

HEADQUARTERS  
WESTERN CHEMICAL CENTER  
TOOELE, UTAH

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CMLDD-K 600.12

9 September 1949

SUBJECT: Estimated Cost of Planning for CEBAR Site.

TO: Chief, Chemical Corps  
Department of the Army  
Gravelly Point  
Washington 25, D. C.

1. The cost of planning for the proposed CEBAR site near Dugway Proving Ground is estimated at \$10,000. It is requested that funds in this amount be made available to this command.

2. This estimate is concurred in by Mr. H. B. Zackrison, Office of the Chief of Engineers and Mr. I. N. Beall, Office of the Chief, Chemical Corps.

FOR THE COMMANDING OFFICER:



DANIEL KING  
1st Lt., Cml C  
Adjutant

Copy furnished:  
CG, Sixth Army  
ATTN: Army Engr

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Office of the Command Historian, CBDCOM  
Edgewood Arsenal, MD  
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File: Justification for CEBAR Proving Establishment

NAME: CEBAR PROVING ESTABLISHMENT

SPONSOR: Chemical Corps, Department of the Army

UNCLASSIFIED

LOCATION: Tooele County, Utah

TYPE OF PROGRAM: Chemical, Biological and Radiological Warfare

PLANT AREA (ACRES): 250,000 (approximate)

FLOOR SPACE (SQ FT) :	846,597	TOTAL PERSONNEL :	1365
OFFICE :	24,634	MILITARY :	503
LABORATORY :	55,312	CIVILIAN :	862
SHOP :	33,600	Scientific :	92
OTHER :	733,051	Technical :	162
		Other :	608

CONSTRUCTION

ANNUAL RENT

COST :	\$21,500,440	0
LAND :	0	
BUILDINGS :	13,129,440	
EQUIPMENT :	3,581,000	
OTHER :	4,800,000	

101  
98/1/24/

GENERAL INFORMATION:

MISSION: Developmental and type testing of items and techniques in chemical, biological and radiological warfare and service testing of Chemical Corps items.

PROGRAMS: Chemical Corps Project Program.

LOCATION: 85 miles southwest of Salt Lake City, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army and Atomic Energy Commission.

DESCRIPTION:

Technical Facilities for AW Operations . . . . .	\$ 1,621,840
Technical Facilities for BW Operations . . . . .	2,944,900
Technical Facilities for CW Operations . . . . .	1,468,000
Technical Facilities for Joint ABC Operations. . . . .	1,400,200
Post and Administrative Facilities. . . . .	2,446,500
Housing, Messing and Club Facilities . . . . .	6,851,000
Utilities and Roads. . . . .	3,540,000
Community and Recreational Facilities . . . . .	1,238,000

\$ 21,510,440



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JUSTIFICATION:

1. The overall mission of the Chemical Corps within the Dept of Defense is to develop and perfect means for waging offensive and defensive radiological, biological and chemical warfare. The Department of the Army has Dept of Defense responsibility for chemical and biological warfare and for the dissemination of radiological warfare agents. The Army has assigned this responsibility to the Chemical Corps for execution. In addition, within the Department of the Army the Chemical Corps has full responsibility for all forms of radiological warfare (except the offensive use of nuclear reaction). To carry out this responsibility the Chemical Corps has organized continuing programs for developmental testing and type testing in these fields, and service testing or operational evaluation of Chemical Corps items.
2. To test and evaluate the items and agents developed by this Corps requires a large, isolated proving ground establishment within the Continental United States. Such an establishment is not available to this Corps at any location within its own jurisdiction or from other federal agencies or civilian sources. In this connection, a group representing the Army, Air Force, AFSWP and AEC made an extensive survey of proposed field test sites for radiological weapons and munitions. As a result of this survey, the group recommended the reactivation of Dugway Proving Ground, together with the use of applicable areas of the adjoining Wendover Air Force Base in Utah for testing the offensive and defensive phases of radiological warfare. A similar study with respect to chemical warfare and biological warfare was made by an unbiased group of outside specialists selected by the Chemical Corps. This group, after careful study and evaluation, also recommended Dugway Proving Ground as the most favorable site within the United States for the testing and operational evaluation of AW, BW, and CW. The recommendations of these groups, taken together with the obvious economy of effort and increased efficiency of operations which would result from combining A, B, and C testing at a single site led to the selection of Dugway Proving Ground as the optimum site for a permanent establishment. These three types of warfare embrace field test problems sufficiently compatible to utilize advantageously common facilities and technical personnel, and will result in an increased administrative and operational efficiency.
3. This installation will be known as the CEBAR Proving Establishment, CEBAR is a coined word to cover Chemical, Biological and Radiological Warfare operations, and will therefore be descriptive of the installation upon activation.
4. The attainment of the objectives of the Chemical Corps program requires the testing and operational evaluation of chemical, biological and radiological agents, incendiaries, flame agents, screening agents (smokes) in both standard and development type of weapons, munitions and equipment. Included, and as a part of these tests, will be tests of individual and collective protective equipment and procedures, together with applicable countermeasures. A portion of these tests will, of necessity, be made on a large scale, and will involve the use of both new and conventional types of airplanes operating at varied altitudes and speeds. The realization of research and development objectives must to a large degree be held in abeyance due to lack of adequate large scale test facilities. The extremely hazardous nature and security classification of these items require isolation from normal habitation. Each of these three types of agents

requires in itself one or more separate test areas of large acreage - some located relatively close and others relatively remote from one another. For example, there will be one area under BW for crop regulatory agents of approximately twenty-five (25) square miles which include two test grids, a 20-mm range, and supporting buildings and facilities. Agent simulants only will be used in this area. A second area will be used for pathogenic BW agents and the preparation of munitions filled with these agents or their simulants. This area will be approximately two square miles and will include a small group of laboratory and operational buildings. A third area will be used for other types of pathogenic agents which will require one hundred (100) square miles and include test grids, ranges and supporting buildings. Certain parts of this area must be protected by an electric fence and the building area protected by a cyclone fence. It will be necessary to locate the third area remote from all installations except the second area. Similarly, segregated areas must be provided for the chemical and radiological agents and these, of necessity, must be isolated from each other. In the field of chemical agents, the new and extremely effective G series nerve gases are being produced on a pilot scale and are now ready for test. A new vesicant agent known as "HQ" is ready for test and evaluation in comparison with mustard. New and superior means for the dispersion and dissemination of new agents and standard agents are in the latter stages of research and development and urgently need to be tried out on a larger scale. The planned tests will include the dispersion and dissemination of liquid and solid materials in the form of aerosols and particulates from many types of bombs, projectiles, missiles, generators, and dispersers. A similar status prevails for incendiaries, flame agents, screening agents and smokes. The use of the highly toxic agents in large scale tests will in many instances contaminate the target area beyond practical decontamination for extended periods. Such contamination would render the area unfit for other uses and may require following tests to be carried out on "clear" areas. This calls for large area targets, widely separated. Further, the contamination would prove an intolerable handicap at any station having other than toxic agent testing as its primary mission.

5. Individual and collective protective equipment has been developed and is now ready for field test against radiological, biological and chemical warfare. New means for protection and decontamination are in advanced stages of development and will require field tests. It is possible that the present tactical and strategical concepts in the fields of radiological, biological and chemical warfare may be radically revised as a result of test and operational evaluation. No facilities are presently available to the Chemical Corps for the conduct of such tests.

6. Reference is made to letter from this office to the Director of Logistics, Subject: "Facilities for RW Field Test Site at Dugway Proving Ground", dated 28 April 1949, justifying funds in the amount of \$3,194,875 to provide on the site at Dugway Proving Ground those facilities required between now and the end of the Calendar Year 1950 to prosecute an interim RW munitions program. Such funds have not yet been allocated for this purpose. This requirement is also included in the present justification. Should allocation of funds for the interim RW test site be made prior to the allocation of funds for the permanent AW, BW and CW proving ground establishment, the requirements

for such of these interim facilities as are suitable for the permanent installation will be withdrawn from the overall permanent requirements.

7. Although several of the facilities herewith presented are in the nature of supporting utilities and therefore are not, strictly speaking, research and development facilities; nevertheless, they are presented at this time, since their construction is essential to the operation of the establishment as a whole.

8. The construction of the facilities to establish this facility would not duplicate any existing or contemplated facilities of the Chemical Corps or the Department of Defense. CEBAR Proving Establishment will be used to carry out developmental, engineering and service tests, and will not be used for basic and applied research. The facilities presently available to the Chemical Corps at Camp Detrick, Maryland and contemplated to be made available at Princeton, New Jersey are and will be used for research and development and small scale testing. Large scale testing of the type contemplated at CEBAR cannot be accomplished at either of these facilities. Similarly, the laboratories of the Technical Command and the Medical Division at the Army Chemical Center, Maryland are used for basic and applied research and small development testing, but here also large scale testing of the type and scope considered essential is impossible.

9. The types of testing programs to be carried out at CEBAR by phase are estimated by percentage below:

	<u>RW</u>	<u>BW</u>	<u>CW</u>
Research. . . . .	0	0	0
Development Testing . . . . .	55	30	25
Type Testing (Engineering Testing). . . . .	40	60	60
Operational Evaluation (Service Testing). . . . .	5	10	15

The operational evaluation (service testing) contemplated above for CEBAR is service testing of Chemical Corps items. The service tests of other using agencies are not included in the above percentages. However, it is visualized that service testing of ABC items will ultimately involve the use of highly toxic materials, and an isolated area equipped and staffed such as CEBAR will be required. This facility can be made available to using agencies for such service testing; as they may require. It should be noted that the facility as proposed is essential to the development and type testing programs for all ABC items and does not rely on service testing requirements as an appreciable portion of its justification.

10. The proposed establishment is located about 85 miles southwest of Salt Lake City, Utah, and is about 38 miles from the nearest rail connection, and about 40 miles from the Town of Tooele, Utah. There is one modern road connecting this proving ground with Salt Lake City via Tooele. There are no civilian centers closer than Tooele; therefore, there are no available sources of labor and no housing or community facilities adjacent to the proving ground. The proving ground as constructed during the war was of temporary structures only, many of which have deteriorated beyond their useful life and

have been salvaged; therefore, it is necessary to rebuild completely, using only a few of the temporary buildings which still remain. During World War II an air field was constructed, and the runway and aprons of this field can presently be used for lighter aircraft (up to B17 and B24 type). It is contemplated that a new hangar and machine shop will be erected and the runway resurfaced, and lengthened to 8000 feet and widened to 200 feet. Wells have been sunk in the area, and drinking water can be obtained.

11. The responsibility for financing this proposed proving ground is that of the Department of the Army except for the animal laboratory for the RW Technical Facilities which should be funded and operated by the Atomic Energy Commission. If approval is granted for its construction, it is proposed that approximately \$14,500,000 be made available for the first year, and the remainder in the second year.

COMMAND RELATIONSHIP: The proposed establishment will be a Class II installation under the jurisdiction of the Chief, Chemical Corps.

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**NAME :** Technical Facilities for Radiological Warfare Operations

**SPONSOR :** Chemical Corps, Department of the Army

**LOCATION :** CEBAR Proving Ground Establishment, Tooele County, Utah

**TYPE OF PROGRAM:** Radiological Warfare Operations -R-0%; D-55%; TT-40%;  
OE-5%

**PLANT AREA (ACRES):** Not applicable

<b>FLOOR SPACE (SQ FT) :</b>	27,180	<b>TOTAL PERSONNEL :</b>	190
OFFICE	: 3,940	MILITARY	: 40
LABORATORY	: 11,840	CIVILIAN	: 150
SHOP	: 2,500	Scientific	: 29
OTHER	: 8,900	Technical	: 59
		Other	: 62

**CONSTRUCTION:**

**ANNUAL RENT:**

<b>COST</b>	:	\$1,621,840		0
LAND	:	0		
BUILDINGS	:	520,840		
EQUIPMENT	:	1,026,000		
OTHER	:	75,000		

**GENERAL INFORMATION:**

**MISSION:** Developmental and type testing on offensive and defensive aspects of radiological warfare with the exception of the atomic bomb.

**PROGRAMS:** Broadly, the Chemical Corps Program in the field of radiological warfare includes: (1) RW Agents; (2) handling and storage incident to selection, evaluation, dissemination and defense; (3) munitions and aerial dissemination from fragmentation bombs, gliding rotors, small clusterable bombs and automatic projector shell, and; (4) protection, decontamination and chemical methods of detection.

**LOCATION:** CEBAR Proving Establishment, Tooele County, Utah.

**COMPLETION TIME:** Two (2) years.

**FINANCING:** Public Works Funds, Department of the Army and Atomic Energy Commission.

**DESCRIPTION:** The specific facilities necessary to carry out the development and testing program of RW are as follows:

Health Physics and Decontamination Building. . . . .	\$ 151,840
Animal Laboratory . . . . .	222,000
RW Munitions Testing Building. . . . .	30,000
RW Laboratory for "Hot" Materials. . . . .	1,050,000
Radiochemical Laboratory . . . . .	90,000
Technical Administration Building. . . . .	55,000
Munitions storage, assembly and modification building for airborne munitions. . . . .	<u>23,000</u>
	\$1,621,840

JUSTIFICATION: Radiological warfare is a new field almost entirely unexplored. It contemplates the use of radioactivity and radioactive materials, such as products from the atomic pile to produce death or casualties in man, animals, and plants. In view of its potential effectiveness for gross anti-personnel warfare, the Joint Dept of Defense - AEC Panel on RW has recommended that this new and unique weapon be investigated under high priority to determine feasibility.

At present there are a number of isotopes and elements which are potentially usable and have been selected as possible RW agents by the Chemical Corps. These selected materials need to be field tested and operationally evaluated both from the offensive and defensive standpoint using munitions and equipment of conventional and unconventional design. Like BW and CW, RW requires large areas and isolation from human habitation for test for security reasons and because of the extreme hazards involved. An immediate objective is to develop a prototype munition for delivery by manned aircraft, which will carry a substantial quantity of RW agent and disseminate it in effective amounts over a large target area.

The number of personnel needed to carry out the essential program as listed on the first page is based upon the fact that chemical and biological warfare operations will be conducted at the same establishment, and therefore some personnel may be used for work in all three fields. This fact also applies as regards administrative, community, recreational and supporting utility activities. Personnel and technical facilities herein set forth are the minimum requirements for a combined chemical, biological and radiological warfare proving establishment. All estimates herein would be substantially increased on the basis of separate and independent establishments. The technical facilities are required at the site for the accomplishment of the test program and do not duplicate facilities elsewhere established under the Dept of Defense or AEC. In this connection, a group of Army, Air Force, AFSWP and AEC representatives recently made an extensive survey and study of field test sites for RW and as a result recommended the Chemical Corps Dugway Proving Ground with the adjoining Wendover Air Force Base as the most suitable and acceptable for the uses contemplated.

COMMAND RELATIONSHIPS: Proposed facility will be a component of CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

**NAME** : Technical Facilities for Biological Warfare Operations

**SPONSOR** : Chemical Corps, Department of the Army

**LOCATION** : CEBAR Proving Establishment, Tooele County, Utah

**TYPE OF PROGRAM:** Biological Warfare - R - 0%  
D - 30%  
TT - 60%  
OE - 10%

**PLANT AREA (ACRES):** Not applicable

<b>FLOOR SPACE (SQ FT)</b> :	56,852	<b>TOTAL PERSONNEL</b> :	182
OFFICE :	6,200	MILITARY :	20
LABORATORY :	22,900	CIVILIAN :	162
SHOP :	1,000	Scientific :	30
OTHER :	26,752	Technical :	42
		Other :	90

**CONSTRUCTION:**

**ANNUAL RENT:**

<b>COST</b> :	\$2,944,900		0
LAND :	0		
BUILDINGS:	1,422,900		
EQUIPMENT:	1,394,000		
OTHER :	128,000		

**GENERAL INFORMATION:**

**MISSION:** Developmental and type testing of models, materials, agents, equipment, devices and systems with applicable countermeasures in the field of biological warfare - crops, animals and man and service testing of Chemical Corps items.

**PROGRAMS:** Biological Warfare Operations versus man, animals and crops.

**LOCATION:** On the site of CEBAR Proving Establishment - Technical and Test Areas.

**COMPLETION TIME:** Two (2) years.

**FINANCING:** Public Works Funds, Department of the Army.

**JUSTIFICATION:**

I. The Chemical Corps has broad Dept of Defense and sole Dept of the Army responsibilities in the field of biological warfare. During the early part of World War II, by direction of higher authority, work in both the offensive and defensive phases of biological warfare was started, and Camp Detrick, Frederick, Maryland was built for this work. Also, a small testing station was established

at Horn Island, Pascagoula, Mississippi. This testing station has, however, since been abandoned. Development in the field of BW has now reached a point where developmental testing, type testing and operational evaluation on an extended scale are vitally essential. Work up to this time has been carried out on a laboratory scale and to an extremely limited extent on small grid areas at Camp Detrick. However, those areas are so limited in size, and the installation is so closely adjacent to thickly populated areas that large scale testing is impossible.

2. The facility herein described is one of three technical facilities at the proposed CEBAR Proving Establishment; the other two will be devoted to radiological and chemical warfare. These facilities will not duplicate other facilities in the Department of the Army or under the Dept of Defense. All basic research and initial development in the field of BW will continue to be carried out at Camp Detrick and in a facility at Princeton, New Jersey, if acquired and made available to the Chemical Corps. The Princeton facility is intended to be used for plant and crop control, and for work with domestic animals. Field testing will be impossible at that station for the same reasons given with respect to Camp Detrick.

3. The following require the facilities herein proposed for testing within the next two (2) years.

- a. Bomb, Particulate, 4-lb, E48
- b. Cluster, Particulate, 500-lb, E96
- c. Bomb, Particulate, 1/2-lb, and cluster therefor
- d. Projectile, Particulate, 20-mm
- e. Generator, Aerosol, Continuous
- f. Dispersion and dissemination techniques and procedures
- g. Applicable individual and collective protective equipment and techniques
- h. Decontamination methods and procedures

4. The specific facilities necessary for the BW facility are herewith presented in three sections, each representing an area. Area 1 will cover approximately 25 square miles and will be used for experimentation with BW agent simulants and crop regulatory agents and equipment. The area will include two test grids, a 20-mm range and supporting buildings and facilities. Agent simulants only will be used in this area; hence, it may be located without reference to possible infection of personnel; however, certain of the buildings must be inclosed within a fence for experimentation with pathogenic BW agents and the preparation of munitions filled with pathogenic or simulated agents. This area will cover approximately 2 square miles, will include a small group of laboratory and similar buildings, and should be located in the immediate vicinity of Area 3 and remote from other activities; for security reasons this area must be inclosed by a fence. The third area will be used for experimentation with other types of pathogenic BW agents, and will cover approximately 100 square miles, including two test grids, a 20-mm range and supporting structures. This entire area must be protected by an electric fence and the area occupied by certain buildings protected by an additional cyclone fence. Areas 2 and 3 must be widely separated and isolated from other installations.

CEBAR - BW

DESCRIPTION: The proposed buildings and facilities, and with estimated costs, are listed below:

AREA 1

Laboratory and Offices . . . . .	\$ 170,000
Munitions Storage. . . . .	27,500
Explosive Storage. . . . .	5,000
Cold Storage . . . . .	10,000
Plant Growing Structure. . . . .	13,000
Soil Preparation . . . . .	10,000
Observation Dugouts. . . . .	18,000
Circular Grid. . . . .	45,000
Square Grid. . . . .	385,000
20-mm Range. . . . .	8,000
Fence (stock tight). . . . .	2,500
Water Salinity Removal Plant . . . . .	32,500
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	\$ 726,500

AREA 2

Laboratory (Pathogenic Organism). . . . .	\$ 85,000
Munition Loading and Assembly Plant . . . . .	105,000
Headquarters Building . . . . .	57,500
Explosive Storage . . . . .	6,400
Barracks . . . . .	16,000
Animal Shed . . . . .	9,000
Animal Building . . . . .	27,000
Fence (cyclone) . . . . .	72,000
Water Salinity Removal Plant. . . . .	32,500
Incinerator. . . . .	10,000
	<hr/>
	\$ 420,400

AREA 3

Laboratory . . . . .	\$ 460,000
Personnel Decontamination Building . . . . .	45,000
Equipment Decontamination Building . . . . .	222,000
Service Station. . . . .	1,000
Six Observation Dugouts. . . . .	18,000
Circular Grid. . . . .	45,000
Square Grid. . . . .	385,000
20-mm Range. . . . .	8,000
Fence (electric) . . . . .	6,000
Fence (cyclone). . . . .	168,000
Water Softening Plant. . . . .	195,000
BW Sewage Decontamination System . . . . .	195,000
Incinerator. . . . .	50,000
	<u>\$ 1,798,000</u>

GRAND TOTAL \$ 2,944,900

COMMAND RELATIONSHIPS: The proposed facility will be a component of the CEBAR Proving Establishment, a Class II installation under the jurisdiction of the Chief, Chemical Corps.

NAME : Technical Facilities for Chemical Warfare Operations  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah  
TYPE OF PROGRAM: Chemical Warfare - R - 0%  
D - 25%  
TT - 60%  
OE - 15%

PLANT AREA (ACRES): Not applicable

FLOOR SPACE (SQ FT):	25,600	TOTAL PERSONNEL :	98
OFFICE :	1,900	MILITARY :	15
LABORATORY :	15,200	CIVILIAN :	83
SHOP :	3,600	Scientific :	25
OTHER :	4,900	Technical :	36
		Other :	22

CONSTRUCTION:

ANNUAL RENT:

COST :	\$1,468,000	0
LAND :	0	
BUILDINGS :	963,600	
EQUIPMENT :	402,400	
OTHER :	95,000	

GENERAL INFORMATION:

MISSION: Developmental and type testing of materials, agents, equipment, devices and systems with applicable countermeasures in the field of chemical warfare and service testing of Chemical Corps items.

PROGRAMS: Toxic chemicals, incendiaries, flame, screening agents, individual and collective protection, applicable countermeasures, and medical aspects of chemical warfare.

LOCATION: Dugway Proving Establishment, Tooele, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

DESCRIPTION: The specific facilities necessary for the CW installation are presented below, with the estimated cost:

Range Office . . . . .	\$ 16,400
Chemistry Laboratory . . . . .	143,000
Munitions Assembly Building . . . . .	9,200
Field Operations Building . . . . .	56,000
Surveillance Room (Arctic) . . . . .	95,000
Surveillance Room (Desert) . . . . .	25,000
Surveillance Room (Tropical) . . . . .	23,000
Decontamination Center . . . . .	28,000
Rehabilitation and Target Areas . . . . .	20,000
Medical Test Evaluation Laboratory . . . . .	327,400
Target Grid Areas (3) . . . . .	225,000
Construction of Targets (Industrial and Housing) of Prototype Enemy Areas for Study of Gas and Incendiary Warfare and Cloud Drift Within Such Areas . . . . .	500,000
	<u>\$1,468,000</u>

JUSTIFICATION: The Chemical Corps has broad Dept of Defense and full Dept of the Army responsibility in the field of chemical warfare. New developments in chemical agents, flame, incendiaries, together with weapons, munitions, and protective equipment necessitate a large proving establishment for test and operational evaluation. New techniques and tactics for their use need to be established and demonstrated. All research and the major part of development activities will continue to be carried out at Army Chemical Center, Maryland. However, large scale type testing and operational evaluation are impossible at that facility due to lack of space and the hazards to surrounding urban and rural populations.

The facilities herein described will not duplicate any facilities designed and used for similar purposes in the Department of the Army or in the Dept of Defense. This proving establishment is the minimum essential to the attainment of established chemical objectives as approved in the project program. Special emphasis is to be placed on new methods for dispersing and disseminating agents to form effective aerosols and carrier clouds. The proposed tests will include the dispersal of materials from all types of bombs, projectiles, missiles, thermal generators and dispersors, some of which tests will be carried out by dropping from airplanes at varied heights and speeds. Furthermore, the evaluation of modern protective devices and equipment requires tests on a scale not possible at the Army Chemical Center.

COMMAND RELATIONSHIPS: Proposed facility will be a component of CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

NAME : CEBAR Proving Establishment  
 SPONSOR : Chemical Corps, Department of the Army  
 LOCATION : Tooele County, Utah  
 TYPE OF PROGRAM: Technical Facilities for Joint ABC Operations  
 PLANT AREA (ACRES): Not applicable

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FLOOR SPACE (SQ FT) :	104,060	TOTAL PERSONNEL :	153
OFFICE :	1,944	MILITARY :	17
LABORATORY :	3,872	CIVILIAN :	136
SHOP :	20,300	Scientific :	8
OTHER :	77,944	Technical :	25
		Other :	103

CONSTRUCTION:	ANNUAL RENT :	
COST :	\$1,400,200	0
LAND :	0	
BUILDINGS :	858,600	
EQUIPMENT :	501,600	
OTHER :	40,000	

GENERAL INFORMATION:

MISSION: Support the chemical, biological and radiological warfare test programs.

PROGRAMS: Animal breeding and holding, machine shops, meteorological data, instrument repair, photographic service and storage to support all test programs.

LOCATION: Dugway Proving Establishment, Tooele, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION: Three distinct but related fields of warfare have been assigned to the Chemical Corps for research and development. There are many problems in each of the fields which are not common to either of the other two fields, but there are some problems which are common to all three fields.

Where common problems exist in different fields, it is often possible to effect real economies by using combined or joint facilities on these common problems. It is the purpose of the "Joint ABC Technical Facilities" to work on these common problems.

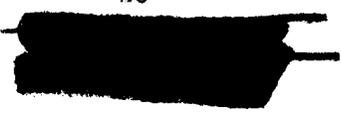
UNCLASSIFIED

These Joint ABC Facilities will serve the following functions:

- a. Animal Breeding and Holding Facility: This facility will do all the animal breeding and raising required by biological and chemical warfare and possibly for radiological warfare. This facility will not have observation or autopsy laboratories for use on exposed animals. This latter work will be done in separate facilities for each of the three fields. The breeding and holding facility is required because reliable animal data can be obtained only if the various species are acclimated to that locale and are raised under optimum and controlled conditions.
- b. Technical Machine Shop: This is a large machine shop with a wide variety of equipment and capabilities. It will be required to perform modifications on prototype munitions and sampling equipment. It will be capable of doing metal work, wood work, plastics work, etc.
- c. Meteorological Station: A meteorological station with a wide variety of instruments and mobile units will be required to prepare weather forecasts and to take detailed readings on field tests of all types.
- d. Instrument Repair Facility: The field sampling and laboratory equipment required in the ABC fields are often delicate and complex. Although the instruments have widely varied functions, they have many common components and problems. For example, electronic principles are often used in measurements in each of the A, B, and C fields.
- e. Technical Warehouses: Warehousing is a common problem. The space requirements of each of the three fields will vary widely from time to time. An economy can be effected by combining warehousing facilities.
- f. Toxic and Explosives Areas: All three fields have munitions using explosives. These materials must be stored until required. Agents cannot be stored near explosives nor can agents of particular types be stored together. The area will store all explosives prior to completed munition assembly and will store some agents for later test use.
- g. Technical Photographic Laboratory: This laboratory will furnish all photographic requirements of the ABC fields with the single exception of film badge work for health physics in the RW program.

DESCRIPTION: The specific facilities necessary to furnish joint support to the testing programs of BW, CW, and RW are as follows:

Animal Breeding and Holding Farm:	\$496,200	
Animal feed and bedding storage . . . . .	\$	40,000
Incinerator Plant . . . . .		20,000
Cage Cleaning, sterilizing and storage. . . . .		60,000
Goat and Sheep Sheds. . . . .		54,000
Small animal breeding buildings (2) . . . . .		120,000
Small animal holding buildings (3) . . . . .		195,000
Post-exposure holding buildings (2) . . . . .		<u>7,200</u>





UNCLASSIFIED

Machino Shop . . . . .	\$ 329,000
Meteorological Station . . . . .	26,000
Instrument Repair Building . . . . .	90,000
Toxic gas area and explosive storage . . . . .	146,000
Photographic laboratory . . . . .	67,000
Warehouses (6) . . . . .	<u>246,000</u>

\$ 1,400,200

COMMAND RELATIONSHIPS: Proposed facility will be a component of the CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.



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Water Works and Sewage Disposal . . . . . \$ 2,155,000

Water works include two 500,000-gallon tanks or reservoirs, on high ground above residence area; two additional wells to be drilled; provision included for emergency expansion. Normal sanitary sewage disposal for total estimated population of 2500.

Access Roads . . . . . \$ 630,000

Ten miles black top to connect main highway to residential and headquarters area.

Repair of Existing Roads . . . . . \$ 280,000

Improvement of Existing Main Highway . . . . . \$ 250,000

Resurface 34 miles of the existing main highway over Johnson's Pass.

Heating and Other Power Costs are included in other estimates for other buildings and facilities.

\$ 3,540,000

COMMAND RELATIONSHIPS: Proposed facilities will be component parts of CEBAR Proving Establishment, a Class II installation under the jurisdiction of the Chief, Chemical Corps.

NAME : CEBAR Proving Establishment  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah  
TYPE OF PROGRAM: Post and Administration Buildings to support Chemical,  
Biological and Radiological Warfare Test Programs

PLANT AREA: Not applicable

FLOOR SPACE (SQ FT):	82,005	TOTAL PERSONNEL :	680
OFFICE :	10,425	MILITARY :	380
LABORATORY :	1,500	CIVILIAN :	300
SHOP :	6,200	Scientific :	0
OTHER :	63,880	Technical :	0
		Other :	300

CONSTRUCTION:

ANNUAL RENT:

COST :	\$ 2,446,500	0
LAND :	0	
BUILDINGS:	1,559,500	
EQUIPMENT:	135,000	
OTHER :	752,000	

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GENERAL INFORMATION:

MISSION: Necessary post and administration buildings to provide for an active development and test establishment with 1,365 working personnel and total population of 2,500 (estimated).

PROGRAM: Development and testing in the fields of radiological, biological, and chemical warfare.

LOCATION: On the site, at CEBAR Proving Establishment, Tooele County, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION AND DESCRIPTION: The facilities herein described and justified will constitute those facilities necessary for the post activities and administrative functions of the CEBAR Proving Establishment. This Establishment is necessary to provide test and evaluation facilities for the Chemical Corps in carrying out the responsibilities with respect to radiological, biological and chemical warfare. The Proving Establishment will be located, in part, on the site of Dugway Proving Ground in Tooele County, Utah. It is located approximately 85 miles southwest of Salt Lake City and about 40 miles by road from

Tooele, Utah. The Establishment will have a working personnel of approximately 1,365, both military and civilian, with a total estimated population of about 2,500. The facilities herein described are the minimum necessary for this purpose.

a. Post Administration Building: \$ 130,000

This facility will house the commanding officer of the Establishment, his executive and administrative staff, and the necessary clerical, fiscal and other personnel and will have the usual office furniture, safes, files, and communication system.

b. Motor Pool: \$ 108,000

Due to the widely separated areas of test operations, an extensive motor pool is necessary and will supply vehicles of all types and make repairs thereto. The usual wash racks, paint room, stock room, instrument repair room, etc., are included.

c. QM Office and Warehouse: \$ 41,000

Standard type of QM office, warehouse, and supply room will be required for handling all types of materials and supplies; loading and delivery ramp is included.

d. Post Laundry: \$ 41,500

Standard Laundry required for all military and civilian personnel and operational units, including hospital; no other laundry available within 50 miles.

e. Post Commissary: \$ 18,000

To supply subsistence for military and civilian personnel; warehouse type building with office and salesroom, icebox, deep freezer, and usual equipment.

f. Utilities Shop: \$ 55,000

To supply usual shop facilities for the post, such as carpenters, plumbers, and general repair shops for maintenance of post facilities.

g. Station Hospital: \$ 801,000

A hospital of sufficient capacity to handle the normal post complement is essential; in addition to the usual hospital, it is necessary to provide additional space to take care of possible accidents which might occur from the extremely hazardous nature of the test and development work to be carried out. No special hospital equipment is required for this purpose, however.

h. Guard House: \$ 13,000

Guard house and detention building in the barracks area of standard fireproof construction is required.

i. Air Base: \$ 1,219,000

The present air strip is not capable of handling the latest type of heavy aircraft. The runway must therefore be strengthened, resurfaced, and widened to approximately 8,000 feet in length by 200 feet in width. In addition, an operations building and a hangar, estimated to cost \$39,000 and \$430,000 respectively, are necessary. Since much of the test and operational development will be with aerial munitions, a reasonable adequate air base is essential.

j. Fire Station: \$ 20,000

A fire station to house the post fire equipment, alarm office and provide sleeping facilities for fire personnel is required.

COMMAND RELATIONSHIPS: Proposed facility will be a component of the CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

NAME : CEBAR Proving Establishment  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah  
TYPE OF PROGRAM: Community and Recreational Facilities in support of radiological, biological and chemical warfare test and development operations.

PLANT AREA: Not applicable

FLOOR SPACE (SQ FT) : 58,800  
OFFICE : 225  
LABORATORY : 0  
SHOP : 0  
OTHER : 58,575

CONSTRUCTION:	ANNUAL RENT:
COST : \$ 1,238,000	0
LAND : 0	
BUILDINGS : 1,103,000	
EQUIPMENT : 25,000	
OTHER : 110,000	

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GENERAL INFORMATION:

MISSION: To provide necessary community and recreational facilities to personnel at CEBAR Proving Establishment, totaling 1365 working personnel, military and civilian, and 2500 total personnel (estimated).

PROGRAMS: Development and testing in the fields of radiological, biological and chemical warfare.

LOCATION: On the site, at CEBAR Proving Establishment.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION AND DESCRIPTION: The CEBAR Proving Establishment will be located in Tooele County, Utah, approximately 85 miles southwest of Salt Lake City and about 38 miles from the town of Tooele, Utah. Due to the nature of the tests to be conducted, isolation from centers of population is essential. Therefore, it is necessary to provide recreational and community facilities for the operating personnel and their families. It is anticipated that approximately 1365 personnel, military and civilian, will be employed at the establishment, with a total estimated population of approximately 2500. Of the operating

personnel, approximately 515 will be military personnel.

The necessary facilities for this purpose are as follows:

- a. School, Chapel and Small Shopping Center. \$ 900,000

There are no schools or churches available within 40 miles of the establishment, and it is essential that facilities of this nature be provided for both the military and civilian personnel who will live at the establishment. Also, a small community shopping center is essential for the same reasons.

- b. Post Theater. \$ 195,000

Standard theater construction with capacity to seat 400 persons, and having 35-mm projectors, with the usual equipment, is necessary for both the military and civilian populations.

- c. Swimming Pool. \$ 110,000

The isolation of this installation, plus the fact that the summers are long and hot, make the provision of a swimming pool for civilian and military personnel essential.

- d. Post Exchange. \$ 35,000

Post Exchange service is required for the military personnel. Standard type of construction with necessary office, storage space and sales room is contemplated.

COMMAND RELATIONSHIPS: The proposed facility will be a component of the CEBAR Proving Establishment, a Class II installation under the jurisdiction of the Chief, Chemical Corps.

NAME : CEBAR Proving Establishment  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah

UNCLASSIFIED

TYPE OF PROGRAM: Housing, Mess and Club Facilities in Support of Radiological, Biological, and Chemical Warfare Test Programs

PLANT AREA (ACRES): Not applicable

FLOOR SPACE (SQ FT) :	492,100	TOTAL PERSONNEL :	62
OFFICE :	0	MILITARY :	31
LABORATORY :	0	CIVILIAN :	31
SHOP :	0	Scientific :	0
OTHER :	492,100	Technical :	0
		Other :	31

CONSTRUCTION:

ANNUAL RENT :

COST : \$ 6,851,000  
LAND : 0  
BUILDINGS : 6,701,000  
EQUIPMENT : 90,000  
OTHER : 60,000

0

GENERAL INFORMATION:

MISSION: Living quarters, mess and club facilities for officers, enlisted men, civilian scientific, technical and other civilian personnel, totaling 1,365. Total estimated population, inclusive of families, 2,500.

PROGRAMS: Development and testing in the fields of radiological, biological, and chemical warfare.

LOCATION: On the site, at CEBAR Proving Establishment.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION: Housing, mess and club facilities for military and civilian operating personnel on the site which is, of necessity, isolated from normal areas of human habitation.

DESCRIPTION: Conventional Corps of Engineers permanent type construction suitable for the locality. The type of construction would compare to that used at Sandia, New Mexico. It is estimated that the following minimum accommodations will be required for the operating personnel and their families:

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	<u>AREA (SQ FT)</u>	<u>TOTAL COST</u>
BOQ, 10 Field, 60 Co. Gr.	42,000	\$ 550,000
Barracks for 400 EM	80,000	944,000
Mess for 400 EM	10,000	131,000
Service Club (500 EM)	3,500	53,000
Civilian Women's Dorm (200)	30,000	393,000
Civilian Male Dorm (475)	65,000	815,000
Off. Club and Mess (400 Off. & Civ.)	11,000	165,000
Civilian Mess (500)	13,000	170,000
		\$ 3,221,000
100 Fam. Qtrs., Off. & Prof. @ \$16,500	108,000	1,650,000
120 Fam. Qtrs., NCO & Tech. @ \$16,500	<u>129,600</u>	<u>1,980,000</u>
TOTAL	492,100	\$ 6,851,000

COMMAND RELATIONSHIPS: Proposed facility will be a component of the CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

CMLC

UNCLASSIFIED

6 December 1949

SUBJECT: Construction of CERAR Proving Establishment

THRU: Director of Logistics  
General Staff, USA  
Washington 25, D. C.

PRM NO. 89331

TO: Chief, Legislative and Liaison Division  
Office, Chief of Staff, USA  
Washington 25, D. C.

1. Attached is a draft of a proposed bill (Inclosure #1) for Congressional action authorizing construction of CERAR Proving Establishment (Inclosure #2) for use in developmental and type testing in the fields of chemical, biological and radiological warfare by the Chemical Corps, Department of the Army. The development program in these fields is being seriously delayed pending availability of this establishment.

2. This proposal for the CERAR Proving Establishment was approved unanimously as presented by the Research and Development Board at its 27th meeting held on 30 November 1949.

3. In order to expedite the construction of this urgently needed establishment, it is recommended that appropriate action be taken to introduce this bill at the Second Session of the 81st Congress.

GROUP 4

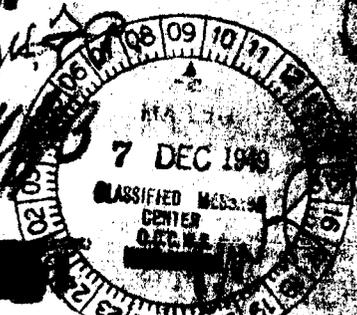
DOWNGRADED AT 8 YEAR INTERVALS  
DECLASSIFIED AFTER 12 YEARS  
DOD DIR 5200.10

2 Incls:

- 1. Draft of Proposed Bill  
dtd 19 Oct 49
- 2. CERAR Prov Estab,  
1 Jul 49 (Rev.  
20 Sep 48)

A. C. MAULIFFE  
Major General  
Chief, Chemical Corps

*Handwritten signatures and initials:*  
W  
SOM  
A.P.  
A.P.



UNCLASSIFIED

WJGappell/5216/rmh  
When Inclosure No. 2 is  
withdrawn, this document  
may be handled as unclassified.

ml 2949

WR 13747

(59) 5211 W

010 —  
X600.1 CERAR Proving Establishment

A BILL

To authorize construction for the Chemical Corps, Department of the Army, of a proving ground establishment, and for other purposes.

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled.

Section 1. The Secretary of the Army, under the direction of the Secretary of Defense, is hereby authorized to establish or develop a military installation and facility by the construction, installation, or equipment of temporary or permanent public works, including buildings, facilities, appurtenances and utilities as follows:

    Tooele County, Utah: A proving ground establishment, appurtenances and utilities; \$21,600,000.

Section 2. To accomplish the above authorized construction the Secretary of the Army, under the direction of the Secretary of Defense, is authorized to acquire lands and rights pertaining thereto, or other interests therein, including the temporary use thereof, by donation, purchase, exchange of Government-owned lands, or otherwise.

Section 3. There is hereby authorized to be appropriated out of any money in the Treasury of the United States not otherwise appropriated, such sums of money as may be necessary for the purposes of this Act. The cost of this project enumerated above may, in the discretion of the Secretary of the Army, be varied upward 10 per centum if necessary to expedite construction or to meet unanticipated increases in construction costs.

NO 1175 (59)

Encl 1

Section 4. Appropriations made to carry out the purposes of this Act shall be available for expenses incident to construction, including administration, overhead planning and surveys, and shall be available until expended.

Section 5. Any construction authorized herein may be prosecuted under direct appropriations or authority to enter into contracts in lieu of such appropriations.

A handwritten signature or set of initials, possibly "MJB", written in dark ink on the right side of the page.

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COMMITTEE ON BIOLOGICAL WARFARE

Attachment A, Item 3  
Agenda, 20th Meeting

INFORMATION CONCERNING  
PROPOSED CEBAR PROVING GROUND ESTABLISHMENT

- References:
- (a) RDB 114/4 - RDB Calendar 1949.
  - (b) RDB 137/1 - Policy Concerning Review of Proposals Involving R&D Establishments, Facilities and Supporting Utilities.
  - (c) RDB 233/1.3- Review of Facilities Proposals for FY 1951.
  - (d) CX 7/3 - Previous Committee Recommendations on Proving Grounds.  
CX 32/1  
CX 32/2

1. Reference (a) sets a deadline of 30 September 1949 for the submission of the Committee's FY 1951 Facilities Proposals Report.
2. Reference (d) lists the documents in which the Committee has recommended the establishment of BW proving grounds, as follows:

In the "Appraisal", dated 26 August 1947, (CX 7/3, p. 3, par. 2.1.2) it recommended that "adequate Field Testing Stations should be provided as soon as possible".

A similar recommendation was included in the "Integrated Plan", dated 18 May 1948 (CX 32/1, p. 3, par. 4.7 and p. 6, par. 5.1.8). Again in the "Integrated Program", dated 8 February 1949 (CX 32/2, p. 3, par. 4.6; p. 6, par. 5.1.8; p. 7, par. 5.2.3) recommendations for adequate testing fields were made.

The Committee on Chemical Warfare has also made strong recommendations for an adequate proving ground and had already proposed that steps be taken to consider the advisability of a combined proving ground for CW and BW. The CEBAR Proving Establishment Proposal and the following proposed procedure for its consideration reflect the previous thinking of the two Committees.

3. In accordance with mutual understandings with Board agencies the CEBAR Proving Ground Proposal will be considered by the three Committees concerned (CW, BW and AE), but primary responsibility will rest with the Committee on Chemical Warfare, and for

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8029

334 Research + Development Board

9/11/6

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DOD DIR 5200.10

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priority placement and review of concurrences the proposal will appear only on the CW Committee list. The technical facilities for BW research will be considered in detail by the BW Committee, those for CW and RW are scheduled for detailed consideration by the appropriate Committees. All the non-technical facilities are scheduled for consideration by each of the Committees concerned. It is planned to have the Chairmen of the three Committees meet on 28 September, after all Committees have considered the proposal, to consolidate their findings and forward them to the Board.

4. The decision as to location of the Proving Ground was the result of careful investigations by three different groups. A group having AFSWP, Air Force, AE, and CW and BW Chemical Corps representation visited several possible Government-owned sites and decided (25 March 1949) that Dugway was the best available when all three CEBAR weapons were taken into consideration. The Air Force concurred on the basis of utilization of the Dugway-Wendover Field area as a site for using all three CEBAR weapons, but expressed a non-concurrence from the point of view of RW testing alone. A second group consisting of Chemical Corps and civilian members (Nolen Report) again decided Dugway-Wendover area was the best available site. At a CW panel meeting on 25 August 1948, the Air Force representative made known that the Wendover Air Force Base would be declared "surplus" and suggested that it might be taken over as a CEBAR Proving Ground instead of Dugway, as it had power, water and sewer installations as well as quarters, runways and a rail spur. In view of this suggestion a third group, consisting of BW, CW and RW representatives of the Chemical Corps with representation from the Engineers Corps, the CW Committee and the BW secretariat, RDB, inspected the Wendover Air Force Base and Dugway on September 5-9, inclusive. The decision was unanimous that the Wendover area was not suitable for either CW or BW testing as the terrain consisted largely of caked salt bed which could not be traversed by wheeled vehicles. The only suitable testing areas were either too near Highways 40 and 50 or more than 50 miles from the Hq. area. Furthermore, there were no permanent buildings, the temporary ones were in very bad repair, the water pipe line needed replacement at least in part and the runways would have to be re-caulked. It would not be feasible to utilize Dugway testing areas from Wendover as headquarters since these areas would be 80 to 125 miles distant by a road which would have to be built around the salt flats.

The Dugway Proving Ground already has roads and communication between the Hq. area and several of the testing areas and is now being used on a "Safari" basis from the Western Chemical Center at Deseret for CW, BW and RW testing. However, it is not considered feasible to continue indefinitely on such a basis as it is too wasteful of time and manpower and the necessary testing cannot be accomplished within reasonable time limits. The Dugway area is the only area among those investigated affording the necessary isolation, climatic conditions and adequate field testing areas for BW, CW and RW tests.

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5. The CEBAR Proving Establishment is estimated to cost \$24,506,740. The proposal was accorded priority 3 in the complete Army proposal list of 165 items for FY 1951. It appears doubtful that the establishment can be maintained and staffed within the present budgetary and personnel limits of the Chemical Corps. However, it is contemplated that the staff of about 80 from San Jose Project at St. Thomas, V.I. would be transferred to Dugway along with certain specially qualified individuals from Edgewood and Detrick; some personnel would also be supplied by other interested agencies. Complete staffing would of course not be necessary until the completion of the project. A first increment of \$10,000,000 is being requested for FY 1951 under Priority 3.

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1863-c

July 1949  
(Rev. 20 Sept. 1949)

NAME: CEBAR PROVING ESTABLISHMENT

SPONSOR: Chemical Corps, Department of the Army

LOCATION: Tooele County, Utah

TYPE OF PROGRAM: Chemical, Biological and Radiological Warfare

PLANT AREA (ACRES): 250,000 (approximate)

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FLOOR SPACE (SQ FT) :	846,597	TOTAL PERSONNEL :	1365
OFFICE :	24,634	MILITARY :	503
LABORATORY :	55,312	CIVILIAN :	862
SHOP :	33,600	Scientific :	92
OTHER :	733,051	Technical :	162
		Other :	608

CONSTRUCTION	ANNUAL RENT
COST :	\$21,500,440
LAND :	0
BUILDINGS :	13,129,440
EQUIPMENT :	3,531,000
OTHER :	4,800,000

GENERAL INFORMATION:

MISSION: Developmental and type testing of items and techniques in chemical, biological and radiological warfare and service testing of Chemical Corps items.

PROGRAMS: Chemical Corps Project Program.

LOCATION: 85 miles southwest of Salt Lake City, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army and Atomic Energy Commission.

DESCRIPTION:

Technical Facilities for AW Operations . . . . .	\$ 1,621,840
Technical Facilities for BW Operations . . . . .	2,944,900
Technical Facilities for CW Operations . . . . .	1,468,000
Technical Facilities for Joint ABC Operations . . . . .	1,400,200
Post and Administrative Facilities . . . . .	2,446,500
Housing, Messing and Club Facilities . . . . .	6,851,000
Utilities and Roads . . . . .	3,540,000
Community and Recreational Facilities . . . . .	1,238,000

\$ 21,500,440

**UNCLASSIFIED**

GROUP 4  
DOWNGRADED AT 3 YEAR INTERVALS;  
DECLASSIFIED AFTER 12 YEARS  
DOD DIR 5200.10

JUSTIFICATION:

1. The overall mission of the Chemical Corps within the Dept of Defense is to develop and perfect means for waging offensive and defensive radiological, biological and chemical warfare. The Department of the Army has Dept of Defense responsibility for chemical and biological warfare and for the dissemination of radiological warfare agents. The Army has assigned this responsibility to the Chemical Corps for execution. In addition, within the Department of the Army the Chemical Corps has full responsibility for all forms of radiological warfare (except the offensive use of nuclear reaction). To carry out this responsibility the Chemical Corps has organized continuing programs for developmental testing and type testing in these fields, and service testing or operational evaluation of Chemical Corps items.
2. To test and evaluate the items and agents developed by this Corps requires a large, isolated proving ground establishment within the Continental United States. Such an establishment is not available to this Corps at any location within its own jurisdiction or from other federal agencies or civilian sources. In this connection, a group representing the Army, Air Force, AFSWP and AEC made an extensive survey of proposed field test sites for radiological weapons and munitions. As a result of this survey, the group recommended the reactivation of Dugway Proving Ground, together with the use of applicable areas of the adjoining Wendover Air Force Base in Utah for testing the offensive and defensive phases of radiological warfare. A similar study with respect to chemical warfare and biological warfare was made by an unbiased group of outside specialists selected by the Chemical Corps. This group, after careful study and evaluation, also recommended Dugway Proving Ground as the most favorable site within the United States for the testing and operational evaluation of AW, BW, and CW. The recommendations of these groups, taken together with the obvious economy of effort and increased efficiency of operations which would result from combining A, B, and C testing at a single site led to the selection of Dugway Proving Ground as the optimum site for a permanent establishment. These three types of warfare embrace field test problems sufficiently compatible to utilize advantageously common facilities and technical personnel, and will result in an increased administrative and operational efficiency.
3. This installation will be known as the CEBAR Proving Establishment, CEBAR is a coined word to cover Chemical, Biological and Radiological Warfare operations, and will therefore be descriptive of the installation upon activation.
4. The attainment of the objectives of the Chemical Corps program requires the testing and operational evaluation of chemical, biological and radiological agents, incendiaries, flame agents, screening agents (smokes) in both standard and development type of weapons, munitions and equipment. Included, and as a part of these tests, will be tests of individual and collective protective equipment and procedures, together with applicable countermeasures. A portion of those tests will, of necessity, be made on a large scale, and will involve the use of both new and conventional types of airplanes operating at varied altitudes and speeds. The realization of research and development objectives must to a large degree be held in abeyance due to lack of adequate large scale test facilities. The extremely hazardous nature and security classification of these items require isolation from normal habitation. Each of these three types of agents

requires in itself one or more separate test areas of large acreage - some located relatively close and others relatively remote from one another. For example, there will be one area under BW for crop regulatory agents of approximately twenty-five (25) square miles which include two test grids, a 20-mm range, and supporting buildings and facilities. Agent simulants only will be used in this area. A second area will be used for pathogenic BW agents and the preparation of munitions filled with these agents or their simulants. This area will be approximately two square miles and will include a small group of laboratory and operational buildings. A third area will be used for other types of pathogenic agents which will require one hundred (100) square miles and include test grids, ranges and supporting buildings. Certain parts of this area must be protected by an electric fence and the building area protected by a cyclone fence. It will be necessary to locate the third area remote from all installations except the second area. Similarly, segregated areas must be provided for the chemical and radiological agents and these, of necessity, must be isolated from each other. In the field of chemical agents, the new and extremely effective G series nerve gases are being produced on a pilot scale and are now ready for test. A new vesicant agent known as "HQ" is ready for test and evaluation in comparison with mustard. New and superior means for the dispersion and dissemination of new agents and standard agents are in the latter stages of research and development and urgently need to be tried out on a larger scale. The planned tests will include the dispersion and dissemination of liquid and solid materials in the form of aerosols and particulates from many types of bombs, projectiles, missiles, generators, and dispersers. A similar status prevails for incendiaries, flame agents, screening agents and smokes. The use of the highly toxic agents in large scale tests will in many instances contaminate the target area beyond practical decontamination for extended periods. Such contamination would render the area unfit for other uses and may require following tests to be carried out on "clear" areas. This calls for large area targets, widely separated. Further, the contamination would prove an intolerable handicap at any station having other than toxic agent testing as its primary mission.

5. Individual and collective protective equipment has been developed and is now ready for field test against radiological, biological and chemical warfare. New means for protection and decontamination are in advanced stages of development and will require field tests. It is possible that the present tactical and strategical concepts in the fields of radiological, biological and chemical warfare may be radically revised as a result of test and operational evaluation. No facilities are presently available to the Chemical Corps for the conduct of such tests.

6. Reference is made to letter from this office to the Director of Logistics, Subject: "Facilities for RW Field Test Site at Dugway Proving Ground", dated 28 April 1949, justifying funds in the amount of \$3,194,875 to provide on the site at Dugway Proving Ground those facilities required between now and the end of the Calendar Year 1950 to prosecute an interim RW munitions program. Such funds have not yet been allocated for this purpose. This requirement is also included in the present justification. Should allocation of funds for the interim RW test site be made prior to the allocation of funds for the permanent AW, BW and CW proving ground establishment, the requirements

for such of these interim facilities as are suitable for the permanent installation will be withdrawn from the overall permanent requirements.

7. Although several of the facilities herewith presented are in the nature of supporting utilities and therefore are not, strictly speaking, research and development facilities; nevertheless, they are presented at this time, since their construction is essential to the operation of the establishment as a whole.

8. The construction of the facilities to establish this facility would not duplicate any existing or contemplated facilities of the Chemical Corps or the Department of Defense. CEBAR Proving Establishment will be used to carry out developmental, engineering and service tests, and will not be used for basic and applied research. The facilities presently available to the Chemical Corps at Camp Detrick, Maryland and contemplated to be made available at Princeton, New Jersey are and will be used for research and development and small scale testing. Large scale testing of the type contemplated at CEBAR cannot be accomplished at either of these facilities. Similarly, the laboratories of the Technical Command and the Medical Division at the Army Chemical Center, Maryland are used for basic and applied research and small development testing, but here also large scale testing of the type and scope considered essential is impossible.

9. The types of testing programs to be carried out at CEBAR by phase are estimated by percentage below:

	<u>DA</u>	<u>BW</u>	<u>CW</u>
Research . . . . .	0	0	0
Development Testing . . . . .	55	30	25
Type Testing (Engineering Testing) . . . . .	40	60	60
Operational Evaluation (Service Testing) . . . . .	5	10	15

The operational evaluation (service testing) contemplated above for CEBAR is service testing of Chemical Corps items. The service tests of other using agencies are not included in the above percentages. However, it is visualized that service testing of ABC items will ultimately involve the use of highly toxic materials, and an isolated area equipped and staffed such as CEBAR will be required. This facility can be made available to using agencies for such service testing as they may require. It should be noted that the facility as proposed is essential to the development and type testing programs for all ABC items and does not rely on service testing requirements as an appreciable portion of its justification.

10. The proposed establishment is located about 85 miles southwest of Salt Lake City, Utah, and is about 38 miles from the nearest rail connection, and about 40 miles from the Town of Tooele, Utah. There is one modern road connecting this proving ground with Salt Lake City via Tooele. There are no civilian centers closer than Tooele; therefore, there are no available sources of labor and no housing or community facilities adjacent to the proving ground. The proving ground as constructed during the war was of temporary structures only, many of which have deteriorated beyond their useful life and

have been salvaged; therefore, it is necessary to rebuild completely, using only a few of the temporary buildings which still remain. During World War II an air field was constructed, and the runway and aprons of this field can presently be used for lighter aircraft (up to B17 and B24 type). It is contemplated that a new hangar and machine shop will be erected and the runway resurfaced, and lengthened to 8000 feet and widened to 200 feet. Wells have been sunk in the area, and drinking water can be obtained.

11. The responsibility for financing this proposed proving ground is that of the Department of the Army except for the animal laboratory for the RW Technical Facilities which should be funded and operated by the Atomic Energy Commission. If approval is granted for its construction, it is proposed that approximately \$14,500,000 be made available for the first year, and the remainder in the second year.

COMMAND RELATIONSHIP: The proposed establishment will be a Class II installation under the jurisdiction of the Chief, Chemical Corps.

CLASSIFIED

July 1949  
(Rev. 20 Sept 1949)

NAME : Technical Facilities for Radiological Warfare Operations  
 SPONSOR : Chemical Corps, Department of the Army  
 LOCATION : CEBAR Proving Ground Establishment, Tooele County, Utah  
 TYPE OF PROGRAM: Radiological Warfare Operations -R-0%; D-55%; TT-40%;  
 OE-5%

PLANT AREA (ACRES): Not applicable

FLOOR SPACE (SQ FT) :	27,180	TOTAL PERSONNEL :	190
OFFICE :	3,940	MILITARY :	40
LABORATORY :	11,840	CIVILIAN :	150
SHOP :	2,500	Scientific :	29
OTHER :	8,900	Technical :	59
		Other :	62

CONSTRUCTION:

ANNUAL RENT:

COST : \$1,621,840  
 LAND : 0  
 BUILDINGS : 520,840  
 EQUIPMENT : 1,026,000  
 OTHER : 75,000

0

GENERAL INFORMATION:

MISSION: Developmental and type testing on offensive and defensive aspects of radiological warfare with the exception of the atomic bomb.

PROGRAMS: Broadly, the Chemical Corps Program in the field of radiological warfare includes: (1) RW Agents; (2) handling and storage incident to selection, evaluation, dissemination and defense; (3) munitions and aerial dissemination from fragmentation bombs, gliding rotors, small clusterable bombs and automatic projector shell, and; (4) protection, decontamination and chemical methods of detection.

LOCATION: CEBAR Proving Establishment, Tooele County, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army and Atomic Energy Commission.

DESCRIPTION: The specific facilities necessary to carry out the development and testing program of RW are as follows:

UNCLASSIFIED

UNCLASSIFIED

Health Physics and Decontamination Building. . .	\$ 151,840
Animal Laboratory . . . . .	222,000
RW Munitions Testing Building. . . . .	30,000
RW Laboratory for "Hot" Materials. . . . .	1,050,000
Radiochemical Laboratory . . . . .	90,000
Technical Administration Building. . . . .	55,000
Munitions storage, assembly and modification building for airborne munitions. . . . .	<u>23,000</u>
	\$1,621,840

JUSTIFICATION: Radiological warfare is a new field almost entirely unexplored. It contemplates the use of radioactivity and radioactive materials, such as products from the atomic pile to produce death or casualties in man, animals, and plants. In view of its potential effectiveness for gross anti-personnel warfare, the Joint Dept of Defense - AEC Panel on RW has recommended that this new and unique weapon be investigated under high priority to determine feasibility.

At present there are a number of isotopes and elements which are potentially usable and have been selected as possible RW agents by the Chemical Corps. These selected materials need to be field tested and operationally evaluated both from the offensive and defensive standpoint using munitions and equipment of conventional and unconventional design. Like BW and CW, RW requires large areas and isolation from human habitation for test for security reasons and because of the extreme hazards involved. An immediate objective is to develop a prototype munition for delivery by manned aircraft, which will carry a substantial quantity of RW agent and disseminate it in effective amounts over a large target area.

The number of personnel needed to carry out the essential program as listed on the first page is based upon the fact that chemical and biological warfare operations will be conducted at the same establishment, and therefore some personnel may be used for work in all three fields. This fact also applies as regards administrative, community, recreational and supporting utility activities. Personnel and technical facilities herein set forth are the minimum requirements for a combined chemical, biological and radiological warfare proving establishment. All estimates herein would be substantially increased on the basis of separate and independent establishments. The technical facilities are required at the site for the accomplishment of the test program and do not duplicate facilities elsewhere established under the Dept of Defense or AEC. In this connection, a group of Army, Air Force, AFSWP and AEC representatives recently made an extensive survey and study of field test sites for RW and as a result recommended the Chemical Corps Dugway Proving Ground with the adjoining Wendover Air Force Base as the most suitable and acceptable for the uses contemplated.

COMMAND RELATIONSHIPS: Proposed facility will be a component of CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

UNCLASSIFIED

1 July 1949  
(Rev. 20 Sept 1949)

NAME : Technical Facilities for Biological Warfare Operations  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah  
TYPE OF PROGRAM: Biological Warfare - R - 0%  
D - 30%  
TT - 60%  
OE - 10%

**UNCLASSIFIED**

PLANT AREA (ACRES): Not applicable

FLOOR SPACE (SQ FT) :	56,852	TOTAL PERSONNEL :	182
OFFICE :	6,200	MILITARY :	20
LABORATORY :	22,900	CIVILIAN :	162
SHOP :	1,000	Scientific :	30
OTHER :	26,752	Technical :	42
		Other :	90

CONSTRUCTION:

ANNUAL RENT:

COST : \$2,944,900  
LAND : 0  
BUILDINGS: 1,422,900  
EQUIPMENT: 1,394,000  
OTHER : 128,000

0

GENERAL INFORMATION:

MISSION: Developmental and type testing of models, materials, agents, equipment, devices and systems with applicable countermeasures in the field of biological warfare - crops, animals and man and service testing of Chemical Corps items.

PROGRAMS: Biological Warfare Operations versus man, animals and crops.

LOCATION: On the site of CEBAR Proving Establishment - Technical and Test Areas.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION:

1. The Chemical Corps has broad Dept of Defense and sole Dept of the Army responsibilities in the field of biological warfare. During the early part of World War II, by direction of higher authority, work in both the offensive and defensive phases of biological warfare was started, and Camp Detrick, Frederick, Maryland was built for this work. Also, a small testing station was established

**UNCLASSIFIED**

at Horn Island, Pascagoula, Mississippi. This testing station has, however, since been abandoned. Development in the field of BW has now reached a point where developmental testing, type testing and operational evaluation on an extended scale are vitally essential. Work up to this time has been carried out on a laboratory scale and to an extremely limited extent on small grid areas at Camp Detrick. However, these areas are so limited in size, and the installation is so closely adjacent to thickly populated areas that large scale testing is impossible.

2. The facility herein described is one of three technical facilities at the proposed CEBAR Proving Establishment; the other two will be devoted to radiological and chemical warfare. These facilities will not duplicate other facilities in the Department of the Army or under the Dept of Defense. All basic research and initial development in the field of BW will continue to be carried out at Camp Detrick and in a facility at Princeton, New Jersey, if acquired and made available to the Chemical Corps. The Princeton facility is intended to be used for plant and crop control, and for work with domestic animals. Field testing will be impossible at that station for the same reasons given with respect to Camp Detrick.

3. The following require the facilities herein proposed for testing within the next two (2) years.

- a. Bomb, Particulate, 4-lb, E48
- b. Cluster, Particulate, 500-lb, E96
- c. Bomb, Particulate, 1/2-lb, and cluster therefor
- d. Projectile, Particulate, 20-mm
- e. Generator, Aerosol, Continuous
- f. Dispersion and dissemination techniques and procedures
- g. Applicable individual and collective protective equipment and techniques
- h. Decontamination methods and procedures

4. The specific facilities necessary for the BW facility are herewith presented in three sections, each representing an area. Area 1 will cover approximately 25 square miles and will be used for experimentation with BW agent simulants and crop regulatory agents and equipment. The area will include two test grids, a 20-mm range and supporting buildings and facilities. Agent simulants only will be used in this area; hence, it may be located without reference to possible infection of personnel; however, certain of the buildings must be inclosed within a fence for experimentation with pathogenic BW agents and the preparation of munitions filled with pathogenic or simulated agents. This area will cover approximately 2 square miles, will include a small group of laboratory and similar buildings, and should be located in the immediate vicinity of Area 3 and remote from other activities; for security reasons this area must be inclosed by a fence. The third area will be used for experimentation with other types of pathogenic BW agents, and will cover approximately 100 square miles, including two test grids, a 20-mm range and supporting structures. This entire area must be protected by an electric fence and the area occupied by certain buildings protected by an additional cyclone fence. Areas 2 and 3 must be widely separated and isolated from other installations.

CEBAR - BW

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DESCRIPTION: The proposed buildings and facilities, and with estimated costs, are listed below:

AREA 1

Laboratory and Offices . . . . .	\$ 170,000
Munitions Storage. . . . .	27,500
Explosive Storage. . . . .	5,000
Cold Storage . . . . .	10,000
Plant Growing Structure. . . . .	13,000
Soil Preparation . . . . .	10,000
Observation Dugouts. . . . .	18,000
Circular Grid. . . . .	45,000
Square Grid. . . . .	385,000
20-mm Range. . . . .	8,000
Fence (stock tight). . . . .	2,500
Water Salinity Removal Plant . . . . .	32,500
	<hr/>
	\$ 726,500

AREA 2

Laboratory (Pathogenic Organism). . . . .	\$ 85,000
Munition Loading and Assembly Plant . . . . .	105,000
Headquarters Building . . . . .	57,500
Explosive Storage . . . . .	6,400
Barracks . . . . .	16,000
Animal Shed . . . . .	9,000
Animal Building . . . . .	27,000
Fence (cyclone) . . . . .	72,000
Water Salinity Removal Plant. . . . .	32,500
Incinerator . . . . .	10,000
	<hr/>
	\$ 420,400

[REDACTED]

5. The specific facilities necessary for the BW facility are herewith presented in four sections, each representing an area. Area 1 will cover approximately 25 square miles and will be used for experimentation with BW agent simulants and crop regulatory agents and equipment. The area will include two test grids, a 20-mm range and supporting buildings and facilities. Agent simulants only will be used in this area; hence, it may be located without reference to possible infection of personnel; however, certain of the buildings must be inclosed within a fence for purposes of security. The second area will be used for experimentation with pathogenic BW agents and the preparation of munitions filled with pathogenic or simulated agents. This area will cover approximately 2 square miles, will include a small group of laboratory and similar buildings, and should be located in the immediate vicinity of Area 3 and remote from other activities; for security reasons this area must be inclosed by a fence. The third area will be used for experimentation with other types of pathogenic BW agents, and will cover approximately 100 square miles, including two test grids, a 20-mm range and supporting structures. This entire area must be protected by an electric fence and the area occupied by certain buildings protected by an additional cyclone fence. Areas 2 and 3 must be widely separated and isolated from other installations. Area 4 is the Headquarters area for BW operations, and may be located at any convenient point reasonably accessible to Areas 1, 2 and 3.

DESCRIPTION: The proposed buildings and facilities, and with estimated costs, are listed below:

AREA 1

Laboratory and Offices . . . . .	\$ 170,000
Munitions Storage . . . . .	27,500
Explosive Storage . . . . .	5,000
Cold Storage . . . . .	10,000
Plant Growing Structure . . . . .	13,000
Soil Preparation . . . . .	10,000
Observation Dugouts . . . . .	18,000
Circular Grid . . . . .	45,000
Square Grid . . . . .	385,000
20-mm Range . . . . .	8,000
Fence (stock tight) . . . . .	2,500
Water Salinity Removal Plant . . . . .	32,500
	<u>\$ 726,500</u>

AREA 2

Laboratory (Pathogenic Organism) . . . . .	\$ 85,000
Munition Loading and Assembly Plant . . . . .	105,000
Headquarters Building . . . . .	57,500
Explosive Storage . . . . .	6,400
Barracks . . . . .	16,000
Animal Shed . . . . .	9,000
Animal Building . . . . .	27,000
Fence (cyclone) . . . . .	72,000
Water Salinity Removal Plant . . . . .	32,500
Incinerator . . . . .	10,000
	<u>\$ 420,400</u>

UNCLASSIFIED

AREA 3

Laboratory . . . . .	\$ 460,000
Personnel Decontamination Building . . . . .	45,000
Equipment Decontamination Building . . . . .	222,000
Service Station. . . . .	1,000
Six Observation Dugouts. . . . .	18,000
Circular Grid. . . . .	45,000
Square Grid. . . . .	385,000
20-mm Range. . . . .	8,000
Fence (electric) . . . . .	6,000
Fence (cyclone). . . . .	168,000
Water Softening Plant. . . . .	195,000
BW Sewage Decontamination System . . . . .	195,000
Incinerator. . . . .	50,000
	<u>\$ 1,798,000</u>

GRAND TOTAL \$ 2,944,900

COMMAND RELATIONSHIPS: The proposed facility will be a component of the CEBAR Proving Establishment, a Class II installation under the jurisdiction of the Chief, Chemical Corps.

UNCLASSIFIED

July 1949  
(Rev. 20 Sept 1949)

UNCLASSIFIED

NAME : Technical Facilities for Chemical Warfare Operations

SPONSOR : Chemical Corps, Department of the Army

LOCATION : CEBAR Proving Establishment, Tooele County, Utah

TYPE OF PROGRAM: Chemical Warfare - R - 0%  
D - 25%  
TT - 60%  
OE - 15%

PLANT AREA (ACRES): Not applicable

FLOOR SPACE (SQ FT):	25,600	TOTAL PERSONNEL :	98
OFFICE :	1,900	MILITARY :	15
LABORATORY :	15,200	CIVILIAN :	83
SHOP :	3,600	Scientific :	25
OTHER :	4,900	Technical :	36
		Other :	22

CONSTRUCTION:

ANNUAL RENT:

COST :	\$1,468,000	0
LAND :	0	
BUILDINGS :	963,600	
EQUIPMENT :	402,400	
OTHER :	92,000	

GENERAL INFORMATION:

MISSION: Developmental and type testing of materials, agents, equipment, devices and systems with applicable countermeasures in the field of chemical warfare and service testing of Chemical Corps items.

PROGRAMS: Toxic chemicals, incendiaries, flame, screening agents, individual and collective protection, applicable countermeasures, and medical aspects of chemical warfare.

LOCATION: Dugway Proving Establishment, Tooele, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

DESCRIPTION: The specific facilities necessary for the CW installation are presented below, with the estimated cost:

UNCLASSIFIED

UNCLASSIFIED

Range Office . . . . .	\$ 16,400
Chemistry Laboratory . . . . .	143,000
Munitions Assembly Building . . . . .	9,200
Field Operations Building . . . . .	56,000
Surveillance Room (Arctic) . . . . .	95,000
Surveillance Room (Desert) . . . . .	25,000
Surveillance Room (Tropical) . . . . .	23,000
Decontamination Center . . . . .	28,000
Rehabilitation and Target Areas . . . . .	20,000
Medical Test Evaluation Laboratory . . . . .	327,400
Target Grid Areas (3) . . . . .	225,000
Construction of Targets (Industrial and Housing) of Prototype Enemy Areas for Study of Gas and Incendiary Warfare and Cloud Drift Within Such Areas . . . . .	500,000
	<u>\$1,468,000</u>

JUSTIFICATION: The Chemical Corps has broad Dept of Defense and full Dept of the Army responsibility in the field of chemical warfare. New developments in chemical agents, flame, incendiaries, together with weapons, munitions, and protective equipment necessitate a large proving establishment for test and operational evaluation. New techniques and tactics for their use need to be established and demonstrated. All research and the major part of development activities will continue to be carried out at Army Chemical Center, Maryland. However, large scale type testing and operational evaluation are impossible at that facility due to lack of space and the hazards to surrounding urban and rural populations.

The facilities herein described will not duplicate any facilities designed and used for similar purposes in the Department of the Army or in the Dept of Defense. This proving establishment is the minimum essential to the attainment of established chemical objectives as approved in the project program. Special emphasis is to be placed on new methods for dispersing and disseminating agents to form effective aerosols and carrier clouds. The proposed tests will include the dispersal of materials from all types of bombs, projectiles, missiles, thermal generators and dispersors, some of which tests will be carried out by dropping from airplanes at varied heights and speeds. Furthermore, the evaluation of modern protective devices and equipment requires tests on a scale not possible at the Army Chemical Center.

COMMAND RELATIONSHIPS: Proposed facility will be a component of CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

UNCLASSIFIED

20 Sept 1949

UNCLASSIFIED

NAME : CEBAR Proving Establishment  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : Tooele County, Utah  
TYPE OF PROGRAM: Technical Facilities for Joint ABC Operations  
PLANT AREA (ACRES): Not applicable  
FLOOR SPACE (SQ FT) : 104,060  
OFFICE : 1,944  
LABORATORY : 3,872  
SHOP : 20,300  
OTHER : 77,944  
TOTAL PERSONNEL ; 153  
MILITARY : 17  
CIVILIAN : 136  
Scientific : 8  
Technical : 25  
Other : 103

CONSTRUCTION:

ANNUAL RENT:

COST : \$1,400,200  
LAND : 0  
BUILDINGS : 858,600  
EQUIPMENT : 501,600  
OTHER : 40,000

0

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GENERAL INFORMATION:

MISSION: Support the chemical, biological and radiological warfare test programs.

PROGRAMS: Animal breeding and holding, machine shops, meteorological data, instrument repair, photographic service and storage to support all test programs.

LOCATION: Dugway Proving Establishment, Tooele, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION: Three distinct but related fields of warfare have been assigned to the Chemical Corps for research and development. There are many problems in each of the fields which are not common to either of the other two fields, but there are some problems which are common to all three fields.

Where common problems exist in different fields, it is often possible to effect real economy by using combined or joint facilities on these common problems. It is the purpose of the "Joint ABC Technical Facilities" to work on these common problems.

UNCLASSIFIED

These Joint ABC Facilities will serve the following functions:

a. Animal Breeding and Holding Facility: This facility will do all the animal breeding and raising required by biological and chemical warfare and possibly for radiological warfare. This facility will not have observation or autopsy laboratories for use on exposed animals. This latter work will be done in separate facilities for each of the three fields. The breeding and holding facility is required because reliable animal data can be obtained only if the various species are acclimated to that locale and are raised under optimum and controlled conditions.

b. Technical Machine Shop: This is a large machine shop with a wide variety of equipment and capabilities. It will be required to perform modifications on prototype munitions and sampling equipment. It will be capable of doing metal work, wood work, plastics work, etc.

c. Meteorological Station: A meteorological station with a wide variety of instruments and mobile units will be required to prepare weather forecasts and to take detailed readings on field tests of all types.

d. Instrument Repair Facility: The field sampling and laboratory equipment required in the ABC fields are often delicate and complex. Although the instruments have widely varied functions, they have many common components and problems. For example, electronic principles are often used in measurements in each of the A, B, and C fields.

e. Technical Warehouses: Warehousing is a common problem. The space requirements of each of the three fields will vary widely from time to time. An economy can be effected by combining warehousing facilities.

f. Toxic and Explosives Areas: All three fields have munitions using explosives. These materials must be stored until required. Agents cannot be stored near explosives nor can agents of particular types be stored together. The area will store all explosives prior to completed munition assembly and will store some agents for later test use.

g. Technical Photographic Laboratory: This laboratory will furnish all photographic requirements of the ABC fields with the single exception of film badge work for health physics in the RW program.

DESCRIPTION: The specific facilities necessary to furnish joint support to the testing programs of BW, CW, and RW are as follows:

Animal Breeding and Holding Farm:	\$496,200	
Animal feed and bedding storage . . . . .		\$ 40,000
Incinerator Plant . . . . .		20,000
Cage Cleaning, sterilizing and storage. . . . .		60,000
Goat and Sheep sheds. . . . .		54,000
Small animal breeding buildings (2) . . . . .		120,000
Small animal holding buildings (3) . . . . .		195,000
Post-exposure holding buildings (2) . . . . .		<u>7,200</u>

UNCLASSIFIED

Machine Shop . . . . .	\$ 329,000
Meteorological Station . . . . .	26,000
Instrument Repair Building . . . . .	90,000
Toxic gas area and explosive storage . . . . .	146,000
Photographic laboratory . . . . .	67,000
Warehouses (6) . . . . .	<u>246,000</u>
	\$ 1,400,200

COMMAND RELATIONSHIPS: Proposed facility will be a component of the CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

UNCLASSIFIED

Water Works and Sewage Disposal. . . . . . \$ 2,155,000

Water works include two 500,000-gallon tanks or reservoirs, on high ground above residence area; two additional wells to be drilled; provision included for emergency expansion. Normal sanitary sewage disposal for total estimated population of 2500.

Access Roads . . . . . \$ 630,000

Ten miles black top to connect main highway to residential and headquarters area.

Repair of Existing Roads. . . . . . \$ 280,000

Improvement of Existing Main Highway. . . . . . \$ 250,000

Resurface 34 miles of the existing main highway over Johnson's Pass.

Heating and Other Power Costs are included in other estimates for other buildings and facilities.

\$ 3,540,000

COMMAND RELATIONSHIPS: Proposed facilities will be component parts of CEBAR Proving Establishment, a Class II installation under the jurisdiction of the Chief, Chemical Corps.

July 1949  
(Rev. 20 Sept 1949)

NAME : CEBAR Proving Establishment  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah

**UNCLASSIFIED**

TYPE OF PROGRAM: Post and Administration Buildings to support Chemical, Biological and Radiological Warfare Test Programs

PLANT AREA: Not applicable

FLOOR SPACE (SQ FT):	82,005	TOTAL PERSONNEL :	680
OFFICE :	10,425	MILITARY :	380
LABORATORY :	1,500	CIVILIAN :	300
SHOP :	6,200	Scientific :	0
OTHER :	63,880	Technical :	0
		Other :	300

CONSTRUCTION:

ANNUAL RENT:

COST :	\$ 2,446,500	0
LAND :	0	
BUILDINGS:	1,559,500	
EQUIPMENT:	135,000	
OTHER :	752,000	

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GENERAL INFORMATION:

MISSION: Necessary post and administration buildings to provide for an active development and test establishment with 1,365 working personnel and total population of 2,500 (estimated).

PROGRAM: Development and testing in the fields of radiological, biological, and chemical warfare.

LOCATION: On the site, at CEBAR Proving Establishment, Tooele County, Utah.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION AND DESCRIPTION: The facilities herein described and justified will constitute those facilities necessary for the post activities and administrative functions of the CEBAR Proving Establishment. This Establishment is necessary to provide test and evaluation facilities for the Chemical Corps in carrying out the responsibilities with respect to radiological, biological and chemical warfare. The Proving Establishment will be located, in part, on the site of Dugway Proving Ground in Tooele County, Utah. It is located approximately 85 miles southwest of Salt Lake City and about 40 miles by road from

**UNCLASSIFIED**

Tooele, Utah. The Establishment will have a working personnel of approximately 1,365, both military and civilian, with a total estimated population of about 2,500. The facilities herein described are the minimum necessary for this purpose.

a. Post Administration Building: \$ 130,000

This facility will house the commanding officer of the Establishment, his executive and administrative staff, and the necessary clerical, fiscal and other personnel and will have the usual office furniture, safes, files, and communication system.

b. Motor Pool: \$ 108,000

Due to the widely separated areas of test operations, an extensive motor pool is necessary and will supply vehicles of all types and make repairs thereto. The usual wash racks, paint room, stock room, instrument repair room, etc., are included.

c. QM Office and Warehouse: \$ 41,000

Standard type of QM office, warehouse, and supply room will be required for handling all types of materials and supplies; loading and delivery ramp is included.

d. Post Laundry: \$ 41,500

Standard Laundry required for all military and civilian personnel and operational units, including hospital; no other laundry available within 50 miles.

e. Post Commissary: \$ 18,000

To supply subsistence for military and civilian personnel; warehouse type building with office and salesroom, icebox, deep freezer, and usual equipment.

f. Utilities Shop: \$ 55,000

To supply usual shop facilities for the post, such as carpenters, plumbers, and general repair shops for maintenance of post facilities.

g. Station Hospital: \$ 801,000

A hospital of sufficient capacity to handle the normal post complement is essential; in addition to the usual hospital, it is necessary to provide additional space to take care of possible accidents which might occur from the extremely hazardous nature of the test and development work to be carried out. No special hospital equipment is required for this purpose, however.

h. Guard House: \$ 13,000

Guard house and detention building in the barracks area of standard fireproof construction is required.

i. Air Base: \$ 1,219,000

The present air strip is not capable of handling the latest type of heavy aircraft. The runway must therefore be strengthened, resurfaced, and widened to approximately 8,000 feet in length by 200 feet in width. In addition, an operations building and a hangar, estimated to cost \$39,000 and \$430,000 respectively, are necessary. Since much of the test and operational development will be with aerial munitions, a reasonable adequate air base is essential.

j. Fire Station: \$ 20,000

A fire station to house the post fire equipment, alarm office and provide sleeping facilities for fire personnel is required.

COMMAND RELATIONSHIPS: Proposed facility will be a component of the CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

July 1949  
(Rev. 20 Sept 1949)

UNCLASSIFIED

NAME : CEBAR Proving Establishment UNCLASSIFIED  
SPONSOR : Chemical Corps, Department of the Army  
LOCATION : CEBAR Proving Establishment, Tooele County, Utah  
TYPE OF PROGRAM: Community and Recreational Facilities in support of radiological, biological and chemical warfare test and development operations.

PLANT AREA: Not applicable

FLOOR SPACE (SQ FT) : 58,800  
OFFICE : 225  
LABORATORY : 0  
SHOP : 0  
OTHER : 58,575

CONSTRUCTION:

ANNUAL RENT:

COST : \$ 1,238,000 0  
LAND : 0  
BUILDINGS : 1,103,000  
EQUIPMENT : 25,000  
OTHER : 110,000

GENERAL INFORMATION:

MISSION: To provide necessary community and recreational facilities to personnel at CEBAR Proving Establishment, totaling 1365 working personnel, military and civilian, and 2500 total personnel (estimated).

PROGRAMS: Development and testing in the fields of radiological, biological and chemical warfare.

LOCATION: On the site, at CEBAR Proving Establishment.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION AND DESCRIPTION: The CEBAR Proving Establishment will be located in Tooele County, Utah, approximately 85 miles southwest of Salt Lake City and about 38 miles from the town of Tooele, Utah. Due to the nature of the tests to be conducted, isolation from centers of population is essential. Therefore, it is necessary to provide recreational and community facilities for the operating personnel and their families. It is anticipated that approximately 1365 personnel, military and civilian, will be employed at the establishment, with a total estimated population of approximately 2500. Of the operating

UNCLASSIFIED

personnel, approximately 515 will be military personnel.

The necessary facilities for this purpose are as follows:

- a. School, Chapel and Small Shopping Center. \$ 900,000

There are no schools or churches available within 40 miles of the establishment, and it is essential that facilities of this nature be provided for both the military and civilian personnel who will live at the establishment. Also, a small community shopping center is essential for the same reasons.

- b. Post Theater. \$ 195,000

Standard theater construction with capacity to seat 400 persons, and having 35-mm projectors, with the usual equipment, is necessary for both the military and civilian populations.

- c. Swimming Pool. \$ 110,000

The isolation of this installation, plus the fact that the summers are long and hot, make the provision of a swimming pool for civilian and military personnel essential.

- d. Post Exchange. \$ 33,000

Post Exchange service is required for the military personnel. Standard type of construction with necessary office, storage space and sales room is contemplated.

COMMAND RELATIONSHIPS: The proposed facility will be a component of the CEBAR Proving Establishment, a Class II installation under the jurisdiction of the Chief, Chemical Corps.

July 1949  
(Rev. 20 Sept 1949)

NAME : CEBAR Proving Establishment

SPONSOR : Chemical Corps, Department of the Army

LOCATION : CEBAR Proving Establishment, Tooele County, Utah

TYPE OF PROGRAM: Housing, Mess and Club Facilities in Support of Radiological, Biological, and Chemical Warfare Test Programs

PLANT AREA (ACRES): Not applicable

UNCLASSIFIED

FLOOR SPACE (SQ FT) :	492,100	TOTAL PERSONNEL :	62
OFFICE :	0	MILITARY :	31
LABORATORY :	0	CIVILIAN :	31
SHOP :	0	Scientific :	0
OTHER :	492,100	Technical :	0
		Other :	31

CONSTRUCTION:	ANNUAL RENT :	
COST :	\$ 6,851,000	0
LAND :	0	
BUILDINGS :	6,701,000	
EQUIPMENT :	90,000	
OTHER :	60,000	

GENERAL INFORMATION:

MISSION: Living quarters, mess and club facilities for officers, enlisted men, civilian scientific, technical and other civilian personnel, totaling 1,565. Total estimated population, inclusive of families, 2,500.

PROGRAMS: Development and testing in the fields of radiological, biological, and chemical warfare.

LOCATION: On the site, at CEBAR Proving Establishment.

COMPLETION TIME: Two (2) years.

FINANCING: Public Works Funds, Department of the Army.

JUSTIFICATION: Housing, mess and club facilities for military and civilian operating personnel on the site which is, of necessity, isolated from normal areas of human habitation.

DESCRIPTION: Conventional Corps of Engineers permanent type construction suitable for the locality. The type of construction would compare to that used at Sandia, New Mexico. It is estimated that the following minimum accommodations will be required for the operating personnel and their families:

UNCLASSIFIED

	<u>AREA (SQ FT)</u>	<u>TOTAL COST</u>
BOQ, 10 Field, 60 Co. Gr.	42,000	\$ 550,000
Barracks for 400 EM	80,000	944,000
Mess for 400 EM	10,000	131,000
Service Club (500 EM)	3,500	53,000
Civilian Women's Dorm (200)	30,000	393,000
Civilian Male Dorm (475)	65,000	815,000
Off. Club and Mess (400 Off. & Civ.)	11,000	165,000
Civilian Mess (500)	13,000	170,000
		\$ 3,221,000
100 Fam. Qtrs., Off. & Prof. @ \$16,500	108,000	1,650,000
120 Fam. Qtrs., NCO & Tech. @ \$16,500	<u>129,600</u>	<u>1,980,000</u>
TOTAL	492,100	\$ 6,851,000

COMMAND RELATIONSHIPS: Proposed facility will be a component of the CEBAR Proving Establishment, which is a Class II installation under the jurisdiction of the Chief, Chemical Corps.

UNCLASSIFIED

SECURITY CLASSIFICATION (If any)

# DISPOSITION FORM



FILE NO.

CMLWR-B 322 Cebav

SUBJECT

Justification for CEBAR Proving Establishment

TO Chief, Sup & Proc Div  
OCCmC, Wash. 25, D. C.

FROM Chief, Res & Eng Div  
OCCmC, A Cml C, Md.

DATE 3 March 1950  
Lt Col ROBall/2257/trp

COMMENT NO. 1

1. In compliance with verbal request of the Office of the Chief of Engineers there are forwarded five (5) photostatic copies of pages 1 through 9 of AGO Form 726, dated 12 January 1950, revised 2 March 1950, and consolidation sheet therefor, dated 28 February 1950, for use in connection with justification for CEBAR Proving Establishment.

2. Referenced revised sheets provide for 1st phase of 1951 construction in the amount of \$8,004,190, 2nd phase of 1951 construction in the amount of \$4,000,000, future construction in the amount of \$11,506,010, and a total of \$21,510,200.

FOR THE CHIEF, RESEARCH AND ENGINEERING DIVISION:

*Rura O. Ball*  
RURA O. BALL, Lt. Colonel, Cml C  
Asst to Chief, Res & Eng Div

5 Incls  
5 epps of Form 726  
& Consolidation Sheet

CC: with inclosure Liaison, R&E Div, Wash, D. C.  
CC: " " Technical Director, Camp Detrick, Md.  
CC: " " Western Chemical Center, Tooele, Utah  
CC: " " District Engineer, San Francisco, Calif.

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X6001  
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Engineers  
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24 Mar 50*

GROUP 4  
DOWNGRADED AT 3 YEAR INTERVALS  
DECLASSIFIED AFTER 12 YEARS  
DOD DIR 5200.10

UNCLASSIFIED

*WR 5102*

CORAS PROVING ESTABLISHMENT

Revised  
28 Feb 1950

<u>Technical Facilities</u>	<u>1st. Quater 1951</u>	<u>2nd. Quater 1951</u>	<u>Febuary</u>	<u>Total</u>
EW Operations	0	500,000	827,200	1,327,200
EW Operations	1,700	300,180	1,380,800	2,682,600
CW Operations	1,100	229,600	378,300	611,000
Joint Operations	1,000	421,700	378,200	1,821,000
<b>Total Technical Facilities</b>	<b>1,343,900</b>	<b>1,451,400</b>	<b>3,225,000</b>	<b>6,020,300</b>
 <u>Administrative Facilities</u>				
Post & Admin. Facilities	2,400	497,400	2,426,800	3,776,600
Housing & Club Facilities	14,100	755,900	3,474,100	6,473,700
Utilities & Roads	1,836,690	918,200	1,839,010	3,793,900
Community & Recreation	527,100	377,500	511,100	1,445,700
<b>Total Admin. Facilities</b>	<b>4,660,290</b>	<b>2,548,600</b>	<b>8,281,010</b>	<b>15,489,900</b>
 <b>GRAND TOTALS</b>	 <b>6,004,190</b>	 <b>4,000,000</b>	 <b>11,506,010</b>	 <b>21,510,200</b>

MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

PAGE 1 OF 2 PAGES (This Installation)  
DATE 12 January 1950 (Revised 2 April 1950)

UNCLASSIFIED

NAME OF INSTALLATION CEBAR Proving Establishment					LOCATION Tooele County, Utah	
STRENGTH	OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND
ACTUAL					II	10th Army
REQUIRED	115	400	850	1365	CATEGORY	OVERSEAS COMMAND
					LIST	SERVICE
						Chemical Corps

LINE NO.	DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED FY 1951	AMOUNT PROPOSED FY 1951	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
						First Phase	Amount Proposed FY 1951 Second Phase	Amount Proposed Future Fiscal Year (000)	
CEBAR Proving Establishment									
CEBAR is required for experimental testing, type testing and operational evaluation of the offensive, defensive and medical aspects of chemical, biological and radiological warfare. Due to lack of funds, this project was broken down into 3 increments as follows:									
			\$ 6,004,190						
			4,000,000						
			11,506,010						
			\$21,510,200						
Projects Constituting CEBAR are:									
<u>Technical Facilities for RW Operations</u>									
1	Health Physics and Decontamination Buildings								
	Buildings	53.7							This installation is essential for the protection of health of personnel engaged in and adjacent to all RW activities.
	Equipment	18.0							
		71.7	71.7				71.7		
2	RW Laboratory for "Hot" Materials								This laboratory partially provides for receiving, storage and transfer of radioactive materials.
	Buildings	500.0							
	Equipment	563.0							
		1,063.0	1,063.0		500.0	563.0			
3	Radiochemical Laboratory								This laboratory provides for the chemical analysis of all RW munitions before and after dissemination. Complete data is required on connection with activity and decontamination.
	Buildings	130.0							
	Equipment	45.0							
		175.0	175.0			175.0			
4	RW Technical Administration Building								This Building is required for administration and coordination of RW activities, evaluation of data and preparation of reports.
	Building	52.9	52.9			52.9			
5	Munitions storage, assembly and modification building for airborne munitions								This building is required for modification and clustering of RW munitions.
	Building	21.6							
	Equipment	3.0							
		24.6	24.6			24.6			
	Sub-Total RW		1,387.2		500.0	887.2			

DA AGO FORM 726  
1 SEP 49

PREVIOUS EDITIONS ARE OBSOLETE

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MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

NAME OF INSTALLATION CEMR Proving Establishment					LOCATION Tooele County, Utah			
OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND			
				II	Sixth Army			
				CATEGORY	OVERSEAS COMMAND			
				LIST	SERVICE			
115	400	850	1365		Chemical Corps			
CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED FY 1951 (\$000)	AMOUNT PROPOSED FY 1951 Future Second Phase (\$000)	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
					NEED- NOW	INTERMEDIATE CRDS	MAJOR CMD OR SERVICE	
			First Phase	Amount Proposed				
				Future Fiscal Year (000)				
<b>Chemical Warfare and BW Operations</b>								
Munitions Storage Building	13.7							Storage is required for protection of munitions and components
Munitions Storage Equipment	5.0							
	18.7	18.7		18.7				
Munitions Storage Building	1.45	5.7		5.7				Storage is required for protection of explosive material.
Munitions Storage Equipment	4.0							Cold Storage is required for bacterial cultures to control viability.
	5.0							
	9.0	9.0		9.0				
Munitions Storage Building	18.6							This building is required to prepare and store soil and growing plants for test of regulatory agents
Munitions Storage Equipment	3.0							
	21.6	21.6	21.6					
Munitions Storage Building	2.45							These Dugouts are for protection of Observation personnel. Four are required in one location and two at another.
Munitions Storage Equipment	591.4	591.4		591.4				This grid is for sampling of pathogenic agents on 2000 yd. square grid at 50 yd. intervals
Munitions Storage Building	4.8							This range is required for evaluation of BW munitions filled with simulant and/or crop regulatory agents.
Munitions Storage Equipment	8.0	8.0		8.0				
Munitions Storage Building	1.4							This item is for repair and relocation of 4 miles of 5 strand barbed wire fence to exclude stock from Area I.
Munitions Storage Equipment	1.4	1.4		1.4				
Munitions Storage Building	10.0							Water of low saline content is required for preparation of cultures and growth of plants
Munitions Storage Equipment	22.5							
	32.5	32.5	32.5					
Munitions Storage Building		709.0	54.1	57.5				
Munitions Storage Equipment	400.0							This building is required for preparation of cultures and determination of culture characteristics during each stage of munition evaluation. Also used for examination of infected animals
	391.6							
	591.6	591.6	591.6					

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CLASSIFICATION  
**MASTER PLAN AND CONSTRUCTION PROGRAM - PART E**  
 (Installation Construction Program)

REPORTS SYMBOL CSGLD 34(81)  
 PAGE 3 OF 9 PAGES (This Installation)  
 DATE 12 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION: **CEBAR Proving Establishment**  
 LOCATION: **Tooele County, Utah**  
 CLASS: **Sixth Army**  
 MAJOR COMMAND: **Sixth Army**  
 OVERSEAS COMMAND:   
 CATEGORY:   
 SERVICE: **Chemical Corps**

STRENGTH: OFFICERS **115**, ENLISTED MEN **100**, CIVILIANS **850**, TOTAL **1365**  
 ACTUAL:   
 REQUIRED:

LINE NO.	DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$00)	ESTIMATED TOTAL COST (\$00)	AMOUNT PROPOSED FY 19 51	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
					First Phase	Amount Proposed FY 1951 Second Phase	Amount Proposed Future Fiscal Year (000)	
Technical Facilities for BW Operations (Continued)								
16	Munition Loading and Assembly Plant							This building is required for filling and clustering of pathogenic agent munitions.
	Building	15.6						
	Equipment	20.0	35.6			35.6		This building required for administration and control of AREAS II & III and provide living quarters for personnel required for constant duty.
17	Headquarters with Barracks Building	79.6	79.6			79.6		Storage is required for protection of explosive materials.
18	Explosive Igloos (4) Building	1.45	5.7		5.7			This shed required for protection and feeding of large animals held at site of test.
19	Animal Shed Building	12.4	12.4			12.4		This building required for supply of small animals for test site.
20	Animal Building Building Equipment	29.3	5.0	34.3	34.3			This fence 36" stock with 3 strand of barbed wire required to contain test animals and exclude range stock.
21	Fence, Animal 6 mi. @ \$1.00/ft	31.7	31.7			31.7		Water of low saline content required for preparation of cultures.
22	Water Salinity Removal Plant Building Equipment	10.0	12.5	32.5	32.5			Safe disposal of contaminated solid material is required.
23	Incinerators Building Equipment	6.0	6.0	12.0	12.0			
	SUB-TOTAL AREA II			835.4	670.4	5.7	159.3	
	AREA III BW							
24	Personnel Decontamination Building Building Equipment	15.0	10.0	25.0	25.0			Exposed personnel require decontamination for safety operations.

DA FORM 726 1 SEP 49

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MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

REPORTS CONTROL SYMBOL CSGLD-24(1)  
PAGE 4 OF 7 PAGES (This Installation)  
DATE 12 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION Chemical Corps Establishment				LOCATION Tooele County, Utah		MAJOR COMMAND Sixth Army	
OFFICERS		ENLISTED M.E.A.	CIVILIANS	TOTAL	CLASS II	OVERSEAS COMMAND	
		400	850	1365	CATEGORY	SERVICE Chemical Corps	

DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED FY 1951 (\$000)	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
				First Phase	Amount Proposed FY 1951 Second Phase	Amount Proposed Future Fiscal Year (\$000)	
Decontamination	40.0	40.0	40.0				All equipment in area requires decontamination between tests or before removal from area.
Storage Station	8.3	8.3	8.3				This structure provides minimum service for contaminated vehicles.
Observation Posts (6)	2.45	14.7				14.7	Protection of observation personnel who control sampling is required (4 at circular and 2 at square grid).
	591.4	591.4				591.4	This grid is for sampling of pathogenic agents on 2000 yd. square grid at 50 yd. intervals.
	84.5	84.5		84.5			This fence provides for retention of test animals and exclusion of range animals. 30" high, 6" stay, hog-tight, with 3 barbed wires required.
	11.9	75.0					This plant is required to process water prior to utilization to prevent extreme casts in decontamination of sewage.
	89.9	89.9	89.9				Provides for decontamination of all sewage from contaminated areas and buildings.
	17.4	185.0				50.0	Provides for safe disposal of all solid bacteriological waste in area.
	127.0	24.0				24.0	
<b>TOTAL</b>			1,080.2	213.2	236.9	630.1	
<b>TOTAL</b>			2,618.6	937.7	300.1	1,380.8	

FORM 726

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MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

REPORTS POL SYMBOL CSOLD-4(2)

PAGE 4 OF 7 PAGES (This Installation)

DATE 12 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION				LOCATION			
Supporting Establishment				Tooele County, Utah			
OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND		
	400	850	1355	II	Sixth Army		
				CATEGORY	OVERSEAS COMMAND		
				LIST	SERVICE		
				Chemical Corps			
DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$00)	ESTIMATED TOTAL COST (\$00)	AMOUNT PROPOSED FY 1951	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
				URGENT	INTERMEDIATE	MAJOR CMD OR SERVICE	
Facilities for B Operations (Continued)							
Decontamination Building	40.0	40.0	40.0				All equipment in area require decontamination between tests or before removal from area.
Service Station Structure	8.3	8.3	8.3				This structure provides minimum service for contaminated vehicles.
Observation Posts (6)	2.45	14.7			14.7		Protection of observation personnel who control sampling is required (1 at circular and 2 at square grid).
Sampling Grid	591.4	591.4			591.4		This grid is for sampling of pathogenic agents on 2000 sq. square grid at 50 yd. intervals.
Animal Pen	84.5	84.5	84.5				This fence provides for retention of test animals and exclusion of range animals. 10' high, 6" stay hog-tight, with 3 barbed wires required.
Water Treatment Plant	11.9	89.9	89.9				This plant is required to process water prior to utilization to prevent extreme costs in decontamination of sewage.
Sewage Treatment Plant	17.4	50.0	50.0				Provides for decontamination of all sewage from contaminated areas and buildings.
Incinerator	12.0	24.0			24.0		Provides for safe disposal of all solid bacteriological waste in area.
<b>Total B Operations</b>		1,080.2	213.2	236.9	630.1		
<b>Total B Operations</b>		2,618.6	937.7	300.1	1,380.6		

DA FORM 726

PREVIOUS EDITIONS ARE OBSOLETE

CLASSIFICATION

UNCLASSIFIED

MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

REPORTS OF SYMBOL CSGLD 34417  
PAGE 5 OF 6 PAGES (This Installation)  
DATE 12 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION CERAR Proving Establishment					LOCATION Tooele County, Utah	
STRENGTH			TOTAL		CLASS II	
OFFICERS	ENLISTED MEN	CIVILIANS			MAJOR COMMAND Sixth Army	
ACTUAL					OVERSEAS COMMAND	
Required	115	400	850	1365	SERVICE Chemical Corps	

LINE NO.	DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED		PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
				FY 1951	FY 1952	First Phase	Second Phase	Future Fiscal Year (000)	
33	Technical Facilities for CW Operations Chemistry Laboratory Building Equipment	131.0 25.0	156.0			156.0			Provides for the analysis of collected data in testing of munitions
34	Munitions Assembly Building Building Equipment	7.2 2.0	9.2			9.2			Provides for assembly, firing, and clustering of test munitions.
35	Field Operations Building Building	48.0	48.0			48.0			Provides area for preparation of plans, assembly of test data and evaluation.
36	Surveillance Room (Arctic) Building Equipment	23.4 60.0	83.4		83.4				Provides for Arctic tests and preparation of agents, receiving transfer.
37	Surveillance Room (Desert) Building Equipment	24.1 0.5	24.6				24.6		Provides for desert testing of munitions and agents.
38	Surveillance Room (Tropical) Building Equipment	18.1 2.0	20.1				20.1		Provides for tropical testing of munitions and agents.
39	Decontamination Center Building Equipment	14.4 2.0	16.4			16.4			Required for decontamination of personnel exposed in test work.
40	Rehabilitation of Targets (Simulated) Structure		20.0				20.0		Provides for target buildings for evaluation of munitions.
41	Medical Test Evaluation Laboratory Building Equipment	150.0 100.0	250.0			250.0			Required to evaluate and develop agents for prophylaxis and curative measures.
42	Observation Platform Structure	18.0	54.0			54.0			12'x12'x50' high tower for test observation.
43	Observation Dugouts (4) Building	2.45	9.8			9.8			For protection of test personnel
SUB TOTAL CW OPERATIONS					691.5	83.4	229.6	378.5	

DA AGO FORM 726  
1 SEP 49

PREVIOUS EDITIONS ARE OBSOLETE

CLASSIFICATION

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MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

DATE 12 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION SPEAR PROVING ESTABLISHMENT				LOCATION Tooele County, Utah	
OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND
115	100	850	1365	II	Sixth Army
				CATEGORY	OVERSEAS COMMAND
				LIST	SERVICE
					Chemical Corps

DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$00)	ESTIMATED TOTAL COST (\$00)	AMOUNT PROPOSED		PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS		REMARKS
			FY 1950	FY 1951	INTERMEDIATE CMDS	MAJOR CMD OR SERVICE	
			First Phase	Amount Proposed FY 1951 Second Phase	Amount Proposed Future Fiscal Year (00)		
<b>Chemical Facilities for Joint Operations:</b>							
Animal Feed & Bedding Storage							Provides for test animals. Used in evaluation work.
Building	69.0	69.0	69.0				Provides for safe disposal of solid materials.
Washers (3)							
Building	6.0						
Equipment	6.0					12.0	Provides facilities for animal equipment.
Equipment	12.0	24.0	12.0				
Washers, Sterilizing							
Building	55.4						
Equipment	10.0						
Equipment	65.4	65.4	65.4				Provides quarters for test goats and sheep.
Washers, Sterilizing							
Building	11.6					21.3	Provides for rearing of small animals for test work. Acclimation is required for control purposes.
Equipment		23.3					
Washers, Sterilizing							
Building	65.4	130.8	65.4	65.4			Provides for living quarters for small animals awaiting test work
Animal Holding Building							
Building	55.5						
Equipment		165.4	111.0	55.4			Provides for holding of exposed test animals
Washers, Sterilizing							
Building (2)	7.7					14.4	
Equipment		14.4					
Washers, Sterilizing							
Building	216.7						This shop is required to modify test munitions, repair large test equipment and fabricate special equipment.
Equipment	34.0					252.7	
Equipment		252.7					Provides for repair and fabrication of small instruments. Used in test work and laboratory facilities.
Equipment Repair Shop							
Building	87.3						
Equipment	30.0						
Equipment	117.3	117.3				117.3	Provides for loading and transfer of agents changed to liquid state.
Washers, Sterilizing							
Building	24.1						
Equipment	2.0						
Equipment	26.1	26.1				26.1	Provides for safe operations on munitions fuses.
Washers, Sterilizing							
Building	8.0						
Equipment		8.0				8.0	

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MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

REPORTS AND SYMBOLS (This Installation)

DATE

NAME OF INSTALLATION CEBAR Proving Establishment					LOCATION Tooele County, Utah		
STRENGTH	OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND	
ACTUAL					II	Sixth Army	
Required	115	400	850	1365	CATEGORY	OVERSEAS COMMAND	
					LIST	SERVICE Chemical Corps	

LINE NO.	DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED FY 1951	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
					First Phase	Intermediate CMOS	MAJOR CMD OR SERVICE	
Technical Facilities for Joint Operations (Continued)								
55	Open Transfer Shed							
	Building	8.5						Provides for transfer of agents from shipping containers to munitions.
	Equipment	1.0						
		9.5	19.0			19.0		
56	Office and Change House							Provides for administration of toxic area.
	Building	35.7	35.7			35.7		
57	Hoist Station							Provides for transfer of munitions from yard to trucks or vice versa.
	Building	13.5						
	Equipment	2.0						
		15.5	15.5			15.5		
58	Warehouse							Provides storage of munitions and components required for tests.
	Building	8.9						
	Equipment	1.0						
		9.9	69.3			69.3		
59	Painting and Repair Shop							Provides for the painting and minor repair for shipping containers and munitions.
	Building	15.6						
	Equipment	7.0						
		22.6	22.6			22.6		
60	Photographic Laboratory							Provides for photographic work required for test evaluation of items and munitions.
	Building	54.0						
	Equipment	20.0						
		74.0	74.0			74.0		
61	Warehouses (6)							Provides for warehousing of material and special equipment.
	Building	23.5						
62	Meteorological Buildings							Complete weather data is required for evaluation of test data and control of test operations.
	Building	48.2	48.2	48.2				
Sub-Total Technical Facilities for Joint Operations			1,323.0	322.8	421.7	578.5		
Post and Administrative Facilities:								
63	Administration Building							Provides for post administration and coordination of all technical operations.
	Building	512.0	512.0	175.0		337.0		
64	Motor Pool							Provides for maintenance and operation of 250 vehicles.
		146.5	146.5			146.5		

MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

REPORTS CONTROL SYMBOL CSGLD-34(1)  
PAGE 8 OF 9 PAGES (This Installation)

DATE 17 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION Proving Establishment				LOCATION Tooele County, Utah	
OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND
115	400	850	1365	II	Sixth Army
				CATEGORY	OVERSEAS COMMAND
				LIST	SERVICE
					Chemical Corps

DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED FY 1951 (\$000)	PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS		REMARKS
				INTERMEDIATE CMDS	MAJOR CMD OR SERVICE	
			First Phase	Amount Proposed FY 1951 Second Phase	Amount Proposed Future Fiscal Year (000)	
Administrative Facilities (Continued)						
Office & Warehouse	48.6	48.6		48.6		Provides for storage of AM Material required at the post.
Messing	103.2	103.2		103.2		Provides for housekeeping supplies for personnel on post (nearest shopping center 50 miles).
Utilities Shop Building	324.9	324.9			324.9	Provides for all RMU activities. Constant changes for post of this type requires larger shop than usual post.
Medical Hospital (100 Bed) Building	1,518.4	1,518.4	600.0	300.0	618.4	Provides for hospitalization of regular personnel and for normal operational hazards to personnel engaged in this type of work.
Building	45.6	45.6		45.6		Provides for Air Force personnel required for test work.
Air Runway	1,000.0	1,000.0			1,000.0	Provides for modification of present Air Runway to 8000' x 200' size.
Building	77.4	77.4	77.4			Provides fire protection at Headquarters Area.
Building, Messing and Club Facilities		1,776.8	852.4	497.4	426.8	Provides for 72 Bachelor Officers or Scientific Personnel
Building	182.3	182.3	182.3	182.3	182.3	Provides housing for required Enlisted Men
Trucks (200 Men with Garage) Building	480.0	480.0	480.0		480.0	Provides club facilities for EM and Technicians
Building	165.3	165.3	165.3			Provides for female personnel housed on post. (100 to commute).
Building	312.5	312.5	162.5		150	Provides for housing of 200 males. (275 males to commute).
Building	625.0	625.0		312.5	312.5	Provides for recreation of all Officers and Scientific personnel & messing of bachelors.
Building	210.0	210.0	210.0			

MASTER PLAN AND CONSTRUCTION PROGRAM - PART E  
(Installation Construction Program)

REPORTS GOVERNMENT PRINTING OFFICE  
PAGE 9 OF 7 PAGES (This Installation)  
DATE 12 January 1950 (Revised 2 March 1950)

NAME OF INSTALLATION CERAR Proving Establishment					LOCATION Tooele County, Utah		
STRENGTH	OFFICERS	ENLISTED MEN	CIVILIANS	TOTAL	CLASS	MAJOR COMMAND	
ACTUAL					II	Sixth Army	
					CATEGORY	OVERSEAS COMMAND	
Required	115	400	850	1365	LIST	SERVICE Chemical Corps	

LINE NO.	DESCRIPTION OF CONSTRUCTION ITEM	ESTIMATED UNIT COST (\$000)	ESTIMATED TOTAL COST (\$000)	AMOUNT PROPOSED FY 1951		PROPOSED PRIORITY FOR CONSTRUCTION OF ITEMS			REMARKS
				First Phase	Amount Proposed FY 1951 Second Phase	Priority	INTERMEDIATE CMOs	MAJOR CMD OR SERVICE	
Housing, Messing and Club Facilities (Continued)									
76	Family Quarters (224 Units) Buildings	130.5	3,654.0	1,044.0	260.7	2,349.3			Provides for housing for all married employed. (No housing is available within 50 miles)
	Sub-Total Housing, Messing and Club Facilities		6,473.7	2,244.1	755.5	4,474.1			
Utilities and Roads									
79	Power Supply and Distribution	960.0	960.0	350.0	110.0	460.0			Provides for power supply and distribution, telephones, fire alarm and street lighting.
80	Water Supply & Distribution	578.6	578.6	230.0	212.105	136.495			Water supply & distribution to five separate areas.
81	Sewage Collection and Disposal	331.0	331.0	150.0	100.0	81.0			Sewage collection & disposal for five separate areas.
82	New Roads & Repairs	849.2	849.2	101.0	230.0	518.2			Thirty miles of repair, twenty miles of new road, 300,000 sq ft parking.
83	Improvement of Existing Main Highway	300.0	300.0			300.0			Repair of twenty miles of highway.
84	Landscaping Main Area	25.1	25.1			25.1			Provides initial landscaping of main area.
85	Site Facilities for Buildings	750.0	750.0	205.690	231.785	318.215			Provides for gas, water, and utilities to buildings.
	Sub-Total Utilities & Roads		3,793.9	1,036.690	918.200	1,839.010			
Community & Recreational Facilities									
86	School, Gym and Cafeteria	564.0	564.0	150.0	150.0	264.0			Provides school for 500 pupils (nearest school 20 miles, mountain range).
87	Chapel	203.0	203.0			203.0			Provides religious activities (300 capacity).
88	Bowling Alley								
	Building	89.0							
	Equipment	24.0							
	Sub-Total	113.0	113.0	113.0					
89	Post Theatre (500)	190.0	190.0	190.0					Provides recreation at isolated post.
90	Swimming Pools (2)	74.1	148.2	74.1		74.1			Provides recreation at isolated post.
91	Post Exchange	227.5	227.5		227.5				Provides supplies at isolated post.
	Sub-Total Community and Recreational Facilities		1,445.7	527.1	377.5	541.1			
GRAND TOTAL			21,510.2	6,004,190	4,000,000	11,506,010			