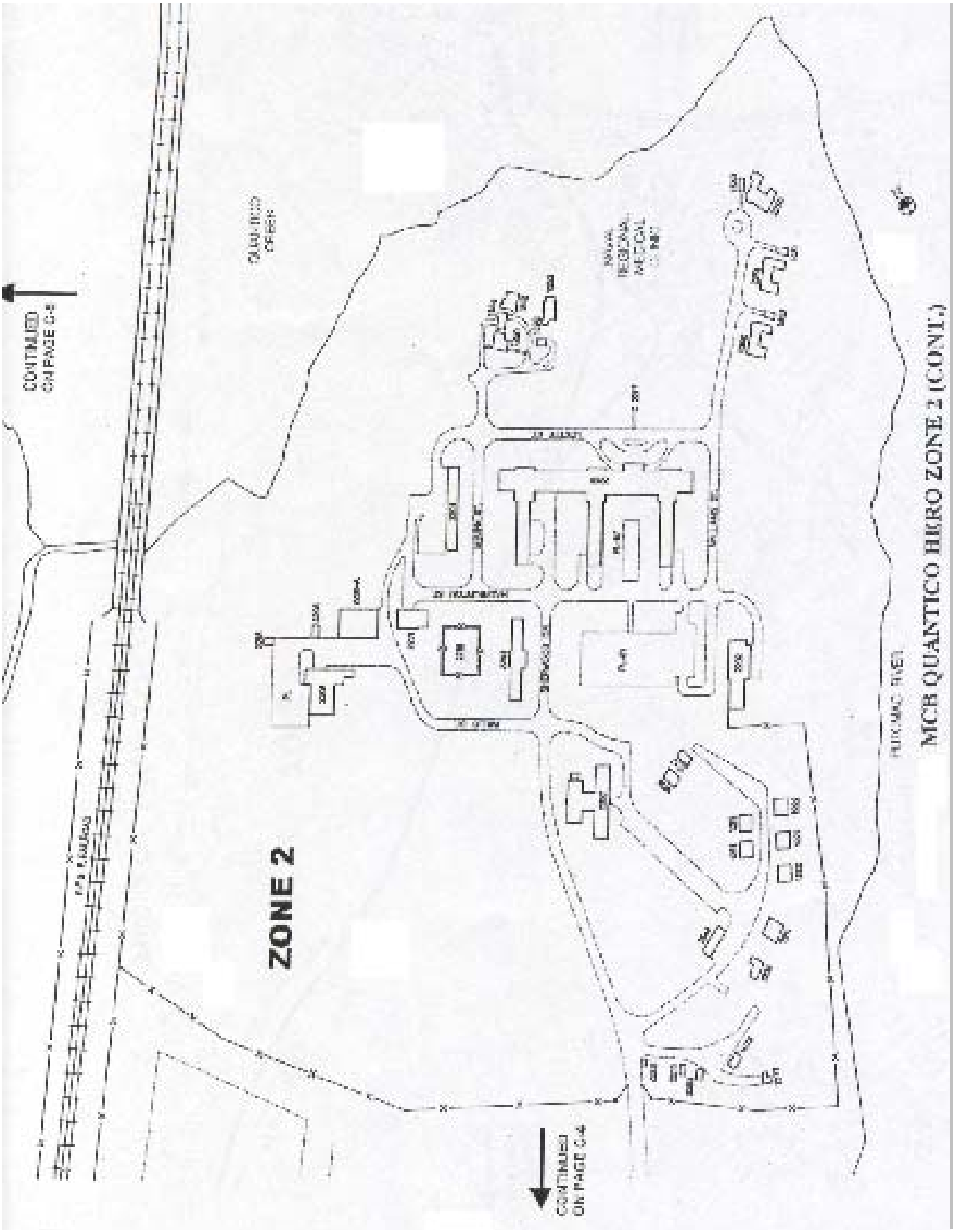
ENCLOSURE (3)



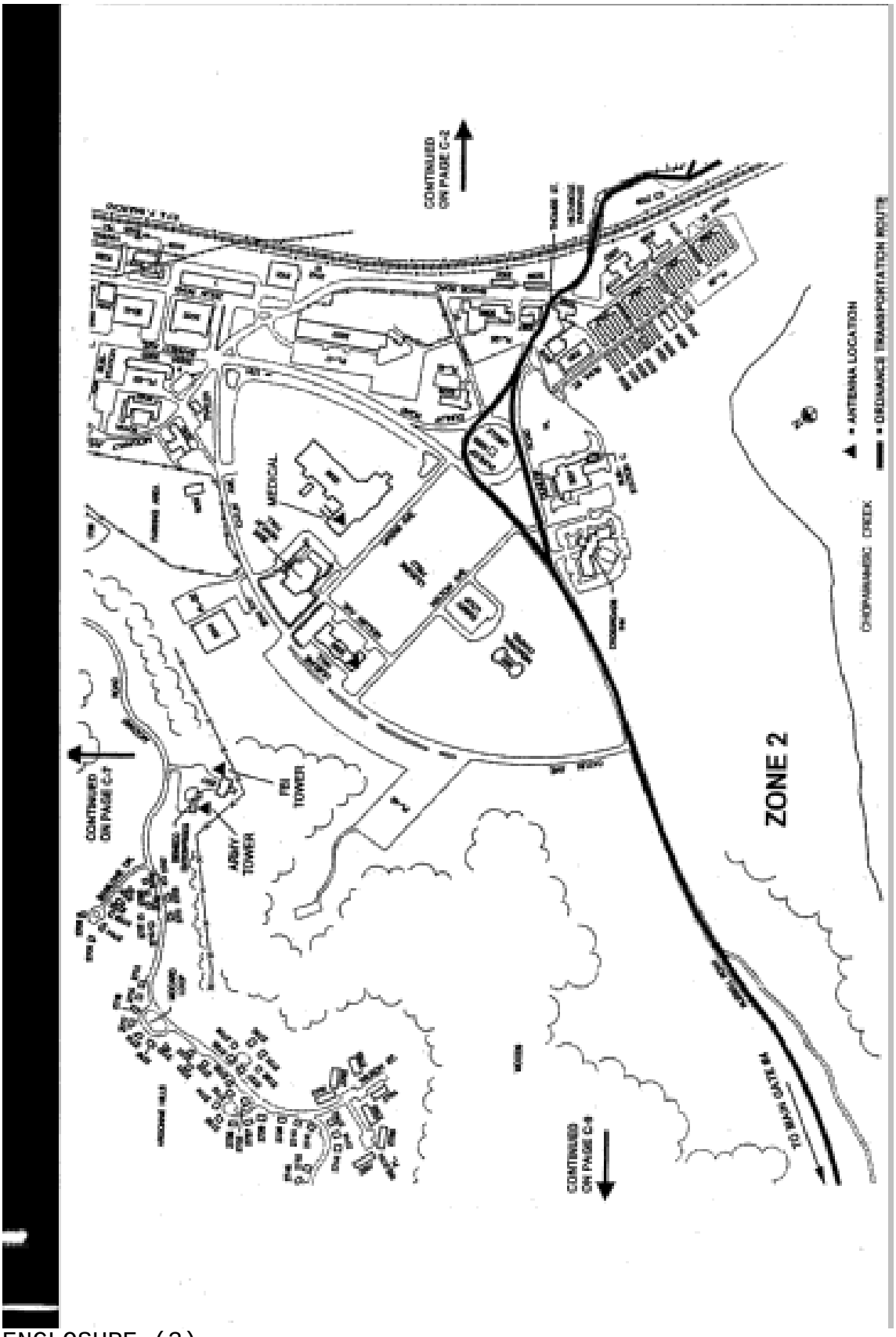
ENCLOSURE (3)


MCB QUANTICO HERO ZONE 2
ZONE 2
▲ = ANTENNA LOCATION
CONTINUED ON PAGE C-7
CONTINUED ON PAGE C-3
CONTINUED ON PAGE C-8
POTOMAC RIVER

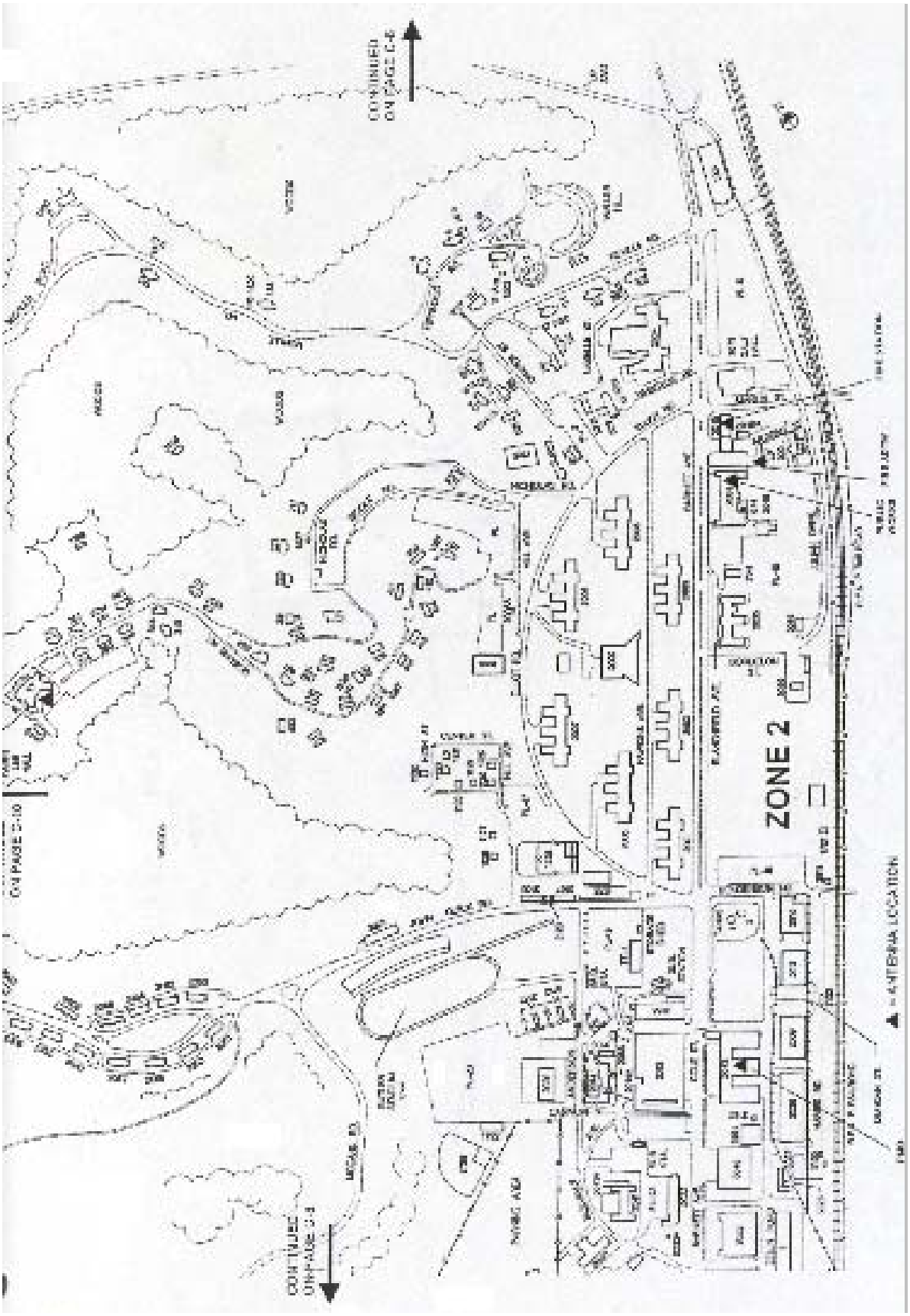
ENCLOSURE (3)


MCB QUANTICO HERO ZONE 2 (CONT.)
ZONE 2
CONTINUED ON PAGE 6-5
CONTINUED ON PAGE 6-4
GUN RUN GREEN
MARINE CORPS MEDICAL
PRINCE WILLIAM FOREST PARK
PRINCE WILLIAM FOREST PARK
POTOMAC RIVER

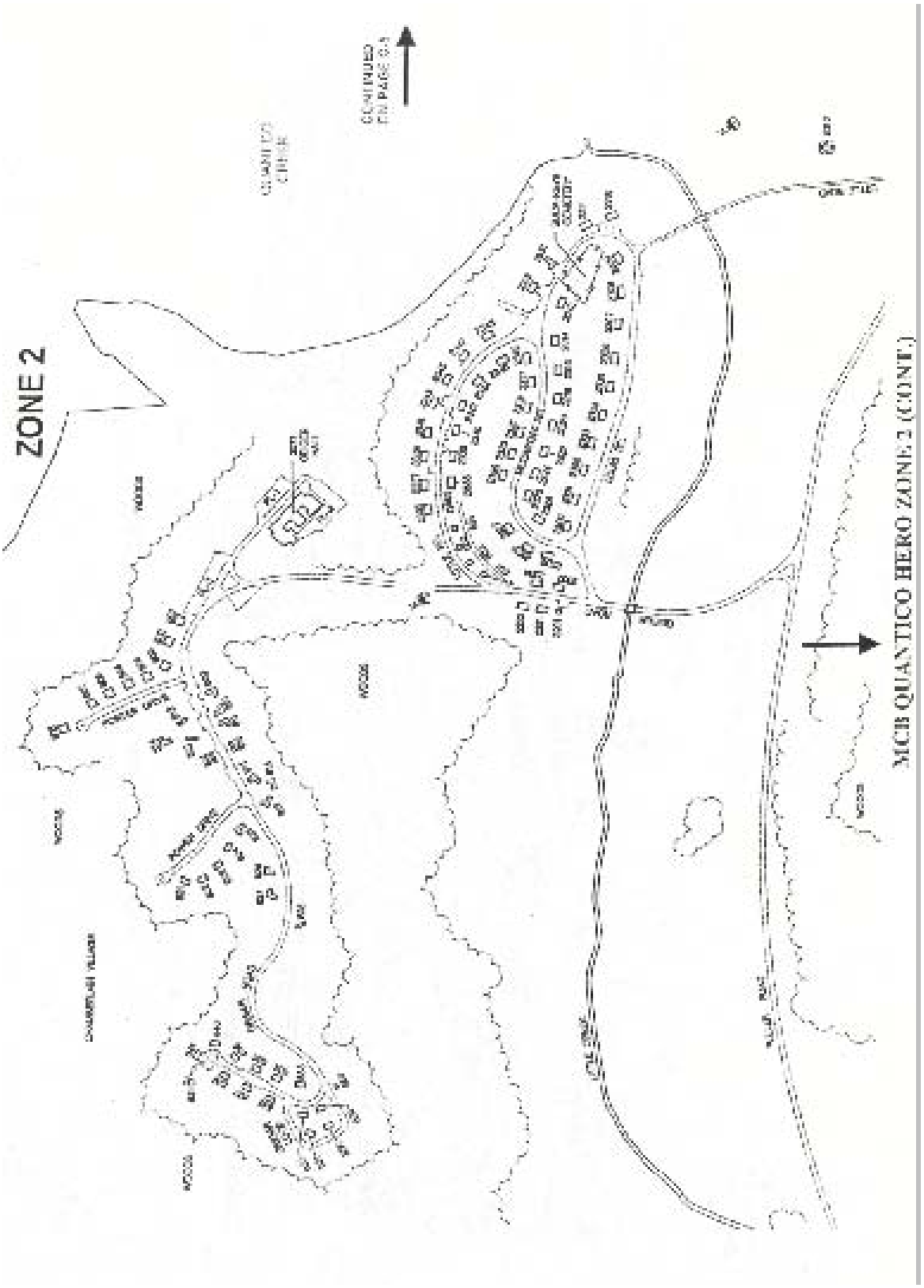
ENCLOSURE (3)


CONTINUED ON PAGE C-2
MEDICAL
FBI TOWER
ARMY TOWER
CONTINUED ON PAGE C-7
CONTINUED ON PAGE C-9
ZONE 2
ANTENNA LOCATION
ORDNANCE TRANSPORTATION ROUTE
TO MAIN GATE #4

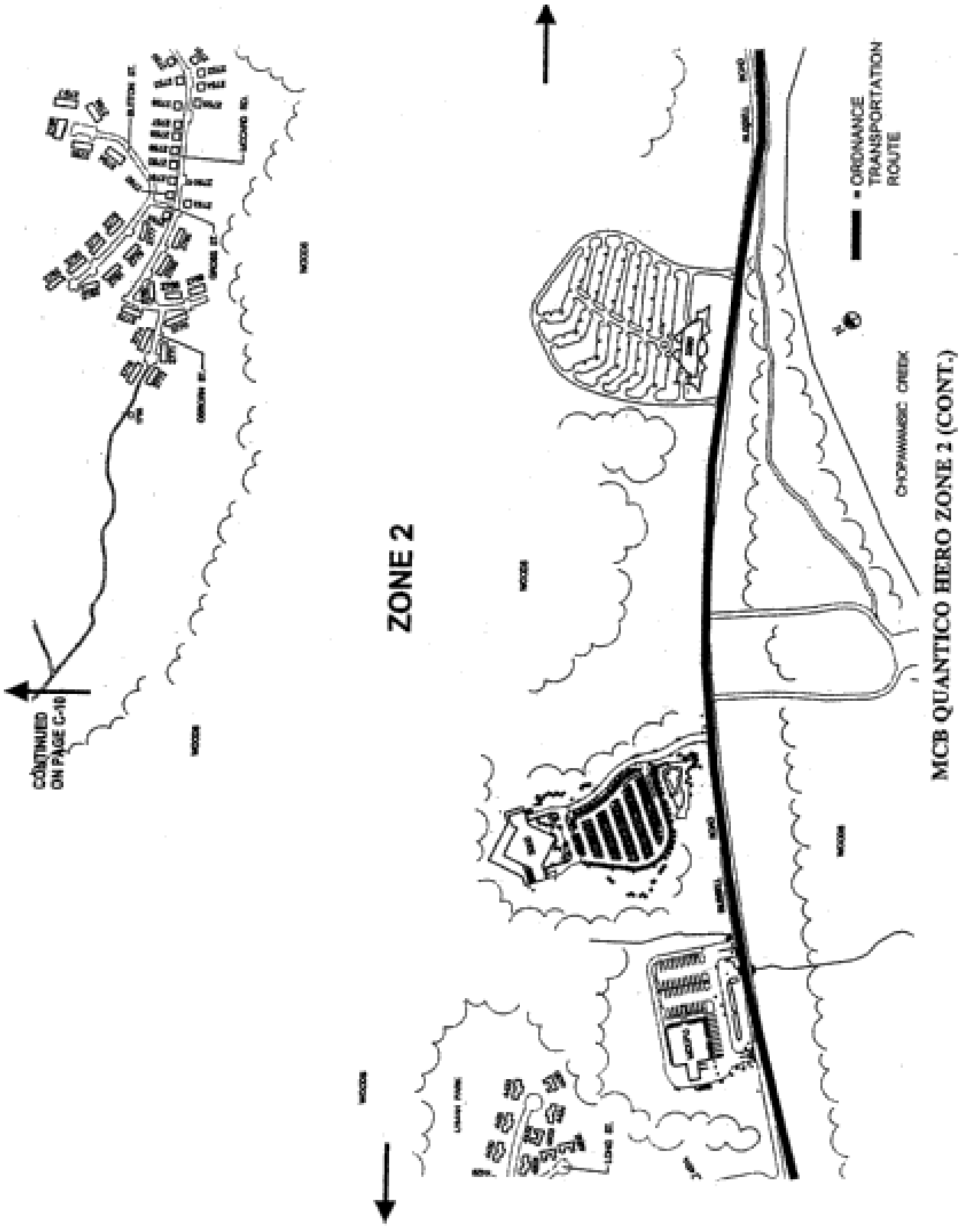
ENCLOSURE (3)



ENCLOSURE (3)

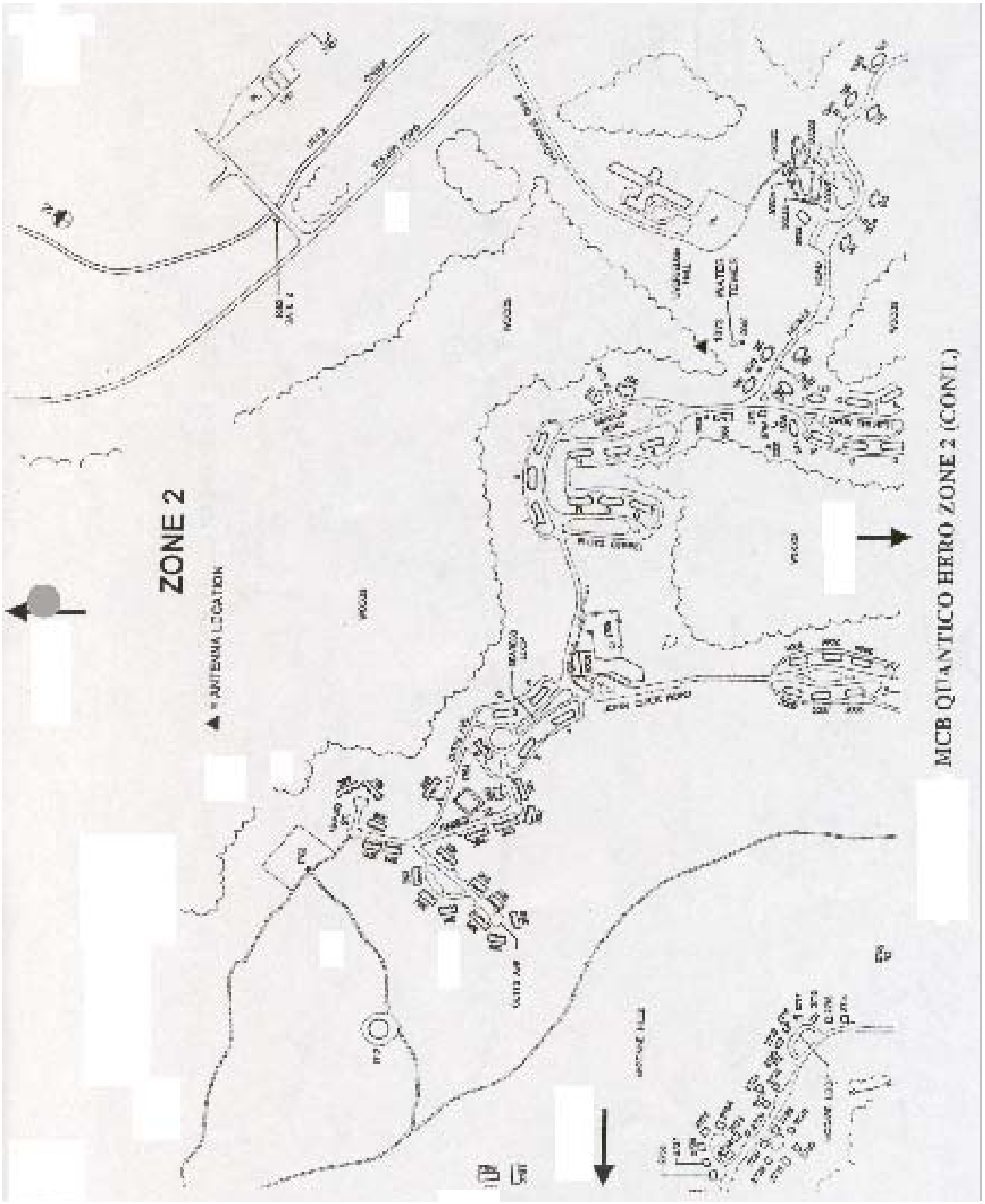


ENCLOSURE (3)

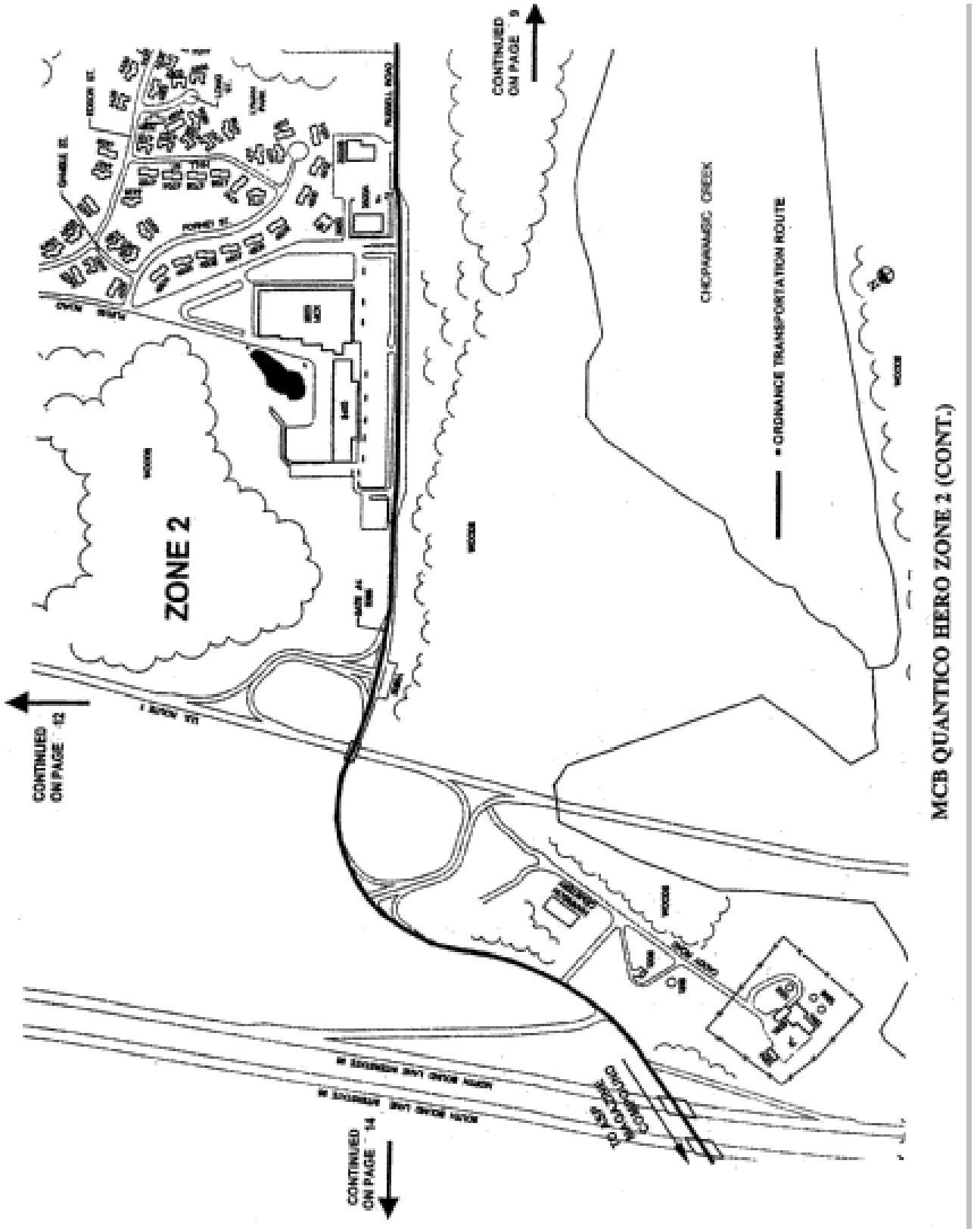


MCB QUANTICO HERO ZONE 2 (CONT.)

ENCLOSURE (3)

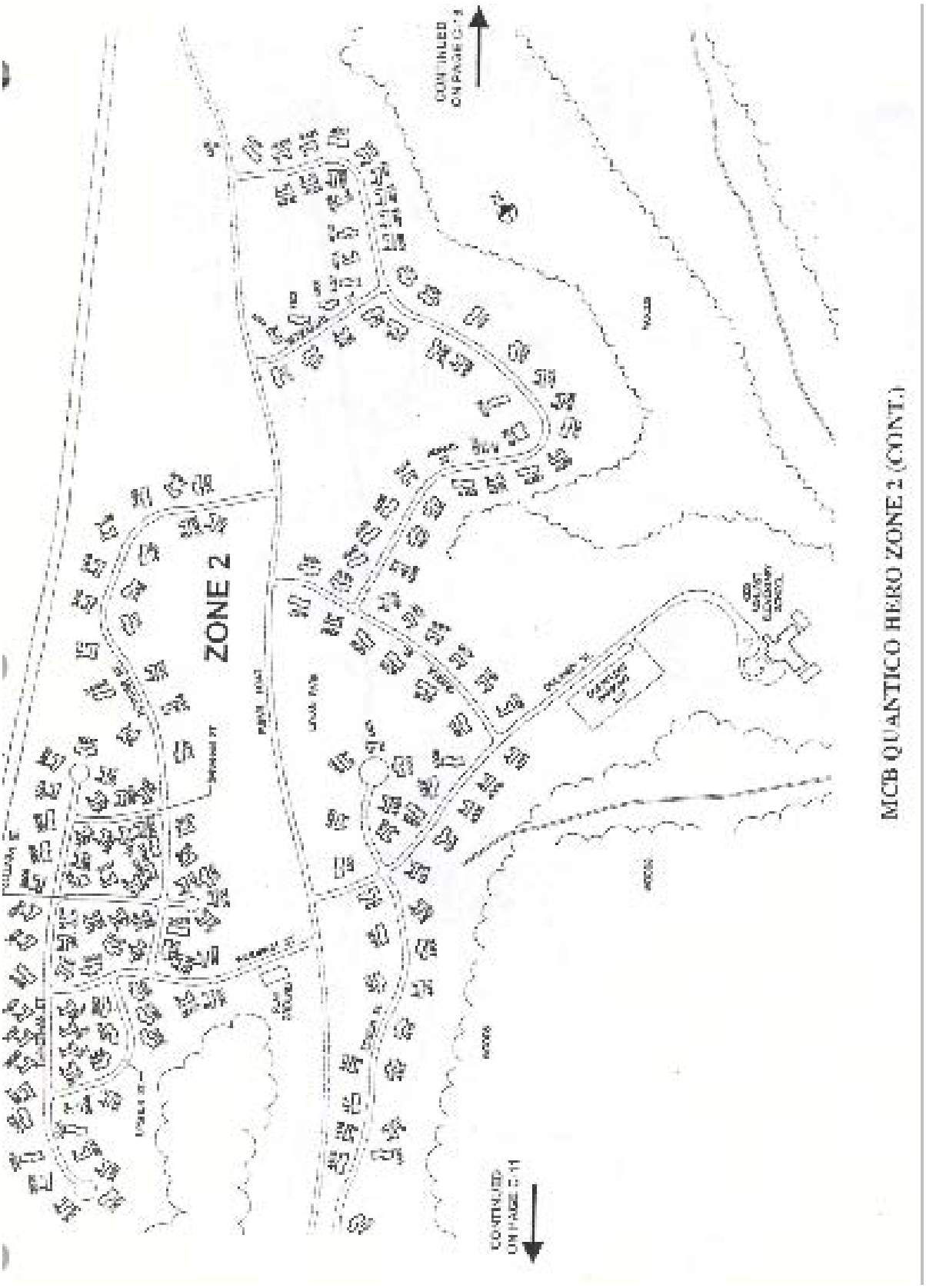


ENCLOSURE (3)



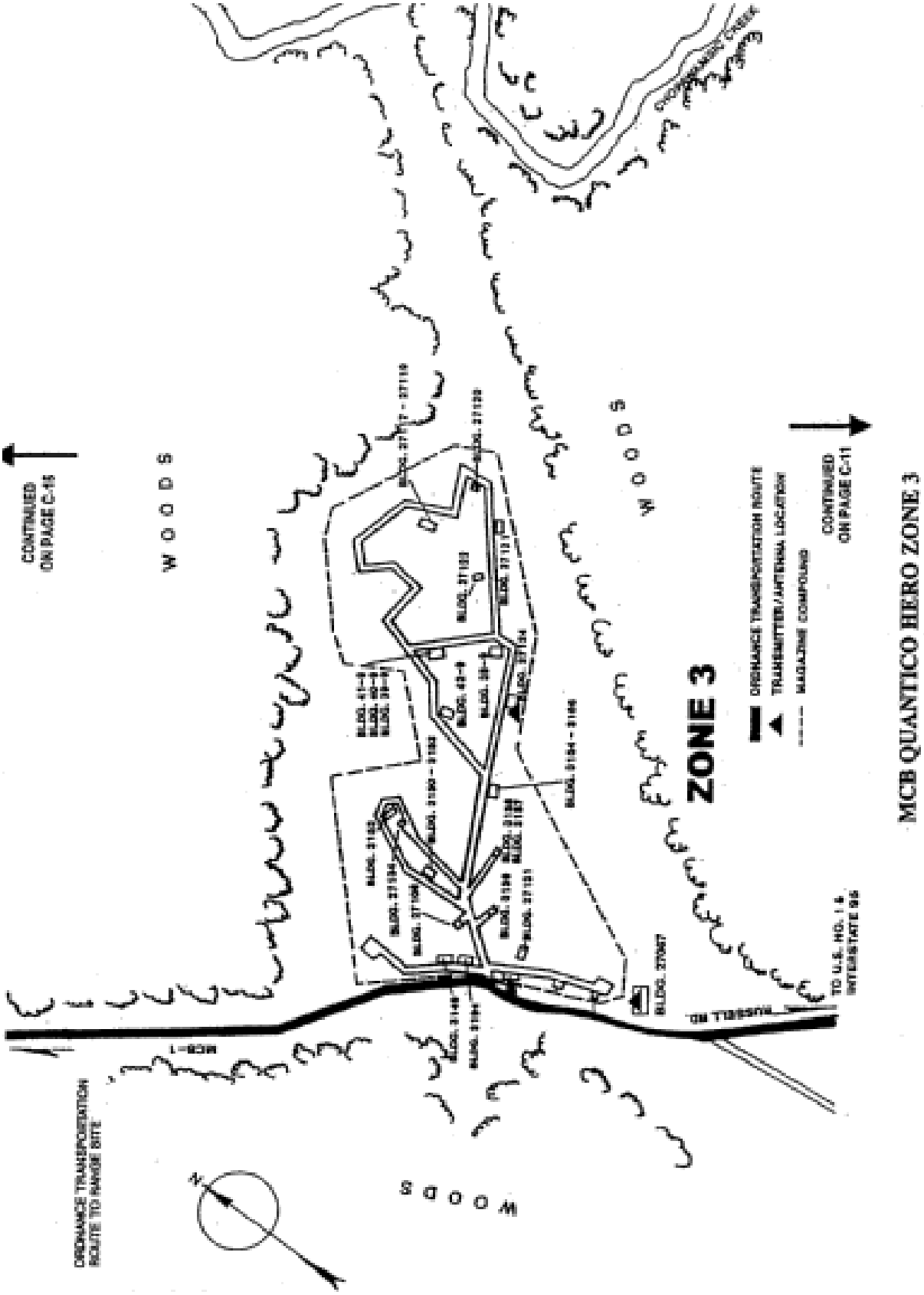
MCB QUANTICO HERO ZONE 2 (CONT.)

ENCLOSURE (3)

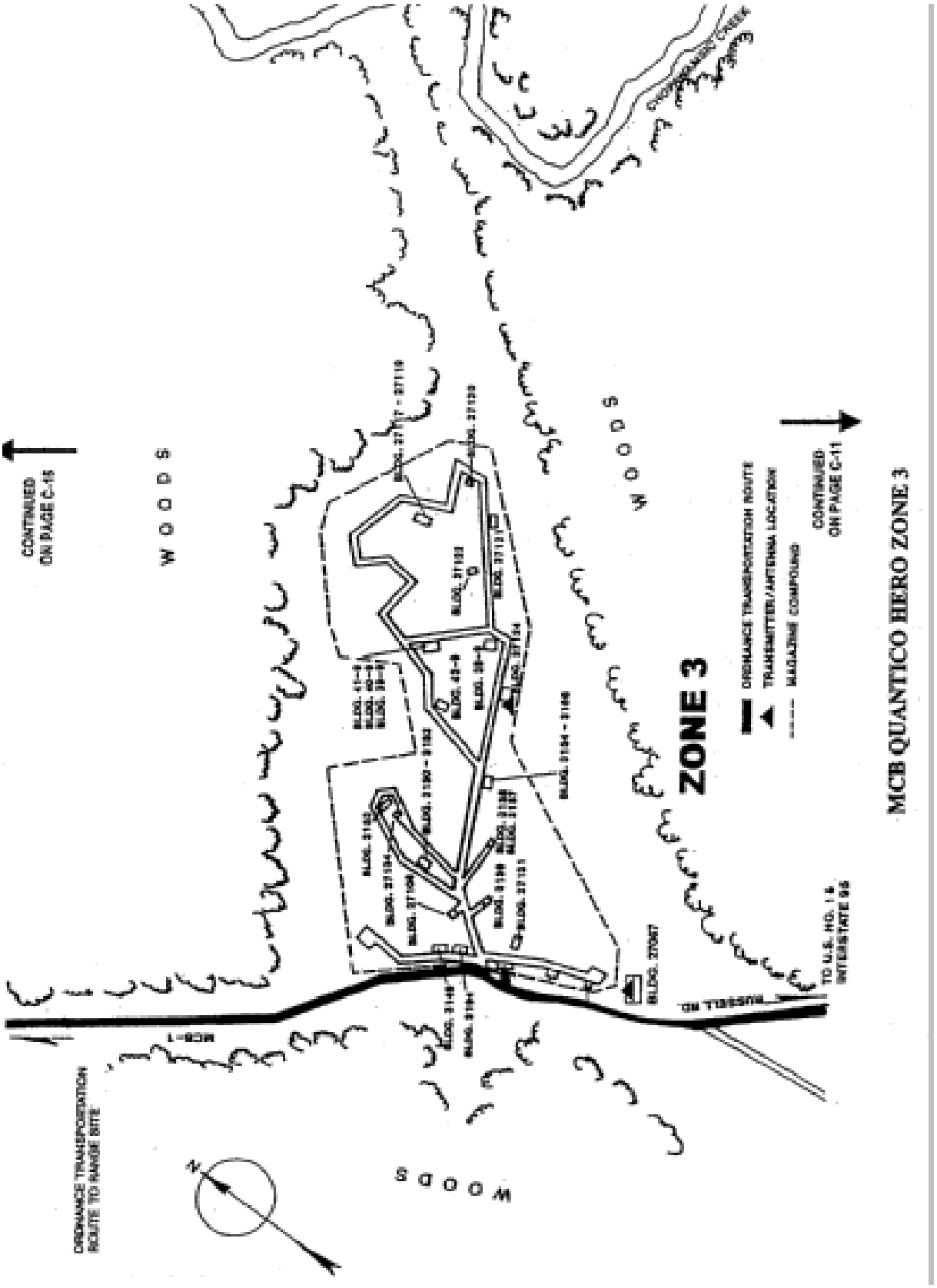


MCB QUANTICO HERO ZONE 2 (CONT.)

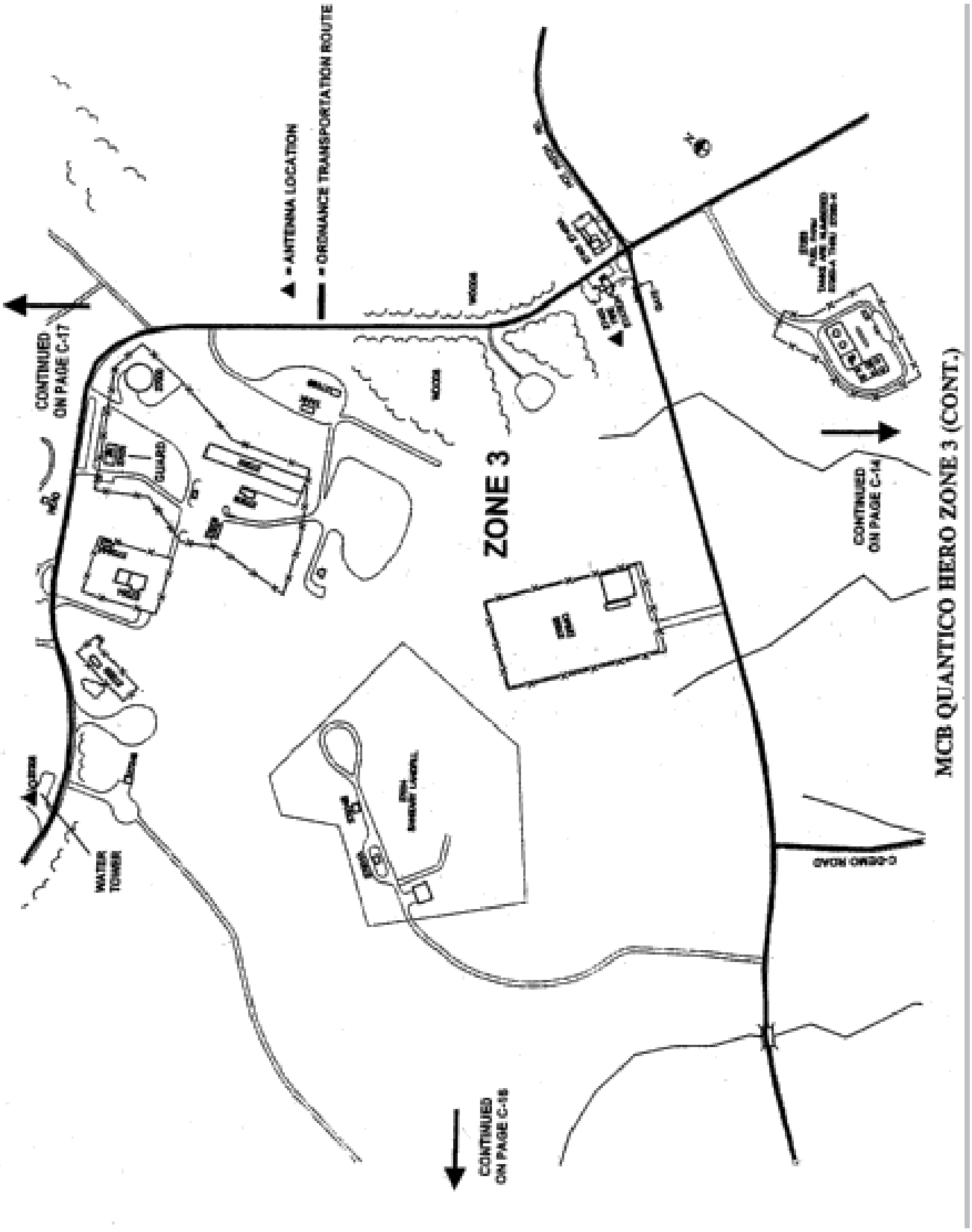
ENCLOSURE (3)


MCB QUANTICO HERO ZONE 3
ZONE 3
CONTINUED ON PAGE C-16
CONTINUED ON PAGE C-11
WOODS
ORDNANCE TRANSPORTATION ROUTE
TRANSMITTER / ANTENNA LOCATION
MAGAZINE COMPOUND
ORDNANCE TRANSPORTATION ROUTE TO RANGE SITE
TO U.S. RTE. 1 & INTERSTATE 95
RUSSELL RD.
MCB-1
N

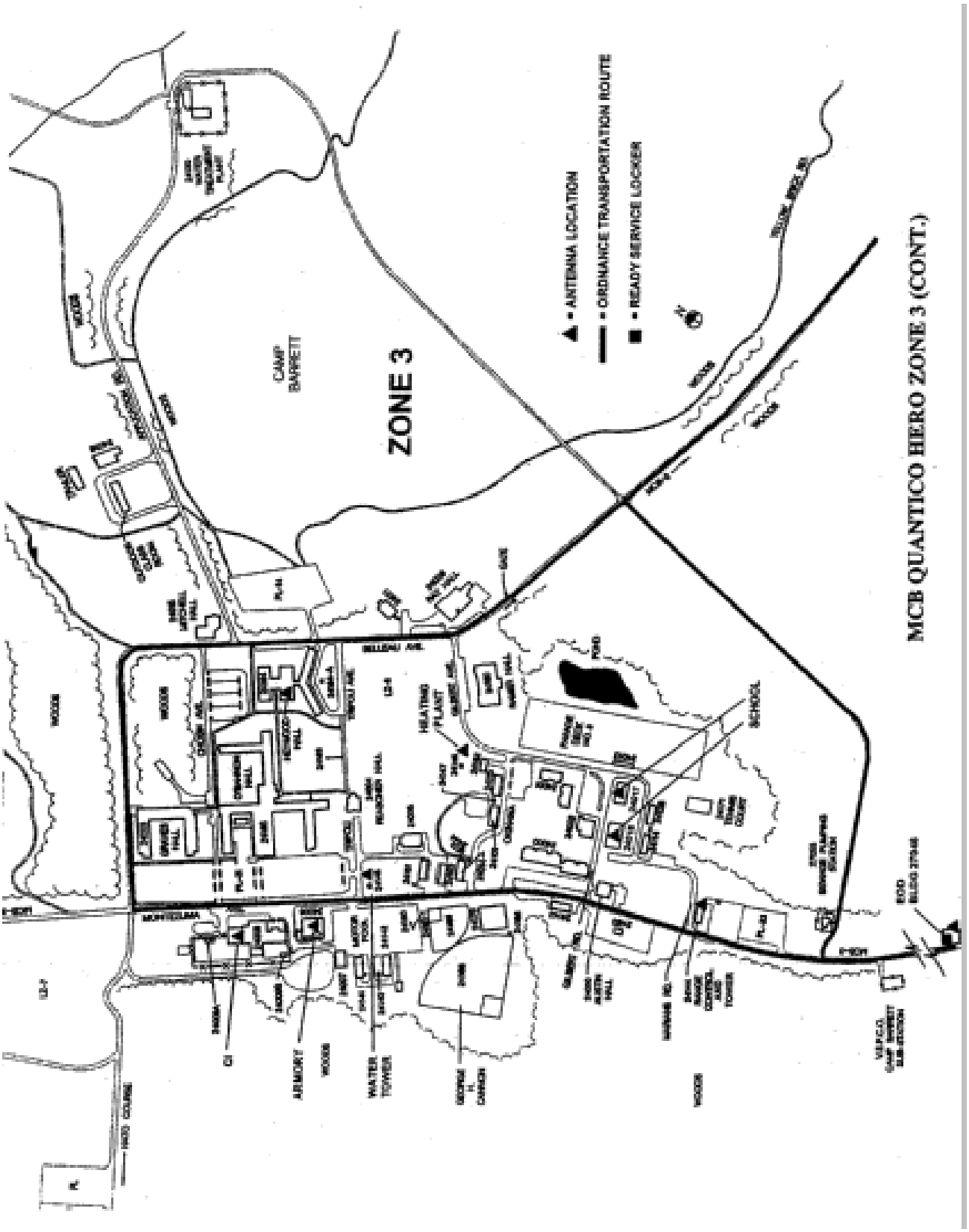
ENCLOSURE (3)


MCB QUANTICO HERO ZONE 3
ZONE 3
ORDNANCE TRANSPORTATION ROUTE
TRANSMITTER/ANTENNA LOCATION
MAGAZINE COMPOUND
CONTINUED ON PAGE C-11
CONTINUED ON PAGE C-15
TO U.S. RTE. 1 & INTERSTATE 95
ORDNANCE TRANSPORTATION ROUTE TO RANGE SITE
WOODS
N

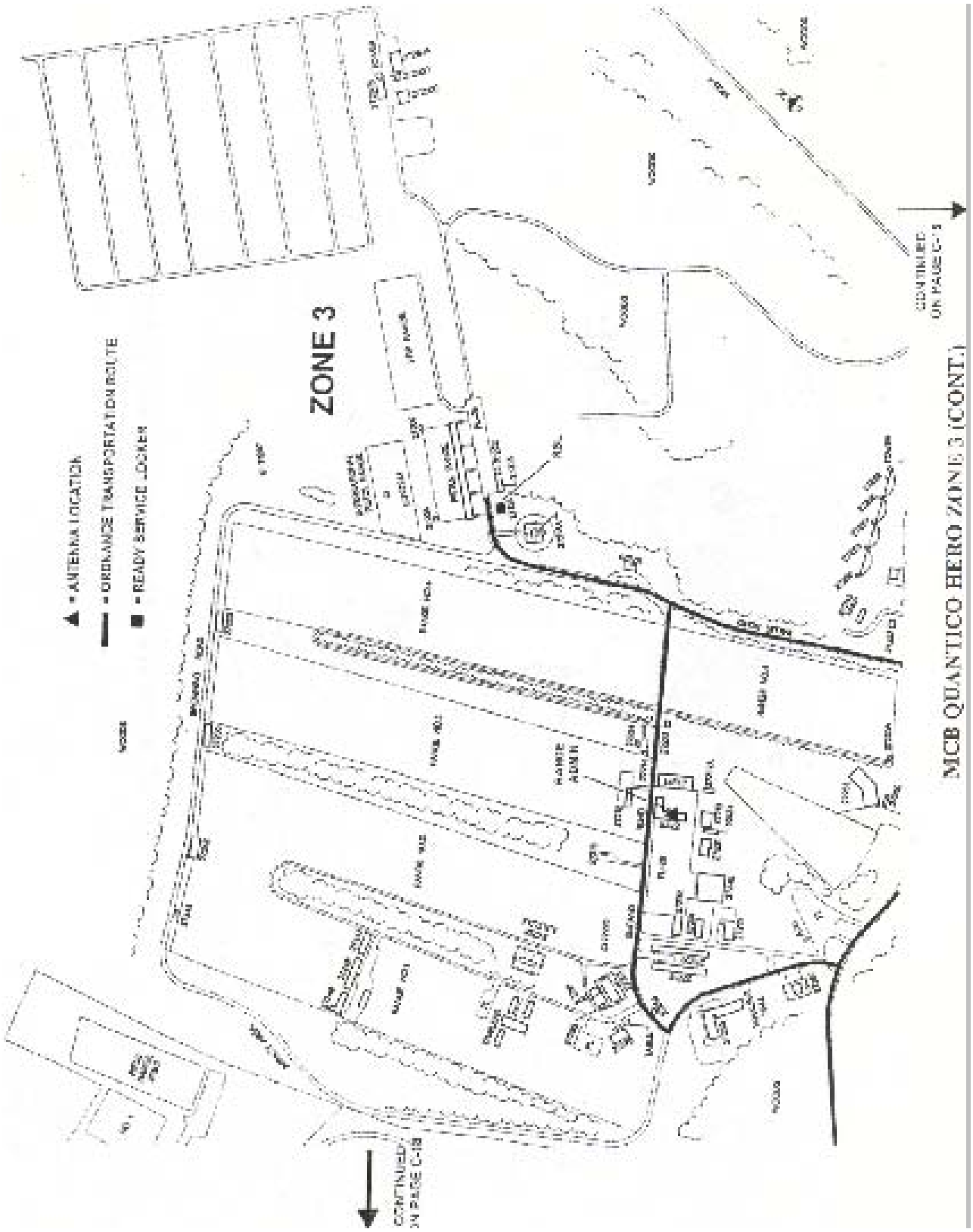
ENCLOSURE (3)


▲ = ANTENNA LOCATION
= ORDNANCE TRANSPORTATION ROUTE
ZONE 3
CONTINUED ON PAGE C-17
CONTINUED ON PAGE C-14
CONTINUED ON PAGE C-16
WATER TOWER
GUARD
MCB QUANTICO HERO ZONE 3 (CONT.)

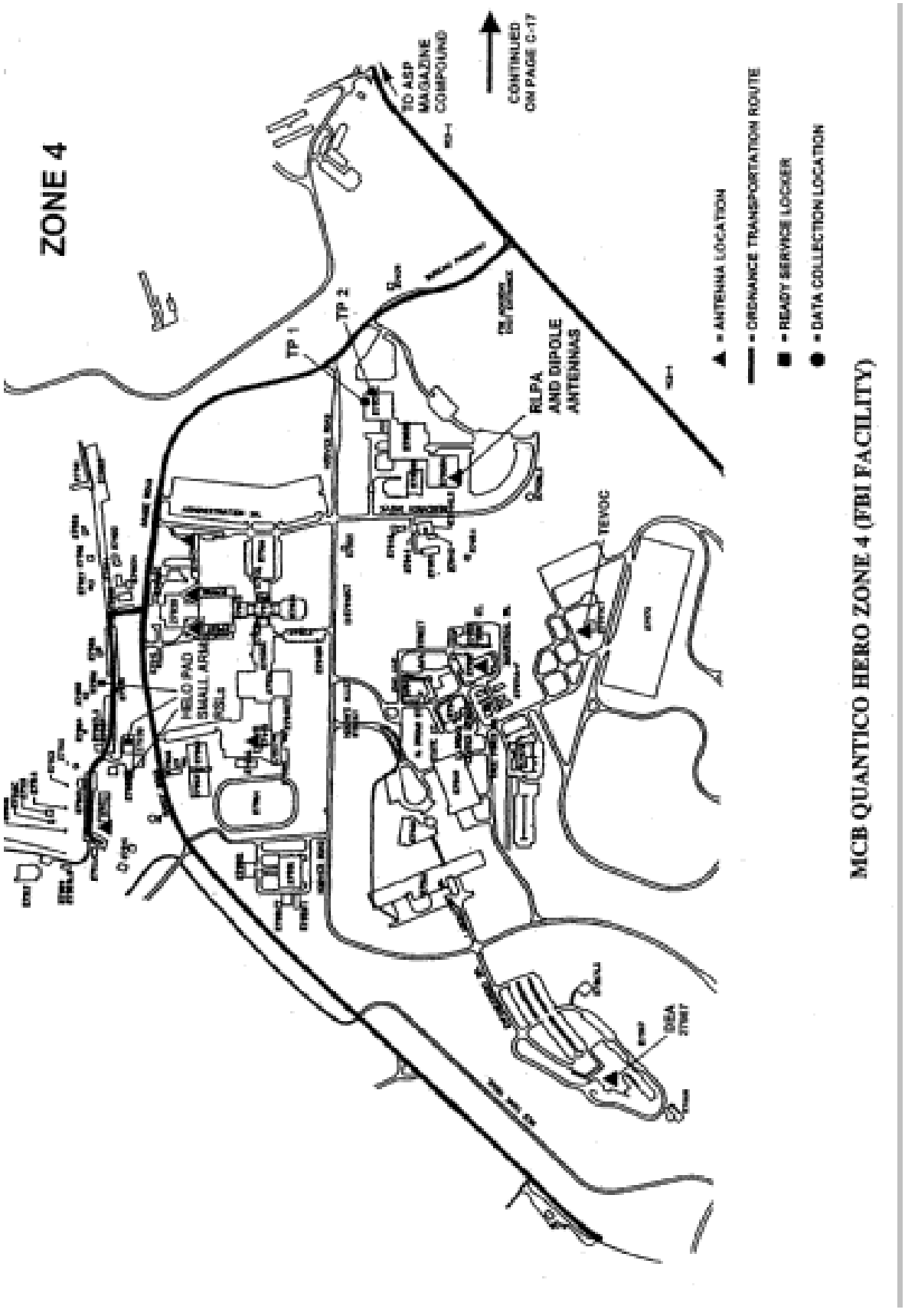
ENCLOSURE (3)


MCB QUANTICO HERO ZONE 3 (CONT.)
ZONE 3
CAMP BARRETT
▲ = ANTENNA LOCATION
= ORDNANCE TRANSPORTATION ROUTE
■ = READY SERVICE LOCKER
WOODS
ARMORY
WATER TOWER
SCHOOL

ENCLOSURE (3)

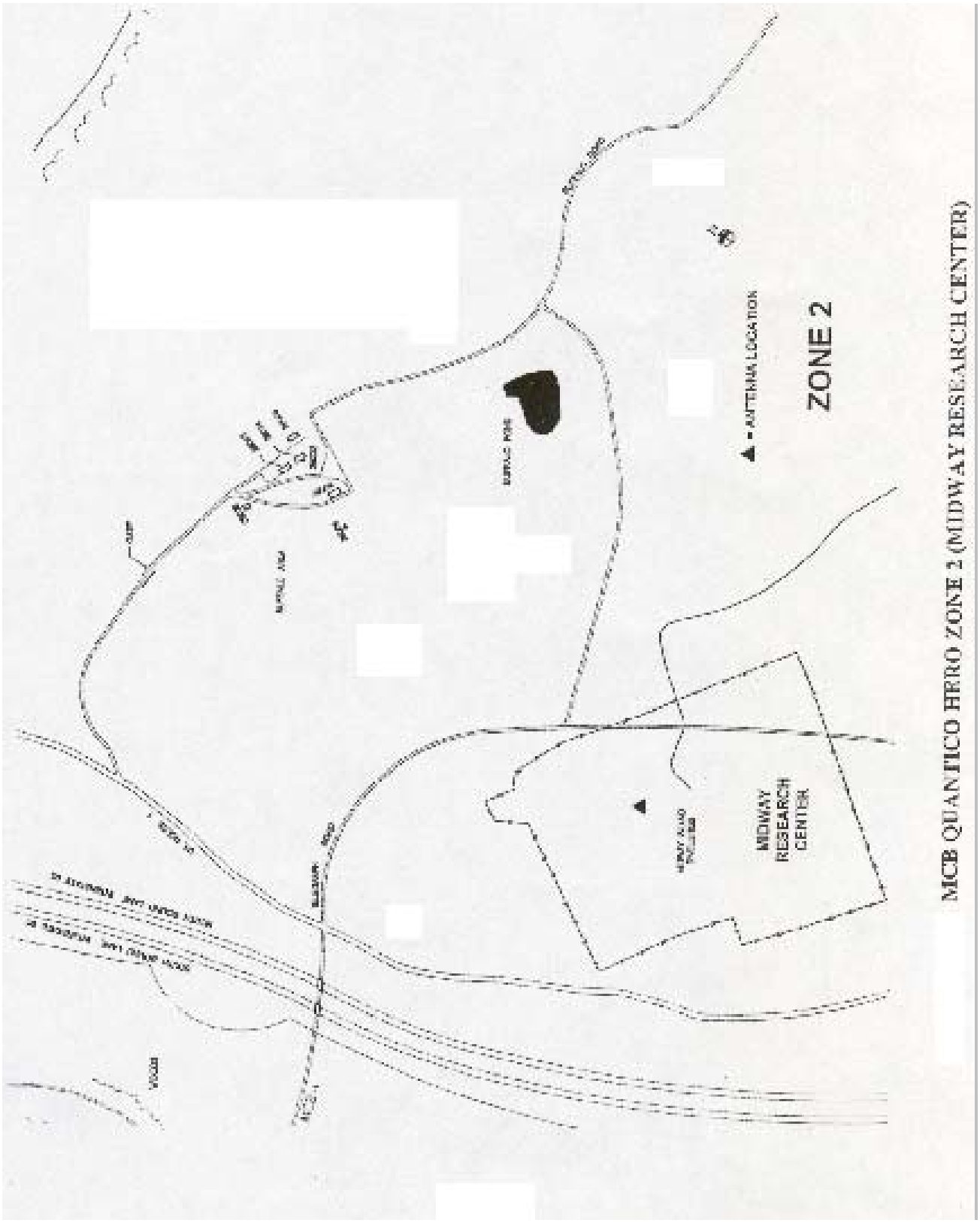

MCB QUANTICO HERO ZONE 3 (CONT.)
ZONE 3
= ANTENNA LOCATION
= ORDNANCE TRANSPORTATION ROUTE
= READY SERVICE LOCKER
CONTINUED ON PAGE C-3
CONTINUED ON PAGE C-2B

ENCLOSURE (3)

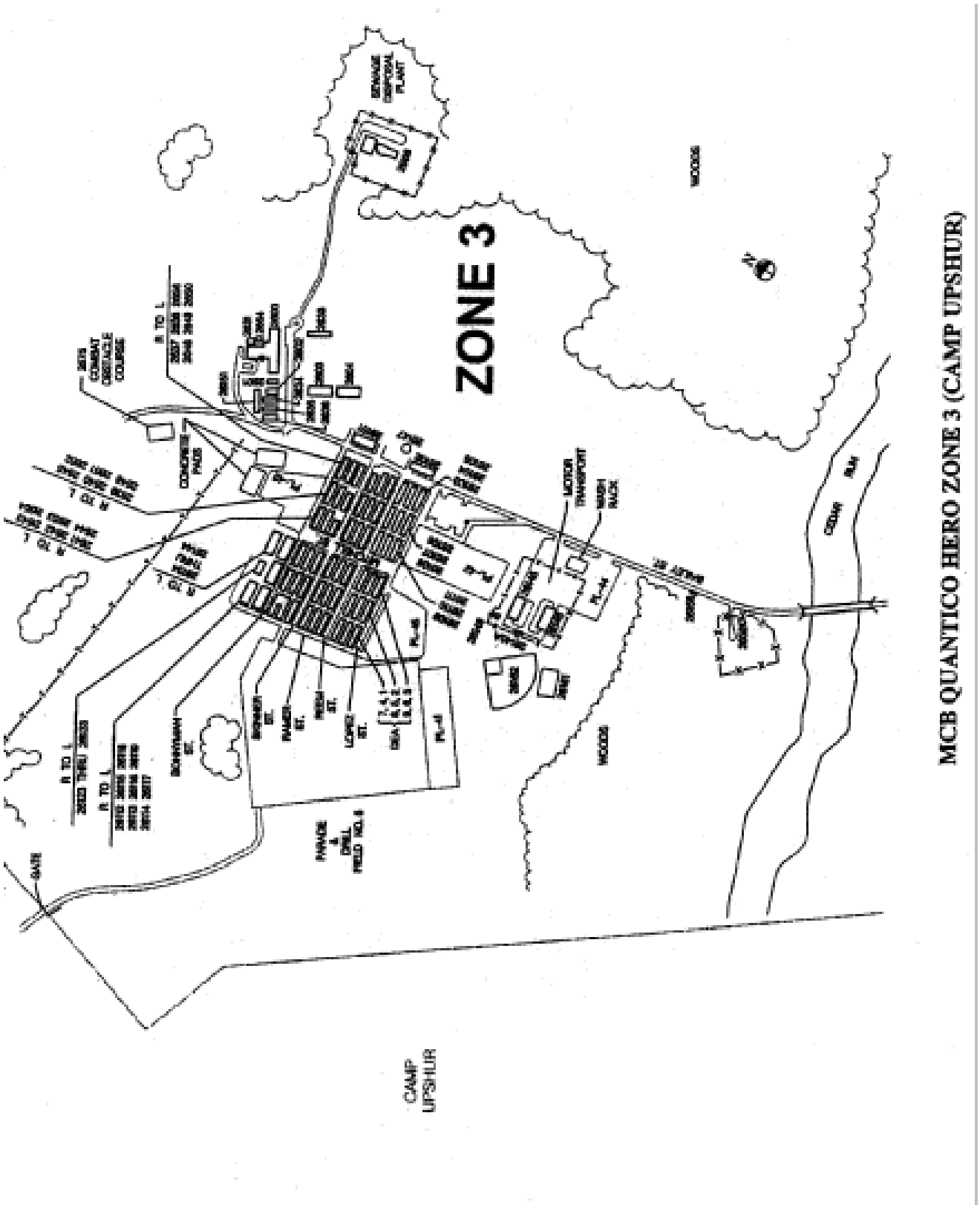


MCB QUANTICO HERO ZONE 4 (FBI FACILITY)

ENCLOSURE (3)


ZONE 2
ANTENNA LOCATION
MIDWAY RESEARCH CENTER
MCB QUANTICO HERO ZONE 2 (MIDWAY RESEARCH CENTER)

ENCLOSURE (3)


ZONE 3
WOODS
WOODS
CAMP UPSHUR
MCB QUANTICO HERO ZONE 3 (CAMP UPSHUR)

ENCLOSURE (3)

APPLICATIONS FOR SETTINGS HERO CONDITIONS

NALC / Ordnance General Applications		Activity	Situation/Location	HERO Condition
All	HERO SAFE ORDNANCE	Presence, handling, and loading	All	0
All	HERO UNSAFE ORDNANCE	Presence, handling, and loading	Zone 1	1
			Zone 2	1
			Zone 3	1
			Zone 4	1
All	HERO SUSCEPTIBLE ORDNANCE	Presence, handling, and loading	Zone 1	2
			Zone 2	2
			Zone 3	2
			Zone 4	2

ENCLOSURE (4)

HERO EMISSION CONDITION (EMCON) PROCEDURES

HERO CONDITION 0

1. HERO EMCON is not required; all transmitters (as listed in appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF) may be operated.

2. Observe the general HERO requirements for shore stations in chapter 5 of NAVFAC 11010/31 Parts I and II.

HERO CONDITION 1

1. Maintain the HERO UNSAFE ORDNANCE separation distances for mobile and portable transmitters (as listed in appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF or chapter 2 of NAVFAC 11010/31 Parts I and II.)

2. Silence all aircraft transmitters except very high frequency/ ultrahigh frequency (VHF/UHF) communications transmitters less than 20 watts or transmitters operating into dummy loads.

3. For an ordnance accident, emergency response units such as the Fire Department, Explosive Ordnance Disposal, and Security Battalion responding to the scene with radio equipment must maintain a minimum separation distance of 150 feet from the accident site if using three VHF (132-174 MHz) mobile radios; similarly, a minimum separation distance of 50 feet must be maintained when using three VHF portable radios. Silence all other radios at the scene; for single radio use, apply the separation distances cited in appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF or chapter 2 of NAVFAC 11010/31 Parts I and II for that specific mobile or portable unit.

HERO CONDITION 2

1. Maintain the HERO SUSCEPTIBLE ORDNANCE separation distances for mobile and portable transmitters (as listed in appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF or chapter 2 of NAVFAC 11010/31 Parts I and II.)

2. Silence all aircraft transmitters except VHF/UHF communications transmitters less than 40 watts or transmitters operating into dummy loads.

SAFE SEPARATION DISTANCES FOR AIRCRAFT HIGH FREQUENCY (HF), VERY HIGH FREQUENCY (VHF), ULTRAHIGH FREQUENCY (UHF), AND RADAR TRANSMITTERS, PORTABLE AND MOBILE TRANSMITTERS

Building	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Max. Avg. Power (watts)	Transmitter Type	Separation Distances HERO UNSAFE ORDNANCE (feet/meters)	Separation Distances HERO SUSCEPTIBLE ORDNANCE (feet/meters)
17 BOQ	TAD 1002B	Folded coaxial	2.1	136 - 174	40	MOT L43JJ	71 / 22	15 / 5
17 BOQ	DB-404	Dual dipole	5.9	403 - 420	40	GE MLSU1440	37 / 11	12 / 4
69 Fire Station	MSF 5000	35-foot whip	2.1	149 - 150	110	MOT D43CU	108 / 33	24 / 7
505 Fire Admin	15-foot whip	Whip	2.1	136 - 174	40	MOT D43CU	71 / 22	15 / 5
2004 Public Works	RRA-5304	Dipole	7.0	36 - 37	60	MOT MITREK	578 / 176	73 / 22
2043 PMO/GEMU	MSF 5000	35-foot whip	2.1	149 - 150	110	MOT D43CU	108 / 33	24 / 7
2043 PMO/GEMU	DB-222E	Colinear-Offset	8.1	136 - 174	40	MOT L43JJ	142 / 43	30 / 9
2043 PMO/GEMU	15-foot whip	Ground plane	2.1	136 - 174	30	MOT D43EX	62 / 19	13 / 4
2043 PMO/GEMU	TDD-6072A	Colinear	6.9	136 - 174	25	MOT L43TS	98 / 30	21 / 6
2043 PMO/GEMU	TDD-6072A	Colinear	6.9	132 - 150	128	GE DM76RAS55	228 / 69	48 / 15
2045 Fire Station	MSF 5000	35-foot whip	2.1	149 - 150	110	MOT D43CU	108 / 33	24 / 7
2085 Edson Hall	JRC-11.209	Whip	2.1	156 - 162	25	JHS-32A	49 / 15	11 / 3
2103 Hangar	Quarter-wave	Ground plane	2.1	162 - 174	5	MOTT 1383	21 / 6	10 / 3
2104 Hangar	N/A	Blade	3.0	30 - 32	15	AN/ARC-186	492 / 150	26 / 8
			3.0	32 - 88	15		205 / 63	25 / 8
			3.0	116 - 152	10		46 / 14	10 / 3
2105 A/C Tower	TACO 2296-1	TACO	0.0	225 - 400	10	CM-200UT	17 / 5	10 / 3
2105 A/C Tower	TACO 2295-3	TACO	0.0	225 - 400	10	CM-200UT	17 / 5	10 / 3
2105 A/C Tower	TACO 4072	TACO	0.0	225 - 400	10	CM-200UT	17 / 5	10 / 3
2105 A/C Tower	TACO 4073	TACO	0.0	225 - 400	10	CM-200UT	17 / 5	10 / 3
2105 A/C Tower	TACO 4074	TACO	0.0	225 - 400	10	CM-200UT	17 / 5	10 / 3
2105 A/C Tower	AS-1729/VRC	Dipole	2.1	30 - 76	65	AN/VRC-46 (High)	924 / 282	48 / 15
			2.1	30 - 76	10	(Low)	362 / 111	19 / 6
2112 Larson Gym	AS-2809/SRC	Dipole	2.1	116 - 152	50	AN/GRT-21 (VHF)	93 / 28	19 / 6
			2.1	225 - 400	50	(UHF)	48 / 15	13 / 4
2112 Larson Gym	AS-1018/SRC	Colinear dipole	5.0	225 - 400	10	AN/GRT-22	30 / 9	10 / 3
2112 Larson Gym	N/A	Stacked dipole	5.0	225 - 400	10	AN/GRT-22	30 / 9	10 / 3
2112 Larson Gym	Dipole	Dipole	2.1	225 - 400	10	AN/GRT-22	21 / 7	10 / 3
2112 Larson Gym	Dipole	Dipole	2.1	162 - 174	5	MOT PX300S	21 / 6	10 / 3
2117 FBI Antenna	Center-fed	Inverted-V	2.1	2 - 3	1000	MIL-SPEC 1030C	3624 / 1105	362 / 111
2117 FBI Antenna	Dipole	Dipole	2.1	6 - 7	1000	DRK TR7A	3624 / 1105	362 / 111
2117 FBI Antenna	Vertical	Sleeve	2.1	7 - 12	1000	w/linear DRK L7	3624 / 1105	362 / 111
3250 Lejeune Hall	TAD -6082A	Cardioid	8.4	136 - 174	30	MOT D43CU	127 / 39	27 / 8
3259 Medical	N/A	Colinear	5.1	136 - 174	110	MOT MSR 2000	166 / 51	36 / 11
3259 Medical	Mobile	Quarter-wave	3.1	136 - 174	35	MOT SPECTRA	75 / 23	16 / 5
5103 Aero Club	AS-3972/A	Colinear array	2.1	30 - 400	5	AN/ARC-210(V)	256 / 78	13 / 4
5122-C Radar Pad	FA-9344	Parbolic	33.5	2755 - 2825	44	AN/FPN-63	211 / 64	149 / 45
5156 Fire Station	DB-222E	Colinear-offset	8.1	136 - 174	40	MOT L43xx	142 / 43	30 / 9
24006 Armory	N/A	Colinear	2.1	410 - 430	40	TK880	24 / 7	10 / 3
24009 CI	AS-390/SRC	Coaxial stub	2.1	29 - 89	30	CM200 UHF	628 / 191	33 / 10

N/A=Not assigned.

ENCLOSURE (6)

Building	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Max. Avg. Power (watts)	Transmitter Type	Separation Distances HERO UNSAFE ORDNANCE (feet/meters)	Separation Distances HERO SUSCEPTIBLE ORDNANCE (feet/meters)
24009 CI	15 Foot Whip	Ground plane	2.1	136 - 174	30	MOT D43CU	62 / 19	13 / 4
24162 Heating Plant	TDD-6072A	Colinear	6.9	136 - 174	110	MOT L73JJ	205 / 62	44 / 13
24164 Heywood Hall	15-foot whip	Ground plane	2.1	136 - 174	30	MOT D43CU	62 / 19	13 / 4
27001 Guard	N/A	N/A	3.1	136 - 174	110	GE Ranger	132 / 40	28 / 9
			2.1	32 - 50	60		370 / 113	44 / 14
27046 EOD	N/A	Folded coaxial	2.1	29 - 38	110	GE N8A102	1202 / 366	64 / 19
			2.1	32 - 50	100		478 / 146	57 / 17
27046/47/48 Fire Alarm	N/A	Dipole	3.5	460 - 470	4	RC-2W	10 / 3	10 / 3
27067 ASP	N/A	Dipole	2.1	136 - 174	30	MOT DESKTRAC	62 / 19	13 / 4
27067 ASP	TRA4503P	Phantom	3.5	460 - 470	4	RC-2W	10 / 3	10 / 3
27067 ASP	N/A	Dipole	3.5	460 - 470	4	RC-2W	10 / 3	10 / 3
27124Ramp Fire Alarm	N/A	Dipole	3.5	460 - 470	4	RC-2W	10 / 3	10 / 3
27211 Range	DB-201	Ground plane	2.1	138 - 141	6	GE ML5L160	27 / 8	10 / 3
27400 Fire Station	DB-222E	Colinear-offset	8.1	136 - 174	40	MOT L43xx	142 / 43	30 / 9
Radar Hill	FA-9344	Parabolic	33.5	2755 - 2825	875	AN/GPN-27	940 / 287	666 / 203
27911 FBI(17)	Colinear	Colinear	12.1	901 - 945	500	MOT C73RX	185 / 56	89 / 27
27937 FBI(7)	Colinear	Colinear	12.1	901 - 945	500	MOT C73RX	185 / 56	89 / 27
27937 FBI(7)	Colinear	Colinear	12.1	167 - 171	500	MOT C73RX	647 / 197	150 / 46
27938 FBI(8)	Colinear	Colinear	12.1	901 - 945	500	MOT C73RX	185 / 56	89 / 27
27938 FBI(8)	Colinear	Colinear	12.1	413 - 417	500	MOT C73RX	262 / 80	87 / 27
27940 FBI(10)	Colinear	Colinear	12.1	901 - 945	500	MOT C73RX	185 / 56	89 / 27
27947 FBI(16)	Colinear	Colinear	12.1	901 - 945	500	MOT B844JZ	185 / 56	89 / 27
27947 FBI(16)	Colinear	Colinear	12.1	901 - 945	500	MOT B93RX	185 / 56	89 / 27
27947 FBI(16)	Vertical dipole	Dipole	9.0	931 - 932	45	SKYTEL QT-5997	38 / 11	18 / 6
27950 FBI(15)	Colinear	Colinear	12.1	901 - 945	500	MOT B93RX	185 / 56	89 / 27
27958 FBI(19)	Dipole	Dipole	2.1	3 - 30	1000	HAR RF-350 w/amp	3624 / 1105	362 / 111
27958 FBI(19)	SATCOM	Parabolic	9.0	225 - 400	18	LST-5C/AM-7175/URC	64 / 19	17 / 5
			9.0	225 - 400	5	LOS (High)	34 / 10	10 / 3
			9.0	225 - 400	2	LOS (Low)	21 / 6	10 / 3
27958 FBI(19)	Horizontal dipole	Dipole	4.1	3 - 30	1000	HAR RF-350 w/amp	4563 / 1391	456 / 139
27958 FBI(19)	Inverted L	Longwire	3.1	3 - 30	1000	HAR RF-350 w/amp	4067 / 1240	407 / 124
27958 FBI(19)	RLPA	N/A	7.0	3 - 30	1000	HAR RF-350 w/amp	6372 / 1943	637 / 194
27967 DEA	N/A	Slotted waveguide	31.0	824 - 849	3	Cellular Telephone	138 / 42	64 / 20
27973 TEVOC	Colinear	Colinear	12.1	413 - 417	500	MOT C73RX	262 / 80	87 / 27
				Portable				
N/A	STUB	Stub	0.9	403 - 512	5	MOT H44SX	10 / 3	10 / 3
N/A	STUB	Stub	0.9	136 - 174	5	MOT H43YX (SABER)	22 / 7	10 / 3
N/A	SATCOM	Parabolic	9.0	225 - 400	18	LST-5C	64 / 19	17 / 5
			9.0	225 - 400	5	LOS (High)	34 / 10	10 / 3
			9.0	225 - 400	2	LOS (Low)	21 / 6	10 / 3

N/A=Not assigned.

ENCLOSURE (6)

GENERAL HERO SAFE SEPARATION DISTANCE REQUIREMENTS

1. The following requirements apply to all ordnance operations at Marine Corps Base/Marine Corps Air Facility (MCB/MCAF) Quantico involving the presence, handling, and loading of ordnance unless otherwise specified in NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010.

a. Use Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF for specific HERO guidance concerning HERO UNSAFE and HERO SUSCEPTIBLE ORDNANCE. Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF provides recommendations for mitigating HERO. Enclosed is a listing of emitter systems (and safe separation distances), facility drawings (indicating emitter system and ordnance locations, as well as, HERO zones to facilitate the setting of HERO EMISSION CONDITION (EMCON), current HERO status of ordnance stored in the magazine area, results of the 2001 HERO survey, and a complete HERO EMCON bill for MCB/MCAF Quantico.

b. Ordnance evolutions must be planned so that there is a minimum of exposure of ordnance to the radio-frequency (RF) environment.

c. Avoid touching any exposed firing contact, wiring, or other exposed circuitry with any part of the body or with any metallic object.

d. Ensure all open electrical connectors on the ordnance are covered with non-shorting caps.

e. Ordnance will not be assembled/disassembled in an RF environment.

f. Igniters, primers, detonators, and other items containing electrically initiated devices will not be stowed in the same magazine as electronic or electric fuses.

g. If the safe separation distance provided in appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF or chapter 2 of NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010 must be violated for any ordnance operation, the transmitting antenna must be silenced.

2. Transporting ordnance aboard MCB/MCAF Quantico requires the same safety requirements and RF restrictions specified for that particular item during normal handling operations. When ordnance systems are disassembled or when they have exposed electrically initiated devices, firing circuits, or wiring during the transport operation, the HERO UNSAFE ORDNANCE restrictions of NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010 apply.

3. Ensure that ordnance accident response units (Fire Department, Explosive Ordnance Disposal, and Security Battalion) maintain a minimum separation distance of 150 feet from the accident site when three VHF/UHF mobile radios are in use, and 50 feet when three portable radios are in use. For single radio use, see the applicable separation distances listed in appendix A of Hazards of Electromagnetic Radiation to Ordnance Assessment of MCB/MCAF.