

89-9-8
RCC1.950320.009

HEADQUARTERS
WESTERN CHEMICAL CENTER
TOOELE, UTAH

UNCLASSIFIED

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

DANIEL KING
1st Lt., Cml C
Adjutant

Copy furnished:
CG, Sixth Army
ATTN: Army Engr

161

6811 291

Handwritten signature/initials

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

UNCLASSIFIED

url 2377

600.1 Western Chemical Center

Edgewood Arsenal, Maryland
CBDCOM Historical Office
Higher Command Room
File Cabinet # 76 Drawer # 1
File Name: 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
58/1/241

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



UNCLASSIFIED

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.

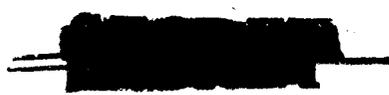
3. This installation will be known as the CEBAR Proving Establishment, CEBAR is a coined word to cover Chemical, Biological and Radiological Warfare operations, and will therefore be descriptive of the installation upon activation.

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>EW</u>	<u>EW</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

UNCLASSIFIED

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.

UNCLASSIFIED

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	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.

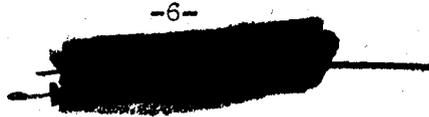
PROGRAMS: Broadly, the Chemical Corps Program in the field of radiological warfare includes: (1) RW Agents; (2) handling and storage incident to selection, evaluation, dissemination and defense; (3) munitions and aerial dissemination from fragmentation bombs, gliding rotors, small clusterable bombs and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

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	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:

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



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
	<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

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.

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	<u>500,000</u>
	\$1,468,000

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 dispersers, 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

UNCLASSIFIED

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 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>

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.

CLASSIFIED

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.

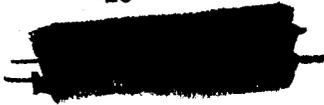
Repair of Existing Roads \$ 280,000

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	

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	

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. \$ 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.

1 July 1949
(Rev. 20 Sept 1949)

UNCLASSIFIED

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

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 1,365. 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:

CEBAR - Housing, Mess & Club

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
		<u>\$ 3,221,000</u>
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