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April 29, 1965

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Mr. W. B. Cramer, Area Manager
U. S. Atomic Energy Commission
P. O. Box 66
Miamisburg, Ohio 45342

Dear Mr. Cramer:

Plant Acquisition and Construction
Environment and Standards Building Addition (2)

Attached are eight copies of data sheets for this project revised in accordance with our recent discussions.

If any further information is required, please advise.

Very truly yours,

Original signed by D. L. Scott
David L. Scott
Vice President,
Plant Manager

DLB:lr
Enclosures

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herein contains
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cc: Mr. W. B. Cramer (2)

bc: (with enclosure)

- | | | |
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This Document consists of 36 pages.

This is copy 13 of 20 Series A.

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Construction Project Data Sheet

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1. Title and Location of Project: Development and Standards Building
Addition, Mound Laboratory,
Miamisburg, Ohio

2. Project No.

3. Date A-E Work Initiated: 1st Qtr., FY
3a. Date Physical Construction Begins: 4th Qtr., FY
4. Date Physical Construction Ends: 3rd Qtr., FY

5. Previous Cost
Est.: None

6. Current Cost
Est.: 2/23/65
\$660,000

7. Obligation and Cost Schedule:

| <u>Fiscal Year</u> | <u>Obligations</u> | <u>Costs</u> |
|--------------------|--------------------|--------------|
| FY | \$525,000 | \$100,000 |
| FY | 135,000 | 560,000 |

8. Brief Physical Description of Project:

This facility will be provided through new construction as an addition to the west end of the existing Development and Standards Facility (D-S Building). Site location and layout are shown on Sketches No. 1, 2 and 3, pages 27, 28 and 29.

GROUP 1

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1ST REVIEW DATE: 7/9/99
AUTHORITY: 48 CFR 101-11.6
2ND REVIEW DATE: 4/24/2016
AUTHORITY: 48 CFR 101-11.6
NAME: Bob Kately

Date: April 28, 1965

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The project provides a gross total of 10,200 square feet of new building construction consisting of 9,000 square feet on ground level and 1,200 square feet as second floor penthouse area and having a gross volume of 106,500 cubic feet. Approximately 5900 square feet of the structure will be net usable space.

The addition will be a single story structure with a slab floor, structural steel frame and concrete block curtain wall. The exterior walls will be faced with brick to match the existing structure. The interior is to be finished with a plastered drop ceiling and metal panel wall partitions. An insulated metal panel penthouse will house the building service equipment.

The addition will be divided into explosive and inert areas, and into low and standard relative humidity environment areas.

The main facilities and work involved in this project, as indicated on Sketches 1, 2, and 3 are:

1. Surveillance Storage

This 550 square foot area will be used for holding and unpackaging of packaged explosive items received from modification centers and the main storage area for current surveillance and reacceptance inspection. This room will be adjacent to the existing surveillance inspection area in the D-S Building. The

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area will be Class II Group D (explosive area) in finish and have conductive flooring and bench tops, explosion proof electrical outlets and dust proof lighting. All metal shelving, cabinets and benches will be grounded.

2. Packaging Material Drying Area

This is a 900 square foot area made up of two rooms separated by three drying rooms. One room is for incoming packaging material and one for hold of dried packaging material. Packaging material from the storage or repair area will be stacked on special trucks for selective drying operations and moved into drying rooms. The material from the ovens will be cooled and held in the low humidity (30 percent RH) room until removal as required by the product packaging area.

The drying rooms will be of a steam-heated circulated-air type with individual temperature controls.

3. Repair of Packaging Materials

An area of 350 square feet equipped with repair benches and an open area for material handling is provided. Packaging suitcases, trays, and other reusable packaging components are reconditioned and repaired in this area.

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4. Packaging Material Storage

This storage area of 1,200 square feet will be a staging and supply area for packaging materials for explosive and related items currently being produced. Packaging materials will be brought to this area from the metal quonset hut approximately four weeks before use permitting a partial drying and equilibration of temperature before use.

5. Product Packaging

Product packaging is to occupy a 900 square foot area of Class II Group G finish (explosive area) and have a low humidity (30 percent RH) atmospheric environment. All explosive items requiring hermetic packaging will be packaged in this area. The room will have packaging benches around its perimeter with a central open area for handling items and packaging materials.

6. Shipping and Receiving Area, and Bonded Storage for WR Explosive & Related Items

This 1,400 square foot area is for the storage of all explosive and related items prior to shipment. A locked partitioned area is provided for WR material of a bonded nature and an office is included for records and control of storage operations. Explosive and related items for surveillance and reacceptance will be received in this area.

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7. Shipping and Receiving

An area of 600 square feet is provided for receiving shipments of miscellaneous materials, tools and instrumentation used in the D-S Building. Many of the dies, gages and instruments are security sensitive so that a secured receiving area is provided.

8. Toilet and Lounge Area

The men's and women's toilet and lounge areas occupy 600 square feet and will serve personnel occupying the new addition and also supplement the overcrowded facilities in the existing D-S Building.

9. Office and Clerical Area

This area of 600 square feet will be used by the Surveillance Group and Quality Control Group for maintaining records and for housing supervisory and clerical personnel.

10. Penthouse

A penthouse of 1,200 square feet will house building equipment for two building environmental control systems, heaters and blowers for drying rooms, electrical switchgear, etc.

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11. Relocation of Existing Services and Utilities Extensions

Services of bottle gas, CO₂ cylinders, stairs and solvent storage now located on the west dock of the existing D-S Building will be relocated to the south of the new addition. A walkway will be provided from the dock to these re-located services.

Services of steam, condensate return, sanitary sewer, and fire line will be extended from existing piping near the proposed addition. Hot and cold water, compressed air, storm sewer and electrical service will be extended from the existing adjacent building.

12. Roadway and Dock

A new dock is to be provided on the west end of the addition and utilize the existing roadway.

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9. Justification of Need:

The purpose of this addition is to provide space, facilities, and equipment in the D-S Building area to support inspection, packaging, storage, and associated operations for WR explosive components and related items. This is to be accomplished by adding the space to alleviate overcrowded conditions and by providing an environment compatible with the requirements of support operations. The addition will also afford needed facilities that are presently not available and will centralize other operations that are being performed under unsatisfactory conditions.

Specifically, the addition will provide required environment and/or space for the following:

1. WR Explosive Component Final Inspection and Quality Control Operations

The functions of precision inspection and quality control are being performed in the same areas with operations such as packaging material storage, repair, cleaning and labeling of packaging materials, and packing and shipping operations. The proposed addition will provide space for these non-inspection operations and release space for meeting the recommendations of the QC Audits because the existing Final Inspection area will be used for only inspection and quality control operations.

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The inventory in Final Inspection varies from 10,000 to a maximum of 100,000 items. On March 1, 1965, as shown on Table 2 (page 31), the area contained products and packaging materials which would occupy 1,528 cubic feet as calculated from Tables 2 and 3 (pages 31 and 32). Under present conditions these materials must be stored under benches or wherever space can be found available.

The inspection area is inadequate to simultaneously accumulate, hold, inspect, and package these items. The production cycle for fabrication and inspection of a lot of product ranges from three to eight months. The inspection area is continuously receiving product from six production groups. The completed units are accumulated in this area until the fabrication of each individual lot is completed. Present inspection space requires shuffling of products from one area in inspection to another to prevent shutdown of the inspection line. Several of these items must be tested using the same equipment. This makes it difficult to have complete control of the inspection operations and material. Inspection now has 2,374 square feet of usable area. Current utilization of this area and its proposed future use is described below. See Sketch 3 for room location.

Space Utilization - Final Inspection Area

| <u>Room</u> | <u>Square Feet</u> | <u>Present Use</u> | <u>Future</u> |
|-------------|--------------------|--|--|
| D-S 205 | 1,331 | Precision measurement, storage and packaging of all explosive items. | Precision measurement of all explosive items for production and development. |

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| <u>Room</u> | <u>Square Feet</u> | <u>Present Use</u> | <u>Future</u> |
|-------------|--------------------|---|--|
| DS-206 | 378 | Precision measurement and packaging of inert items. | Precision measurement of all inert items. |
| DS-207 | 392 | Unsegregated material storage, product storage, repair of shipping containers, labeling of shipping containers. | Segregated storage of all fabricated products in the inspection process as received from Production during lot build including "hold" WR material, Test Fire Samples, Environmental Samples, AEC QAIA Samples and Lots pending DAO/AEC acceptance. |
| DS 215 | 273 | Precision measurement and storage of inert items. | Discrepant Material Reject Room. Reject material to be reviewed by QC Engineering and/or the Material Review Board. |

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Two recent QC-2 audits, one performed in July, 1963, the other in September 1964, recommended that rejected items found during an inspection operation be removed immediately from the lot and stored separately from the WR acceptable items. Recommendations of these two audits are quoted below:

QC-2 Audit July 16-19, 1963

"Considering that rejected items must at some point in the process be separated from accepted items, it is recommended that separation be accomplished at the point of rejection. It is further recommended that processing of non-WR material be accomplished separately to eliminate mixing of acceptable and reject items in the same trays; it is believed that this will assure better control over discrepant material."

QC-2 Audit September 21-25, 1964

"Thorough review of operating material control practices should be made. Procedures should be issued (1) to require better identification at work collection points of status of material, and (2) to clarify identification and segregation methods for reject, hold, and accepted items in assembly and inspection processes. Application of procedures should be enforced and periodically audited to insure continuing compliance."

Due to the necessity of performing various packaging operations in the existing final inspection area, space is not now available to comply with this order. Approval of this requested addition will make possible the compliance with these recommendations.

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The new addition, by providing space for packaging and storage of packaged items and the processing and storage of packaging materials, will relieve the critical space problems in the Final Inspection areas of the D-S Building.

2. Space for Surveillance and 1E26 Detonator Reacceptance Inspection

Space is required for product surveillance and detonator reacceptance program operations. Inspection operations and item handling are hampered because unpackaging, inspection, repackaging, storage of packaged items in process, and the storage and processing of packaging materials in process occupy the same area.

Surveillance is performed on explosive items that have been produced at Mound Laboratory and in some instances, detonators manufactured at other sites. The surveillance program provides for quality assurance and evaluation by disassembly, testing and inspection of items returning from stockpile sampling, retrofit, and retirement programs. In addition to surveillance, the detonator reacceptance program operations are performed in this area. This operation consists of the accumulation of detonators by lots from the item stockpile sampling, retirement, and retrofit programs.

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The addition will provide a 550 square foot room to hold and unpackage all packaged explosive items currently being received and will be inspected for reacceptance for WR use as evaluation of the stockpile sample. This will release 370 square feet of space in the existing surveillance area for inspection operations. See Sketch 3 for existing surveillance area.

3. Permit Moving the Packaging Material Reconditioning and Storage

The proposed addition will consolidate the operations of reconditioning and storing packaging material and provide the capability of furnishing dry and usable packages and packaging materials. The need for this space lies in the fact that Mound does not have the capability for supplying clean, dry, reconditioned packaging containers to support detonator production. Reconditioning and storage of packages and packaging material for detonator production is currently being done in inadequate facilities in five different locations.

Packaging material quality, cleanliness and the environment are most critical in the storage and shipment of WR detonators and related explosive devices. As noted above, these items are extremely sensitive to moisture and their performance may be seriously impaired when subjected to an environment of greater than 30 percent relative humidity. Consequently, all packaging materials must be clean and dry and the storage containers must be in excellent condition so they can be hermetically sealed. The humidity indicator card specifications shown on Table 4 (page 33) are indicative of the importance of dry packaging materials.

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Presently all packaging materials are stored in an unheated Quonset Hut located approximately 0.80 mile from the inspection and manufacturing areas. After storage in this area, all packaging material must be reinspected, cleaned, dried, and the proper labels affixed prior to their use for the packaging of detonators or being sent to another site. Materials stored in this Hut experience a temperature range of 0°F to 120°F and a humidity range of 40 to 95 percent during a year. The Hut is too small to be used for the repair, cleaning and drying of these materials. Consequently, the precision inspection area must be used to perform these functions.

The problem of high humidity is one that has become worse during the past several years. Initially the "AN can" package provided a minimum surface area for adherence or absorption of moisture which later might transfer to the packaged item. Contained moisture in these packages could easily be removed by the addition of desiccants. More recent designs of shipping containers and the related materials have drastically increased the area of moisture holding surfaces. This has increased to the extent that desiccants alone can no longer be depended upon for the necessary moisture removal. This project will provide drying facilities and proper atmospheric controls for the preparation of materials so that desiccants will adequately control moisture levels within sealed containers.

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Production in FY 1959-1960 basically consisted of 1E26 detonators. In contrast, the build schedules detailed on Table 1 (page 30) show thirty-eight different products scheduled for production through 1968. An "AN can" and the package material inside used for packaging 100 1E26 detonators require 1.96 cubic feet in storage. Current items being produced require a much greater volume for storage of container and package material. Comparative examples per 100 items are: 39 cubic feet of packaging material storage space required for MCl968; 16.26 cubic feet, for MCl651; 10.25 cubic feet, for MCl600 Series Timers; and 9.80 cubic feet for MCl690 detonator.

Space required for storage of active packaging materials is estimated as follows:

- a. The average number of units of Mound-manufactured product for the month of greatest scheduled activity in Fiscal Year 1968 to be processed through the addition to D-S Building, as reflected by Table 1, is 34,605 units. The number of can, cases, boxes, and shipping and handling trays to support such a month's production would occupy 3500 cubic feet.
- b. Packages and packaging material necessary to support items to be shipped by the Development Department in any typical month would also be processed through the addition to the D-S Building.

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- c. As the need arises in the AEC complex, empty, dried, and reconditioned detonator packages and materials are supplied by Mound. This also requires preparation and storage area.

In addition to the storage space for packaging materials outlined above, space is required for the storage of packaging material for miscellaneous items manufactured at Mound such as fiducials, SE-1's, SP-106's, EX-12's, sugar loads, electronic switches, bridge wires, etc. The storage room of 1200 square feet in the D-S Building addition will accommodate approximately 4,416 cubic feet of material at any one time. The Quonset Hut must still be used as a long-term holding area.

The packaging material repair area will use 350 square feet of the new addition. Here the material will be inspected, repaired and salvaged. Items such as suitcases will have labels removed; latches, hinges and gaskets will be repaired and replaced.

The packaging material drying area will occupy a total space of 900 square feet. It will provide capabilities for the drying of various packaging materials, respective to their temperature limitations, and also provide means for the reactivation of used desiccants. Inspected and repaired packaging material will be transferred from the storage area to the pre-drying area. Here trucks will be loaded and processed through a drying cycle provided by one of the three ovens. The truck removed from the oven will be held in a staging area for

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cooling and then transferred to the item packaging room as required. Since the material could take on excessive moisture in cooling and awaiting transfer, a 30% relative humidity atmosphere is provided in the staging area.

4. Packaging of Explosive Items

Detonators and related WR components are extremely sensitive to moisture and their performance may be seriously impaired when subject to a moist environment.

Los Alamos packaging specifications No. 9Y41739 defines these packaging requirements including a need for a maximum relative humidity of 30 percent within the container. In addition, a rough draft of 1E26 Reacceptance Specifications, LASL drawing 9Y42773, Revision D, lowers the relative humidity requirement for 1E26 detonators in storage to 20% RH.

Compliance with these specifications is seriously jeopardized by the lack of the proper environment to prepare and maintain packaging materials and by the lack of space to store finished goods in WR, non-WR, Reject and Hold categories. These limitations have resulted in shipping schedule delays and difficulties in maintaining absolute assurance that all materials are controlled within these categories. As an example, during November and December 1964, Lot 9030 of the detonator 1E26B was delayed approximately eight weeks and packaged and repackaged numerous times before the 30 percent relative humidity requirement could be met. Of the last twenty lots of

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detonators rejected by AEC QAIA personnel, eleven were for packaging defects.

The addition will provide a room 900 square feet in area which will be maintained at approximately 30 percent relative humidity for the packaging of explosive items.

5. Shipping and Receiving Area, and Bonded Storage for WR and Other Classified Items

Mound does not have an adequate shipping and receiving area for WR and other classified explosive items. Packaged items are held in the Final Inspection and Surveillance areas. This contributes to the congested condition and requires the trucking and double handling of these packaged items when they must be moved to other storage areas because of indefinite shipping schedules.

Items for Surveillance and detonator reacceptance are now received in the "W" Building, transferred to D-S Building for necessary inspection and accountability and finally transferred and stored in metal storage buildings in the lower area of the site. When the respective grouping of items is complete they are transferred to the D-S Building. This requires transfer scheduling and adds to the congestion of the surveillance area.

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Numerous weapons-related but non-WR items are now held or stored in various areas of the plant. These consist of reject material (held for final designation by D.M.R. group), obsolete material (finished product out of date), and miscellaneous items manufactured at Mound such as fiducials, SE-1's, SP-106's, EX-12's, sugar loads, electronic switches, bridge wires, etc. These items should all be held in one area for shipping or other disposition.

The shipping, receiving and bonded storage areas of the proposed addition will be 1400 square feet in size. Metal building No. 17, now used for storage of WR items, will revert to a storage area for equipment and inert materials in support of the "I" Building operations. Space now used in "T" Building for storage of nonexplosive detonator-related items will revert to use of operations related to that area.

6. Shipping and Receiving Area for Supplies

The D-S Building does not have a shipping and receiving area. The room originally intended for this purpose has been utilized for a drawing control bank and clothing dispensary.

The addition will provide a 600 square foot area for receiving and shipping of miscellaneous materials, tools and instrumentation used in the D-S Building.

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Many of the dies, gages and instruments are security sensitive and require special handling. A caged area will be provided in this room for items requiring special handling.

7. Alleviate Substandard D-S Building Rest Room Facilities

The criteria for rest rooms in the original D-S Building were based on a work load to be handled by a force of 90 persons (60 women and 30 men). Since construction, the work activities performed in the building have increased extensively with a resultant increase in personnel. The work force presently housed in this building numbers 200 persons (125 women, and 75 men). The toilet and lounge room areas are inadequate and substandard for this number of people. Quite often accommodations in other buildings have to be used by D-S Building personnel. Present conditions do not meet the AEC Standards of Minimum Plumbing Facilities (AEC-Appendix 6301 Part 1F refers to National Plumbing Code).

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The following table outlines the existing, proposed additional, and the recommended facilities:

| <u>Employees</u> | <u>Toilet Facilities</u> | | | <u>Lavatories</u> | | |
|------------------|---------------------------------------|--------------------------------------|----------------|-------------------|-----------------|----------------|
| | <u>Existing</u> | <u>Proposed</u> | <u>Minimum</u> | <u>Existing</u> | <u>Proposed</u> | <u>Minimum</u> |
| 75 male | 4 (2 water closets) (2 urinals) | 3 (2 water closets) (1 urinal) | 5 | 2 | 2 | 8 |
| 125 female | 4 (water closets) | 3 (water closets) | 6 | 3 | 2 | 12 |

Since there are twelve laboratory sinks throughout the building area, only lavatories in support of the toilet rooms will be added.

The expected life of the building is fifty years. The probable life of the equipment is twenty years.

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The facility is sized for one shift operation. Much of the "Addition" area will be used for specialized storage from which little is gained in multishift operation. Areas such as product packaging, drying and repair will function on overtime or multishift operations as work schedules require. In essence, multishift operation in the proposed addition would not reflect a general reduction in space requirements.

There will be no net increase in annual operating costs for this facility (See Table 5, page 34). The \$30,000 estimated increased maintenance and utility cost is offset by operating savings estimated at \$35,000 per year, (See Table 6, page 35 for detail of savings.) No additional personnel are required.

If this project is not approved the following adverse effects will continue:

1. The probability of reject materials accidentally being included in a WR lot.
2. Improvement cannot be made in the reliability, operating efficiency and accuracy of the inspection operations under present operating conditions.
3. Additional schedule delays may result from packaging with materials having a moisture content in excess of that permitted by specifications. This is certainly true if the packaging specifications are modified to require 20% relative humidity rather than the 30% now required.
4. Detonator reacceptance programs will have to be performed in a detonator surveillance area under extremely crowded conditions.
5. Safety and security will continue to be jeopardized by the use of corridors, hallways, and the D-S Building lobby for a shipping and receiving area.

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10. Details of Cost Estimate:

| <u>Item</u> | <u>Unit Cost</u> | <u>Item Cost</u> | <u>Total Cost</u> |
|--|------------------|------------------|-------------------|
| a. Engineering Design, and Inspection @ approximately 15% of Construction Costs | | | \$ 70,000 |
| b. Land and Land Rights | | | -0- |
| c. Construction Costs | | | 450,000 |
| <u>Improvement to Land</u> | | | |
| Temporary security fence | | \$ <u>3,000</u> | |
| <u>Building</u> | | | |
| One-story, steel frame, concrete block with face brick, penthouse, air con- ditioning, with a part conductive linoleum and explosion proof fixtures | | | |
| | 10,200/s.f. | \$ 41.50/s.f. | <u>425,000</u> |

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Weapons Program
Subprogram 39-03

1. Title and Location of Project: Development and Standards Building Addition, Mound Laboratory, Miamisburg, Ohio

2. Project No.

| | <u>Unit Cost</u> | <u>Item Cost</u> | <u>Total Cost</u> |
|---|------------------|------------------|-------------------|
| <u>Special Facilities</u> | | | |
| Steam circulating and drying ovens | | \$ 10,000 | |
| <u>Utilities</u> | | | |
| Steam 3" and condensate 1½" including stanchions and drips | | 3,000 | |
| Electrical 500 M cable and 3" conduit, 280 l.f. and breaker | | 6,000 | |
| Fire line extension and fire hydrant | | 3,000 | |
| d. <u>Standard Equipment</u> | | | \$ 30,000 |
| Contractor Procured | | | |
| Dock leveler | | 1,000 | |
| Metal shelving 2.5' x 8' H, 172 l.f. | \$ 15/l.f. | 3,000 | |
| Wall cabinets 1' x 2' H, 80 l.f. | 25/l.f. | 2,000 | |
| Cabinets with conductive bench tops 68 l.f. | 44/l.f. | 3,000 | |
| Cabinets with wood bench tops 88 l.f. | 34/l.f. | 3,000 | |
| Monsanto Procured | | | |
| Misc. cabinets, furniture, trucks, racks, etc. | | 20,000 | |

Albuquerque
Operations Office

Construction Project Data Sheet

Schedule 44
Weapons Program
Subprogram 39-03

1. Title and Location of Project: Development and Standards Building
Addition, Mound Laboratory,
Miamisburg, Ohio

2. Project No.

| <u>Item</u> | <u>Unit Cost</u> | <u>Item Cost</u> | <u>Total Cost</u> |
|--------------------|------------------|------------------|-------------------|
| e. Contingency | | | <u>\$110,000</u> |
| Total Project Cost | | | \$660,000 |

11. Major Contractor and Intended Type of Contract:

A-E Title I - Starts First Quarter FY ; finishes Second Quarter FY ; design will be on the basis of negotiated lump-sum architect-engineer contract - Estimated cost \$18,000.

A-E Title II - Starts Second Quarter FY ; finishes Fourth Quarter FY ; design will be on the basis of negotiated lump-sum architect-engineer contract - Estimated cost \$40,000.

A-E Title III - Starts Fourth Quarter FY ; finishes Third Quarter FY ; work will be on the basis of negotiated lump-sum architect-engineer contract - Estimated cost \$12,000.

Procurement of special production equipment and furnishing of trucks, racks, cabinets and furniture will be performed by Monsanto from the First Quarter FY ; to the Third Quarter FY . Estimated Cost \$20,000 (not including contingency).

~~SECRET~~

Albuquerque
Operations Office

Construction Project Data Sheet

Schedule 44
Weapons Program
Subprogram 39-03

-
1. Title and Location of Project: Development and Standards Building Addition, Mound Laboratory, Miamisburg, Ohio
2. Project No.
-

Construction starts Fourth Quarter FY ; finishes Third Quarter FY . Construction will be accomplished by firm, fixed-price contract awarded on the basis of competitive bids. Estimated cost \$460,000 (not including contingency).

| | | |
|----------|------|-----------|
| AEC | Cost | \$635,000 |
| Monsanto | Cost | \$ 25,000 |

12. A fallout shelter is not incorporated in this construction project because a building is located at this plant site which provides adequate shelter for all plant personnel.

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Date: April 28, 1965

U N C L A S S I F I E D

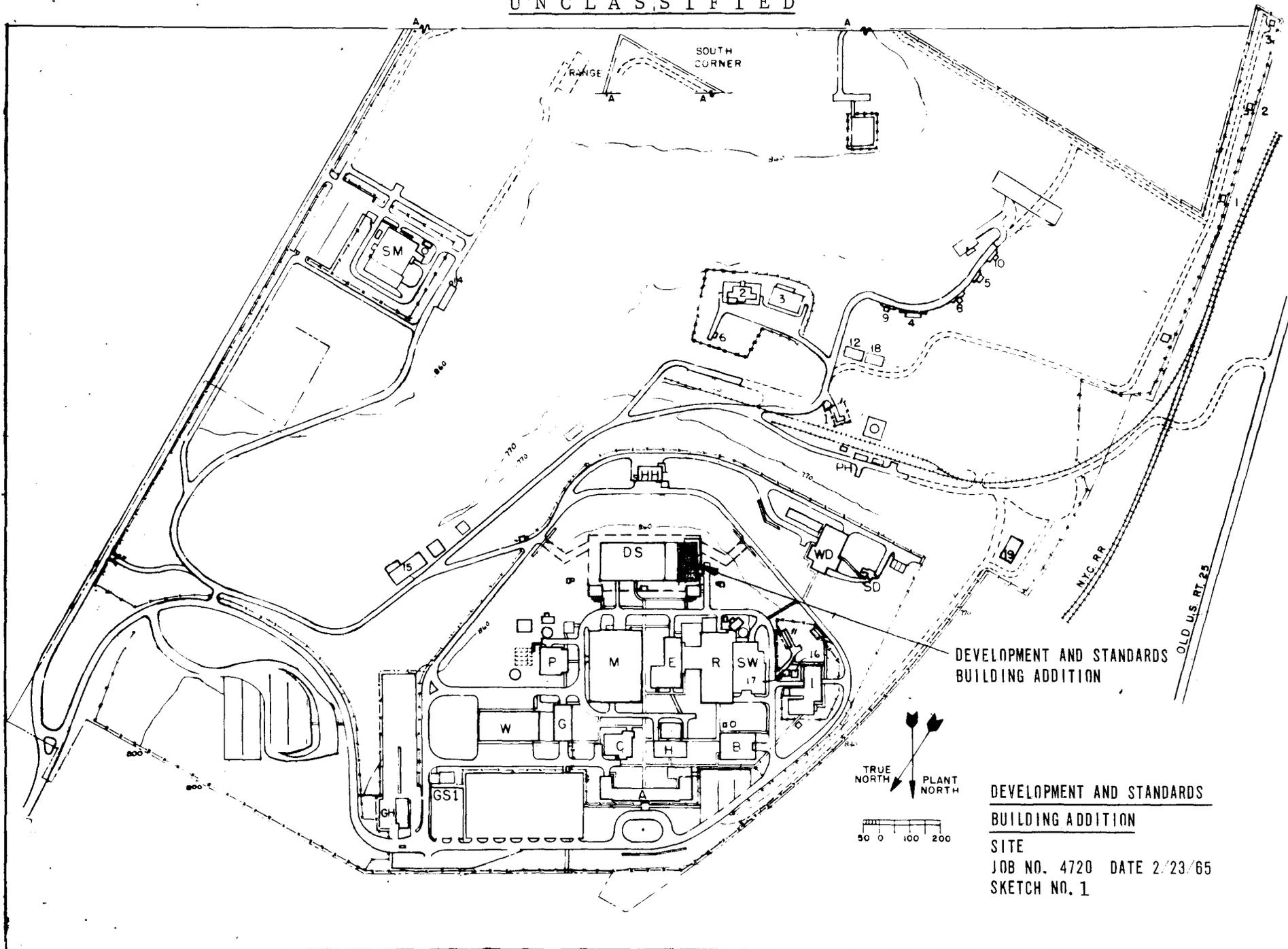
APPENDIX

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U N C L A S S I F I E D

UNCLASSIFIED

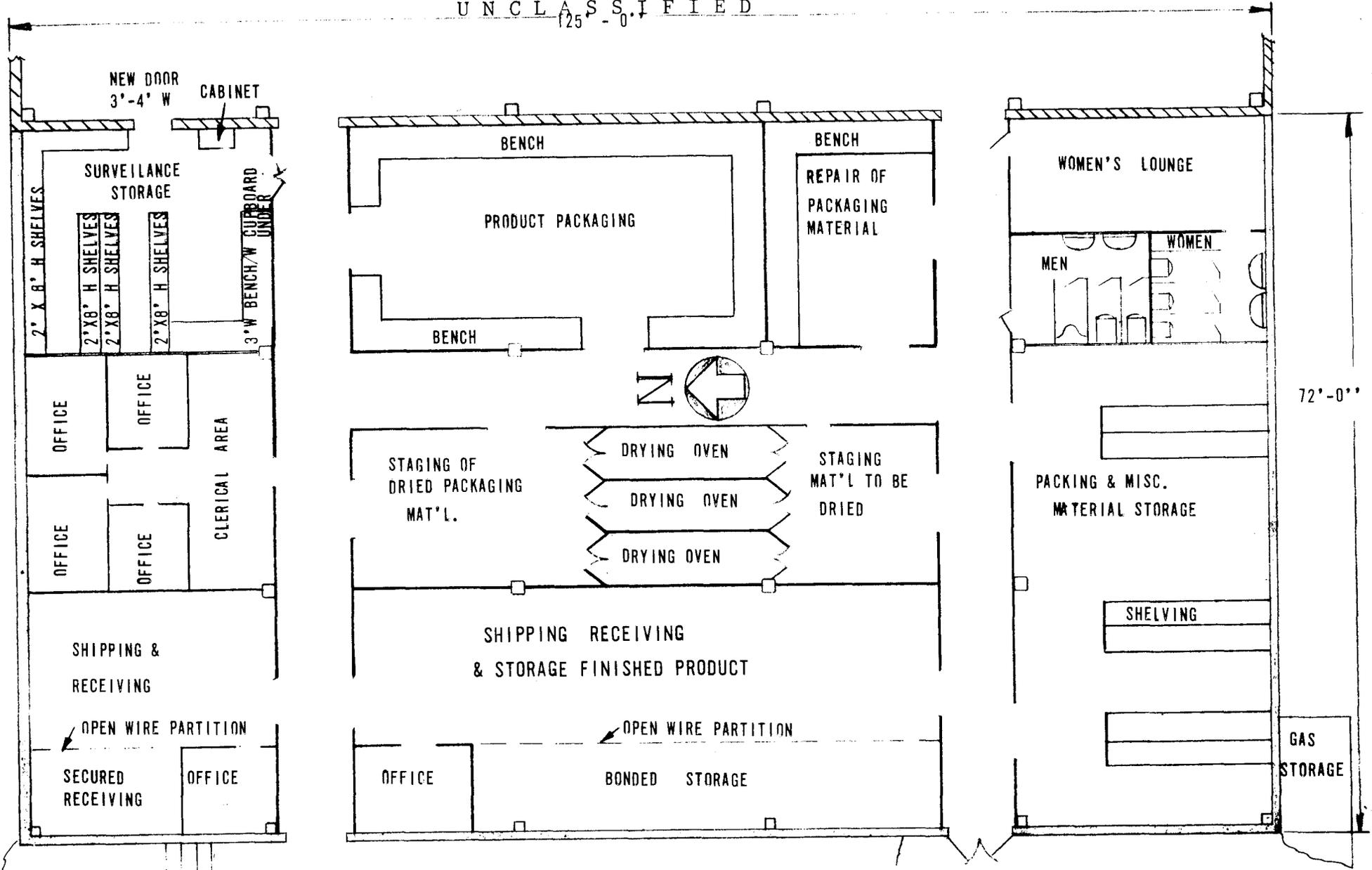


DEVELOPMENT AND STANDARDS
BUILDING ADDITION

DEVELOPMENT AND STANDARDS
BUILDING ADDITION

SITE
JOB NO. 4720 DATE 2/23/65
SKETCH NO. 1

UNCLASSIFIED



DEVELOPMENT AND STANDARDS
BUILDING ADDITION
FLOOR PLAN
JOB NO. 4720 DATE 2/23/65
SKETCH NO. 2

UNCLASSIFIED



125'-10"

25'-10"

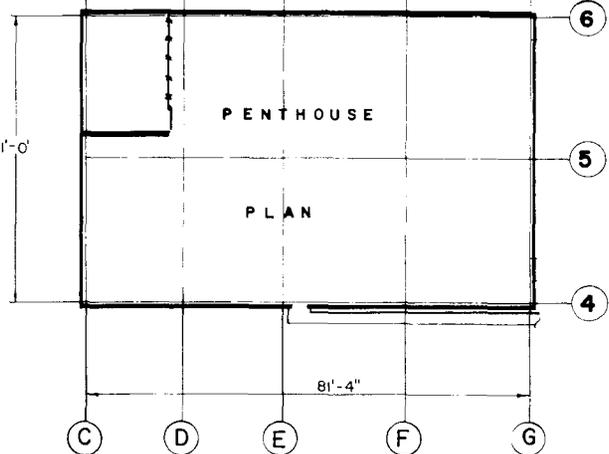
51'-0"

81'-4"

FINAL INSPECTION AREA



SURVEILLANCE AREA



UNCLASSIFIED

3 3-10-65 REVISED WD G.B.
 2 7-64 REVISED GB PT
 1 4-2-64 CHANGED ROOM NUMBERS HJM GB

MESSAGING RESEARCH CORPORATION

D. S. BUILDING

D.E.W. 7-16-63
 G.A.B. 7-22-63

768 NOTED

SKETCH #3

TABLE 2

INSPECTION INVENTORY

| <u>Item</u> | <u>Product</u> | <u>Lot Number</u> | <u>Lot Size</u> | <u>Shipping Trays</u> | <u>Shipping Containers</u> | <u>Disposition</u> |
|-------------|----------------|-------------------|-----------------|-----------------------|----------------------------|--------------------|
| 1 | 1E26-S | 9034 | 2916 | 150 | 30 | In Process |
| 2 | 1E26-B | 9032 | 3441 | 392 | 144 | In Process |
| 3 | 1E26-B | 9033 | 3300 | 381 | 137 | In Process |
| 4 | MC-1303 | 16 | 113 | 16 | 8 | In Process |
| 5 | MC-1651 | 016 | 408 | 816 | 51 | In Process |
| 6 | MC-1651 | 017 | 361 | 736 | 46 | In Process |
| 7 | MC-1651 | 019 | 397 | 800 | 50 | In Process |
| 8 | MC-1651 | 020 | 408 | 816 | 51 | In Process |
| 9 | MC-1651 | 021 | 480 | 960 | 60 | In Process |
| 10 | MC-1651 | 022 | 478 | 960 | 60 | In Process |
| 11 | MC-1651 | 023 | 500 | 1008 | 63 | In Process |
| 12 | MC-1673 | TR001 | 30 | 2 | 2 | In Process |
| 13 | MC-1675 | 002 | 400 | 27 | 27 | In Process |
| 14 | MC-1943 | 10 | 1042 | 24 | 3 | In Process |
| 15 | MC-1943 | 11 | 1000 | 24 | 3 | In Process |
| 16 | MC-1957 | Qual. | 2582 | 48 | 16 | In Process |
| 17 | MC-1986 | Qual. | 49 | 51 | 17 | In Process |
| 18 | MC-1991 | 101 | 409 | 85 | 17 | In Process |
| 19 | ER-213 | 003 | 318 | 20 | 4 | In Process |
| | | 004 | 138 | 10 | 2 | In Process |
| 20 | Adapter Switch | 001 | 10 | 0 | 1 | In Process |
| Totals | | | 18780 | 7326 | 792 | |

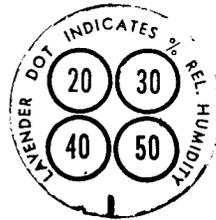
Table 3

Packaging Storage Requirements

| Item | Shipping Containers | | | Shipping-Handling Trays | | |
|----------------|--------------------------------------|---------------------|-----------------------------|------------------------------|------------------------|-----------------------------|
| | Size of Shipping Containers (inches) | Units Per Container | Storage Space Per 100 Units | Trays Per Shipping Container | Size of Trays (inches) | Storage Space Per 100 Units |
| 1E26 S | 12 x 12 x 15 | 100 | 1.26 ft ³ | 5 | 2 x 11 x 11 | .70 ft ³ |
| 1E26 B | 6 x 14 x 28 | 16 | 7.87 ft ³ | 2 | 2 x 11 x 26 | 4.13 ft ³ |
| MC-1690 | 12 x 12 x 15 | 20 | 6.30 ft ³ | 5 | 2 x 11 x 11 | 3.50 ft ³ |
| MC-1991 | 12 x 12 x 15 | 25 | 5.04 ft ³ | 4 | 2 x 11 x 11 | 2.24 ft ³ |
| MC-1943 | 6 x 11 x 20 | 420 | .16 ft ³ | 7 | 1/2 x 10 x 18 | .09 ft ³ |
| MC-1942 | 6 x 11 x 20 | 420 | .16 ft ³ | 7 | 1/2 x 10 x 18 | .09 ft ³ |
| MC-2136 | 6 x 14 x 28 | 16 | 7.87 ft ³ | 2 | 2 x 11 x 26 | 4.13 ft ³ |
| MC-1957 | 12 x 12 x 15 | 100 | 1.26 ft ³ | 5 | 2 x 11 x 11 | .70 ft ³ |
| MC-1986 | 6 x 14 x 28 | 6 | 21.00 ft ³ | 6 | 1 x 12 x 26 | 18.00 ft ³ |
| ER-206 (1E30) | 12 x 12 x 15 | 100 | 1.26 ft ³ | 5 | 2 x 11 x 11 | .70 ft ³ |
| Driver Det. 62 | 6 x 14 x 28 | 16 | 7.87 ft ³ | 2 | 2 x 11 x 26 | 4.13 ft ³ |
| Driver Det. 63 | 6 x 14 x 28 | 16 | 7.87 ft ³ | 2 | 2 x 11 x 26 | 4.13 ft ³ |
| MC-1283 | 6 x 11 x 20 | 8 | 8.13 ft ³ | 1 | 6 x 11 x 20 | 8.13 ft ³ |
| MC-1464 | 6 x 14 x 28 | 20 | 6.30 ft ³ | 1 | 3 x 12 x 26 | 2.70 ft ³ |
| MC-1303 | 6 x 11 x 20 | 16 | 7.87 ft ³ | 2 | 2 x 9 x 18 | 2.38 ft ³ |
| MC-1651 | 6 x 11 x 20 | 8 | 8.13 ft ³ | 16 | 2 x 4 x 5 | 4.60 ft ³ |
| MC-1697 | 6 x 11 x 20 | 16 | 7.87 ft ³ | 2 | 2 x 9 x 18 | 2.38 ft ³ |
| FE Trans. 62 | 6 x 11 x 20 | 8 | 8.13 ft ³ | 1 | 6 x 11 x 20 | 8.13 ft ³ |
| FE Trans. 63 | 6 x 11 x 20 | 8 | 8.13 ft ³ | 1 | 6 x 11 x 20 | 8.13 ft ³ |
| MC-1758 | 6 x 11 x 20 | 16 | 7.87 ft ³ | 2 | 2 x 9 x 18 | 2.38 ft ³ |
| Transducer | 6 x 11 x 20 | 8 | 8.13 ft ³ | 1 | 6 x 11 x 20 | 8.13 ft ³ |
| Timer | 6 x 11 x 20 | 16 | 7.87 ft ³ | 2 | 2 x 9 x 18 | 2.38 ft ³ |
| FE Trans. | 6 x 11 x 20 | 8 | 8.13 ft ³ | 1 | 6 x 11 x 20 | 8.13 ft ³ |
| FE Trans. | 6 x 11 x 20 | 8 | 8.13 ft ³ | 1 | 6 x 11 x 20 | 8.13 ft ³ |
| Timer | 6 x 11 x 20 | 16 | 7.87 ft ³ | 2 | 2 x 9 x 18 | 2.38 ft ³ |
| SE-1 B.W. | 15 x 7 x 8 | 500 | .10 ft ³ | | | |
| SE-1 S.L. | 15 x 7 x 8 | 500 | .10 ft ³ | | | |
| SE-1 Det. | 6 x 11 x 20 | 240 | .32 ft ³ | 3 | 1 x 9 x 16 | .12 ft ³ |
| SE-1 Special | 6 x 11 x 20 | 240 | .32 ft ³ | 3 | 1 x 9 x 18 | .12 ft ³ |
| EX-12 B | 6 x 11 x 20 | 240 | .32 ft ³ | 3 | 1 x 9 x 18 | .12 ft ³ |
| SE-12 B | 6 x 11 x 20 | 240 | .32 ft ³ | 3 | 1 x 9 x 18 | .12 ft ³ |
| SP-106 | 6 x 14 x 28 | 12 | 11.53 ft ³ | 6 | 1 x 11 x 25 | 8.78 ft ³ |
| ER-184 Heads | 6 x 6 x 10 | 1000 | .02 ft ³ | | | |

TABLE 4

INDICATOR, HUMIDITY CARD SPECIFICATION
(Typical)



Facsimile of Cards

NOTES:

- (1) Humidity card material shall be paper, blotting, Fed. Spec. UU-P-63a, Grade B, White, Halftone, both sides smooth. PH value 6.5 to 7.2. Thickness shall be .015 to .022. All printing shall be approximately as shown and shall be (black) in accordance with Fed. Spec. TT-1-528. The area within each circle shall be impregnated with a chemical solution, originally blue in color, which shall turn to a distinct pink color when at equilibrium with the relative humidities ($\pm 5\%$) shown. The .88 diameter background for the four humidity indicating circles shall be a permanent pink in color. The .31 dia. circles shall match this color when at equilibrium with the relative humidities shown. (For card test purposes the relative humidities shall be measured at $77^{\circ} \pm 1^{\circ}\text{F}$).
- (2) Card may be obtained from the Humidial Company, 805 West B Street, Colton, California, or Mound Laboratory approved equivalent.
- (3) No. Required - 1

Reference: Mound Laboratory Drawing No. 2-2240

U N C L A S S I F I E D

TABLE 5

ANNUAL OPERATING COST DISTRIBUTION

| <u>Item of Cost</u> | <u>Total Cost New Function</u> | <u>Total Cost Existing Function</u> | <u>Net Difference Increase - (Decrease)</u> |
|----------------------------------|------------------------------------|---|---|
| Direct Labor | \$120,000 ^(a) | \$130,000 | (\$10,000) |
| Direct Materials | 58,000 ^(a) | 63,000 | (5,000) |
| Indirect Costs | 396,000 ^(a) | 384,000 | 12,000 |
| Total Costs | 574,000 | 577,000 | (3,000) |
| Maintenance Costs ^(b) | 40,000 | 10,000 | 30,000 |

(a) These reflect computed savings in Operating Cost as shown on Page 35 and 36, Table 6.

(b) These costs include utilities and they are included in the Indirect Costs.

U N C L A S S I F I E D

Table 6

Details of Estimated Savings

The proposed addition to the D-S Building will result in annual operating economies estimated at \$35,000. The details of these savings are as follows:

- a. Labor saved by having consolidated and additional facilities, thereby eliminating time of truck drivers, laborers, guards, and warehousemen is estimated at \$7,000 as shown below.

| | |
|-----------------|--|
| Truck Drivers | - 17 ½ hrs./wk. at \$2.75/hr. x 52 wks. = \$2,500 |
| Laborers | - 14 ½ hrs./wk. at \$2.75/hr. x 52 wks. = \$2,000 |
| Warehousemen | - 14 ½ hrs./wk. at \$2.75/hr. x 52 wks. = \$2,000 |
| Security Guards | - 3 ½ hrs./wk. at \$2.75/hr. x 52 wks. = <u>\$ 500</u> |
| | Total \$7,000 |

- b. Savings on packages and packaging materials by keeping material dry and by utilizing more reactivated desiccant material. This cannot be done currently because of lack of the necessary facilities to dry material and reactivate desiccant. Approximately twenty packing cases and forty AN cans, valued at \$3,900, are lost each year due to moisture damage. Presently, we activate approximately two cans of silica gel per day. Mound uses an average of four to five cans each working day. With the facilities in the D-S Building addition, we could reactivate all of our requirements of silica gel. Reactivation of two additional cans of silica gel per day would mean a savings of approximately \$5,600 per year. The total savings yearly on the proper drying of material and reactivating silica gel can conservatively be stated as a total of \$9,500.

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Table 6
(Cont'd)

- c. Opening detonator packages, replacing desiccant, removing damp trays, and repackaging, using dry packages and/or trays costs approximately \$5,000 per year. Trays and packaging material on approximately 200 repacks per year are now being lost because of excessive moisture at a cost of \$5,000 per year.

The total savings in this area is \$10,000 per year.

- d. Savings would be realized by reducing the cost of heat, light, water, janitorial service, and Chem-Jon rental for the Quonset Hut and Building 17 at approximately \$3,000 per year:

Heat, light, and water for Quonset Hut and Building 17 reduced \$140.00 a month = \$1,680 per year.

Janitorial Services for Quonset Hut and Building 17 reduced \$110.00 per month - \$1,320 per year.

Chem-Jon rental for the Quonset Hut only at \$30.00 per month = \$360.00 per year.

- e. The average annual cost of cases damaged by excessive moving and handling is \$4,500. Also, approximately 200 handling and packing trays are lost each year by excessive handling, moving, and damaging at a cost of approximately \$1,000. Consequently, a savings of \$5,500 will result from the elimination of excessive handling and resultant damage.

Total Operating Economies Expected - \$ 35,000

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