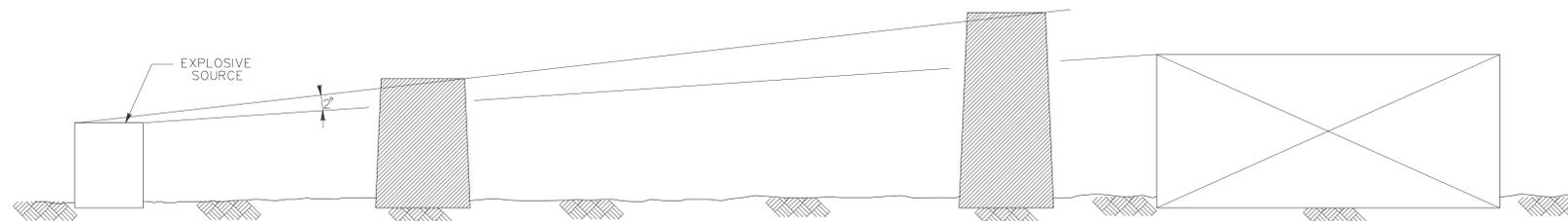
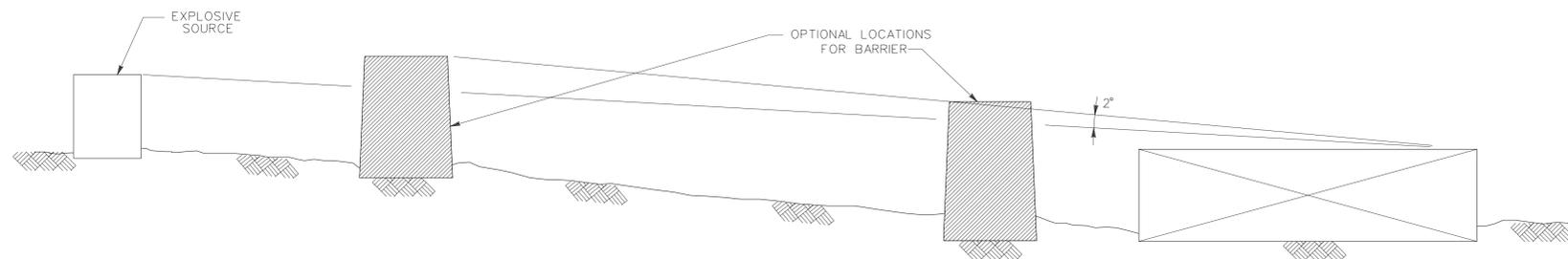


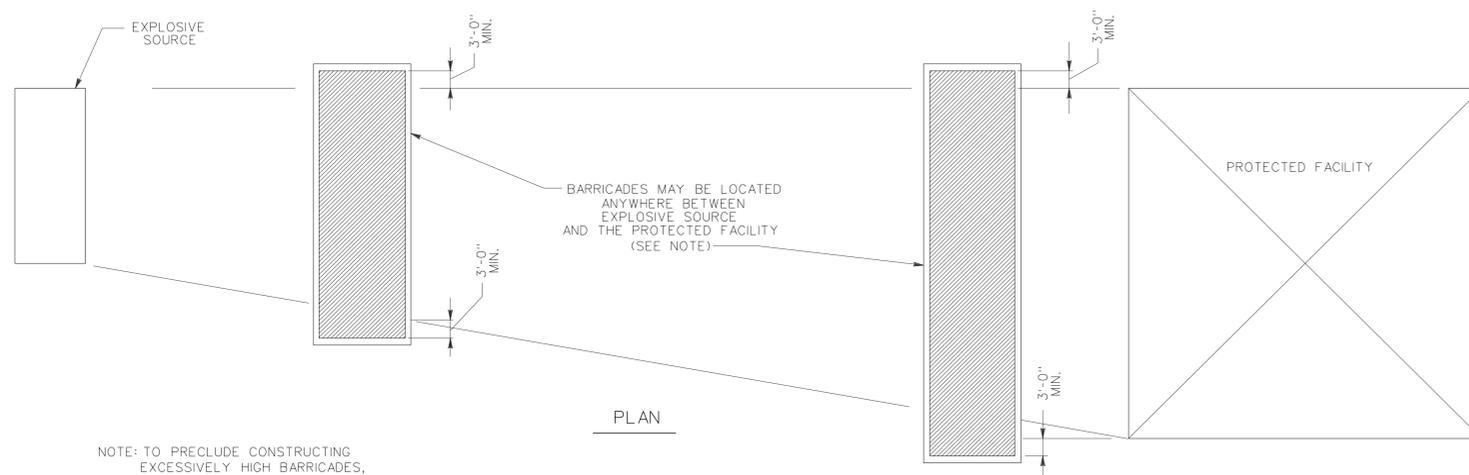
SECTION: PROTECTED FACILITY LEVEL WITH EXPLOSIVE SOURCE



SECTION: PROTECTED FACILITY HIGHER THAN EXPLOSIVE SOURCE



SECTION: PROTECTED FACILITY LOWER THAN EXPLOSIVE SOURCE



PLAN

NOTE: TO PRECLUDE CONSTRUCTING EXCESSIVELY HIGH BARRICADES, THE BARRICADE SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO THE EXPLOSIVE SOURCE/STACK ON WHICH THE REFERENCE POINT IS ESTABLISHED.

BARRICADES MAY BE LOCATED ANYWHERE BETWEEN EXPLOSIVE SOURCE AND THE PROTECTED FACILITY (SEE NOTE)

GENERIC BARRICADE

N.T.S.

REFERENCES	
DOD 6055.9-STD	AMMUNITION AND EXPLOSIVES SAFETY STANDARDS.
AR 385-64	AMMUNITION AND EXPLOSIVES SAFETY STANDARDS
AMC-R 385-100	SAFETY MANUAL (FOR AMC FACILITIES ONLY)
TM 5-855-1	FUNDAMENTAL OF PROTECTIVE DESIGN FOR CONVENTIONAL WEAPONS.
TM 5-1300	STRUCTURES TO RESIST THE EFFECTS OF ACCIDENTAL EXPLOSIONS
TM 9-1300-206	AMMUNITION AND EXPLOSIVES STANDARD

OVERALL OBJECTIVES
<ul style="list-style-type: none"> THE OBJECTIVE OF THIS DEFINITIVE DRAWING IS TO PROVIDE THE DESIGNER A SHOPPING LIST OF BARRICADES CONSIDERED EFFECTIVE IN PROTECTING BUILDINGS, INSTALLATION ACCESS POINTS, EXPLOSIVE-HANDLING FACILITIES, AND HIGH-VALUE EQUIPMENT STORAGE AREAS. THIS DEFINITIVE DRAWING AFFORDS DESIGNERS THE MEANS TO SELECT AND DESIGN COST EFFECTIVE BARRICADES TO SATISFY FUNCTIONAL REQUIREMENTS TO INCLUDE AESTHETIC CONSIDERATIONS.

GENERAL NOTES
<ul style="list-style-type: none"> BARRICADES - BARRICADES ARE PROTECTIVE STRUCTURES WHICH ACT AS A BARRIER BETWEEN AN EXPLOSIVE SOURCE AND A PROTECTED FACILITY. WHEN PROPERLY CONSTRUCTED, THEY ARE EFFECTIVE AGAINST HIGH VELOCITY, LOW ANGLE FRAGMENTS, EVEN THOUGH THE BARRICADE MAY BE DESTROYED IN THE PROCESS. FRAGMENTS MOVE ALONG BALLISTIC TRAJECTORIES RATHER THAN STRAIGHT LINES, THEREFORE REASONABLE MARGINS IN BARRICADE HEIGHT AND LENGTH MUST BE PROVIDED BEYOND THE MINIMUM DIMENSIONS WHICH BLOCK LINE OF SIGHT. (SEE "GENERIC BARRICADE", THIS SHEET.) LIMITATIONS - BARRICADES PROVIDE LIMITED PROTECTION AGAINST BLAST OVERPRESSURES IN THE NEAR RANGE (AT A DISTANCE OF 2 TO 10 TIMES BARRICADE HEIGHT); THEY ARE NOT EFFECTIVE IN REDUCING BLAST OVERPRESSURES IN THE FAR RANGE. FOR THIS REASON, EVEN WHEN BARRICADES ARE USED, FACILITIES MAY STILL REQUIRE PROTECTION FROM OVERPRESSURES. BARRICADE TYPES - MANY TYPES OF BARRICADES ARE DEPICTED ON THIS DRAWING. SELECTION WILL BE INFLUENCED BY FUNCTIONAL REQUIREMENTS, COST, AESTHETICS, SITE CONSTRAINTS, AND MATERIAL AVAILABILITY. MINIMUM REQUIREMENTS: <ul style="list-style-type: none"> THE SLOPE OF ANY FREE-STANDING EARTH FILL (UNREINFORCED) SHALL NOT BE STEEPER THAN 2 UNITS HORIZONTALLY TO 1 UNIT VERTICALLY. EARTH FILL MATERIAL SHALL BE REASONABLY COHESIVE (SOLID OR WET CLAY OR SIMILAR TYPES OF SOILS MAY NOT BE USED AS THEY ARE TOO COHESIVE), FREE FROM DELETERIOUS ORGANIC MATTER, TRASH, DEBRIS, AND STONES HEAVIER THAN TEN POUNDS OR LARGER THAN SIX INCHES IN DIAMETER. MANUFACTURERS - MANY OF THESE BARRICADE SYSTEMS ARE PROPRIETARY, REGISTERED, ETC. THE MANUFACTURERS IDENTIFIED ARE FOR GENERAL INFORMATION ONLY. THEIR INCLUSION DOES NOT IMPLY PRODUCT ENDORSEMENT. UNDOUBTLY THERE ARE MANY OTHERS. THOSE IDENTIFIED ARE TO PROVIDE POTENTIAL USERS WITH SOURCE OF INFORMATION. COSTS - COST DATA IS BASED ON CONSTRUCTION IN WASHINGTON, D.C., WITH MIDPOINT OF CONSTRUCTION JANUARY 1989. <ul style="list-style-type: none"> COST IS BASED ON BARRICADE HEIGHT OF 15 FEET. LIFE CYCLE ANALYSIS SHOULD BE USED TO DETERMINE LEAST COST FOR BARRICADES WITH A SIGNIFICANT DESIGN LIFE. ESTIMATES ARE ROUGH ORDER OF MAGNITUDE (ROM) AND SHOULD BE USED FOR COMPARISON PURPOSES ONLY. THESE ESTIMATES SHOULD NOT BE USED AS GOVERNMENT ESTIMATES. ESTIMATES MAY VARY WIDELY DEPENDING ON AVAILABILITY OF LOCAL MATERIALS AND SITE SPECIFIC CONDITIONS. MAN-HOUR ESTIMATES DO NOT INCLUDE OVERHEAD MAN-HOURS OR MOVE IN/MOVE-OUT TIME.

GENERAL REVISIONS		
Symbol	Description	Date Approved

U.S. ARMY ENGINEER DIVISION, HUNTSVILLE, ALABAMA		22NOV81	
Site adapt A/E :		BARRICADES	
Dwn. by : RDP		Ckd. by : AF	Design file no. : 51722
Reviewed by :	Date : 2 DEC 88	Sheet reference number : 1	Rev. :
Approved by :	Drawing code : DEF 149-30-01	Sheet 1 of 13	