

Safety

EXPLOSIVES SAFETY STANDARDS

AFMAN 91-201, 7 March 2000 and Change 1, 18 Oct 01 is supplemented as follows. This supplement applies to commanders, functional managers, supervisors, and individual ANG personnel. Send comments and suggested improvements to this supplement on AF Form 847, **Recommendation for Change of Publication**, through channels, to ANG/DOSW, 3500 Fetchet Avenue, Mail Stop 18, Andrews AFB, MD 20762-5157.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

1.1. This supplement provides guidance for explosives operations and locations unique to the Air National Guard. It is impossible to adequately cover every situation; therefore, the absence of safeguards in this supplement or in referenced publications does not indicate that other safeguards do not exist. Commanders must provide adequate protection for personnel and resources, on and off base, from hazards of explosive, flammable, or toxic materials.

1.2.4. (Replace) (ANG) Units will ensure that existing AF/DOD approved site plans meet current explosive siting requirements. If existing explosive clear zones do not change, document the review and maintain with site plans. If only net explosive weight (NEW) changes send a letter to ANG/DOSW, identifying as a minimum: *Reference existing approved site plan number; Existing facility and existing HC/D and NEW; Proposed NEW change and HC/D.* If an explosive clear zone changes, develop a new site plan IAW AFMAN 91-201 Chapter 4. Site plans must include facility design information, Lightning protection System (LPS), and other safety features for complete review and approval.

1.3.1.3. ANG units are authorized to store non-DOD owned munitions from federal, state, local agencies, and foreign nations when the storage does not violate Public Law 10 U.S.C. 2692 with 1998 Authorization Act changes. SE in conjunction with DO, LG, and CE staffs will ensure that specific technical guidance and procedures are delineated in applicable instructions to ensure that storage, handling, and disposal of these munitions is done safely and meets DoD and AF requirements. The listing of munitions will include as a minimum: Nomenclature, Quantity, Hazard/Class/Division & compatibility group, NEW, and UN shipping number/name. This listing will be provided to Safety and Munitions Storage.

1.4.2. ANG units tasked to deploy combat forces will coordinate with the DoD host to designate facilities and locations for storage, build-up, transportation, inspection, demolition, destruction of unserviceable/hazardous explosives, and munitions loading operations. Deployment explosives safety site planning is to ensure proper planning and coordination between deploying units and host or supported unit. Lead/Host ANG units will ensure that a person who is fully qualified and trained IAW AFI 91-202, Chapter 10, is included in the deployment package.

OPR: ANG/DOSW (Ms E. Sheppe)

Certified by: NGB/CF (Col T. Scherling)

Supersedes AFMAN 91-201/ANGSUP1, 6 Nov 98

Pages: 12/Distr: F

1.4.2.4. Include any compensatory actions stipulated in the site plan approval memo.

1.4.3. Weapons safety personnel must be part of the site survey for OPlan or EXPlan tasking. Weapons safety support during the actual bed-down and employment is the responsibility of the lead/host wing.

★2.3. Operating Instructions (OIs) are required for all explosives operations to include munitions holding areas, and licensed locations. The weapons safety office must review operating Instructions annually.

★2.4. All items listed are applicable.

2.5.1. Ensure HC/D 1.2 is further identified as: 1.2.1 NEWQD, 1.2.2 NEWQD and 1.2.3 NEWQD (as applicable).

2.15.2. Qualified EOD personnel will give initial training for all non-EOD trainers. Lesson plans will be coordinated with the safety office. As a minimum, academic training will include:

2.15.2.1. (Added) (ANG) Item description and associated hazards.

2.15.2.2. (Added) (ANG) Safety and handling precautions.

2.15.2.3. (Added) (ANG) Transportation requirements.

2.15.2.4. (Added) (ANG) Technical data warnings, cautions and notes.

2.15.2.5. (Added) (ANG) Pre-use/post-use inspection criteria. Misfire, dud and munitions residue disposition procedures.

2.15.3.9. Light metal containers of any type (e.g., 55 gallon drums, ammo cans), are not authorized for use as barriers when initiating ground burst or hand grenade simulators. Sandbags or bias ply tractor tires not containing steel belts may be used as barriers. Use of sandbags or tires does not reduce initiating distances contained in 2. 15.3.

2.15.4. Sandbag barriers may be used. The use of sandbags does not reduce initiating distances contained in 2. 15.3.

2.15.5. Light metal containers of any type (e.g., 55 gallon drums, ammo cans), are not authorized for use as barriers when initiating ground burst or hand grenade simulators. Sandbags or bias ply tractor tires not containing steel belts may be used as barriers. Use of sandbags or tires does not reduce initiating distances contained in 2. 15.3.

2.15.5.1. (Added) (ANG) Use of sandbags or tire does not reduce initiating distances contained in 2.15.3.

2.15.5.2. (Added) (ANG) Identify munitions malfunctions and duds by visible means to prevent personnel from accidentally disturbing them. EOD is the **only** agency authorized to handle or dispose of dud or damaged munitions. Munitions maintenance personnel will ensure that an area is available to store these dud/damaged munitions IAW AFMAN 91-201, Paragraph 2.31.

2.16. Higher headquarters (HHQ) inspection teams will follow the base Exercise Evaluation Team (EET) established procedures as much as possible. If base procedures are not available, HHQ teams will use their own established procedures. Coordinate procedures with the host safety office to eliminate any potential conflicts.

2.16.2. Security Forces ammunition must not exceed HC/D 1.4 items.

2.16.3. (Added) (ANG) Prior to IG arrival, the unit WSM or GSM will license a storage location for their exercise munitions, if required.

2.18.1. Coordinate all fire department training plans relating to explosives with the safety office. The base fire chief ensures all mutual aid departments are aware of the placards and symbols used by USAF/ANG and how to fight a fire involving explosives. At military installations and Geographically Separated Units (GSUs), which rely on local civilian firefighting support, both military and DOT placards are authorized.

2.19. The MSA Supervisor will maintain as a minimum a record of the last fire drill.

2.21. The Base Fire Chief makes the final determination on fire protection equipment in the absence of regulatory guidance/requirements.

2.25.7.3. Local written instructions will be developed assigning responsibility to notify base fire department on any change to explosives status of an explosives operation or location.

2.26.2. Send requests for joint storage of non-munitions items with explosives to ANG/DOSW.

2.26.4. Refer to 2.16.2. of this supplement.

2.28.4. Contact ANG/DOSW for approval of outdoor storage of explosives.

2.29.3. Storage in an operating building is discouraged but permitted under the following circumstances/conditions:

2.29.3.1. MSA supervisor deems overnight storage in operating locations necessary to meet mission requirements and prevent unnecessary delays caused by repeated warehousing of material.

2.29.3.2. Overnight storage will be limited to a one shift working quantity.

2.29.3.3. Approved explosives limits will not be exceeded.

2.29.3.4. Operations will not be conducted in the same bay/location until the stored explosives are removed.

2.31.2. Unserviceable munitions may be held temporarily (less than 12 hours) in munitions holding areas until they can be moved to the MSA. Segregate and identify the unserviceable munitions. Serviceability tags (e.g., 1500 series) qualify as other highly visible means.

2.32.14. Send requests and risk assessment to ANG/DOSW.

2.35. Prior to IG arrival, the unit WSM or GSM will license a storage location for their exercise munitions, if required.

2.35.2. **NOTE:** HC/D 1.2.1 items will not be licensed.

2.35.4.5. If Electro-explosive Devices (EED) are stored at the licensed location, ensure that handling and grounding requirements are met and included in the OI. Prior to storage an EED survey will be conducted to ascertain the level of risk.

2.35.5. Renewed explosives facility licenses require coordination with the fire department and security forces. Coordinate and document the annual review of the explosives facility license with the originator.

2.35.6. (Added) (ANG) As a minimum, the originator, safety, security forces and the base fire department will maintain a copy of approved licenses.

2.37.5.1. Units will establish jammed gun-clearing procedures, which will be reviewed and approved, by the safety office. Contact EOD for guidance/assistance when a hazardous situation exists (e.g., evidence of explosive residue, pieces of ammunition casings, or damage to gun system from an exploded round, etc.).

2.37.5.6. Licensing is required when procedures are not established to return downloaded ammunition within 24 hours.

2.37.12. Munitions will not be left in the area when aircraft maintenance operations have concluded for the day/evening.

2.53. The supervisor will maintain records.

★**2.54.** Maintain records of lightning protection system inspections IAW AFI 32-1065. The supervisor of the affected facilities will maintain the records.

2.58. Land mobile radio (LMR) equipment, including portable radios, pagers and cellular phones must receive an electromagnetic hazard analysis prior to use around EEDs. Perform procedures in 2.58.5. to determine safe separation distances. Use of LMRs around EEDs is not authorized unless the analysis is accomplished and approved by the installation commander. The installation safety office, the using activity and the Base LMR Manager will maintain a listing of approved devices.

2.64.3. Mixing of compatibility groups is authorized by EOD for proficiency training and disposal operations as long as blasting caps and demo charges are separated to the maximum extent possible.

2.64.4. Only qualified EOD personnel can make the determination as to whether dangerous unserviceable munitions are safe for transportation.

2.68. As a minimum, the following agencies will be provided copies of maps showing on base explosive movement routes:

2.68.1. Base Fire Department.

2.68.2. Security Forces.

2.68.3. Munitions Storage Area.

2.68.4. Maintenance Operations Center (MOC).

2.68.5. Airbase Operability.

2.68.6. Base Operations.

2.68.7. EOD.

2.68.8. Host/tenant Safety Office.

2.71. Does not apply to base shooting teams or honor guard details transporting limited quantities of small arms ammunition (HC/D 1.4S) in support of sanctioned events.

2.71.2.8. (Added) (ANG) The following requirements apply when higher headquarters evaluator teams are using vehicles (to include rentals) to transport explosives in the performance of military duties:

2.71.2.8.1. (Added) (ANG) Use DOT placards.

2.71.2.8.2. (Added) (ANG) Items will be in approved shipping containers or metal containers and packaged to prevent item-to-item contact.

2.71.2.8.3. (Added) (ANG) Do not transport containers in vehicle passenger compartments.

2.71.2.8.4. (Added) (ANG) Do not transport more than a combined total of 10 ground burst simulators or smoke generators at any one time.

2.71.2.8.5. (Added) (ANG) At least one 2A:10BC rated fire extinguisher will be available in the passenger compartment.

2.71.2.8.6. (Added) (ANG) Notify the fire department of make, model, registration and license number of all vehicles transporting simulators and generators.

2.71.2.8.7. (Added) (ANG) Return all remaining explosive items to their licensed location or munitions storage area, when no longer required for use during normal exercise duties.

2.71.2.9. (Added) (ANG) Privately owned vehicles will not be used to transport DoD explosives.

2.81.2.2. Send requests to ANG/LGMF.

2.83. Send requests to ANG/DOSW.

3.2.1.11. Wing mobility/deployment centers.

3.2.1.15. (Added) (ANG) Central Security Control (CSC).

3.2.1.16. (Added) (ANG) Hazardous Material Pharmacy.

3.3. Each multi-bay facility where explosive operations take place will have an OI addressing the specific limitations on concurrent operations at that facility. When mission requirements dictate, no more than two concurrent operations may be performed in a single bay if munitions involved in both operations are HC/D 1.4 (OI required as stated above).

Table 3.3. Note 43. Non-explosives loaded aircraft supporting mobility/contingency operations must be parked at no less than K18 from combat aircraft parking areas. All other non-explosives loaded military aircraft will be parked at K30 for aircraft survivability.

3.13.3.5. (Added) (ANG) Unhardened combat generation facilities (shops, offices, breakrooms, etc) that support both air defense alert and unit aircraft must be separated from alert aircraft by incremental K40/50.

3.13.3.6. (Added) (ANG) Alert crews and essential support personnel may be housed in the same structure as alert aircraft if the aircraft and personnel are separated by substantial dividing walls and blast doors that provide equivalent IL protection.

3.25.4.3. Missiles on trailers may remain in alert hangars for periods not to exceed 12 hours, provided Q-D standards are met. This authority will only be implemented during aircraft changeover or flying exercises.

3.28.3.8. Field Fabricated Disposable Dearmer.

3.34.10.1. (Added) (ANG) Storage of mixed trailer loads. The MCE of each trailer will be totaled (e.g., three trailers, each having an MCE of 72 lbs., total NEW equals 216 lbs). **NOTE:** IM must be maintained between trailers to keep the MCE at 72 lbs.

3.34.10.2. (Added) (ANG) Storage of mixed trailer loads with AURCs. The MCE of each trailer and all AURCs are combined for the total NEW.

Example:

three trailer loads of missiles each with an MCE of 72 lbs	= 216 lbs NEW
five AURCs of AIM-9 missiles	= 158 lbs NEW
five AURCs of AIM-7 missiles [other than WAU-17]	= 520 lbs NEW
five AURCs of AIM-120 missiles	= <u>340 lbs NEW</u>
	1,234 lbs NEW

3.34.11. (Added) (ANG) Calculating the total NEWQD when storing containerized (storage/shipping containers) AIM-7s, AIM-9s, AIM-120s missiles together in the same location is obtained by combining the NEWQD of all items to arrive at the total NEW for the location. For Example:

Five AURCs of AIM-9 missiles	= 160 lbs
Five AURCs of AIM -7 missiles [other than WAU-17]	= 520 lbs
Five AURCs of AIM-120 missiles	= 340 lbs

The total NEWQD is **1,020** lbs of HC/D 1.1.

4.1. Explosives safety site planning is a coordinated effort of Civil Engineering (CE), safety, and user organizations to ensure appropriate approval of facilities and operations affected by AF and DoD Explosive Safety Standards. The WSM/GSM has oversight responsibility for formulating, coordinating, and submitting explosives safety site plans. CE and user agencies will provide necessary information and documents required for explosives safety site plan submissions.

4.1.4. (Added) (ANG) The wing/unit safety office will brief the Facility Utilization Board (FUB) annually on all explosive safety clear zones and their purpose.

4.2.1. The WSM/GSM will participate in the concept development phase, design review meetings and request for proposal submittals. The WSM/GSM will point out unique explosive safety requirements and act as advisor to the project engineer to ensure that the requirements of DDESB are incorporated in the design effort.

4.3. Send three (3) copies of proposed site plan to ANG/DOSW.

4.3.2. ANG tenant units on non-ANG bases will forward an informational copy to ANG/DOSW.

★4.4. Wing/unit safety and communications personnel must review the siting of transmitter antennas for compliance with explosive safety criteria. When the equipment location presents a hazard to electro-explosives devices, request assistance according to Para 2.58.10. of the basic manual.

★4.5. Wing/unit safety and communications personnel must review the siting of transmitter antennas for compliance with explosive safety criteria. When the equipment location presents a hazard to electro-explosives devices, request assistance according to Para 2.58.10. of the basic manual.

★4.6.4. These are items identified in Table 3.15.ANG/DOSW approval is required prior to construction. Submit letter with a map identifying location to ANG/DOSW for approval.

4.8.1. Approval authority is ANG/DOSW. Format will be a 1" = 400' map, AF Form 943 and accompanying transmittal letter.

4.11. To gain approval for occupied facilities not meeting glass standards, submit a complete risk assessment along with the site-planning package.

4.11.2. When submitting a facility design for final review and approval, ensure that the following areas are included: Lightning protection system, concrete dividing walls, grounding systems, fire suppression systems, locations of any windows (glass breakage assessment), etc. Scale drawings are required on all details of the lightning protection system including demonstration of the 100 foot rolling ball theory. (See NFPA 780, and Appendix K).

4.11.3.8.6. The wing/unit SE, BCE, and the using organization commander must coordinate on all expeditious requests.

4.11.4. Additional 8-1/2" X 11" (letter size) map sections, portraying the sited area, may be submitted. Ensure that letter-size maps are to scale, and the scale is annotated on the map.

4.11.4.4. Mark PES and exposed sites (ES) sub-numbers on the map that correspond to the facilities identified in the site plan package when facility numbers are not depicted on the map.

4.11.5.1. Multi-barricaded storage cell drawing numbers ANG-DWG-94-001, 94-002 and 96-001 (Figures 4.2, 4.3, and 4.4, attached) have been approved by the DDESB to store up to 425 lbs NEW per barricaded cell in earth-covered magazines of undefined strength. Munitions authorized to be stored in the multi-barricades have also been identified on the drawings. HC/D 1.4 is also authorized to be stored with HC/D 1.1. Variations to the drawings and munitions items must be previously approved by the DDESB. HC/D 1.2 and 1.3 storage within these cubicles are **prohibited**. AIM-9s stored in multi-barricaded igloo configuration must be stored so that exposure to other munitions will not be greater than 425 lbs.

4.11.5.1.1. (Added) (ANG) Units requesting storage of items not listed must submit a request to ANG/DOSW for approval.

4.11.5.1.2. (Added) (ANG) Other approved ANG Definitive Drawings that are available at ANG/DOSW are:

ANG-DWG-87-112 – Earth Covered Igloo 40 x 80

ANG-DWG 87-096 – Earth Covered M&I (Fresno Concept)

ANG-DWG-89-115 – Earth Covered Igloo (Drive through) 40 x 80 (Fargo Concept)

ANG-DWG-89-116 – Earth Covered M&I (Fargo Concept)

ANG-DWG-94-004 – Earth Covered M&I (Ft Smith Concept)

ANG-DWG- 99-001 – Atlantic City Multi-Barricaded Storage Cells

4.11.7. Air Force Form 943 will be used for all site plans. Include an electronic copy of the cover letter and AF Form 943 in the site plan package. With the exception of aircraft parking locations, a separate AF Form 943 will be used for each ES or PES being sited.

4.16. It is ANG's policy to maintain existing clear zones to the maximum extent possible. Clear zones will remain in effect for future planning purposes to prevent permanent encroachment. If notified of possible encroachments, contact ANG/DOSW for assistance.

6.5.1. Environmental restoration of Formerly Used Defense Sites (FUDS) is the responsibility of the United States Army Corps of Engineers (USACE). Refer all potential FUDS related environmental restoration requirements to ANG/DOSW and CE with all readily available information concerning location, dimensions/acreage, known use of land prior to turnover, and any other information available. ANG/CE will, in turn, evaluate/validate the information and coordinate transfer with USACE FUDS program representatives.

A4.4.1. Provide a PES/ES sub-number for each exposure or explosion source i.e., ES2-1, PES3-1 when facility numbers are not depicted on the map. The numbers 2 and 3 indicate the site plan number, and the 1 indicates the first exposure or explosion source within the inhabited building distance clear zone.

PAUL A. WEAVER, JR., Major General, USAF
Director, Air National Guard

OFFICIAL

DEBRA N. LARRABEE, Colonel, USAF
Chief, Support Services

Attachments

Fig 4.2. (Added) (ANG) ANG-DWG-94-001

Fig 4.3. (Added) (ANG) ANG-DWG-94-002

Fig 4.4. (Added) (ANG) ANG-DWG-96-001

Fig 4.5. (Added) (ANG) ANG-DWG-99-001

Figure 4.3. (Added) (ANG) ANG-DWG-94-002. 40- X 80' Earth Covered Igloo Magazine.

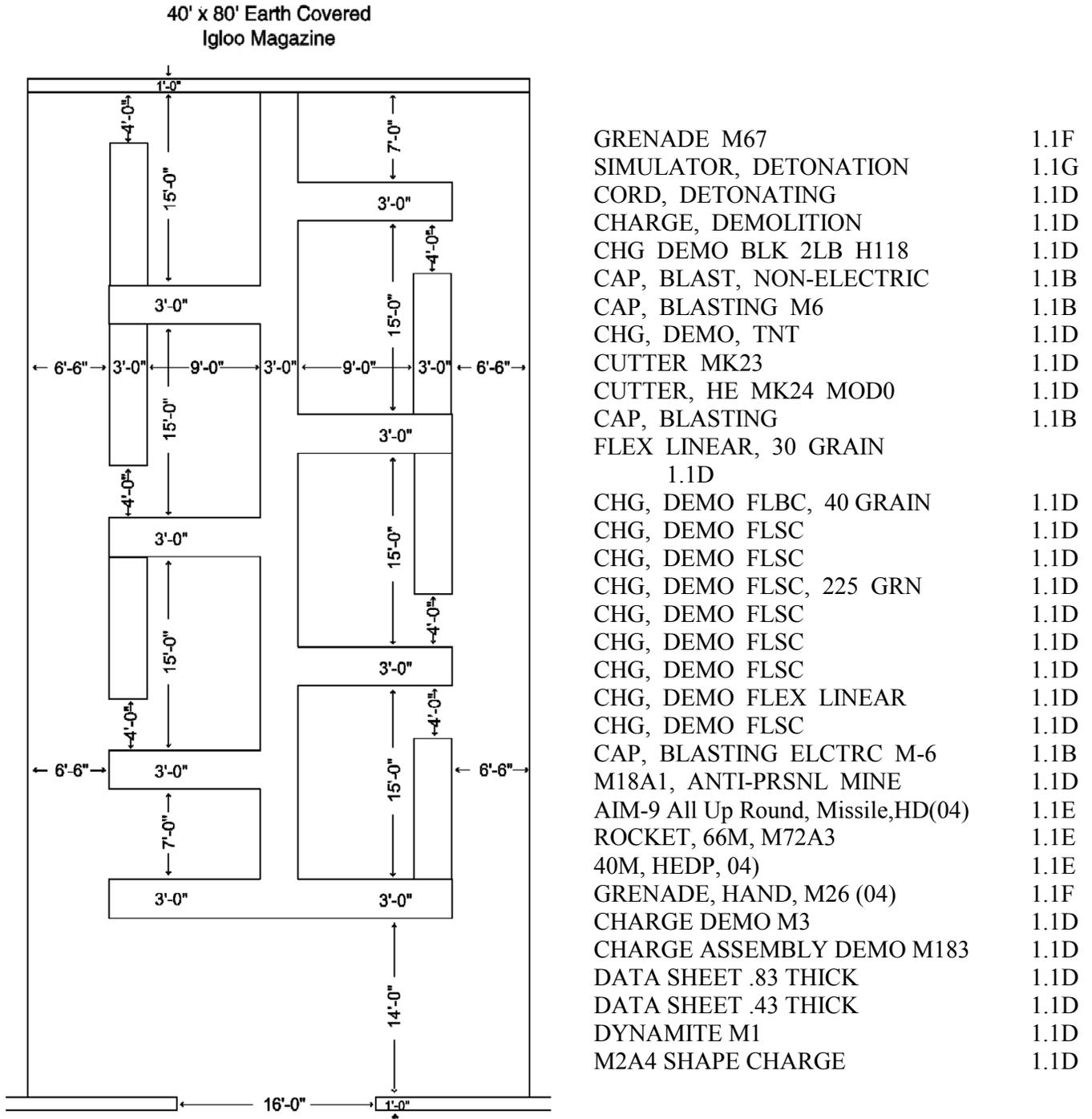
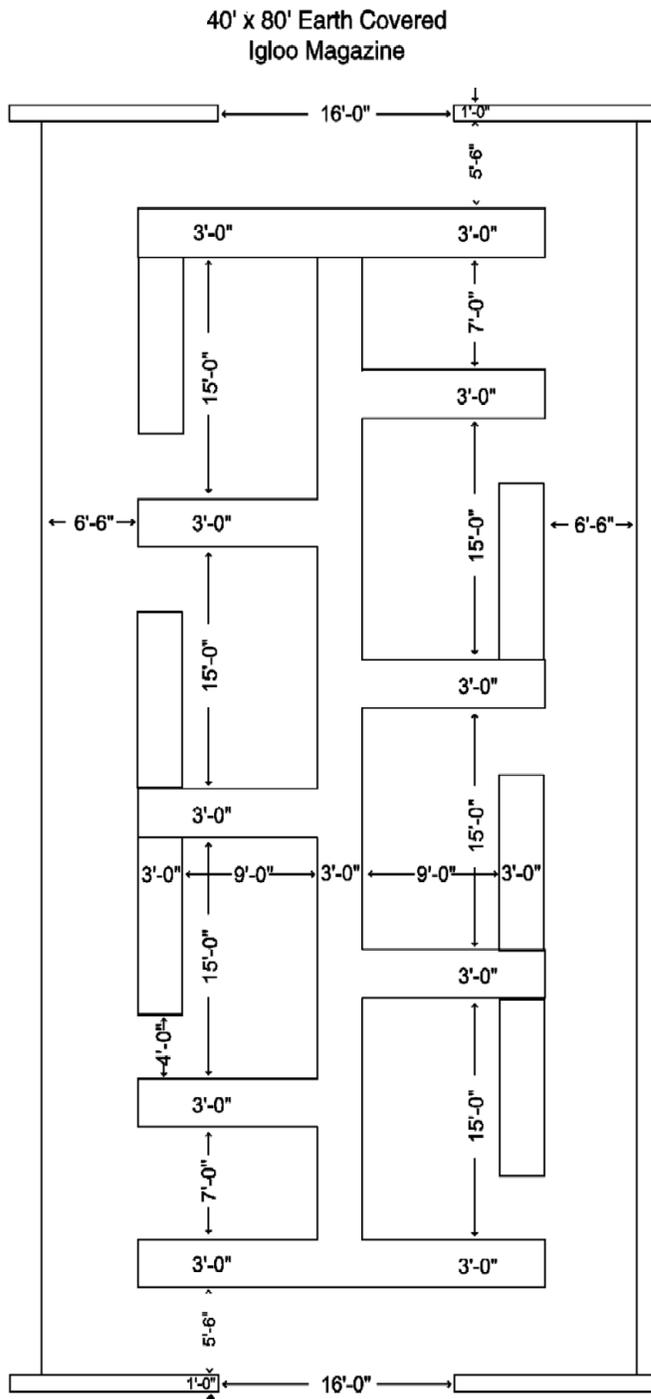


Figure 4.4. (Added) (ANG) ANG-DWG-96-001. 40' x 80' Earth Covered Igloo Magazine



- | | |
|------------------------------------|------|
| GRENADe M67 | 1.1F |
| SIMULATOR, DETONATION | 1.1G |
| CORD, DETONATING | 1.1D |
| CHARGE, DEMOLITION | 1.1D |
| CHG DEMO BLK 2LB H118 | 1.1D |
| CAP, BLAST, NON-ELECTRIC | 1.1B |
| CAP, BLASTING M6 | 1.1B |
| CHG, DEMO, TNT | 1.1D |
| CUTTER MK23 | 1.1D |
| CUTTER, HE MK24 MOD0 | 1.1D |
| CAP, BLASTING | 1.1B |
| FLEX LINEAR, 30 GRAIN | |
| 1.1D | |
| CHG, DEMO FLBC, 40 GRAIN | 1.1D |
| CHG, DEMO FLSC | 1.1D |
| CHG, DEMO FLSC | 1.1D |
| CHG, DEMO FLSC, 225 GRN | 1.1D |
| CHG, DEMO FLSC | 1.1D |
| CHG, DEMO FLSC | 1.1D |
| CHG, DEMO FLSC | 1.1D |
| CHG, DEMO FLEX LINEAR | 1.1D |
| CHG, DEMO FLSC | 1.1D |
| CAP, BLASTING ELCTRC M-6 | 1.1B |
| M18A1, ANTI-PRSNL MINE | 1.1D |
| AIM-9 All Up Round, Missile,HD(04) | 1.1E |
| ROCKET, 66M, M72A3 | 1.1E |
| 40M, HEDP, 04) | 1.1E |
| GRENADe, HAND, M26 (04) | 1.1F |
| CHARGE DEMO M3 | 1.1D |
| CHARGE ASSEMBLY DEMO M183 | 1.1D |
| DATA SHEET .83 THICK | 1.1D |
| DATA SHEET .43 THICK | 1.1D |
| DYNAMITE M1 | 1.1D |
| M2A4 SHAPE CHARGE | 1.1D |

Figure 4.5. (Added) (ANG) ANG-DWG-99-001. 26'x 60' Earth Covered Igloo Magazine.

